IEEE UFFC-JS 2024

IEEE ULTRASOCINC, FERROELECTRICS, AND FREQUENCY CONTROL JOINT SYMPOSIUM

SYMPOSIUM PROGRAM

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Welcome Message from the General Chairs

Dear Colleagues and Friends,

It is our great pleasure to welcome you to the decennial IEEE Ultrasonics, Ferroelectrics, and Frequency Control Joint Symposium (UFFC-JS). This year, we are honored to celebrate the 70th anniversary of the IEEE UFFC Society, a milestone that underscores our long-standing commitment to advancing the fields of ultrasonics, ferroelectrics, and frequency control.

The UFFC-JS promises to be an exceptional event, bringing together leading researchers, industry experts, and practitioners from around the globe. Our program is packed with insightful presentations, cutting-edge research, and numerous opportunities for networking and collaboration. We are confident that this symposium will provide a platform for fruitful discussions and the exchange of innovative ideas that will shape the future of our disciplines.

We would like to extend our heartfelt thanks to our organizing committee, sponsors, and volunteers for their tireless efforts in making this symposium a reality. Your dedication and hard work are truly appreciated.

We look forward to your active participation and hope you enjoy the symposium and your stay in the vibrant city of Taipei.

General Co-Chair
Pai-Chi Li
National Taiwan University

General Co-Chair
Wan-Thai Hsu
Soundskrit

UFFC-JS 2024 Organizing Committee

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Neus Domingo, ORNL, USA - Ferroelectrics
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Brooke Richtik, Senior Student Rep – Ferrorelectrics
Samantha Schafer, Senior Student Rep – Ultrasonics
Andrew Markel, Senior Student Rep – Frequency Control
Ipek Efe, Junior Student Rep – Ferrorelectrics
Laurine Meistersheim, Junior Student Rep - Frequency Control

Technical Program Committee

IUS

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Guy Cloutier, University of Montreal	Lead: MIM]
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MSR]	Lasse Lovstakken, Norwegian University of Science and
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Technology	Geoff Luke, Dartmouth College [Track Lead: MPA]
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Lead: MEL]	Giulia Matrone, University of Pavia
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Marvin Doyley, University of Rochester	[Track Lead: MTH]
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John F. Vetelino, University of Maine	

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Group Co-Chair(s):
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Levent Degertekin, Georgia Institute of Technology

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ISAF

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Julia Glaum, Norwegian University of Science and Technology (NTNU) Barbara Malič, Jožef Stefan Institute Ahmad Safari, Rutgers University Shujun Zhang, University of Wollongong Jeong Dae Yong, Inha University Ichiro Fujii, University of Yamanashi Satoshi Wada, University of Yamanashi	*Track 4: Applications of Ferroelectrics, Piezoelectrics, and Related Materials* **Track Chair:** Qifa Zhou, University of Southern California Brahim Dkhil, CentraleSupélec, Paris-Saclay University Takeshi Yoshimura, Osaka Prefecture University Kui Yao, Institute of Materials Research & Engineering, A*STAR, Singapore Andrew Bell, University of Leeds Roger Whatmore, Imperial College London Hong Wang, Southern University of Science and Technology Jing-Feng Li, Tsinghua University Dragan Damjanovic, EPFL/Switzerland Sandy Cochran, University of Glasgow Wei Ren, Xi'an Jiaotong University

IFCS

Group 1: Materials, Resonators and Resonator Circuits **Group Co-Chair:** Wei-Chang Li, Institute of Applied Mechanics, National Taiwan University *Group 2: Oscillators, Synthesizers, Noise and Circuit Techniques* **Group Co-Chairs:** Jeronimo Segovia-Fernandez, Texas Instruments, Inc. Magnus Danielson, Rubidium, Sweden Andrey Matsko, California Institute of Technology *Group 3: Microwave Frequency Standards and Applications* **Group Co-Chairs:** Yanhui Wang, Peking University Fernando Ramirez Martinez, Institute of Nuclear Sciences, National Autonomous University of Mexico (UNAM) Michel Abrgall Paris Observatory, Paris Sciences et Lettres University (PSL) Rachel Elvin, Fraunhofer UK Research, Ltd. Greg Hoth, National Institute of Standards and Technology	*Group 4: Sensors and Transducers* **Group Co-Chairs:** Philip Feng, University of Florida Hanna Cho, Ohio State University Harris Hall, U.S. Air Force Junqiu Liu, Shenzhen International Quantum Academy Gustavo Wiederhecker, Gleb Wataghin Institute of Physics, State University of Campinas Mustafa Mert Torunbalci, Google, Inc. · Quantum AI *Group 5: Timekeeping, Time and Frequency Transfer, GNSS Applications* **Group Co-Chairs:** Diego Luna, National Institute of Industrial Technology (INTI) Michael Coleman, U.S. Naval Research Laboratory (NRL) *Group 6: Optical Frequency Standards and Applications* **Group Co-Chairs:** Kaoru Minoshima, University of Electro-Communications Flavio Cruz, Gleb Wataghin Institute of Physics, State University of Campinas (Unicamp) Hong Chang, The National Time Service Center

General Information

Venue
The Conference Center
Taipei Nangang Exhibition Center – Hall 1, No.1, Jingmao 2nd Rd., Nangang District, Taipei City 11568, Taiwan

Registration Hours
Please visit the registration desk on Floor 7 (Hall 2) to pick up your registration materials. You will only need to check in once to pick up your badge.

Sunday, September 22
8:00 - Short Course/Tutorial Attendee Badge Pick-Up Only
8:30 to 18:00 – Attendee Badge Pick-Up

Monday, September 23 – Wednesday, September 25
8:00 to 16:00 – Registration Open

Thursday, September 26
8:00 to 15:00 – Registration Open

CONFlux Virtual Platform
Login credentials will be sent out to all registrants a few days before the conference. Only the plenary sessions will be live-streamed.

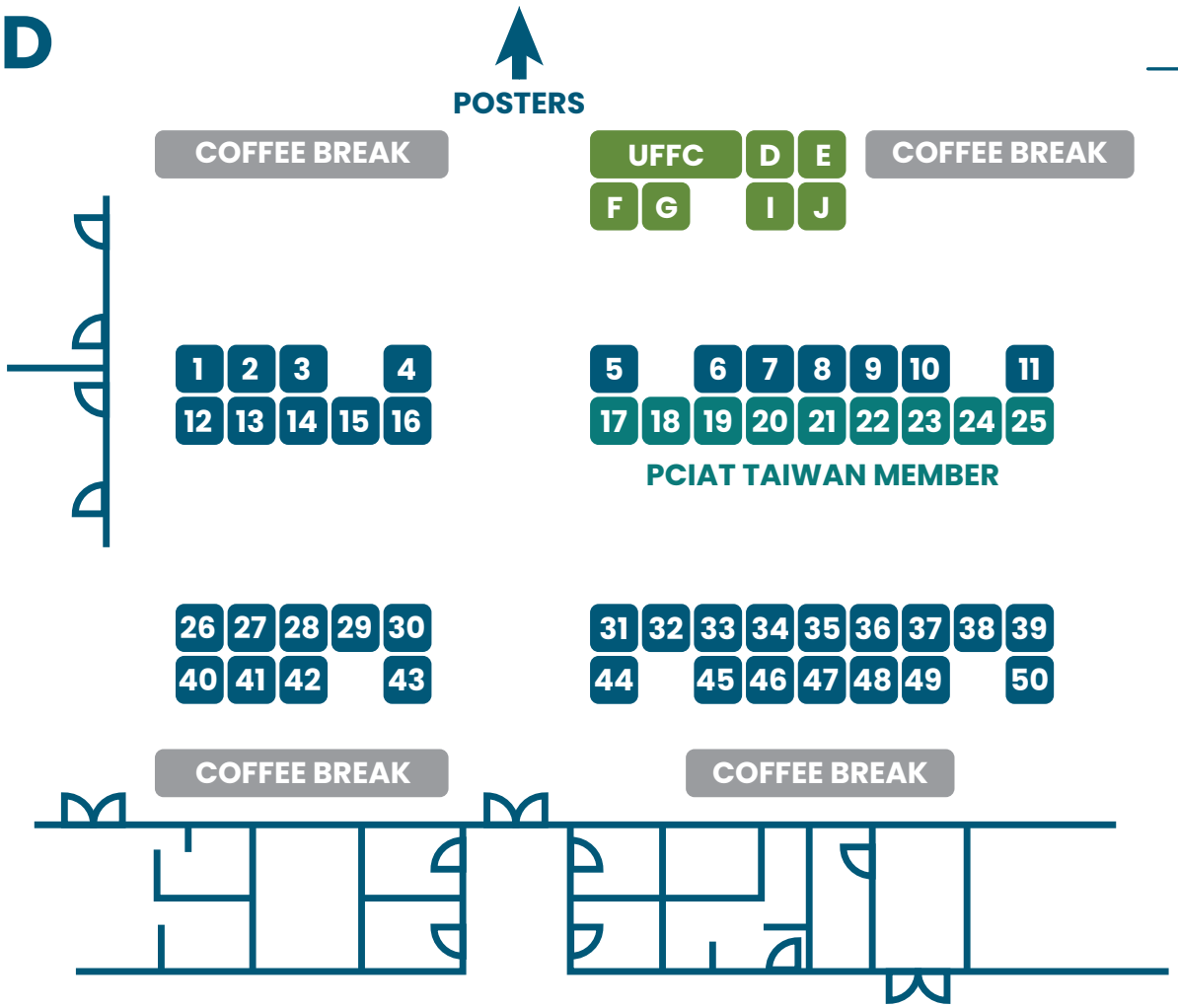
Poster Sessions
The poster sessions will be held in the Exhibit Hall, located on the 4th Floor of TaiNEX Hall 2. A layout map will be posted on the conference application to help you find the posters you are interested in.

Proceedings
The final Proceedings will be sent to attendees post-conference.

Speaker-Ready Room
ALL speakers with an oral presentation **MUST** bring their presentation slides (on a USB drive) to their session room 30 minutes before their scheduled presentation session so that technicians there can upload the slides to the computer in the room. If you want to test your slides, you can bring them to the speaker preparation room in Room 603.

It will NOT be possible to use presentations from personal laptops.

FLOOR GRID



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Taipei Nangang Exhibition Center, Taipei, Taiwan || September 22 – 26, 2024

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17 & 18: Taitien Electronics Co.,Ltd.
19: TST
20: tstbio
21 & 22: TXC
23: Mercury Electronic Ind. Co. Ltd
24 & 25: Siward
26: Novosound
27: Lyncee Tec
28: Hisky Medical Technologies
29: Broadsound Corporation
30 & 43: Verasonics
31: Shanghai Acoustic Life Science Co., Ltd (ALS)
32: PASCAL Digital Ultrasound, LLC
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34: Sansei (三生)
35: Optorun
36: CYBERDYNE
37: ONDA Corporation
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39: Precision Acoustics
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44: Sumitomo Precision Products, Co.,Ltd.
45 & 46: S-SHARP CORPORATION
47: Oscilloquartz
48: Ionix
49: TOPTICA Photonics
50: Frequency Electronics

ABC: UFFC
D: Focused Ultrasound Foundation
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F: Portwell (Acer)
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I: Neoark
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ENLIGHT TECHNOLOGY 恩萊特科技股份有限公司	Enlight Technology is Siemens EDA official representative in Taiwan. Provides full EDA solutions which can be used for IC, PIC, MEMS, PCB layout, DFM and MES application from IC level to system level. We provide specialized solutions and technical services for all kind of electronics industry.
KFK Furuya Metal Co., Ltd.	Furuya Metal Co., Ltd specializes in the rare metals of the platinum group and Al-Sc. With sophisticated technology developed through our engagement with Ir, Ru, and other metals that are difficult to work with and to recover, we develop high-purity, high-quality products, and recovers metals using our own exclusive technology.
IMASONIC	IMASONIC designs and manufactures high-performance ultrasonic transducers for Health (including special solutions for Photoacoustic Imaging and therapeutic applications) and Non-Destructive Testing applications from 35 years. Using our proprietary piezocomposite technology, any type of transducer can be developed based on customer's requirements, from single element to Phased Array transducers.
MEC MERCURY CRYSTAL 瑪居禮電波	MEC Established in 1973. 1st crystal manufacturer in Taiwan. The headquarter 53 years experiences. The major production line to manufacture quartz crystals. ISO 9001 certified, ISO 14001 certified and IATF-16949 certified. MEC also has over 250 employees.
NDK	Production and sales of Crystal-Related products such as Crystal devices (e.g. Crystal Units, Crystal Oscillators, Crystal filters), Ultrasonic Transducers, Synthetic Quartz and Crystal Blank.
novosound	Novosound is a pioneering ultrasound technology company based in Scotland, specialising in advanced thin-film sensors. Their innovative ultrasound solutions are applied across sectors such as medical, industrial, and aerospace, improving imaging, diagnostics, and monitoring with enhanced accuracy and efficiency.

OPTORUN OPTONANOTECHNOLOGY®	Optorun was founded in 1999 under the business model of providing process solutions for optical thin-film deposition using opto-nanotechnology. Since its founding, as a comprehensive manufacturer of vacuum optical thin-film equipment, we have been providing equipment products along with deposition process know-how in order to maximize value for our customers and hence contribute to the whole society.
TAYCA TFT CORPORATION	TFT Corporation, is a wholly-owned subsidiary of Tayca CORPORATION, operates as a distributor of Piezoelectric ceramics, composite and single crystals produced by TAYCA CORPORATION and TRS Technologies.
TOPTICA	High-end laser systems for scientific and industry.
TPAC	TPAC is a global leader in Ultrasound Solutions for Research, specializing in NDE and medical applications. We offer an open platform with advanced systems, customizable emission signals, comprehensive software and extensive API. Coupled with TPAC's worldwide support, we deliver the flexibility and reliability essential for researchers working on innovative projects.
OSCILLOQUARTZ A division of Adtran	Oscilloquartz is a pioneer in time and frequency synchronization. We design, manufacture and deploy end-to- end PNT synchronization systems that ensure the delivery, assurance and resiliency of highly precise timing information over next generation packet and legacy mission critical networks. As an ADTRAN division, we're creating new opportunities and create innovation for tomorrow's PNT networks.
PASCAL DIGITAL ULTRASOUND ™	PASCAL provides solutions that bridge the gap between ultrasound waves and digital data. In an industry characterized by vendors focused on individual components such as transducers, interconnections, and electronics, PASCAL offers new services and products that integrate the complete ultrasound chain to match the specific needs of each application.

Polytec	Polytec GmbH, a global leader in precision optical measurement solutions, is proud to showcase its cutting-edge technologies at the upcoming SEMICON exhibition. With over 50 years of expertise in the field, Polytec is dedicated to empowering semiconductor manufacturers with innovative tools for enhancing product quality, optimizing processes, and accelerating time-to-market.
Qualcomm	Qualcomm relentlessly innovates to deliver intelligent computing everywhere, helping the world tackle some of its most important challenges. Our leading-edge AI, high performance, low-power computing, and unrivaled connectivity deliver proven solutions that transform major industries. At Qualcomm, we are engineering human progress.
RADIANT TECHNOLOGIES, INC. YOUR GATEWAY TO FERROELECTRIC/MULTIFERROIC/PIEZOELECTRIC TESTING & DEVICES	Since its inception in 1988, Radiant Technologies, Inc. has been dedicated to innovating characterization equipment for non- volatile memory technologies, non- linear electromechanical materials, MEMS, and actuator/sensors. Radiant pioneered and developed the first ferroelectric test system which quickly became the world- wide industry standard for characterizing non-linear materials.
Sanseidenshi ELECTRONICS & FAsystems	Sansei Electronics develops production equipment for ultra- small crystals.
ALS ULTRASOUND	Founded in Zhangjiang Hi-tech Park, Shanghai, Acoustic Life Science Co., Ltd. (ALS) is specialized in high-end medical imaging ultrasound products and ultrasonic therapeutic instruments, including high frequency ultrasound probes and imaging catheters.
SinapTec® ULTRASONIC TECHNOLOGY	SinapTec provides cutting-edge ultrasonic OEM modules for healthcare, biotech, industry, and research, delivering worldwide trusted solutions from design to production. Based on breakthrough patented intelligent system, ultrasonic drivers and transducers are suitable for HIFU therapeutic applications, gene therapy, and sample preparation.

Patience Confidence Concentric SIWARD	Established in 1988, Siward is a world-leading manufacturer in the crystal and oscillator industry. We offer a comprehensive range of products, from synthetic quartz crystal to in-house designed and manufactured crystal units. Our commitment to cutting-edge photolithography technology and active engagement in research and development enable us to deliver products known for their exceptional reliability and stability.
SDI SPECTRADYNAMICS, INC.	SpectraDynamics Inc. is a provider of high-performance instrumentation for quantum, timing, and frequency applications. Since 1994, SDI has built a distinguished reputation for providing the time and frequency community with the state of the art electronics, low noise and excellent performance, necessary to support atomic time and frequency standards.
TAITIEN Our Performance, Your Reputation	Taitien, established in 1976, is a leading quartz frequency control component manufacturer, offering products such as X'TAL, OSC, VCXO, TCXO, and OCXO. With manufacturing sites in Taiwan, the US, and China, and global sales operations, Taitien serves industries like automotive, IT, and telecommunications. Known for innovation, Taitien holds patents in quartz technologies and continues advancing through R&D.
TST	Founded in 1997, TST is Taiwan's leading supplier of SAW and crystal devices, and a global OEM/ODM SAW provider.
tstbio	tst biomedical electronics co. ltd., an innovative Taiwan-based biomedical electronics spin-off founded in 2018 by Tai-Saw Technology Co., Ltd., stands at the forefront of excellence in providing cutting-edge Surface Acoustic Waves (SAW) Open Platform Services. Since 2021, tst biomedical has demonstrated outstanding achievement by delivering the SAW Platform to diverse partners, showcasing a commitment to technological advancement.
TXC	Founded in 1983, TXC Corporation is a global leader in frequency control solutions, known for advanced technology and innovation. Our diverse product portfolio supports industries in a comprehensive ecosystem such as mobile communications, edge computation, AI infrastructure, automotive, telecommunications, data communication, and AIoT devices.

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FUJIFILM VISUALSONICS

HISKY MED

AMS SYSTEMS

Apacer 宇瞻科技

FREQUENCY ELECTRONICS, INC.

Portwell

NEOARK NEOARK CORPORATION

Ech Intelligent

ONDA

IMRA

PRECISION ACOUSTICS

CYBERDYNE

Student Travel Grant Winners

Abhinav Kumar Singh
IIT Gandhinagar, India

Adam D. Maxwell
University of Washington, USA

Aimen Malik
University of Toronto, Hospital for Sick Children, Canada

Akira Sasaki
Osaka University, Japan

Alec Batts
Columbia University, United States

Alice Wu
Polytechnique Montreal, Canada

Amirhossein Omidvar
University of British Columbia, Canada

Anamik Jhunjhunwala
Georgia Institute of Technology, USA

Andrew Markel
Tulane University, USA

Anna Paulik
Graz University of Technology, Austria

Annika Benson
Dalhousie University, Canada

Aocheng Bao
Peking University, China

Asraful Haque
Indian Institute of Science, India

Aurelio Venditti
Northeastern University, USA

Baichen Lin
IMRE, A*STAR, Singapore

Bingke Shi
NTSC, Chinese Academy of Sciences, China

Boyuan Xiao
Tsinghua University, China

Brenda Yu
Stanford University, USA

Caique Veras
CEA-Leti, France

Chenchen Zhou
Fudan University, China

Chenfang Yan
IMECAS, China

Chengxin Li
KU Leuven, Belgium

Christina Proestaki
Columbia University, United Kingdom

Chun Yu Chou
National Tsing Hua University, Taiwan

Chun-Yi Chen
National Yang Ming Chiao Tung University, Taiwan

Dingyuan Liu
SIIT, Chinese Academy of Sciences, China

Dongqing Shang
SIIT, Chinese Academy of Sciences, China

Elnaz Shokati
University of Bristol, United Kingdom

Emily Ahern
University of Adelaide, Australia

Euisuk Chung
Georgia Institute of Technology, USA

Filip Bodera
Toronto Metropolitan University, Canada

Fotios Tsitsos
Columbia University, USA

Hanbing Chu
Xi'an Jiaotong University, China

Huibo Hong, NTSC
The Chinese Academy of Sciences, China

Hyunwoo Cho
Sogang University, Korea

I Gede Eka Sulistyawan
Tohoku University, Japan

Imad Bellouki
Delft University of Technology, Netherlands

Ipek Efe
ETH Zurich, Switzerland

Jack Kramer
The University of Texas at Austin, USA

Jacob Siegel
National Institute of Standards and Technology, USA

Janna Ruisch
Radboud University Medical Center, Netherlands

Jee Won Yang
California Institute of Technology, USA

Jia-En Chen
University College London, United Kingdom

Jiacheng Chen
University of Tours, France

Jialong Li
SIIT, Chinese Academy of Sciences, China

Jianzhong Chen
Nanjing University of Aeronautics & Astronautics, China

Jiayan Li
Tongji University, China

Jie Deng
Xi'an Jiaotong University, China

Jiming Fang
University of Science and Technology of China, China

JingHong Lu
Shanghai University, SIMIT, China

Jingsong Liu
USTC, China

Jose Antonio
Pontificia Universidad Católica del Perú, Peru

Juliette Reydet
Physics for Medicine, France

Junyan Zheng
The Hong Kong University of Science and Technology, Hong Kong

Kaitlyn Liang
Stanford University, USA

Konstantina Papangelopoulou
KU Leuven, Belgium

Kyohei Yamada
The University of Tokyo, Japan

Laurine Wouters
KU Leuven, Belgium

Alexis Leconte
Polytechnique Montreal, Canada

Leqi Yang
Washington University in Saint Louis, USA

Lindsey Lynch
Queen's University Belfast, United Kingdom

Liyuan Jiang
Xi'an Jiaotong University, China

Louise Zhuang
Stanford University, USA

Mahyar Ghavami
University of Alberta, Canada

Student Travel Grant Winners (continued)

Mahyar Ghavami
University of Alberta, Canada

Maki Shibata
Toyohashi Univ. of Tech., Japan

Maya Elbaz
Tel-Aviv University, Israel

Melina Tourni
Columbia University, USA

Mengjie Shi
King's College London, United Kingdom

Mingye Du
Shanghaitech University, China

Nabil Haidour
INSERM, ESPCI, CNRS, France

Nairit Das
North Carolina State University, USA

Natsumi Fujiwara
Osaka University, Japan

Nicolas Zucker
Physics for Medicine Paris, France

Nuriel Rozsa
Delft University of Technology, Netherlands

Omar Barrera
University of Texas at Austin, USA

Pat De la Torre Sanchez
University of Waterloo, Canada

Peisen Liu
Tsinghua University, China

Peng Zhang, Harbin University of Science and Technology, China

PengCheng Zhu
SWUST, SIMIT, China

Pingxu Chen
Shanghai Jiao Tong University, China

Rama Satya Sandilya
Indian Institute of Science, India

Rebecca Jones
University of North Carolina Chapel Hill, USA

Rick Waasdorp
Delft University of Technology, Netherlands

Siaka Fadera,
Washington University in St Louis, USA

Silvan Stettler
EPFL, Switzerland

Sodai Yamaguchi
Doshisha University, Japan

Soeren Soennecken
Technical University of Darmstadt, Germany

Somnath Kale
Indian Institute of Science Education & Research, India

Soyun Joo
KAIST, Korea

Stephan Strassle Rojas
Georgia Institute of Technology, USA

Sungwoo Kang
Daegu Gyeongbuk Institute Science & Tech, Korea

Thi-Nhan Phan
National Tsing Hua University, Taiwan

Thomas Furcatte
CEA-Leti, Université Grenoble Alpes, France

Tianyu Guo
Peking University, China

Ting Xie
Peking University, China

Touka Meki
Inserm Paris, PSL University, France

Tzu-Hsuan Hsu
National Tsing Hua University, Taiwan

Vera van Hal
Eindhoven University of Technology, Netherlands

Weiye Li
University of Zurich, Switzerland

William Schulz
University of Leeds, United Kingdom

Yasuhiro Kawaguchi
Chiba University, Japan

Yeongyu Kim
KAIST, Korea

Yiming Wang
USTC, China

Yin-Fan Chiang
National Yang Ming Chiao Tung University, Taiwan

Ying Zhou
SIAT, Chinese Academy of Sciences, China

Yinran Chen
Xiamen University, China

Yohkoh Shimano
Waseda University, Japan

Yu Qiang,
IIT, Chinese Academy of Sciences, China

Yue Xu
The University of Hong Kong, China

Yuki Harada
Doshisha University, Japan

Yuki Noguchi
Tohoku University, Japan

Yuya Yoshida
Doshisha University, Japan

William Schulz
University of Leeds, United Kingdom

Xiaoli Fang
SIMIT China

Xinhui Cui
University of Science and Technology of China, China

Yohkoh Shimano
Waseda University, Japan

Yongyi Wu
Xi'an Jiaotong University, China

Yu Hu
Huazhong University of Science and Technology, China

Yuyang Hu
Erasmus MC, Netherlands

Yuzhan Huang
Tsinghua University, China

Zehua Dou
Dresden University of Technology, Germany

Zhanyu Lai
Waseda University, Japan

Zhe Chen
Tsinghua University, China

Zhendong Chen
Peking University, China

Zhikai Ruan
Xi'an Jiaotong University, China

Zhiwei Wen
Wuhan University, China

Zhiwei You
Peking University, China

Zhongbin Dai
University of Science and Technology of China, China

Zi-Yao Hung
National Tsing Hua University, Taiwan

Student Poster Finalists

ULTRASONICS
Monday, September 23 | 14:30 - 16:30
Exhibit Hall (TaiNEX Hall 1)

Jiming Fang, University of Science and Technology of China
7304: 5-GHz Wideband Acoustic Filter with FBW of 20% Based on Z-Cut Lithium Niobate

Pat De la Torre Sanchez, University of Waterloo
7371: Global Speed-of-Sound Estimation Using a Single Unfocused Transmission

Nuriel Rozsa, Delft University of Technology
7569: A 3D Ultrasound Probe with Monolithically-Integrated 4096-Element CMUT Array Imaging 60°x60°x10 cm at 2000 Volumes/S

Konstantina Papangelopoulou, KU Leuven
7642: Timing of Natural Shear Waves After Mitral Valve Closure and Their Relationship with Left Ventricular Hemodynamics

Alec Batts, Columbia University
7699: Non-Invasive Adeno-Associated Viral Gene Delivery to the Brain in Non-Human Primates with Cavitation-Guided Focused Ultrasound

Liping Zhang, Shanghai Xin Ou Integration Technology Co., Ltd
7763: Demonstration of Spurious-Free and Low-Loss X-Band SAW Filter

Hanbing Chu, Xi'an Jiaotong University
7778: Fast Contrast-Enhanced Microvessel Imaging with Depth-Consistent Sub-Diffractive Spatial Resolution: from Simulation to Human Tumor Imaging

Jianzhong Chen, Nanjing University of Aeronautics and Astronautics
7885: Shape-Adaptive Stretchable Transducer for Wearable Imaging

Nabil Haidour, Physics for Medicine, INSERM, ESPCI, PSL
7930: Wide Field of View 3D Ultrasound Localization Microscopy of Whole Organs in Vivo Using multi-Lens Large Aperture Arrays

Chenfang Yan, Institute of Microelectronics of the Chinese Academy of Sciences
7952: PMUT-Based Acoustic Tweezer for Programmable Particle Manipulation

Chenchen Zhou, Fudan University
7960: Vortex-Encoded Waveform Inversion for Fast Musculoskeletal Tomography

Maki Shibata, Toyohashi Univ. of Tech.
8012: Three-Dimensional Consecutive Observation for the Reaction of Brain Immune cells, microglia, Using Scanning Acoustic Microscopy

Elnaz Shokati, University of Bristol
8072: Towards Efficient Microwave to Optical Signal Transduction Using Confocal High Overtone Lateral Bulk Acoustic Wave Resonators (cXBARs)

Zhiwei You, Peking University
8154: Three-Port Piezoelectric Microphone with Stiffness Modulation Based on DC Bias

Rick Waasdorp, Delft University of Technology
8190: Skull-Aberration Correction for non-Invasive Doppler Imaging of the Rat Brain

Boyuan Xiao, Tsinghua University
8207: High Frequency LLSAW Filters with Higher Order Modes Elimination Based on LiNbO3/SiO2/Sapphire Substrate

Student Poster Finalists (continued)

Filip Bodera, Toronto Metropolitan University
8429: Transcranial Photoacoustic Imaging to Detect Blood-Brain Barrier Disruption in Neonatal Rats Using Size Tunable ICG J-Aggregates

Nairit Das, North Carolina State University
8541: Design and Fabrication of 128+128 Element Row-Column Addressed CMUT Arrays for Monitoring Murine Cardiac Flow Patterns

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FREQUENCY CONTROL
Tuesday, September 24 | 14:30 - 16:30
Exhibit Hall (TaiNEX Hall 1)

Kunfeng Xie, State Key Laboratory of Advanced Optical Communication System and Networks, Department of Electronics
7021: Multiple-Node Time Transfer Based on BFDM Without Requiring Link Calibration

Jiming Fang, University of Science and Technology of China
7305: 12-GHz Spurious-Free Fin-Mounted Lamb Wave Resonator with Half-Electrode Reflectors

Zhongbin Dai, University of Science and Technology of China
7529: 10.5-GHz Coupled Longitudinal and Shear SAW Resonator with High Electromechanical Coupling Coefficient of 18%

Chin-Yu Chang, National Tsing Hua University
7629: An 878 MHz Low Noise LiNbO3/SiO2/Sapphire Acoustic Delay Line Oscillator

Marco Pomponio, NIST - CU Boulder
7693: Direct Digital Measurement System for Phase-Amplitude Noise and Allan Deviation

Chengxin Li, KU Leuven
7708: On Improving the Sensitivity of Thermal Piezoresistive Resonators by a DC Thermal Pumping Scheme

Zhendong Chen, Peking University
8239: A Compact Rubidium Optical Clock Based on Modulation Transfer Spectrum

Aurelio Venditti, Northeastern University
8504: Experimental Demonstration of a Plasmonically-Enhanced Vacuum-Packaged LVR-Based Gas Sensor

Jacob Siegel, National Institute of Standards and Technology
8607: Multiple Ensemble Optical Lattice Clock Evaluation of Lattice Light Shift and Density Shift Systematics

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FERROELECTRICS

Tuesday, September 24 | 14:30 - 16:30
Exhibit Hall (TaiNEX Hall 1)

Ning Lv, State Key Laboratory of Integrated Chips and Systems, School of Microelectronics, Fudan University
7204: Optimization and Round-Trip Performance Analysis of High-Frequency PMUTs Based on High-Order Mode

Ryo Furukawa, Hiroshima University
7411: Interface Gradient: Structure Characteristics of BaTiO3-KNbO3 Core-Shell Nano-Composite Particles

Kayoko Sakaguchi, Hiroshima University
7414: Two Types of Cubic Structures Coexisting in the Paraelectric Phase of PMN Relaxor Ferroelectric

Student Poster Finalists (continued)

Motoki Aruga, Hiroshima University
7418: Influence of Bi(Mg0.5Ti0.5)O3 Concentration on Local Structure in BaTiO3-Bi(Mg0.5Ti0.5)O3-BiFeO3 Revealed by Visualization of Electron Density Distribution

Soumyajyoti Mondal, Indian Institute of Science Bangalore
7499: Giant Electrostriction in Bulk Re (III) Substituted CeO2: Influence of Re - Oxygen Vacancy Interaction and Re Concentration

Yuri Oshima, Tokyo University of Science
7852: Effect of Slow Cooling Process on Energy Storage Properties of (Bi0.5Na0.5)TiO3-Based Solid Solution Ceramics

Kai Kamijo, Hiroshima University
8064: Contribution of A-Site Sr Cation to cubic-Tetragonal Phase Transition in SrTiO3 by Reverse Monte Carlo Simulation

Manuel Pelayo Garcia, Novosound
8245: Enhanced Pyro/Piezoelectric Properties by Oblique Angle Deposition for Improved Ultrasonic Sensors

Plenary Speakers

PLEN-01
Monday, September 23
8:30 – 10:00 TWT
Room: 701A-D

Elisa Konofagou, Columbia University
"Ultrasound is good for the brain - opening new avenues in diagnostics, therapeutics and theranostics"

Elisa Konofagou is the Robert and Margaret Hariri Professor of Biomedical Engineering and Professor Radiology as well as Director of the Ultrasound and Elasticity Imaging Laboratory at Columbia University in New York City. Her main interests are in the development of novel theranostic and therapeutic ultrasound methods for the advancement of therapeutic ultrasound. Elisa has co-authored over 300 published articles in the aforementioned fields. Elisa Konofagou is the Robert and Margaret Hariri Professor of Biomedical Engineering. Elisa is an Elected Member of the National Academy of Medicine (US), an Elected Fellow in the International Society of Electrical and Electronic Engineering (IEEE), the American Institute of Biological and Medical Engineering (AIMBE), and the Acoustical Society of America (ASA).

Elisa is recipient of the CAREER award by the National Science Foundation (NSF), the Nagy award by the National Institutes of Health (NIH), the Technological Achievement Award by the IEEE Engineering in Medicine and Biology Society (EMBS), the Carl Hellmuth Hertz Ultrasonics Award by the IEEE Society in Ultrasonics, Ferroelectrics and Frequency Control (UFFC) gas well as additional recognitions by the American Heart Association, the Acoustical Society of America, the American Institute of Ultrasound in Medicine, the American Association of Physicists in Medicine, the Wallace H. Coulter Foundation, the Bodossaki Foundation, the Society of Photo-optical Instrumentation Engineers (SPIE), and the Radiological Society of North America (RSNA). Elisa also serves as President-Elect of the International Society of Therapeutic Ultrasound.

PLEN-02
Monday, September 23
10:30 – 12:00 TWT
Room: 701A-D

Matthew O'Donnell, University of Washington
"2013-2024: A period of amazing growth for ultrasonics"

Following undergraduate, graduate, and post-doctoral training at Notre Dame and Washington University in St. Louis, Dr. O'Donnell joined General Electric Corporate Research and Development Center in Schenectady, NY in 1980, where he worked on medical electronics, including MRI and ultrasound imaging systems. In 1990, he moved to University of Michigan in Ann Arbor, MI where he held appointments in Electrical Engineering & Computer Science and in Biomedical Engineering. In 1998, he was named the Jerry W. and Carol L. Levin Professor of Engineering. From 1999-2006 he also served as Chair of the Biomedical Engineering Department. In 2006 he moved to the University of Washington in Seattle, WA where he was the Frank and Julie Jungers Dean of Engineering from 2006-2012. He is now Frank and Julie Jungers Dean Emeritus and a Professor of Bioengineering at the University of Washington. His most recent research has explored new imaging modalities, including elasticity imaging, in vivo microscopy, optoacoustic devices, photoacoustic contrast agents for molecular imaging and therapy, laser ultrasound systems, and catheter-based devices. He has won numerous awards, including the Distinguished Alumni Award from the University of Notre Dame, the Achievement and Rayleigh Awards from the IEEE-UFFC Society, the William J. Morlock Award for Excellence in Biomedical Technology from the IEEE-EMBS Society, and the IEEE Biomedical Engineering Award. He is a fellow of the IEEE and AIMBE and is an elected member of the Washington State Academy of Sciences and the National Academy of Engineering.

Plenary Speakers (continued)

PLEN-03
Tuesday, September 24
8:30 – 10:00 TWT
Room: 701A-D

Shujun Zhang, University of Wollongong
"Advances in bulk ferroelectrics over the past decade" (PLEN-03a)

Shujun Zhang is a Distinguished Professor of Material Science & Engineering at University of Wollongong, Australia, prior to which, he served as a Senior Scientist and Professor at the Pennsylvania State University, USA. Presently, his focus lies in exploring the intricate relationship between design & fabrication, microstructure, properties, and device performance of electronic materials, particularly with applications in piezoelectric transducers and energy storage/harvesting.

He has co-authored 600 technical papers and holds 12 granted patents in the fields of electronic ceramics, crystals and composites. He is the Clarivate highly cited researchers since 2021. He has received several accolades from various societies, including an Academician of World Academy of Ceramics, an IEEE Fellow of the Ultrasonics, Ferroelectric and Frequency Control Society (UFFC-S); a Fellow of the American Ceramic Society; and a Future Fellow of Australian Research Council.

Additionally, he is a recipient of IEEE UFFC-S Ferroelectrics Recognition Award; a winner of the New South Wales Premier's Prizes for Science & Engineering; the Ross Coffin Purdy Award at the American Ceramic Society; and Vice-Chancellor's Research Excellence Award for Researcher of the Year at UOW. He is the Editor-in-Chief for Microstructures, section Editor-in-Chief for Crystals, as well as an Associate Editor for the IEEE Transactions on UFFC, Journal of the American Ceramic Society, and Science Bulletin. He has also served as an elected IEEE UFFC AdCom member (2016-2018) and Vice President for Ferroelectrics (IEEE UFFC, 2021-2023). He is a member of the technical program committees for both International Ultrasonics Symposium (IUS) and International Symposium on Applications of Ferroelectrics (ISAF). He also served as the co-general chair for the 2021 IEEE ISAF conference.

Lane W. Martin, Rice University
"Thin-Film Ferroelectrics" (PLEN-03b)

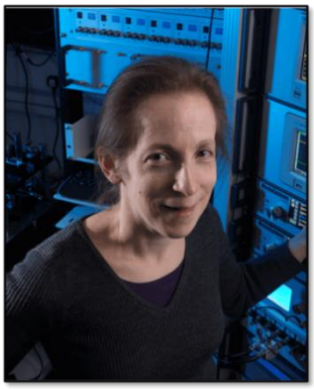
Lane W. Martin is the Robert A. Welch Professor of Materials Science and NanoEngineering, Chemistry, and Physics and Astronomy and the inaugural Director of the Rice Advanced Materials Institute at Rice University. He also maintains an appointment as a Faculty Senior Scientist in the Materials Sciences Division at Lawrence Berkeley National Laboratory. Lane received his B.S. from Carnegie Mellon University in Dec. 2003 and his M.S. and Ph.D. from the University of California, Berkeley in May 2006 and 2008, respectively, all in Materials Science and Engineering. From 2008 to 2009, Lane served as a Postdoctoral Fellow in the Quantum Materials Program, Materials Sciences Division, Lawrence Berkeley National Laboratory. From 2009 to 2014, Lane was an Assistant Professor in the Department of Materials Science and Engineering at the University of Illinois, Urbana-Champaign. Lane returned to the University of California, Berkeley as an Associate Professor from 2014-2018. He was promoted to Professor in July 2018 and served as Vice/Associate Chair from 2018-2021. From 2021 to 2023, Lane was a Chancellor's Professor and Chair of the Department of Materials Science and Engineering and served as both the Secretary and Chair (elected) of the Faculty of the College of Engineering at the University of California, Berkeley.

Lane has published >280 papers, his work has been cited ~30,000 times (resulting in an h-index = 79; i10-index = 230), and he has given >180 invited/plenary/keynote talks. Lane's work has garnered a number of awards including being named a Fellow of the Materials Research Society (MRS, 2024), a Fellow of the American Ceramics Society (ACerS, 2023), a Fellow of the American Physical Society (APS, 2022), selected to the 2022-2024 Defense Science Study Group, multiple-time Highly Cited Researcher (ranked in the top 1% by citations for field and publication year in Web of Science), the IEEE-Ultrasonics, Ferroelectrics, and Frequency Control (UFFC) Society Ferroelectrics Young Investigator Award (2019), the Robert L. Coble Award for Young Scholars from the American Ceramic Society (2016), the American Association for Crystal Growth (AACG) Young Author Award (2015), the Presidential Early Career Award for Scientists and Engineers (2014), the Dean's Award for Research Excellence for the University of Illinois, Urbana-Champaign (2013), the National Science Foundation CAREER Award (2012), the Army Research Office Young Investigator Program Award (2010), and others.

Plenary Speakers (continued)

PLEN-04
Wednesday, September 25
8:30 – 10:00 TWT
Room: 701A-D

Helen Margolis, National Physical Laboratory (NPL)
"Optical clocks for international timekeeping: progress towards a redefinition of the second"



Helen Margolis is the Head of Science for the Time & Frequency department at the UK National Physical Laboratory (NPL) and an NPL Senior Fellow in Optical Frequency Standards and Metrology.

Helen's specialist area of research expertise is optical frequency metrology using femtosecond combs, part of NPL's research programme in next-generation optical clocks. This is part of a wider international effort towards a redefinition of the SI unit of time, the second, and Helen has coordinated two European projects working towards this goal: International Timescales with Optical Clocks (ITOC) and Robust Optical Clocks for International Timescales (ROCIT). She is also the Technical Authority for the National Timing Centre programme, which is developing new resilient timing infrastructure for the UK.

Helen represents NPL and the UK on various international committees, including the Consultative Committee for Time and Frequency (CCTF) and several of its working groups. She is a member of the CODATA Task Group on Fundamental Constants and chaired the Executive Committee of the European Frequency and Time Forum from 2018 – 2021. She has been a Visiting Professor at the University of Oxford since 2017 and was awarded an MBE in 2019 for her services to metrology. In 2023 she was awarded the I I Rabi Award by the IEEE Ultrasonics, Ferroelectrics and Frequency Control Society, and also received the 2023 European Frequency and Time Award.

IEEE UFFC-JS 2024 Tutorial/Short Course Program

Note 1: Short courses and tutorials will be held in person only on Sunday, September 22. Prices listed are for the full day, which is all-inclusive.

Note 2: Virtual attendees can watch the recorded short courses and tutorials up to 30 days after the conference ends. These will not be streamed live.

Date	Sunday, September 22, 2024													
Venue	**NANGANG HALL 2**										**NANGANG HALL 1**			
	701A	**701B**	**701C**	**701D**	**701E**	**701F**	**701G**	**701H**	**702**	**703**	**500**	**501**	**503**	**507**
Theme / Time	***Sensors, Transducers and Resonators***			***Ferroelectric and Piezoelectric materials science and characterization***			***T & F Metrology and Time Keeping***	***Clocks, Combs & Applications***	***Physical Acoustics***		***AI / ML***	***Medical Ultrasonics***		
08:30-10:15	**SC-01**: Fundamentals of piezoelectric and ferroelectric materials and their applications (Shujun Zhang, Andrew J Bell)	**SC-02**: Ultrasound system design: Analog front end circuits, in-probe electronics and imaging systems (David Cowell, Enrico Boni, Michiel Pertijs)	**SC-03**: Introduction to Piezoelectric MEMS technologies - History and perspectives (Songbin Gong)	**SC-04**: Ultrasonic Non-Destructive Materials Characterization (NDMC) (Walter Arnold)	**T-01**: Some like it broad: Broad-band dielectric spectroscopy of ferroic materials (Elena Buixaderas)	**T-02**: Synthesis and processing of Piezoelectric crystals (Carlota Cannalias)	**T-03**: Noise Measurements at Microwave Frequencies (Eugene Ivanov)	**T-04**: Microwave Atomic Clocks (Eric Burt)	**SC-05**: Bulk Acoustic Wave Design Fundamentals for Filter Applications (David A. Feld, Mihir Patel)	**SC-06**: Acoustic Tweezers: From Basic Principles to Its Biological Applications (Jae Youn Hwang, Hyung Ham Kim, Teng Ma)	**T-10**: Understand ferroelectrics with machine learning potential (Shi Liu)	**SC-07**: Ultrasound Signal Processing with GPUs—Introduction to Parallel Programming (Billy Yiu, Marcin Lewandowski, Piotr Jarosik)		**SC-08**: Super resolution ultrasound imaging (Olivier Couture, Pengfei Song)
10:15-10:45					**Coffee Break**									
10:45-12:30					**T-06**: Ferroelectric materials for piezoluminescence and multi-piezo (Chao-nan Xu)	**T-07**: Texture-Engineered Piezoelectric Ceramics: Processing, Property and Applications (Yunfei Chang)	**T-08**: Low-noise digital electronics for time and frequency metrology (Claudio Calosso)	**T-09**: Vapor-cell-based atomic metrology: Fundamentals and Innovations (Yuan-Yu Jau)						
12:30-13:00	**Lunch**													
13:00-13:30														
13:30-14:00														
14:00-15:45	**T-11**: XBARs and high-frequency resonators and filters exploiting thin layers of lithium niobate (Victor Plessky)	**T-12**: Materials Development for Ultrasound Transducers (Betul Akkopru-Akgun)	**T-13**: Al,(Sc)N for piezoelectric MEMS applications (Geoff Brennecka)	**T-14**: Characterizing Nanoscale Electromechanical Responses of Ferroelectric Topological Defects by PFM (Peggy Zhang)	**SC-09**: Therapeutic applications of focused ultrasound: From biophysics to clinical application (Meaghan O'Reilly, David Melodelima)	**T-16**: Synthesis and processing of ferroelectric thin films (Hiroshi Funakubo)	**T-17**: UTC Time scale and SI second redefinition (Patrizia Tavella)	**T-18**: Cutting edge combs, not for your hair (Tara Fortier)	**SC-10**: Acoustic waves in nonlinear elastic media: An introduction to basic principles and modelling (Andreas Mayer)	**SC-11**: Acoustical Imaging; from acoustic field equations to imaging and inversion (Koen W.A. van Dongen)	**SC-12**: Machine learning for NDE, data compression and communication (Erdal Oruklu, Jafar Saniie)	**SC-13**: Medical Ultrasound Transducers (David M. Mills, Frederic Lanteri, Jeremie Barrel)	**SC-15**: Ultrasound imaging of low velocity blood flow (Matthew Bruce)	**SC-14**: Hydrophone Measurements for Biomedical Ultrasound Applications (Peter A. Lewin, Elly Martin, Srinath Rajagopal, Keith Wear)
15:45-16:15	**Coffee Break**		**Coffee Break**			**Coffee Break**								
16:15-18:00	**T-19**: Acoustic Metasurfaces (Erqian Dong)		**T-21**: PiezoMEMS for Photonics Applications (Sunil Bhave)	**T-22**: Nonlinear Optical Studies of Complex Ferroelectric Textures (Salia Cherifi-Hertel)		**T-24**: Doped HfO2-based ferroelectrics - From fundamentals to device applications (Uwe Schroeder)	**T-25**: GNSS and Two-Way Satellite Time and Frequency Transfer (Calvin Lin)	**T-26**: Optical Atomic Clocks (Chun-Chia Chen)						

Invited Speakers

ULTRASONICS

Group 1
Medical Ultrasonics

- Apoutou N'Djin, Inserm University Lyon
  "Neutral Activities Causally Evoked by Single-Pulse Focused Ultrasound Stimulation"
- Chulhong Kim, PoHang University of Science and Technology
  "Multi-modal Imaging: Photoacoustic Imaging Plus More"
- Dr. Nebojsa Duric, University of Rochester
  "The Role of Ultrasound Tomography in Breast Cancer Diagnosis and Management"
- Hideyuki Hasegawa, University of Toyama
  "New Autocorrelation Estimator for Vector Doppler Method"
  Hong Chen, Washington University in St. Louis
  "Breaking Barriers: Transforming the Diagnosis and Treatment of Brain Diseases Through Focused Ultrasound"
- Tali llovitsh, Tel Aviv University
  "Enhancing Noninvasive Therapy with Low-frequency Ultrasound and Nanoscale Bubbles"
- Wei-Ning Lee, Department of Electrical and Electronic Engineering, The University of Hong Kong
  "Ultrasound Elastographic Methods to Elucidate In Vivo Mechanics of Vascular and Skeletal Muscles"

Group 2
Sensors, NDE & Industrial Applications

- James Friend, University of California San Diego
  "Micro to Nano-Scale Acoustofluidics from BAW and SAW"
- Lorenzo Capineri, University of Florence
  "Electronic Design Considerations and System Development for Structural Health Monitoring with Ultrasonic Guided Waves"
- Mami Matsukawa, Doshisha University
  "Wave Propagation and Generation in Bone"
- Zheng Fan, Nanyang Technological University
  "From Defect Imaging to Material Characterization using Ultrasonic Waves"

Group 3
Physical Acoustics

- Ivan Pelivanov, University of Washington, U.S.A.
  "Dynamic optical coherence elastography in the cornea: current state and perspectives"
- Qifa Zhou, University of Southern California
  "Acoustic Wave for Vision Restoration"
- Takahiko Yanagitani, Waseda University, Japan
  "Ferroelectric ScAlN thin films for periodically polarization inverted BAW resonators"

Group 4
Microacoustics-SAW, FBAR & MEMS

- Andreas Tag, Qorvo
  "Advances in BAW Technology enabling 5G NR and WiFi6E"
- Natalya F. Naumenko, National University of Science and Technology "MISIS"
  "Very-high-velocity acoustic modes and higher-order Harmonics for Application in SAW/BAW Devices"
- Ruochen Lu, The University of Texas at Austin
  "Scaling of Acoustic Resonators into Millimeter Wave Regime Using Piezoelectric Thin Films"

Invited Speakers (continued)

Group 5
Transducers & Transducer Materials

- Christophe Notard, Vermon
  "Packaging for Diagnostic and Interventional Transducers"
- Robert Wodnicki, University of Southern California
  "2D Arrays: Technologies and Challenges, a Review of Past, Present and Future"
- Soner Sonmezoglu, Northeastern University
  "Miniaturized Ultrasonic Wireless Implants Operating at Depth"
- Nuria Barniol, Universitat Autonoma de Barcelona
  "Advancing Ultrasound Technology with the Integration of PMUTs on CMOS"

Clinical

- Chueh-Hung Wu, MD, PhD, National Taiwan University
  "Recent Advances in Musculoskeletal Ultrasound: Elastography and Machine Learning"
- Hsiang-Yu YU, MD, Neurologic Institute, Taipei Veterans General Hospital, Taiwan, Brain Research Center, National Yang Ming Chiao Tung University
  "Focused Ultrasound: Lesioning and Neuromodulation in Epilepsy"
- Jin-Chung Shih, MD, PhD, Department of Obstetrics and Gynecology, College of Medicine, National Taiwan University
  "Beyond 2D Images - Unlocking the Power of Ultrasound in Clinical Practice of Obstetrics"

Focused Ultrasound Spotlight

- Jae Young Lee, Department of Radiology, Seoul National University (SNU) College of Medicine and Seoul National University Hospital (SNUH)
  "Harnessing Focused Ultrasound for Pancreatic Cancer Treatment: A Journey from Lab to Patient since 2007"
- Kuo-Chen Wei MD, Chang Gung Memorial Hospital, Taiwan
  "Focused Ultrasound Treatment of Brain Tumors"
- Zhen Xu, University of Michigan
  "Histotripsy Cancer Treatment: the Road from Bench to Bedside"
- Kullervo Hynynen, Sunnybrook Research Institute
  "Sculpting Ultrasound for Treatment with Phased Arrays and AI"

FERROELECTRICS/PFM

Group 1
Fundamentals and Theory of Ferroelectrics and Related Materials

- Cheol-Seong Hwang, Seoul National University
  "Material Engineering for Ferroelectric NAND Flash Memory"
- Junling Wang, City University of Hong Kong
  "Controlling Magnetization (and Spin) with Electric Field"
- Norihiro Oshime, National Institutes for Quantum and Radiological Science and Technology
  "3D Visualization of Ferroelectric Domains in a nanocrystal using Bragg coherent X-ray diffraction imaging"

Group 2
Processing of Ferroelectrics Crystals, Ceramics, Thick & Thin Films

- Julian Bradley Walker, NTNU
  "Plastic Crystals and Their Potential As Matrix Phases for Recyclable Composite Ferroelectrics"
- Manuel Henrique Lente, Universidade Federal de Sao Paulo
  "Electric field modulation of upconversion photoluminescence in rare-earth doped (K,Na)NbO3 ceramics"
- Sangwook Kim, Hiroshima University
  "Insights into the role of structural disorder on ferroelectricity and piezoelectricity in lead-free BiFeO3-based piezoelectric materials"

Invited Speakers (continued)

Group 3
Characterization & Properties of Ferroelectrics

- Andreja Bencan, Institute Jozef Stefan
  "Atomic-Scale Structure and Defect Dynamics in Lead-free Perovskite Ferroelectrics using STEM"
- Sebastjan Glinsek, Luxembourg Institute of Science and Technology
  "Piezoelectric Films for Surface Haptics"
- Tomoaki Yamada, Nagoya University
  "Electro-optic effect in ferroelectric thin films: from classical perovskites to emerging fluorites and wurtzites"
- Venkatraman Gopalan, The Pennsylvania State University
  "Probing Emergent Phenomena in Complex Oxides Through Nonlinear Optics and Coherent X-Rays"

Group 4
Applications of Ferroelectrics, Piezoelectrics and Related Materials

- Dr. Ahmad Safari, Rutgers University
  "Advances in Development of Pb-Free Piezoelectric Materials for Medical Transducer Applications"
- Dr. Astri Haugen, Denmark University of Technology
  "Additive manufacturing of textured lead-free piezoelectric ceramics"
- Tsubasa Yonai, Sony
  "Ferroelectric HfO2 based 1T1C FeRAM for advanced CMOS technology nod"

FREQUENCY CONTROL

Group 1
Materials, Resonators and Resonator Circuits

- Mina Rais-Zadeh, JPL
  "Sparse Array of Thermal Resonators: Enhanced Infrared Detection and High-Resolution Imaging at 500°C"
- Shih-Yung Pao, TXC, Taiwan
  "The Optimization of Inverted-Mesa Type Quartz Crystal Resonators with the Consideration of Effects of Structural Parameters"
- Yao Zhu, A*Star, Singapore
  "Advancing RF Acoustic Resonators through ScAlN Thin Film Technology"

Group 3
Microwave Frequency Standards and Applications

- Liron Stern, The Hebrew University of Jerusalem
  "New avenues in photonically integrated frequency references"
- Paul Griffin, Strathclyde University
  "Integrated Cold-Atom Microwave References"

Group 4
Sensors and Transducers

- Hoe Joon Kim, Daegu Gyeongbuk Institute of Science and Technology (DGIST)
  "Piezoelectric Resonant Sensors for Smart Environmental Monitoring"
- Sylvain Ballandras, SOITEC SA
  "SAW filter technology on POI for sensor applications"

Group 5
Timekeeping, Time and Frequency Transfer, GNSS Applications

- Bin Jian, National Research Council Canada (NRC)
  "Continuous GPS PPP-AR Frequency Transfer Links"
- Lukasz Bonenberg, Joint Research Centre (JRC) of the European Commission (EC)
  "Time transfer developments within the proposed EU C-PNT ecosystem"
- Patrizia Tavella, BIPM
  "News from the Consultative Committee for Time and Frequency: Redefinition of the Second and a Continuous Coordinated Universal Time (UTC)"

Invited Speakers (continued)

Group 6
Optical Frequency Standards and Applications

- Martin Boyd, Vector Atomic
  "Optical Clocks at Sea"
- Ursula Keller, ETH Zurich
  "Stability without effort: understanding the unique properties of single-cavity dual-comb lasers"

PFM

- Elzbieta Gradauskaite, Laboratoire Albert Fert (CNRS – Thales – Université Paris Saclay)
  "Layered in-plane ferroelectrics for oxide electronics"
- Seungbum Hong, KAIST
  "Interface between nanoscale tip and ferroelectric surface studied by atomic force microscopy"
- Vincenzo Esposito, Technical University of Denmark
  "Electro-chemo-mechanical coupling in ferroionic metal oxides"

JOINT SESSIONS

Al,ScN for PiezoMEMS, Resonators, and Ferroelectrics

- Betul Akkopru-Akgun, Penn State
  "The Impact of Interfacial Chemistry on Oxygen Exchange Kinetics and Electronic Charge Transport in Al1-xScxN Films"
- Simon Fichtner, U Kiel
  "Charged Polarization Domain Walls in Wurtzite-Type Ferroelectrics and their Application in Resistive Switching Devices"

Materials development for ultrasound transducers

- Erling Ringgaard, CTS Corporation - Ferroperm Piezoceramics
  "Lead-free piezoelectric transducers for resonant applications"

Domains Joint with PFM

- Jirka Hlinka, Czech Academy of Sciences
  "Domain walls, skyrmions and antiskyrmions in Ferroelectric Perovskites"
- Long-Qing Chen, The Pennsylvania State University
  "Thermodynamics of Ferroelectric Crystals and Domain Structures"

Industry Events

Transitions into Industry
Tuesday, September 24 | 18:00 – 19:00
505abc (TaiNEX Hall 1)

Are you a student or academic professional aiming to transition to the industry? Have burning questions about industry transitions? We've got the answers! Join us at our upcoming event where expert panelists will guide you through the process and share valuable insights.

Demo Show
Wednesday, September 25 | 18:00 – 19:00
505abc (TaiNEX Hall 1)

Got amazing products that deserve the spotlight? We've got the stage! Join us at our upcoming event to showcase your products to a wide audience of potential customers and partners.

The development of ultrasound with semiconductor technologies - past, present, and future
Tuesday, September 24 | 16:30 – 18:00
505abc (TaiNEX Hall 1)

Panelists: Dana Weinstein (Purdue University), David A. Horsley (Northeastern University), Konrad Young (National Taiwan University), Sheng-Shian Li (National Tsing Hua University), James Yang (Qualcomm)
Moderator: Jessica Liu Strohmann (Qualcomm)

The development of ultrasound with semiconductor technologies - past, present, and future

Discover the transformative journey of ultrasound technology through the lens of semiconductor advancements. From its early days to today's cutting-edge innovations, and into the promising future, this panel will explore it all. Featuring distinguished experts in the field, this discussion will highlight historical milestones, current breakthroughs, and prospects. Don't miss this opportunity to engage with pioneers and industry leaders shaping the future of ultrasound technology.

Industry Round Table
Thursday, September 26 | 12:00 – 13:00
505abc (TaiNEX Hall 1)

Join us for an engaging and informal gathering where industry leaders and professionals come together to discuss the latest trends, challenges, and opportunities in our field. This round table event is a fantastic opportunity to enjoy lunch while networking with like-minded individuals, sharing your insights, and hearing from experts who are shaping the future of our industry.

Special Events

UFFC Volunteer Panel
Monday, September 23 | 12:00 - 12:40
506 (TaiNEX Hall 1)

Moderator: Paul Reynolds (Acoustiic Inc)
Panelists: Debra Coler (Tablerock Consulting Solutions LLC), Dana Weinstein (Purdue University), Helen Mulvana (University of Glasgow), Ralph Bulanadi (University of Geneva), Arun Kumar Thittai (Indian Institute of Technology Madras)

UFFC-JS 2024 Welcome Reception
Monday, September 23 | 18:30 – 20:30
Exhibition Hall - Area R (TaiNEX Hall 2, Floor 4)

Unwind and Connect at the Welcome Reception!
After a busy day at the symposium, join us for a refreshing **Welcome Reception** designed to help you relax and recharge.

Savor Delicious Appetizers: Enjoy a delectable assortment of appetizers that perfectly complement a selection of refreshing beverages. From savory bites to sweet treats, our offerings are crafted to please every palate.

Network and Reconnect: This is your chance to unwind in a laid-back atmosphere, meet new people, and reconnect with colleagues. Engage in lively conversations about the day's sessions, exchange insights, and build valuable connections in a relaxed setting.

Foster New Connections: Whether you're catching up with old friends or making new acquaintances, this reception is the perfect opportunity to strengthen professional relationships and share experiences. A Welcome Reception ticket is included with your conference registration. Guest tickets are available for purchase.

UFFC-JS 2024 Banquet Dinner
Tuesday, September 24 | 19:00 – 21:00
Exhibition Hall - Area S (TaiNEX Hall 2, Floor 4)

Join us for an unforgettable evening as we mark the 70th anniversary of the UFFC with a **Grand Banquet Dinner** that promises to be a highlight of the year.

Dine in Elegance: Indulge in a sumptuous multi-course dinner, carefully crafted to delight your taste buds. Our chefs have prepared a menu that celebrates both local and classic flavors, ensuring a dining experience that is as memorable as it is delicious.

Enjoy Live Entertainment: Be entertained by captivating performances that will add a special touch to the evening.

Connect and Celebrate: This is more than just a dinner—it's a chance to reconnect with old friends, network with colleagues, and celebrate the remarkable journey of UFFC over the past 70 years. Don’t miss out on this milestone event! Reserve your place now and be part of a celebration that honors our past, celebrates our present, and looks forward to a bright future.

Let’s make this a night to remember!

A ticket is not included in your registration but can be added for $25. Guest tickets are available for purchase for $80. Limited tickets remain, so purchase your ticket in advance to reserve your spot.

Professional Headshots
Monday, September 23 – Thursday, September 26 | 14:30 – 16:30
UFFC Society Booth - Exhibition Hall (TaiNEX Hall 2, Floor 4)

Student Events

Student Social
Sunday, September 22 | 18:00 – 20:00
TaiNEX Hall 2 - Floor 3

The Student Social marks the start of the conference for student attendees, providing a platform for networking and reconnecting with peers from previous years. Through engaging icebreaker activities, students can build new connections while also fostering existing relationships. The event serves as the official kickoff for all student-focused activities throughout the conference, creating a welcoming and collaborative environment for participants.

Student Led Conference: A Showcase of Emerging and Novel Student Research
Monday, September 23, Tuesday, September 24, and Wednesday, September 25 | 14:45 – 15:20
507 (TaiNEX Hall 1)

The Student Led Conference highlights outstanding student research through a poster showcase, offering a platform for students to present innovative work in emerging areas. Nine poster abstracts, three from each technical track, will be selected for oral presentations. During these sessions, students will deliver a 7-minute presentation of their research, followed by a 3-minute Q&A. This conference aims to recognize exceptional student achievements and provide greater visibility for their work to a broader audience.

Student Career Networking Event
Tuesday, September 24 | 12:00 – 13:00
505abc (TaiNEX Hall 1)

This event will feature a diverse panel of professionals from various industries, academia, and national laboratories. Focusing on opportunities in the fields of ultrasonics, ferroelectrics and frequency control, this event helps bridge the gap between students and the often-overlooked job prospects. Our goal is to provide students with valuable insights into different career paths, job searching, the interview process, and work-life balance.

Student Pitch Competition
Wednesday, September 25 | 12:00 – 13:00
505abc (TaiNEX Hall 1)

The Student Pitch Competition will be an opportunity for students to present themselves to future employers and the research community. This is intended to help employers find new team members or postdocs and help students expand their professional network. Two individual juries of leading academic and industry representatives will select their winners. Bring a single slide and show everyone your most interesting results in 90 seconds!

Participants will be judged on their single presentation slide, their clarity of speech and time management, their clarity of results/research, and the overall impression will be provided as if this pitch was a job interview. There will be three prizes awarded and each winner will receive an IEEE UFFC-S certificate.

Women in Engineering Events

Workshop: Assertive communication for self-advocacy and career advancement
Monday, September 23 | 16:30 – 18:00
505abc (TaiNEX Hall 1)

Instructor: Dr. Tara Fortier (National Institute of Standards and Technology)

Workshop goals: Develop better awareness about who and how you are in your professional life.
Use that awareness to begin planning where you want to go and how you want to get there.
How to network effectively and advocate for what you want and where you want to go.

The workshop will be highly interactive, focusing on participant engagement, discussion, and exercises around communication for career advocacy, with a focus on planning, networking and communicating one's value.

WIE Breakfast Networking Event
Thursday, September 26 | 7:00 – 8:00
505abc (TaiNEX Hall 1)

This event is a fantastic opportunity to:

- **Network** with like-minded academics, researchers and industry professionals. Find mentors or mentees, and connect with your peers!
- **Share** experiences, insights, and advice with fellow women in engineering.
- **Learn** and discuss about diverse topics such as, impact of culture on Women in STEM, Strategies to advocate for each other, Achieving work-life balance, and effective communication.

Enjoy a delicious breakfast while engaging in meaningful conversations! This event is open to everyone, regardless of gender. We encourage all to join us and be part of the conversation and contribute to a rich and diverse dialogue.

Publication Events

UFFC Publications Town Hall
Monday, September 23 | 12:00 – 13:00
505ab (TaiNEX Hall 1)

UFFC Society has recently launched a journal reform process to calibrate the publishing scopes of our society's two sponsored journals (T-UFFC and OJ-UFFC) and to better align them with the interests of the UFFC readership. Please join us at this townhall meeting to hear from the UFFC leadership about the latest developments of this reform process. Your participation and input will help shape the upcoming scope changes of the two journals. Lunch will be provided.

Reviewer Training Workshop
Wednesday, September 25 | 12:00 – 13:00
507 (TaiNEX Hall 1)

Are you interested in assessing the merit of the latest research advances in the UFFC community and in upholding the quality of research publications? If so, you should consider serving as a peer reviewer for the IEEE T-UFFC. Join this workshop to learn how to prepare professional review critiques. Are you already a reviewer but wanted to find out more about the quality expectations for peer review critiques? If so, you should also join this workshop. Early-career researchers are welcomed!

At this workshop, Dr. Karla Mercado-Shekhar and Dr. Billy Yiu will introduce you to T-UFFC's peer review criteria and will share various tips for critique preparation. Lunch will be served.

a-MEM Challenge 2024

Algorithms for Mapping Elastic Modulus (a-MEM) Challenge 2024
Tuesday, September 24 | 12:00 – 13:00
505abc (TaiNEX Hall 1)

IEEE Challenge Poster Session
Wednesday, September 25 | 14:30 – 16:30
Exhibit Hall (TaiNEX Hall 2)

Organizers: Emma Harris (Institute of Cancer Research, London), Jeff Bamber (Institute of Cancer Research, London), John Civale (Institute of Cancer Research, London), Mark Palmeri Duke University), Heiko Tzschätzsch, (Charité-Universitätsmedizin Berlin), Tom Meyer (Charité-Universitätsmedizin Berlin), Matthew Urban (Mayo Clinic College of Medicine and Biomedical Sciences)

Elastographic imaging (or elastography) is a powerful, non-invasive, and multiscale technique that can measure the biomechanical properties of tissues. The rapidly expanding interest in elastography in both clinical and preclinical medical research domains, reflects its potential, not only to improve the detection and diagnosis of disease, but also to help understand the underlying mechanobiological mechanisms that promote disease.

Objectives of this challenge:

- To challenge the community to devise more accurate and precise algorithms for elastic modulus estimation (via detection and characterisation of propagating shear waves).
- To raise greater awareness of the challenges associated with elastic modulus estimation, and to gain further knowledge on why certain approaches fail.
- To identify the most promising approaches to elastic modulus estimation.
- To provide a benchmark and public data for the future development of SWS and elastic modulus estimation algorithms.
- Challenge data: Experimental and simulated IQ/RF images of propagating shear waves from impulse and harmonic (continuous) sources.

Challenge data: The following category data will be shared with participants.

1. Experimental IQ/RF images of propagating shear waves from impulse sources.
2. Experimental IQ/RF images of propagating shear waves from harmonic (continuous) sources.

Cash prizes will be given to the top three submissions from both categories.

PRIZE: Sponsored by Verasonics

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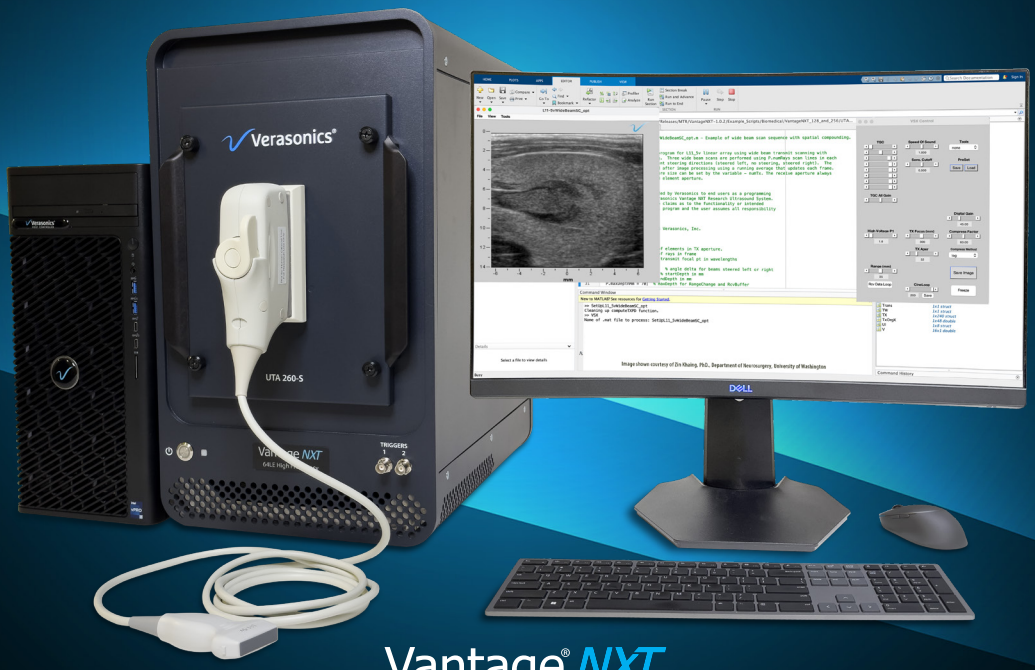

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PROGRAM AT A GLANCE

Tutorial & Short Course Day - Sunday, September 22, 2024

IEEE UFFC-JS 2024

	NANGANG HALL 2										NANGANG HALL 1						
	701A	701B	701C	701D	701E	701F	701G	701H	702	703	500	501	506	507	505ab	505c	Hall 2 (Floor 3)
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14:00-15:45	T-11: XBARs and high-frequency resonators and filters exploiting thin layers of lithium niobate (Victor Plessky)	T-12: Materials Development for Ultrasound Transducers (Betul Akkopru)	T-13: Al,(Sc)N for piezoelectric MEMS applications (Geoff Brennecka)	T-14: Characterizing Nanoscale Electromechanical Responses of Ferroelectric Topological Defects by PFM (Peggy Zhang)	SC-09: Therapeutic applications of focused ultrasound: From biophysics to clinical application (David Melodelima, Kullervo Hynynen)	T-16: Synthesis and processing of ferroelectric thin films (Hiroshi Funakubo)	T-17: UTC Time scale and SI second redefinition (Patrizia Tavella)	T-18: Cutting edge combs, not for your hair (Tara Fortier)	SC-10: Acoustic waves in nonlinear elastic media: An introduction to basic principles and modelling (Andreas Mayer)	SC-11: Acoustical Imaging; from acoustic field equations to imaging and inversion (Koen W.A. van Dongen)	SC-12: Machine learning for NDE, data compression and communication (Erdal Oruklu, Jafar Saniie)	SC-13: Medical Ultrasound Transducers (David M. Mills, Frederic Lanteri, Jeremie Barrel)	SC-15: Ultrasound imaging of low velocity blood flow (Matthew Bruce)	SC-14: Hydrophone Measurements for Biomedical Ultrasound Applications (Peter A. Lewin, Elly Martin, Srinath Rajagopal, Keith Wear)			
15:45-16:15	Coffee Break					Coffee Break											
16:15-18:00	T-19: Acoustic Metasurfaces (Erqian Dong)					T-24: Doped HfO2-based ferroelectrics - From fundamentals to device applications (Uwe Schroeder)	T-25: GNSS and Two-Way Satellite Time and Frequency Transfer (Calvin Lin)	T-26: Optical Atomic Clocks (Chun-Chia Chen)									
18:00-20:00																	Student Social 18:00 - 20:00

Registration Hours 8:00 - 18:00

PROGRAM AT A GLANCE

Day 1 - Monday, September 23, 2024

IEEE UFFC-JS 2024

	NANGANG HALL 2										NANGANG HALL 1							
	701A	701B	701C	701D	701E	701F	701G	701H	702	703	500	501	502	503	506	507	505ab	505c
07:00-08:00																	TPC Meeting - IUS Groups 2, 3, 4, 5	Publications Committeee Meeting
08:30-10:00	Opening Ceremony & Plenary 1: Elisa Konofagou																	
10:00-10:30	Coffee Break (Area R, 4F, Hall 2)																	
10:30-12:00	Plenary 2: Matthew O'Donnell																	
12:00-13:00	Lunch (Area R, 4F, Hall 2)														UFFC Volunteer Panel		UFFC Publications Town Hall	PFM Advisory
13:00-14:30	MIM: Cardiovascular imaging	MBF: Neural Imaging and Applications	MTC: Bone Characterization	General Physical Acoustics (PGP) 1	ALD Lithium Niobate Devices	TES: Transducer Interface Electronics and Systems	Application Driven Processing	Doped Hafnium Oxide - Material 1	BFO and Multiferroics	MBE Brain and Neural Applications	Wave Propagation (NWP) and Acoustic Microfluidics	Resonant Sensors and Transducers	MBF: Novel Vector Flow Imaging Methods	MEL: Shear Wave Elastography Techniques 1	MBB: Aberration Correction & Sound Speed Estimation	Focused Ultrasound Spotlight 1		
14:30-16:30	Poster 1 & Coffee Break (Area R, 4F, Hall 2)															Student Led Conference 14:45 - 15:20		
16:30-18:00	Clinical Spotlight	MBB: Plane wave & unfocussed Transmit	MIM: 3D imaging	MPA: Advancements in Photoacoustic Imaging Systems and Phantoms	MSR: Data Processing	TMU: Transducers and Systems for Sensing, Communication, and Wireless Power Transfer	Fundamentals of Ferroelectrics 1	Ferroelectric Thin Films 1	Novel Materials and Approaches 1	Acoustic Microfluidics (NAF)	Domains & Domain Walls 2	MSD: Wearable and Portable Ultrasound	MCA: Contrast Agent Imaging 1	AlScN Switching Kinetics 1	MIS: Image Enhancement 1	MCA: Contrast Agent Imaging 2	WiE Workshop	
18:00-18:30																		
18:30-20:30	Welcome Reception (Area R, 4F, Hall 2)																	

Registration Hours 8:00 - 18:00

Exhibit Hall Hours 8:30 - 19:00

PROGRAM AT A GLANCE

Day 2 - Tuesday, September 24, 2024

IEEE UFFC-JS 2024

	NANGANG HALL 2										NANGANG HALL 1						
	701A	701B	701C	701D	701E	701F	701G	701H	702	703	500	501	502	503	506	507	505abc
07:00-08:00																	TPC Meetings - ISAF, IFCS, IUS Group 1
08:30-10:00	Plenary 3: Shujun Zhang and Lane Martin																
10:00-10:30	Coffee Break (Area R, 4F, Hall 2)																
10:30-12:00					AHD Extreme High Frequency Devices 1	In Memory of Dr. Jian Yuan: Diagnostic & Interventional Transducers	PFM 1	Lead Free Ferroelectrics	Multiferroics	Acoustic Sensors (NAS)	Material Development Ultrasound Transducers	Measurement Techniques and Oscillator Characterization	Verasonics Seminar	MPA: Preclinical Applications of Photoacoustic Imaging	MIS: Tissue Classification and Characterization 1	Focused Ultrasound Spotlight 2	
12:00-13:00	Lunch (Area R, 4F, Hall 2)												Piezocrystals Standards Committee			a-MEM Challenge Workshop	UFFC Publications Town Hall
13:00-14:30	AlScN Switching Kinetics 2	MBB: Matrix and Sparse Arrays	MCA: Therapy and Drug Delivery	MIS: Microvascular Imaging	ABD BAW Devices 1	TMI: 2D Arrays	Novel Methods	Lead Based Ferroelectrics	Manufacturing Focused Processing	Acoustic Imaging and Microscopy (NAI)	Joint: Ultrasonic PiezoMEMS Technologies and Applications	Integrated Microwave Clocks	MSD: Novel Devices and Applications	MEL: Mechanical Characterization of the heart	MIM: Multi-modality Imaging & New Imaging Modalities	MTC: Novel Methods and Applications	
14:30-16:30	Poster 2 & Break (Area R, 4F, Hall 2)															Student Led Conference	
16:30-18:00	MBE BBB Opening, Mechanotransduction, Cavitation, Immunotherapy	MIS: Theraputics and Interventional	MIS: Contrast Agents	Nonlinear Acoustics (PNL) 1	AHD Extreme High Frequency Devices 2	TMI: Flexible Transducers	Fundamentals of Ferroelectrics 2	Doped Hafnium Oxide - Devices/ Material 1	Processing of Lead Free Materials	Material & Defect Characterization (NMC)	MSR: Thorax and Abdomen	Optical Time-Frequency Transfer for Future Applications	MTC: Attenuation and Backscatter Coefficients	MTC: Cardiovascular System Characterization	MEL: Imaging Tissue Anisotropy	MTH: Neuromodulation	The development of ultrasound with semiconductor technologies - past, present, and future
18:00-19:00																	Transition to Industry
19:00-21:00	Banquet (Area S, 4F, Hall 2)																

Registration Hours 8:00 - 18:00

Exhibit Hall Hours 8:30 - 18:00

PROGRAM AT A GLANCE

Day 3 - Wednesday, September 25, 2024

IEEE UFFC-JS 2024

	NANGANG HALL 2										NANGANG HALL 1						
	701A	701B	701C	701D	701E	701F	701G	701H	702	703	500	501	502	503	506	507	505abc
08:30-10:00	Plenary 4: Helen Margolis																
10:00-10:30	Break (Area R, 4F, Hall 2)																
10:30-12:00					ASD SAW Devices 1	TMI: Wearable Transducers	Piezoelectric Applications	Ferroelectric Thin Films 2	Novel Materials and Approaches 2	Photoacoustics (NPA) 1	AlScN Growth	Ultrastable Optical Cavities, Laser Stabilization Techniques and Synthesis		MIS: Image Formation	MIM: AI for imaging 1	MSR: Probes and Beamforming	
12:00-13:00	Lunch (Area R, 4F, Hall 2)												IUS 2025 Organizers			Reviewer Training	Student Pitch Competition
13:00-14:30	AlScN	MIM: New Imaging Techiques 1	MPA: Translational Applications of Photoacoustic Imaging	Underwater Acoustics (NUA) and Transducers (NDE and Industrial) (NTC)	SAW	TMI: Multiwave and Optomechanical Transducers	PFM 2	Doped Hafnium Oxide - Material 2	Relaxors & Antiferroelectrics	MEMS Resonators and Oscillators	Domains & Domain Walls 1	Advances in Optical Clocks	MSR: Agents and Biomarkers	MIS: Doppler and Vascular Imaging	MTN: Advanced Technologies for Cancer Theranostics	MBF: Cardiovascular Imaging and Applications	
14:30-16:30	Poster 3 & Break (Area R, 4F, Hall 2)															Student Led Conference 14:45 - 15:20	
16:30-18:00	MSR: Brain 1	MIS: Image and Signal Processing in Ultrasound Imaging 1	MEL: Shear Wave Elastography Techniques 2	Nonlinear Acoustics (PNL) 2	ASD SAW Devices 2	TMU: Capacitive Micromachined Ultrasonic Transducers 1	Towards Application	Doped Hafnium Oxide - Devices/ Material 2	Ferroelectric Thin Films 3	Resonant Sensors for Environmental Monitoring	MTH: Advanced Therapeutic Ultrasound Technologies	Compact Optical Clocks and Novel Techniques	MTN: Brain Theranostics	Acoustic Imaging and Microscopy (NAI) and Flow Measurement (NFM)	MIM: New Imaging Techiques 2	Machine Learning for Ultrasonics, Ferroelectrics and Frequency Control	
18:00-19:00																	Industry Demo

Registration Hours 8:00 - 18:00

Exhibit Hall Hours 8:30 - 10:00

PROGRAM AT A GLANCE

Day 4 - Thursday, September 26, 2024

IEEE UFFC-JS 2024

	NANGANG HALL 2										NANGANG HALL 1						
	701A	701B	701C	701D	701E	701F	701G	701H	702	703	500	501	502	503	506	507	505abc
07:00-08:30																	WiE Networking Breakfast
08:30-10:00	MSR: Brain 2	MSD: Advanced Systems and Implementations	MTH: Drug Delivery 1	Acoustic Tweezers & Particle Manipulation (PAT) 1	ABD BAW Devices 2	TMU: Piezoelectric Micromachined Ultrasonic Transducers 1	TMI: Diagnostic and Therapeutic Transducers	MIS: Echocardiography	Process Control and Industrial Ultrasound (NPC)	Wearable Devices 1	Photoacoustics (NPA) 2	GNSS and TWSTFT for Time and Frequency Transfer	Thin Films (PTF)	Ultrasound Tomography Spotlight	MEL: Vascular Elasticity Imaging	Optical Synthesizers and VCOs	
10:00-10:30	Coffee Break (Area R, 4F, Hall 2)																
10:30-12:00	MEL: (Pre) Clinical Elastography and Safety Monitoring	MBB: Coherence Factor & Diverging Wave Imaging	MBF: Novel Clutter Filtering and Signal Processing Techniques	General NDE Methods (NDE)	ASD SAW Devices 3	TPF: Applications of Piezoelectrics and Ferroelectrics 1	MIM: fUS & Microvascular Imaging	MIS: Image Formation 2	Signal Processing (NSP)	Wearable Devices 2	Opto-Acoustics & Phononics (POA & PPN) 1	Next Generation Time and Frequency Transfer: From SI Second to PNT	Modelling & Inversion (PMI)		MTC: High Frequency Tissue Characterization	Quartz and Lithium Niobate Resonators	
12:00-12:30	Lunch (Area R, 4F, Hall 2)																Industry Round Table
13:00-14:30	MTH: Cavitation Based Therapy and Blood Brain Barrier Opening	MTN: Brain Delivery and Cancer Therapy	MEL: Diagnostic Markers and AI in Mechanical Characterization	MIS: Image and Signal Processing in Ultrasound Imaging 2	ASD SAW Devices 4	TPM: Piezoelectric Transducer Materials	TMI: Intravascular Ultrasound Transducers	MBB: Artifact Removal & Passive Cavitation Imaging	Structural Health Monitoring (NSH)	AlN-Based Resonators and Filters	Acoustic Tweezers & Particle Manipulation (PAT) 2	High-performance Microwave Clocks			MTC: Liver Tissue Characterization 1		
14:30-16:30	Poster 4 & Coffee Break (Area R, 4F, Hall 2)																
16:30-18:00	Closing Ceremony																

Registration Hours 8:00 - 15:00

Exhibit Hall Hours 8:30 - 16:30

Day 1: Monday, September 23

Opening Ceremony and Plenary #1
Location: 701A-D (TaiNEX 2)
8:30 - 10:00

Ultrasound is Good for the Brain - Opening New Avenues in Diagnostics, Therapeutics and Theranostics
Elisa Konofagou, Columbia University

Coffee Break
Location: Exhibit Hall - 7F (TaiNEX 2)
10:00 - 10:30

Plenary #2
Location: 701A-D (TaiNEX 2)
10:30 - 12:00

2013-2024: A Period of Amazing Growth for Ultrasonics
Matthew O'Donnell, University of Washington

UFFC Distinguish Service, UFFC Publication, and IUS Awards

Lunch
Location: Exhibit Hall - 7F (TaiNEX 2)
12:00 - 13:00

A1L-02: MIM: Cardiovascular imaging
Location: 701A (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Chris de Korte, Radboudumc
Wei-Ning Lee, University of HongKong

7817: Ultrafast Power Doppler Imaging for Myocardial Perfusion Assessment: Histopathologic Correlation and In Vivo Comparison
Naiyuan Zhang, Jerome Baranger, Matteo Ponzoni, Mei Sun, Luc Mertens, Maelys Venet, Jason Maynes, John Coles, Mark Friedberg, Olivier Villemain
Hospital for Sick Children, Canada

7655: Large Scale Simulation of Realistic Cardiac Ultrasound Recordings with Clinically Relevant Artifacts
Nitin Burman{1}, Sophie Heymans{1}, Claudia Manetti{2}, Joost Lumens{2}, Jan D'Hooge{1}
{1}KU Leuven, Belgium; {2}Maastricht University, Netherlands

8276: Exploring the Link Between Neovascularisation and Carotid Plaque Mechanics
Yasmine Guendouz{3}, Brooke Tornifoglio{3}, Gordon O' Brien{3}, Moein Mozaffarzadeh{2}, Chris de Korte{2}, Su Guvenir{1}, Kim Van Gaalen{1}, Frank Gijsen{1}, Ali Akyildiz{1}, Tríona Lally{3}
{1}Erasmus Medical Center, Netherlands; {2}Radboud University Medical Center, Netherlands; {3}Trinity College Dublin, Ireland

7524: Wall Thickness in AAAs Using IVUS In Vivo
Floor Fasen{2}, Marc van Sambeek{1}, Richard Lopata{2}
{1}Catharina Hospital Eindhoven, Netherlands; {2}Eindhoven University of Technology, Netherlands

7842: Dynamic Wall Shear Stress Image Guidance of Percutaneous Coronary Intervention with Forward-Viewing Intravascular Ultrasound
Travis Singh{2}, Amauri Assef{2}, Jimena Martin Tempestti{1}, Alessandro Veneziani{1}, Brooks Lindsey{2}
{1}Emory University, United States; {2}Georgia Institute of Technology, United States

7110: Unveiling a Century Old Mystery: The Physical Origins of the Korotkoff Sounds
Jerome Baranger{1}, Olivier Villemain{1}, Guillaume Goudot{2}, Alexandre Dizeux{1}, Heiva Le Blay{1}, Tristan Mirault{2}, Emmanuel Messas{2}, Mathieu Pernot{1}, Mickael Tanter{1}
{1}Institute Physics for Medicine Paris, Inserm, ESPCI PSL Paris, CNRS, France; {2}Université Paris Cité, Inserm, PARCC, HEGP, APHP, France

A1L-03: MBF: Neural Imaging and Applications
Location: 701B (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Meng-Lin Li, National Tsing Hua University
Gianmarco Pinton, University of North Carolina-Chapel Hill

8522: Vector Flow Velocity Imaging of Preterm Neonatal Brains Using Neural Network Models
You Li{2}, Max Zalcman{1}, Huiling Zhang{2}, Erika Rubesova{1}, Jeremy Dahl{1}
{1}Stanford University, United States; {2}University of Texas at Dallas, United States

8630: Measurement of Cerebral Blood Flow Under Acute Injury Conditions
Oliver Kripfgans, Stephen Pinter, Brendan McCrackena, Carmen Colmenero Mahmood, Venkatakrishna Rajajeec, Hakam Tiba, Jonathan Rubin
University of Michigan, United States

8884: Non-Invasive Longitudinal 4D Transcranial Functional Ultrasound Imaging in Mice with Alzheimer's Disease During Vibrotactile Stimulation
Rebecca Jones{2}, Ryan Deruiter{1}, Melissa Caughey{2}, Hatim Belgharbi{2}, Paul Dayton{2}, Gianmarco Pinton{2}
{1}Mayo Clinic, United States; {2}University of North Carolina at Chapel Hill, United States

8140: Bimodal PET/US Device for Quantification of Molecular and Hemodynamic Changes in Rat Brain: A Pilot Study with Modafinil Drug
Lim Anna Sieu{3}, Lenin Chinchilla{2}, Reda El Mazhoum{5}, Maud Goislard{3}, Alexandra Winkeler{3}, Anthony Novell{4}, Nisolas Tournier{3}, Jean-Luc Gennisson{1}
{1}BioMaps - Université Paris Saclay - CNRS, France; {2}BioMaps - Université Paris-Saclay, France; {3}BioMaps - Université Paris-Saclay - CEA, France; {4}BioMaps - Université Paris-Saclay - CNRS, France; {5}Sorbonne université, France

8970: Quantifying Cerebral Perfusion in a Microgravity Analog Using High Frame Rate Ultrasound
Theresa Gu{4}, Hassan Nahas{4}, Andrew Robertson{1}, Billy Yiu{3}, Richard Hughson{2}, Alfred Yu{4}
{1}Department of Kinesiology and Health Sciences, University of Waterloo, Canada; {2}Schlegel-UW Research Institute for Aging, Canada; {3}Technical University of Denmark, Denmark; {4}University of Waterloo, Canada

A1L-04: MTC: Bone Characterization
Location: 701C (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Marie Muller, NCSU
Kay Raum, Charité - Universitätsmedizin Berlin

7174: The Relationship Between Attenuation and Backscatter Coefficients in Cortical Bone, In-Tracortical Pore Size Distribution, and Fracture Risk
Angela Galindo, Ziyuan Liu, Kay Raum
Charité Universitätsmedizin Berlin, Germany

7549: In Vivo Estimation of Ultrasound Wave-Speed Anisotropy in Human Cortical Bone with Ultrasound Imaging: A Precision Analysis
Amadou Sall Dia{2}, Guillaume Renaud{1}, Quentin Grimal{2}
{1}Department of Imaging Physics, Delft University of Technology,, Netherlands; {2}Sorbonne Universite, INSERM, CNRS, Laboratoire d'Imagerie Biomedicale, LIB, France

8334: Ultrasonic Wave Velocity Decrease in Bone of Ovariectomized and Spontaneous-Menopause Mice
Taiga Wada{1}, Shuta Kodama{1}, Yuhi Haneda{1}, Yoshihumi Tsuchiya{2}, Mami Matsukawa{1}
{1}Doshisha University, Japan; {2}National Institute of Advanced Industrial Science and Technology (AIST), Japan

7583: Quantitative Ultrasound Analysis for Rib Bones
Felix Sundblad{3}, Cristina Herrera{4}, Clark Dickerson{4}, Ari Salmi{2}, Kay Raum{1}
{1}Charité-Universitätsmedizin Berlin, Germany; {2}Univeristy of Helsinki, Finland; {3}University of Helsinki, Finland; {4}University of Waterloo, Canada

7769: QUS Envelope Statistics Imaging of the Lumbar Vertebrae as a New Approach for Predicting the Risk of Vertebral Fractures in Postmenopausal Women
Chiao-Yin Wang{1}, Yu-Ching Lin{2}, Po-Hsiang Tsui{1}
{1}Chang Gung University, Taiwan; {2}Keelung Chang Gung Memorial Hospital, Taiwan

7563: Automatic Grading of Nucleus Pulposus Degeneration for Spinal Endoscopic Surgery Based on Ultrasound Signal Analysis by ViT
Yiwei Xiang{1}, Jiaqi Yao{1}, Chang Jiang{2}, Nixi Xu{2}, Zixian Chen{2}, Rui Zheng{1}
{1}Shanghaitech University, China; {2}Zhongshan Hospital Fudan University, China

A1L-05: General Physical Acoustics (PGP) 1
Location: 701D (TaiNEX 2)
13:00 - 14:30
Session Chair(s): TBA

7700: Acoustic Wave for Vision Restoration
Qifa Zhou, Mark Humayun, Biju Thomas, Chen Gong, Gengxi Lu, Jie Ji, Chi-Feng Chang
University of Southern California, United States

7403: Thickness-Only Acoustic Hologram for Precise Ultrasound Neuromodulation and its Validation via Blood-Brain Barrier Opening in Mice
Moon Hwan Lee, Jae Youn Hwang
DGIST, Korea

7957: Reveal the Incidence-Independent Frequency Shift in Acoustic Rotational Doppler Effect
Chuanxin Zhang, Xue Jiang, Dean Ta
Fudan University, China

8447: The Behavior of Cylindrical Crevice Bubbles That Cause the Twinkling Artifact on Silicon Wafers
Eric Rokni, Julianna Simon
Penn State University, United States

7084: Towards Broadband Lateral BAW Excitation in a Low-Velocity Anisotropic Substrate
Konstantin Yushkov, Natalya Naumenko, Vladimir Molchanov
University MISIS, Russia

A1L-06: ALD: Lithium Niobate Devices
Location: 701E (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Sunil Bhave, Purdue University
Shogo Inoue, Qorvo, Inc.

8134: A1-Mode Lamb Wave Resonator in 128° Y-Cut Lithium Niobate with Electromechanical Coupling Coefficient of 57%
Meijuan Li, Kai Yang, Jiming Fang, Fuhong Lin, Chengjie Zuo
University of Science and Technology of China, China

8433: Lithium Niobate Resonators for Piezoelectric Power Conversion: Spurious Mode Suppression via an Active Ring
Vakhtang Chulukhadze{2}, Eric Stolt{1}, Clarissa Daniel{1}, Juan Rivas-Davila{1}, Ruochen Lu{2}
{1}Stanford, United States; {2}UT Austin, United States

7136: Thermo-acoustic Phase Modulator based on Y36-cut $LiNbO_3$ Thin Film
Xuankai Xu{1}, Yushuai Liu{1}, Lihui Jin{1}, Peng Wu{2}, Yitao Liao{2}, Tao Wu{1}
{1}Shanghaitech University, China; {2}Xuzhou Liyu Advanced Technology Co. Ltd., China

7072: 36.8-GHz Fin-Mounted Lithium Niobate Resonator with High Electromechanical Coupling Coefficient of 33.8%
Kai Yang, Fuhong Lin, Jiming Fang, Haoran Tao, Jie Chen, Chengjie Zuo
University of Science and Technology of China, China

8813: Temperature-Driven Degradations on Lithium Niobate MEMS Acoustic Filter
Junyan Zheng, Fangsheng Qian, Zijun Ren, Jiashuai Xu, Xingyu Liu, Yansong Yang
Hong Kong University of Science and Technology, Hong Kong

8097: A Suspended Lithium Niobate Resonator with Buried Electrodes at 3.5 GHz
Silvan Stettler, Guillermo Villanueva
EPFL, Switzerland

A1L-07: TES: Transducer Interface Electronics and Systems
Location: 701F (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Michiel Pertijs, Delft University of Technology
David Cowell, University of Leeds

7569: A 3D Ultrasound Probe with Monolithically-Integrated 4096-Element CMUT Array Imaging 60°×60°×10 cm at 2000 Volumes/s
Nuriel Rozsa{1}, Zhao Chen{4}, Taehoon Kim{1}, Jason Voorneveld{3}, Djalma Simoes Dos Santos{1}, Peng Guo{1}, Yannick Hopf{1}, Emile Noothout{1}, Zu-Yao Chang{1}, Chao Chen{1}, Vincent Henneken{4}, Nico de Jong{2}, Hendrik Vos{2}, Johan Bosch{2}, Martin Verweij{2}, Michiel Pertijs{2}
{1}Delft University of Technology, Netherlands; {2}Delft University of Technology, Erasmus MC University Medical Center, Netherlands; {3}Erasmus MC University Medical Center, Netherlands; {4}Philips Innovation & Strategy, Netherlands

7816: A Row Column Addressed Handheld USB Ultrasound Probe for Real Time Biplane Imaging
Damien Joguet{2}, Mahé Bulot{2}, Moullart De Torcy Armand{2}, Agnès Lejeune{2}, Emmanuel Montauban{2}, Tony Matéo{2}, Guillaume Bloino{2}, Olivier Gérard{2}, Clara Prud'Homme{1}, Martin Flesch{2}, Guillaume Ferin{2}
{1}Department of Interventional Radiology, Paul Brousse Hospital (APHP), France; {2}VERMON - Innovation department, France

7351: Ultrasound System for Real-Time High-Frame-Rate Multi-Probe Applications
Daniele Mazierli{3}, Alessandro Savoia{2}, Claudio Giangrossi{3}, Enrico Boni{3}, Alessandro Ramalli{3}, Muhammad Usman Khan{2}, Monica La Mura{2}, Alvise Bagolini{1}, Piero Tortoli{3}
{1}Fondazione Bruno Kessler, Italy; {2}Roma Tre University, Italy; {3}University of Florence, Italy

7504: An ASIC for Efficient Generation of High-Voltage Transmit Pulses for Battery-Powered Ultrasound Devices
Imad Bellouki{1}, Nuriel Rozsa{1}, Zu-Yao Chang{1}, Zhao Chen{1}, Mingliang Tan{2}, Michiel Pertijs{1}
{1}Delft University of Technology, Netherlands; {2}SonoSilicon, China

7586: Significant Improvement in SNR of PMUTs by Using Transimpedance Amplifier: A Promising Architecture Towards Canonical Ultrasound Medical Imaging
Sina Sadeghpour, Rui Amendoeira Esteves, Michael Kraft
KU Leuven, Belgium

7891: 3D Imaging Based on Electronically Scanned Large Aperture Arrays
Baoqiang Liu{2}, Robert Wodnicki{2}, Xin Sun{2}, Josquin Foiret{1}, Qifa Zhou{2}, Katherine W Ferrara{1}
{1}Stanford University, United States; {2}University of Southern California, United States

A1L-08: Application Driven Processing
Location: 701G (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Udo Eckstein, Friedrich-Alexander-Universität Erlangen-Nürnberg

7012: Electric Field Modulation of Upconversion Photoluminescence in Rare-Earth Doped (K,Na)NbO_3 Ceramics
Manuel Henrique Lente
Universidade Federal de São Paulo-Unifesp, Brazil

8168: Acoustic Bragg Reflector Type Resonator Using Epitaxial $PbTiO_3$ Thin Films
Wataru Shimoyama, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

8184: Lead-Free $(K_{0.5}Na_{0.5})NbO_3$ Piezoelectric Thin Films for Ultrasonic Haptic Feedback
Jueyu Chen{4}, Kui Yao{2}, Edwin Hang Tong Teo{3}, Poh Chong Lim{2}, Jianwei Chai{2}, Milan Shrestha{1}
{1}Continental-NTU Corporate Lab, Nanyang Technological University, Singapore; {2}Institute of Materials Research and Engineering, ASTAR, Singapore; {3}School of EEE and MSE, Nanyang Technological University, Singapore; {4}School of EEE, Nanyang technological university and IMRE, ASTAR, Singapore

8776: Processing of Porous Electro-Ceramic Materials and Transducers
Chris Bowen, Eleanor Roake, Qingping Wang
University of Bath, United Kingdom

8786: Enhanced Longitudinal Piezoelectric Coefficient in $(Ba_{0.85}Ca_{0.15})(Zr_{0.1}Ti_{0.9})O_3$ via a Highly Aligned Porous Structure
Zihe Li, James Roscow, Hamideh Khanbareh, Chris Bowen
University of Bath Department of Mechanical Engineering, United Kingdom

A1L-09: Doped Hafnium Oxide - Material 1
Location: 701H (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Vincenzo Esposito, Denmark Technical University

8789: Unveiling Phase Transformation in Ferroelectric $Hf_{1-x}Zr_xO_2$ Thin Films with Real-Time Strain Monitoring During Rapid Thermal Annealing
Yu-Cheng Kao{2}, Hao-Kai Peng{2}, Jia-Hong Huang{2}, Yung-Hsien Wu{2}, Pin-Jiun Wu{1}, Kuo-An Wu{2}
{1}National Synchrotron Radiation Research Center, Taiwan; {2}National Tsing Hua University, Taiwan

7254: Impact of In-Plane Strain on the Ferroelectric Properties of Ultra-Thin $Hf_xZr_{1-x}O_2$ Films
Florian Wunderwald{1}, Bohan Xu{1}, Patrick Lomenzo{1}, Kristina Holsgrove{2}, Thomas Mikolajick{1}, Alfred Kersch{3}, Uwe Schroeder{1}
{1}Namlab, Germany; {2}Queen's University Belfast, United Kingdom; {3}University Applied Sciences, Germany

7469: Approaches to Suppress Wake-Up Effects in Back-End-of-Line Thermal Budget Compatible Hafnium-Zirconium-Oxide Thin Films
David Lehninger, Shouzhuo Yang, Ayse Sünbül, Konrad Seidel, Maximilian Lederer
Fraunhofer Institute for Photonic Microsystems (IPMS), Germany

8056: Coexistence, Control, and Balance of Ferroelectricity and Antiferroelectricity in $(Hf,Zr)O_2$ Thin Films
Igor Stolichnov{1}, Bohan Xu{2}, Uwe Schroeder{2}
{1}EPFL, Switzerland; {2}Namlab, Germany

7325: Spectroscopic Insights Into Filamentary and Ferroelectric Switching in Epitaxial $Hf_{0.5}Zr_{0.5}O_2$
Judith Knabe, Kalle Goß, Regina Dittmann
Forschungszentrum Juelich, Germany

A1L-10: BFO and Multiferroics
Location: 702 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Sangwook Kim, Hiroshima University

7090: High-Temperature Stable Piezoelectricity in $BiFeO_3$-Based Lead-Free Ceramics by Suppressing Electrical Heterogeneity
Xiaodong Yan, Zhengbao Yang
Hong Kong University of Science and Technology, China

8992: Ferroelectricity-Induced Surface Ferromagnetism in Core-Shell Nanoparticles
Carlos Canhassi{1}, Roman Chernozem{2}, Polina Chernozem{2}, Konstantin Romanyuk{3}, Alina Urakova{2}, Danila Koptsev{2}, Roman Chernozem{2}, Yakov Kopelevich{1}, Andrei Kholkin{3}
{1}State University of Campinas, Brazil; {2}Tomsk Polytechnic University, Russia; {3}University of Aveiro, Portugal

7887: Role of the Third Component in Ternary $BiFeO_3$-$BaTiO_3$-Based Piezoelectric Ceramics
Hyunwook Nam{2}, Sangwook Kim{1}, Ichiro Fujii{3}, Motoki Aruga{1}, Shintaro Ueno{3}, Keisuke Nozoe{2}, Hajime Nagata{2}, Yoshihiro Kuroiwa{1}, Satoshi Wada{3}
{1}Hiroshima University, Japan; {2}Tokyo University of Science, Japan; {3}University of Yamanashi, Japan

7674: Exceptional Efficiency of $BiFeO_3$-Based Piezocatalysts by Chemical Design
Wafa Amdouni{1}, Mojca Otoničar{5}, David Alamarguy{1}, Pascale Gemeiner{1}, Frédéric Mazaleyrat{3}, Hager Maghraoui-Meherzi{4}, Vincent Garcia{7}, Stephane Fusil{7}, Jens Kreisel{2}, Sebastjan Glinsek{6}, Brahim Dkhil{1}
{1}CentraleSupélec, Université Paris-Saclay, France; {2}Department of Physics and Materials Science, University of Luxembourg, Luxembourg; {3}ENS Paris-Saclay, Université Paris-Saclay, France; {4}Faculté des Sciences de Tunis, Université Tunis El Manar, Tunisia; {5}Jožef Stefan Institute and Jožef Stefan Postgraduate Schoo, Slovenia; {6}Materials Research and Technology Department, Luxembourg Institute of Science and Technology, Luxembourg; {7}Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, France

8005: Atomic Level Origin of the Impact of Octahedral Tilting and Tetragonal Distortions on the Functional Properties of the Room Temperature Multiferroic $Bi_6Ti_3Fe_{1.5}Mn_{0.5}O_{18}$
Louise Colfer{2}, Núria Bagués{1}, Mohammad Noor-A-Alam{2}, Michael Schmidt{2}, Michael Nolan{2}, David W. McComb{1}, Lynette Keeney{2}
{1}Center for Electron Microscopy and Analysis, The Ohio State University, United States; {2}Tyndall National Institute, University College Cork, Ireland

A1L-11: MBE Brain and Neural Applications
Location: 703 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Keith Wear, Food and Drug Administration
Kibo Nam, Thomas Jefferson University

8382: Differential Effects of Ultrasound Neuromodulation in Healthy Mice and Parkinson's Disease Mice
Leqi Yang, Kevin Xu, Dingyue Zhang, Yaoheng Yang, Hong Chen
Washington University in Saint Louis, United States

7841: Response Characteristics of Different Types of Neurons to Ultrasound Stimulation
Jiaru He, Jiejun Zhu, Zhihai Qiu
Guangdong Institute of Intelligence Science and Technology, China

8767: Neural Activities Causally Evoked by Single-Pulse Focused Ultrasound Stimulation
W. Apoutou N'Djin
LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France

7758: Exploring Sono-Neuromodulation Parameters via Electrophysiological Evaluation in Ultrasound-Induced Cellular Changes
Hyojin Seong, Kisang Eom, Jungho Hyuen, Jaesok Yu
DGIST, Korea

7344: Evaluating and Testing the Physical Limits of Acoustic Holograms for Transcranial Brain Applications
Rachel Burstow, Antonios Pouliopoulos
King's College London, United Kingdom

A1L-12: Wave Propagation (NWP) and Acoustic Microfluidics
Location: 500 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): James Friend, University of California-San Diego
Changting Xu, Qualcomm

8024: Numerical Simulation of Elastic Wave Transmission and Refraction Through a Layer of Aligned Tubes
Akira Sasaki, Naoki Mori, Takahiro Hayashi
Osaka University, Japan

8225: Fast Prediction for Dispersion Curves in Pipes Based on Neural Network
Han Yang, Siqi Zhang, Jian Li, Shili Chen, Zhoumo Zeng, Yang Liu
Tianjin University, China

7712: Laterally Uniform Surface Acoustic Waves for Acoustofluidics via Inverse Apodization
James Friend
University of California San Diego, United States

7141: Integration of Localized Surface Plasmon Resonance (LSPR) Sensor on SAW Device -Influence of Longitudinal Wave Radiated Into Liquid by SAW on LSPR Sensor-
Atsuya Kida, Jun Kondoh
Shizuoka University, Japan

8997: Wave Propagation and Generation in Bone
Mami Matsukawa
Doshisha University, Japan

A1L-13: Resonant Sensors and Transducers
Location: 501 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Andreja Erbes, STMicroelectronics

9021: Saw Filter Technology on POI for Sensor Applications
Sylvain Ballandras{2}, Emilie Courjon{2}, Gabrielle Aspar{2}, Julien Garcia{2}, William Daniau{1}, Gilles Martin{1}, Alexandre Ravesky{2}, Saly Ndiaye{2}, Tony Makdissy{2}, Thierry Laroche{2}, Roland Salut{1}, Philipp Achatz{2}
{1}FEMTO-ST, CNRS UMR 6174, France; {2}SOITEC SA, France

7708: On Improving the Sensitivity of Thermal Piezoresistive Resonators by a DC Thermal Pumping Scheme
Chengxin Li{2}, Hemin Zhang{3}, Chen Wang{2}, Aojie Quan{2}, Linlin Wang{2}, Mustafa Mert Torunbalci{1}, Michael Kraft{2}
{1}Google, United States; {2}KU Leuven, Belgium; {3}Northwestern Polytechnical University, China

7942: Low-Vacuum Sensing with Silicon-on-Nothing Resonating Membrane
Daniel Ssu-Han Chen, Jihang Liu, David Sze Wai Choong, Duan Jian Goh, Sagnik Ghosh, Jaibir Sharma, Yul Koh
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

8686: Electrostatic Frequency Tuning of FeGaB/AlN Magnetostrictive-Piezoelectric Cantilever Beam Resonator
Haoqi Lyu{1}, Yuxi Wang{3}, Wuhao Yang{1}, Mingye Du{3}, Zheng Wang{2}, Xiaorui Bie{1}, Tao Wu{3}, Xudong Zou{1}
{1}Aerospace Information Research Institute, Chinese Academy of Sciences, China; {2}QiLu Aerospace Information Research Institute, China; {3}School of Information Science and Technology, ShanghaiTech University, China

7215: Exploring the Quality Factor of Quartz Crystal Resonator with N-M Asymmetric Electrode Structure in 3rd Overtone Mode
Jianguo Hu{2}, Pengwen Guo{1}, Zhen Li{1}, Xiangshun Geng{1}
{1}Tsinghua University, China; {2}University of Electronic Science and Technology of China, China

A1L-14: MEL: Shear Wave Elastography Techniques 1
Location: 503 (TaiNEX 1**)**
13:00 - 14:30
Session Chair(s): Kathy Nightingale, Duke University
Stefan Catheline, INSERM LabTAU

8920: Regularized Phase Gradient Analysis for Reverberant Shear Wave Elastography
Edmundo Miranda{1}, Sebastian Merino{1}, Juvenal Ormachea{3}, Kevin Parker{2}, Roberto Lavarello{1}
{1}Pontificia Universidad Católica del Perú, Peru; {2}University of Rochester, United States; {3}Verasonics, Inc, United States

7017: Shear Wave Elastography with High Precision and Relaxed Frame Rate Utilizing 2D Radial Basis Function Reconstruction
Sajjad Afrakhteh, Libertario Demi
University of Trento, Italy

8589: 3D Multi-Plane Multi-Resolution Shear Wave Elastography
Abdelrahman Elmeliegy{4}, Matthew Urban{2}, Lynn Munday{1}, Murthy Guddati{3}
{1}Idaho National Laboratories, United States; {2}Mayo Clinic, Rochester, United States; {3}NC State University, United States; {4}NC State University (currently at University of Texas at Austin), United States

8275: Evaluation of Combination Probe for B-Mode Imaging and Focused Shear Wave Elastography
Yu-Hsuan Chao{2}, Kyle Spratt{1}, Mark Hamilton{1}, Kang Kim{3}, John Cormack{4}
{1}Applied Research Laboratories, University of Texas at Austin, Austin, TX, United States; {2}Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States; {3}Medicine and Bioengineering, University of Pittsburgh, Pittsburgh, PA, United States

8456: Characterization of Anisotropic Lattice-Structured Phantoms Using 3D Rotational Shear Wave Elasticity Imaging (3D-RSWEI)
Shruthi Srinivasan{1}, Daniel Yoon{2}, Margrethe Ruding{2}, Kevin Eckstein{2}, Ned Rouze{1}, Mark Palmeri{1}, David Bradway{1}, Wren Wightman{1}, Derek Chan{1}, Kaden Bock{1}, Philip Bayly{2}, Kathryn Nightingale{1}
{1}Duke University, United States; {2}Washington University, United States

8345: Three-Dimensional Vibration-Controlled Shear Wave Elastography in the Lower Back
John Cormack{4}, Maryam Satarpour{3}, Zhiyu Sheng{4}, Yu-Hsuan Chao{3}, Allison Bean{5}, Ryan Nussbaum{5}, Jiantao Pu{6}, Ajay Wasan{1}, Kang Kim{2}
{1}Anesthesiology and Perioperative Medicine and Psychiatry, University of Pittsburgh, Pittsburgh PA, United States; {2}Bioengineering and Medicine, University of Pittsburgh, Pittsburgh PA, United States; {3}Bioengineering, University of Pittsburgh, Pittsburgh PA, United States; {4}Medicine, University of Pittsburgh School of Medicine, Pittsburgh, PA, United States; {5}Physical Medicine and Rehabilitation, University of Pittsburgh School of Medicine, Pittsburgh PA, United States; {6}Radiology, Ophthalmology, and Bioengineering, University of Pittsburgh, Pittsburgh PA, United States

A1L-01: MBB: Aberration Correction & Sound Speed Estimation
Location: 506 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Chulhong Kim, Pohang University of Science and Technology
Daniel Rohrbach, Verasonics

8190: Skull-Aberration Correction for Non-Invasive Doppler Imaging of the Rat Brain
Rick Waasdorp{1}, Eleonora Muñoz-Ibarra{1}, Baptiste Heiles{1}, Flora Nelissen{2}, Valeria Gazzola{2}, Guillaume Renaud{1}, David Marescsa{1}
{1}Delft University of Technology, Netherlands; {2}Netherlands Institute for Neuroscience, Netherlands

8661: NeRVE: Neural Representation Velocity Estimation a Differentiable Beamforming Approach Using Implicit Neural Representations for Sound Speed Estimation and Autofocusing
Walter Simson, Benjamin Frey, Dongwoon Hyun, Jeremy Dahl
Stanford University, United States

8695: Simultaneous Reverberation Noise Reduction and Aberration Correction Using Wavefield Correlation
Louise Zhuang, Thurston Brevett, Dongwoon Hyun, Jeremy Dahl
Stanford University, United States

8326: Path-Based Modelization of Aberrating Layers for Efficient Aberration Correction
Baptiste Heriard-Dubreuil{2}, Adrien Besson{1}, Claude Cohen-Bacrie{1}, Jean-Philippe Thiran{3}
{1}E-Scopics, France; {2}E-Scopics / EPFL, France; {3}EPFL, Switzerland

8018: Comparative Study of Image Quality Metrics for Global Sound-Speed Estimation
Roman Denkin, Orcun Goksel
Uppsala University, Sweden

8528: EchoFrame: An Open-Source Processing Pipeline for Real-Time, Ultrafast, Ultrasound Imaging
Stefanos Florescu{2}, Luuk Verhoef{2}, Petros Arvanitis{3}, Frits Mastik{2}, Bouwe Andela{4}, Michael Brown{7}, Bas Generowicz{6}, Sebastiaan Koekkoek{2}, Michael Krumin{7}, Agnes Landemard{7}, Angelos Ntasios{1}, Leon Oostrum{4}, Richard Rau{5}, George Smaragdos{2}, Sadaf Soloukey{2}, Luxi Wei{2}, Matteo Carandini{7}, Christos Strydis{2}, Pieter Kruizinga{2}
{1}ASML, Netherlands; {2}Erasmus MC, Netherlands; {3}MVG, Greece; {4}Netherlands eScience Center, Netherlands; {5}Sonova Group, Switzerland; {6}TNO, Netherlands; {7}University College London, United Kingdom

A1L-15: Focused Ultrasound Spotlight 1
Location: 507 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Marvin Doyley, Rochester University
Frederic Padilla, Focused Ultrasound Foundation

9009: Harnessing Focused Ultrasound for Pancreatic Cancer Treatment: A Journey from Lab to Patient Since 2007
Jae Young Lee
Seoul National University Hospital, Korea

9012: Sculpting Ultrasound for Treatment with Phased Arrays and AI
Kullervo Hynynen
Sunnybrook Research Institute/University of Toronto, Canada

7591: The Function of Pcdh15 in Mediating Ultrasound Neuromodulation
Xinxin Wang{2}, Zhihai Qiu{1}, Zhen Yuan{2}
{1}Guangdong institute of intelligence science and technology, China; {2}University of Macau, China

A1L-16: MBF: Novel Vector Flow Imaging Methods
Location: 502 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Jorgen Arendt Jensen, Technical University of Denmark
Billy Yiu, Technical University of Denmark

8752: New Autocorrelation Estimator for Vector Doppler Method
Hideyuki Hasegawa
University of Toyama, Japan

7177: Staggered PRF with Double Transmission (StaBle) for Increasing the Velocity Limit of High-Frame-Rate Vector Doppler Imaging
Geraldi Wahyulaksana{3}, Colin K.L. Phoon{1}, Glenn I. Fishman{2}, Jeffrey A. Ketterling{3}
{1}Hassenfeld Children's Hospital at NYU Langone, United States; {2}NYU Langone Health, United States; {3}Weill Cornell Medicine, United States

7048: In Vivo Evaluation of the Hemodynamic Consequences of Carotid Endarterectomy by Using High-Frame-Rate Velocity Vector Imaging
Janna Ruisch{2}, Suzanne Holewijn{3}, Michel Reijnen{3}, Chris de Korte{1}, Anne Saris{1}
{1}Radboud University Medical Center, Netherlands; {2}Radboud University Medical Center & Rijnstate Hospital, Netherlands; {3}Rijnstate Hospital, Netherlands

8482: Fast 3D Vector Flow Imaging Using Taylor Approximation and Row-Column Addressed Arrays
Lasse Thurmann Jørgsen, Jørgen Arendt Jensen
Technical University of Denmark, Denmark

8781: Ultrasound Vector Flow Imaging-Based Wall Shear Stress Measurement and Validation by Phase-Contrast Magnetic Resonance Imaging
Yigang Du{1}, Haiyan Ding{2}, Xujin He{1}, Le He{2}, Linsong Deng{1}, Shuangshuang Li{1}, Lei Zhu{1}
{1}Shenzhen Mindray Bio-Medical Electronics Co., Ltd., China; {2}Tsinghua University, China

Poster Session #1 - A2aP-18: MSR: Agents, Phantoms and Applications
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Ge Zhang, Physics for Medicine Institute Paris
Sophie Heymans , KU Leuven

7028: Ultrasound Localization Microscopy Imaging by Monodisperse Microbubble Uncoupling: First Experimental Study
Giulia Tuccio{3}, Lisa Te Winkel{1}, Corinne Bruggeman{2}, Wim Van Hoeve{1}, Libertario Demi{3}
{1}Solstice, Netherlands; {2}Sosltice, Netherlands; {3}University of Trento, Italy

7083: Detection of Cerebral Micro-Vasospasm Using 3D Transcranial Super-Resolution Ultrasound
Georges Chabouh{2}, Louise Denis{2}, Myriam Abioui-Mourgues{3}, Suzanne Goursaud{1}, Maxime Gauberti{4}, Denis Vivien{4}, Cyrille Orset{3}, Sara Martinez de Lizarrondo{3}, Olivier Couture{2}
{1}Department of Clinical Research, Caen-Normandie University Hospital, Caen, France, France; {2}Laboratoire d'imagerie biomédicale Sorbonne Université CNRS INSERM, France; {3}Normandie University, UNICAEN, INSERM UMR-S U1237, France; {4}Normandie University, UNICAEN, INSERM UMR-S U1237, Department of Clinical Research, Caen-Normandie U, France

7250: Assessment of Carotid Plaque Neovascularization In Vivo in Humans Using Ultrasound Localization Microscopy
Henri Leroy{1}, Anatole Jimenez{1}, Louise Wang{2}, Nassim Mohamedi{2}, Clément Papadacci{1}, Pierre Julia{3}, Emmanuel Messas{2}, Tristan Mirault{2}, Guillaume Goudot{2}, Mathieu Pernot{1}
{1}Institute Physics for Medicine Paris, France; {2}Vascular medicine department, Georges Pompidou European hospital, APHP, Paris, France; {3}Vascular surgery department, Georges Pompidou European hospital, APHP, Paris, France

7261: Ultrasound-Compatible Microfluidic Devices for Investigating Clot and Plaque Dynamics Using Ultrasound Localization Microscopy
Yarin Gershman, Grigori Shapiro, Tali Ilovitsh
Tel Aviv University, Israel

7289: Dynamic Erythrocytes Ultrasound Localization Microscopy Through ECG Gating Approach
Chih-Yang Lin, Chih-Chung Huang
National Cheng Kung University, Taiwan

7355: Transcutaneous Super-Resolution Ultrasound Imaging Using Erythrocytes Versus Microbubbles in a Rabbit Kidney
Mostafa Amin Naji{3}, Matthieu Toulemonde{1}, Jipeng Yan{1}, Kai Riemer{2}, Peter Weinberg{1}, Mengxing Tang{1}, Jørgen Arendt Jensen{3}
{1}Imperial College London, United Kingdom; {2}Institute of Mountain Emergency Medicine, United Kingdom; {3}Technical University of Denmark, Denmark

7521: Super-Resolution Ultrasound Imaging Using Erythrocytes on an Axillary Human Lymph Node
Mostafa Amin Naji{1}, Nathalie Sarup Panduro{2}, Seyed Mohammad Mahdi Tabatabaei Majd{1}, Ali Salari{1}, Michael Bachmann Nielsen{2}, Charlotte Mehlin Sørensen{2}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

7566: Monodisperse Microbubbles Versus SonoVue For: Transcranial 3D Ultrasound Localization Microscopy (ULM) in Mice
Georges Chabouh{1}, Macy Vreman{4}, Louise Denis{1}, Myriam Abioui-Mourgues{2}, Denis Vivien{3}, Cyrille Orset{2}, Tim Segers{4}, Olivier Couture{1}
{1}Laboratoire d'imagerie biomédicale Sorbonne Université CNRS INSERM, France; {2}Normandie University, UNICAEN, INSERM UMR-S U1237, France; {3}Normandie University, UNICAEN, INSERM UMR-S U1237, Department of Clinical Research, Caen-Normandie U, France; {4}Physics of Fluids Group, MESA Institute for Nanotechnology, Technical Medical (TechMed) Center, Un, Netherlands

7617: Capillary-Scale Hydrogel-Based Microvascular Models – Demonstration of 3D Super-Resolution Ultrasound Contrast Imaging
Shusei Kawara, Jingwen Zhu, Brian Cunningham, James Bezer, Meng-Xing Tang, Sam Au, James Choi
Imperial College London, United Kingdom

7977: Velocity Model-Based Aberration Correction and Transcranial Ultrasound Localization Microscopy in Rat Brain
Yuanyang Guo, Dean Ta, Kailiang Xu
Fudan University, China

7980: The Feasibility of Using Super Resolution Imaging for Studying the Vascular Development of the Zebrafish
Xiang-Ting Wang, Chih-Chung Huang
National Cheng Kung University, Taiwan

8546: Aberrating Murine Skull Microvascular Phantom for Super-Resolution Ultrasound Imaging
Jaime Parra Raad, Mark Solomon, Daniel Lock, Kirsten Christensen-Jeffries
King's College London, United Kingdom

Poster Session #1 - A2bP-18: High Power, Temperature Effects & Thin Films (PTE & PTF)
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Ji Wang, Ningbo University, China

7794: Two-Layer Polarization Inverted SiAlN Film BAW Resonator Operating in Second-Overtone Mode
Kei Fukunaga, Masashi Suzuki, Shoji Kakio
university of yamanashi, Japan

8201: Surface Acoustic Wave Resonators at High Frequency on Grown Lithium Niobate Thin Film on (104)-Oriented Sapphire
Léa La Spina{2}, William Daniau{2}, Pascal Boulet{3}, Vincent Astié{1}, Jean-Manuel Decams{1}, Samuel Margueron{2}, Vincent Laude{2}, Ausrine Bartasyte{2}
{1}Annealsys, France; {2}FEMTO-ST Institute, France; {3}Jean Lamour Institute, France

8647: Thermometric Profiling of Capacitive Micromachined Ultrasonic Transducer Surface via Micro-Fabricated Fractal Resistive Thermometer
Jungmin Lee{1}, Joo Young Pyun{1}, Woosung Park{2}, Hyeonggeun Yu{1}, Butrus Thomas Khuri-Yakub{3}, Byung Chul Lee{1}
{1}Korea Insitute of Science and Technology, Korea; {2}Sogang University, Korea; {3}Stanford University, United States

8694: Characteristics of Shear-Horizontal-Mode Circumferential Waves Propagated in ZnO Films/Silica Glass Pipe Structure Under Liquid Load
Sodai Yamaguchi{1}, Shinji Takayanagi{1}, Takahiko Yanagitani{2}
{1}Doshisha university, Japan; {2}Waseda university, Japan

Poster Session #1 - A2aP-19: MBB: Novel Beamforming Approaches
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Dongwoon Hyun, Stanford University
Bryan Cunitz, University of Washington

7014: Acquisition and Processing of V-Wave Ultrasound Beams for Fast Frame Rate
Chuck Peng, Jun Tang
Cloudstream, United States

7157: Simplified Delay-and-Sum Implementation for Plane Wave Ultrasound Imaging
Ninghao Wang{1}, Zhitian Shen{1}, Yiheng Li{2}, Yang Jiao{1}, Yaoyao Cui{1}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}University of Science and Technology of China, China

7258: Two-Stage Filtered Higher Order Delay Multiply and Sum Beamformer for Ultrasound Plane Wave Imaging with Linear Complexity
Christian Marinus Huber{2}, Magdalena Eschenbacher{1}, Helen Schreiner{1}, Helmut Ermert{2}, Ingrid Ullmann{1}, Stefan Lyer{2}
{1}Institute of Microwaves and Photonics (LHFT), Germany; {2}Section of Experimental Oncology and Nanomedicine, Professorship for AI-Controlled Nanomaterials, Germany

8017: Cross-Angular Delay Multiply and Sum Beamforming for Enhanced Computationally Efficient Image Formation
Cameron Smith{2}, Matthieu Toulemonde{2}, Marcelo Lerendegui{2}, Kai Riemer{2}, Dina Malounda{1}, Peter Weinberg{2}, Mikhail Shapiro{1}, Meng-Xing Tang{2}
{1}California Institute of Technology, United States; {2}Imperial College London, United Kingdom

8197: High Spatiotemporal Resolution Ultrasound Imaging Based on Single Plane Wave
Yaoting Yue, Huchang Guan, Chen Jiang, Xin Liu, Dean Ta
Fudan University, China

8519: Genetic Algorithm-Based Sparse Matrix Beamforming
Rui Amendoeira Esteves, Sina Sadeghpour, Chen Wang, Michael Kraft
KU Leuven, Belgium

8549: Image Quality Improvements by Correction of Speed of Sound in an Intermediate Path
Bryan Cunitz, Simón Bedoya, Jack Potter, Ron Daigle
Verasonics, Inc., United States; Verasonics, Inc., Colombia; Verasonics, Inc., United Kingdom

8658: SLSC Beamforming with Filtered Cross-Correlation-Induced Harmonics to Improve Spatial Resolution
Manik Kakkar, Muyinatu Bell
Johns Hopkins University, United States

8708: Harmonic SLSC Beamforming Theory
Mahban Gholijafari, Muyinatu Bell
Johns Hopkins University, United States

8885: Spatial Coherence Beamforming in Lung Ultrasound Imaging from Numerical Simulations to Ex Vivo Large Animal Data
Oleksii Ostras, Francisco Santibanez, Gianmarco Pinton
University of North Carolina at Chapel Hill, United States

8966: Cross Hyper-Beamforming
Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

Poster Session #1 - A2bP-19: MIM: AI for imaging 2
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): John Cormack , University of Pittsburgh
Kang Kim, University of Pittsburgh

7334: Domain-Knowledge-Enhanced Integrated Model for Lung Ultrasound Video Scoring
Yiwen Liu{1}, Wenyu Xing{2}, Chao He{3}, Mingbo Zhao{1}
{1}Donghua University, China; {2}Fudan University, China; {3}Shanghai Changzheng Hospital, China

7359: Exploring Training Data Setup to Enhance Myocardium Motion Estimation in Cardiac Ultrasound
Andrea Pulido{2}, Nitin Burman{2}, Sandro Queirós{3}, Jan D'Hooge{1}
{1}Ku Leuen, Belgium; {2}Ku Leuven, Belgium; {3}University of Minho, Portugal

7400: Deep Learning-Based Fundamental Frequency Conversion for a Mechanically Rotating Dual-Element Ultrasound Endoscopic Probe
Moon Hwan Lee{2}, Hah Min Lew{4}, Jae Seong Kim{1}, Jaegeun Park{1}, Sangyeon Youn{5}, Jihun Kim{3}, Hee Man Kim{6}, Jae Youn Hwang{2}
{1}Alpinion Medical Systems, Korea; {2}DGIST, Korea; {3}Kangnam University, Korea; {4}Klleon AI Research, Korea; {5}Samsung Electronics, Korea; {6}Yonsei University College of Medicine, Korea

7683: Model-Based Speed-of-Sound Reconstruction via Interpretable Pruned Priors
Can Deniz Bezek, Orcun Goksel
Uppsala University, Sweden

8453: Improved Localization of High-Concentration Microbubbles in Ultrafast Ultrasound Imaging Using a Watershed-Based CNN Algorithm
Duong Hung Pham, Denis Kouamé
IRIT Laboratory, France

8464: Deep Learning-Based Parity Detection: A Comparative Study of MRI and Ultrasound
Simon Verlinde, Florian Ramakers, Adéla Samešová, Jan Deprest, Helena Williams
KU Leuven, Belgium

8573: Deep Reinforcement Learning Approach for Adaptive Ultrasound Image Reconstruction with a Flexible Array Probe
Piotr Jarosik{1}, Michal Byra{1}, Ziemowit Klimonda{2}, Pawel Dluzewski{1}, Marcin Lewandowski{2}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}us4us Ltd., Poland

8772: A Novel Diffusion-Based Deep Learning Model to Suppress HIFU Interference During Real-Time Monitoring in Ultrasound-Guided HIFU Surgery
Dejia Cai{1}, Kun Yang{4}, Xintao Liu{2}, Jiahong Xu{1}, Yao Ran{1}, Yang Xu{3}, Xiaowei Zhou{1}
{1}Chongqing Medical University, China; {2}East China Normal University, Shanghai, China; {3}Hubei Medical Devices Quality Supervision and Test Institute, China; {4}Tianjin University, China

8818: TranSpeed: Transformer-Based Generative Adversarial Network for Speed-of-Sound Reconstruction in Pulse-Echo Mode
Haotian Chen{1}, Yuanbin Zhu{2}, Jingyi Zuo{2}, Md Rizwanul Kabir{2}, Aiguo Han{2}
{1}University of Illinois Urbana-Champaign, United States; {2}Virginia Tech, United States

Poster Session #1 - A2bP-20: MTC: Machine learning methods for tissue characterization
Location: P03 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Mengxing Tang, Imperial College London

7544: Implicit Neural Representations for Speed-of-Sound Estimation in Ultrasound
Michal Byra{1}, Piotr Jarosik{2}, Piotr Karwat{1}, Ziemowit Klimonda{1}, Marcin Lewandowski{2}
{1}Polish Academy of Sciences, Poland; {2}US4US, Poland

7802: Vision Transformer Network Based on Ultrasonic Radiofrequency Data for Red Blood Cell Aggregation Classification
Jinsong Guo, Yufeng Zhang, Bingbing He, Xun Lang, Jinyuan Li
Yunnan University, China

8318: Comparison of Radio Frequency Vs Beamformed Ultrasound Data for Infarct Classification with CNNs
Paulo Tostes{1}, Anca Balinisteanu{3}, Sara Ferreira{2}, Helena Williams{1}, Jens-Uwe Voigt{1}, Jan D'Hooge{1}
{1}KU Leuven, Belgium; {2}U Hasselt, Belgium; {3}University of Medicine and Pharmacy, Bucharest, Romania

8671: Unsupervised Domain Adaptation Method for Deep Learning Based Speed-of-Sound Estimation
Jaebin Lee, Hyunwoo Cho, Yangmo Yoo
Sogang University, Korea

8683: Generalizable Deep Learning for Pulse-Echo Speed of Sound Imaging via Time-Shift Maps
Haotian Chen{1}, Jingyi Zuo{2}, Yuanbin Zhu{2}, Md Rizwanul Kabir{2}, Aiguo Han{2}
{1}University of Illinois Urbana-Champaign, United States; {2}Virginia Tech, United States

8947: Deep Learning for Ultrasound Attenuation Coefficient Estimation
Roberto Marín, Itamar Salazar-Reque, José Timaná, Roberto Lavarello
Pontificia Universidad Católica del Perú, Peru

Poster Session #1 - A2aP-20: MTH: Brain Therapy
Location: P03 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00

7164: Non- invasive Ultrasound Stimulation in a Mouse Model of Rett Syndrome Rescues Hippocampal Memory and Social Skills
Xiaohui Huang
Hong Kong Polytechnic University, China

7321: Non-Invasive Sciatic Nerve Stimulation by Focused Ultrasound for Hematopoietic System Modulation
Jen-Chin Hsieh, Ching-Hsiang Fan
National Cheng Kung University, Taiwan

7568: Enhancing Transcranial Focused Ultrasound Simulation Accuracy: Analytical and Experimental Validation Across Sub-MHz Frequencies
Han Li, Isla Barnard, Tyler Halliwell, Tom Gilbertson, Zhihong Huang
University of Dundee, United Kingdom

7827: Brain Regional Specificity of Ketamine Action Revealed by Ultrasonic Drug Uncaging Using Acoustomechanically Activatable Liposomes
Brenda Yu{2}, Sedona Ewbank{2}, Kanchan Sinha Roy{2}, Matine Azadian{2}, Mahaveer Purohit{2}, Yun Xiang{2}, Alex Hart{2}, Jeffrey Wang{1}, Ali Taoube{2}, Diego Gomez Lopez{3}, Raag Airan{2}
{1}Johns Hopkins Hospital, United States; {2}Stanford University, United States; {3}Vanderbilt University, United States

7869: Non-Invasive Neuromodulation with Piezoelectric MoS_2 Nanosheets-Loaded Microbubbles for Epilepsy Therapy
Min-Hwa Chou{2}, Ching-Hsiang Fan{1}, Chih-Kuang Yeh{2}
{1}National Cheng Kung University, Taiwan; {2}National Tsing Hua University, Taiwan

8248: Targeted Modulation of GABAergic Neurons by Sonogenetics to Suppress Epileptic Seizures
Thi-Nhan Phan{3}, Ching-Hsiang Fan{2}, Hsien-Chu Wang{3}, Hao-Li Liu{1}, Yu-Chun Lin{3}, Chih-Kuang Yeh{3}
{1}Chang Gung University, Taiwan; {2}National Cheng Kung University, Taiwan; {3}National Tsing Hua University, Taiwan

8249: Enhanced Blood-Brain Barrier Opening Induced by Ultrasound Combined with Microbubble Clusters
Shifang Guo, Yan Li, Wanlin Jia, Zhen Ya, Mingxi Wan
Xi'an Jiaotong University, China

Poster Session #1 - A2aP-21: TPM: Piezoelectric Transducer Materials and Applications
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Franck Levassort, Francois Rabelais University of Tours

7496: High-Power Testing System and Method for Piezoelectric Material Parameters
Xiaobo Wang, Wenchao Xue, Yuliang Zhu, Tao Han, Chengtao Luo
Shanghai Jiao Tong University, China

7707: A Flexible and Open-Source Pe Loop Tracer for Polymer Thin-Film Transducers
Marc-Andrè Wessner{1}, Federico Villani{1}, Sofia Papa{3}, Kirill Keller{2}, Laura Ferrari{3}, Francesco Greco{3}, Luca Benini{1}, Christoph Leitner{1}
{1}ETH Zurich, Switzerland; {2}Graz University of Technology, Austria; {3}School of Advanced Studies Sant'Anna Pisa, Italy

7941: Investigation of AC Poling for PZT/PZT Sol-Gel Composite
Ono Ryota, Kobayashi Makiko
Kumamoto University, Japan

8060: Efficient Deposition of Potassium Sodium Niobate ($(K_{0.5}Na_{0.5})NbO_3$, KNN) Thin Film on SiO_2 Substrate by Low-Pressure RF Magnetron Sputtering
Hyunsoo Jeong, Heesoo Kim, Hyungham Kim
Pohang University of Science and Technology, Korea

8076: Characterization of Two-Photon Polymerization 3D Printing Materials for Acoustic Matching Layer and Lens Fabrication
Tönnis Trittler{1}, Susan Walter{2}, Severin Schweiger{3}, Robert Kirchner{4}, Sören Köble{3}, Julian Kober{1}, Jochen Hampe{1}, Gerhard Fettweis{5}, Henning Heuer{2}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, TU Dresden Faculty of Medicine Carl Gustav Carus, Germany; {2}Fraunhofer Institute for Ceramic Technologies and Systems, Germany; {3}Fraunhofer Institute for Photonic Microsystems, Germany; {4}HETEROMERG GmbH, Germany; {5}Vodafone Chair Mobile Communications Systems, Department of Electrical Engineering, TU Dresden, Germany

8319: Ultrasonically Induced Electrical Potentials in Biodegradable PLLA Films
Shouta Kitajima, Taiga Wada, Mami Matsukawa
Doshisha University, Japan

8353: Properties of Textured Piezoceramics Measured with Miniature Samples
Anna Alexandrou{1}, Sandy Cochran{1}, Richard O'Leary{2}, Sakineh Fotouhi{3}
{1}University of Glasgow, United Kingdom; {2}University of Strathclyde, United Kingdom; {3}University of the West of England Bristol, United Kingdom

8704: Temperature Coefficient of Frequency Characterization for a 20nm Free-Standing $Hf_{0.5}Zr_{0.5}O_2$ Membrane by the Second-Order Mode
Wuhao Yang{1}, Haoqi Lyu{1}, Hai Zhong{4}, Zhuohui Liu{2}, Jingyi Zhang{1}, Zheng Wang{3}, Xiaorui Bie{1}, Chen Ge{2}, Xudong Zou{1}
{1}Aerospace Information Research Institute, Chinese Academy of Sciences, China; {2}Beijing National Laboratory for Condensed Matter Physics Institute of Physics, Chinese Academy of Sc, China; {3}QiLu Aerospace Information Research Institute Aerospace Information Research Institute, China; {4}School of Physics and Optoelectronics Engineering Ludong University, China

8897: Alternating Current Polarization to Enhance 60MHz PMN-PT 1-3 Composite for Medical Ultrasound Application
Wei-Yi Chang{1}, Jian Tian{1}, Patrick McGowan{1}, Huaiyu Wu{2}, Xiaoning Jiang{2}
{1}CTS Advanced Materials, United States; {2}North Carolina State University, United States

Poster Session #1 - A2bP-21: MBF: Novel Blood Flow Imaging and Signal Processing Techniques
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Alessandro Ramalli, University of Florence

7347: Iteratively Reweighted Least Square rPCA Clutter Filtering for High-Sensitivity Ultrasound Microvascular Imaging
Baohui Fang{2}, Lijie Huang{1}, Jianwen Luo{1}, Yinran Chen{2}
{1}Tsinghua University, China; {2}Xiamen University, China

7579: Ultrafast Power Doppler Imaging with Real-Time SVD Clutter Filtering
Baptiste Pialot, Francesco Guidi, Giulio Bonciani, Piero Tortoli, Alessandro Ramalli
University of Florence, Italy

7897: Ultrasound Doppler Imaging of Microvascular Blood Flow at 30 MHz
Matthew Bruce{3}, Matthew Lowerison{2}, Jennifer Harmon{3}, Charles Tremblay-Darveau{1}, Pengfei Song{2}
{1}Philips Medical Systems, United States; {2}University of Illinois, United States; {3}University of Washington, United States

7905: Low SNR Velocity Estimation: Does Auto-Correlation Beat Cross-Correlation and Coded Excitation?
Joosje de Bakker{2}, Ingvild Ekroll{1}, Anne Saris{2}, Jørgen Avdal{1}
{1}Norwegian University of Science and Technology, Norway; {2}Radboud University Medical Center, Netherlands

7970: Super Resolution Reconstruction of Hemodynamic Parameter Fields from Ultrafast Ultrasound Image Velocimetry Using Augmented Mapping Physics-Informed Neural Network
Meiling Liang{2}, Jiacheng Liu{2}, Hao Wang{1}, Hanbing Chu{2}, Liyuan Jiang{2}, Chao Guo{2}, Yujin Zong{2}, Mingxi Wan{2}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

8325: Total Variational Robust PCA for Ultrasound Microvascular Clutter Filtering
Baohui Fang, Yinran Chen
Xiamen University, China

8467: 2-D Wall and Flow Tracking for Simultaneous Blood Pressure and Volume Flow Rate Measurement
Shao-Kai Lu, Ching-Yao Lu, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

8610: A Multi-Stage Filtering Framework for Noise Removal in Contrast-Free Ultrasound Microvasculature Imaging
Soroosh Sabeti, Mostafa Fatemi, Azra Alizad
Mayo Clinic, United States

8715: Dealiasing Color Doppler by Combining Image Segmentation with Multi-PRF Sampling
Hsin-Yu Chen, Hsiao-Liang Cheng, Pai-Chi Li
National Taiwan University, Taiwan

Poster Session #1 - A2bP-22: MIS: Image and Signal Processing in Ultrasound Imaging 3
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Daniele Mazierli, University of Florence

7107: CAMDA Net: Cross Attention Multi-Modal Domain Adaptation Using B-Mode and Sinogram
Hyeonjik Lee{2}, Seokhwan Oh{2}, Myeong-Gee Kim{1}, Young-Min Kim{2}, Guil Jung{2}, Sangyun Kim{2}, Hyuk-Sool Kwon{3}, Hyeon-Min Bae{2}
{1}Barreleye, Korea; {2}KAIST, Korea; {3}Seoul National University Bundang Hospital, Korea

7185: Localisation and Decoding of Acoustoelectric Brain Imaging Based on Anisotropic Brain Models
Xue Wang{2}, Hao Zhang{2}, Chen Zhang{2}, Guowei Chen{2}, Jia He{1}, Mingyu Li{2}, Feng He{2}, Minpeng Xu{2}, Dong Ming{2}
{1}Tianjin Medical University, China; {2}Tianjin University, China

7450: Frame Interpolation of Ultrasound IQ Data Using Dictionary Learning and SFA Method
Tengfei Wang{2}, Teng Ma{2}, Lei Li{1}, Chongchong Guo{1}
{1}Mindray, China; {2}Shenzhen Institute of Advanced Technology,Chinese Academy of Sciences, China

7874: Initial Investigation of Packet Average of an Evaluation Index for Estimation of Average Speed of Sound in Blood Flow Imaging
Ryo Nagaoka, Masaaki Omura, Hideyuki Hasegawa
University of Toyama, Japan

8543: Ultrasound Attenuation Coefficient Estimation: Comparison Among Different Beamforming and Data Acquisition Methods
Hamid Moradi{1}, Farah Deeba{2}, Robert Rohling{1}
{1}University of British Columbia, Canada; {2}University of North Carolina at Charlotte, United States

8580: A Meta Matching Layer to Image Behind Calcified Plaques
Ashkan Ghanbarzadeh-Dagheyan{2}, Erqian Dong{1}, Nicholas Fang{1}
{1}University of Hong Kong, Hong Kong; {2}University of Twente, Netherlands

8656: Abdominal Sound Speed Estimation Through Machine Learning
Jun Hong Park{1}, Ryan Wickman{2}, Omar Yunis{2}, Dongwoon Hyun{1}, Chrysanthe Preza{2}, Carl Herickhoff{2}
{1}Stanford University, United States; {2}University of Memphis, United States

8693: Enhanced Accuracy in Shape Estimation for Flexible Ultrasonic Transducer Array Probes Applying Modified Thompson Tau Method Based on Direct Waves Between Elements
Shinryu Matsuoka{2}, Masayuki Tanabe{1}
{1}Faculty of Advanced Science and Technology, Kumamoto University, Japan; {2}Graduate School of Science and Technology, Kumamoto University, Japan

Poster Session #1 - A2aP-22: TMU: Capacitive Micromachined Ultrasonic Transducers 2
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Monica La Mura, Roma Tre University

7033: Modeling and Simulation of a Piezoelectric-Capacitive Hybrid Micromachined Ultrasonic Transducer
Yan Wang{1}, Ning Lv{1}, Leming He{1}, Weijiang Xu{2}, Jia Zhou{1}, Junyan Ren{1}
{1}Fudan University, China; {2}Univ. Polytechnique Hautsde-France, France

7042: Accurately Predicting the Performance of Polymer-Based CMUTs by Coupling Finite-Element and Analytic Models
Martin Angerer, Jonas Welsch, Carlos Gerardo, Edmond Cretu, Robert Rohling
UBC, Canada

7444: Optimal Acoustical Energy Transfer Using CMUT with Discrete Self-Biasing Circuit
Paul Roche{1}, Dominique Certon{1}, Samuel Callé{1}, Jean-Charles Le Bunetel{1}, Kevin Nadaud{1}, Dimitri Galayko{2}, Guylaine Poulin-Vittrant{1}
{1}GREMAN UMR 7347, Université de Tours, CNRS, INSA-CVL, 16 rue Pierre et Marie Curie, 37071 Tours, Fr, France; {2}Sorbonne Université - LIP6/SOC, France

7684: CMUT with Step Structure and Long Rectangular Membranes for High Sensitivity Ultrasound Imaging
Yousef Valizadeh Yaghmourali, Shayan Khorassany, Eric Dew, Mohammad Maadi, Roger Zemp
University of Alberta, Canada

7706: Transparent Top-Orthogonal-to-Bottom Electrode (TOBE) CMUT Arrays for Through-Illumination Volumetric Photoacoustic Imaging
Mahyar Ghavami, Darren Dahunsi, Roger Zemp
University of Alberta, Canada

7895: A Dual-Phase Annular Array CMUT
Young Jin Cho, min Chul Kim, min Seok Kim, Jin Hyuk Kim, hyeong Geun Jo, Chang Hoon Lee, Kwan Kyu Park
Hanyang University, Korea

8063: Analysis and Detection of Vertical Shorts in Row-Column Addressed CMUT Arrays: Towards Enhanced Quality Control and Inspection
Kasper Fløng Pedersen, Rune Sixten Grass, Mads Alexander Weile, Kitty Steenberg, Erik Vilain Thomsen
Technical university of Denmark, Denmark

8144: In-Situ Performance Evaluation of Silicon-Based Ultrasonic Transducer Under Extreme Thermal Conditions
Seonghun Cho{2}, Dong-Hyun Kang{2}, Jungmin Lee{2}, Woosung Park{4}, Jae-Woong Jeong{1}, Arif Sanli Ergun{3}, Butrus Thomas Khuri-Yakub{5}, Byung Chul Lee{2}
{1}Korea Advanced Institute of Science and Technology (KAIST), Korea; {2}Korea Institute of Science and Technology (KIST), Korea; {3}Orchard Ultrasound Innovation, United States; {4}Sogang University, Korea; {5}Stanford University, United States

8159: Preventing Vertical Short-Circuits in CMUTs Through Low Voltage Anodic Bonding
Kitty Steenberg, Rune Sixten Grass, Erik Vilain Thomsen, Kasper Fløng Pedersen
Technical University of Denmark, Denmark

8281: Broadband Characterization of Nonlinearities in Ultrasonic Transducers with Swept-Sine Technique
Tönnis Trittler{1}, Marco Arnegger{1}, Julian Kober{1}, Edgar Manfred Gustav Dorausch{4}, Omid Chaghaneh{1}, Cornelius Kühnöl{4}, Marco Kircher{3}, Jochen Hampe{1}, Henning Heuer{2}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, TU Dresden Faculty of Medicine Carl Gustav Carus, Germany; {2}Fraunhofer Institute for Ceramic Technologies and Systems, Germany; {3}Fraunhofer Institute for Photonic Microsystems, Germany; {4}Vodafone Chair Mobile Communications Systems, Department of Electrical Engineering, TU Dresden, Germany

8327: Near-Field High-Pressure for Tactile Stimulation Based on Under-Glass Capacitive Micromachined Ultrasonic Transducer (CMUT)
Min Chul Kim, Young Jin Cho, Min Seok Kim, Jin Hyuk Kim, Hyeong Geun Jo, Chang Hoon Lee, Kwan Kyu Park
Hanyang University, Korea

8445: Transparent Ultrasensitive Buckled Dome Etalon (BuDE) Ultrasound Transducers
Isaak Meadus, Mahyar Ghavami, Roger Zemp
Department of Electrical & Computer Engineering, University of Alberta, Canada

8967: Advanced Design of Capacitive Micromachined Ultrasonic Transducers with Ultra-Low Quality Factor
Amirhossein Moshrefi, Mohammadreza Kolahdouz Moghaddam, Ilgar Jafarsadeghi Pournaki, Abid Ali, Frederic Nabki
École de technologie supérieure ÉTS, Canada

8615: Fast and Accurate Estimation of Collapse and Snapback Voltages of CMUTs
Muhammad Usman Khan{3}, Monica La Mura{3}, Rob van Schaijk{2}, Marta Saccher{1}, Ronald Dekker{2}, Alessandro Stuart Savoia{3}
{1}Delft University of Technology, Netherlands; {2}Philips, Netherlands; {3}Roma Tre University, Italy

Poster Session #1 - A2aP-23: Opto-Acoustics & Phononics (POA & PPN) 2
Location: P06 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Vincent Laude, FEMTO-ST / CNRS

7224: Hybrid Functional Optoacoustic Ultrasound Bio-Microscopy for Volumetric Angiography and Oximetry
Weiye Li, Yu-Hang Liu, Zhenyue Chen, Johannes Rebling, Urs Hofmann, Daniil Nozdriukhin, Xose Luis Dean-Ben, Daniel Razansky
University of Zurich, Switzerland

7510: Measurement of Airborne Ultrasound with Quasi-Heterodyne Interferometer by Utilizing Refractive Index Modulation of Air
Kentaro Nakamura, Yuji Wada
Tokyo Institute of Technology, Japan

8107: Complex Dispersion of Rayleigh-Bloch Waves
Vincent Laude
Centre National de la Recherche Scientifique, France

8155: An Ultrasound and Photoacoustic Dual-Mode Temperature Imaging Method and System Based on Improved U-Net Deep Learning Network
Yiming Ma{2}, Yuelin Han{2}, Lingyu Ma{2}, Mingjian Sun{1}
{1}Harbin Institute of technology, China; {2}Harbin Institute of technology, China

8336: Dispersion of Surface Acoustic Waves on Silicon Determined with Surface Brillouin Scattering
Fehima Uagarak{2}, Alexis Mosset{1}, Vincent Laude{1}
{1}Centre National de la Recherche Scientifique, France; {2}Université de Franche-Comté, France

8348: Frequency Response of a Dual Layer SPR-Type Ultrasonic Receiver
Kota Dezao, Shuta Kodama, Shouta Kitajima, Hayato Ichihashi, Mami Matsukawa
Doshisha university, Japan

8564: Guiding Light Through Absorbing Structures Using a Linear Transducer at Diagnostic Intensities
Volodymyr Rohovets, Georg Schmitz, Maxim Cherkashin
Ruhr University Bochum, Germany

8653: Physics-Based Artificial Intelligence (PHAI) Model for Estimating the Diameter of Blood Vessels Using PhotoAcoustic PlethysmoGraphy (PAPG)
Sumit Agrawal, John Schneider, Hrishikesh Panchawagh
Qualcomm, United States

A2bP-23: MCA: Molecular and Therapeutic Imaging
Location: P06 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Antonios Pouliopoulos, King's College London

7560: 3D Contrast Enhanced Ultrasound Angiography and Perfusion Imaging in Adult Neurocritical Care After Sub-Arachnoid Hemorrhage
Louise Denis{1}, Clément Gakuba{2}, Georges Chabouh{1}, Maxime Gauberti{2}, Sylvain Bodard{1}, Arthur Chavignon{3}, Vincent Hingot{3}, Denis Vivien{2}, Olivier Couture{1}
{1}LIB (Sorbonne Universite, CNRS, INSERM), France; {2}Normandie Univ, UNICAEN, INSERM, PhIND, CHU Caen, France; {3}Resolve Stroke, France

8008: Nondestructive Ultrasound Molecular Imaging Based on a Neural Network Approach Utilizing Post-Processed Ultrasound Images
Jihye Baek, Dongwoon Hyun, Arutselvan Natarajan, Farbod Tabesh, Ramasamy Paulmurugan, Jeremy Dahl
Stanford University, United States

8115: High-Contrast Nonlinear Ultrasound Imaging of Acoustic Reporter Genes
Hugues Favre, Bung Min Park, Eleonora Muñoz-Ibarra, Dion Terwiel, David Maresca
TU Delft, Netherlands

8492: Imaging of Macrophages in Solid Tumors with Ultrasound
Pranav Premdas, Chulyong Kim, Hohyun Lee, Yann Ferry, Costas Arvanitis
Georgia Institute of Technology, United States

8718: Time-Intensity-Based Automatic Quantification of Contrast-Enhanced Harmonic Images for Differential Diagnosis of Pancreatic Tumors
Kuan-Chih Chen, Hsiu-Po Wang, Pai-Chi Li
National Taiwan University, Taiwan

8910: In Vivo Evaluation of CNR and Resolution of Dual-Frequency Transducers with Different Transmit and Receive Characteristics for Clinical Acoustic Angiography
Kathlyne Jayne Bautista{3}, Jianhua Yin{1}, Emmanuel Cherin{1}, Stuart Foster{2}, Christine Demore{2}, Paul Dayton{3}
{1}Sunnybrook Research Institute, Canada; {2}Sunnybrook Research Institute, University of Toronto, Canada; {3}University of North Carolina at Chapel Hill/North Carolina State University, United States

A2bP-24: MPA: Preclinical Photoacoustic Imaging
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Parag Chitnis, George Mason University

7112: Photoacoustic Characterisation of Photothermal Nanoparticles Containing Metal-Bis(Dithiolene) Complexes: In Vitro Validation
Franck Camerel{2}, Sandrine Cammas-Marion{2}, Francois Varray{1}
{1}CREATIS, France; {2}Sciences Chimiques de Rennes, France

7507: Monitoring of Subcutaneous Drug Diffusion by LED-Based Photoacoustic Imaging
Yuki Ujigawa, Takuro Ishii, Riku Suzuki, Eka Sulistyawan, Daisuke Nishimae, Yoshifumi Saijo
Tohoku University, Japan

8254: Enhancing In-Vivo Oxygen Saturation Accuracy in Photoacoustic Imaging: A Comparative Study of Two Fluence Compensation Techniques
Azin Khodaverdi{1}, Baptiste Jayet{2}, Tobias Erlöv{1}, John Albinsson{1}, Aboma Merdasa{1}, Nils Gustafsson{1}, Rafi Sheikh{1}, Malin Malmsjö{1}, Stefan Andersson-Engels{2}, Magnus Cinthio{1}
{1}Lund University, Sweden; {2}Tyndall National Institute, Ireland

8285: A Multi-Bandwidth Photoacoustic Tomography Imaging System Suitable for Small Animals
Zezheng Qin, Mingjian Sun
Harbin Institute of Technology, China

8439: Photoacoustic Imaging for Quantitative Assessment of Radiofrequency Catheter Ablation Lesions
Shang Gao{3}, Haotian Liu{3}, Allison Post{1}, Lukas Jaworski{1}, Drew Bernard{1}, Mathews John{1}, Elizabeth Cosgriff-Hernandez{2}, Mehdi Razavi{1}, Haichong Zhang{3}
{1}Texas Heart Institute, United States; {2}University of Texas at Austin, United States; {3}Worcester Polytechnic Institute, United States

8446: Short-Wave Photoacoustic Imaging of Lipid Pools Post Ischemic Stroke in Murine Brains
Christopher Salinas, Helena Morrison, Russell Witte
University of Arizona, United States

7940: Structure, Functional, Contrast-Enhanced Photoacoustic Imaging of Metastatic Liver Tumor In Vivo
Jiwoong Kim, Jihye Lee, Seongwook Choi, Hyori Lee, Jinge Yang, Hyunseo Jeon, Minsik Sung, Won Jong Kim, Chulhong Kim
POSTECH, Korea

Poster Session #1 - A2aP-24: Acoustic Tweezers & Particle Manipulation (PAT) 3
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Jae Youn Hwang, DGIST

7092: Multi-Frequency Ultrasound Directed Self-Assembly
Christopher Presley{2}, Fernando Guevara Vasquez{1}, Bart Raeymaekers{2}
{1}University of Utah, United States; {2}Virginia Tech, United States

7189: Utilizing Acoustic Vortex as Dynamic Lenses for Light Focusing
Zong-Han Hsieh, Hsiu-Hui Tu, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

7493: Square-Wave Drive on Ultrasonic Liquid Crystal Optical Lenses
Ryoya Mizuno{1}, Yuma Kuroda{1}, Akira Emoto{2}, Mami Matsukawa{1}, Daisuke Koyama{1}
{1}Doshisha University, Japan; {2}Tokushima University, Japan

7734: Enhancing Light Penetration in Tissue Using Acoustic Vortex: Insights Into Bubble Cavitation and Refractive Index Dynamics
Chia-Wen Hu, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

8500: Obstacle-Crossing Self Focused Acoustic Transducer Based on Bessel Beams
Jiaqi Li{1}, Zhenhuan Sun{1}, Hai Liu{2}, Song Liu{1}
{1}Shanghaitech University, China; {2}University of Southern California, China

8840: Arbitrary Acoustic Field Construction and Flexible Modulation Based on Oscillating Microbubble Array
Xinjia Li, Wei Zhou, Xiufang Liu, Hao Quan, Long Meng
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

Poster Session #1 - A2aP-25: ABD-P BAW Devices and Lamb Wave Resonators
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Shogo Inoue, Qorvo, Inc.

7071: Efficient Lateral Excitation of Higher-Order Harmonics in Lithium Niobate Resonators Using Periodically Poled Piezoelectric Films (P3F)
Natalya Naumenko
National University of Science and Technology “MISIS”, Russia

7137: Design, Fabrication, and Characterization of Dual-Mode AlN Lamb Wave Resonators Above 2 GHz
Tiancheng Luo{1}, Xiaoming Huang{4}, Qinwen Xu{2}, Yuanhang Qu{2}, Huajun Liu{1}, Qibin Zeng{1}, Baichen Lin{3}, Yan Liu{2}, Chengliang Sun{2}
{1}Agency for Science, Technology and Research, Republic of Singapore, Singapore; {2}Institute of Technological Sciences, Wuhan University, Wuhan, China, China; {3}School of Materials Science and Engineering, Nanyang Technological University, Republic of Singapore, Singapore; {4}School of Physics and Technology, Wuhan University, Wuhan, China, China

7144: Fabrication and Evaluation of 9 GHz Second-Overtone Mode Smrs with Polarization Inverted SiAlN/AlN Films
Masashi Suzuki, Kei Fukunaga, Shoji Kakio
University of Yamanashi, Japan

7251: Frequency Tunable Bulk Acoustic Wave Resonators Based on the Acoustoelectric Effect
Wenxuan Li, Ruchuan Shi, Chengtao Luo, Tao Han
Shanghai Jiao Tong University, China

7272: A New Fabrication Process for Lamb Wave Resonator with IDT-IDT Structure
Shitao Lv, Zexin Sun, Wenhao Ye, Jicong Zhao, Haiyan Sun
Nantong University, China

7273: Serially Connected Strip-Type Bulk Acoustic Resonator Using X-40°Y $LiNbO_3$ (XSAR) with Bandwidth of 33%
Yong Guo, Michio Kadota, Shuji Tanaka
Tohoku university, Japan

7302: High-Q, Spurious Free Lamb Wave Resonator with Acoustic Speeder Structure
Wenhao Ye, Shitao Lv, Zexin Sun, Haiyan Sun, Jicong Zhao
Nantong University, China

7479: 5 GHz $Sc_{0.2}Al_{0.8}N$ BAW Resonators with a Hybrid FBAR/SMR Structure for Tailored Acoustic Properties and Increased Q-Value
Tuomas Pensala, Tapani Makkonen, James Dekker, Abhilash Thanniyil, Oili Ylivaara, Enni Hartikainen, Stefan Mertin
VTT Technical Research Centre, Finland

7530: 6.5GHz BAW Resonators and Filters Fabricated on Single Crystal AlN Template Background, Motivation and Objective
Wentong Dou
Southwest University of Science and Technology, China

7601: High-Order Lamb Wave Mode of 128°Y-Cut $LiNbO_3/SiO_2$ Resonator Covered with AlN Film Exhibiting Higher Electromechanical Coupling
Feixuan Huang{1}, Guojie Chang{3}, Mingye Du{2}, Chen Ma{1}, Xi He{1}, Lihang Liao{1}, Jianlin Chen{1}, Qinghua Ren{1}, Fengyuan Yang{1}, Yiming Ma{1}, Nan Wang{1}
{1}Shanghai University, China; {2}ShanghaiTech University, China; {3}Weihai Guangtai Airport Equipment Co., Ltd, China

7883: Fabrication and Evaluation of Film Bulk Acoustic Resonators Using $(K,Na)NbO_3$ Films Deposited by RF Sputtering
Yuta Nakayama, Masashi Suzuki, Shoji Kakio
University of Yamanashi, Japan

8170: Double Mode Type BAW(DMB) Filter Based on Polarization-Inverted ScAlN Multilayers SMR
Momoka Matsumura, Saneyuki Shibata, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

8175: Full Epitaxial SMR with Epitaxial Top and Bottom Metal Acoustic Bragg Reflectors as Thick Electrodes
Misaki Tomioka, Satoshi Tokai, Takahiko Yanagitani
Waseda university, ZAIKEN, Japan

8389: Acoustic Confinement in XBARs
John Koulakis, Azarin Zarassi, Soumya Yandrapalli, Sean McHugh
Resonant, a Murata Company, United States

8751: Experimental Study of the Acoustic-Electromagnetic Hybrid Filter at a Wide Temperature Range
Zijun Ren, Fangsheng Qian, Xingyu Liu, Junyan Zheng, Jiashuai Xu, Yansong Yang
Hong Kong University of Science and Technology, Hong Kong

7600: Machine Learning Assisted AlN Resonator Optimization Achieving 7.8% Coupling Coefficient with 70% Reduction in Computational Time
Xi He{2}, Chen Ma{2}, Feixuan Huang{2}, Lihang Liao{2}, Jianlin Chen{2}, Qinghua Ren{2}, Fengyuan Yang{2}, Yiming Ma{2}, Xing Haw Marvin Tan{1}, Nan Wang{2}
{1}Agency for Science, Technology and Research (A-STAR), Singapore; {2}Shanghai University, China

7779: Error of Uncertainty Calculation for Material Properties of MEMS Resonator Extracted by AI-Assisted Technique
Yinuo Enoch Zhao{1}, Chen Liu{3}, You Qian{3}, Rahul Singaram Senthilkumar{5}, Zibo Juan{4}, Wai Siang Yeoh{2}, Wei-Bin Ewe{2}, Viet Phuong Bui{2}, Xing Haw Marvin Tan{2}
{1}Hwa Chong Institution, Singapore; {2}Institute of High Performance Computing (IHPC) Agency for Science Technology and Research (A STAR), Singapore; {3}Institute of Microelectronics (IME) Agency for Science Technology and Research (A STAR), Singapore; {4}National Junior College, Singapore; {5}St Joseph's Institution, Singapore

A2bP-25: MIM: Acoustoelectric imaging & tomography
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Russell Witte, The University of Arizona
Hans-Martin Schwab, Eindhoven University of Technology

7870: Confounding Electrode Effects in Acoustoelectric Signal Measurements
Wei Yi Oon, Yuchen Tang, Wei-Ning Lee
University of Hong Kong, Hong Kong

8475: Multichannel Transcranial Acoustoelectric Imaging with Current Source Localization in Human Head Model
Teodoro Trujillo{1}, Jinbum Kang{2}, Margaret Allard{1}, Nadia Farha{1}, Sehyuk Park{1}, Stephen Cowen{1}, Katalin Gothard{1}, Paul Larson{1}, Martin Weinand{1}, Leonid Kunyansky{1}, Russell Witte{1}, Matt O'Donnell{2}
{1}University of Arizona, United States; {2}University of Washington, United States

8685: Custom 1.5 MHz, 32x32 Us Array for Transtemporal Acoustoelectric Brain Imaging
Sehyuk Park{2}, Margaret Allard{2}, Nadia Farha{2}, Teo Trujillo{2}, Jinbum Kang{1}, Matt O'Donnell{3}, Russell Witte{2}
{1}Catholic University of Korea, Korea; {2}University of Arizona, United States; {3}University of Washington, United States

8681: In Vivo Ultrasound Vibrational Potential Imaging (UVPI) of Electrode Contacts for Neural Applications
Omar Perez, Teodoro Trujillo, Sehyuk Park, Katalin Gothard, Steven Cowen, Paul Larson, Martin Weinand, Russell Witte
University of Arizona, United States

7463: Effective Apodization in Synthetic Aperture Ultrasound Computed Tomography
Soheil Hakakzadeh{1}, Zahra Kavehvash{1}, Mohammad Mehrmohammadi{2}
{1}Sharif Univ. of Tech., Iran; {2}University of Rochester Medical Center, United States

7762: Study on Attenuation Tomography Using Low-Frequency Ultrasound Differential Imaging with Variational Autoencoder for Human Thorax
Tong Zhang, Haokang Shi, Rui Guo, Maokun Li, Fan Yang, Shenheng Xu
Tsinghua University, China

7824: Deep Learning for 3D Ultrasound Tomography Denoising
James Wiskin, Bilal Malik, John Klock
QT Imaging, United States

8016: Fast Full Waveform Inversion Using Reflection Image and Anatomical Prior for Dual-Linear-Array Ultrasound Computed Tomography
Zeyu Zhuang, Hongxiang Lin
Zhejiang Lab, China

8556: A Differentiable Physics Approach for Unsupervised Ultrasound Tomography
Mohammad Wasih, Mohamed Almekkawy
Pennsylvania State University, University Park, United States

7642: Timing of Natural Shear Waves After Mitral Valve Closure and Their Relationship with Left Ventricular Hemodynamics
Konstantina Papangelopoulou{1}, Annette Caenen{2}, Stephanie Bezy{1}, Jurgen Duchenne{1}, Marta Orlowska{1}, Jens-Uwe Voigt{1}, Jan D'Hooge{1}
{1}KU Leuven, Belgium; {2}KU Leuven, UGent, Belgium

A2bP-26: MSR: Advanced Processing
Location: P09 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Joe Hansen-Shearer, Imperial College London

7027: Towards Sub-100Hz Super-Resolution Imaging Through a Novel Bi-Directional Interpolation Technique
Giulia Tuccio, Sajjad Afrakhteh, Libertario Demi
University of Trento, Italy

7246: 3D Microbubbles Identification with Neyman-Pearson Theory for Ultrasound Localization Microscopy
Valentin Mazellier{1}, George Chabouh{2}, Olivier Couture{2}, Pauline Muleki-Seya{1}, François Varray{1}
{1}CREATIS UMR 5220, Univ Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, Villeurbanne, France; {2}Laboratoire d'Imagerie Biom ´edicale, Sorbonne University, CNRS, INSERM, Paris, France

7641: Improved Curvelet Transform-Based Sparsity Promoting Algorithm for Fast Ultrasound Localization Microscopy
U-Wai Lok, Joshua D. Trzasko, Chengwu Huang, Jingke Zhang, Ryan Deruiter, Shigao Chen
Mayo Clinic, United States

7654: GPU-Based Blockwise Non-Local Means Filtering with Microbubble Separation for 3D Ultrasound Localization Microscopy
U-Wai Lok, Joshua D. Trzasko, Chengwu Huang, Jingke Zhang, Ryan Deruiter, Shigao Chen
Mayo Clinic, United States

7884: Improved Ultrasound Localization Microscopy with Adaptive Nonlinear Compounding
Liyuan Jiang{2}, Jiacheng Liu{2}, Hanbing Chu{2}, Yang Liu{1}, Xiao Su{1}, Mingxi Wan{1}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

7954: Overlapping Microbubble Localization Based on Multiscale Statistical Features for Ultrasound Super Resolution Imaging
Jiacheng Liu, Liyuan Jiang, Hanbing Chu, Meiling Liang, Jinxuan Ma, Chao Guo, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

7996: Single-Frame Image Resolution Expansion Based on Mean Shift Algorithm Improves Microbubble Separation and Localization at High Concentrations
Hanbing Chu, Liyuan Jiang, Jinxuan Ma, Jiacheng Liu, Meiling Liang, Chao Guo, Lei Zhang, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

8041: Distortion Map and Correction for Ultrasound Localisation Microscopy with a Row-Column Array
Joseph Hansen-Shearer, Meng-Xing Tang
Imperial College London, United Kingdom

8053: On the Visualization of Super-Resolution Ultrasound: Real or Illusion?
Iman Taghavi{2}, Lauge Naur Hansen{2}, Amy Theresa McDermot{3}, Nathalie Sarup Pandu{1}, Charlotte Mehlin Sørensen{3}, Jørgen Arendt Jensen{2}
{1}Copenhagen University Hospital, Denmark; {2}Technical University of Denmark (DTU), Denmark; {3}University of Copenhagen, Denmark

8086: Increasing Microbubble Concentrations in Microvascular Imaging via Microbubble Separation by Means of Orthogonal Frequency Division Multiplexing
Giulia Tuccio{2}, Lisa Te Winkel{1}, Corinne Bruggeman{1}, Wim Van Hoeve{1}, Libertario Demi{2}
{1}Solstice, Netherlands; {2}University of Trento, Italy

Poster Session #1 - A2aP-26: Acoustic Imaging & Microscopy, Photoacoustics, Acoustic Sensors, Transducers, Process Control & Industrial US
Location: P09 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Yul Koh, A Star
Martin Angerer, University of British Columbia

7206: An Accurate Auto-Diagnosis Ultrasonic Model for Battery State-of-Charge Estimation Through Pulse-Echo Testing Approach
Fan Yang{2}, Qian Mao{2}, Kwok-Ho Lam{1}, Jiyan Dai{3}
{1}Glasgow of University, United Kingdom; {2}Hong Kong Polytechnic University, Hong Kong; {3}The Hong Kong Polytechnic University, Hong Kong

7317: Analysis of Acoustic Radiation Characteristics of Langevin Transducer with Circular Plate
Jungsoon Kim{2}, Moojoon Kim{1}
{1}Pukyong National University, Korea; {2}Tongmyong University, Korea

7556: Compensation Function for Enhanced Bandwidth and Improved SNR Through Programmable Spectral Shape Signals
Muhammad Tayyib{1}, Linas Svilainis{2}
{1}Kaunas University of Technology, Lithuania; {2}Kaunas University of Technology., Lithuania

7909: Suppressing Bifurcation in Bolt-Clamped Langevin Ultrasonic Transducers Through AC Current-Driven Control
Sven Suppelt{2}, Jan Helge Dörsam{2}, Carsten Kleber{2}, Alexander Anton Altmann{2}, Toni Schmitt{2}, Harald Gietler{1}, Stefan Hess{1}, Mario Kupnik{2}
{1}Infineon Technologies, Germany; {1}Infineon Technologies, Austria; {2}Technische Universität Darmstadt, Germany

7923: Exploring Clamping Mechanisms for Air-Coupled High-Power Ultrasound Transducers
Jan Helge Dörsam, Christian Kayser, Alexander Anton Altmann, Sven Suppelt, Claas Hartmann, Sonja Wismath, Sören Soennecken, Christoph Haugwitz, Mario Kupnik
Technische Universität Darmstadt, Germany

7943: Novel Piezoelectric Ultrasonic Transducer for Die-Casting Process
Mako Nakamura, Yoshihito Kawamura, Shinobu Satonaka, Makiko Kobayashi
Kumamoto University, Japan

8331: Application of Phase and Frequency Modulated Signals to Improve Defect Detection in Thick, Non-Planar Components Using a Lead-Free, High-Frequency, Flexible Ultrasonic Array
Elmergue Germano{4}, Morteza Tabatabaeipour{2}, Ehsan Mohseni{4}, David Lines{4}, Anthony Gachagan{4}, Kwok-Ho Lam{3}, David Hughes{1}, Heather Trodden{1}, Charles Macleod{4}
{1}Novosound Ltd, United Kingdom; {2}Ulster University, United Kingdom; {3}University of Glasgow, United Kingdom; {4}University of Strathclyde, United Kingdom

7564: Simulation Study on Decoding with Correlation and Convolution for Hadamard and Golay-Coded Ultrasound Array Transmission
Chikayoshi Sumi, Bowen Deng
Graduate School of Sophia University, Japan

8079: Highly Accurate Image Registration Method for Ultrahigh Frequency Acoustic Impedance Microscopy Toward Multimodal Observation of Cardiomyocyte Tissues
Tomomi Murai, Yujiro Tanaka, Koji Sakai, Katsuyoshi Hayashi, Takuro Tajima
NTT Corporation, Japan

8490: Simplified Ultrasonic Imaging Sensor Based on Distributed Electrode Activation Control
Mohammad Syaryadhi, Eiko Nakazawa, Norio Tagawa, Ming Yang
Graduate School of Systems Design, Tokyo Metropolitan University, Japan

8825: Deep Learning Algorithm for High-Speed and High-Resolution Scanning Acoustic Microscopy
Yuon Song, Jeesu Kim
Bi-lab/Pusan National University, Korea

8941: New Applications of Principal Component Analysis and Coherency in Ultrasound Phase Aberration Corrected Echo Imaging
Chikayoshi Sumi
Sophia University, Japan

7098: Study of Surface Acoustic Wave Sensor Sensitivity Using Bonded Structure of Piezoelectric Crystals
Yudai Ota, Jun Kondoh
Shizuoka University, Japan

7413: Sensitivity Enhancement of Wireless QCM Hydrogen Sensor Using $Pd_{80}Au_{20}$ Alloy Film
Takato Otake{1}, Manabu Suzuki{1}, Fumihito Kato{1}, Hirotsugu Ogi{2}
{1}Nippon Institute of Technology, Japan; {2}Osaka University, Japan

7500: Development of Measurement System for Reflected Surface Acoustic Wave Sensors
Keiichiro Shibata, Jun Kondoh
Shizuoka University, Japan

7615: Design of a Wideband Cymbal Array Hydrophone with Equivalent Circuits
Yongrae Roh, Donghyun Kim
Kyungpook National University, Korea

7830: Improved Transducer Performance for 3D USCT
Patrick Pfistner, Michael Zapf, Nicole Ruiter
KIT, Germany

7949: Thermochromic Liquid Crystal Sensors for Ultrasonic Displacement Measurements
Martha Turvey{2}, Oksana Trushkevych{2}, David McKnight{1}, Kai Patel{2}, Rachel Edwards{2}
{1}Pictura Bio, United Kingdom; {2}University of Warwick, United Kingdom

8026: Stereolithography-Based Flexural Ultrasonic Transducers for High Frequency Applications
Alexander Hamilton{2}, Sam Adams{2}, Mahshid Hafezi{2}, Will Somerset{1}, Lei Kang{3}, Steve Dixon{4}, Sandy Cochran{2}, Koko Lam{2}, Andrew Feeney{2}
{1}University of Bristol, United Kingdom; {2}University of Glasgow, United Kingdom; {3}University of Portsmouth, United Kingdom; {4}University of Warwick, United Kingdom

8386: High Temperature Liquid Level Monitoring Using Capacitive Micromachined Ultrasound Transducer (CMUT)
Nooshin Saeidi, Karman Frances Raj George Maria Selvam, Meghana Vishwanatha, Maik Wiemer, Harald Kuhn
Fraunhofer ENAS, Germany

8622: Ultrasonic Fiber Waveguides in the Measurements of Spatially Distributed Environmental and Material Properties
Kenneth Walton, Mikhail Skliar
University of Utah, United States

8264: Improved Photoacoustic Beamforming Utilizing Apodization Windows
Yu Weng{2}, Filip Bodera{2}, Elizabeth Berndl{2}, Eno Hysi{3}, Shrishti Singh{1}, Remi Veneziano{1}, Parag Chitnis{1}, Mark McVey{3}, Michael Kolios{2}
{1}George Mason University, United States; {2}Toronto Metropolitan University, Canada; {3}University of Toronto, Canada

8347: Photoacoustic Microscopy via PVDF Transducer Integration with Fiber Optic Illumination
Tianrui Zhao
King's College London, United Kingdom

7828: Investigating the Influence of Slurry Ore Type Rheology and Mineralogical Composition on Ultrasonic Measurement Techniques with Varying Particle Size Fractions
Sekantsi Mabandla{1}, Philip Loveday{2}, Chandima Gomes{2}, Deogratius Maiga{1}, Terence Phadi{1}
{1}Mintek, South Africa; {2}University of the Witwatersrand, South Africa

7967: Off-Grid Sparse Bayesian Learning for Partial Discharge Ultrasonic Detection Accelerated by Principal Component Analysis and Deep Learning
Xiaobo Zhang, Bo Lin, Jinchan Zhu, Ping Wang
Chongqing University, China

8911: Polymer-Based CMUT Flow Front Monitoring During a Vacuum Assisted Resin Infusion Process of a Carbon Fibre Fabric a Fundamental Research and Feasibility Study
Tunahan Kayaci{2}, Jonas Welsch{2}, Martin Angerer{2}, Heinz Voggenreiter{1}, Edmond Cretu{2}, Robert Rohling{2}, Carlos Daniel Gerardo{2}
{1}Deutsches Zentrum für Luft-und Raumfahrt e.V. - German Aerospace Center, Germany; {2}University of British Columbia, Canada

8012: Three-Dimensional Consecutive Observation for the Reaction of Brain Immune Cells, Microglia, Using Scanning Acoustic Microscopy
Maki Shibata{2}, Daiki Yamanaka{2}, Naohiro Hozumi{2}, Yuki Kawaguchi{1}, Kazuto Kobayashi{1}, Sachiko Yoshida{2}
{1}Honda Electronics Co., Ltd., Japan; {2}Toyohashi Univ. of Tech., Japan

Poster Session #1 - A2aP-27: MEL: Elastography Developments using Simulations
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Yue Xu, University of Hong Kong

7130: Optical Micro-Elastography Using a 2D Boundary-Condition-Free Nonlinear Inversion Technique
Sajad Ghazavi{1}, Elijah Van Houten{2}, Hari Nair{1}, Guillaume Fle{1}, Guy Cloutier{1}
{1}University of Montreal, Canada; {2}University of Sherbrooke, Canada

7495: An Autocorrelation-Based Approach for Estimating Shear Wave Speed Using 2D Velocity Vector
Mahsa Sotoodeh Ziksari, Andreas Austeng, Sven Peter Näsholm, Elsa Cecconello, Chaoran Han, Sverre Holm, Yücel Karabiyik
University of Oslo, Norway

8498: Double Profile Intersection (DoPIo) Ultrasound with Acoustic Radiation Force Beam Steering Interrogates Young's Modulus in Transversely Isotropic Media
Sabiq Muhtadi, Keita Yokoyama, Caterina Gallippi
University of North Carolina at Chapel Hill and North Carolina State University, United States

8534: Shear-Wave Pulse-Compression Elastography Using a Modulated Acoustic Radiation Force Excitation
Enrique M. González-Mateo{2}, Josep Rodríguez-Sendra{2}, Francisco Camarena{2}, Noé Jiménez{1}
{1}Consejo Superior de Investigaciones Científicas, Spain; {2}Universitat Politècnica de València, Spain

8901: Multidimensional SWEI Algorithms in Rotationally Sampled Data: Assessing the Accuracy of Phase Speed Reconstruction in Transversely Isotropic Media
Wren Wightman{2}, Ned Rouze{2}, Derek Chan{2}, Shruthi Srinivasan{2}, Mark Palmeri{1}, Kathryn Nightingale{2}
{1}Duke Univeristy, United States; {2}Duke University, United States

8942: Enhanced Assessment of Muscle Quality Using Shear Wave Imaging: Theoretical Insights Into Shear Wave Attenuation in Anisotropic Viscoelastic Muscles
Jinping Dong{1}, Youjun Liu{1}, Wei-Ning Lee{2}
{1}Beijing University of Technology, China; {2}University of Hong Kong, Hong Kong

Poster Session #1 - A2bP-27: MCA: Bubble Dynamics and Therapeutic Strategies
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Yi-Ju Ho, National Yang Ming Chiao Tung University

7238: PET Labeling Allows Investigation of Microbubble and Nanodroplet Contrast Agent Drainage Kinetics in Mouse Models
Georgia Adam{3}, Islay Cranston{1}, Carlos Alcaide-Corral{1}, Timaeus Morgan{1}, Paveekorn Supteranon{2}, Susan Farrington{1}, Adriana Tavares{1}, Carmel Moran{1}, Helen Mulvana{2}
{1}University of Edinburgh, United Kingdom; {2}University of Glasgow, United Kingdom; {3}University of Strathclyde, United Kingdom

7285: Revealing Flow Dynamics in Microfluidic-Inspired Devices Through Nanobubble-Mediated Ultrasound Localization Microscopy
Grigori Shapiro, Tali Ilovitsh
Department of Biomedical Engineering, Tel Aviv University, Tel Aviv, Israel, Israel

7634: Estimation of Microbubble Oscillation Radius from Acoustic Emission Using Machine Learning-Informed Linear Acoustics Theory
Hohyun Lee, Reza Pakdaman Zangabad, Levent Degertekin, Costas Arvanitis
Georgia Institute of Technology, United States

8251: Cross-Corneal Riboflavin Drug Delivery Enhanced and Regulated Cavitation by pLIFU for Keratoconus Treatment: Ex Vivo Study
Qiao Wang{1}, Chengzhi Yang{1}, Pengfei Xu{1}, Jianpu Li{2}, Diya Wang{1}
{1}School of Life Science and Technology, Xi'an Jiaotong University, China; {2}Shanghai Aerospace Electronic Technology Institute, Shanghai, China, China

8438: Investigation of Cavitation in Plain and Drug-Loaded Nanobubbles Using Passive Cavitation Detection Method
Muhammad Saad Khan{2}, Victoria Bulycheva{2}, Charlotte Ferworn{2}, Omar Falou{2}, Eric Strohm{2}, Pinunta Nittayacharn{1}, Elizabeth Berndl{2}, Raffi Karshafian{2}, Agata Exner{1}, Michael Kolios{2}
{1}Case Western Reserve University, United States; {2}Toronto Metropolitan University, Canada

8462: Modulation of the Tumor Microenvironment with a Modified Clinical Scanner
Lance De Koninck{2}, Connor Krolak{2}, Kaleb Vuong{2}, Seonghun Shin{2}, Jeffry Powers{1}, Michalakis Averkiou{2}
{1}Philips Ultrasound, United States; {2}University of Washington, United States

8537: Optimized and Adaptive High Frame-Rate Ultrasound Imaging of Perfluorocarbon Nanodroplet Activation and Recondensation
Charles Dyall{2}, Dmitry Nevozhay{2}, Trevor Mitcham{1}, Yunyun Chen{2}, Stephen Lai{2}, Konstantin Sokolov{2}, Richard Bouchard{2}
{1}University of Rochester Medical Center, United States; {2}UT MD Anderson Cancer Center, United States

Poster Session #1 - A2bP-28: MTH: Cavitation
Location: P11 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00

7005: Combining Ultrasound-Induced Blood-Brain Barrier Opening and FLASH Radiation: Safety and Feasibility
Jia-Ling Ruan, Shihong Wu, Michael Gray, Iain Tullis, Eleanor Stride, Kristoffer Petersson
University of Oxford, United Kingdom

7458: Self-Sensing Cavitation Detection - Application in Swine Transthoracic Aortic Valve Pulsed Cavitational Ultrasound Therapy
Clara Magnier{4}, Wojciech Kwiecinski{1}, Daniel Suarez Escudero{1}, Suxer Alfonso Garcia{1}, Elise Vacher{3}, Maurice Delplanque{1}, Emmanuel Messas{2}, Mathieu Pernot{3}
{1}Cardiawave, France; {2}Hôpital Européen Georges Pompidou, APHP, Vascular Medicine Department, France; {3}Physics for Medicine Paris, Inserm, ESPCI PSL Paris, CNRS, France; {4}Physics for Medicine Paris, Inserm, ESPCI PSL Paris, CNRS, Cardiawave, France

7945: Time-Resolved Passive Cavitation Mapping Using Coherence Factor Weighting During Pulsed HIFU Exposures
Shukuan Lu, Ruibo Su, Mingxi Wan
Xi’an Jiaotong University, China

8034: Impedance Matching Method Using an Optimized Algorithms Based on GA and PSO for Dual-Frequency Boiling Histotripsy
Yan He{1}, Yaoyao Cui{2}, Wenchang Huang{1}, Weiwei Shao{2}
{1}School of Biomedical Engineering (Suzhou), University of Science and Technology of China, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China

8080: Nucleation Pressure Threshold of a Nanodroplet in Viscoelastic Tissue: A Theoretical Simulation
Kangyi Feng{1}, Yueyuan Wang{1}, Chaonan Zhang{1}, Yujin Zong{1}, Mingxi Wan{2}
{1}Xi'an jiaotong university, China; {2}Xi’an Jiaotong University, China

8186: Dynamics of Microbubble Clusters Trapped by an Acoustic Vortex
Shifang Guo, Wanlin Jia, Yan Li, Zhen Ya, Hongmei Zhang, Mingxi Wan
Xi’an Jiaotong University, China

8227: Immediate Appearance of Increased Hypoechoic Liquefaction Region After Boiling Histotripsy Using Tandem Pulse Sequence
Baicheng Xing, Yufeng Zhou
Chongqing Medical University, China

8338: Boiling Histotripsy Bubble Dynamics in Elastic, Fibrous Tissues
Jacob Elliott, Julianna Simon
Pennsylvania State University, United States

Poster Session #1 - A2aP-28: MTH: Drug Delivery 2
Location: P11 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Thomas Deffieux, ESPCI

7082: Numerical Simulation of Ultrasound Propagation for Acoustically-Mediated Inner Ear Drug Delivery
Fabrice Micaletti{2}, David Bakhos{1}, Dapeng Li{3}, Ayache Bouakaz{2}, Jean-Michel Escoffre{2}, Damien Fouan{2}
{1}ENT and Cervico-Facial Surgery Department, University Hospital Center of Tours, 2 Boulevard Tonnelle, France; {2}UMR 1253, iBrain, University of Tours, Inserm, Tours, France, France; {3}Xi'an Jiaotong University, China

7205: A Novel FePt Nano-Sonosensitizer for Sonodynamic Therapy Based on Ferroptosis
Ling-Hsuan Yang, Tzu-Yu Lin, Ping-Ching Wu, Chih-Chung Huang
National Cheng Kung University, Taiwan

7760: Explore the Auxiliary Effect of Ultrasound Penetration Promotion on Anti-Inflammatory Effects of Natural Ingredients
Qing Yue{2}, Yufeng Zhang{2}, Bingbing He{2}, Ningtao Zhang{1}
{1}Botanee Group, China; {2}Yunnan Univerity, China

8234: Continuous Procedure from Retention to Culture of Vascular Endothelial Cells on Wall Surface Using Lipid Bubbles and Bar-Shape Acoustic Field
Shunya Watanabe{3}, Ayako Noguchi{3}, Kota Konishi{3}, Yuki Ichikawa{3}, Yoshitaka Miyamoto{1}, Daiki Omata{2}, Ryo Suzuki{2}, Kohji Masuda{3}
{1}National Research Institute for Child Health and Development, Japan; {2}Teikyo University, Japan; {3}Tokyo University of Agriculture & Technology, Japan

8491: Utilization of a Perfusion Chamber to Analyze Insulin Secretion After Administration of Low-Intensity, Continuous Ultrasound
John Hill, Mallory Brayer, Aleksandar Jeremic, Vesna Zderic
George Washington University, United States

Poster Session #1 - A2aP-29: MIS: Image Enhancement 2
Location: P12 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Federico Mento, University of Trento

7080: Enhanced Diagnostic Ultrasound via ADMM-Based Inverse Problem Solving with Total-Variation Regularization
Yhonatan Kvich, Oded Cohen, Yonina Eldar
Weizmann Institute of Science, Israel

7353: Enhancement of Ultrafast Ultrasound Images: A Performance Comparison Between CNNs Trained with RF or IQ Images
Roser Viñals, Paolo Motta, Jean-Philippe Thiran
École Polytechnique Fédérale de Lausanne, Switzerland

7512: Denoising Diffusion Restoration Models for Ultrasound Reconstruction Using Compact Singular Value Decomposition
Sem Koenen, Oisín Nolan, Vincent van de Schaft, Ruud van Sloun
Eindhoven University of Technology, Netherlands

7575: Computationally Efficient SVD Clutter Filtering for Ultrafast Imaging
Baptiste Pialot{2}, Piero Tortoli{2}, Francesco Guidi{2}, Thanasis Loupas{1}, Alessandro Ramalli{2}
{1}Philips, Netherlands; {2}University of Florence, Italy

7900: Enhancing Ultrafast Synthetic Transmit Aperture Imaging Quality with an Attention-Based Deep Neural Network
Mohamed Tamraoui, Hervé Liebgott, Emmanuel Roux
Creatis, France

8451: Comparative Analysis of Mismatched Filtering Techniques: Cyclic vs. Non-Cyclic Approach
Cornelius Kühnöl{4}, Edgar Dorausch{4}, Tönnis Trittler{3}, Julian Kober{3}, Omid Chaghaneh{3}, Alessandro Ramalli{1}, Enrico Boni{2}, Gerhard Fettweis{4}, Jochen Hampe{3}, Moritz Herzog{3}
{1}Department of Information Engineering, University of Florence, Italy; {2}Department of Information Engineering, University of Florence, Florence, Italy; {3}Else Kröner Fresenius Center for Digital Health, TU Dresden Faculty of Medicine Carl Gust Carus, Germany; {4}Vodafone Chair Mobile Communications Systems, Department of Electrical Engineering, TU Dresden, Germany

8756: Deep Learning Enhanced Visualization of Passive Cavitation Mapping in High Intensity Focused Ultrasound
Shuowen Chen{1}, Fang Zhou{1}, Lian Feng{1}, Kun Yang{2}, Xiaowei Zhou{1}
{1}Chongqing Medical University, China; {2}Tianjin University, China

A2bP-29: MBE Brain, Sonoporation, Ca^{2+} Inflow
Location: P12 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Elly Martin, University College London
Juan Tu, Nanjing University

7198: Long-Term Fates of Reversibly Sonoporated Cells Dependent on Degree of Intracellular Calcium Fluctuations
Jianmin Shi, Yuhang Ma, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

7322: Induction of Calcium Ion Influx in Endothelial Cells by Vortex-Focused Ultrasound
Chien-Hsun Lin, Ching-Hsiang Fan
National Cheng Kung University, Taiwan

7792: Regulating Intracellular Calcium Fluctuations to Rescue Sonoporated Cells
Jianmin Shi, Yuhang Ma, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

8043: Evaluating Piezo1/2 Ion Channel Expression in Glioma Cells to Determine the Potential for Focused Ultrasound-Mediated Mechanical Modulation of Brain Tumors
Lauren Gomes, Jody Rosenblatt, Antonios Pouliopoulos
King's College London, United Kingdom

8271: Modeling and Characterization of Complex Focal Patterns for Ultrasound Neuromodulation in Mice
Hector Estrada{2}, Yiming Chen{2}, Neda Davoudi{2}, Ali Özbek{2}, Qendresa Parduzi{2}, Shy Shoham{1}, Daniel Razansky{2}
{1}NYU Langone Health, United States; {2}University and ETH Zurich, Switzerland

8316: The Effect of Cell Cycle on the Sonoporation in Pancreatic Adenocarcinoma Cells
Ziyin Wang, Xinxing Duan
chongqing medical university, China

8749: Preliminary Study: Transcranial Ultrasound Stimulation for Ameliorating Binge Eating Disorder
Yu Cai, Jiejun Zhu, Jiaru He, Zhihai Qiu
Guangdong Institute of intelligent technology and technology, China

A3L-01: MIS: Image Enhancement 1
Location: 506 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Xufei Chen, Eindhoven University

7695: Resolution Enhancement of 250 MHz Quantitative Acoustic Microscopy Using a Quantum Denoising-Based Red Scheme
Sayantan Dutta, Jonathan Mamou
Department of Radiology, Weill Cornell Medicine, United States

8561: Ultrasound Image Enhancement with the Variance of Diffusion Models
Yuxin Zhang{2}, Clément Huneau{1}, Jérôme Idier{1}, Diana Mateus{2}
{1}LS2N, France; {2}LS2N, Centrale Nantes, France

7035: 2D Echocardiography Image Segmentation via Patch-Based Generative Adversarial Network
Noreen Fatima, Sajjad Afrakhteh, Libertario Demi
University of Trento, Italy

8359: Automatic Vessel Segmentation in B-Mode Images Using the Segment-Anything-Model (SAM) with Color Doppler Prompt Engineering
Iason Zacharias Apostolakis, Jason Yu, Thanasis Loupas
Philips, United States

8667: An Unsupervised Deep Clutter Filter for High-Quality Ultrafast Perfusion Imaging
Hyunwoo Cho{2}, Jinbum Kang{1}, Yangmo Yoo{2}
{1}Catholic University of Korea, Korea; {2}Sogang University, Korea

A3L-02: Clinical Spotlight
Location: 701A (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Marvin Doyley, University of Rochester

9010: Recent Advances in Musculoskeletal Ultrasound: Elastography and Deep Learning
Chueh-Hung Wu
National Taiwan University Hospital, Taiwan

9089: Beyond 2D Images- Unlocking the Power of Ultrasound in the Clinical Practice of Perinatal Medicine
Jin-Chung Shih
Department of Obstetrics and Gynecology, National Taiwan University, Taiwan

9107: Focused Ultrasound: Lesioning and Neuromodulation in Epilepsy
Hsiang-Yu Yu
Taipei Veterans General Hospital, Taiwan

A3L-03: MBB: Plane Wave & Unfocussed Transmit
Location: 701B (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Pai-Chi Li, National Taiwan University
Tai-Kyong Song, Sogang University

8391: Improved Efficiency of an Element Pitch Compensation Approach for Plane Wave Ultrasound Reconstruction in k-Space
Hans-Martin Schwab, Richard Lopata
Eindhoven University of Technology, Netherlands

7733: High-Quality Ultrasound Imaging with Limited Unfocused Transmissions by Learning Complex-Valued Receive Apodization Weights
Di Xiao, Alfred Yu
University of Waterloo, Canada

7018: A Novel High Frame Rate and High Contrast Coherent Plane Wave Compounding Approach Utilizing Euclidean Distance Transform
Sajjad Afrakhteh, Libertario Demi
University of Trento, Italy

7297: Ultrasound Plane-Wave Imaging Reconstruction Based on Unsupervised Contrastive Learning
Aohua Wang{1}, Jingfeng Lu{1}, Hua Zhuang{2}, Yi Zhang{1}
{1}Sichuan University, China; {2}West China Hospital of Sichuan University, China

A3L-04: MIM: 3D imaging
Location: 701C (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Clement Papadacci, INSERM/Physics for Medicine

8241: Volumetric Computational Ultrasound Imaging of Carotid Artery Using 20×12 Elements Matrix Transducer with Aberration Mask: Phantom Studies
Yuyang Hu{2}, Michael Brown{2}, Mahé Bulot{3}, Maxime Cheppe{3}, Guillaume Ferin{3}, Luxi Wei{2}, Didem Dogan{1}, Geert Leus{1}, Antonius F.W. van de Steen{2}, Pieter Kruizinga{2}, Johannes G. Bosch{2}
{1}Delft University of Technology, Netherlands; {2}Erasmus MC, Netherlands; {3}Vermon S.A., France

7522: In-Vivo 3D Ultrafast Imaging Using a 3072-Elements Matrix Transducer
Manon Caudoux{2}, Benjamin Guérif{3}, Oscar Demeulenaere{2}, Philippe Mateo{2}, Bijan Ghaleh{1}, Mickael Tanter{2}, Clément Papadacci{2}, Mathieu Pernot{2}
{1}Inserm U955-IMRB, UPEC, ENVA, France; {2}Physics for Medicine, France; {3}Vermon / Physics for Medicine, France

8395: Real-Time Volumetric Spine Imaging for Interventional Guidance with a Large-Aperture Array
Ning Lu, Josquin Foiret, Byung Chul Yoon, Katherine Ferrara
Stanford University, United States

8407: High-Resolution Large Field-of-View Volumetric Ultrasound Scanner for Breast Imaging
Ning Lu{2}, Josquin Foiret{2}, Eunyeong Park{1}, Steven Poplack{2}, Katherine Ferrara{2}
{1}Korea Advanced Institute of Science & Technology (KAIST), Korea; {2}Stanford University, United States

7183: Simulation Study of 3D Frequency-Domain Full Waveform Inversion for Whole-Breast Imaging Using a Multi-Row Ring Array Transducer
Rehman Ali, Gaofei Jin, Trevor Mitcham, Nebojsa Duric
University of Rochester, United States

7937: MSL-Net: Enhancing Free-Hand 3D Ultrasound Reconstruction Using Deep Learning for Advanced Clinical Visualization
Siyeoul Lee, Seonho Kim, Minkyung Seo, Ashok Kambaluru, Dongeon Lee, Chunsu Park, Seonyeong Lee, Jiye Kim, Minwoo Kim
Pusan National University, Korea

A3L-05: MPA: Advancements in Photoacoustic Imaging Systems and Phantoms
Location: 701D (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Min Wu, Eindhoven University of Technology

8891: 3D Printed Gel Wax Phantoms for Photoacoustic Imaging
Jia-En Chen, Karol Duque, Nam Huynh, Efthymios Maneas, Paul Beard, Adrien Desjardins
University College London, United Kingdom

7410: Refraction Correction for Photoacoustic Vector Flow Imaging of Blood in a Bone Phantom
Caitlin Smith{2}, Jami Shepherd{2}, Guillaume Renaud{1}, Kasper van Wijk{2}
{1}Delft University of Technology, Netherlands; {2}University of Auckland, New Zealand

7710: Dichroism-Sensitive Photoacoustic Imaging for the In-Depth Estimation of Fibers Orientation in Tissue
Camilo Cano{2}, Amir Gholampour{2}, Marc van Sambeek{1}, Richard Lopata{2}, Min Wu{2}
{1}Catharina Hospital, Netherlands; {2}Eindhoven University of Technology, Netherlands

8210: Cardiac Photoacoustic Imaging Using Motion Compensation Based on Ultrasound Speckle Tracking
Anton Nikolaev, Jeroen Essers, Gijs van Soest
ErasmusMC, Netherlands

8515: FPGA-Accelerated Hybrid Lossless and Lossy Compression for Next-Generation Portable Optoacoustic Platforms
Federico Villani{1}, Sevrin Mathys{1}, Çağla Özsoy{2}, Xosé Luís Deán-Ben{2}, Andrea Cossettini{1}, Michele Magno{1}, Daniel Razansky{2}, Luca Benini{1}
{1}ETH Zurich, Switzerland; {2}University of Zurich, ETH Zurich, Switzerland

7402: Adaptive-Subtraction Electromagnetic Interference Noise Reduction for Photoacoustic Imaging In Vivo
Ruixi Sun, Zihao Huang, Fan Zhang, Feng Gao, Fei Gao
ShanghaiTech University, China

A3L-06: MSR: Data Processing
Location: 701E (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Jorgen Arendt Jensen, Technical University of Denmark
Matthew Lowerison, UIUC

7888: Correlation-Based Phase Correction for Microbubble Localization in Transcranial Ultrasound
Hanbing Chu{2}, Jiacheng Liu{2}, Meiling Liang{2}, Chao Guo{2}, Liyuan Jiang{2}, Jinxuan Ma{2}, Yichen Yan{1}, Yujin Zong{2}, Mingxi Wan{2}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

8367: Contrast-Free Ultrasound Super-Resolution Imaging Using Hankel Singular Value Decomposition-Based Flow Separation
Andre Rath{1}, Iman Taghavi{1}, Charlotte Sørensen{2}, Jørgen Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

8368: Non-Rigid Motion Compensation for Use in Clinical Super-Resolution Ultrasound Imaging in Testicular Tumors
Daniel Lock{2}, Jaime Parra Raad{2}, Dean Huang{2}, Cheng Fang{2}, Paul Sidhu{2}, Mengxing Tang{1}, Kirsten Christensen-Jeffries{2}
{1}Imperial College London, United Kingdom; {2}King's College London, United Kingdom

7926: Spectral Shift Compensation Match Filter and Spot Radial Shrinkage Based on Aberration Correction for Transcranial Ultrasound Super Resolution Imaging
Jiacheng Liu, Hanbing Chu, Meiling Liang, Jinxuan Ma, Liyuan Jiang, Chao Guo, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

8417: An Open-Source Benchtop for Localization and Tracking (BLT)
Stephen Lee{2}, Joshua Kinugasa{1}, Alexis Leconte{2}, Jonathan Poree{2}, Samuel Mihelic{3}, Andreas Linninger{3}, Jean Provost{2}
{1}Chiba University, Japan; {2}Polytechnique Montreal, Canada; {3}University of Illinois Chicago, United States

A3L-07: TMU: Transducers and Systems for Sensing, Communication, and Wireless Power Transfer
Location: 701F (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Levent Degertekin, Georgia Institute of Technology
Alessandro Stuart Savoia, Roma Tre University

8374: Concurrent Pulse-Echo and Through-Transmission Ultrasound Tracking with Multi-Frequency PMUTs
Teng Zhang, Shenglin Hou, Ashwin Seshia
University of Cambridge, United Kingdom

7944: High Performance and Low SWaP Oxygen Sensors Based on Piezoelectric Micromachined Ultrasonic Transducers
Miaojie Liu, Yi Gong, Boyun Zhang, Wei Pang, Xuejiao Chen, Menglun Zhang
Tianjin University, China

8305: Underwater Ultrasound Communication Based on PMUTs with DC Bias Voltage
Yiwei Guo{2}, Chenyuan Zhang{2}, Chong Yang{1}, Jiao Xia{1}, Wei Wang{1}, Yipeng Lu{1}
{1}School of Integrated Circuits, Peking University, China; {2}School of Software and Microelectronics, Peking University, China

7936: Biocompatible Hermetic Encapsulation of PMUTs for Usage in Implantable Medical Devices
Esmaeil Afshari{2}, Samer Houri{1}, Rik Verplancke{2}, Veronique Rochus{1}, Maarten Cauwe{2}, Pieter Gijsenbergh{1}, Xavier Rottenberg{1}, Maaike Op de Beeck{2}
{1}imec, Belgium; {2}imec and Ghent University, Belgium

8912: Miniaturized Ultrasonic Wireless Implants Operating at Depth
Soner Sonmezoglu
Northeastern University, United States

A3L-08: Fundamentals of Ferroelectrics 1
Location: 701G (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Junling Wang, Southern University of Science and Technology

8195: Nanoscale Electrostatic Control in Ferroelectric Thin Films Through Lattice Chemistry Engineering
Ipek Efe{2}, Alexander Vogel{1}, William S. Huxter{2}, Elzbieta Gradauskaite{2}, Christian L. Degen{2}, Marta D. Rossell{1}, Manfred Fiebig{2}, Morgan Trassin{2}
{1}Electron Microscopy Center, EMPA, Switzerland; {2}ETH Zurich, Switzerland

8841: Spin Hall Magnetoresistance and Finite Size Effects in Multiferroic $BiFeO_3$ Thin Films
Daniel Sando
University of Canterbury, New Zealand

8180: Electrode Elastic Modulus as the Primary Driver of the Capping Effect in Ferroelectric Hafnia
Megan Lenox{4}, Shelby Fields{3}, Samantha Jaszewski{2}, Rafiqul Islam{4}, Shafkat Bin Hoque{4}, Patrick Hopkins{4}, Jon-Paul Maria{1}, Jon Ihlefeld{4}
{1}Pennsylvania State University, United States; {2}Sandia National Laboratories, United States; {3}U.S. Naval Research Laboratory, United States; {4}University of Virginia, United States

7284: Insights Into the Role of Structural Disorder on Ferroelectricity and Piezoelectricity in Lead-Free $BiFeO_3$-Based Piezoelectric Materials
Sangwook Kim
Hiroshima University, Japan

A3L-09: Ferroelectric Thin Films 1
Location: 701H
16:30 - 18:00
Session Chair(s): Tomoaki Yamada, Nagoya University

7291: Development of Dual Layer PZT Film for Commercial Use
Mario Kiuchi, Sena Yamamoto, Yukitaka Yamaguchi, Tsuyoshi Takemoto
Sumitomo Precision Products Co., Ltd., Japan

7197: Suppression of Pyrochlore Phase Growth in Sm-PMN-PT Epitaxial Thin Film Prepared via Sputter Deposition by Modification of Seed Layer Surface
Akihiko Teshigahara, Ayumu Arai, Shinya Yoshida
Shibaura Institute of Technology, Japan

7386: Ultrafast Multiplexed Electrostatic Printing of Piezoelectric PZT Films
Xuemu Li, Zhengbao Yang
Hong Kong University of Science and Technology, China

7412: Sputter Deposition of Mono and Polycrystalline Composite PZT Thin Film Using Area-Selective Modification of Buffer Layer Surface by Wet Etching
Yusaku Katagai, Akihiko Teshigahara, Shinya Yoshida
Shibaura Institute of Technology, Japan

7494: Structural Characterization and Ferroelectric Properties of Self-Polarized Epitaxial Tetragonal $(Bi,K)TiO_3$-$PbTiO_3$ Films Grown by Hydrothermal Method
Yuxian Hu, Taichi Murashita, Kazuki Okamoto, Hiroshi Funakubo
Tokyo Institute of Technology, Japan

7878: Enhanced Piezoelectric Properties and Relaxor Behaviour in (Ce, Y) Co-Doped BCTZ Thin Films
Kevin Nadaud{2}, Beatrice Negulescu{2}, Nazir Jaber{2}, Fabien Giovannelli{2}, Guillaume Nataf{2}, Micka Bah{2}, Pascal Andreazza{1}, Jerome Wolfman{2}
{1}ICMN, UMR 7374 CNRS-Univ. Orléans, France; {2}Lab. GREMAN UMR7347 CNRS Univ.Tours, France

A3L-10: Novel Materials and Approaches 1
Location: 702 (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Hana Uršič Nemevšek, Jožef Stefan Institute

7378: Organic-Inorganic Hybrids, a New Path of Ferroelectrics for Outstanding Electromechanical and Photoelectric Properties
Yuzhong Hu{1}, Marin Alexe{4}, Hongjin Fan{2}, Junling Wang{3}, Pooi See Lee{2}
{1}Heidelberg University, Germany; {2}Nanyang Technological University, Singapore; {3}Southern University of Science and Technology, China; {4}University of Warwick, United Kingdom

8068: Synthesis and Characterization of $SnTiO_3$: Lead-Free Ferroelectric Alternative
Noda Shintaro, Kai Kamijo, Nobuo Nakajima
Hiroshima University, Japan

8162: Temperature-Dependent Electro-Mechanical Properties of Photoferroelectric $BaTi_{1-x}Sn_xO_3$ ($0 \leq X \leq 0.15$)
Viktoria Kraft{1}, Michel Kuhfuss{1}, Neamul Hayet Khansur{1}, Rita Maria Cicconi{1}, Alexander Martin{2}, Koji Kimura{2}, Koichi Hayashi{2}, Kyle Grant Webber{1}
{1}Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; {2}Nagoya Institute of Technology, Japan

7225: Investigating Piezoelectric Response Across the Thickness of Screen-Printed and Aerosol-Deposited Piezoelectric Thick Films
Hana Uršič, Teja Pelko, Matej Šadl
Institut Jožef Stefan, Slovenia

7165: DisLocation Density-Tuned Functionality in $BaTiO_3$ Single Crystals
Fangping Zhuo, Jürgen Rödel
Technical University of Darmstadt, Germany

8763: Piezoelectric Power Generation of Multiple PZT Tape-Based Cantilever Structures at Non-Resonant Frequency
Kwan Sik Park{2}, Byeong Kon Kim{1}, Sang Heon Kim{2}, Yong Soo Cho{2}
{1}Ceratorq, Korea; {2}Yonsei University, Korea

A3L-11: Acoustic Microfluidics (NAF)
Location: 703 (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Daisuke Koyama, Doshisha University

8782: Functional Manipulation of Solid or Liquid Objects via Holographic Interdigital Transducers
Pengqi Li, Wei Zhou, Long Meng
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

7168: Automated Microfluidic System Enabled Continuous Separation of Nanoparticles with Gigahertz Acoustofluidic Tweezers
Shuying Wang, Luyao Li, Qing Zhou, Weiwei Cui, Hao Zhang
Tianjin University, China

8791: Micro to Nano-Scale Acoustofluidics from BAW and SAW
James Friend
University of California San Diego, United States

7213: Refractive Index Change and Nanobubble Cluster Induced by 100-Megahertz-Range, High-Intensity Ultrasonic Irradiation
Yuki Harada{1}, Mutsuo Ishikawa{2}, Mami Matsukawa{1}, Daisuke Koyama{1}
{1}Doshisha University, Japan; {2}Toin University of Yokohama, Japan

8850: Acoustothermal Transfection of Stem Cells for Cell Therapy
Xiufang Liu, Ning Rong, Xinjia Li, Long Meng
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

A3L-12: Domains & Domain Walls 2
Location: 500 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Nobuhiro Oshime, National Institutes for Quantum Science and Technology

7571: Thermodynamics of Ferroelectric Crystals and Domain Structures
Bo Wang{1}, Long-Qing Chen{2}
{1}Lawrence Livermore National Lab, United States; {2}Pennsylvania State University, United States

8855: Role of the Domain Wall Conductivity in the Kinetics of the Polarization Reversal and Screening in Ferroelectrics
Denis Alikin, Mikhail Kosobokov, Anton Turygin, Vladimir Shur
Ural Federal University, Russia

8466: Domain Walls, Skyrmions and Antiskyrmions in Ferroelectric Perovskites
Jiri Hlinka
Fyzikální ústav AV ČR, v.v.i., Czech Rep.

8193: Noninvasive Three-Dimensional Mapping of Polar Skyrmion Structures
Joohee Bang{1}, Nives Strkalj{2}, Martin Sarott{3}, Morgan Trassin{1}, Thomas Weber{1}
{1}ETH Zurich, Switzerland; {2}Institute of Physics, Zagreb, Croatia; {3}University of Groningen, Netherlands

A3L-13: MSD: Wearable and Portable Ultrasound
Location: 501 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Valentino Meacci, University of Florence
Marcin Lewandowski, US4us

9006: Advancing Towards a Lower-Power Wearable Ultrasound Sensor for Real-Time Bladder Volume Monitoring Using CNN Optimization
Rouzbeh Molaei Imenabadi, Katherine Brown, Dinesh Bhatia
University of Texas at Dallas, United States

7593: Development of Wearable Ultrasound Shear Wave Elastography to Continuously Monitor Stiffness Changes of Livers for Preventing Acute Liver Failure
Hsiao-Chuan Liu{4}, Yushun Zeng{4}, Chen Gong{4}, Xiaoyu Chen{2}, Piotr Kijanka{1}, Junhang Zhang{4}, Yuri Genyk{4}, Yi-Hong Chou{3}, Xuanhe Zhao{2}, Qifa Zhou{4}
{1}AGH University of Krakow, Poland; {2}Massachusetts Institute of Technology, United States; {3}National Yang Ming Chiao Tung University, Taiwan; {4}University of Southern California, United States

7388: Ai Enabled High Frame Rate Portable Ultrasound Imaging Pipeline: Prototype Implementation with GPU Acceleration
Arun Kumar V{1}, Madhavanunni A N{1}, Mahesh Raveendranatha Panicker{2}
{1}Indian Institute of Technology Palakkad, India; {2}Singapore Institute of Technology, Singapore

8023: A Novel and Versatile USB OEM Ultrasound Platform: From Research Innovation to Extended Portable Application Development
Tony Matéo, Damien Joguet, Guillaume Bloinot, Olivier Gérard, Nicolas Félis, David Savéry, Martin Flesch, Guillaume Férin
Vermon, France

8596: Space-Time Compressed Sensing Framework for Integrated Ultrasound Imaging System-on-a-Chip
Reza Pakdaman Zangabad, Xitie Zhang, Shaolan Li, F. Levent Degertekin
Georgia Institute of Technology, United States

7352: Towards Wearable Ultrafast Ultrasound: A FPGA Solution
Zhengchang Kou, Michael Oelze
University of Illinois Urbana-Champaign, United States

A3L-14: AlScN Switching Kinetics 1
Location: 503 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Betul Akkopru-Akgun, Pennsylvania State University

7008: Ferroelectric Scandium-Doped Aluminum Nitride for Enabling Capacitive Selector-Free FeRAM Array
Li Chen, Hock Koon Lee, Chen Liu, Binni Varghese, Zhan Jiang Quek, Minghua Li, Subhranu Samanta, Yan Hong, Huamao Lin, Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

8220: Domain Walls and Resistive Switching in $Al_{1-x}Sc_xN$
Simon Fichtner{3}, Georg Schönweger{3}, Niklas Wolff{2}, Adrian Petraru{2}, Isabel Streicher{1}, Haidong Lu{4}, Deik Dasenbrook{2}, Alexei Gruverman{4}, Stefano Leone{1}, Lorenz Kienle{2}, Hermann Kohlstedt{2}
{1}Fraunhofer IAF, Germany; {2}Kiel University, Germany; {3}Kiel University/Fraunhofer ISIT, Germany; {4}University of Nebraska - Lincoln, United States

8719: Thickness-Dependent Switching and Device-to-Device Uniformity Analysis of $Al_{0.7}Sc_{0.3}N$-Based Ferroelectric Capacitor on 8-Inch Si Wafer
Subhranu Samanta, Glen Wong, Hock Koon Lee, Minghua Li, Binni Varghese, Huamao Lin, Chen Liu, Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology, and Research (ASTAR), Singapore

7933: In Quest of Temperature-Dependent Ferroelectric Switching in 50 nm $Al_{0.7}Sc_{0.3}N$ Thin Film
Subhranu Samanta, Hock Koon Lee, Minghua Li, Binni Varghese, Huamao Lin, Li Chen, Chen Liu, Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology, and Research (ASTAR), Singapore

8849: Clamping Effect of Dielectric and Ferroelectric Properties in ScAlN
Chen Liu, Ying Zhang, You Qian, Li Chen, Xinghua Wang, Qingxin Zhang, Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

A3L-15: MCA: Contrast Agent Imaging 2
Location: 507 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Mike Averkiou, University of Washington
Rik Vos, Erasmus MC

8096: Effect of Surface Charge Modification on the Imaging Performance of Targeted Microbubbles
Yuantong Zhong, Tianyu Guo, Feihong Dong, Jue Zhang
Peking University, China

8217: Nondestructive Detection of Bound Targeted Microbubbles for Ultrasound Molecular Imaging with High-Order Singular Value Decomposition
Gonzalo Collado-Lara{1}, Geraldi Wahyulaksana{2}, Hendrik Vos{1}, Klazina Kooiman{1}
{1}Erasmus MC, Netherlands; {2}Weill Cornell Medical College, United States

8414: Size-Selected Microbubbles for Superharmonic Imaging
Jing Yang{2}, Amin Jafari Sojahrood{1}, David Goertz{2}, Stuart Foster{2}, Christine Demore{2}
{1}Sunnybrook Research Institute, Canada; {2}University of Toronto, Canada

7875: Harmonic Imaging Enhances Nonlinear Detection of Acoustic Biomolecules
Rohit Nayak, Mengtong Duan, Bill Ling, Zhiyang Jin, Dina Malounda, Mikhail Shapiro
California Institute of Technology (Caltech), United States

8409: Risk Assessment of Carotid Plaques Using 3D Contrast-Enhanced Ultrasound with Subharmonic-Aided Pressure Estimation
Kibo Nam{1}, Paul Dimuzio{2}, John Farber{1}, Corinne Wessner{1}, Priscilla Machado{1}, Patrick O'Kane{1}, Andrej Lyshchik{1}, Flemming Forsberg{1}
{1}Thomas Jefferson University, United States; {2}Thomas Jefferson University Hospital, United States

8003: Deep Learning-Based Diagnosis of Intraplaque Neovascularization in Carotid Plaque in Contrast-Enhanced Ultrasound Images for Vulnerability Assessment
Bokai Hu{2}, Han Zhang{2}, Caixia Jia{1}, Ke Chen{2}, Xiangjiang Tang{2}, Da He{2}, Luni Zhang{1}, Shiyao Gu{1}, Jing Chen{1}, Jitong Zhang{2}, Rong Wu{1}, Sung-Liang Chen{2}
{1}Shanghai General Hospital, China; {2}Shanghai Jiao Tong University, China

A3L-16: MCA: Contrast Agent Imaging 1
Location: 502 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Shigao Chen, Mayo Clinic
Michael Kolios, Ryerson University

7778: Fast Contrast-Enhanced Microvessel Imaging with Depth-Consistent Sub-Diffractive Spatial Resolution: From Simulation to Human Tumor Imaging
Hanbing Chu{2}, Liyuan Jiang{2}, Jiacheng Liu{2}, Meiling Liang{2}, Yichen Yan{1}, Xiao Su{1}, Jinxuan Ma{2}, Chao Guo{2}, Lei Zhang{2}, Yujin Zong{2}, Mingxi Wan{2}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

8559: An Inhalable Ultrasound Contrast Agent Optimized for Tracheal In Vivo Imaging
Andrew Weitz, Phillip Durham, James Tsuruta, Paul Dayton, Melissa Caughey
University of North Carolina - Chapel Hill, United States

8400: A Physically Realistic Contrast-Enhanced Ultrasound Simulator
Nathan Blanken{2}, Baptiste Heiles{1}, Alina Kuliesh{1}, Michel Versluis{2}, Kartik Jain{2}, David Maresca{1}, Guillaume Lajoinie{2}
{1}Delft University of Technology, Netherlands; {2}Twente University, Netherlands

8267: Fast Volumetric Nonlinear Sound Sheet Imaging of Cellular and Microvascular Functions
Baptiste Heiles{1}, Floor Nelissen{3}, Dion Terwiel{1}, Byung Min Park{1}, Eleonora Munez-Ibarra{1}, Rick Waasdorp{1}, Pierina Barturen{2}, Mengtong Duan{2}, Taranum Ara{1}, Mikhail Shapiro{2}, Valeria Gazzola{3}, David Maresca{1}
{1}Department of Imaging Physics, TU Delft, Netherlands; {2}Shapiro Lab, California Institute of Technology, United States; {3}Social Brain Lab, Netherlands Institute of Neurosceince, Netherlands

7202: A New Bimodal PET/US Imaging Device Using 18F Radiolabeled Lipid-Shell Microbubbles for Preclinical In Vivo Studies
Anthony Novell{3}, Julen Ariztia{2}, Ambre Dauba{1}, Eliott Lechapt{3}, Dimitri Kereselidze{2}, Anthony Delalande{4}, Charles Truillet{2}, Bertrand Kuhnast{2}, Jean-Luc Gennisson{3}
{1}BioMaps - Université Paris Saclay, France; {2}BioMaps - Université Paris Saclay - CEA, France; {3}BioMaps - Université Paris Saclay - CNRS, France; {4}Université d'Orléans, France

8265: Dense Ultrasonic Speed-of-Sound Shift Imaging for Improved Microbubble Detection in Contrast-Enhanced Ultrasound
Keren Karlinsky, Tali Ilovitsh
Tel-Aviv University, Israel

Day 2: Tuesday, September 24

Plenary #3
Location: 701A-D (TaiNEX Hall 2)
08:30 - 10:00

Advances in bulk ferroelectrics over the past decade
Shujun Zhang, University of Wollongong

Thin-Film Ferroelectrics
Lane W. Martin, Rice University

UFFC Achievement and ISAF Awards

Coffee Break
Location: Exhibit Hall - 7F (TaiNEX 2)
10:00 - 10:30

B1L-01: MIS: Tissue Classification and Characterization 1
Location: 506 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Zhengchang Kou, University of Illinois
Libertario Demi, University of Trento

8015: Ultrasound Radiofrequency Image Improves the Tissue Segmentation Performance of Deep Learning Models
Zhun Xie{1}, Nan Ji{2}, Lijun Xu{1}, Jianguo Ma{1}
{1}Beihang University, China; {2}Beijing Tiantan Hospital, Captial Medical University, China

7153: Alveolar Geometry Estimation Through Quantitative Lung Ultrasound Spectroscopy, Phantom Study with Monodisperse Vs Polydisperse Microbubble Populations
Federico Mento{1}, Marco Rosson{1}, Lisa Te Winkel{2}, Wim van Hoeve{2}, Libertario Demi{1}
{1}Department of Information Engineering and Computer Science, University of Trento, Italy, Italy; {2}Solstice Pharmaceuticals B.V., Enschede, Netherlands, Netherlands

7160: A Novel Empirical Wavelet Transform Approach for Classification of Radiofrequency Lung Ultrasound Signals Applied to Diagnosis of Lung Diseases
Mattia Perpenti{1}, Federico Mento{1}, Sajjad Afrakhteh{1}, Giuliana Barcellona{2}, Tiziano Perrone{2}, Libertario Demi{1}
{1}Department of Information Engineering and Computer Science, University of Trento, Italy, Italy; {2}Emergency and Urgency Department, Humanitas Gavazzeni Bergamo, Bergamo, Italy, Italy

8431: Frequency Estimator to Improve H-Scan Tissue Characterization
Jihye Baek{1}, Thurston Brevett{1}, Dongwoon Hyun{1}, Ahmed Kaffas{2}, Kevin Parker{3}, Jeremy Dahl{1}
{1}Stanford University, United States; {2}University of California San Diego, United States; {3}University of Rochester, United States

7627: Integrating Substantia Nigra's Ultrasomics and Clinical Attributes for Automated Diagnosis in Parkinson's Disease
Hongyu Kang{2}, Shuai Li{2}, Xinyi Wang{2}, Yu Sun{2}, Xin Sun{1}, Fangxian Li{1}, Chao Hou{1}, Sai-Kit Lam{2}, Wei Zhang{1}, Yong-Ping Zheng{2}
{1}Beijing Tiantan Hospital, Capital Medical University, China; {2}Hong Kong Polytechnic University, Hong Kong

8890: Unsupervised Clustering of Functional Ultrasound Connectivity to Disentangle Brain Dynamics
Valeria Grasso, Joseph Tennyson, Tommaso Di Ianni
University of California San Francisco, United States

B1L-06: AHD Extreme High Frequency Devices 1
Location: 701E (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Ken-ya Hashimoto, UESTC
Andreas Tag, Qorvo, Inc.

7383: Toward Interdigital Transducer-Based mmWave Acoustic: Mitigating Self-Resonances
Xingyu Liu, Junyan Zheng, Zijun Ren, Fangsheng Qian, Jiashuai Xu, Yansong Yang
Hong Kong University of Science and Technology, China

8527: 21.4 GHz Surface Acoustic Wave Resonator with 11,400 m/s Phase Velocity in Thin-Film Lithium Niobate on Silicon Carbide
Joshua Campbell{2}, Ian Anderson{2}, Tzu-Hsuan Hsu{2}, Omar Barrera{2}, Jack Kramer{2}, Sinwoo Cho{2}, Vakhtang Chulukhadze{2}, Gavin Latham{2}, Ming-Huang Li{1}, Ruochen Lu{2}
{1}National Tsing Hua University, Taiwan; {2}University of Texas at Austin, United States

8792: Scaling of Acoustic Resonators Into Millimeter Wave Regime Using Piezoelectric Thin Films
Ruochen Lu
University of Texas at Austin, United States

8847: Boosting Quality Factor in 15 GHz Film Bulk Acoustic Resonators (FBAR)
Chen Liu, Ying Zhang, You Qian, Xinghua Wang, Qingxin Zhang, Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

7384: 22.4 GHz Longitudinal SAW Resonator with K^2_{eff} of 3.4% and Q_{max} of 192
Tzu-Hsuan Hsu{1}, Joshua Campbell{2}, Jack Kramer{2}, Sinwoo Cho{2}, Zhi-Qiang Lee{1}, Ming-Huang Li{1}, Ruochen Lu{2}
{1}National Tsing Hua University, Taiwan; {2}University of Texas at Austin, United States

B1L-07: In Memory of Dr. Jian Yuan: Diagnostic & Interventional Transducers
Location: 701F (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Xiaoning Jiang, NC State University
Levent Degertekin, Georgia Institute of Technology

8616: Development, Integration, and Testing of a High-Resolution Ultrasound Endoscope and Neuronavigation System for Minimally-Invasive Brain Surgery
Annika Benson{1}, Robert Weaver{1}, Adrienne Weeks{2}, Tim Hayes{3}, Josh Richmond{3}, Thomas Landry{1}, Jeremy Brown{1}
{1}Dalhousie University, Canada; {2}Nova Scotia Health, Canada; {3}Synaptive Medical, Canada

8261: Guidance and Quantitative Assessment of PFA Treatment for Gastrointestinal Cancers Using an Integrated US-OCT-NIRF Endoscopic System
Ruiming Kong{2}, Fenggang Ren{1}, Zhuoquan Chen{2}, Bing Wang{2}, Hairong Zheng{2}, Teng Ma{2}
{1}First Affiliated Hospital of Xi'an Jiaotong University, Department of Hepatobiliary Surgery, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

8130: A Radiation-Free Percutaneous Coronary Intervention (PCI) Guidance Method Based on Interventional Rotating Linear Phased Array
Dongqing Shang, Hairong Zheng, Teng Ma
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

9004: Packaging for Diagnostic and Interventional Transducers
Christophe Notard
Vermon s.a., France

B1L-08: PFM 1
Location: 701G (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Roger Proksch, Oxford Instruments

7169: Layered In-Plane Ferroelectrics for Oxide Electronics
Elzbieta Gradauskaite
Laboratoire Albert Fert, France

8926: Distance and Relative Humidity Contribution to the Off-Surface Response of AFM Cantilevers
Iaroslav Gaponenko{3}, Ryan Wagner{2}, Roger Proksch{1}, Patrycja Paruch{3}
{1}Oxford Instruments, United States; {2}Purdue University, United States; {3}University of Geneva, Switzerland

8865: Polarization-Derived Lithography of Ferroelectrics
Seongwoo Cho{2}, Iaroslav Gaponenko{2}, Céline Lichtensteiger{2}, Seungbum Hong{1}, Patrycja Paruch{2}
{1}KAIST, Korea; {2}University of Geneva, Switzerland

8993: Revealing the Mechanisms Behind the Resistive Switching in Thin Film Bismuth Ferrite: SPM Approach
Denis Alikin{1}, Alexander Abramov{2}, Boris Slautin{2}, Vladimir Shur{2}, Andrei Kholkin{1}
{1}University of Aveiro, Portugal; {2}Ural Federal University, Russia

7452: Data-Driven Insights from Multidimensional PFM Measurements: Unraveling Enhanced Piezoelectricity in Ceramic-Polymer Composites
Soyun Joo{1}, Rama Vasudevan{2}, Seungbum Hong{1}
{1}Korea Advanced Institute of Science and Technology, Korea; {2}Oak Ridge National Laboratory, United States

B1L-09: Lead Free Ferroelectrics
Location: 701H (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Sebastjan Glinsek, Luxembourg Institute of Science and Technology

7318: Atomic-Scale Structure and Defect Dynamics in Lead-Free Perovskite Ferroelectrics Using STEM
Andreja Bencan Golob{1}, Katarina Ziberna{1}, Oana Condurache{1}, Goran Drazic{2}
{1}Jožef Stefan Institute, Slovenia; {2}National Institute of Chemistry, Slovenia

8900: Ferroelectric Behavior of Epitaxial $BaTiO_3$ Films Grown on TiN Buffered Si Using Pulsed Laser Deposition
Rama Satya Sandilya Ventrapragada, Abhyuday Verma, Arvind Rajnarayan Singh, Shubham Kumar Parate, Srinivasan Raghavan, Pavan Nukala, Sushobhan Avasthi
IISc Bengaluru, India

8896: Ultra-High Capacitive Energy Storage Properties in Sn-Doped $BaTiO_3$ Thin Films
Zouhair Hanani{1}, Soukaina Merselmiz{1}, Nina Daneu{1}, Gertjan Koster{2}, Zdravko Kutnjak{1}, Matjaz Spreitzer{1}
{1}Jozef Stefan Institute, Slovenia; {2}University of Twente, Netherlands

8835: Giant Electrostriction from Defective Epitaxial $BaTiO_3$ Integrated on Si (100)
Shubham Kumar Parate{1}, Sandeep Vura{1}, Subhajit Pal{2}, Upanya Khandelwal{1}, Rama Satya Ventrapragada{1}, Pavan Nukala{1}
{1}IISc Bangalore, India; {2}Queen Mary University of London, India

7487: Ferroelectric Lattice Instability in Cubic Structures of ABO_3 Perovskite-Type Oxides Revealed by Valence Electron Density Distribution Visualization Experiments
Mingyang Shao{2}, Sangwook Kim{1}, Hiroshi Tanaka{3}, Yoshihiro Kuroiwa{1}
{1}Hiroshima University, Japan; {2}National Institutes for Quantum Science and Technology, Japan; {3}Shimane University, Japan

B1L-10: Multiferroics
Location: 702 (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Daniel Sando, Univ. of Canterbury

7089: Engineering Metallic Two-Dimensional Ferroelectrics and Multiferroics
Manuel Bibes
Laboratoire Albert Fert, France

7311: An Emergent Quadruple Phase Ensemble in Doped Bismuth Ferrite Thin Films Through Site and Strain Engineering
Jinling Zhou{2}, Hsin-Hui Huang{3}, Shunsuke Kobayashi{3}, Shintaro Yasui{5}, Ke Wang{6}, Eugene A. Eliseev{4}, Anna N. Morozovska{4}, Ichiro Takeuchi{8}, Zijian Hong{10}, Daniel Sando{7}, Qi Zhang{1}, Nagarajan Valanoor{9}
{1}CSIRO Manufacturing, Australia; {2}Department of Physics, Tsinghua university, China; {3}Japan Fine Ceramics Center, Japan; {4}National Academy of Sciences of Ukraine, Ukraine; {5}Tokyo Institute of Technology, Japan; {6}Tsinghua university, China; {7}University of Canterbury, New Zealand; {8}University of Maryland, United States; {9}University of New South Wales, Australia; {10}Zhejiang University, China

7234: Magnetic Field Control of Lithium Niobate Acoustic Thin Film Delay Lines
Mingye Du, Yuxi Wang, Tao Wu
Shanghaitech university, China

8905: Pressure-Induced Dissolution and Plastic Deformation of Perovskite Ferroelectrics
Mojca Otonicar, Meryem Lachhab, Samir Salmanov, Aadil Shah, Katarina Ziberna, Andreja Bencan, Tadej Rojac, Danjela Kuscer
Electronic ceramics department, Jožef Stefan Institute, Slovenia

8775: Controlling Magnetization (and Spin) with Electric Field
Junling Wang
City University of Hong Kong, China

B1L-11: Acoustic Sensors (NAS)
Location: 703 (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Jun Kondoh, Shizuoka University

8154: Three-Port Piezoelectric Microphone with Stiffness Modification Based on DC Bias
Zhiwei You, Chong Yang, Lei Zhao, Yipeng Lu
Peking University, China

7716: Ultrasonic Reporter for Kinase Activity (UReKA)
Jee Won Yang, Zhiyang Jin, Mikhail Shapiro
California Institute of Technology, United States

8798: Enhanced Infrared Sensing with 30% Scandium-Doped Aluminum Nitride Acoustic Delay Lines Integrated with Metamaterial Absorbers
Farah Ben Ayed, Gabriel Giribaldi, Aurelio Venditti, Pietro Simeoni, Zhenyun Qian, Matteo Rinaldi
Northeastern university, United States

7903: Acoustical Sensitivity and Linearity of a Air-Coupled 3D-Printed Ferroelectret Ultrasonic Receiver
Sven Suppelt{4}, Alexander Anton Altmann{4}, Stephan Schaumann{4}, Nils Demuth{4}, Marc Müller{4}, Luise Emelin Jazdzewski{1}, Tomás Gómez Álvarez-Arenas{3}, Christian Bretthauer{2}, Achim Bittner{1}, Mario Kupnik{4}
{1}Hahn-Schickard, Germany; {2}Infineon Technologies, Germany; {3}Spanish National Research Council, Spain; {4}Technische Universität Darmstadt, Germany

7422: Utilizing Layer-Parameter of Shear Horizontal Surface Acoustic Wave Biosensor for Precise Lipoprotein Particle Sizing
Chia Hsuan Cheng{1}, Hiromi Yatsuda{2}, Jun Kondoh{1}
{1}Shizuoka University, Japan; {2}tst biomedical electronics Co., Ltd., Taiwan

8542: Highly Efficient T-Shaped Piezoelectric Micromachined Transducer
Mohammadreza Kolahdouz Moghaddam, Amirhossein Moshrefi, Seyedfakhreddin Nabavi, Frederic Nabki
Ecole de technologie superieure, Canada

B1L-12: Material Development Ultrasound Transducers
Location: 500 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Ahmad Safari, Rutgers University

8533: Lead-Free Piezoelectric Transducers for Resonant Applications
Erling Ringgaard{1}, Franck Levassort{2}, Ke Wang{4}, Jeffrey Vaitekunas{3}, Hajime Nagata{5}
{1}CTS Denmark, Denmark; {2}GREMAN Laboratory, University of Tours, France; {3}Penn State University, United States; {4}State Key Laboratory of New Ceramics and Fine Processing, Tsinghua University, China; {5}Tokyo University of Science, Japan

7398: Medium Temperature and Low Voltage Poling for PMN-0.27PT Crystal
Zibo Jiang{4}, Kaijia Wu{2}, Yongming Jiang{1}, Zuo-Guang Ye{3}
{1}Innovia Materials Co., Ltd, China; {2}Jiangsu Rongqing Technology Co., Ltd, China; {3}Simon Fraser University, Canada; {4}Xi'an Jiaotong University, China

7448: High-Frequency Linearization of Giant Electrostriction in Ceria
Victor Buratto Tinti{1}, Henrik Bruus{2}, Vincenzo Esposito{1}
{1}DTU Energy, Denmark; {2}DTU Fysik, Denmark

7648: Miniaturized 6 MHz Phased-Array Ultrasound Probe Based on Lead-Free Doped $BaTiO_3$ Piezoceramics
Claire Bantignies{5}, Loïck Bonnet{3}, Monique Pouille-Favre{2}, Rémi Rouffaud{1}, Ana Borta-Boyon{4}, Franck Levassort{1}
{1}Greman, France; {2}Junia, France; {3}Marion Technologies, France; {4}Thales Research and Technology, France; {5}Vermon - Innovation Dpt, France

8932: "Dual e_{31}: Direct and Converse e_{31} Measurement for a Single Thin Film Sample
Sean Smith, Bernardo Martinez-Tovar, Michael McDaniel, Naomi Montross, Eduardo Villarreal, Joseph Evans
Radiant Technologies, United States

B1L-13: Measurement Techniques and Oscillator Characterization
Location: 501 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Brendan Heffernan, IMRA

7693: Direct Digital Measurement System for Phase-Amplitude Noise and Allan Deviation
Marco Pomponio, Archita Hati, Craig Nelson
NIST, United States

8230: Towards GHz Low Phase Noise Oscillators with Electro-Optomechanical Resonators
Thomas Furcatte, Joan Barceló, Wioletta Trzpil, Mathis Lefebvre, Marc Gely, Munique Kazar Mendes, Guillaume Jourdan, Sébastien Hentz, Marc Sansa
CEA-Leti, Université Grenoble Alpes, F-38000 Grenoble, France

8583: Measuring Ultrastable Frequency Sources with Composite References
Claudio Eligio Calosso{3}, Christophe Fluhr{1}, Benoit Dubois{1}, Vincent Giordano{2}, François Vernotte{2}, Enrico Rubiola{2}
{1}FEMTO-Engineering, France; {2}FEMTO-ST, France; {3}Istituto Nazionale di Ricerca Metrologica (INRIM), Italy

8242: Low-G Sensitivity Design and Implementation for Commercial Quartz Crystal Oscillators
Chien-Cheng Yang{2}, Yi-Chia Chen{1}, Chin-Yu Chang{1}, Sheng-Shian Li{1}
{1}National Tsing Hua University, Taiwan; {2}Taitien Electronics Company Ltd., Taiwan

8810: A 2.4-GHz Cryogenic CMOS Oscillator Based on FBAR Resonator for Quantum Computing Applications
Xinhui Cui, Guosheng Lei, Yuefeng Chen, Zhuozhi Zhang, Chao Luo, Xiangxiang Song, Guoping Guo, Chengjie Zuo
University of Science and Technology of China, China

B1L-14: MPA: Preclinical Applications of Photoacoustic Imaging
Location: 503 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Jin Ho Chang, DGIST

7406: Longitudinal Photoacoustic Monitoring of Collagen Evolution Modulated by Cancer-Associated Fibroblasts: Simulation and Experiment Studies
Jiayan Li{2}, Lu Bai{1}, Wenxiang Zhi{1}, Qian Cheng{2}
{1}Fudan University, China; {2}Tongji University, China

8666: Ultrasound/Photoacoustic Image-Guided Magnetic Delivery and Guidance of Stem Cells
Anamik Jhunjhunwala{1}, Kelsey Kubelick{1}, Masako Ishikawa{2}, Brooke Chambliss{1}, Myeongsoo Kim{1}, Jinhwan Kim{3}, Stanislav Emelianov{1}
{1}Georgia Institute of Technology, United States; {2}Nagoya University, Japan; {3}University of California Davis, United States

7608: Monitoring Mitochondrial Transplantation After Liver Ischemia/Reperfusion Injury Using Intraoperative Photoacoustic Imaging
Avinash Mukkala, Ori Rotstein, Eno Hysi
St. Michael's Hospital/University of Toronto, Canada

8568: Pre-Clinical Micro-Us and Photoacoustic Imaging of Porphysome Nanoparticles
Nidhi Singh{3}, Yohannes Soenjaya{2}, Emmanuel Cherin{2}, Felipe Roa{3}, Gang Zheng{1}, Brian C. Wilson{1}, F. Stuart Foster{3}, Christine Demore{3}
{1}Princess Margret Cancer Center, University of Toronto, Canada; {2}Sunnybrook Research Institute, Canada; {3}Sunnybrook Research Institute, University of Toronto, Canada

8644: Monitoring of Liposome-Encapsulated ICG Biodistribution and Stability with Multi-Wavelength PA Imaging and Cryofluorescence Tomography
Cayla Wood{2}, Claire Jones{2}, Ananthakrishnan Jeevarathinam{2}, Sangheon Han{2}, Riley Watson{2}, Jennifer Meyer{2}, Jason Cook{1}, Konstantin Sokolov{2}, Richard Bouchard{2}
{1}NanoHybrids, Inc., United States; {2}University of Texas MD Anderson Cancer Center, United States

8624: The Effects of Delay Between NB Injection and US Stimulation on Tumor Vasculature Assessed by Photoacoustic Imaging
Elizabeth Berndl{3}, Anoja Giles{2}, Wenyi Yang{2}, Martin Stanisz{2}, Pinunta Nittayacharn{1}, Gregory Czarnota{2}, Agata Exner{1}, Michael Kolios{3}
{1}Case Western Reserve University, United States; {2}Sunnybrook Research Institute, Canada; {3}Toronto Metropolitan University, Canada

B1L-15: Focused Ultrasound Spotlight 2
Location: 507 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Frederic Padilla, Focused Ultrasound Foundation
Marvin Doyley, Rochester University

9022: Therapeutic Applications of Neuronavigation-Guided Focused Ultrasound in Malignant Glioma
Kuo-Chen Wei{2}, Ko-Ting Chen{2}, Hong-Chieh Tsai{2}, Ting-Wei Chang{2}, Mun Chun Yeap{2}, Pin-Yuan Chen{2}, Chiung-Yin Huang{2}, Hao-Li Liu{1}
{1}Department of Electrical Engineering, National Taiwan University, Taiwan; {2}Department of Neurosurgery, Chang Gung Memorial Hospital, Taiwan

8797: Histotripsy Cancer Treatment: The Road from Bench to Bedside
Zhen Xu
University of Michigan, United States

7078: Enhanced Transdermal Drug Delivery by Vortex Focused Ultrasound
Chih-Hsien Li, Ching-Hsiang Fan
Department of Biomedical Engineering, National Cheng Kung University, Taiwan

Lunch
Location: Exhibit Hall - 7F (TaiNEX 2)
12:00 - 13:00

A-MEM Challenge
Location: 507 (TaiNEX 1)
12:00 - 13:00
Session Chair(s): Emma Harris, Institute of Cancer Research, London,
John Civale, Institute of Cancer Research, London

A Robust Pipeline Including Directional Filtering and Wave Propagation Zones for Mapping Shear Wave Velocity
Ariana Cihan, Patrick Segers, Annette Caenen
Ghent University, Belgium

Improved Shear Wave Estimation using Optimization-based Tracking and Adaptive Physics-inspired Deep Neural Network
Ali Kafaei Zad Tehrani{1}, Hassan Rivaz{1} , Yuyang Gu{2}, Ion Candel{2}
{1} Concordia University, Canada; {2} Harvard Medical School, USA

USEWEB for Mapping Elastic Modulus for ARF Push: (a-MEM) Challenge 2024
Piotr Kijanka{1}, Hsiao-Chuan Liu{2}, Hyoung-ki Lee{3}
{1} AGH University of Krakow, Poland; {2} University of Southern California, USA; {3} Philips Inc., USA

Harmonic Elastography Through Time-of-Flight Calculations
Murthy Guddati
North Carolina State University, USA

Challenge results from the Elastography Task Force, Digital Signal Processing and Image Analysis (DSB) Group
Mahsa Sotoodeh Ziksari
University of Oslo, Norway

B2L-01: MIM: Multi-modality Imaging & New Imaging Modalities
Location: 506 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Stanislav Emelianov, Georgia Institute of Technology
Jonathan Mamou, Weill Cornell Medicine

8817: Multi-Modal Imaging: Photoacoustic Imaging Plus More
Chulhong Kim
Pohang University of Science and Technology, Korea

7607: Optical Ultrasound Platform for Endobronchial Imaging
Shaoyan Zhang, Robert Stafford-Williams, Sean Cardiff, Eleanor Mackle, Semyon Bodian, Edward Zhang, Paul Beard, Richard Colchester, Adrien Desjardins, Erwin Alles
University College London, United Kingdom

7235: Magnetic Microbubbles Improve Magnetomotive Ultrasound Displacement Amplitude Despite Low Loading Efficiency
Georgia Adam{5}, Vladimir Denisov{1}, Zahra Rattray{5}, Adrian Thomson{3}, Susan Moug{2}, Tomas Jansson{1}, Susan Farrington{3}, Carmel Moran{3}, Helen Mulvana{4}
{1}Lund University, Sweden; {2}Royal Alexandra Hospital, United Kingdom; {3}University of Edinburgh, United Kingdom; {4}University of Glasgow, United Kingdom; {5}University of Strathclyde, United Kingdom

8623: Tomographic Imaging of Acoustically Induced Electric Polarization in Human Body
Nobuto Kaitoh{1}, Haruya Inoko{1}, Kazuki Tamura{2}, Kenji Ikushima{1}
{1}Department of Biomedical Engineering, Tokyo University of Agriculture and Technology, Japan; {2}Institute of Photonics Medicine, Hamamatsu University School of Medicine, Japan

7572: Modeling of Acoustoelectric Effect with Electrokinetic Phenomenon: A Simulation Study Based on Ion-Solvent Interaction
Yuchen Tang, Wei Yi Oon, Wei-Ning Lee
University of Hng Kong, Hong Kong

B2L-02: AlScN Switching Kinetics 2
Location: 701A (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Simon Fichtner, University Kiel

7163: Wake-Up, Retention, and Fatigue in Wurtzite Ferroelectric Films
Susan Trolier-McKinstry, Fan He, Leonard Jacques, Pannawit Tipsawat, John Hayden, Jon-Paul Maria
Penn State, United States

8771: Stable Switching of Ferroelectric ($Al_{0.8}Sc_{0.2}$)N Films as a Function of Temperature and Frequency
Shinnosuke Yasuoka{3}, Ryoichi Mizutani{3}, Reika Ota{3}, Takahisa Shiraishi{3}, Takao Shimizu{1}, Kazuki Okamoto{3}, Masato Uehara{2}, Hiroshi Yamada{2}, Morito Akiyama{2}, Hisohi Funakubo{3}
{1}National Institute for Materials Science (NIMS), Japan; {2}National Institute of Advanced Industrial Science and Technology (AIST), Japan; {3}Tokyo Institute of Technology, Japan

7337: Understanding Ferroelectric $Al_{0.85}Sc_{0.15}N$ Domain Switching Dynamics Through the Comparison with $Hf_{0.5}Zr_{0.5}O_2$
Roberto Guido, Xuetao Wang, Bohan Xu, Ruben Alcala, Thomas Mikolajick, Uwe Schroeder, Patrick Lomenzo
NaMLab gGmbH, Germany

7772: Grain Limited Domain Switching in Wurtzite-Type Ferroelectrics
Takao Shimizu{2}, Kota Hasegawa{1}, Takeo Ohsawa{2}, Isao Sakaguchi{2}, Naoki Ohashi{2}
{1}Kyusyu University, Japan; {2}National Institute for Materials Science, Japan

8360: Switching Mechanisms in Ferroelectric Wurtzites
Cheng-Wei Lee{1}, Keisuke Yazawa{2}, Andriy Zakutayev{2}, Geoff Brennecka{1}, Prashun Gorai{1}
{1}Colorado School of Mines, United States; {2}National Renewable Energy Laboratory, United States

8502: Understanding Evolution of $Al_{1-x}(Sc,B)_xN$ Film Leakage Characteristics and Switching Kinetics with Varying Defect and Wake-Up States
Erdem Ozdemir{2}, Betul Akkopru-Akgun{2}, Leonard Jacques{2}, Pedram Yousefian{2}, Keisuke Yazawa{1}, Chloe Skidmore{2}, Jack Hayden{2}, Jon-Paul Maria{2}, Clive Randall{2}, Susan Trolier-McKinstry{2}
{1}Colorado School of Mines, United States; {2}Penn State University, United States

B2L-03: MBB: Matrix and Sparse Arrays
Location: 701B (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Walter Simson, Stanford University
Sina Sadeghpour, KU Leuven

8540: 3D Imaging with Flexible Patch Shape Estimation Using Differentiable Beamforming
Dongwoon Hyun, Ben Frey, Jeremy Dahl
Stanford University, United States

7819: Weighted Periodic Sparse Array: Analysis, Design, and In Vivo Demonstration
Doyoung Jang{1}, Heechul Yoon{1}, Gi-Duck Kim{2}, Jae Hee Song{4}, Tai-Kyong Song{3}
{1}Dankook University, Korea; {2}Samsung Medison, Korea; {3}Sogang University, Korea; {4}University of Queensland, Korea

7667: Fast Image Reconstruction in the Frequency Domain for Row-Column-Arrays
Paul Hagemeyer, Thomas Lisson, Stefanie Dencks, Georg Schmitz
Ruhr University Bochum, Germany

7369: Real-Time Motion-Corrected 3D Imaging with Row-Column Arrays
Sebastian Kazmarek Præsius, Lasse Thurmann Jørgensen, Jørgen Arendt Jensen
Technical University of Denmark, Denmark

8113: Spatiotemporal Encoding Synthetic Transmit Aperture for 3D Ultrasound Imaging
Zhiqiang Li, Xingyue Wei, Lijie Huang, Rui Wang, Gangqiao Xie, Jianwen Luo
Tsinghua University, China

8705: Efficient Retrospective Transmit Focusing with Range-Doppler Algorithm
Marko Jakovljevic{2}, Scott Schoen{2}, Michael Wang{1}, Louise Zhuang{3}, Anthony Samir{2}
{1}General Electric Healthcare, United States; {2}Massachusetts General Hospital, United States; {3}Stanford University, United States

B2L-04: MCA: Therapy and Drug Delivery
Location: 701C (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Meaghan O'Reilly, Sunnybrook Research Institute
Klazina Kooiman, Thoraxcenter, Erasmus MC

8392: Three-Dimensional Pressure-Based Neoadjuvant Chemotherapy Response Prediction of Breast Cancer
Kibo Nam{2}, Basak Dogan{5}, Dominique James{4}, Corinne Wessner{2}, Jessica Porembka{5}, Priscilla Machado{2}, Bersu Ozcan{5}, Nisha Unni{5}, Maysa Abu-Khalaf{3}, Kenneth Hoyt{1}, Flemming Forsberg{2}
{1}Texas A&M University, United States; {2}Thomas Jefferson University, United States; {3}Thomas Jefferson University Hospital, United States; {4}University of Texas at Dallas, United States; {5}University of Texas Southwestern Medical Center, United States

7519: Ultrasound-Mediated Blood Brain Barrier Opening for the Delivery of mRNA Lipid Nanoparticles in a Glioblastoma Mouse Model
Maya Elbaz{4}, Meir Goldsmith{3}, Yulia Chulanova{3}, Mike Bismuth{2}, Dan Peer{3}, Tali Ilovitsh{1}
{1}Department of Biomedical Engineering and The Sagol School of Neuroscience, Tel-Aviv University, Israel; {2}Department of Biomedical Engineering, Tel-Aviv University, Israel; {3}George S. Wise Faculty of Life Sciences. Tel Aviv University, Israel; {4}Sagol School of Neuroscience, Tel-Aviv University, Israel

8082: Acoustic pH Sensors for Ultrasound Imaging of Cellular Acidification
Byung Min Park, Dion Terwiel, Baptiste Helies, Eleonora Munoz-Ibarra, David Maresca
TU Delft, Netherlands

7263: Ultrasound-Assisted Modulation of Endothelial Immunobiology in the Context of CAR-NK-92 Cell Chemotaxis for Cellular Immunotherapy
Elahe Memari{1}, Ryan Alkins{2}, Brandon Helfield{1}
{1}Concordia University, Canada; {2}Queen's University, Canada

7381: Direct Observation of Post-Sonoporation Membrane Resealing in a Giant Unilamellar Vesicle Model
Lyuyuan Wu, Junrong Zhang, Robyn Klassen, Euan Gardner, Zhao Pan, Alfred Yu
University of Waterloo, Canada

9155: Highly Sensitive Ultrasound Imaging of Acoustic Biomolecules Using Coded Excitations
Rohit Nayak{1}, Mengtong Duan{1}, Bill Ling{1}, Dina Malounda{1}, Mickael Tanter{2}, Mikhail G. Shapiro{1}
{1}California Institute of Technology, United States; {2}ESPCI Paris, Physics for Medicine Paris, Inserm, France

B2L-05: MIS: Microvascular Imaging
Location: 701D (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Matthew Bruce, Washington University
Massimo Mischi, Eindhoven University of Technology

7441: An Adaptive Spatiotemporal Filter for Ultrasound Localization Microscopy Based on Density Canopy Clustering
Yu Qiang{2}, Wenyue Huang{2}, Wenjie Liang{2}, Yue Pan{2}, Zhiqiang Zhang{2}, Lei Sun{1}, Weibao Qiu{2}
{1}HongKong Polytechnic University, China; {2}Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

8621: Deep Learning for Fast Inter-Frame Motion Correction in Ultrasound Microvasculature Imaging
Manali Saini, Mostafa Fatemi, Azra Alizad
MAYO CLINIC COLLEGE OF MEDICINE AND SCIENCE, United States

8071: Robust 3D Visualization of Skin Micro-Vessels Based on Signal and Image-Based Feature Extraction on Ultrafast Us Dataset Acquired with Continuous Linear Array Translation
Anam Bhatti, Takuro Ishii, Yoshifumi Saijo
Tohoku University, Japan

8143: High Spatiotemporal Resolution Contrast-Free Microvascular Imaging Using Angular Clutter Filtering and Adaptive Nonlinear Compounding
Liyuan Jiang{2}, Hanbing Chu{2}, Yang Liu{1}, Jiacheng Liu{2}, Hongmei Zhang{1}, Yujin Zong{2}, Mingxi Wan{1}
{1}Xi'an Jiaotong University, China; {2}Xi’an Jiaotong University, China

7503: Clutter Filtering of Angular Domain Data for Contrast-Free Ultrafast Microvascular Imaging
Liyuan Jiang{2}, Hanbing Chu{2}, Yang Liu{1}, Jiacheng Liu{2}, Mingxi Wan{1}
{1}Xi'an Jiaotong University, China; {2}Xi’an Jiaotong University, China

7597: Volumetric Contrast-Free Super Resolution Imaging with a Row-Column Array
Jørgen Arendt Jensen
Technical University of Denmark, Denmark

B2L-06: ABD BAW Devices 1
Location: 701E (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Rich Ruby, Broadcom Ltd.

9015: Advances in BAW Technology Enabling 5G NR and WiFi6E
Andreas Tag, Michael Schaefer, Jyothi Sadhu, Milad Koohi
Qorvo Inc, Germany; Qorvo Inc, United States

8766: Breaking the Ladder Bandwidth Limitation: Synthesis of Acoustic Wave Ladder Filters Adding Parallel Connected Resonators
Santi Cano, Carlos Caballero, Mario Faura, Jordi Verdu, Pedro de Paco
Universitat Autonoma de Barcelona, Spain

7847: A Method for Determining the Impedance of BAW Resonators Within a Filter
Renfeng Jin, David Molinero, Dave Feld
Skyworks Inc., United States

8100: Innovative Glass-Encapsulation for Double-Side-Pattern BAW Filters
Ji Liang, Xiaoru Wang, Duan Feng, Jie Zou
Shenzhen Newsonic Technologies Co.Ltd, China

8632: A High Power-Handling Laterally-Excited Bulk Acoustic Resonator with Double-Layer Electrodes Over +35 dBm
Zhiwei Wen, Wenjuan Liu, Min Zeng, Yuanhang Qu, Yao Cai, Yan Liu, Chengliang Sun
Wuhan University, China

B2L-07: TMI: 2D Arrays
Location: 701F (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Christine Démoré, University of Toronto
Holly Lay, Acoustiic Inc

7846: 17.5 MHz Ultrasound 2D Array Fabrication with Interposer and Stacked PCB
Yizhe Sun{3}, Xin Sun{3}, Robert Wodnicki{3}, Haochen Kang{3}, U-Wai Lok{1}, Shigao Chen{1}, Qifa Zhou{2}
{1}Mayo Clinic College of Medicine, United States; {2}University of southern califor, United States; {3}University of southern california, United States

8541: Design and Fabrication of 128+128 Element Row-Column Addressed CMUT Arrays for Monitoring Murine Cardiac Flow Patterns
Nairit Das{2}, Eda Begum Erdogan{2}, Muhammet Annayev{2}, Jeffrey Ketterling{1}, Yalcin Yamaner{2}, Omer Oralkan{2}
{1}Cornell University, United States; {2}North Carolina State University, United States

8483: A Large-Area Tiled Bias-Sensitive Electrostrictive TOBE Array with 128×256 Elements
Negar Majidi{3}, Mohammad R. Sobhani{1}, Roger Zemp{2}
{1}CliniSonix Inc., Canada; {2}CliniSonix Inc. & University of Alberta, Canada; {3}University of Alberta, Canada

7366: Separate Transmit/Receive Sparse Ultrasound Probe for 3D Imaging
Alexis Carrion, Ibrahima Touré, Tamara Krpic, Maxime Bilodeau, Philippe Marcoux, Patrice Masson, Nicolas Quaegebeur
Université de Sherbrooke, Canada

8673: 2D Arrays: Technologies and Challenges, a Review of Past, Present and Future
Robert Wodnicki{2}, Katherine Ferrara{1}, Qifa Zhou{2}
{1}Stanford, United States; {2}University of Southern California, United States

B2L-08: Novel Methods
Location: 701G (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Erdem Ozdemir, Penn State

8092: Strain-Induced Polarization Rotation in a Freestanding Ferroelectric Oxide Membrane
Alban Degezelle
Centre de Nanosciences et Nanotechnologies, France

7998: Oersted Mapping of Current Flow in Ferroelectric Domain Walls with a Single-Spin Magnetometer
James Dalzell, Conor McCluskey, Ray McQuaid, Marty Gregg, Amit Kumar
Queen's University Belfast, United Kingdom

8356: Beyond Ferroelectric Characterization at Nanoscale: Multi-Imaging of PZT Thin Film Through Enhanced DFRT-SSPFM
Hugo Valloire{1}, Thomas Jalabert{1}, Nicolas Vaxelaire{1}, Brice Gautier{2}, Xiaofei Bai{2}, Lukasz Borowik{1}
{1}CEA-LETI, France; {2}INSA LYON, France

8111: Additive Manufacturing of Textured, Lead-Free Piezoelectric Ceramics
Astri Haugen
DTU, Denmark

8101: Exploring Complex Polar Orders in Nanosize Ferroelectric Layers by Scanning Transmission Electron Microscopy
Oana Condurache{2}, Razvan Burcea{2}, Mouna Khiari{1}, Stephane Fusil{3}, Brahim Dkhil{2}, Maxime Vallet{2}, Vincent Garcia{3}, Houssny Bouyanfif{1}
{1}Université de Picardie Jules Verne, Laboratoire de Physique de la Matière Condensée, France; {2}Université Paris-Saclay, CentraleSupelec, SPMS, France; {3}Université Paris–Saclay, CNRS, Laboratoire Albert Fert, France

B2L-09: Lead Based Ferroelectrics
Location: 701H (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Andreja Bencan, Institute Jozef Stefan

7851: Comparison of AC and DC Poling of Mn-Doped $Pb(Mg_{1/3}Nb_{2/3})O_3$-$Pb(ZrTi)O_3$ Single Crystals by Solid-State Crystal Growth Method
Hiroshi Maiwa{2}, Yushi Yamagata{2}, Yu Xiang{2}, Yohachi Yamashita{2}, Ho-Yong Lee{1}
{1}Ceracomp. Co. Ltd.,, Korea; {2}Shonan Institute of Technology, Japan

7056: Investigation of Dielectric, Ferroelectric and Piezoelectric Properties of Sm & Eu Doped $Pb(Mg_{1/3}Nb_{2/3})_{0.71}Ti_{0.29}O_3$ Ceramics
Shubham Modgil{1}, O.P. Thakur{2}, Sanjeev Kumar{1}, Arun Kumar Singh{1}
{1}Punjab Engineering College (Deemed to be University), Chandigarh, India; {2}Solid State Physics Laboratory, New Delhi, India

8349: Revealing the Piezoelectric Mechanism in Novel High Tc Ferroelectric Ceramic $Bi(Fe,Ti,Mg)O_3$ - $PbTiO_3$
Brooke Richtik{3}, Alicia Manjon-Sanz{2}, Leah Bellcase{1}, Rachel Beall{1}, Vedika Shah{1}, Jacob Jones{1}, Michelle Dolgos{3}
{1}North Carolina State University, United States; {2}Oak Ridge National Laboratory, United States; {3}University of Calgary, Canada

8603: Domain-Wall Enhancement of Pyroelectric Response
Ching-Che Lin{2}, Yihao Hu{3}, Jaegyu Kim{2}, Djamila Lou{2}, Ashwath Bhat{2}, Pravin Kavle{2}, Tae Yeon Kim{2}, Chris Dames{2}, Shi Liu{3}, Lane Martin{1}
{1}Rice University, United States; {2}UC Berkeley, United States; {3}Westlake university, China

7551: Dielectric Properties of Mixed Halide Perovskites
Sergejus Balciunas{2}, Mantas Simenas{2}, Sarunas Svirskas{2}, Juras Banys{2}, Miroslaw Maczka{1}
{1}Institute of Low Temperature and Structure Research, Poland; {2}Vilnius University, Lithuania

8145: Physical Implementation of Neural Networks Using Nonlinearly Coupled Piezoelectric MEMS Resonators for Neuromorphic Sensing
Takeshi Yoshimura{2}, Taiki Haga{2}, Norifumi Fujimura{2}, Kensuke Kanda{3}, Isaku Kanno{1}
{1}Kobe University, Japan; {2}Osaka Metropolitan University, Jordan; {2}Osaka Metropolitan University, Japan; {3}University of Hyogo, Japan

B2L-10: Manufacturing Focused Processing
Location: 702 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Manuel Henrique Lente, Universidade Federal de São Paulo

8861: Plastic Crystals and Their Potential as Matrix Phases for Recyclable Composite Ferroelectrics
Julian Walker
Norwegian University of Science and Technology, Norway

7475: Powder-Based High-Throughput Solid-State Synthesis of Functional Ceramics
Kyle Webber, Tobias Fey, Udo Eckstein
Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

8004: $(Na_{1/2}Bi_{1/2})TiO_3$-Based Lead-Free Piezoceramic Suspensions for Additive Manufacturing by Photopolymerization
Tobias Pötzelsberger{2}, Anastasia Kucheryavaya{2}, Max Schmallegger{2}, Yue Liu{1}, Lovro Fulanović{1}, Jurij Koruza{2}
{1}TU Darmstadt, Germany; {2}TU Graz, Austria

8744: Antiferroelectric Materials for High Power Energy Conversion
Yun Liu
Australian National University, Australia

7767: Effect of Sintering Temperature on the Small- and Large-Signal Electromechanical Properties of $0.94(Na_{1/2}Bi_{1/2})TiO_3$-$0.06BaTiO_3$
Alexander Martin{2}, Juliana Maier{1}, Neamul Khansur{1}, Ken-Ichi Kakimoto{2}, Kyle Webber{1}
{1}Friedrich Alexander University Erlangen-Nuremberg, Germany; {2}Nagoya Institute of Technlogy, Japan

B2L-11: Acoustic Imaging and Microscopy (NAI)
Location: 703 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Peter Lukacs, University of Strathclyde

8571: Combining Gas Vesicle Acoustic Contrast Agents with Field-Deployable GHz Frequency Ultrasonic Chips to Detect Gene Expression in Sentinel Microorganisms
Ishaan Dev{1}, Anuj Baskota{3}, Justin Kuo{3}, Amit Lal{2}, Mikhail Shapiro{1}
{1}California Institute of Technology, United States; {2}Cornell University, United States; {3}Geegah Inc., United States

7223: 3D Imaging of Dynamic Collagen Release from Living Fibroblasts and Melanoma via Ultrasonic Microscope
Sachiko Yoshida{3}, Daiki Yamanaka{3}, Kazuto Kobayashi{1}, Naohiro Hozumi{3}, Yuki Ogura{2}
{1}Honda Electronics Co.Ltd, Japan; {2}Shiseido Co., Ltd MIRAI Technology Institute, Japan; {3}Toyohashi University of Technology, Japan

7121: Long-Time High-Resolution Observation of Culturing Cells by Spectroscopic Focused-Ultrasound Imaging with Deep Learning
Natsumi Fujiwara, Midori Uno, Hiroki Fukuda, Akira Nagakubo, Shao Ying Tan, Masahiro Kino-Oka, Hirotsugu Ogi
Graduation School of Engineering, Osaka University, Japan

8939: Age Dependent Ultrasonic Properties of Zebrafish Embryos Using GHz Ultrasound Imaging
Daria Shkel, Amit Lal
Cornell University, United States

8609: Modeling and Imaging of GHz Ultrasonic Impedance of C. elegans
Anuj Baskota{3}, Hsin-Yun Chang{1}, Amaresh Chaturbedi{1}, Justin Kuo{3}, Serhan Ardanuc{3}, Siu Sylvia Lee{1}, Amit Lal{2}
{1}Cornell University, United States; {2}Cornell University, Geegah Inc, United States; {3}Geegah Inc, United States

8598: Portable Fungi Growth Detection of Botrytis Cinerea Enabled by Swept Frequency GHz Ultrasonic Imaging
Daria Shkel, Amit Lal
Cornell University, United States

B2L-12: Joint: Ultrasonic PiezoMEMS Technologies and Applications
Location: 500 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Alessandro Stuart Savoia, Roma Tre University
Haley Nicole Jones, Pennsylvania State University

7963: Innovative Electro-Structural Integration Approach Defining Large-Area PMUT on TFT Backplane for Ultrasound Imaging Systems
Pieter Gijsenbergh, Antonia Malainou, Dominika Wysocka, Robert Ukropec, Alessandro Stoppato, Zhiyuan Shen, Florian De Roose, Raf Appeltans, Veronique Rochus, Xavier Rottenberg
imec, Belgium

8259: A Simplified and Wafer-Level Thin Film Characterization of Transverse Piezoelectric Coefficient
Chong Yang{2}, Jingwei He{1}, Lei Zhao{2}, Zhiwei You{2}, Aocheng Bao{2}, Isaku Kanno{1}, Yipeng Lu{2}
{1}Mechanical Engineering, Kobe University, Japan; {2}School of Integrated Circuits, Peking University, China

8084: Temperature Coefficients of Transverse Elastic Properties of Scandium-Doped Aluminum Nitride (ScAlN) Thin Film Grown on Preformed Cavities
Sagnik Ghosh, Prakasha Chigahalli Ramegowda, Duan Jian Goh, Jaibir Sharma, Yul Koh, Joshua Lee
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

7108: Array of AlScN-Based Piezoelectric Micromachined Ultrasonic Transducers (PMUTs) for the Acoustofluidic Manipulation of Particles and Spheroids
Emilie Vuille-Dit-Bille{2}, Sarah Heub{2}, Dara Bayat{2}, Marc-Alexandre Dubois{2}, Thomas Overstolz{2}, Selman Sakar{3}, Gilles Weder{1}
{1}CSEM, Switzerland; {2}CSEM SA, Switzerland; {3}EPFL, Switzerland

9001: Advancing Ultrasound Technology with the Integration of PMUTs on CMOS
Nuria Barniol
Universitat Autonoma de Barcelona, Spain

B2L-13: Integrated Microwave Clocks
Location: 501 (TaiNEX 1**)**
13:00 - 14:30
Session Chair(s): Tetsuya Ido, NICT

8994: Integrated Cold-Atom Microwave References
Paul Griffin{2}, Alan Bregazzi{2}, Aidan Arnold{2}, Erling Riis{2}, James McGilligan{2}, Christoph Affolderbach{1}, Gaetano Mileti{1}
{1}Université de Neuchâtel, Switzerland; {2}University of Strathclyde, United Kingdom

8710: Wafer-Scale Microfabrication for Alkali-Metal Vapor Cells Using Inkjet Printed Rubidium Azide
Shun Kiyose{1}, Miroku Shimada{6}, Yasushi Hori{2}, Yusuke Odagiri{4}, Satoshi Hatano{4}, Yuichiro Yano{3}, Shigeyoshi Goka{5}, Yoshikazu Hirai{1}, Motoaki Hara{3}
{1}Kyoto University, Japan; {2}Microjet Corporation, Japan; {3}National Institute of Information and Communications Technology, Japan; {4}Neoark Corporation, Japan; {5}Tokyo Metropolitan University, Japan; {6}TOYOBO MC Corporation, Japan

8747: Cesium Laser-Atomic Oscillator
Yuan-Yu Jau
Sandia National Labs, United States

7387: Development of a Compact Cold-Atom Clock with a Loop-Gap Cavity
Sang Eon Park, Hyun-Gue Hong, Young-Ho Park, Sang-Bum Lee, Jae Hoon Lee, Seji Kang, Sangwon Seo, Taeg Yong Kwon
Korea Research Institute of Standards and Science, Korea

8793: Development Status and Performance of the Timing Unit Rubidium Oscillator (TURbO) as a Compact High Performance, Low Swap Atomic Clock
Christopher Varuolo{2}, Huascar Ascarrunz{2}, Justin Lanfranchi{1}, Jordan Jones{1}, Thomas McClelland{1}
{1}Frequency Electronics Inc., United States; {2}Frequency Electronics, Inc., United States

B2L-14: MEL: Mechanical Characterization of the Heart
Location: 503 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Hideyuki Hasegawa, University of Toyama
Geng-Shi Jeng, National Yang Ming Chiao

7810: New Observations and Analysis of Natural Myocardial Vibrations for Myocardial Passive Stiffness Assessment
Yue Xu, Meizhen Wu, Kai-Hang Yiu, Wei-Ning Lee
University of Hong Kong, Hong Kong

7175: Comparison of Natural Mechanical Wave Imaging Derived Myocardial Anisotropic Indicator Between Healthy Volunteers and Hypertensive Subjects
Dan Ran, Shuangshuang Li
Shenzhen Mindray Bio-Medical Electronics Co., Ltd, China

7665: 3D High-Frame-Rate Imaging of Natural Shear Waves in the Parasternal View of the Heart
Annette Caenen{4}, Konstantina Papangelopoulou{3}, Laurine Wouters{3}, Jens-Uwe Voigt{3}, Patrick Segers{2}, Sebastien Salles{1}, Lasse Lovstakken{5}, Jan D'Hooge{3}
{1}CNRS, France; {2}Ghent University, Belgium; {3}KU Leuven, Belgium; {4}KU Leuven/Ghent University, Belgium; {5}Norwegian University of Science and Technology, Norway

8335: Natural Shear Waves: Evaluating the Performance of Automatic Wave Speed Estimators
Andressa Araujo Andrade Sousa{1}, Marta Orlowska{1}, Annette Caenen{2}, Laurine Wouters{1}, Ahmed Youssef{1}, Jens-Uwe Voigt{1}, Jan D'Hooge{1}
{1}KU Leuven, Belgium; {2}KU Leuven/ UGent, Belgium

8826: Impact of Pressure Overload on Left and Right Ventricle Myocardial Stiffness
Aimen Malik{4}, Maelys Venet{3}, Alison Howell{1}, Rajiv Chaturverdi{1}, Luc Mertens{1}, Jerome Baranger{2}, Olivier Villemain{3}
{1}Hospital for Sick Children, Canada; {2}Physics for Medicine Paris, France; {3}University Hospital of Bordeaux, France; {4}University of Toronto, Hospital for Sick Children, Canada

8487: Reproducibility of Point of Care Cardiac Time Harmonic Ultrasound Elastography
Tom Meyer{1}, Brunhilde Wellge{1}, Gina Barzen{1}, Stefan Klemmer-Chandia{1}, Fabian Knebel{2}, Katrin Hahn{1}, Thomas Elgeti{1}, Thomas Fischer{1}, Jürgen Braun{1}, Heiko Tzschätzsch{1}, Ingolf Sack{1}
{1}Charité - Universitätsmedizin Berlin, Germany; {2}Sana Klinikum Lichtenberg, Germany

B2L-15: MTC: Novel Methods and Applications
Location: 507 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Roberto Lavarello, Pontificia Universidad Católica del Perú

7922: Ultrafast Ultrasound Imaging with a Matrix Array and Sparse Random Aperture Compounding for Single Motor Unit Activation Analysis
Marco Carbonaro, Silvia Seoni, Melania Nardella, Alberto Botter, Kristen Meiburger
Politecnico di Torino, Italy

8187: Enhancing Pulmonary Tumor Diagnosis Based on Endobronchial Ultrasound Images Through Cross-Domain Features via Supervised Contrastive Learning
Zhe Chen{2}, Jiaxin Feng{1}, Xingyue Wei{2}, Qiong He{2}, Shiyue Li{1}, Changhao Zhong{1}, Jianwen Luo{2}
{1}Guangzhou Medical University, China; {2}Tsinghua Universuty, China

8957: Nonlinearity Parameter Imaging of Local Estimates Using Spatial Compounding
Esteban Avilés, Roberto Lavarello, Andres Coila
Pontificia Universidad Católica del Perú, Peru

7349: Homodyned K-Distribution Based Characterization of the Rat Placenta Using the Reduced Uterine Perfusion Pressure Model of Preeclampsia
Alexander Gleed{2}, Andrew Markel{1}, Allan Alencar{1}, Kenneth Swan{1}, Cameron Hoerig{2}, Carolyn Bayer{1}, Jonathan Mamou{2}
{1}Tulane University, United States; {2}Weill Cornell Medicine, United States

7375: Muscle Quality Assessment Through Live Speed-of-Sound Measurement
Di Xiao, Pat De la Torre, Malak Saif El Nasr, Marina Mourtzakis, Alfred Yu
University of Waterloo, Canada

7709: Random Forest-Based Classification of Metastases in Clinically Scanned In Vivo Lymph Nodes Using Quantitative Ultrasound Imaging
Elmira Ghahramani{3}, Cameron Hoerig{3}, Kirk Wallace{1}, Maoxin Wu{2}, Jonathan Mamou{3}
{1}GE HealthCare Technology & Innovation Center, United States; {2}Stony Brook University, United States; {3}Weill Cornell Medicine, United States

B2L-16: MSD: Novel Devices and Applications
Location: 502 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Steven Freear, University of Leeds
Brooks Lindsey, Georgia Institute of Technology

7451: Design and Control of a Magnetically-Actuated Ultrasound Capsule Endoscope
Zhengxin Yang{1}, Yang Jiao{1}, Lihao Liu{2}, Xinze Li{1}, Jiaqi Li{1}, Yaoyao Cui{1}
{1}Suzhou Institute of Biomedical Engineering and Technology (SIBET), Chinese Academy of Sciences (CAS), China; {2}University of Science and Technology of China, China

7151: An Autotuning Diaphragm Assessment System Based on Ultrasound Image Tracking
Zhen Song{1}, Vaheh Nazari{1}, Stefanie Yu Sun{1}, Alfred S.K. Wong{2}, Yongping Zheng{1}
{1}Hong Kong Polytechnic University, Hong Kong; {2}Queen Mary Hospital, Hong Kong, Hong Kong

7468: Novel Tri-Frequency Probe Development for Advanced Photoacoustic Gastrointestinal Imaging
Jun-Yan Huang{1}, Hsiao Chuan Liu{3}, Jian-Xing Wu{2}
{1}National Chin-Yi University of Technolog, Taiwan; {2}National Sun Yat-sen University, Taiwan; {3}University of Southern California, United States

8226: Device Design for the Rapid Ultrasonic Rewarming of Alginate Beads and Cryoprotectant Solution to Improve Cryopreservation Recovery
Rui Xu, Thomas Brookshaw, Eloy Erro, Morgan Roberts, Bradley Treeby, Clare Selden, Eleanor Martin
University College London, United Kingdom

8354: Open-Source Fully-Programmable Flow Phantom for Doppler Ultrasound
Sergei Vostrikov{1}, Josquin Tille{1}, Ilia Nazemtsev{1}, Luca Benini{2}, Andrea Cossettini{1}
{1}ETH Zurich, Switzerland; {2}ETH Zurich, University of Bologna, Switzerland

8916: Novel Design and Registration of Acoustic Holograms in Transcranial FUS Therapy
Pradosh Pritam Dash, Costas Arvanitis
Georgia Institute of Technology, United States

Poster Session #2: B3aP-18: Nonlinear Acoustics (PNL) 3
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Mihir Patel, Self

7428: Enhancement Effects of Underwater Acoustic Streaming by a Cylinder with a Cavity
Yimeng Wang, Manabu Aoyagi
Muroran Institute of Technology, Japan

7478: Exclusive Bubble Detection in Multiphase-Flows, Using Forced Non-Linear Oscillation
Hannes Emmerich{2}, Vaishakh Tholan{1}, Sascha Heitkam{1}, Kerstin Eckert{1}, Zehua Dou{2}, Jürgen Czarske{2}, David Weik{2}
{1}Helmholtz-Zentrum Dresden-Rossendorf, Germany; {2}Technische Universität Dresden, Germany

7757: Non-Contact Mode-Selective Excitation of Liquid Motion in a Container Using Acoustic Radiation Force of Airborne Convergent Ultrasound
Shunsuke Hijikata, Masaya Takasaki, Keisuke Hasegawa
Saitama University, Japan

7988: A Designing Method of Multi-Channel Ultrasound Source Signals for Presenting Private Sound Field with Parametric Mixing in Air
Tatsuya Ito, Masaya Takasaki, Keisuke Hasegawa
Saitama Univ., Japan

8362: Non-Contact Rotation by Acoustic Streaming Generated by a Cylinder with Multiple Small Through-Holes
Manabu Aoyagi{1}, Naoki Karakizawa{1}, Yimeng Wang{1}, Kohei Aono{2}
{1}Muroran Institute of technology, Japan; {2}SEIDENSHA ELECTRONICS CO., LTD, Japan

8448: Optimizing Sound Quality with a Compact Linear-Amplifier-Based Parametric Speaker: Harmonics Reduction and Bass Enhancement
Yin-Fan Chiang, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

7462: Strategy for Overhead Redirection of Exhaled Infectious Aerosols Using Upward Upright Acoustic Streaming by Floor-Reflected Ultrasonic Beam
Hiromu Hashimoto, Masaya Takasaki, Keisuke Hasegawa
Saitama university, Japan

Poster Session #2: B3bP-18: ISAF: Fundamentals of Ferroelectrics
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Uwe Schroeder, Namlab

7424: Spontaneous Polarization and Transverse Current in TGS
Toshio Kikuta{2}, Bogusław Fugiel{1}
{1}University of Silesia, Poland; {2}University of Toyama, Japan

7618: Enhancement of Barium Titanate Based Ultraviolet Photodetector by Incorporating Reduced Graphene Oxide of Superior Optical Properties
Rohit Raj Padhi, Guo-Hua Feng
National Tsing Hua University, Taiwan

8764: Enhancement of Electromechanical and Piezoelectric Charge Coefficient in Lead-Free $Na_{0.2}K_{0.3}Bi_{0.5}TiO_3$ Ceramic Through Poling Effect
Ranjan Kumar Sahu, Saket Asthana
Indian Institute of Technology Hyderabad, India

8788: Probing of DisLocation-Controlled Domain Nucleation and Domain Wall Pinning in Single-Crystal $BaTiO_3$ by MEMS-Based Multi-Stimuli In Situ TEM
Tianshu Jiang{1}, Fangping Zhuo{3}, Yevheniy Pivak{2}, Leopoldo Molina-Luna{1}
{1}Advanced Electron Microscopy Division, Department of Materials- and Geosciences, TU Darmstadt, Germany; {2}DENSsolutions, The Netherlands, Germany; {3}Nonmetallic Inorganic Materials Division, Department of Materials- and Geosciences, TU Darmstadt, Germany

8846: Ferroelectric Properties of $KNb(Si, Ge)_2O_7$ Single Crystals
Takuya Hoshina, Yukio Suga, Sou Yasuhara, Takaaki Tsurumi
Tokyo Institute of Technology, Japan

8871: Structural, Electrical and Multiferroic Properties of $BiFeO_3$ Nanocrystalline Thin Films Crystallized by Rapid Thermal Annealing Process
Ming-Cheng Kao{6}, Jun-Hong Weng{2}, Chih-Hung Chiang{1}, Kai-Huang Chen{3}, Der-Yuh Lin{5}, Tsung-Kuei Kang{4}, Kai-Tang Shi{7}, Yu-Chuan Shen{7}
{1}Department of Aeronautical Engineering, Chaoyang University of Technology, Taiwan; {2}Department of Electrical Engineering, Tunghai University, Taiwan; {3}Department of Electronic Engineering, Cheng Shiu University, Taiwan; {4}Department of Electronic Engineering, Feng Chia University, Taiwan; {5}Department of Electronic Engineering, National Changhua University of Education, Taiwan; {6}Department of Information and Communication Engineering, Chaoyang University of Technology, Taiwan; {7}Graduate Institute Aeronautics, Chaoyang University of Technology, Taiwan

Poster Session #2: B3bP-19: ISAF: Processing of Ferroelectric Crystals, Ceramics, Thick and Thin Films
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Uwe Schroeder, Namlab

7204: Stress Analysis Based Multi-Electrode Optimization for High-Frequency PMUTs in High-Order Mode
Ning Lv, Yan Wang, Leming He, Junyan Ren
State Key Laboratory of Integrated Chips and Systems, School of Microelectronics, Fudan University, China

7426: Crystallinity and Dielectric Properties of $BaTiO_3$ Thin Films Deposited via Pulsed Laser Deposition
Shinya Kondo{2}, Taichi Murakami{2}, Loick Pichon{1}, Joël Leblanc-Lavoie{1}, Takashi Teranishi{2}, Akira Kishimoto{2}, My Ali El Khakani{1}
{1}Institut National de la Recherche Scientifique (INRS), Canada; {2}Okayama University, Japan

7499: Giant Electrostriction in Bulk RE (III) Substituted CeO_2: Influence of Re-Vö Interaction and Re Concentration
Soumyajyoti Mondal{1}, Pooja Punetha{2}, Binoy Krishna De{1}, Gobinda Das Adhikary{1}, Rajeev Ranjan{2}, Pavan Nukala{1}
{1}Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore, India; {2}Materials Engineering, Indian Institute of Science, Bangalore, India

7603: Actualization of Large (200mm) Wafer Scale Deposition of 001 Oriented $PbZr_xTi_{1-x}O_3$ (PZT) Thin-Film Deposition for Commercial PiezoMEMS Applications
Anirban Ghosh{2}, Madeleine Petschnigg{2}, Ravindra Singh Bisht{2}, Volker Roebisch{1}, Dino Faralli{1}, Martin Kratzer{1}
{1}EVATEC AG, Switzerland; {2}Silicon Austria Labs, Austria

8216: Formation Mechanisms of $(K,Na)NbO_3$ Prepared by Different Nb_2O_5 Powders
Takuma Shoji, Yuka Takagi, Hyunwook Nam, Hajime Nagata
Tokyo University of Science, Japan

8471: The Glow Discharge Plasma Polarization Effect on PVDF Film Properties
Bogdan Basov, Eugenia Buryanskaya, Kamila Makarova, Konstantin Moiseev, Alexy Osipkov
Bauman Moscow State Technical University, Russia

8830: Effect of Processing Techniques on Effective Piezoelectric Behaviour in Peptide-Based Materials
Juliette Newell{1}, Viktor Barat{1}, Poh Chong Lim{1}, Yunjie Chen{1}, Yee Hwee Lim{1}, Richard Bryce{2}, Kui Yao{1}
{1}ASTAR, Singapore; {2}University of Manchester, United Kingdom

9017: Low-Temperature Synthesis of $BaTiO_3$-$Bi(Mg_{0.5}Ti_{0.5})O_3$-$BiFeO_3$ Using Citrate Method
Shota Nakagawa{3}, Ichiro Fujii{3}, Nam Hyunwook{2}, Shintaro Ueno{3}, Kim Sangwook{1}, Yoshihiro Kuroiwa{1}, Satoshi Wada{3}
{1}Hiroshima University, Japan; {2}Tokyo University of Science, Japan; {3}University of Yamanashi, Japan

Poster Session #2: B3aP-19: ASS-P Sensor, Materials and Novel Devices
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Marta Clement, Polytechnic University of Madrid (UPM)

7242: Wavelength-Scale Focusing Transducer Based on Suspended Aluminum Nitride Thin Film
Jiawei Li{1}, Lihui Jin{1}, Mingye Du{1}, Peng Wu{2}, Yitao Liao{2}, Tao Wu{1}
{1}ShanghaiTech University, China; {2}Xuzhou Liyu Advanced Technology Co. Ltd, China

7257: Low Loss Acoustic Waveguide Based on 128° Y-Cut Lithium Niobate
Wenzhen Li, Jiawei Li, Tao Wu
Shanghaitech University, China

7296: A Comparative Study on Insertion Loss and Shape Factor of Acoustic Delay Lines
Yang Li, Tao Wu
ShanghaiTech University, China

7303: Low Loss Acoustic Waveguide Based on AlN Thin Film
Yang Li, Jiawei Li, Tao Wu
ShanghaiTech University, China

7459: Multi-Channel Wireless MEMS-QCM Sensor Chip Operating at GHz Order Fundamental Resonance Frequencies
Ryo Umetsu{1}, Manabu Suzuki{1}, Fumihito Kato{1}, Hirotsugu Ogi{2}
{1}Nippon Institute of Technology, Japan; {2}Osaka University, Japan

8032: Elastic Properties of Rocksalt ScN Films Investigated by Laser Ultrasound
Pavel Pupyrev{3}, Saskia Mihalic{4}, Akash Nair{2}, Patrik Stranak{2}, Elena Mayer{3}, Florian Hörich{1}, Armin Dadgar{1}, André Strittmatter{1}, Andreas Mayer{3}
{1}Department of Semiconductor Epitaxy, Otto von Guericke University, Magdeburg, Germany; {2}Fraunhofer Institute for Applied Solid State Physics IAF, Freiburg, Germany; {3}HS Offenburg – University of Applied Sciences, Germany; {4}Institute for Sustainable Systems Engineering INATECH, Albert-Ludwigs-University Freiburg, Freiburg, Germany

8033: Development of a Thermal SAW Phase Modulator for Physical Reservoir Computing
Taiki Ijima, Claude Meffen, Amit Banerjee, Jun Hirotani, Toshiyuki Tsuchiya
Kyoto University, Japan

8426: Evaluation of ScAlN Thin Films by Line-Focus-Beam Ultrasonic-Material-Characterization System
Yuji Ohashi{2}, Jun-Ichi Kushibiki{2}, Kentaro Totsu{2}, Ayaka Hanai{3}, Ayaka Katsumata{3}, Takahiko Yanagitani{3}, Hiroaki Takeno{1}, Takahiro Ito{1}
{1}GEOMATEC Co., Ltd., Japan; {2}Tohoku University, Japan; {3}Waseda University, Japan

8485: Multifunctional Transmissive Single Port Delay Line SAW Sensor for Magnetic Field and Temperature Monitoring
Laurine Meistersheim{1}, Prince Mengue{1}, Cécile Floer{1}, Sami Hage-Ali{1}, Hamid M'Jahed{1}, Sébastien Petit-Watelot{1}, Sergei Zhgoon{2}, Thomas Hauet{1}, Laurent Badie{1}, Michel Hehn{1}, Omar Elmazria{1}
{1}Institut Jean Lamour, UMR 7198 - CNRS - Université de Lorraine, France; {2}National Research University, Moscow Power Engineering Institute, Russia

8517: Annealing Integration of Au Nanoparticles in Solidly Mounted Resonators for Opto-Electro-Acoustic Biosensing
Miguel Huerga, Kimberly Melgarejo, Ricardo Hervás, Teona Mirea, José Manuel Carmona-Cejas, Carlos Angulo, Marta Clement, Jimena Olivares
Universidad Politécnica de Madrid, Spain

8517: Annealing Integration of Au Nanoparticles in Solidly Mounted Resonators for Opto-Electro-Acoustic Biosensing
Miguel Huerga, Kimberly Melgarejo, Ricardo Hervás, Teona Mirea, José Manuel Carmona-Cejas, Carlos Angulo, Marta Clement, Jimena Olivares
Universidad Politécnica de Madrid, Spain

8551: Design and Fabrication of Piezoelectric Micromachined Phase Comparator
Seyedfakhreddin Nabavi, Mathieu Gratuze, Frederic Nabki
Ecole de technologie superieure, Canada

8579: Harsh Environment SAW Resonators on Thin Film Lithium Niobate Substrate for RF Wireless Sensing Applications
Amr Ghoname, Ahmed Hassanien, Edmond Chow, Songbin Gong
University of Illinois at Urbana-Champaign, United States

8614: Boosting Sensitivity in AlN-Based Electroacoustic Sensors Through High-Frequency Operation
José Manuel Carmona-Cejas, Rubén Fortín, Ricardo Hervás, Teona Mirea, Jimena Olivares, Marta Clement
Universidad Politécnica de Madrid, Spain

7373: Intraocular pressure measurement using surface acoustic wave optical coherence elastography (SAW-OCE)
Yilong Zhang{3}, Zhengshuyi Feng{4}, Robert Scott{2}, Ying Yang{1}, Chunhui Li{3}, Zhihong Huang{4}
{1}Keele University, United Kingdom; {2}Théa Pharmaceuticals Ltd, United Kingdom; {3}University of Dundee, United Kingdom; {4}University of York, United Kingdom

7415: A Lorentz Force Magnetometer Based on a TPoS Resonator Operating in Close-Loop Configuration
Xu-Heng Ou-Yang, Yi-Ming Pan, Cheng Tu, Xiao-Sheng Zhang
University of Electronic Science and Technology of China, China

Poster Session #2: B3aP-20: TPF: Applications of Piezoelectrics and Ferroelectrics 2
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Monica La Mura, Roma Tre University

7161: Langevin Transducers Incorporating TPMS Lattice Front Masses
Weihuan Kong, Andrew Feeney, Margaret Lucas
University of Glasgow, United Kingdom

7567: Analysis of Mechanical and Electrical Cross-Talk Effects in Advanced Single Crystal and Standard Piezocomposite Transducers Using B-Scan Measurements
Sean Toffessi Siewe{2}, Nicolas Felix{2}, David Voisin{2}, Matt Spigelmyer{1}, Wyatt Stoup{1}, Mathieu Legros{2}
{1}TransducerWorks, Vermon Group, United States; {2}VERMON, France

7982: Analysis of Particle Diameter Distribution Produced by Ultrasonic Atomization Under Different Power and Frequency Conditions
Weiquan Wang{2}, Chikahiro Imashiro{2}, Hiroshi Hasegawa{1}, Kohsuke Hirano{1}, Takeshi Morita{2}
{1}Kaijo Corporation, Japan; {2}University of Tokyo, Japan

8021: Impedance Compensation Method for Ultrasound Sensors
Zewei Lu, Michael Zapf, Wei Hong, Birgit Burger, Simon Kraft, Nicole Ruiter
karlsruhe institute of technology, Germany

8313: CMOS Integrated Optically Driven Sonic Fourier Transforms
Luis Amaro, Yutong Liu, Justin Kuo, Amit Lal
Cornell University, United States

8677: Low Temperature Polysilicon Piezoresistive Strain Gauge for Mobile Applications
Jae Seo, Jessica Liu Strohmann, Simone Weng, Samuel Wang, Reed Meng, Jason Su, Kostadin Djordjev
Qualcomm, Taiwan; Qualcomm, China; Qualcomm, United States

Poster Session #2: B3bP-20: ISAF: Characterization and Properties of Ferroelectrics
Location: P03 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Uwe Schroeder, Namlab

7166: Synthesis and Characterization of (1-x)(0.3$BiFeO_3$-0.7$SrTiO_3$)-x$NaNbO_3$ Relaxor Ferroelectrics for Energy Storage Application
Kai-Yu Wang, Hung-Chi Lee, Wen-Yu Hsiao, Xiaoding Qi
National Cheng Kung University, Taiwan

7203: Relaxor-Like Behavior in Plastic Crystals Solid Solution
Kou Minami{2}, Tomoyasu Usui{2}, Sakyo Hirose{2}, Jun Harada{1}
{1}Hokkaido University, Japan; {2}Murata Manufacturing Co., Ltd., Japan

7222: Promising Ferroelectric Properties of Ultra-Thin $Hf_{1-x}Zr_xO_2$ (4 nm) Enabled by In-Situ Argon Plasma Treatment with a Low Thermal Budget (350℃)
Chia-Wei Hsu, Jia-Hua Jhang, Zheng-Lin Yang, Chih-Yu Teng, Yuan-Chieh Tseng, Yen-Lin Huang
National Yang Ming Chiao Tung University, Taiwan

7229: Stabilizing the Ferroelectric Phase of $Hf_{0.5}Zr_{0.5}O_2$ Thin Films by Charge Transfer
Shu Shi{2}, Tengfei Cao{3}, Haolong Xi{5}, Jiangzhen Niu{1}, Xixiang Jing{3}, Hanxin Su{2}, Xiaobing Yan{1}, He Tian{5}, Evgeny Tsymbal{4}, Jingsheng Chen{2}
{1}Hebei University, China; {1}Hebei University, Singapore; {2}National University of Singapore, Singapore; {3}Northwestern Polytechnical University, Singapore; {3}Northwestern Polytechnical University, China; {4}University of Nebraska, Lincoln, Singapore; {5}Zhejiang University, Singapore; {5}Zhejiang University, China

7345: Spectroscopic Studies in New Antiferroelectric Ceramics
Elena Buixaderas, Anirudh K.R.
Institute of Physics, Czech Academy of Sciences, Czech Rep.

7393: Quantitative Analysis of Domain Sizes in Relaxor Ferroelectrics Using Transmission Electron Micrographs
Nathan Brichta{2}, Levi Tegg{2}, Luke Giles{1}, John Daniels{1}, Julie Cairney{2}
{1}University of New South Wales, Australia; {2}University of Sydney, Australia

7411: Interface Gradient: Structure Characteristics of $BaTiO_3$-$KNbO_3$ Core-Shell Nano-Composite Particles
Ryo Furukawa{1}, Sangwook Kim{1}, Mingyang Shao{2}, Ichiro Fujii{3}, Shintaro Ueno{3}, Satoshi Wada{3}, Yoshihiro Kuroiwa{1}
{1}hiroshima university, Japan; {2}national institutes for quantum science and technology, Japan; {3}yamanashi university, Japan

7414: Two Types of Cubic Structures Coexisting in the Paraelectric Phase of PMN Relaxor Ferroelectric
Kayoko Sakaguchi{2}, Sanwook Kim{2}, Hidehiro Ohwa{1}, Kenji Ohwada{3}, Norihiro Oshime{3}, Shinya Tsukada{4}, Yoshihiro Kuroiwa{2}
{1}Gifu University, Japan; {2}Hiroshima University, Japan; {3}QST, Japan; {4}Shimane University, Japan

7418: Influence of $Bi(Mg_{0.5}Ti_{0.5})O_3$ Concentration on Local Structure in $BaTiO_3$–$Bi(Mg_{0.5}Ti_{0.5})O_3$–$BiFeO_3$ Revealed by Visualization of Electron Density Distribution
Motoki Aruga{1}, Sangwook Kim{1}, Hyunwook Nam{2}, Shota Nakagawa{3}, Ichiro Fujii{3}, Shintaro Ueno{3}, Satoshi Wada{3}, Yoshihiro Kuroiwa{1}
{1}Hiroshima University, Japan; {2}Tokyo University of Science, Japan; {3}University of Yamanashi, Japan

7427: Measurement of Contact Angles of Nanoscale Water Droplets on Ferroelectric Single Crystal via AFM AC Mode
Uichang Jeong, Seungbum Hong
Korea Advanced Institute of Science and Technology, Korea

7621: Enhanced Heat Transfer in Porous Pyroelectric Materials for Energy Harvesting via Thermal Conduction
Qingping Wang, Chris Bowen
University of Bath, United Kingdom

7751: Measurement of Stress Free Electrostrictive Constants and Nonlinear Dielectric Constants of $LiNbO_3$ Single Crystal
Yasuo Cho{2}, Ryo Nakagawa{1}, Toshimaro Yoneda{1}, Takeshi Nakao{1}, Mamoru Ikeura{1}
{1}Murata Manufacturing Co., Ltd., Japan; {2}Tohoku University, Japan

7852: Effect of Slow Cooling Process on Energy Storage Properties of $(Bi_{0.5}Na_{0.5})TiO_3$-Based Solid Solution Ceramics
Yuri Oshima, Yuka Takagi, Hyunwook Nam, Hajime Nagata
Tokyo University of Science, Japan

7906: Small-Signal Piezoelectric Properties on Mn-Doped $BiFeO_3$–$BaTiO_3$ Lead-Free Piezoelectric Ceramics
Keisuke Nozoe, Hyunwook Nam, Yuka Takagi, Hajime Nagata
Tokyo University of Science, Japan

7908: Magnetic Permeability Investigation of AL800 Ferrite by Different Methods
Saulius Rudys{2}, Christine Vollinger{1}, Juras Banys{2}, Vidmantas Kalendra{2}
{1}CERN, Switzerland; {2}Vilnius University, Lithuania

7913: Crystal Structure and Dielectric Properties of Nb-Substituted $LaTaO_4$
Hironobu Hirayama
National Defense academy, Japan

8064: Contribution of A-Site Sr Cation to Cubic-Tetragonal Phase Transition in $SrTiO_3$ by Reverse Monte Carlo Simulation
Kai Kamijo{1}, Nobuo Nakajima{1}, Fan Dongxiao{2}, Andris Anspoks{3}
{1}Hiroshima University, Japan; {2}IMSS, KEK, Japan; {3}University of Latvia, Latvia

8083: Precipitation Hardening for Enhanced Piezoelectric Performance in NBT-Based Piezoceramics
Sabrina Kahse, Siegfried Teuber, Lovro Fulanović, Jürgen Rödel
Technical University of Darmstadt, Germany

8245: Enhanced Pyro/Piezoelectric Properties by Oblique Angle Deposition for Improved Ultrasonic Sensors
Manuel Pelayo Garcia{4}, Des Gibson{2}, Carlos Garcia Nuñez{3}, Dave Hughes{1}
{1}Novosound, United Kingdom; {2}Univerisity of the West of Scotland, United Kingdom; {3}University of Glasgow, United Kingdom; {4}University of the West of Scotland, Novosound, United Kingdom

8289: Wafer-Level TSDC and Q-DLTS Measurement System for Failure Prediction of Piezo Thin-Films and MEMS Devices
Thorsten Schmitz-Kempen, Tom Kremers, Peter Mardilovich
aixACCT Systems GmbH, United Kingdom; aixACCT Systems GmbH, Germany

8441: Ferroelectric Properties and Fatigue Behavior of {100} Textured 1-µm Thick PZT Films by Chemical Solution Deposition
Mireny Ugalde Reygadas{2}, Monica Isela Acuautla Meneses{2}, Miguel Badillo Avila{1}
{1}Politecnico di Milano, Italy; {2}University of Groningen, Netherlands

8821: Ferroelastic Domain Switching in Single Crystalline Mn-Doped $BiFeO_3$ Thin Film
Seiji Nakashima{5}, Koji Kimura{2}, Naohisa Happo{1}, Artoni Ang{4}, Yuta Yamamoto{3}, Halubai Sekhar{2}, Ai Osaka{5}, Koichi Hayashi{2}, Hironori Fujisawa{5}
{1}Hiroshima City University, Japan; {2}Nagoya Institute of Technology, Japan; {3}Nara Institute of Science and Technology, Japan; {4}Toyota Technological Institute, Japan; {5}University of Hyogo, Japan

9013: Mn-Doped Niobate Perovskite Ceramics and Thin Films for High-Field Applications
Jack Leber, Sreeakhil Pulipaka, Adam Wynne, Ahmad Safari
Rutgers University, United States

7277: Improving the Ferroelectric Properties of AlScN Thin Films with AlN Buffer Layer
Kang Du
Shanghaitech University, China

Poster Session #2: B3bP-21: ISAF: Applications of Ferroelectrics, Piezoelectrics
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Uwe Schroeder, Namlab

7044: Temperature Study of Standing Wave Ultrasonic Motor
Than Zaw Myint, Xiong Liu, Chakravarty Barish, June Christian Ang, Yichao Ma, Brendon Shi Wei Leong
Seagate Research, Singapore

7145: A Wide Electrically Tunable Cavity Filter Using Thin-Film Barium-Strontium-Titanate Varactors
Shuwen Jiang, Jie Yang
University of Electronic Science and Technology of China, China

7195: A Study on Doping in Solution-Derived Ferroelectric Hf-Zr-O Films
Sho Hashiguchi, Eisuke Tokumitsu
Japan Advanced Institute of Science and Technology, Japan

7231: Gait Phase Detection Using 3D-Printed Piezoelectric Force Myography Sensors
Bastian Latsch{2}, Niklas Schäfer{2}, Stephan Schaumann{2}, Steffen Graffe{2}, Asghar Mahmoudi{2}, Martin Grimmer{2}, Alexander A. Altmann{2}, Omar Ben Dali{2}, Stephan Rinderknecht{2}, Philipp Beckerle{1}, Mario Kupnik{2}
{1}Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; {2}Technische Universität Darmstadt, Germany

7614: Self-Powered Ferroelectric Film-Based Ultraviolet Photodetector with Strong Thermoelectric Effect for Wearable Medical Applications
Rohit Raj Padhi, Guo-Hua Feng
National Tsing Hua University, Taiwan

7898: Ferroelectric Control of Spin-Charge Interconversion in $Pb(Zr,Ti)O_3$-Based 2D Electron Gases for Emerging in-Memory Computing Spintronic Devices
Thomas Buttiens{2}, Luis Moreno{2}, Ruchi Tomar{2}, Anouk Goossens{2}, Fernando Gallego{2}, Thomas Maroutian{1}, Manuel Bibes{2}
{1}C2N, France; {2}laboratoire Albert Fert, France

8133: Towards Room-Temperature Ferroelectric-Spin-Orbit (FESO) Devices Based on Perovskite Ferroelectrics
Anouk Stefanie Goossens{1}, Ruchi Tomar{1}, Fernando Gallego{1}, Luis Moreno Vicente Arche{1}, Lucía Iglesias{1}, Florian Godel{1}, Laurent Vila{2}, Jean-Philippe Attane{2}, Manuel Bibes{1}
{1}Laboratoire Albert Fert, France; {2}Université Grenoble Alpes, CEA, CNRS, Spintec, Grenoble, France

8449: Characterization of Structural and Dielectric Properties of Barium-Strontium Niobate Thin Films for Microwave Applications
Andrei Tumarkin{1}, Ludmila Ivleva{2}, Alexey Bogdan{1}, Eugeny Sapego{1}
{1}Electrotechnical University, Russia; {2}General Physics Institute, Russia

8460: Strontium Titanate Films for Ultrahigh Frequency Applications
Andrei Tumarkin, Eugeny Sapego, Alexey Bogdan, Artem Karamov
Electrotechnical University, Russia

8469: Ferroelectric Composites $BaTiO_3$ and $SrTiO_3$ with a Low-Melting Additive B_2O_3
Andrei Tumarkin{1}, Natalia Tyurnina{2}, Zoya Tyurnina{2}, Olga Sinelshchikova{2}, Darya Tsygankova{2}, Andrey Drozdovsky{1}, Artem Karamov{1}
{1}Electrotechnical University, Russia; {2}Institute of Silicate Chemistry, Russia

8560: Electrical Transducer Model Based on Barium Titanate Characterization at Low Frequency for Piezoelectric Applications
Silmi Kaffah{1}, Jens Kirchner{1}, Viktoria Kraft{2}, Michelle Weichelt{2}, Georg Fischer{1}
{1}Institute for Smart Electronics and Systems, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; {2}Institute of Glass and Ceramics, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

8732: Study on Supercritical Fluid Technique for Application in Nonvolatile Resistive Random Access Memory (RRAM) Device Using SBT Ferroelectric Thin Films
Kai-Huang Chen{2}, Ming-Cheng Kao{1}, Chien-Min Cheng{3}, Yao-Chin Wang{2}, Cheng-Che Hsieh{3}, Guo-Jau Hung{2}
{1}Chaoyang University, Taiwan; {2}Cheng Shiu University, Taiwan; {3}Southern Taiwan University of Science and Technology, Taiwan

8761: Piezoelectric Power Generation of Amorphous Perovskite Oxide Thin Films
Ju Han, Sung Hyun Park, Ye Seul Jung, Jae Won Kwon, Yong Soo Cho
Yonsei University, Korea

8812: A Room-Temperature Ferroelectric Resonant Tunneling Diode
Zhijun Ma{3}, Qi Zhang{2}, Lingling Tao{6}, Yihao Wang{3}, Daniel Sando{5}, Jinling Zhou{4}, Yizhong Guo{1}, Kayla Lord{7}, Peng Zhou{3}, Yongqi Ruan{3}, Zhiwei Wang{3}, Alex Hamilton{7}, Alexei Gruverman{6}, Evgeny Tsymbal{6}, Tianjin Zhang{3}, Nagarajan
{1}Beijing University of Technology, China; {2}CSIRO, Australia; {3}Hubei University, China; {4}Tsinghua University, China; {5}University of Canterbury, New Zealand; {6}University of Nebraska, United States; {7}University of New South Wales, Australia

Poster Session #2: B3aP-21: MEL: Muscle Elastography
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Pei-Yu Chen, National Cheng Kung University

7129: Four-Dimensional (4D) Ultrasound Shear Wave Elastography Using Hierarchical-Based Excitation (HE-SWE)
Xin Sun, Chi-Feng Chang, Junhang Zhang, Yushun Zeng, Hsiao-Chuan Liu, Qifa Zhou
Department of Biomedical Engineering, University of Southern California, United States

7158: Adaptive Shear Wave Anisotropic Imaging for Pennate Muscle by Tilted Supersonic Shear Imaging (T-SSI)
Guo-Xuan Xu, Chih-Chung Huang
National Cheng Kung University, Taiwan

8176: In Vivo Shear Wave Attenuation Measurement in Skeletal Muscle
Andres Camargo{1}, Nicolas Benech{2}, Jean-Luc Gennisson{3}, Thoma Frappart{4}, Carlos Negreira{2}, Javier Brum{2}
{1}Intituto de Física, Facultad de Ciencias, UdelaR, Uruguay; {2}Intituto de Física, Facultad de Ciencias, Universidad de la República, Uruguay; {3}Laboratoire d'imaginerie Medical Multimodal, BioMaps, Univesrsite Paris Saclay, France; {4}Supersonic Imaging, Aix en Province, France

8364: Three-Dimensional Ultrasound Myofascial Strain Tensor Imaging for Investigating Chronic Lower Back Pain
Zhiyu Sheng, Maryam Satarpour, John Cormack, Yu-Hsuan Chao, Allison Bean, Ryan Nussbaum, Jiantao Pu, Ajay Wasan, Kang Kim
University Of Pittsburgh, United States

8486: Elastic Anisotropy Interrogation by ARFI Ultrasound Is Robust to Rotation Angle Range, Step-Size, and Placement Error in Excised Muscle
Aidan Armstrong, Caterina Gallippi
University of North Carolina at Chapel Hill and North Carolina State University, United States

Poster Session #2: B3aP-22: MEL: Tumor Detection with Elastography
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Geng-Shi Jeng, National Yang Ming Chiao

7313: A Poly-Vinyl Alcohol (PVA)-Based Phantom for Prostate Cancer Detection Using Multiparametric Ultrasound: A Validation Study
Adel Jawli, Zhihong Huang, Ghulam Nabi
University of dundee, United Kingdom

7584: Advancing Prostate Cancer Diagnosis Through Shear Wave Attenuation Imaging: A Novel Q Inversion Approach
Yue Pan, Yu Qiang, Xingying Wang, Ningyuan Wang, Zhiqiang Zhang, Weibao Qiu
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

8320: Preclinical Vibrational Shear Wave Elastography: Effect of Anaesthesia and Tumour Alignment on Repeatability
John Civale, Vaideesh Parasaram, Jeff Bamber, Emma Harris
Institute of Cancer Research, United Kingdom

8951: Multiparametric ARFI-Based Elastography to Improve Breast Cystic Detection
Safeer Hyder{2}, Richard Barr{1}, Gabriela Torres{2}
{1}Northeastern Ohio Medical University, United States; {2}Siemens Ultrasound, Slovakia; {2}Siemens Ultrasound, United States

8968: Limited Element Diverging Wave-Based Quasi-Static Ultrasound Elastography for Prostate Cancer Application – Initial Findings
Apoorv Chetan, Arun Thittai
Indian Institute of Technology Madras, India

Poster Session #2: B3bP-22: Joint: Domains/Ultrasound transducers
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Uwe Schroeder, Namlab

7624: Acoustic Metamaterial Optimisation for Megahertz Frequencies
Rachel Stoakes{3}, Roger Domingo-Roca{3}, Lars Erik Myrstuen{1}, Jeremie Barrel{1}, Andrew Feeney{2}, James Windmill{3}
{1}GE Healthcare, France; {2}University of Glasgow, United Kingdom; {3}University of Strathclyde, United Kingdom

8639: Microprotrusion Decorated Solid Coupling for Long-Term Wearable Ultrasound Monitoring
Yongquan Ma, Qiutong Lin, Xingli Xu, Liang Zhang, Wei Pang, Wei Wei, Chengyang Yu, Pengfei Niu
Tianjin University State Key Laboratory of Precision Measurements Technology and Instrumer, China

9016: Enhanced Piezoelectric Properties of $0.90(Bi_{0.5}Na_{0.5})TiO_3$–$0.10BaTiO_3$ Ceramics by Alternating Current Poling Above Curie Temperature
Zhuangkai Wang{2}, Ichiro Fujii{2}, Hyunwook Nam{1}, Adisu Tsige Shibiru{2}, Shintaro Ueno{2}, Satoshi Wada{2}
{1}Tokyo University of Science, Japan; {2}University of Yamanashi, Japan

7717: Analysis of Nanoscale Ferroelectric Domain Dynamics Based on Image Processing of Local C-V Maps
Yoshiomi Hiranaga{1}, Takanori Mimura{2}, Takao Shimizu{2}, Hiroshi Funakubo{2}, Yasuo Cho{1}
{1}Tohoku University, Japan; {2}Tokyo Institute of Technology, Japan

Poster Session #2: B3bP-23: Joint: Piezoelectric Micromachined Ultrasonic Transducers
Location: P06 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Weibao Qiu, Shenzhen Institutes of Advanced Technology

7300: Design and Dynamic Characterization of Mode-Switchable $AlSc_{0.2}N$ PMUTs
Haochen Lyu{1}, Ahmad Safari{1}, Songsong Zhang{2}
{1}Rutgers, United States; {2}Shanghai University, China

7486: Development of an Easily Fabricated, Highly Flexible PMUT Array Based on Titanium Foil for Enhancing Ultrasound Manipulation
Chi-Chun Wang, Guo-Hua Feng
National Tsing Hua University, Taiwan

7993: Towards Unparallelled CMOS-Compatible Air-Coupled pMUT Performance with 30% Sc-Doped AlN Through an Analysis of Residual Stress Effects
Jihang Liu{1}, Goh Duan Jian{1}, Daniel Ssu-Han Chen{1}, David Choong Sze Wai{1}, Trivedi Shyam{1}, Prakasha Chigahalli Ramegowda{1}, Merugu Srinivas{1}, Huamao Lin{1}, Qing Xin Zhang{1}, Peter Chang Hyun Kee{1}, Amal Das{2}, Alessandra Sciarrone{2}, Albe
{1}Institute of Microelectronics, Singapore; {2}ST Microelectronics, Italy

8035: Compensation of Thermal Effects in PZT and $Sc_{0.2}Al_{0.8}N$ PMUTs Through DC Bias Tuning
Duan Jian Goh{1}, Jihang Liu{1}, Sze Wai David Choong{1}, Sagnik Ghosh{1}, Daniel Chen{1}, Yul Koh{1}, Ravi Shankar{2}, Carlo Prelini{2}, Alberto Leotti{2}, Domenico Giusti{2}
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}STMicroelectronics, Singapore; {2}STMicroelectronics, Italy

8361: Metal-Based Piezoelectric Micromachined Ultrasonic Transducer for Rangefinders on Robotic Arms Safety
Poyu Cheng{2}, Wenjong Wu{2}, Chowyong Ng{1}, Weicheng Tian{1}
{1}Delta Electronics, Taiwan; {2}National Taiwan University, Taiwan

8617: Multi-Frequency Harmonic Energy Modification of Piezoelectric Micromachined Ultrasonic Transducer (PMUT) for Advanced Sensing Applications
Yufeng Gao, Aocheng Bao, Chong Yang, Lei Zhao, Yipeng Lu
Peking University, China

8755: Dual-Electrode pMUT with Switch Mode Operation to Enhance Receive Sensitivity
Jihang Liu{1}, Daniel Ssu-Han Chen{1}, David Sze Wai Choong{1}, Goh Duan Jian{1}, Trivedi Shyam{1}, Teo Yong Shun{1}, Merugu Srinivas{1}, Yan Hong{1}, Huamao Lin{1}, Qingxin Zhang{1}, Alberto Leotti{2}, Maheshlal Goutham Koppisetti{2}, Jason Zhigang Jia{2
{1}Institute of Microelectronics, Singapore; {2}ST Microelectronics, Singapore

Poster Session #2: B3aP-23: MEL: Cardiovascular Elastography
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Clement Papadacci, INSERM/Physics for Medicine

8218: The Impact of Valve Stenosis and Replacement on Wave Characteristics in Cardiac Shear Wave Elastography
Laurine Wouters{1}, Annette Caenen{2}, Marta Orlowska{1}, Lennert Minten{1}, Jens-Uwe Voigt{1}, Jan D'Hooge{1}
{1}KU Leuven, Belgium; {2}KU Leuven / Ugent, Belgium

8221: In Vivo and In Vitro 3D Quantification of Natural Wave Velocity in the Human Heart
Janie Hanrard{2}, Olivier Pedreira{3}, Touka Meki{3}, Juliette Reydet{3}, Mickael Tanter{3}, Emmanuel Messas{1}, Clement Papadacci{2}, Mathieu Pernot{2}
{1}APHP, France; {2}Institute Physics for Medicine, France; {3}stitute Physics for Medicine, France

8295: Tracking Myocardial Natural Mechanical Waves Using Deep Learning-Based Ultrafast Ultrasound Imaging
Sébastien Salles{5}, Jingfeng Lu{3}, Fabien Millioz{4}, Olivier Bernard{4}, Damien Garcia{4}, Jonathan Poree{2}, Jean Provost{1}, Yi Zhang{3}, Denis Friboulet{4}
{1}Department of Engineering Physics, Montreal Heart Institute, Polytechnique Montréal, Canada; {2}Department of Engineering Physics, Polytechnique Montréal, Canada; {3}School of Cyber Science and Engineering, Sichuan University, Chengdu, China; {4}Univ Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, CREATIS, France; {5}University of Bordeaux, CRMSB, CNRS, France

8437: Comparison of Dispersion Curves for Arterial Elastography Obtained with the Fourier Transform and Stockwell Transform
Yuqi Wang{2}, Charles Capron{2}, Piotr Kijanka{1}, Shuvrodb Adhikary{3}, Murthy Guddati{3}, Matthew Urban{2}
{1}AGH University of Krakow, Poland; {2}Mayo Clinic, United States; {3}NC State University, United States

8450: Mechanical Property Estimates of Human Carotid Artery Wall in 30 In Vivo Subjects
Yuqi Wang{2}, Charles Capron{2}, Hyoung-Ki Lee{4}, Shuvrodeb Adhikary{3}, Tuhin Roy{1}, Murthy Guddati{3}, Matthew Urban{2}
{1}Columbia University, United States; {2}Mayo Clinic, United States; {3}NC State University, United States; {4}Philips, Inc., United States

8575: Principal Component Analysis for ARFI Variance of Acceleration (VoA)-Based Human Carotid Plaque Feature Delineation, In Vivo
Shureed Qazi, Keerthi Anand, Caterina Gallippi
University of North Carolina at Chapel Hill, United States

Poster Session #2: B3aP-24: MTC: Musculoskeletal System Characterization
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Lori Bridal, CNRS at Sorbonne University

7578: Tibialis Anterior Muscle Transient Response Analysis Due to Fibular Nerve Electrostimulation Using 2-D Vector Tissue Imaging
Arthur Prieur de la Comble, Guillaume Bacle, Jean-Pierre Remenieras
Université de Tours, INSERM, Imaging Brain & Neuropsychiatry iBraiN U1253, France

7714: On the Relative and Dependent Contributions of Scattering and Absorption to Ultrasonic Attenuation in Cortical Bone
Brett McCandless{3}, Maryline Talmant{2}, Quentin Grimal{2}, Kay Raum{1}, Marie Muller{3}
{1}Center for Regenerative Therapies, Charité-Universitätsmedizin Berlin, Germany; {2}Laboratoire d'Imagerie Paramétrique, UMR CNRS 7623, Université Pierre et Marie Curie, France; {3}North Carolina State University, United States

7786: Simplified Feature Set-Based Radiomics of Multimodal Quantitative Ultrasound Envelope Statistics Imaging for Assessing Ambulatory Function in Duchenne Muscular Dystrophy
Ya-Wen Chuang{1}, Chia-Wei Lin{3}, Wen-Chin Weng{4}, Po-Hsiang Tsui{2}
{1}Chang Gung University, Taiwan; {2}Department of Medical Imaging and Radiological Sciences, Taiwan; {3}National Taiwan University Hospital Hsin-Chu Branch, Taiwan; {4}National Taiwan University Hospital, and College of Medicine, National Taiwan University, Taiwan

8351: Comparison of Attenuation Coefficient and Speed of Sound Measured in Pulse-Echo and Through-Transmission Configurations with Respect to Intracortical Pore Size Distribution
Ziyuan Liu{1}, Brett McCandless{2}, Marie Muller{2}, Kay Raum{1}
{1}Charité – Universitätsmedizin Berlin, Germany; {2}North Carolina State University, United States

8530: Classification of Hip Fragility Fractures in Older Adults Using Ultrasonic Measurements at Mid-Tibia
Jean-Gabriel Minonzio{1}, Ricardo Martinez{2}, Cristina Espinoza{1}, Viviana Garcia{1}, Carlos Cristi-Montero{2}, José Luis Dinamarca-Montecinos{1}
{1}Universidad de Valparaiso, Chile; {2}Universidad Pontificia Catolica de Valparaiso, Chile

8663: In Vivo Measurement Method of the Speed of Sound in Cartilage Based on a Pseudo Point Scattered Wave Generation from Subchondral Bone Surface
Naotaka Nitta, Toshikatsu Washio, Keigo Hikishima
AIST, Japan

Poster Session #2: B3bP-24: Joint: Machine Learning
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7723: Real-Time Tracking System for Red Tides Through Acoustic Signals and Artificial Intelligence
Daehun Kim{3}, Hyeon-Ju Jeon{2}, Yeongho Sung{3}, Jin Hyeong Park{3}, O-Joun Lee{1}, Hae Gyun Lim{3}
{1}Catholic University of Korea, Korea; {2}Korea Institute of Atmospheric Prediction Systems, Korea; {3}Pukyong National University, Korea

7865: Advanced Classification of Sand Particle Size Distribution with Acoustic Sensing and Convolutional Neural Networks
Yeongho Sung{1}, Jang Keon Kim{2}, Daehun Kim{1}, Taeyang Kwon{1}, Jongmuk Won{2}, Hae Gyun Lim{1}
{1}Pukyong National University, Korea; {2}University of Ulsan, Korea

8014: Trained Compounding Operator to Improve Ultrasound Imaging Frame Rate
Sushanth Govinahallisathyanarayana, Gurunath Reddy, Chandan Aladahalli
GE healthcare, India

8146: A Dual-Modal Sensor Fusion System for Bladder Volume Monitoring
Jun Wang, Zeyang Dai, Dasong Zhuang, Xiao Liu
Fudan University, China

8562: Automatic Segmentation of Placenta for Quantitative Ultrasound Analysis
Billy Hempstead{2}, Robert Rohling{1}, Farah Deeba{2}
{1}University of British Columbia, Canada; {2}University of North Carolina at Charlotte, United States

8650: Improving Intersession Reproducibility for Forearm Ultrasound Based Hand Gesture Classification Through an Incremental Learning Approach
Keshav Bimbraw, Jack Rothenberg, Haichong Zhang
Worcester Polytechnic Institute, United States

8669: Hand Gesture Classification Based on Forearm Ultrasound Video Snippets Using 3D Convolutional Neural Networks
Keshav Bimbraw, Ankit Talele, Haichong Zhang
Worcester Polytechnic Institute, United States

Poster Session #2: B3bP-26: PFM 3
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Vincenzo Esposito, Denmark Technical University
Andrei Kholkin, University of Aveiro

8098: Cryogenic Piezoresponse Force Microscopy of Emerging Ferroelectrics
Alexander Toh{2}, Minghua Li{1}, Li Chen{1}, Chen Liu{1}, Ryuji Fujita{3}, Thorsten Hesjedal{3}, Yao Zhu{1}, Pin Ho{1}
{1}Agency for Science, Technology and Research, Singapore; {2}National University of Singapore, Singapore; {3}University of Oxford, United Kingdom

8185: Enabling Mechanical Polarization Switching in Ferroelectric Thin Films via Extreme Low Loading Force
Seongmun Eom{1}, Yeongyu Kim{1}, Pravin Kavle{3}, Lane Martin{2}, Seungbum Hong{1}
{1}Korea Advanced Institute of Science and Technology, Korea; {2}Rice University, United States; {3}University of California, Berkeley, United States

Poster Session #2: B3aP-25: MIS: Neural Network Application to Ultrasound Imaging
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Libertario Demi, University of Trento

7409: Residual-Fusion Network for Multi-Modality Breast Cancer Image Analysis
Yoonjae Cho{1}, Sampa Misra{1}, Ravi Managuli{4}, Richard G Barr{3}, Jeongmin Lee{2}, Chulhong Kim{1}
{1}POSTECH, Korea; {2}Samsung Medical Center, United States; {3}Southwoods Imaging, United States; {4}University of Washington, United States

7523: Adaptive Ultrasound Scan-Line Selection Using Temporal Diffusion Models
Oisín Nolan, Tristan Stevens, Wessel van Nierop, Ben Luijten, Ruud van Sloun
Eindhoven University of Technology, Netherlands

7589: Latent Diffusion Models as Ultrasound Priors
Tristan Stevens{1}, Oisín Nolan{1}, Jean-Luc Robert{2}, Ruud van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips Research North America, United States

7871: Tracking 2D Vascular Wall Motion in In Vivo Ultrasound Imaging
Anika Tabassum Sejuty, Suhyun Park
Ewha Womans University, Korea

8918: Cardiac Phase Recognition in 2D Echocardiography Through Integrated Transfer Learning Within Autoencoder and Recurrent Neural Networks
Somayeh Akbari, Joris Guldentops, Jan D'Hooge
KU Leuven, Belgium

Poster Session #2: B3bP-25: Joint: Wearable Devices
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7314: Evaluation of a Dual Linear Flexible Ultrasound Array for Surgical Interventional Guidance
Hasti Rostamikhanghahi{2}, Marcus Ingram{2}, Brian G. Booth{1}, Jan D'Hooge{2}
{1}Ghent University, Belgium; {2}KU Leuven, Belgium

7443: Non-Newtonian Acoustic Gel for Wearable Ultrasound Monitoring System
Harikrishnan Pisharody Gopalakrishnan{1}, Mahesh Raveendranatha Panicker{2}
{1}Indian Institute of Technology Palakkad, India; {2}Singapore Institute of Technology, Singapore

7446: Online Scaphoid Tracking Using a Wearable and Flexible Ultrasound Array: A First Proof of Concept
Hasti Rostamikhanghahi{2}, Marcus Ingram{2}, Brian G. Booth{1}, Jan D'Hooge{2}
{1}Ghent University, Belgium; {2}KU Leuven, Belgium

8048: Wearable Ferroelectret Sensors for Muscle Activity Measurements
Niklas Schäfer{2}, Bastian Latsch{2}, Stephan Schaumann{2}, Steffen Graffe{2}, Omid Mohseni{2}, Julian Seiler{2}, Alexander Anton Altmann{2}, Omar Ben Dali{2}, Martin Grimmer{2}, André Seyfarth{2}, Mario Kupnik{2}, Philipp Beckerle{1}
{1}Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; {2}Technische Universität Darmstadt, Germany

8274: A PMUT-Based Wearable Ultrasound System for Central Blood Pressure Monitoring
Hang Yang{2}, Hanzhang Liu{2}, Jingqi Chen{2}, Xiaoxiang Gao{2}, Chuan Chen{2}, Zunliang Wang{2}, Xiaoduo Zhang{1}, Hui Li{1}, Feng Yin{2}
{1}Nanjing Sheng Xi Xing Yin Technology Limited, China; {2}Southeast University, China

8321: A Robust Wearable Pre-Voiding Alarm System That Offers Significant Tolerance to Sensor Placement Errors
Jun Wang, Zeyang Dai, Dasong Zhuang, Xiao Liu
Fudan University, China

Poster Session #2: B3aP-26: MIS: Lung Ultrasound
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Marie Muller, NCSU

7013: Quantitative Lung Ultrasound Spectroscopy Classification Performance in Differentiating CPE, Pneumonia, and PF, a Comparative Classifiers' Analysis
Federico Mento{1}, Mattia Perpenti{1}, Giuliana Barcellona{2}, Tiziano Perrone{2}, Libertario Demi{1}
{1}Department of Information Engineering and Computer Science, University of Trento, Italy, Italy; {2}Emergency and Urgency Department, Humanitas Gavazzeni, Bergamo, Italy, Italy

7019: Novel Quantitative Lung Ultrasound Spectroscopy Approach for Diseases Classification
Mattia Perpenti{1}, Federico Mento{1}, Giovanni Pierro{2}, Alessandro Perrotta{2}, Andrea Smargiassi{2}, Riccardo Inchingolo{2}, Libertario Demi{1}
{1}Department of Information Engineering and Computer Science, University of Trento, Trento, Italy; {2}UOC Pneumologia, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Roma, Italy

7101: TranSLUCEnT: Transferred Sequential Lung Ultrasound Characteristic Encodings-Based Transformer for Lung Ultrasound Pattern Classification in Premature Neonates
Umair Khan{2}, Noreen Fatima{2}, Xi Han{2}, Camilla Rigotti{1}, Federico Cattaneo{1}, Giulia Dognini{1}, Maria Luisa Ventura{1}, Emanuella Zannin{1}, Giovanni Iacca{2}, Libertario Demi{2}
{1}IRCCS San Gerardo dei Tintori - Monza, Italy; {2}University of Trento, Italy

7328: Lightweight Lung Ultrasound Video Analysis Model
Wenyu Xing{2}, Zhibin Zhu{2}, Yiwen Liu{1}, Chao He{3}, Yifang Li{2}, Dean Ta{2}
{1}Donghua University, China; {2}Fudan University, China; {3}Shanghai Changzheng Hospital, China

7783: Cross Domain Features from Lung Ultrasound Examination for COVID-19 Pneumonia Severity Assessment
Zhiqiang Li{2}, Xueping Yang{1}, Xingyue Wei{2}, Mixue Wang{1}, Gangqiao Xie{2}, Jing Yu{1}, Qiong He{2}, Yao Zhang{1}, Jianwen Luo{2}
{1}Department of Ultrasound Beijing Ditan Hospital, Capital Medical University, China; {2}Tsinghua University, China

Poster Session #2: B3aP-27: MTC: Tissue Characterization - Applications
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Emilie Franceschini, Laboratoire de Mécanique et d'Acoustique

7508: Tumor Characterization Using the Backscatter Coefficient at Low and High-Frequency
Cyril Malinet{2}, Celia Mansilla{2}, Iveta Fajnorova{1}, Adrien Rohfritsch{3}, David Melodelima{3}, Aurélie Dutour{1}, Pauline Muleki Seya{2}
{1}CRCL, France; {2}CREATIS, France; {3}labTAU, France

7594: Characterization of Tumors Unresponsive to Chemotherapy Using the Backscatter Coefficient and Envelope Statistics
Celia Mansilla{2}, Cyril Malinet{2}, Iveta Fajnorova{1}, Adrien Rohfritsch{3}, David Melodelima{3}, Hervé Liebgott{2}, Aurélie Dutour{1}, Pauline Muleki Seya{2}
{1}CRCL, France; {2}CREATIS, France; {3}labTAU, France

7638: Estimation of Local Pulse Wave Velocity for the Common Carotid Artery Using a Portable Ultrasound Research Platform
Piotr Karwat{2}, Marcin Lewandowski{2}, Hanna Smach{1}
{1}IPPT PAN, Poland; {2}us4us Ltd., Poland

7727: Envelope Statistics Analysis of M-Mode Signals in Lung Ultrasound for Distinguishing Stratosphere from Seashore Signs
Shohei Mori{2}, Mototaka Arakawa{2}, Shin Yoshizawa{2}, Sreeraman Rajan{1}, Yuu Ono{1}
{1}Carleton University, Canada; {2}Tohoku University, Japan

8104: Differentiating Glioblastoma and Normal Brain Tissue Using the Nakagami and Burr Distribution Analyses of the Echo Envelope: An Ex-Vivo Study
Jagruti M Patil{2}, Shilpa Rao{3}, Vikas Vazhayil{3}, Hardik Pandya{1}, Anita Mahadevan{3}, Karla P. Mercado Shekhar{2}
{1}Indian Institute of Science, Bangalore, Karnataka, India; {2}Indian Institute of Technology Gandhinagar, Gandhinagar, Gujarat, India; {3}National Institute of Mental Health and Neurosciences, Bangalore, Karnataka, India

8403: Ex Vivo Validation of Ultrasound Thermal Strain Imaging on Human Carotid Endarterectomy Plaque Samples
Ran Wei{3}, Zhiyu Sheng{3}, Tara Richards{3}, Mengyue Chen{2}, Xuecang Geng{1}, Xiaoning Jiang{2}, Julie Phillippi{3}, Edith Tzeng{3}, Kang Kim{3}
{1}Blatek Inc., United States; {2}North Carolina State University, United States; {3}University of Pittsburgh, United States

Poster Session #2: B3bP-27: Frequency Control
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Laura Sinclair, NIST

7068: High-Precision Optical Frequency Measurement Using a Single-Comb System with Tunable Mode Spacing
Kenichi Hitachi{2}, Atsushi Ishizawa{1}, Haruki Sanada{2}, Katsuya Oguri{2}
{1}Nihon University, Japan; {2}NTT Basic Research laboratories, Japan

7190: Phase Locking and Absolute Frequency Stabilization for a Quantum Memory
Yohei Sugiyama, Yuga Kondo, Tomoyuki Horikiri, Feng-Lei Hong, Daisuke Akamatsu
Yokohama National University, Japan

7449: Multiplying the Repetition Frequency of Optical Frequency Comb Signals Based on the Talbot Effect
Bing Xu, Xing Chen, Xinxin Wang, Bin Luo, Song Yu
Beijing University of Posts and Telecommunications, China

7476: Development of an Er-Fiber Comb Using a Semiconductor Saturable Absorber Mirror with an Optical Frequency Reference
Tsubasa Kashimura, Yohei Sugiyama, Shijun Wu, Daisuke Akamatsu, Feng-Lei Hong
Yokohama National University, Japan

7839: A Microwave Frequency Comb with Measurement Capability Up to 100 GHz
Po-Cheng Chang, Tien-Kuan Tseng
TL, Taiwan

7966: Development of the Optical Clocks for the Redefinition of Si Second
Huidong Kim, Won-Kyu Lee, Chang Yong Park, Sungnam Park, Taeg Yong Kwon, Dai-Hyuk Yu, Myoung-Sun Heo
KRISS, Korea

8178: The 1529 nm Laser Stabilization Based on Dual-Wavelength Modulation Transfer Spectroscopy
Jie Miao{1}, Duo Pan{1}, Jingming Chen{1}, Qiaohui Yang{1}, Zhendong Chen{1}, Jingbiao Chen{1}, Jiqing Lian{2}
{1}Peking University, China; {2}Xidian University, China

8179: Compact 780 nm Rb Optical Frequency Standard on "Optical Cubes"
Qiaohui Yang{1}, Tianyu Liu{1}, Jiqing Lian{2}, Chuanwen Zhu{1}, Jie Miao{1}, Zhendong Chen{1}, Jingmin Chen{1}, Duo Pan{1}, Jingbiao Chen{1}
{1}Peking University, China; {2}Xidian University, China

8196: Development of Optical System Utilizing Mirror and Reflector
Doogyu Lee{1}, Hyoung Won Baac{2}
{1}Samsung Electronics & Sungkyunkwan university, Korea; {2}Sungkyunkwan university, Korea

8858: GHz Offset Transfer of Hz Level Stability with a Phase Frequency Detector
Karim Manamanni, Dewni Pathegama, Filippo Bregolin, Florian Schäfer, Katharina Predehl, Steffen Schmidt-Eberle
TOPTICA Photonics AG, Germany

7390: Incorporating a Cesium Fountain Clock Into a Real-Time Time Scale UTC(k)
Shuhong Zhao, Dongshan Yin, Shanshan Bai, Sufang Liu
National Time Service Center of the Chinese Academy of Sciences, China

7434: Atomic Clock Frequency Steering Method Based on Optimal Control Theory
Shanshan Bai, Shuhong Zhao, Shaowu Dong, Zhe Gao
National Time Service Center of the Chinese Academy of Sciences, China

7619: Comparison of Transmitting Different Frequencies for Fiber-Based Radio Frequency Transmission
Yunlan Luo, Zhuoze Zhao, Song Yu
Beijing University of Posts and Telecommunications, China

7790: An Improved Setup for the Realisation of UTC(k) in the Laboratory K
Chung Fai Au Yeung, Shing Lung Yang
Standards and Calibration Laboratory, Hong Kong

7854: Simulation Analyses of a Frequency Transfer System Based on Optical Frequency Combs
Xinbo Li{1}, Ziyang Chen{2}, Ganbin Lu{1}, Dongrui Yu{2}, Kai Wu{1}, Bin Luo{1}, Hong Guo{2}
{1}Beijing University of Posts and Telecommunications, China; {2}Peking University, China

8183: Linear Optical Sampling Detection Electronics with Low Group-Delay Distortion
Shen Zhang, Qi Shen, Min Li, Meng-Zhe Lian, Lei Hou, Jian-Yu Guan, Hai-Feng Jiang, Shengkai Liao
University of Science and Technology of China, China

8208: An Algorithm Optimization Method for Time-Interval Measurement with Linear Optical Sampling
Ganbin Lu{1}, Ziyang Chen{2}, Dongrui Yu{2}, Xinbo Li{1}, Bin Luo{1}, Hong Guo{2}
{1}Beijing University of Posts and Telecommunications, Chile; {1}Beijing University of Posts and Telecommunications, China; {2}Peking University, China

7102: Magnetic Imaging of Metallic Objects Using Eddy Current Measurements
In Kui Cho, Jung Hoon Oh, Hyun Joon Lee, Kye Seok Yoon, Sang-Won Kim
ETRI, Korea

7628: Design of Miniaturization and High-Frequency IM Quartz Crystal Resonator
Cheng Yi Wu{2}, Xixi Wang{2}, Jiguang Cheng{2}, Qiang Zhou{2}, Ji Wang{1}, Min Chiang Chao{2}
{1}Piezoelectric Device Laboratory, School of Mechanical Engineering and Mechanics, Ningbo University,, China; {2}TXC (Ningbo) Co., Ltd., Ningbo, China

7052: LaLI-POP's Lamplight Change with Laser Tuning
Michael Huang, James Camparo
Aerospace Corporation, United States

7282: New Stabilization Technique of the Coherent-Population-Trapping-Based Atomic Clock
Yusuke Odagiri{2}, Satoshi Hatano{2}, Yuichiro Yano{1}, Motoaki Hara{1}, Shigeyoshi Goka{3}
{1}National Institute of Information and Communications Technology, Japan; {2}Neoark corporation, Japan; {3}Tokyo Metropolitan University, Japan

7808: Estimation of a Light Shift Using Various Atomic Resonances in Ramsey-Coherent Population Trapping Sequence
Masahiro Fukuoka{1}, Shigeyoshi Goka{2}
{1}National Institute of Information and Communications Technology, Japan; {2}Tokyo Metropolitan University, Japan

8001: Progress Towards the Absolute Atomic Gravimeter Development
Mikhail Aleynikov, Georgii Osipenko
VNIIFTRI, Russia

8057: Progress on Time Keeping 87Rb Fountain Clock
Hui Zhang, Jun Ruan, Dandan Liu, Sichen Fan, Yang Bai, Yong Guan, Pengyue Lei, Shougang Zhang
National Time Service Center, Chinese Academy of Sciences, China

8557: The Result of Operation Cesium and Rubidium Atomic Fountains
Dmitrii Kupalov, Olga Kupalova, Domnin Yurii, Alexandr Boiko
VNIIFTRI, Russia

7064: Exploring the Impact of Oven System Supply Voltage Fluctuations on Short-Term Frequency Stability of OCXO
Lin Xu, Peng Ye, Shuang Liao, Cheng Chen, Feng Tan
University of Electronic Science and Technology of China, China

7122: Miniature Stratum 3 OCXO with Extended 24 Hours Holdover by Thermal Hysteresis Compensation
Wan-Lin Hsieh, Tun-Jen Hsiao, Chia-Yin Chen, Chun-Chi Lin, Wen-Cheng Wang, Sheng-Hsiang Kao
TXC Corporation, Taiwan

7154: Ultra Low Phase Noise High Frequency TCXO by Dual Filter Harmonics Extraction
Yu-Liang Chen, Chi-Lun Yu, Shu-Ling Yeh, Chih-Hsun Chen, Sheng-Hsiang Kao
TXC Coporation, Taiwan

7626: Onboard Low Phase Noise Microwave Frequency Synthesizers with High Speed DAC and High Frequency Local Oscillators
Jean-Marc Lesage, Jean-Francois Penn
DGA MI - French MoD, France

8452: Ultrastable Photonic-Microwave Oscillator for a Cold Rb Atomic Clock
Michele Giunta{1}, Benjamin Rauf{1}, Pu Zou{1}, Stefan Droste{1}, Franklin Ascarrunz{2}, Lorenzo Hernandez{2}, Juraj Culak{2}, Maria Delgado{2}, Marc Fischer{1}, Ronald Holzwarth{1}
{1}Menlo Systems, United States; {1}Menlo Systems, Germany; {2}SDI, United States

8595: Precision Self Sensing and Compensation Applications of Crystal Oscillators
Wei Zhou{3}, Jiale Peng{2}, Zhiqi Li{1}
{1}xidian university, China; {2}xidian university, China; {3}xidian university (Retired）, Canada

8940: Measurement of Residual Instability of Frequency Dividers Using Carrier-Suppression Technique
Archita Hati, Marco Pomponio, Craig Nelson
NIST, United States

7256: Characterization of AlN and AlScN thin films CPW Transmission on High-Resistive Substrates
Kang Du, Fengyu Liu, Xuankai Xu, Tao Wu
Shanghaitech University, China

7341: A 3D-Printable Metamaterial Using a Magnetic Membrane for Tuneable Acoustic Resonance at Low Frequencies
Alicia Gardiner{3}, Roger Domingo-Roca{4}, James F. C. Windmill{2}, Andrew Feeney{1}
{1}Univeristy of Glasgow, United Kingdom; {2}Univeristy of Strathclyde, United Kingdom; {3}University of Glasgow, United Kingdom; {4}University of Strathclyde, United Kingdom

7389: Technological Advantages of Photolithographic Crystal BK for Automotive
Kenichiro Murata, Naohiro Wakisaka, Kohichi Moriya, Kenichi Ueki
NIHON DEMPA KOGYO CO., LTD., Japan

8731: A Micromechanical Frequency Comb-Based Binary Phase Shift Keying Demodulator
Ting-Yi Chen, Wei-Chang Li
National Taiwan University, Taiwan

8811: Near-Zero-TCF SAW Resonator Based on Z-Cut $LiNbO_3/SiO_2/Si$ Substrate
Jie Chen, Kai Yang, Fuhong Lin, Haoran Tao, Jiming Fang, Chengjie Zuo
University of Science and Technology of China, China

8924: Flexural-Mode Lithium Niobate on Silicon MEMS Transformer
Justin Phelps, Reza Abdolvand
UCF, United States

Poster Session #2: B3bP-28: Late Breaking News ISAF/PFM
Location: P11 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

9002: k_t^2 Estimation of Thin Films via Piezoelectric Stiffening Using Ultrasonic Reflectometry
Yohkoh Shimano, Motoshi Suzuki, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

9024: Investigation on the Planar Poisson's Ratio of <001>-Oriented $Pb(In_{1/2}Nb_{1/2})O_3$–$Pb(Mg_{1/3}Nb_{2/3})O_3$–$PbTiO_3$ Ceramics
Jinjing Zhang, Shuai Yang, Mingwen Wang, Fei Li
Xi'an Jiaotong University, China

9025: Enhancing Energy Storage Density in Lead-Free Transparent Ceramics Through Heterogeneous Structure Design Under Moderate Electric Fields
Qizhen Chai, Fudong Zhang, Qiyuan Zhou, Zhanhui Peng, Di Wu, Pengfei Liang, Lingling Wei, Xiaolian Chao, Zupei Yang
Shaanxi Normal University, China

9027: Growth and Thickness Effect of High Curie Point Relaxor Ferroelectric Thin Films for Piezoelectric MEMS Applications
Zhuo Chen, Zhongchen Gao, Zhihua Duan, Anyang Cui, Xiangyong Zhao, Yanxue Tang, Tao Wang, Feifei Wang
Shanghai Normal University, China

9028: The Polarization Response Characteristics of Potassium Tantalate Niobate Crystals Near the Phase Transition
Yining Dong, Qingyang Shan, Mingxuan Liu, Hao Tian, Xiangda Meng, Peng Tan
Harbin Institute of Technology, China

9030: Ferroelectric-to-Relaxor Transition and Ultrahigh Electrostrictive Effect in Sm^{3+}-Doped $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ Ferroelectrics Ceramics
Yunyao Huang
Xi'an Jiaotong University, China

9031: Ultrahigh Energy Storage in Tungsten Bronze Dielectric Ceramics Through a Weakly Coupled Relaxor Design
Yangfei Gao
Xi'an Jiaotong University, Frontier Institute of Science and Technology, China

9035: Broadband Quasi-Phase Matching Process and Nonlinear Bragg Diffraction Form Self-Assembled Structures in Potassium Tantalate Niobate Crystals
Zijian Zhang, Xing Wen, Peng Tan, Hao Tian
Harbin Institute of Technology, China

9036: Superior Energy Storage Performance in $Bi_{0.5}Na_{0.5}TiO_3$ Based Ceramics via Multi-Size Domain Construction and Multiple Phase Structures Synergistic Design
Yuanhao Wang, Zhanhui Peng, Xiaolian Chao, Zupei Yang
Shaanxi Normal University, China

9038: Sodium Potassium Niobate-Based Ceramics with High-Voltage Electrical Properties at High Curie Temperatures Realized by Constructing Multiphase Coexistence
Yuxuan Li, Zhanhui Peng, Xiaolian Chao, Zupei Yang
Shannxi Normal University, China

9040: Preparation and Electrical Properties of B-Site Ion Doped $Na_{0.25}K_{0.25}Bi_{2.5}Nb_2O_9$ Based Piezoelectric Ceramics
Mengxue Zhang, Xinchun Xie, Ruzhong Zuo
Anhui Polytechnic University, China

9041: Mid-Field High Energy Storage Performance $NaNbO_3$-Based Lead-Free Relaxation Ferroelectric Ceramics
Junwei Lei, Aiewen Xie, Ruzhong Zuo
Anhui Polytechnic University, China

9042: Polarization- and Stress-Related Lattice Dynamics in Solid-Solution Perovskite Ferroelectrics
Bohan Xing, Xuejie Sun, Yu Wang, Peng Tan, Hao Tian
Harbin Institute of Technology, China

9045: Synergistic Outstanding Piezoelectricity and High Curie Temperature Achieved in $BiScO_3$-$PbTiO_3$ Piezoceramics
Yongbao Cui, Lisha Liu, Yaojin Wang
Nanjing University of Science and Technology, China

9046: Electrical-Mediated Piezoelectricity with Unraveled Coupling Mechanism to the Domain Dynamics at Elevated Temperatures in Polycrystalline $BiFeO_3$
Lisha Liu
Nanjing University of Science and Technology, China

9048: Impact of Alternating Current Electric Field Poling on Coercive Field of Relaxor Ferroelectric Crystals
Xinya Feng{2}, Haobin Lei{2}, Chaorui Qiu{2}, Kexin Song{2}, Zhuo Xu{2}, Shujun Zhang{1}, Fei Li{2}
{1}University of Wollongong, Australia; {2}Xi'an Jiaotong University, China

9049: Colossal Electrocaloric Effect in an Interface-Augmented Ferroelectric Polymer
Shanyu Zheng, Donglin Han, Xiaoshi Qian
Shanghai Jiao Tong University, China

9050: Self-Actuating Electrocaloric Refrigerator Utilizing Polar High-Entropy Polymer
Donglin Han, Xiaoshi Qian
Shanghai Jiao Tong University, China

9051: High Energy Storage Density in $NaNbO_3$ Antiferroelectrics with Double Hysteresis Loop
Li Ma{1}, Fujita Toyohisa{1}, Jing-Feng Li{2}, Shujun Zhang{3}, Nengneng Luo{1}
{1}Guangxi University, China; {2}Tsinghua University, China; {3}University of Wollongong, Australia

9054: Studying Monoclinic Heterophase Structure for the Enhanced Piezoelectric Performance in Relaxor Ferroelectrics
Anyang Cui, Feifei Wang
Shanghai Normal University, China

9056: Giant Electric Field–Induced Strain in Lead-Free Piezoceramics
Kun Zeng, Zhengqian Fu, Fangfang Xu
Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9057: Evolution of Domain Structures in Flexible Ferroelectric Thin Film Systems by Phase-Field Simulations
Changqing Guo, Huayu Yang, Jing Wang, Houbing Huang
Beijing Institute of Technology, China

9059: Moderate Fields, Maximum Potential: Achieving High Records with Temperature-Stable Energy Storage in Lead-Free BNT-Based Ceramics
Wenjing Shi, Li Jin
Xi'an Jiaotong University, China

9060: Polarization Switching Mechanism of HfO_2-Based Ferroelectrics Driven by Domain Wall Motion
Yao Wu{2}, Yuke Zhang{1}, Jie Jiang{4}, Limei Jiang{4}, Minghua Tang{4}, Yichun Zhou{4}, Evgeny Y. Tsymbal{3}, Min Liao{4}, Qiong Yang{4}
{1}East China Normal University, China; {2}Huazhong University of Science and Technology, China; {3}University of Nebraska at Lincoln, United States; {4}Xiangtan University, China

9061: Transverse Size Effect of Relaxor Ferroelectric PIMNT Film for One-and Two-Dimensional Integrated Sensors by Simulation
Liang Cao{3}, Zhentao Gong{1}, Simin Wang{4}, Mian Wei{2}, Jiasheng Wang{3}, Qiaozhen Zhang{3}, Zhihua Duan{3}, Tao Wang{3}, Yanxue Tang{3}, Xiangyong Zhao{3}, Feifei Wang{3}
{1}Baoshan World Foreign Language High School, China; {2}High School Affiliated to Shanghai Normal University at Baoshan, China; {3}Shanghai Normal University, China; {4}Shuyang High School of Jiangsu Province, China

9062: Constructing Heterogeneous-Structure TiO_2@Al_2O_3 Nanowire Arrays in Polymer Dielectrics for Improving the Energy Storage Performance
Bo Peng, Hang Luo, Dou Zhang
Central South University, China

9063: Ultra-High Electron Affinity and Peripheral Electronegativity Co-Constructing All-Organic Dielectrics with Outstanding Capacitive Performance at High Temperature
Xiaona Li, Hang Luo, Dou Zhang
Central South University, China

9064: A-Site Engineered $NaNbO_3$ Lead-Free Antiferroelectrics Toward Well-Defined Double Hysteresis Loop
Guiqi Lei, Nengneng Luo
Guangxi University, China

9065: Electrobending Deformation in Thin Piezoceramic
Shuo Tian, Yejing Dai
Sun Yat-sen University, China

9066: High Energy Storage Performance of PZO/PTO Multilayers via Interface Engineering
Yuanyuan Zhang{1}, Qianqian Chen{1}, Ruijuan Qi{1}, Hao Shen{1}, Fengrui Sui{1}, Jing Yang{1}, Wei Bai{1}, Xiaodong Tang{1}, Xuefeng Chen{2}, Zhengqian Fu{2}, Genshui Wang{2}, Shujun Zhang{3}
{1}East China Normal University, China; {2}Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; {3}university of wollongong, Australia

9067: Enhanced Energy Density and Discharge Properties in Lead-Free Sodium Niobate-Based Relaxor Ferroelectric Ceramics for Dielectric Capacitor Application
Xiangyu Meng
Wuhan University of Technology, China

9069: Microscopic Insight Into Domain Configuration in Orthorhombic $K_{0.52}Na_{0.48}NbO_3$ Single Crystals Driven by Electric-Field
Xuejie Sun, Bohan Xing, Chengpeng Hu, Hao Tian
Harbin Institute of Technology, China

9070: Preparation and Energy Storage Properties of A-Site La/Sr Co-Doped PZO Thin Films
Hao Shen, Qianqian Chen, Boxiang Zhou, Xiaodong Tang, Yuanyuan Zhang
East China Normal University, China

9073: Thermodynamic Potential Construction and Biaxial Stress Analysis of $K_{0.4}Na_{0.6}NbO_3$ Single Crystals
Mingxuan Liu, Yining Dong, Song Jin, Chengpeng Hu, Xiangda Meng, Hao Tian
Harbin Institute of Technology, China

9074: Enhanced Dielectric, Ferroelectric and Leakage Current Properties of Periodic BLF-PT/BFM-PT Thin Films on Hastelloy Substrates
Yaning Shen, Pengfei He, Zhengrong Xue
School of Materials Science and Engineering, Shanghai University, Shanghai, China

9075: Effect of Hf and Ho Doping on the Piezoelectric Properties and Curie Temperature of $BiFeO_3$-$PbTiO_3$-$Ba(Zr,Ti)O_3$
Zhengrong Xue, Yaning Shen, Xiuru Tang
School of Materials Science and Engineering, Shanghai University, Shanghai, China

9077: On the Origin of Wake-Up and Fatigue Behavior in HfO_2-Based Ferroelectric Thin Film
Fuling Wu, Huajun Sun
Wuhan University of Technology, China

9080: Curvature Conservation and Conduction Modulation for Symmetric Charged Ferroelectric Domain Walls
Huayu Yang, Changqing Guo, Jing Wang, Houbing Huang
Beijing Institute of Technology, China

9081: Effects of Ti-Doping on Energy Storage Properties and Cycling Stability of $Pb_{0.925}La_{0.05}ZrO_3$ Antiferroelectric Thin Films
Qianqian Chen{1}, Yuanyuan Zhang{1}, Jie Zhang{1}, Hao Shen{1}, Ruijuan Qi{1}, Xuefeng Chen{2}, Zhengqian Fu{2}, Genshui Wang{2}, Jing Yang{1}, Wei Bai{1}, Xiaodong Tang{1}
{1}East China Normal University, China; {2}Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9082: Enhancing the High-Temperature Resistivity and Piezoelectric Response of $BiFeO_3$-0.33$PbTiO_3$-0.13$Ba(Zr_{0.5}Ti_{0.5})O_3$ Ceramics Using a Two-Step Sintering
Pengfei He, Yaning Shen, Xiuru Tang
School of Materials Science and Engineering, Shanghai University, Shanghai, China

9085: Improved Energy Storage Performance of $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$ Based Ceramic by $BiGaO_3$ Modification
Shangshu Li
Wuhan University of Technology, China

9086: Effects of Particle Sizes on the Structure and Piezoelectric Properties of High-Temperature 0.75BF-0.25BT Textured Ceramics
Jianguo Chern, Zhangpan Shen
Shanghai University, China

9087: Reduced Dielectric and Mechanical Losses of 0.36$Bi(Sc_{0.70}Fe_{0.30})O_3-0.64PbTiO_3$ by Mn Modification
Minghu Wei, Jianguo Chen
Shanghai University, China

9088: Multi-Scale Collaborative Optimization of $SrTiO_3$-Based Energy Storage Ceramics with High Performance and Excellent Stability
Lululu Liu{1}, Yang Liu{1}, Jigong Hao{1}, Wei Li{1}, Jiwai Zhai{2}
{1}Liaocheng University, China; {2}Tongji University, China

9090: Sliding Ferroelectricity in Van der Waals Layered γ-InSe Semiconductor
Fengrui Sui{1}, Min Jin{2}, Yuanyuan Zhang{1}, Ruijuan Qi{1}, Yuning Wu{1}, Rong Huang{1}, Fangyu Yue{1}, Junhao Chu{1}
{1}East China Normal University, China; {2}Shanghai Dianji University, China

9091: Research on Complex-Structured PZT Piezoelectric Ceramics for Ultrasonic Transducers Based on DLP 3D Printing
Chuanmin Wang, Haibo Zhang, Weigang Ma, Jinpeng Liu
School of Materials Science and Engineering, Huazhong University of Science and Technology, China

9095: Effect of A-Site Excess on the Shape Memory Effect of Sodium Bismuth Titanate Ceramics
Xiongxin Guo, Pan Chen, Baojin Chu
University of Science and Technology of China, China

9096: Wireless and Opto-Stimulated Flexible Implants: Artificial Retina Constructed by Ferroelectric $BiFeO_3$-$BaTiO_3$/P(VDF-TrFE) Composites
Yuhong Zhu{3}, Xi Liu{2}, Jinyu Ma{2}, Zhaopeng Wang{3}, Haitao Jiang{3}, Cheng Sun{2}, Dae-Yong Jeong{1}, Huaijin Guan{2}, Baojin Chu{3}
{1}Inha University, Korea; {2}Nantong University, China; {3}University of Science and Technology of China, China

9098: Study on Ferroelectric Negative Capacitance FETs
Guangtong Yuan, Jiangyu Li
Southern University of Science and Technology, China

9099: Young's Modulus of Suspended Free-Standing $PbZr_{0.2}Ti_{0.8}O_3$ Films
Longji Lv, Jiangyu Li
Southern University of Science and Technology, China

9102: A Lead-Based Antiferroelectric Multilayer Actuator with High Field-Induced Strain Levels
Xu Wang, Xuefeng Chen, Genshui Wang
Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9103: Crafting Very Low Frequency Magnetoelectric Antenna via Piezoelectric and Electromechanical Synergic Optimization Strategy
Ze Fang, Yaojin Wang
Nanjing University of Science and Technology, China

9104: Improved Piezoelectric Temperature Stability in Lead-Free Ceramics by Adjusting Laminated Structure
Wei Zhang, Desheng Li
Shuoyuan Electric Co., Ltd, China

9105: Unprecedented Piezoelectricity in Free-Standing Membranes
Yaojin Wang
Nanjing University of Science and Technology, China

9108: An Image Recognition Technique for the Quantitative Analysis of Abnormally Oriented Grains in Advanced Piezoelectric Materials
Luca Spagnuolo, Luca Colombo, Walter Gubinelli, Kapil Saha, Pietro Simeoni, Matteo Rinaldi
Northeastern University, United States

9112: The Characterization of Complex Polarization State in Ferroelectric Materials Using High-Throughput Electron NanoDiffraction
Desheng Li, Wei Zhang
Shuoyuan electricity, China

9113: Research on High-Performance Sensors Based on Relaxor Ferroelectric Single Crystals
Lizhi Hu, Yaojin Wang
Nanjing University of Science and Technology, China

9116: Boosting Energy Storage Performance of Relaxor $Na_{0.5}Bi_{0.5}(Fe_{0.03}Ti_{0.97})O_3$-$SrTiO_3$ Thin Films via Local Stress Field Regulation
Huajun Sun, Shibing Xiao
Wuhan University of Technology, China

9117: Emergent Relaxor-Ferroelectric Films for Capacitive Energy Storage via Entropy-Design
Hao Luo, Danyang Wang
School of Materials Science and Engineering, UNSW Sydney, Australia

9118: High Performance Aurivillius-Type Bismuth Titanate-Ferrite for High-Temperature Piezoelectric Applications
Qian Wang, Chun-Ming Wang
Shandong University, China

9121: Spark Plasma Sintering of Calcium Bismuth Niobate High-TC Piezoelectric Ceramics Exhibiting Superior Piezoelectric Performance
Juan-Nan Chen, Xuan-Zhe Pei, Qian Wang, Ze-Yan Wang, Chun-Ming Wang
Shandong University, China

9123: Promoting Periodical Poling in Lithium Niobate Crystal Through Surface Acoustic Wave-Induced Local Lattice Activation
Qilu Liu{2}, Dongzhou Wang{1}, Yuanhua Sang{2}, Hong Liu{2}
{1}Jinan institute of quantum technology, China; {2}Shandong university, China

9124: Spark Plasma Sintering of $Na_{0.5}Bi_{2.5}Nb_2O_9$ Exhibiting Superior Piezoelectric Performance
Guo-Hao Li, Qian Wang, Juan-Nan Chen, Ming-Lei Zhao, Chun-Ming Wang, Mei-Jie Tang
Shandong University, China

9125: High-TC B-Site Mn/Cr Substituted Bismuth Titanate-Niobate Ceramics Exhibiting Superior Piezoelectric Performance
Da-Wei Yan, Qian Wang, Chun-Ming Wang
Shandong University, China

9126: High Piezoelectricity and Low Strain Hysteresis in PMN–PT Based Piezoelectric Ceramics
Jiajia Wang, Yaojin Wang
Nanjing University of Science and Technology, China

9127: Tunable Antiferroelectric Ceramic Polarization via Regulating Incommensurate Phase and Domain Features
Yue Luo{2}, Xuefeng Chen{1}, Shujun Zhang{2}, Zhenxiang Cheng{2}
{1}Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; {2}university of Wollongong, Australia

9128: Enhancing Piezoelectric Properties of $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbHfO_3$-$PbTiO_3$ Ferroelectric Ceramics Through Sm Doping
Chunyang Gao, A M M Tanveer Karim, Zhenxiang Cheng, Shujun Zhang
University of Wollongong, Australia

9130: Achieving High Piezoelectric Performance in Bismuth Titanate-Ferrite Through A-Site Na/Ce Co-Substitution
Chao Yu, Qian Wang, Chun-Ming Wang, Da-Wei Yan
Shandong University, China

9131: Sustaining Super Tetragonal (Super-T) Lattice in Lead-Free Ferroelectric Thin Films on Various Substrates
Siyuan Zhang, Danyang Wang
UNSW Materials Science and Engineering, Australia

9132: Quantum Fluctuations and Ferrielectric to Dipole Glassy Transition in $CuInP_2S_6$ Crystals
Vitalii Liubachko{2}, Anton Kohutych{2}, Ruslan Yevych{2}, Mykola Medulych{2}, Viacheslav Hryts{2}, Artem Pogodin{2}, Svitlana Kopyl{1}, Andrei Kholkin{1}, Yulian Vysochanskii{2}
{1}University of Aveiro, Portugal; {2}Uzhgorod National University, Ukraine

9133: Enhanced Energy Storage Performance and Dielectric Stability in $Bi_{0.5}Na_{0.5}TiO_3$-$Eu_2Ti_2O_7$ Relaxor Ferroelectrics
Meng-Xue Wang, Chun-Ming Wang, Qian Wang, Yi-Jun Wan
Shandong University, China

9134: Lanthanum and Tungsten Substituted Bismuth Titanium Niobate Ceramics Presented High Performance
Mei-Jie Tang, Qian Wang, Chun-Ming Wang
Shandong University, China

9136: Achieving High Piezoelectricity with Excellent Thermal Stability by High Entropy Design
A M M Tanveer Karim, Chunyang Gao, Zhenxiang Cheng, Shujun Zhang
University of Wollongong, Australia

9137: Recording and Reading of Mechanical Force by Afterglow Evaluation of Multi-Piezo Ferroelectric Material $(Li,Na)NbO_3$
Xu-Guang Zheng{1}, Tomoki Uchiyama{2}, Chao-Nan Xu{2}
{1}Saga University, Japan; {2}Tohoku University, Japan

9139: Anomalous Polarization Switching Dynamics in Wurtzite Ferroelectric Nitride Films
Youdi Gu{2}, Shu Shi{2}, Ming Lin{1}, Yao Zhu{1}, Jingsheng Chen{2}
{1}Agency for Science, Technology and Research, Singapore; {2}National University of Singapore, Singapore

9140: Impact of Surface Functional Groups on Mn_2N-Based MXenes' Electronic Behavior and Optical Spectra
Bakhtiar Ul Haq, Se-Hun Kim
Jeju national university, Korea

9144: Lead-Free Energy Storage: Advancing Relaxor Ferroelectrics
Shiyu Zhou{1}, Tongqing Yang{1}, Shujun Zhang{2}
{1}Tongji University, China; {2}University of Wollongong, Australia

9147: High Energy Storage in Tungsten Bronze Ceramics by Doping
Zizheng Song{1}, Yangfei Gao{3}, Xiaojie Lou{3}, Zibin Chen{1}, Shujun Zhang{2}
{1}hong kong polyutechnic university, China; {2}university of wollongong, Australia; {3}xi'an jiaotong university, China

9148: Neodymium-Substituted $Bi_5Ti_3FeO_{15}$ Exhibiting Superior Piezoelectric Performance for High-Temperature Applications
Yijun Wan, Qian Wang, Chunming Wang
Shandong University, China

Poster Session #2: B3aP-28: MBB: MicroBeamforming & GPU Based Beamforming
Location: P11 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Marko Jakovljevic, Harvard University
Beatrice Federici, Eindhoven University of Technology

7219: 3D Ultrasound Imaging with Microbeamformer-Based FDMAS: A Preliminary Performance Assessment
Lorenzo Castrignano{1}, Giulia Matrone{2}, Piero Tortoli{1}, Alessandro Ramalli{1}
{1}University of Florence, Italy; {2}University of Pavia, Italy

7233: A Comparative Analysis of Different Scan Sequences and Micro-Beamforming Strategies for 3D High-Frame-Rate Ultrasound Imaging
Lorenzo Castrignano{3}, Piero Tortoli{3}, Giulia Matrone{4}, Alessandro Stuart Savoia{2}, Marco Crocco{1}, Alessandro Ramalli{3}
{1}Esaote S.p.A., Italy; {2}Roma Tre University, Italy; {3}University of Florence, Italy; {4}University of Pavia, Italy

7864: Off-Grid Ultrasound Imaging by Stochastic Optimization
Vincent van de Schaft{1}, Oudom Somphone{2}, Ruud van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips, France

8087: Delay Multiply and Sum Beamforming in 3D Coherent Multi-Transducer Ultrasound for Contrast Enhancement in the Presence of Acoustic Clutter
Paul Dryburgh{1}, Daniele Mazierli{2}, Joseph V Hajnal{1}, Piero Tortoli{2}, Alessandro Ramalli{2}, Laura Peralta{1}
{1}King's College London, United Kingdom; {2}University of Florence, Italy

8311: High-Frame Rate Tri-Plane Echocardiography Using a Dense 512-Element Matrix Array
Fatemeh Shahbazi{2}, Marcus Ingram{2}, Sophie Heymans{2}, Alessandro Ramalli{1}, Jan Dhooge{2}
{1}DEGLI STUDI DI FIRENZE, Italy; {2}KU Leuven, Belgium

8594: Toward a GPU-Based Adaptive Beamforming for Row Columns Addressed Arrays
Nizar Guezzi, Hyojin Seong, Jaesok Yu
Daegu Gyeongbuk Institute of Science and Technology, Korea

8914: Real-Time Ultrafast Volumetric Imaging with GPU-Based Beamforming and Bias Sensitive Row Column Arrays
Darren Dahunsi{2}, Randy Palamar{2}, Tyler Henry{2}, Tarek Kaddoura{2}, Mohammad Rahim Sobhani{1}, Negar Majidi{2}, Roger Zemp{2}
{1}CliniSonix, Canada; {2}University of Alberta, Canada

8972: Transmit Hyper-Beam Plane-Wave Compounding
Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

Poster Session #2: B3aP-29: MIS: Application of Deep Learning in Ultrasound Imaging
Location: P12 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Sajjad Afrakhteh, University of Trento

7866: Deep Learning-Based Classification of Finger Movements Using Ultrasound Imaging of the Forearm Muscles
Jaeyeop Jang, Myeonghun Han, Changhan Yoon
Inje University, Korea

8019: A SAM-Enhanced Deep Learning Pipeline for the Classification of Breast Tumors in Ultrasound Images
Tao Jiang, Feng Xie, Yifang Li, Ming Yu, Dean Ta
Fudan University, China

8293: Prediction of CRT Outcome from Mitral PW-Doppler and Pacemaker Settings Using Deep Learning
Paulo Tostes{2}, Ahmed Beela{3}, Helena Williams{2}, Joost Lummens{3}, Lieven Herbots{1}, Jan D'Hooge{2}
{1}Jessa Hospital, Belgium; {2}KU Leuven, Belgium; {3}Maastricht University, Netherlands

8629: Fetal Ultrasound Standard Plane Extraction Using Orthogonal Triple-Slice Deep Reinforcement Learning Agent
Baichuan Jiang{2}, Keshuai Xu{2}, Ernest Graham{1}, Russell Taylor{2}, Mathias Unberath{2}, Jeeun Kang{1}, Emad Boctor{2}
{1}Johns Hopkins Medical Institute, United States; {2}Johns Hopkins University, United States

8729: Analyzing Coronary Artery Deformation Based on Intravascular Ultrasound Simulation and Deep Learning
Xinze Li{2}, Peng Song{2}, Yunbo Guo{2}, Tiantian Lv{2}, Yang Jiao{2}, Jing Yang{1}, Yaoyao Cui{2}
{1}Shanghai Xuhui District Central Hospital and Zhongshan-Xuhui Hospital, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Science, China

8820: EchoCCLAD: Coordinate Classification Deep Learning Network for Left Ventricle Landmark Detection on Echocardiograms
Haibo Meng{2}, Xinge Guo{2}, Chien Ting Chin{2}, Chao Tian{1}
{1}Shenzhen Baoan Women's and Children's Hospital, China; {2}Shenzhen University, China

8964: Prostate Volume Quantification Using Deep Learning with 2-D Transrectal Ultrasound: A Quantitative Analysis
Heechul Yoon{2}, Moon-Hyung Choi{1}, Gihun Park{2}
{1}Catholic University of Korea, Korea; {2}Dankook University, Korea

B4L-01: MEL: Imaging Tissue Anisotropy
Location: 506 (TaiNEX 1)
16:30 - 18:00
Session Chair: Chris de Korte, Radboudumc

9014: Ultrasound Elastographic Methods to Elucidate In Vivo Mechanics of Vascular and Skeletal Muscles
Wei-Ning Lee
University of Hong Kong, Hong Kong

8478: DoPIo Push and Track Beam Focal Configurations for Differentiating Shear Elastic Anisotropy in Transversely Isotropic Tissue
Sabiq Muhtadi, Keita Yokoyama, Caterina Gallippi
University of North Carolina at Chapel Hill and North Carolina State University, United States

7236: In-Plane Shear Modulus in Pennate Muscles Using Ultrasound Steered Push Beams
Ricardo Andrade{5}, Ha-Hien-Phuong Ngo{1}, Alice Lemoine{3}, Nicolas Etaix{3}, Thomas Frappart{3}, Javier Brum{4}, Nicolas Benech{4}, Christophe Fraschini{3}, Antoine Nordez{5}, Jean-Luc Gennisson{2}
{1}BioMaps - Université Paris Saclay, France; {2}BioMaps - Université Paris Saclay - CNRS, France; {3}Supersonic Imagine, France; {4}Universidad de Montevideo, Uruguay; {5}Université de Nantes, France

7553: Direct In Vivo Characterization of Tensile Anisotropy and Shear Anisotropy of Skeletal Muscle by Ultrasound Shear Wave Elastography
Ricardo Andrade{4}, Ha-Hien-Phuong Ngo{2}, Apolline Racapé{4}, Mar Hernandez-Secorun{4}, Alice Lemoine{3}, Nicolas Etais{3}, Thomas Frappart{3}, Christophe Fraschini{3}, Antoine Nordez{4}, Jean-Luc Gennisson{1}
{1}BioMaps - Université Paris Saclay - CNRS, France; {2}BioMaps - Université Paris-Saclay, France; {3}Supersonic Imagine, France; {4}Université de Nantes, France

7823: Manual Compression Increases VisR-Derived Mechanical Anisotropy in Human Breast and Rectus Femoris Muscle, In Vivo
Anna Phillips, Caterina Gallippi
University of North Carolina at Chapel Hill, United States

B4L-02: MBE BBB Opening, Mechanotransduction, Cavitation, Immunotherapy
Location: 701A (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Nobuki Kudo, Hokkaido University
Chih-Kuang Yeh, National Tsing Hua University

8088: Developing a Novel High-Fidelity Model to Investigate the Feasibility of Ultrasound-Targeted Nanodroplets Opening the Blood-Brain Barrier
Tianyu Guo, Yuantong Zhong, Xinnan Wang, Feihong Dong, Xianhua Wang, Heping Cheng, Jue Zhang
Peking University, China

8062: Targeting Extracellular Matrix Stiffness via Ultrasound-Modulated Mechanotransduction for Tumor Therapy
Zi-Yuan Wang, Pai-Chi Li, Wei-Wen Liu
National Taiwan University, Taiwan

7657: Refinement of Ultrasound Dosimetry for Enhanced Bone Regeneration: Unveiling Cellular Response Mechanisms
Andrea Orthodoxou, Margaret Lucas, Helen Mulvana
University of Glasgow, United Kingdom

8459: Histotripsy Dose Monitoring via Acoustic Cavitation Emissions (ACE)
Scott Haskell, Ellen Yeats, Zhen Xu, Jonathan Sukovich
University of Michigan, United States

8489: Ultrasound Stimulated Microbubble Radiosensitization in Immunocompetent Models of Cancer
Emma Harris{2}, Hannah Bargh-Dawson{2}, Carol Box{2}, Graeme Birdsey{1}, Jeffrey Bamber{2}
{1}Imperial College London, United Kingdom; {2}Institute of Cancer Research, United Kingdom

8806: Noninvasive Pulsed Ultrasound Enhancing NK/CD8+ T Cells Proliferation and Polarization to Damage Cancer Cells
Wei Dong, Guihu Wang, Wenjuan Li, Yichao Chai, Xinrui He, Senyang Li, Zongfang Li
The Second Affiliated Hospital of Xi'an Jiaotong University, China

B4L-03: MIS: Therapeutics and Interventional
Location: 701B (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Yaoyao Cui, Suzhou Institute of Biomedical Engineering and Technology

7804: YOLO_UND: YOLO and Transformer-Based Ultrasound-Guided Puncture Needle Detection and Localization
Boheng Zhang{1}, Yanqi Zhao{2}, Haorui Huang{2}, Yi Shen{1}, Mingjian Sun{1}
{1}Harbin Institute of Technology, China; {2}Harbin Institute of Technology, Weihai, China

7991: Short-Range Small-Form-Factor 2D Source Localization Using pMUT-Based Delay-Multiply-and-Sum Imaging Towards Catheter Coordination
Mantalena Sarafianou{1}, David Sze Wai Choong{1}, Duan Jian Goh{1}, Srinivas Merugu{1}, Yul Koh{1}, Peter Hyun Kee Chang{1}, Qing Xin Zhang{1}, Domenico Giusti{2}, Alberto Leotti{2}, Ravi Shankar{2}, Goutham Koppisetti{2}
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}ST Microelectronics, Italy; {2}ST Microelectronics, Singapore

8758: Adaptive Eigen Subspace Projection for Suppressing HIFU Interference
Kun Yang{2}, Qiang Li{2}, Xiaowei Zhou{1}
{1}Chongqing Medical University, China; {2}Tianjin University, China

8769: HIFU Ablation Monitoring with Weighted Ultrasound Entropy Imaging
Yingying Zhou{1}, Kun Yang{2}, Jiahong Xu{1}, Dejia Cai{1}, Xiaowei Zhou{1}
{1}Chongqing Medical University, China; {2}Tianjin University, China

8418: Calibrating Conformal Resonant Ultrasound Arrays for Wearable and Implantable Therapeutic Applications
Samuel Desmarais, Tiago Costa
Technische Universiteit Delft, Netherlands

B4L-04: MIS: Contrast Agents
Location: 701C (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Klazina Kooiman, Thoraxcenter, Erasmus MC
Ayache Bouakaz, INSERM

8520: Multiplex Imaging Utilizing Vaporization Dynamics of Single-Wavelength Activated Perfluorohexane Nanodroplets
Euisuk Chung, Andrew Zhao, Stanislav Emelianov
Georgia institute of technology, United States

8684: Microbubble Fluctuation Signal Extraction Based on Whittaker Smoothing Algorithm for Contrast-Enhanced Ultrasound Imaging
Yichen Yan{1}, Hanbing Chu{2}, Liyuan Jiang{2}, Jinxuan Ma{2}, Yiran Chen{1}, Lei Zhang{2}, Yujin Zong{1}, Mingxi Wan{2}
{1}xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

8801: Bandwidth Limited, Large Aperture, Active Acoustic, Spatio-Temporal Mapping (BLAST) of Multi-Bubble Cavitation Events
Mahmoud Komaiha, Tim Hall, Zhen Xu, Jonathan Sukovich
University of Michigan, United States

9007: Enhancing Ultrasound Molecular Imaging: RPCA-Based Filtering to Differentiate Tumor-Bound and Free Microbubbles
Hoda Hashemi, Dongwoon Hyun, Jihye Baek, Arutselvan Natarajan, Farbod Tabesh, Ramasamy Paulmurugan, Jeremy Dahl
Stanford University, United States

7947: Enhanced Ultrasound Imaging Through Combined Singular Value Decomposition and Pulse Inversion for Microbubble Detection in Thinned-Skull Rat Brain
Ge Zhang{2}, Mathis Vert{2}, Nabil Haidour{2}, Dimitris Perdios{2}, Mohamed Nouhoum{1}, Bruno Osmanski{1}, Thomas Deffieux{2}, Sophie Pezet{2}, Mickael Tanter{2}
{1}Iconeus, France; {2}Physics for Medicine Paris, INSERM U1273, ESPCI Paris, PSL University, CNRS, France

8423: Assessing Dispersion Heterogeneity in Adenomyosis Using Quantitative Contrast-Enhanced Ultrasound
Ferenc Igor Kandi{2}, Eva de Bock{1}, Catarina Dinis Fernandes{2}, Simona Turco{2}, Lynda Juffermans{1}, Judith Huirne{1}, Massimo Mischi{2}
{1}Amsterdam UMC, Netherlands; {2}Eindhoven University of Technology, Netherlands

B4L-05: Nonlinear Acoustics (PNL) 1
Location: 701D (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Yook-Kong Yong, Rutgers University

7902: Developing a Real-Time Spatially-Localized Measurement of B/A Using Difference-Frequency Ultrasound Imaging
Kaitlyn Liang, G. Edward Marti, Soon Wei Daniel Lim, Cheng Liu, Jeremy Dahl, Steven Chu
Stanford University, United States

8494: Modeling Nonlinear Wave Propagation for Subharmonic Imaging
Jesse Buijs{1}, Iris Hartstra{2}, Leo Hoogerbrugge{1}, Dirk Verschuur{1}
{1}Delft University of Technology, Netherlands; {2}Deltares, Netherlands

8799: Dynamic Optical Coherence Elastography in the Cornea: Current State and Perspectives
Ivan Pelivanov, Gabriel Regnault, Agathe Marmin, Athira Bs, Ben Anderson, Ruikang Wang, Tueng Shen, Matthew O'Donnell
University of Washington, United States

8576: Piezo-Optical Power Calibration of Nonlinear and Shocked Ultrasound in Real Time
Milan Fritsche, Florian Steinmeyer
Technische Hochschule Nuernberg Georg Simon Ohm, Germany

B4L-06: AHD Extreme High Frequency Devices 2
Location: 701E (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Ryo Nakagawa, x
Ausrine Bartasyte, University of Franche-Comté

8381: Low-Loss Higher-Order Cross-Sectional Lamé Mode SAW Devices in 10-20 GHz Range
Ian Anderson{2}, Tzu-Hsuan Hsu{2}, Vakhtang Chulukhadze{2}, Jack Kramer{2}, Sinwoo Cho{2}, Omar Barrera{2}, Joshua Campbell{2}, Ming-Huang Li{1}, Ruochen Lu{2}
{1}National Tsing Hua University, Taiwan; {2}University of Texas at Austin, Taiwan; {2}University of Texas at Austin, United States

7050: 11.6-GHz SV-SAW Resonator Based on Y128° $LiNbO_3/SiO_2/Si$ Substrate
Kai Yang, Jie Chen, Chengjie Zuo
University of Science and Technology of China, China

8290: A Ku-Band 2nd Order Mode FBAR Based on Bilayer Polarity-Inverted Single Crystal AlN Films
Jinghong Lu
Shanghai University, China

8266: High-K^2_{eff} High Frequency BAW Resonators Based on Single-Crystal Polarity-Inverted $Al_xSc_{1-x}N$ Piezoelectric Films
Pengcheng Zhu
Southwest University of Science and Technology, China

7801: 19.3 GHz Acoustic Filter with 2.2 dB IL, 8.5% FBW, and 47 dB Close-In Rejection in Trilayer Periodically Poled Piezoelectric Thin-Film Lithium Niobate
Omar Barrera, Sinwoo Cho, Jack Kramer, Vakhtang Chulukhadze, Tzu-Hsuan Hsu, Joshua Campbell, Ian Anderson, Ruochen Lu
University of Texas at Austin, United States

7662: Piezoelectric Acoustics Exceeding 100 GHz
Jack Kramer{3}, Omar Barrera{3}, Bryan Bosworth{1}, Nicholas Jungwirth{1}, Lezli Matto{2}, Sinwoo Cho{3}, Nathan Orloff{1}, Mark Goorsky{2}, Ruochen Lu{3}
{1}National Institute of Standards and Technology, Boulder, United States; {2}University of California Los Angeles, United States; {3}University of Texas at Austin, United States

B4L-07: TMI: Flexible Transducers
Location: 701F (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Dominique Certon, Francois Rabelais University of Tours
Paul Van Neer, TU Delft

8296: Developing a Phased PMUT Array Patch for Cardiac Health Monitoring
Milind Pandit{2}, Jo Aerts{2}, Daniel Barbosa{2}, Marco Forlin{2}, Peter Deruytere{2}, Epimitheas Georgitzikis{1}, Tomoatsu Kinoshita{1}, Veronique Rochus{1}, Xavier Rottenberg{1}, Erwin Hijzen{1}
{1}IMEC, Belgium; {2}Pulsify Medical, Belgium

8378: A Flexible Row-Column Array for Deep Tissue Microvascular Imaging
Huaiyu Wu{1}, Sunho Moon{1}, Qi You{2}, Pengfei Song{2}, Xiaoning Jiang{1}
{1}North Carolina State University, United States; {2}University of Illinois Urbana-Champaign, United States

7885: Shape-Adaptive Stretchable Transducer for Wearable Imaging
Jianzhong Chen{2}, Peng Zhang{1}, Yongchuan Li{3}, Dawei Wu{2}, Hairong Zheng{3}, Teng Ma{3}
{1}Harbin University of Science and Technology, China; {2}Nanjing University of Aeronautics and Astronautics, China; {3}Shenzhen Institutes of Advanced Technology, China

8256: Miniaturized Ultrasonic Transducer with PMN-PT Embedded Into Flexible LCP Substrate for Biocompatible Applications
Julian Kober{3}, Tönnis Trittler{3}, Edgar Manfred Gustav Dorausch{6}, Cornelius Kühnöl{6}, Julius Weber{1}, Marc Hauer{2}, Martin Oppermann{5}, Henning Heuer{4}, Jochen Hampe{3}, Moritz Herzog{3}
{1}Contronix Engineering GmbH, Germany; {2}DYCONEX AG, Switzerland; {3}Else Kröner Fresenius Center for Digital Health, TU Dresden Faculty of Medicine Carl Gustav Carus, Germany; {4}Fraunhofer Institute of Ceramic Technologies and Systems, Germany; {5}Institute of Electronic Packaging Technology, TU Dresden, Germany; {6}Vodafone Chair Mobile Communications Systems, Department of Electrical Engineering, TU Dresden, Germany

7070: A Flexible Body-Conformable Ultrasound Transducer Array for Neuromodulation Applications
Jiayi Zhang{2}, Lehang Guo{3}, Huixiong Xu{1}, Chang Peng{2}
{1}Fudan University, China; {2}ShanghaiTech University, China; {3}Tongji University, China

8304: Novel Flexible 3.3 MHz 2D Phased-Array with λ/2 Pitch and High-Density Interconnects for Therapeutic Ultrasound Applications
Hidde Woerdman, Samuel Desmarais, Gandhika Wardhana, Tiago L. Costa
Delft University of Technology, Netherlands

B4L-08: Fundamentals of Ferroelectrics 2
Location: 701G (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Soonil Lee, Changwon National University

7664: Are Lead Halide Perovskites Truly Ferroelectric?
Alexei A. Bokov, Maryam Bari, Zuo-Guang Ye
Simon Fraser University, Canada

8268: Prediction of the Piezoelectric Voltage Coefficient Using DFT Calculations and Analytical Modeling
Ilya Grinberg
Bar Ilan University, Israel

8860: Tracking the Nanoscale Dynamics of the Martensitic-Like Phase Transition in $BiFeO_3$ via Interferometric Nanoindentation
Ralph Bulanadi{4}, Joel Lefever{1}, Iaroslav Gaponenko{4}, King-Fa Luo{5}, Sahar Saremi{3}, Lane Martin{2}, Valanoor Nagarajan{5}, Roger Proksch{1}, Patrycja Paruch{4}
{1}Asylum Research, an Oxford Instruments Company, United States; {2}Rice University, United States; {3}University of California, Berkeley, United States; {4}University of Geneva, Switzerland; {5}University of New South Wales, Australia

7399: DC Bias Characteristics of Doped Nanograin $BaTiO_3$
Takashi Teranishi, Ruku Ozaki, Mizuki Katsura, Shinya Kondo, Akira Kishimoto
Okayama University, Japan

7685: Rotation Induced "Antiferroelectric-Like" Double Hysteresis of $SrTiO_3$ and $BaZrO_3$
Seongjoo Jung, Turan Birol
University of Minnesota, United States

B4L-09: Doped Hafnium Oxide - Devices/Material 1
Location: 701H (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Igor Stolichnov, EPFL

9019: Ferroelectric HfO_2-Based 1T1C FeRAM for Advanced CMOS Technology Node
Tsubasa Yonai{3}, Takafumi Kunihiro{3}, Ryo Ono{3}, Yusuke Shuto{3}, Ruben Alcala{2}, Maximilian Lederer{1}, Konrad Seidel{1}, Uwe Schroeder{2}, Thomas Mikolajick{2}, Jun Okuno{3}, Taku Umebayashi{3}
{1}Fraunhofer IPMS - Center Nanoelectronics Technologies, Germany; {2}NaMLab gGmbH, Germany; {3}Sony Semiconductor Solutions Corporation, Japan

8898: Microwave Characterization of HfO_2/ZrO_2 Superlattice MFM Varactors Integrated into BEOL
Sukhrob Abdulazhanov, Quang Huy Le, David Lehninger, Ayse Sünbül, Thomas Kämpfe, Gerald Gerlach
Fraunhofer IPMS, Germany

8514: A Millimeter Wave Ferroelectric Hafnium Zirconium Oxide-Based Programmable Antenna
Samuel Quaresima, Nicolas Casilli, Vitaly Petrov, Josep Miquel Jornet, Luca Colombo, Benyamin Davaji, Cristian Cassella
Northeastern University, United States

8141: Leverging Ferroelectric La Doped Hafnia for On-Chip Cryogenic Cooling
Jalaja M A
CENTRE FOR NANOSCIENCE AND ENGINEERING (CENSE), INDIAN INSTITUTE OF SCIENCE (IISC), India

7812: Annealing-Free Deposition of $Hf_{0.5}Zr_{0.5}O_2$ Thin Film via In-Situ Crystallization Using Cyclopentadienyl-Based Precursor and Plasma-Enhanced Atomic Layer Deposition
Jaewook Lee, Hyojun Choi, Dong Hee Han, Sun Young Lee, Yong Hyeon Cho, Geun Hyeong Park, Kun Yang, Ju Yong Park, Dong In Han, Min Hyuk Park
Seoul National University, Korea

B4L-10: Processing of Lead Free Materials
Location: 702 (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Alp Sehirlioglu, Case Western Reserve University

7055: Environmentally Friendly Multiferroic Properties of $0.8(Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3)$ -$0.2(CoFe_2O_4)$ Particulate Composite
Pankhuri Bansal, Arun Kumar Singh, Sanjeev Kumar
Punjab Engineering College (Deemed to be University), Chandigarh, India

7057: Effect of Quenching on Dielectric Properties of Sm^{3+} Doped $BiFeO_3$-$BaTiO_3$ Solid Solution
Mukul Kumar{2}, Arun Kumar Singh{2}, A.R. James{1}, Sanjeev Kumar{2}
{1}Ceramics and Composites Group, Defense Metallurgical Research Laboratory, Hyderabad, India; {2}Punjab Engineering College (Deemed to be University), Chandigarh, India

7348: Fabrication of Mn-Added [110]-Oriented $0.85(Bi_{0.5}Na_{0.5})TiO_3$-$0.15BaTiO_3$ Single Crystals by Solid-State Crystal Growth Method
Ichiro Fujii, Ryohei Yuzawa, Shunsuke Kamimura, Shintaro Ueno, Satoshi Wada
University of Yamanashi, Japan

8061: Tuning Microstructure and Properties of NBT-Based Ceramics by Inducing Chemical Inhomogeneities via Bi-Non-Stoichiometry
Sophie Bauer{2}, Till Frömling{1}
{1}Fraunhofer Research Institution for Materials Recycling and Resource Strategies IWKS, Germany; {2}Technical University Darmstadt, Germany

8051: Phase Formation Reactions in the Ferroelectric $(Ba,Ca)(Zr,Ti)O_3$ System
Anna Paulik{1}, Marc Widenmeyer{2}, Anamaria Mihaljevic{1}, Jurij Koruza{1}
{1}Graz University of Technology, Austria; {2}Technical University of Darmstadt, Germany

9018: Piezoelectric Enhancement Through AC Poling Above Curie Temperature of $BaTiO_3$ Ceramics with Varying Grain Sizes
Adisu Tsige Shibiru{2}, Ichiro Fujii{2}, Piyush Sapkota{2}, Hyunwook Nam{1}, Gopal Prasad Khanal{2}, Shintaro Ueno{2}, Satoshi Wada{2}
{1}Tokyo University of Science, Japan; {2}University of Yamanashi, Japan

B4L-11: Material & Defect Characterization (NMC)

Location: 703 (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Walter Arnold, Universität des Saarlandes
Zheng Fan, Nanyang Technological University

8852: Advancing Spatially Resolved Acoustic Spectroscopy (SRAS) from Microstructure to Elasticity Imaging
Rikesh Patel{2}, Wenqi Li{2}, Paul Dryburgh{1}, Carolina Guerra{2}, Rafael Fuentes Dominguez{2}, Richard Smith{2}, Matt Clark{2}
{1}King's College London, United Kingdom; {2}University of Nottingham, United Kingdom

7822: Automatic Detection of Concrete Defects Using Laser Ultrasonic Visualization Technique Based on Deep Learning
Sohichi Hirose{2}, Takahiro Saitoh{1}
{1}Gunma University, Japan; {2}Tokyo Insitute of Technology, Japan

8252: A Comprehensive Thermal Stability Analysis of D-BAW Structures Employing Dry Film Bonding Materials
Weiwei Hu, Youliang Wang, Duan Feng, Jie Zou
Shenzhen Newsonic Technologies Co.Ltd, China

8315: Quantitative Ultrasound Spectroscopy for Battery State of Charge in Variable C-Rate Scenarios
Simon Montoya Bedoya{2}, Daniel Rohrbach{4}, Esteban Garcia-Tamayo{1}, Hader V. Martinez-Tejada{2}, David Howey{3}, Miguel Bernal{5}
{1}BATx SAS, Colombia; {2}Universidad Pontificia Bolivariana, Colombia; {3}University of Oxford, United Kingdom; {4}Verasonic Inc., United States; {5}Verasonics Inc., United States

8344: Scattering-Based Defect Characterization Using Laser Ultrasound Arrays
Peter Lukacs, Geo Davis, Don Pieris, Jie Zhang, Theodosia Stratoudaki
University of Strathclyde, United Kingdom

B4L-12: MSR: Thorax and Abdomen
Location: 500 (TaiNEX 1**)**
16:30 - 18:00
Session Chair(s): TBA

8872: Myocardial Ultrasound Localization Angiography in a Beating Heart: In-Silico Validation and In-Vivo Application in Open-Chest Porcine
Alexis Leconte{4}, Jonathan Porée{4}, Stephen Lee{4}, Mathieu Glorion{2}, Ahmed Menaouar{1}, Samuel Mihelic{5}, Nicolas Noiseux{1}, Andreas Linninger{5}, Pierre-Emmanuel Noly{3}, Jean Provost{4}
{1}Centre de recherche du CHUM, Canada; {2}Hôpital Foch, France; {3}Institut de Cardiologie de Montréal, Canada; {4}Polytechnique Montréal, Canada; {5}University of Illinois Chicago, Department of Biomedical Engineering, United States

8358: Super-Resolution Ultrasound for Testicular Tumor Subtype Differentiation
Daniel Lock{2}, Jaime Parra Raad{2}, Dean Huang{2}, Cheng Fang{2}, Paul Sidhu{2}, Mengxing Tang{1}, Kirsten Christensen-Jeffries{2}
{1}Imperial College London, United Kingdom; {2}King's College London, United Kingdom

8240: Demonstration of Super-Resolution (SR) in the Human Small Intestine for Imaging its Micro-Circulation
Clotilde Vie{1}, Martina Taskova{2}, Matthieu Toulemonde{1}, James Burn{3}, Su Yan{1}, Alastair Brown{4}, Kevin Murphy{1}, Gary Frost{1}, Meng-Xing Tang{1}
{1}Imperial College London, United Kingdom; {2}Imperial College London / NHS, United Kingdom; {3}NHS, United Kingdom; {4}Sosei Heptares, United Kingdom

8602: 3D Super-Resolution Ultrasound Imaging of Rabbit Kidney Using a Row-Column Array Transducer
Qiyang Chen, Zahra Hosseini, Zhiyu Sheng, Kang Kim
University of Pittsburgh, United States

8139: First Clinical Utility of Sensing Ultrasound Localization Microscopy (sULM): Identifying Renal Pseudotumors
Sylvain Bodard{2}, Louise Denis{2}, Georges Chabouh{2}, Dany Anglicheau{1}, Olivier Hélénon{1}, Jean-Michel Correas{1}, Olivier Couture{2}
{1}Hopital Necker, France; {2}Sorbonne University, France

7986: Quantitative Analysis of the Treatment for Pancreatic Cancer Using Endoscopic Ultrasound Localization Microscopy (E-ULM)
De-Quan Chen{1}, Meng-Ying Lin{2}, Shyh-Hau Wang{1}, Chih-Chung Huang{1}
{1}National Cheng Kung University, Taiwan; {2}National Cheng Kung University Hospital, Taiwan

B4L-13: Optical Time-Frequency Transfer for Future Applications
Location: 501 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Lukasz Bonenberg, European Commission Joint Research Center

8937: Enabling Quantum Networks with Precise Time and Frequency Control Techniques
Nicholas Nardelli, Tara Fortier
NIST, United States

7021: Multiple-Node Time Transfer Based on BFDM Without Requiring Link Calibration
Kunfeng Xie, Liang Hu, Jianping Chen, Guiling Wu
State Key Laboratory of Advanced Optical Communication System and Networks, Department of Electronic, China

8157: Optical Clock Comparison via a RF-Over-Fiber Extension to an All-Optical Backbone
Nils Nemitz{1}, Miho Fujieda{1}, Motohiro Kumagai{1}, Shigeo Nagano{1}, Mads Tønnes{1}, Hidekazu Hachisu{1}, Shoichi Okaba{3}, Ichiro Ushijima{3}, Masao Takamoto{2}, Hidetoshi Katori{3}, Tetsuya Ido{1}
{1}NICT, Japan; {2}RIKEN, Japan; {3}University of Tokyo, Japan

B4L-14: MTC: Cardiovascular System Characterization
Location: 503 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Ton van der Steen, Erasmus MC
Yoshifumi Saijo, Tohoku University

8149: In-Vivo 3D Elastic and Backscatter Tensor Imaging Using a 128 Elements Matrix Transducer
Toûka Meki, Juliette Reydet, Olivier Pedreira, Janie Handrard, Mickael Tanter, Clement Papadacci, Mathieu Pernot
Institute Physics for Medicine Paris, France

8430: 3D Pulse Wave Propagation for Tissue Anisotropy Characterization - an In Vitro Study
Jake Sauvage{2}, Safa Mostefaoui{2}, Solveig Fadness{1}, Lasse Lovstakken{1}, Olivier Villemain{3}, Sébastien Salles{4}
{1}NTNU, Norway; {2}Sorbonne university, Laboratory of biomedical imaging, CNRS, INSERM, Paris, France; {3}University of Bordeaux, CRCTB, INSERM, CHU de Bordeaux, France; {4}University of Bordeaux, CRMSB, CNRS, France

7106: Fast Measurement of 3D Anisotropy Using Sparse Coherence Imaging
Raphael Dumas, Baptiste Pialot, Francois Varray
CREATIS, France

7376: Adaptive Profile Correction for Reflected Pulse Wave Velocity Estimation Using High-Frame-Rate Ultrasound
Jason Hsu, Adrian Chee, Di Xiao, Alfred Yu
University of Waterloo, Canada

7971: Measurements of the Local Pulse Wave Velocity Through Area-Flow Method Using a Novel T-Shaped Ultrasound Transducer
Chung-Lin Wang, Chih-Chung Huang
National Cheng Kung University, Taiwan

7663: Non-Invasive 3D Electromechanical Cycle Length Mapping for Atrial Fibrillation Mapping and PVI Ablation Response Prediction
Melina Tourni, Seungyeon Julia Han, Mary Kucinski, Angelo Biviano, Elisa Konofagou
Columbia University, United States

B4L-15: MTH: Neuromodulation
Location: 507 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Elisa Konofagou, Columbia University
Apoutou N'Djin, National Centre for Scientific Research

7630: Phase-Unwrapped Acoustic Lenses for Multifrequency Transcranial Focusing
Maxime Daniel{2}, David Attali{1}, Thomas Tiennot{2}, Mickael Tanter{2}, Jean-François Aubry{2}
{1}GHU-Paris Psychiatrie et Neurosciences, Hôpital Sainte Anne, Université Paris Cité, 75014 Paris, Fra, France; {2}Physics for Medicine Paris, Inserm U1273, ESPCI Paris, PSL University, CNRS UMR 8063, France

7043: Data-Driven Optimization of Ultrasound Parameters for Subject-Specific Neuromodulation
Tommaso Di Ianni, Valeria Grasso
University of California San Francisco, United States

7559: Advancing Transcranial Focused Ultrasound for Neuromodulation: Integration of Pseudo-Brain Model Into Simulations
Han Li{2}, Xinyao Liu{1}, Yue Zhao{1}, Zhiqiong Wang{1}, Zhihong Huang{2}
{1}Northeastern University, China; {2}University of Dundee, United Kingdom

7746: Functional Ultrasound (fUS) Reveals Neurovascular Response Coupled with Motor Response Evoked by Focused Ultrasound (FUS) Neuromodulation in Mice
Seongyeon Kim, Jonas Bendig, Elisa Konofagou
Columbia University, United States

7972: Ultrasound Deep Brain Stimulation Regulates Food Intake and Body Weight in Mice
Wen Meng{2}, Zhengrong Lin{2}, Tianyuan Bian{2}, Xiaoyan Chen{2}, Long Meng{2}, Tifei Yuan{1}, Lili Niu{2}, Hairong Zheng{2}
{1}Shanghai Key Laboratory of Psychotic disorders, Shanghai Mental Health Center, Shanghai Jiaotong Uni, China; {2}Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

8205: Displacement-Guided Focused Ultrasound Median Nerve Stimulation Attenuates Somatosensory Evoked Potentials and Pain Sensation in Healthy Subjects and Carpal Tunnel Syndrome Patients
Erica McCune{1}, Hermes Kamimura{1}, Ethan Bendau{1}, Samuel Blackman{1}, Talia Sachs{1}, Seongyeon Kim{1}, Stephen Lee{1}, Christopher Winfree{2}, Elisa Konofagou{1}
{1}Columbia University, United States; {2}Columbia University Medical Center, United States

B4L-16: MTC: Attenuation and Backscatter Coefficients
Location: 502 (TaiNEX 1**)**
16:30 - 18:00
Session Chair(s): Jeff Ketterling, Weill Cornell Medicine

8819: In-Vivo Quantitative Ultrasound Imaging of Placental Microstructure in a Rat Model of Preeclampsia
Andrew Markel{1}, Cameron Hoerig{2}, Allan Alencar{1}, Kenneth Swan{1}, Jonathan Mamou{2}, Carolyn Bayer{1}
{1}Tulane University, United States; {2}Weill Cornell Medicine, United States

7633: Quantitative Ultrasound Characterization of White Adipose Tissue to Differentiate Benign and Malignant Breast Tumors
Cameron Hoerig{2}, Kemi Babagbemi{2}, Michele Drotman{2}, Kristy Brown{1}, Jonathan Mamou{2}
{1}University of Kansas Medical Center, United States; {2}Weill Cornell Medicine, United States

8679: Differentiable Beamforming for Distributed Attenuation Estimation and Spatial Gain Compensation (SGC)
Benjamin Frey, Dongwoon Hyun, Walter Simson, Thurston Brevett, Louise Zhuang, Jihye Baek, Sergio Sanabria, Jeremy Dahl
Stanford University, United States

8736: Effect of Intervening Tissue Layers on the Attenuation Coefficient Estimation
Mekdes Bezabh, Farah Deeba
University of North Carolina at Charlotte, United States

7239: 3D Backscatter Coefficient Estimation Using a Matrix Probe
Valentin Mazellier{1}, François Varray{2}, Pauline Muleki-Seya{1}
{1}Cnrs, France; {2}Ucbl Lyon 1, France

8919: Deep Learning-Aided Spatially Weighted Ultrasound Attenuation Estimation
José Timaná, Sebastian Merino, Roberto Lavarello
Pontificia Universidad Católica del Perú, Peru

Day 3: Wednesday, September 24

Plenary #4
Location: 701A-D (TaiNEX Hall 2)
08:30 - 10:00

TITLE
Helen Margolis, National Physical Laboratory (NPL)

IFCS Awards

Coffee Break
Location: Exhibit Hall - 7F (TaiNEX 2)
10:00 - 10:30

C1L-01: MIM: AI for imaging 1
Location: 506 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Jean Provost, Polytechnique Montreal
Kai Thomenius, Massachusetts General Hospital

7217: Shape Estimation of Flexible Probe Using Spatial-Attention FlexShapeNet
Xue Gao, Lihong Huang, Yuanyuan Wang, Yi Guo
Department of Electronic Engineering, Fudan University, China

7372: Deep Learning Based Gestational Age Estimation with Outlier Elimination in Blind Sweep Fetal Ultrasound
Priyam Patel, Leila Kalantari, Soheil Borhani, Stephen Schmidt, Shyam Bharat, Melanie Jutras, Jonathan Sutton
Philips, Canada; Philips, United States

7789: Automated Tumor and HIFU Lesion Quantification on Multi-Frequency Harmonic Motion and B-Mode Imaging Using a Multi-Modality Neural Network
Shiqi Hu, Murad Hossain, Yangpei Liu, Xiaoyue Li, Elisa Konofagou
Columbia University, United States

7455: Enhancement of Needle Localization Using Semi-Supervised Deep Learning
Yousef Metwally{2}, Mariam Fouad{1}, Georg Schmitz{1}, Stefanie Dencks{1}
{1}Ruhr University Bochum, Germany; {2}TU Dortmund, Germany

7474: Deep RL for Dynamic Needle Tracking in Ultrasound Imaging
Marko Macura{1}, Tristan Stevens{1}, Nishith Chennakeshava{1}, Piotr Jarosik{2}, Marcin Lewandowski{2}, Harm Belt{1}, Ruud van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}us4us, Poland

7768: Correlation Between Rectus Femoris Muscle Thickness Measured by AI-Assisted Ultrasound Imaging and Body Bioelectrical Impedance Analysis: Towards Ultrasound Assessment of Sarcopenia
Dawei Zhang, Jackie Yeung, Saikit Lam, Justina Liu, Yongping Zheng
Hong Kong Polytechnic University, Hong Kong

C1L-06: ASD SAW Devices 1
Location: 701E (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Omar Elmazria, Université de Lorraine

8831: Very-High-Velocity Acoustic Modes and Higher-Order Harmonics for Application in SAW/BAW Devices
Natalya Naumenko
National University of Science and Technology “MISIS”, Russia

8148: Transformation of Heat Conductivities for Accurate Thermal Modelling of SAW Resonators
Hulin Yao, Shibin Zhang, Pengcheng Zheng, Xiaoli Fang, Dongchen Sui, Mijing Sun, Xin Ou
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

7795: Experimental Study of Nonlinearity Using Tungsten Bottom Electrode on SAW Device
Yoshikazu Kihara, Sanghoon Myeong, Kijung Lee, Takahiro Sato
Wisol co. ltd., Korea

7752: Adaptation Multimode COM for Low-Cut TC-SAW Device
Haekwan Oh, Aleksei Shimko, Takahiro Sato
Wisol, Korea; Wisol, Japan

8127: Approaching Millimeter Wave Acoustic Vibration Measurement with Pulsed Laser Interferometry
Marvin Schewe, Liam G. Connolly, Jason J. Gorman
NIST, United States

C1L-07: TMI: Wearable Transducers
Location: 701F (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Qifa Zhou, University of Southern California
Lei Sun, The Hong Kong Polytechnic University

8726: A Wearable Ultrasound Array Integrated with a Functional Electrical Stimulation Array for Spatially Distributed Sequential Stimulation
Sunho Moon{1}, Xiangming Xue{2}, Vidisha Ganesh{2}, Darpan Shukla{1}, Yong Zhu{1}, Nitin Sharma{2}, Xiaoning Jiang{1}
{1}North Carolina State University, United States; {2}North Carolina State University and University of North Carolina-Chapel Hill, United States

8581: Advancing Muscle Monitoring and Intervention: Wearable Ultrasound for Tremor Frequency Measurement and Real-Time Tissue Displacement Analysis
Xiangming Xue, Sunho Moon, Vidisha Ganesh, Qianqian Cai, Akshar Patel, Nitin Sharma, Xiaoning Jiang
North Carolina State University, United States

8204: Wearable Ultrasound Transducers with Piezo-Polymers Embedded in 3D Porous Graphene
Shirin Movaghgharnezhad, Clayton Baker, Ehsan Ansari, Dulcce Valenzuela, Ahmed Bashatah, Pilgyu Kang, Parag Chitnis
George Mason University, United States

7193: Design and Fabrication of High-Frequency Wearable Ultrasound Array for Small Animal Imaging
Yushun Zeng, Xin Sun, Junhang Zhang, Chen Gong, Robert Wodnicki, Qifa Zhou
University of Southern California, United States

7948: A Low-Voltage Driven Large Bandwidth pMUT Array for Wearable Deep-Tissue Ultrasound Imaging
Tong Jin{2}, Yun Zhang{2}, Chenfang Yan{2}, Rui Wang{1}, Jin Yang{2}, Zijie Zhao{2}, Qiong He{1}, Jianwen Luo{1}, Chengjun Huang{2}, Hang Gao{2}
{1}Department of Biomedical Engineering, School of Medicine, Tsinghua University, China; {2}Institute of Microelectronis of China Academy of Sciences, China

7397: A Wearable Dual-Mode Concave Ultrasound Transducer for Vagus Nerve Stimulation
Ningyuan Wang, Wenyue Huang, Min Su, Yue Pan, Zhiqiang Zhang, Weibao Qiu
Shenzhen Institute of Advanced Technology Chinese Academy of Sciences, China

C1L-08: Piezoelectric Applications
Location: 701G (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Isaku Kanno, Kobe University

7669: Advances in Development of Pb-Free Piezoelectric Materials for Transducer Applications
Ahmad Safari
RUTGER UNIVERSITY, United States

8038: Lead-Free Piezoceramic Materials for Transducer Applications
William Schulz, Andrew Bell
University of Leeds, United Kingdom

7167: Piezoelectric Ceramics for Extreme Environments
Tim Comyn{1}, Peter Cowin{1}, Andrew Bell{2}
{1}Ionix Advanced Technologies LTD, United Kingdom; {2}University of Leeds, United Kingdom

7006: Analytical Design Optimization of Standing Wave Ultrasonic Motors
Yichao Ma, Xiong Liu, Jacko Myint, Brendon Leong
Seagate Research, Singapore

8526: Physical Properties of $LiNbO_3$ Films with Controlled Stoichiometry Grown by DLI-CVD
Quentin Micard{3}, Vincent Astié{1}, Léa La Spina{3}, Pascal Boulet{2}, Samuel Margueron{3}, Jean-Manuel Decams{1}, Ausrine Bartasyte{3}
{1}Annealsys, France; {2}IJL, France; {3}Institut FEMTO-ST, France

C1L-09: Ferroelectric Thin Films 2
Location: 701H (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Julian Walker, NTNU

8009: Impact of Substrate on Dielectric Tunable Properties in Epitaxial $Ba(Zr,Ti)O_3$ Films with Different Thickness
Ryo Takahashi{1}, Yoshitaka Ehara{1}, Yosuke Hamasaki{1}, Shinya Sawai{1}, Shintaro Yasui{2}, Hiroshi Funakubo{2}, Ken Nishida{1}
{1}National Defense Academy, Japan; {2}Tokyo tech., Japan

8147: Structural and Dielectric Characterization of $AgNbO_3$-Based Thin Films from Chemical Solution Deposition
Alexander Kobald{1}, Herbert Kobald{1}, Ivana Panzic{1}, Marco Deluca{2}
{1}Materials Center Leoben Forschung GmbH, Austria; {2}Silicon Austria Labs, Austria

8287: Analysis of Dip Cast Lead Zirconate-Titanate Films on Different Substrates
Kae Nakamura, Susan Trolier-McKinstry
Pennsylvania State University, United States

7433: Fabrication of PZT/$LaNiO_3$/PZT Epitaxial Multilayer Structure for Application to Piezoelectric MEMS Actuators
Sokichi Kato, Akihiko Teshigahara, Shinya Yoshida
Shibaura Institute of Technology, Japan

8410: Free Standing Membrane as a Template for Epitaxial Integration of Functional Oxide on Si
Asraful Haque, Harshal Jason Dsouza, Shubham Kumar Parate, Pavan Nukala, Srinivasan Raghavan
IISc, India

8742: Chemical Solution Deposition of 0.5Ba($Zr_{0.2}Ti_{0.8}$)O_3-0.5($Ba_{0.7}Ca_{0.3}$)TiO_3 Thin Films: Microstructure and Properties
Barbara Malič, Sabi William Konsago, Katarina Žiberna, Aleksander Matavž, Andreja Benčan
Jožef Stefan Institute, Slovenia

C1L-10: Novel Materials and Approaches 2
Location: 702 (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Gobinda Das, NYU Abu Dhabi

7054: Investigation of Structural, Pyroelectric and Energy Storage Properties of Lead-Free $Ba_{0.85}Sr_{0.15}Zr_{0.09}Sn_{0.01}Ti_{0.9}O_3$ Ceramics
Mehak Aggarwal{1}, Gyaneshwar Sharma{2}, Arun Kumar Singh{1}, Sanjeev Kumar{1}
{1}Punjab Engineering College (Deemed to be University), Chandigarh, India; {2}Tilak Dhari PG College, Jaunpur, India

7956: Employment of Low-Dimensional Oxide Nanoparticles in $BaTiO_3$-Based High-Performance Dielectric Ceramic Synthesis
Do-Kyun Kwon, Tae Yeong Song, Myeongu Han, Nayeon Kwon
Korea Aerospace University, Korea

8762: Piezoelectric Energy Harvesting of Large-Scale Monolayer MoS_2 Films
Ji Yeon Kim, Ye Seul Jung, Wenhu Shen, Seo Yeon Han, Yong Soo Cho
Yonsei University, Korea

8765: Piezoelectricity and Power Generation in Hybrid Halide $MAPbX_3$ (X = I, Br, and Cl) Thin Films
Kyeong Su Jo{2}, Da Bin Kim{1}, Kwan Sik Park{2}, Sung Min Her{2}, Yong Soo Cho{2}
{1}University of Toronto, Canada; {2}Yonsei University, Korea

7899: Combining Ferroelectric Nitrides and Topological Insulators for the Ferroelectric Control of Spin-Charge Interconversion
Thomas Buttiens{2}, Gaétan Verdierre{2}, Anouk Goossens{2}, Luis Moreno{2}, Sylvain Massabeau{2}, Marta Rossell{1}, Henri Jaffres{2}, Manuel Bibes{2}
{1}Empa – Swiss Federal Laboratories for Materials Science and Technology, Switzerland; {2}laboratoire Albert Fert, France

7109: A Memosducer Based Bi-Quaternionic Signal Processing for Nonlinear Ultrasonics Imaging Applied to Nondestructive Testing
Sadataka Furui{2}, Serge Dos Santos{1}
{1}INSA Centre Val de Loire, France; {2}Teikyo University, Japan

C1L-11: Photoacoustics (NPA) 1
Location: 703 (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Robert Rohling, University of British Columbia

8429: Transcranial Photoacoustic Imaging to Detect Blood-Brain Barrier Disruption in Neonatal Rats Using Size Tunable ICG J-Aggregates
Filip Bodera{3}, Shrishti Singh{1}, Remi Veneziano{1}, Parag Chitnis{1}, Samuel Jensen{4}, Mark McVey{2}, Michael Kolios{3}
{1}George Mason University, United States; {2}SickKids Hospital, Canada; {3}Toronto Metropolitan University, Canada; {4}University of Toronto, Canada

7031: GenMC: A Deep Learning Toolkit for Light Propagation Modelling for Quantitative Photoacoustics
Mengjie Shi, Tom Vercauteren, Wenfeng Xia
King's College London, United Kingdom

7421: Photoacoustic Computed Tomography with Sparse Data Using Neural Radiance Fields
Bowei Yao, Haizhao Dai, Youshen Xiao, Jingyi Yu, Fei Gao, Xiran Cai
ShanghaiTech University, China

7490: Photoacoustic Feature Extraction by Two-Stages SVD Adaptive Weighting for Cellular OR-PAM
I Gede Eka Sulistyawan, Takuro Ishii, Riku Suzuki, Daisuke Nishimae, Yoshifumi Saijo
Tohoku University, Japan

7030: Learned Needle Tip Localisation with a Photoacoustic Beacon for Ultrasound-Guided Minimally Invasive Procedures
Mengjie Shi{1}, Tianliang Yao{2}, Tom Vercauteren{1}, Wenfeng Xia{1}
{1}King's College London, United Kingdom; {2}Tongji University, China

7798: TCUP_Fusion: Transformer and Convolutional Neural Network Based Ultrasound and Photoacoustic Image Fusion
Boheng Zhang{1}, Zelin Zheng{2}, Yi Shen{1}, Mingjian Sun{1}
{1}Harbin Institute of Technology, China; {2}Harbin Institute of Technology, Weihai, China

C1L-12: AlScN Growth
Location: 500 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Jon-Paul Maria, Pennsylvania State University

8329: The Impact of Interfacial Chemistry on Oxygen Exchange Kinetics and Electronic Charge Transport in $Al_{1-x}Sc_xN$ Films
Betul Akkopru-Akgun, Erdem Ozdemir, Chloe Skidmore, Pedram Yousefian, Leonard Jacques, Clive Randall, Jon-Paul Maria, Susan Trolier-McKinstry
Penn State University, United States

8200: Experimental and Theoretical Investigation of Oxygen-Related Point Defects in $Al_{0.65}Sc_{0.35}N$ Films
Shashidhara Acharya{3}, Xian Wang{1}, Qinwen Xu{4}, Mingsheng Zhang{3}, Jianwei Chai{3}, Poh Chong Lim{3}, Lei Shen{2}, Chengliang Sun{4}, Kui Yao{3}
{1}Chemical Engineering and Biotechnology, Nanyang Technological University, Singapore; {2}Department of Mechanical Engineering, National University of Singapore, Singapore; {3}Institute of Materials Research and Engineering, Singapore; {4}Institute of Tehnological Sciences, Wuhan University, China

8173: Polarization-Inverted Growth of ScAlN Thin Film by Si Doping
Ayaka Hanai, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

8091: Wafer Level Demonstration and Characterization of C-Axis Textured $Sc_{0.3}Al_{0.7}N$ Bilayer Stacks
Huamao Lin{1}, Peng Liu{1}, Daniel Ssu-Han Chen{1}, Binni Varghese{1}, Veronica Shu Sean Wong{1}, Minghua Li{1}, Yan Hong{1}, Yat Fung Tsang{1}, Qingxin Zhang{1}, Peter Hyun Kee Chang{1}, Yao Zhu{1}, Naadaa Zakiyyan{2}, Goutham Koppisetti{2}, Amal Das{2},
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}STMicroelectronics N.V., Singapore

8394: Probing the 1000 °C Ferroelectric Behavior in $Al_{0.7}Sc_{0.3}N$
Daniel Drury{2}, Glen Fox{3}, Geoff Brennecka{1}, Brendan Hanrahan{2}
{1}Department of Metallurgical and Materials Engineering, Colorado School of Mines, United States; {2}DEVCOM Army Research Laboratory, United States; {3}Fox Materials Consulting, LLC, United States

C1L-13: Ultrastable Optical Cavities, Laser Stabilization Techniques and Synthesis
Location: 501 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Tara Fortier, NIST

8981: Ultrastable Sapphire Cavity for Yb Optical Lattice Clocks
Tanner Grogan, Youssef Hassan, Tobias Bothwell, Roger Brown, Jacob Siegel, Benjamin Hunt, Tristan Rojo, Takumi Kobayashi, Andrew Ludlow
NIST, United States

8163: A Close-Cycled-Cooled Ultra-Stable Optical Cavity at 124 K with 1.5×10^{-17} Fractional Frequency Stability
Daniele Nicolodi, Sofia Herbers, Thomas Legero, Uwe Sterr
Physikalisch-Technische Bundesanstalt, Germany

9092: Stability Without Effort: Understanding the Unique Properties of Single-Cavity Dual-Comb Lasers
Ursula Keller
ETH Zurich, Switzerland

7622: Ultra-Low Noise Brillouin Fiber Lasers
Jacob Lampen, Peng Li, Jie Jiang, Martin Fermann, Antoine Rolland
IMRA America, United States

7631: Dual Wavelength Brillouin Laser Stabilized to a Rotational Transition of Carbonyl Sulfide
James Greenberg, Brendan Heffernan, William McGrew, Keisuke Nose, Antoine Rolland
IMRA America, Inc., United States

C1L-14: MIS: Image Formation
Location: 503 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Federico Mento, University of Trento
Ruud van Sloun, Eindhoven University

7502: Nonlinear Singular Value Decomposition Beamforming for Imaging of Gas Vesicles
Ge Zhang{4}, Mathis Vert{4}, Mohamed Nouhoum{2}, Esteban Rivera{4}, Nabil Haidour{4}, Thomas Deffieux{4}, Simon Barral{3}, Dina Malounda{1}, Pascal Hersen{3}, Claire Rabut{1}, Bruno Osmanski{2}, Mikhail Shapiro{1}, Mickael Tanter{4}
{1}Division of Chemistry and Chemical Engineering, California Institute of Technology, United States; {2}Iconeus, France; {3}Institut Curie, Université PSL, Sorbonne Université, CNRS UMR168, Laboratoire Physico Chimie Curie, France; {4}Physics for Medicine Paris, INSERM U1273, ESPCI Paris, PSL University, CNRS, France

8606: Takoyaki Sequence: Volumetric Imaging of Gas Vesicles with a Multiplexed Matrix-Array Transducer
Sunho Lee, Claire Rabut, Di Wu, Dina Malounda, Mikhail Shapiro
California Institute of Technology, United States

8547: gCNR Regularization Improves Deep Neural Network Beamformers
Ying-Chun Pan{1}, Christopher Khan{1}, Ryan Lefevre{2}, Susan Eagle{2}, Brett Byram{1}
{1}Vanderbilt University, United States; {2}Vanderbilt University Medical Center, United States

8415: High-Quality Reconstruction of Plane-Wave Imaging Using Dual-Domain Hybrid CNN-Transformer Network
Tianli Wang{1}, Yu Qiang{2}, Yanyan Yu{1}, Xinyu Zhang{1}, Yuanyuan Shen{1}, Minhua Lu{1}, Xin Chen{1}, Weibao Qiu{2}
{1}School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen University, Shenzhen, China; {2}Shenzhen Institutes of Advanced Technology, China

7339: Deep Learning-Based Inpainting for Sparse Arrays in Ultrafast Ultrasound Imaging
Roser Viñals, Jean-Philippe Thiran
École Polytechnique Fédérale de Lausanne, Switzerland

8479: Hadamard Encoded Row-Column Ultrasonic Expansive Scanning (HERCULES) with Electrostrictive Row-Column Arrays for Ultrafast Pyramidal Volume Scanning
Mohammad Rahim Sobhani{1}, Darren Dahunsi{3}, Michael Caulfield{3}, Tyler Henry{3}, Afshin Kashani Ilkhechi{1}, Randy Palamar{3}, Negar Majidi{3}, Jeremy Brown{2}, Roger Zemp{3}
{1}CliniSonix, Canada; {2}Dalhousie University, Canada; {3}University of Alberta, Canada

C1L-15: MSR: Probes and Beamforming
Location: 507 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Mengxing Tang, Imperial College London
Kirsten Christensen-Jeffries, KCL

7930: Wide Field of View 3D Ultrasound Localization Microscopy of Whole Organs In Vivo Using Multi-Lens Large Aperture Arrays
Nabil Haidour{2}, Hugues Favre{2}, Philippe Mateo{2}, Juliette Reydet{2}, Bijan Ghaleh{1}, Mathieu Pernot{2}, Mickael Tanter{2}, Clement Papadacci{2}
{1}INSERM, France; {2}Physics for Medicine, INSERM, ESPCI, CNRS, France

8495: 3D RF Channel-Based Adaptive Beamforming for 3D Ultrasound Localization Microscopy (3D ULM)
Georges Chabouh{3}, Baptiste Pialot{2}, Louise Denis{3}, Raphael Dumas{2}, Olivier Couture{3}, Pauline Muleki Seya{1}, Francois Varray{2}
{1}CREATIS CNRS (UMR 5220), France; {2}CREATIS INSA Lyon, France; {3}Laboratoire d'imagerie biomédicale Sorbonne Université CNRS INSERM, France

7119: 3D Ultrasound Localization Microscopy with Row-Column Array Probes in Mice and Primate Models
Adrien Bertolo{1}, Jeremy Ferrier{1}, Dimitris Perderios{3}, Julien Claron{2}, Oscar Demeulenaere{3}, Pierre Pouget{2}, Mickael Tanter{3}, Bruno Osmanski{1}, Mathieu Pernot{3}, Thomas Deffieux{3}
{1}Iconeus, France; {2}Institut du Cerveau et de la Moelle Epinière, INSERM 1127, CNRS 7225, Sorbonne Université, France; {3}Physics for Medicine Paris, Inserm U1273, ESPCI Paris, PSL University, CNRS UMR 8063, France

8412: Volumetric Passive Ultrasound Localization Microscopy of Radiation-Induced Nanodroplet Vaporization with a Large Aperture Matrix Array
Sophie Heymans{3}, Marcus Ingram{2}, Bram Carlier{2}, Brecht Vandenborre{3}, Marc Fournelle{1}, Alessandro Ramalli{4}, Koen Van Den Abeele{3}, Jan D'Hooge{2}
{1}Fraunhofer IBMT, Germany; {2}KU Leuven, Belgium; {3}KU Leuven campus KULAK, Belgium; {4}Universita Degli Studi Di Firenze, Italy

8047: Realistic Human Vasculature for Probe Performance Benchmarking in 3D Ultrasound Localization Microscopy
Juliette Reydet, Hugues Favre, Alexandre Dizeux, Nabil Haidour, Mathieu Pernot, Mickael Tanter, Clément Papadacci
Physics for Medicine, INSERM, France

8291: Volumetric Computational Ultrasound Localization Microscopy Using Complex Wavefields and 64 Transceivers
Michael Brown, Luxi Wei, Pieter Kruizinga
Erasmus University Medical Center, Netherlands

C2L-01: MTN: Advanced Technologies for Cancer Theranostics
Location: 506 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Mike Averkiou, University of Washington
Julianna Simon, Pennsylvania State University

7738: Vascular Disruption: A Potentially Therapeutic Tool in Ultrasound Cavitation Treatments
Connor Krolak, Lance De Koninck, Kaleb Vuong, Sherry Gu, Yak-Nam Wang, Mike Averkiou
University of Washington, United States

8277: Multi-Parametric Assessment of Contrast and Molecular Ultrasound to Predict Response to Anti-PD-L1 Immune Checkpoint Inhibitor
Mahsa Bataghva{1}, Farbod Tabesh{1}, Arutselvan Natarajan{1}, Ramasamy Paulmurugan{1}, Ahmed El Kaffas{2}
{1}Stanford University, United States; {2}University of California San Diego, United States

7454: PSMA-Targeted Radionuclide Therapy Enhanced by Microbubble Based Sonoporation in a Preclinical Mouse Model of Human Prostate Cancer
Sophie Tran, Dimitri Kereselidze, Laurène Jourdain, Benoit Jego, Jean-Luc Gennisson, Jean-Michel Daugas, Charles Truillet, Anthony Novell
BioMaps, France

7024: In-Vivo IL-12 Plasmid Delivery Using Microbubble-Assisted Ultrasound in a Mouse Melanoma Model
Edward Oujagir{2}, Coralie Mousset{2}, Marie Roy{2}, Valérie Schubnel{2}, Damien Fouan{2}, Ayache Bouakaz{2}, Sophie Serrière{2}, Laurent Machet{2}, Valérie Gouilleux-Gruart{1}, Jean-Michel Escoffre{2}
{1}Inserm UMR 1100, CEPR, France; {2}Inserm UMR 1253, iBraiN, France

9005: Enhancing Noninvasive Therapy with Low-Frequency Ultrasound and Nanoscale Bubbles
Tali Ilovitsh
Tel Aviv University, Israel

C2L-02: AlScN
Location: 701A (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Laura Sinclair, NIST

7732: Microstructure Study of 200nm $Sc_{0.38}Al_{0.62}N$ Thin Film and its Application to 4GHz FBAR
Xinghua Wang{2}, Chen Liu{1}, Zhixian Chen{1}, Peng Liu{1}, Ying Zhang{1}, Wanwang Yang{3}, Jinfeng Kang{3}, You Qian{1}, Qingxin Zhang{1}, Huamao Lin{1}, Fei Liu{3}, Yao Zhu{1}
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}Institute of Microelectronics(IME), Agency for Science, Technology and Research (ASTAR), Singapore; {3}Peking University, China

8270: 8-25 GHz Broadband Experimental Quality Factor Extraction of 30% ScAlN with Acoustic Delay Lines
Gabriel Giribaldi, Jack Guida, Kapil Saha, Siddhartha Ghosh, Luca Colombo, Matteo Rinaldi
Northeastern University, United States

8299: ScAlN Thick Film Concave Lens Transducer in the 20-90 MHz
Zhanyu Lai{2}, Yohkoh Shimano{2}, Itsuki Endo{2}, Junjun Jia{1}, Takahiko Yanagitani{2}
{1}Waseda University, Japan; {2}Waseda University, ZAIKEN, Japan

8174: Broadband Piezoelectric Transformer Based on 12-Layer ScAlN Polarization Inverted Multilayer
Sarina Kinoshita, Yohkoh Shimano, Momoka Matsumura, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

8746: Experimental Optimization of 30%-Doped ScAlN Acoustic Delay Lines
Farah Ben Ayed, Gabriel Giribaldi, Kapil Saha, Pietro Simeoni, Zhenyun Qian, Matteo Rinaldi
Northeastern university, United States

8172: Comparison of Circular Cathode and Rectangular Cathode Sputtering for AOGs Less $Sc_{0.4}Al_{0.6}N$ Thin Film Growth
Kohei Ekida, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

Lunch
Location: Exhibit Hall - 7F (TaiNEX 2)
12:00 - 13:00

C2L-03: MIM: New Imaging Techiques 1
Location: 701B (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Yongping Zheng, The Hong Kong Polytechnic University
Chih-Chung Huang, National Cheng Kung University

8422: Feasibility of Holocranial Imaging Using Ultrasound Tomography
Trevor Mitcham{2}, Rehman Ali{2}, Melanie Singh{2}, Redi Rahmani{1}, Derrek Schartz{2}, Matthew Bender{2}, Edward Vates{2}, Nebojsa Duric{2}
{1}Barrow Neurological Institute, United States; {2}University of Rochester, United States

7447: Quantitative Neuromuscular Monitoring with Train-of-Four Ratio Using Sonomechanomyography (SMMG)
Pancheng Zhu{1}, Zhen Song{1}, Stanley Sau Ching Wong{2}, Yongping Zheng{1}
{1}Hong Kong Polytechnic University, Hong Kong; {2}University of Hong Kong, Hong Kong

8246: Matrix Regularization for Bias-Free Solution in Pulse-Echo Speed-of-Sound Imaging
Parisa Salemi{2}, Naiara Korta Martiartu{1}, Michael Jaeger{1}
{1}university of Bern, Switzerland; {2}universtiy of Bern, Switzerland

8525: A Novel Method for Tissue Attenuation Imaging Based on Mechanical Reciprocity and Acoustic Radiation Force
Fan Feng, Siladitya Khan, Stephen McAleavey
University of Rochester, United States

7771: Attenuation Differential Imaging Using Low-Frequency Ultrasound for Human Thorax: Experimental Study
Tong Zhang, Haokang Shi, Rui Guo, Maokun Li, Fan Yang, Shenheng Xu
Tsinghua University, China

7269: Evaluation of Dual Directional Wrist Tendon Movements by Using T-Shaped Transducer Through Vector Doppler Imaging
Chien Chen, Chih-Chung Huang
National Cheng Kung University, Taiwan

C2L-04: MPA: Translational Applications of Photoacoustic Imaging
Location: 701C (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Parag Chitnis, George Mason University

7557: Atherosclerosis Chemical Composition Detection Based on Multi-Wavelength Photoacoustic Quantitative Spectroscopy
Ying Gu, Mengjiao Zhang, Yifan Wang, Yuxuan Cheng, Qian Cheng
Tongji University, China

7132: Novel Applications of PhotoAcoustics in Wound Care
Jesse Jokerst
University of San Diego, United States

7652: Accurate Photoacoustic Visualization of RF Ablation Lesions in a Large-Animal Model
Richard Bouchard{2}, Nilesh Mathuria{1}, Krithik Vishwanath{2}, Blake Fallon{1}, Antonio Martino{1}, Carly Filgueira{1}
{1}Houston Methodist Research Institute, United States; {2}University of Texas MD Anderson Cancer Center, United States

8211: Photoacoustic Imaging of Sentinel Lymph Nodes for Patients with Melanoma
Jonas Riksen, Teun Schurink, Francis Kalloor Joseph, Dirk Grunhagen, Gijs van Soest
Erasmus MC, Netherlands

8398: Simultaneous Quantitative Ultrasound and Photoacoustic Imaging of Red Blood Cell Aggregation in the Human Radial Artery: Results from a Pilot Trial
Taehoon Bok{1}, Michael Kolios{2}, Eno Hysi{3}
{1}St. Michael's Hospital, Canada; {2}Toronto Metropolitan University, Canada; {3}University of Toronto, Canada

7279: Assessing the Quality of Kidney Grafts and Predicting Transplant Outcomes Using Intraoperative Quantitative Ultrasound and Photoacoustic Imaging
Sarah Dykstra{1}, Jihye Baek{2}, Alexander Koven{5}, Xiaolin He{1}, Michael Kolios{3}, Kevin Parker{4}, Darren Yuen{5}, Eno Hysi{5}
{1}St. Michael's Hospital, Canada; {2}Stanford University, United States; {3}Toronto Metropolitan University, Canada; {4}University of Rochester, United States; {5}University of Toronto/St. Michael's Hospital, Canada

C2L-05: Underwater Acoustics (NUA) and Transducers (NDE and Industrial) (NTC)
Location: 701D (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Makiko Kobayashi, Kumamoto University
Andrew Feeney, University of Glasgow

8933: An Underwater Transducer Made of Flexible Piezoelectric Microdome Arrays
Rong Fu, Aijun Song
University of Alabama, United States

8635: High-Intensity Underwater Ultrasound with a Fluid-Type Double-Parabolic-Reflector Ultrasonic Transducer
Kyohei Yamada{2}, Weiquan Wang{2}, Hiroshi Hasegawa{1}, Kohsuke Hirano{1}, Takeshi Morita{2}
{1}Kaijo Corporation, Japan; {2}University of Tokyo, Japan

7651: Acoustic Streaming in Solutions with Acousto-Responsive Particles Using Finite Element Analysis
Sonja Wismath, Atieh Razavi, Matthias Rutsch, Marius Finder, Christoph Haugwitz, Jan Helge Dörsam, Nils Demuth, Sören Soennecken, Regine von Klitzing, Amin Rahimzadeh, Mario Kupnik
Technische Universität Darmstadt, Germany

7517: A 220 kHz Air-Coupled Spiral Ultrasonic Phased Array Using Waveguides
Christoph Haugwitz{4}, Fabian Krauß{4}, Gianni Allevato{4}, Matthias Rutsch{4}, Jan-Helge Dörsam{4}, Sonja Wismath{4}, Sören Soennecken{4}, Anne Harth{2}, Christoph Heyl{1}, Cherif Othmani{5}, Sebastian Merchel{5}, Ercan Altinsoy{5}, Thomas Hahn-Jose{3},
{1}Deutsches Elektronen-Synchrotron, Germany; {2}Hochschule Aalen, Germany; {3}Inoson GmbH, Germany; {4}Technische Universität Darmstadt, Germany; {5}Technische Universität Dresden, Germany

8521: Time-Reversing Ultrasonic Transducer for Guided Wave Inspections
Masoud Mohammadgholiha, Luca De Marchi
University Of Bologna, Italy

7793: Evaluation of Local Plasticity by Nonlinear Three-Wave Interaction Method Using Shear-Vertical-Wave Point-Focusing Electromagnetic Acoustic Transducers
Takashi Takishita{1}, Hiroyuki Takamatsu{1}, Hirotsugu Ogi{2}
{1}Kobe Steel, Ltd., Japan; {2}Osaka University, Japan

C2L-06: SAW
Location: 701E (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Marvin Doyley, Rochester University

8778: Investigation of the 3-Overtone Quality Factor of the Quartz Crystal Resonator with Ring Electrodes
Jianguo Hu{2}, Alois Knoll{1}
{1}Technical University of Munich, Germany; {2}University of Electronic Science and Technology of China, China

8743: First Demonstration of Solidly Mounted Bulk Acoustic Wave Resonators Using an Epitaxial ε-Ga_2O_3 Piezoelectric Film on Si
Zhipeng Zhang, Yuping Fu, Yujia Tu, Tao Zhou, Chenhong Huang, Weiqu Chen, Tiecheng Luo, Xifu Chen, Zhuo Yang, Zimin Chen, Yanli Pei, Gang Wang, Xing Lu
Sun Yat-Sen University, China

8203: D-Baw Uniformity Improvement by Resonator Thickness Compensation
Jian Wang, Jie Zou, Duan Feng
Shenzhen Newsonic Technologies Co.Ltd, China

8192: Enhancing ESD Robustness of DBAW Filters Through Release Hole Clearance Design
Xiaoru Wang, Duan Feng, Jie Zou, Ji Liang
Shenzhen Newsonic Technologies Co.Ltd, China

C2L-07: TMI: Multiwave and Optomechanical Transducers
Location: 701F (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Robert Wodnicki, University of Southern California

7725: Performance Enhancement of PMN-PT-Based Transparent Ultrasound Transducers by Room-Temperature Pressure-Controlled ITO Sputtering Method
Heesoo Kim, Minsu Kim, Dasom Heo, Seonghee Cho, Chulhong Kim, Hyung Ham Kim
Pohang University of Science and Technology, Korea

8294: Ring-Shaped Transparent and Broadband Ultrasonic Transducer for Photoacoustic Systems
Yexing Fang, Ting Xie, Yunxiang Zhang, Mengyue Zhang, Haixia Zhang, Yipeng Lu
Peking university, China

7747: A High-Frequency Transparent Ultrasound Transducer with a High Numerical Aperture for Ultrasound/Photoacoustic Dual-Modal Microscopy
Maoyuan Xu, Bingqian Yang, Yaoyao Cui, Yachao Zhang
Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China

7731: Dual-Frequency Ultrawideband Multispectral Acoustic-Resolution Photoacoustic Microscopy
Bingqian Yang, Shen Song, Yaoyao Cui, Yachao Zhang
Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China\

7331: Ultra-Sensitive Cascaded Integrated Photonic Ultrasound Transducers (IPUTs)
Paul van Neer{1}, Peter Harmsma{1}, Anne Maaike Gerritsma{1}, Sabiju Valiya Valappil{2}, Robert Altmann{1}, Srivathsa Bhat{3}, Mikko Harjanne{3}, Sami Ylinen{3}, Yisbel Marin{3}, Paivi Heimala{3}, Martin Verweij{2}, Maurits van der Heiden{1}
{1}TNO, Netherlands; {2}TU Delft, Netherlands; {3}VTT, Finland

C2L-08: PFM 2
Location: 701G (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Andrei Kholkin, University of Aveiro
Elzbieta Gradauskaite, Thales

7281: Interface Between Nanoscale Tip and Ferroelectric Surface Studied by Atomic Force Microscopy
Seungbum Hong
KAIST, Korea

7863: Stretching the Applications of Relaxor Ferroelectrics to the Nanoscale
Yachin Ivry{2}, Cecile Saguy{2}, Alp Sehirlioglu{1}
{1}Case Western Reserve University, United States; {2}Technion - Israel Institute of Technology, Israel

7915: Development of Integrated Measurement System for Local C-V Mapping and Piezoresponse Force Microscopy
Yuki Noguchi{1}, Takanori Mimura{2}, Takao Shimizu{2}, Hiroshi Funakubo{2}, Yoshiomi Hiranaga{1}
{1}Tohoku University, Japan; {2}Tokyo Institute of Technology, Japan

7886: Electromechanical Properties of the Nucleus in Living Cells
Alexis Borowiak{1}, Takehiko Ichikawa{2}, Makiko Kudo{2}, Takeshi Shimi{2}, Takeshi Fukuma{2}
{1}Nano Life Science Institute, Kanazawa University, Japan; {2}Nano Life Science Institute, Kanazawa University,, Japan

7979: Control of Ferroelectric Polarization by Light in an Absorbing System Based on Ferroelectric HfO_2 Revealed by PFM
Ignasi Fina{1}, Huan Tan{1}, Alberto Quintana{1}, Nico Dix{1}, Saul Estandía{1}, Jordi Sort{2}, Florencio Sánchez{1}
{1}ICMAB-CSIC, Spain; {2}UAB, Spain

C2L-09: Doped Hafnium Oxide - Material 2
Location: 701H (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Hiroshi Funakubo, Tokyo Institute of Technology

7577: Tuning Ferroelectricity in $HfZrO_2$ Heterostructures Using Electrochemical Capacitance
Achilles Bergne{1}, Denis Alikin{2}, Victor Buratto Tinti{1}, Dennis Valbjørn Christensen{1}, Nini Pryds{1}, Andrei Kholkin{2}, Vincenzo Esposito{1}
{1}Technical University of Denmark, Denmark; {2}Universidade de Aveiro, Portugal

8167: Electric Field-Induced Piezoelectricity of Epitaxial YSZ and $YHfO_2$ Thin Films
Ayaka Katsumata, Yohkoh Shimano, Takahiko Yanagitani
Wasada University, ZAIKEN, Japan

8738: Effect of Ce/(Hf+Ce) Ratio on Ferroelectric Properties of Thick $xCeO_2$-(1-x) HfO_2 Films Deposited by Sputtering Method Without Substrate Heating
Yu-Ta Chen{2}, Kazuki Okamoto{2}, Kohei Shimonosono{2}, Nachi Chaya{2}, Miki Nakahata{2}, Wakiko Yamaoka{1}, Yukari Inoue{1}, Hiroshi Funakubo{2}
{1}Technical center, TDK corporation, Japan; {2}Tokyo Institute of Technology, Japan

8988: Electro-Chemo-Mechanical Coupling in Ferroionic Metal Oxides
Vincenzo Esposito
Technical University of Denmark, Denmark

8006: Robust Ferroelectricity and Magnetoelectric Coupling in an Epitaxial-$Hf_{0.5}Zr_{0.5}O_2$-Based Multiferroic System
Ignasi Fina{2}, Tetiana Zakusylo{2}, Alberto Quintana{2}, Veniero Lenzi{1}, José Silva{4}, Luis Marques{4}, Jike Lyu{2}, Jordi Sort{3}, Florencio Sánchez{2}
{1}CICECO, Spain; {2}ICMAB-CSIC, Spain; {3}UAB, Spain; {4}University of Minho, Spain

C2L-10: Relaxors & Antiferroelectrics
Location: 702 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Ichiro Fujii, University of Yamanashi

8393: Angle-Resolved Polarized Raman Mapping to Understand Dielectric Responses in Relaxor-Ferroelectric Solid Solution
Shinya Tsukada{3}, Yasuhiro Fujii{2}, Kenji Ohwada{1}
{1}National Institutes for Quantum Science and Technology, Japan; {2}Osaka University, Japan; {3}Shimane University, Japan

7148: A Comparison of the Low Temperature Dielectric Relaxations in Ferroelectrics, Relaxor-Ferroelectrics and Canonical Relaxors
Yang Li, Andrew Bell
University of Leeds, United Kingdom

7111: Ultrahigh Piezoelectric Response from Competing Antiferroelectric and Ferroelectric Orders
Baichen Lin{1}, Yeng Ming Lam{2}, Huajun Liu{1}
{1}Institute of Materials Research and Engineering (IMRE), Agency for Science, Technology and Research, Singapore; {2}School of Materials Science and Engineering, Nanyang Technological University, Singapore

9154: Probing Emergent Phenomena in Complex Oxides Through Nonlinear Optics and Coherent X-Rays
Venkatraman Gopalan
Pennsylvania State University, United States

C2L-11: MEMS Resonators and Oscillators
Location: 703 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Dana Weinstein, Purdue University

8805: Sparse Array of Thermal Resonators: Enhanced Infrared Detection and High-Resolution Imaging at 500°C
Mina Rais-Zadeh{2}, Isabel Rodrigues{2}, Clifford Frez{2}, Savannah Eisner{1}, Debbie Senesky{3}
{1}Colombia University, United States; {2}NASA JPL, United States; {3}Stanford University, United States

7629: An 878 MHz Low Noise $LiNbO_3/SiO_2$/Sapphire Acoustic Delay Line Oscillator
Chin-Yu Chang, Ya-Ching Yu, Chia-Hsien Tsai, Zhi-Qiang Lee, Ming-Huang Li
National Tsing Hua University, Taiwan

8108: Resonant Energy Detector Based on MEMS-CMOS Co-Design for Wake-Up Receivers
Jingsong Liu{2}, Maoyang Qiu{2}, Fuhong Lin{2}, Qinghua Huang{1}, Shumin Liu{1}, Chengjie Zuo{2}
{1}Honor Device Co., Ltd., China; {2}University of Science and Technology of China, China

7025: 3.3-GHz Voltage-Controlled Oscillator with 2.13% Tuning Range Based on A1-Mode $LiNbO_3$ Lamb-Wave Resonator
Xinhui Cui, Kai Yang, Ying Yuan, Jingsong Liu, Chengjie Zuo
University of Science and Technology of China, China

8925: Advancing Precision Timing: A Thermally Stable Lithium Tantalate MEMS Oscillator with Low Phase Noise
Hamed Atashbar, Yasaman Majd, Tanvir Hasan, Hannaneh Mahdavi, Hakhamanesh Mansoorzare, Reza Abdolvand
University of Central Florida, United States

C2L-12: Domains & Domain Walls 1
Location: 500 (TaiNEX 1**)**
13:00 - 14:30
Session Chair(s): Takashi Teranishi , Okayama University

8698: 3D Visualization of Ferroelectric Domains in a Nanocrystal Using Bragg Coherent X-Ray Diffraction Imaging
Norihiro Oshime, Kenji Ohwada, Akihiko Machida, Kento Sugawara, Ayumu Shimada, Tetsu Watanuki, Yoshihiro Kuroiwa
National Institutes for Quantum Science and Technology, Japan

7686: A Boltzmann Statistical Approach for Analysis of Polarization States in Mixed Phase Ferroelectric Materials
Abhijit Pramanick, Laurent Daniel
University Paris-Saclay, France

7666: Ferroelectric Thickness Scaling Effects on Statics and Dynamics of Domain Walls
Somnath Kale, Rohit Soni
Indian Institute of Science Education and Research Berhampur, India

C2L-13: Advances in Optical Clocks
Location: 501 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Nils Nemitz, NICT

7357: Laser Excitation of the Th-229 Nucleus
Ekkehard Peik{1}, Johannes Tiedau{1}, Maksim Okhapkin{1}, Ke Zhang{1}, Fabian Schaden{2}, Thomas Pronebner{2}, Ira Morawetz{2}, Luca Toscani de Col{2}, Felix Schneider{2}, Kjeld Beeks{2}, Tomas Sikorsky{2}, Thorsten Schumm{2}
{1}PTB, Germany; {2}TU Wien, Austria

8399: Development of New-Generation Strontium Ion Optical Clocks
Kosuke Kato{1}, Pierre Dube{1}, Scott Smale{2}, Amar Vutha{2}
{1}National Research Council Canada, Canada; {2}University of Toronto, Canada

8607: Multiple Ensemble Optical Lattice Clock Evaluation of Lattice Light Shift and Density Shift Systematics
Jacob Siegel, Benjamin Hunt, Andrew Ludlow, Kyle Beloy, Youssef Hassan, Takumi Kobayashi, Tobias Bothwell
National Institute of Standards and Technology, United States

8536: First Deployment of a Transportable Ytterbium Optical Lattice Clock with an Ultrastable Microwave Signal Output
Michele Giunta{3}, Tobias Bothwell{4}, Wesley Brand{5}, Robert Fasano{1}, Benjamin Rauf{2}, Ignacio Baldoni{2}, Marco Pomponio{5}, Takuma Nakamura{4}, Thomas Akin{6}, Joseph Whalen{6}, Steven Peil{6}, Craig Nelson{4}, Archita Hati{4}, Franklyn Quinlan{4},
{1}Infleqtion, United States; {2}Menlo Systems, Germany; {3}Menlo Systems/MPQ, Germany; {4}NIST, United States; {5}NIST/UC Boulder, United States; {6}USNO, United States

8332: Multinode Optical Clock Network Linked via Quantum-Limited Two-Way Time Transfer
Abijith Kowligy{3}, Jonathan Roslund{3}, Micah Ledbetter{3}, Gunnar Skulason{3}, Evan Popp{3}, Evan Atchinson{3}, Akash Rakholia{3}, Martin Boyd{3}, Jamil Abo-Shaeer{3}, Arman Cingoz{3}, Emily Caldwell{1}, Fabrizio Giorgetta{1}, Thea Triano{1}, Bill Swann
{1}NIST, United States; {2}OctoSig Consulting, Canada; {3}Vector Atomic, United States

8956: Intuitive Understanding of the Redefinition of the Second Through Multiple Transitions
Tetsuya Ido
NICT, Japan

C2L-14: MIS: Doppler and Vascular Imaging
Location: 503 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): François Varray, Universite Claude Bernard Lyon 1

8120: Faster and Better: Monte Carlo Algorithm Accelerated Distance-Weighted Spatiotemporal Non-Local Means Filtering in Ultrafast Power Doppler Imaging
Zhe Chen, Lijie Huang, Rui Wang, Hengrong Lan, Xingyue Wei, Qiong He, Jianwen Luo
Tsinghua Universuty, China

7488: Estimation of Hemodynamics in a Curved and Obstructed Coronary Artery Model Constructed Using Intravascular Ultrasound Images
Takuro Ishii, Takashi Orihara, Hiroyuki Yagami, Yoshifumi Saijo
Tohoku University, Japan

7590: Fully Automatic Segmentation of Peripheral Arteries Using Color Doppler Ultrasound
Milan Gillissen{3}, Frans van de Vosse{1}, Marc van Sambeek{2}, Richard Lopata{3}
{1}Cardiovascular Biomechanics group, University of Technology, Eindhoven, Netherlands; {2}Catharina Hospital, Eindhoven, Netherlands; {3}Photoacoustics and Ultrasound Laboratory, University of Technology, Eindhoven, Netherlands

7893: Multi-Task Learning Approach for Automatic Diagnosis and Segmentation of Carotid Atherosclerosis Using Portable 3D Ultrasound
Haibin Zhang{2}, Jiawen Li{2}, Duo Xu{2}, Yunqian Huang{1}, Man Chen{1}, Rui Zheng{2}
{1}Department of medical Ultrasound, Tong Ren Hospital, Shanghai Jiao Tong University School of Medicin, China; {2}ShanghaiTech University, Canada; {2}ShanghaiTech University, China

8307: Characterization of Mechanical Properties of Carotid Artery Plaque Using Acoustic Guided Wave
Zhang Hongmei{1}, Aasma Jamali{1}, Tianhao Liu{1}, Mingxi Wan{2}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

8425: Identification of Stroke Risk Based on Ultrasound Characteristics of Carotid Plaque and Clinical Information by Machine Learning and Deep Learning Models
Xiangjiang Tang{2}, Yijun Lu{2}, Zihao Xu{2}, Jitong Zhang{2}, Da He{2}, Rong Wu{1}, Sung-Liang Chen{2}, Caixia Jia{1}
{1}Shanghai General Hospital, China; {2}Shanghai Jiao Tong University, China

C2L-15: MBF: Cardiovascular Imaging and Applications
Location: 507 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Alfred Yu, University of Waterloo

7333: Comparison of Wall Shear Stress Estimation Using Wall Shear Imaging and Poiseuille Flow Model: An In Vivo Pilot Study
Billy Yiu{1}, Alexander Henriksen{1}, Lars Haslund{1}, Michael Nielson{2}, Adrian Chee{3}, Alfred Yu{3}, Jorgen Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark; {3}University of Waterloo, Canada

7404: Error Reduction in Left Carotid Artery Measurements Using High Frame Rate Ultrasound Vector Flow Imaging
Yigang Du{1}, Haiyan Ding{2}, Linsong Deng{1}, Le He{2}, Shuangshuang Li{1}, Lei Zhu{1}
{1}Shenzhen Mindray Bio-Medical Electronics Co., Ltd., China; {2}Tsinghua University, China

7374: Echocardiographic Mapping of Flow Instability (EMFI): High Frame-Rate Quantification of Cardiac Flow Instability
Christopher Kallweit, Hassan Nahas, Sean Peterson, Alfred Yu
University of Waterloo, Canada

8177: Pulse-Inversion Doppler-Based Motion Compensation Reduces Decorrelation in High Frame Rate Contrast-Enhanced Ultrasound
Hsin Huang{1}, Hendrik J Vos{1}, Johan G Bosch{1}, Antonius F. W. van der Steen{1}, Chih-Chung Huang{2}, Jason Voorneveld{1}
{1}Erasmus University Medical Center, Netherlands; {2}National Cheng Kung University, Taiwan

7241: A Deep Learning Approach for Clutter Filtering from Short Packet Sizes in Color Doppler
Julia Puig{1}, Denis Friboulet{1}, Jonathan Porée{2}, Jean Provost{2}, Damien Garcia{1}, Fabien Millioz{1}
{1}INSA Lyon, France; {2}Polytechnique Montréal, Canada

7343: In Vivo Pressure Gradient Estimations Using Synthetic Aperture Ultrasound
Lars Emil Haslund{2}, Alexander Cuculiza Henriksen{1}, Ali Salari{2}, Marie Sand Traberg{2}, Lasse Thurmann Jørgensen{2}, Borislav Gueorguiev Tomov{2}, Michael Bachmann Nielsen{1}, Jørgen Arendt Jensen{2}
{1}Department of Diagnostic Radiology, Denmark; {2}Technical University of Denmark, Denmark

C2L-16: MSR: Agents and Biomarkers
Location: 502 (TaiNEX 1)
13:00 - 14:30

8637: Estimation of Microvessels Radii in Ultrasound Localization Microscopy Using a Realistic Hemodynamic Model
Nin Ghigo{1}, Stephen Lee{1}, Gerardo Ramos{2}, Jonathan Poree{1}, Samuel Mihelic{3}, Andreas Linninger{3}, Abbas Sadikot{2}, Jean Provost{1}
{1}Polytechnique Montreal, Canada; {2}University Mc Gill, Canada; {3}University of Illinois Chicago, United States

7364: Higher Frequency Enables Denser Bloodstream Microbubble Concentrations for Ultrasound Localization Microscopy
Matthew Lowerison, Yike Wang, Bing-Ze Lin, Yirang Shin, Zhe Huang, Pengfei Song
University of Illinois Urbana-Champaign, United States

8642: Tumor Microvasculature Imaging Using Ultrasound Localization Microscopy Combined with High-Resolution Molecular Imaging Technique
Feifei Zhao{1}, Yanjun Xie{3}, Yi Huang{3}, F. William Mauldin Jr.{2}, Alexander L. Klibanov{3}, John A. Hossack{3}
{1}Hebei University of Engineering, China; {2}Rivanna Medical, Inc., United States; {3}University of Virginia, United States

7541: Ultrasound Localization Microscopy as a Potential Biomarker of Neuroinflammation During Brain Development
Solène Ruinet{2}, Zsolt Csaba{3}, Dimitris Perdios{2}, Haleh Soleimanzad{1}, Nicolas Zucker{2}, Sophie Pezet{2}, Pascal Dournaud{3}, Pierre Gressens{3}, Mickael Tanter{2}
{1}Iconeus, Paris, France, France; {2}Institute Physics for Medicine, France; {3}Neurodiderot, Hôpital Robert Debré, France

8421: Single Capillary Reporters (SCaRe) in Super-Resolution Ultrasound Localization Microscopy
Stephen Lee{1}, Alexis Leconte{1}, Alice Wu{1}, Jonathan Poree{1}, Samuel Mihelic{2}, Andreas Linninger{2}, Jean Provost{1}
{1}Polytechnique Montreal, Canada; {2}University of Illinois Chicago, United States

8054: Ultrasound Localization Microscopy Imaging Based on Acoustic Genetically Engineered Bacteria&Cell
Ying Zhou{3}, Jiatao Qian{1}, Zeping Gao{2}, Yuanyuan Wang{3}, Ye Yang{3}, Fei Yan{3}, Hairong Zheng{3}, Teng Ma{3}
{1}College of Integrated Circuits and Optoelectronic Chips, Shenzhen Technology University, Shenzhen 51, China; {2}Harbin Institute of Technology, School of Instrumentation Science and Engineering, Harbin, China, China; {3}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

Poster Session #3: C3aP-18: MIM: Functional Imaging & Tissue Characterization
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Jing Gao, Rocky Vista University
Richard Lopata, Eindhoven University of Technology

7917: Assessment of the Hemodynamic Response Functions in the Brain and Retina of Rodent Models with Functional Ultrasound Imaging
Elias Boulebnane{2}, Clémentine Morisset{2}, Jérémy Thalgott{1}, Mickael Tanter{2}, Franck Lebrin{1}, Thomas Deffieux{2}
{1}Leiden University Medical Center, Einthoven Laboratory, Netherlands; {2}Physics for Medicine Paris, France

8675: Reliable Transcranial Functional Ultrasound in an Adult Cohort (N=13)
Emelina Vienneau, Abbie Weeks, Brett Byram
Vanderbilt University, United States

7935: Ultrasound-Based Longitudinal Study Into Rupture Risk Predictors in Abdominal Aortic Aneurysms
Arjet Nievergeld{2}, Judith Fonken{2}, Esther Maas{2}, Jan-Willem Muller{2}, Mirunalini Thirugnanasambandam{2}, Marc van Sambeek{1}, Richard Lopata{2}
{1}Catharina Hospital Eindhoven, Netherlands; {2}Eindhoven University of Technology, Netherlands

7961: Ultrasound-Based Computational Fluid Dynamics Modelling of Healthy and Stenosed Carotid Arteries: Enhancing Understanding at the Site of Plaque Accumulation
Lotte Piek{2}, Joerik de Ruijter{2}, Marc van Sambeek{1}, Richard Lopata{2}
{1}Catherina Hospital Eindhoven, Netherlands; {2}Eindhoven University of Technology, Netherlands

8432: A Graph-Based Realistic 3D Microvascular Flow Simulator for Ultrasound
Andre Rath{1}, Lauge Hansen{1}, Hans Kjer{1}, Nathalie Panduro{2}, Charlotte Sorensen{2}, Carsten Gundlach{1}, Anders Dahl{1}, Jørgen Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

7010: Ultrasound Attenuation Coefficient to Assess MASLD
Jing Gao{2}, Trinh Nguyen{1}, Ben Wilde{2}
{1}Billings Clinic, United States; {2}Rocky Vista University, United States

8284: Exploring Parkinson's Disease Classification Through Muscular Ultrasound: A Preliminary Study
Bin Zha{2}, Yongsheng Lin{2}, Zili Wang{2}, Lijuan Du{1}, Yongjin Zhou{2}
{1}Capital Medical University, China; {2}Shenzhen University, China

7856: Multi-View 3D Parametric Modeling for Cervical Ultrasound Imaging – A Validation Study
Wei Zhang, Rui Zheng, Yuchong Gao, Songhan Ge, Jianhao Zhao, Haoyuan Tian
ShanghaiTech University, Canada; ShanghaiTech University, China

7984: 3D Parametric Modeling for Cervical Deformity Using a Portable Freehand Ultrasound System - A Feasibility Study
Wei Zhang, Rui Zheng, Yuchong Gao, Songhan Ge, Jianhao Zhao, Haoyuan Tian
ShanghaiTech University, Canada; ShanghaiTech University, China

8090: Towards Advanced Ultrasound Simulations of Virtual Patients Based on In Silico Microstructural Tissue Phantoms
Daniek van Aarle{2}, Jasper Korte{1}, Richard Lopata{2}, Hans-Martin Schwab{2}
{1}Eindhoven Univerisity of Technology, Netherlands; {2}Eindhoven University of Technology, Netherlands

Poster Session #3: C3bP-18: MBB: Deep Learning Based Beamforming & Inverse Problem Solutions
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7430: High-Quality Plane-Wave Image Reconstruction Using U2-Net Deep Learning Model
Jiajin Li{1}, Wenwen Sun{1}, Jinhua Zhou{1}, Hu Peng{2}, Yadan Wang{1}
{1}Anhui Medical University, China; {2}Hefei University of Technology, China

7797: 3D Ultrafast Ultrasound Image Quality Enhancement Using Deep 3D Convolutional Neural Networks
Hao Huang, Yue Zhao
Harbin Institute of Technology, China

7924: Max-Divergence Tri-Angle GAN: Optimizing Ultrasound Plane Wave Image Quality with Strategic Angle Selection and Self-Attention
Yijia Liu{2}, Shaolun Wang{1}, Na Jiang{1}, Miaomiao Zhang{1}, Zhifei Dai{2}
{1}College of Information Engineering, Capital Normal University, Beijing., China; {2}Department of Biomedical Engineering, College of Future Technology, Peking University, Beijing., China

7985: Inverse Problem of Ultrasound Plane Wave Imaging with a Low-Rank and Sparse Model
Shaolun Wang{1}, Yijia Liu{2}, Jiajie Zhang{3}, Na Jiang{1}, Miaomiao Zhang{1}
{1}College of Information Engineering,Captial Normal University,Beijing., China; {2}Department of Biomedical Engineering, College of Future Technology, Peking University,Beijing., China; {3}Tianjin Delita Instrument Technology Co., LTD,Tianjin., China

8109: Improving the Trade-Off Between Image Quality and Framerate Using Deep Learning Based Beamforming for 3D-ICE
Ben Luijten{1}, Harm Belt{1}, Alexander Kolen{2}, Christophe Meyer{2}, Stefan Wörz{2}, Christoph Hennersperger{2}, Ruud Van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}LUMA Vision, Netherlands; {2}LUMA Vision, Germany

8323: Inverse Problems with Multiple Plane Waves: The Angular Simplification
Baptiste Heriard-Dubreuil{2}, Adrien Besson{1}, Claude Cohen-Bacrie{1}, Jean-Philippe Thiran{3}
{1}E-Scopics, France; {2}E-Scopics / EPFL, France; {3}EPFL, Switzerland

8612: Physics-Based Inverse Problem for Aberration Correction in 3D Transcranial Contrast-Enhanced Ultrasound Imaging of the Brain
Paul Xing, Jonathan Poree, Jean Provost
Polytechnique Montreal, Canada

8802: CycleGAN-Enhanced Three-Dimensional Ultrasound Imaging for Deep Targets Using a Small Matrix Array
Hao Guo, Luzhen Nie, Thomas Carpenter, David Cowell, Steven Freear
University of Leeds, United Kingdom

8946: Adversarial Training for Ultrasound Beamforming in Out-of-Distribution Scenarios
Itamar Salazar-Reque, Jesús Juarez, Roberto Lavarello
Pontificia Universidad Católica del Perú, Peru

Poster Session #3: C3bP-19: MBB: Beamforming for Different Array Types
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Safeer Hyder, Siemens Healthineers
Håvard Arnestad, University of Oslo

7150: The Nonlinear p-th Root Spectral Magnitude Scaling Beamforming for Intracardiac Echocardiography Application
Hyunhee Kim, Seonghee Cho, Chulhong Kim
Postech, Korea

7210: Application of Tensor Completion for Reducing the Beamforming Time in Ultrafast Ultrasound Imaging: A Doppler Ultrasound Assessment
Sajjad Afrakhteh, Federico Mento, Libertario Demi
University of Trento, Italy

7440: Transcranial Ultrasound Focusing with Flexible Array Transducer
Yifan Wang, Yiming Chen, Ya Gao, Mengjiao Zhang, Qian Cheng
Tongji University, China

7515: Phased-Array Compounding for Reflection Ultrasound Computed Tomography Systems
Soheil Hakakzadeh{1}, Zahra Kavehvash{1}, Mohammad Mehrmohammadi{2}
{1}Sharif Univ. of Tech., Iran; {2}University of Rochester Medical Center, United States

7958: Transmission Sequence Design for a Pregnancy Monitoring Annular Capacitive Micromachined Ultrasonic Transducer (CMUT)
Maria Jose Almario Escorcia{1}, Rob van Schaijk{2}, Willem-Jan de Wijs{2}, Richard Lopata{1}, Hans-Martin Schwab{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips Innovation Engineering, Netherlands

8044: Comparative Analysis of Quadruple Focal Points Targeting and Investigation Time Using 2D Arrays in HIFU Treatments
Soo Min Hwang, Eun Kyoung Gong
Jeisys medical, Korea

8206: Taylor Series-Based Derivation of the Resolution of Null Subtraction Imaging for Uniform Linear Array
Chaoran Han, Håvard Kjellmo Arnestad, Sven Peter Näsholm, Andreas Austeng
University of Oslo, Norway

8493: Ultrasound Imaging Using Compression Waveguides Towards Lowcost Volumetric Scanning
David Weik, Hannes Bischoff, Tobias Irrgang, Zehua Dou, Jürgen Czarske
TU Dresden, Germany

8611: Construction of Orthogonal Transmit Sequences Using the Nearest Orthogonal Matrix
Håvard Kjellmo Arnestad, Andreas Austeng, Sven Peter Näsholm
University Of Oslo, Norway

8620: A Web-Based, Real-Time and Interactive Simulator for Understanding Emitted Ultrasound Fields from Arbitrary Sources
Magnus Dalen Kvalevåg, Svein-Erik Måsøy, Lasse Løvstakken
NTNU, Norway

Poster Session #3: C3aP-19: Signal Processing, Wave Propagation, Energy Harvesting, Microfluidics, Flow Measurement, Underwater Acoustics
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Harald Kuhn, TU Chemnitz

7034: Measurement of Instantaneous Velocity Vector of Scatterers by Transmitting a Dual-Chirp Plane Wave
Sota Ozaki, Norio Tagawa
Tokyo Metropolitan University, Japan

7047: Integrated Analysis of Material Properties of Additively Manufactured 316L Steel Using Ultrasound Measurements
Shafaq Zia, Johan E. Carlson, Pia Åkerfeldt, Ludovic Hienne
Luleå University of Technology, Sweden

7120: Parallelization of Implicit Finite Difference Methods for Wave Propagation Simulation
Changting Xu
Qualcomm, United States

7184: Key Conditions Contributing to High-Performance Ultrasound-Based Wireless Power Charging
Sungwoo Kang, Juhwan Kim, Jinwoo Kim, Eunji Lee, Jin Ho Chang
Daegu Gyeongbuk Institute Science and Technology, Korea

7310: Industrial Validation of the PMUT Ultrasonic Flowmeter Based on CSOI
Shaokun Wang{2}, Haochen Lyu{1}, Songsong Zhang{2}, Ahmad Safari{1}
{1}Rutgers University, United States; {2}Shanghai University, China

7319: Analysis of Resonant Characteristics of Piezoelectric Vibrator with Elliptical Shells
Moojoon Kim{1}, Jungsoon Kim{2}
{1}Pukyong National University, Korea; {2}Tongmyong University, Korea

7377: Optical Attenuation Coefficient (OAC) Based Automatic Segmentation of Limbal Epithelium and Age-Related Differences
Yilong Zhang{2}, Ryan Dimmock{1}, Ying Yang{1}, Zhihong Huang{3}
{1}Keele University, United Kingdom; {2}University of Dundee, United Kingdom; {3}University of York, United Kingdom

7501: Development of a Broadband Class III Flextensional Hydrophone
Yongrae Roh, Wenbo Wang
Kyungpook National University, Korea

7525: Advanced Wearable Piezoelectric Nanogenerator for Human Energy Harvesting and Self-Powered Sensing
Chulhee Ryu{2}, Wei-Chieh Liu{2}, Yue Wang{2}, Gyu Bin Nam{2}, Jeong Hwan Park{2}, Hyeong Kwang Benno Park{2}, Andrew Jaeyul Han{1}, Taehyun Sung{2}
{1}Hankuk Academy of Foregin Studies, Korea; {2}Hanyang University, China; {2}Hanyang University, Taiwan; {2}Hanyang University, Korea

7625: Ultrasonic Backscatter Communications: A Feasibility Study
Asra Ashraf, Johan E. Carlson, Jaap Ven de Beek, Johan Borg
Luleå University of Technology, Sweden

7690: Ultrasonic Flaw Classification with Self-Supervised Learning Using a Dino Framework
Victoria Heekyung Kim, Muyu Yang, Kushal Virupakshappa, Erdal Oruklu
Illinois Institute of Technology, United States

7820: Time Reversal and Inverse Filter for Blind Deconvolution of Ultrasonic Communication Through Solid Channel
Jafar Saniie, Xin Huang
Illinois Institute of Technology, United States

7832: Implementation of a Robust Chirplet Signal Decomposition Algorithm on FPGA-SoC Platforms for Ultrasonic Flaw Detection
Tianyang Fang, Austin Fite, Jafar Saniie
Illinois Institute of Technology, United States

7981: 2D Surface Reconstruction Using an Air-Coupled pMUT-Based Synthetic Aperture Array
Mantalena Sarafianou{1}, David Sze Wai Choong{1}, Duan Jian Goh{1}, Srinivas Merugu{1}, Yul Koh{1}, Peter Hyun Kee Chang{1}, Qing Xin Zhang{1}, Domenico Giusti{2}, Alberto Leotti{2}, Luca Barabani{2}, Adriyan Hidayat Mohamed Hamsah{2}
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}ST Microelectronics, Italy; {2}ST Microelectronics, Singapore

8363: Piezo-Material Optimization for Ultrasonic Flow Metering in Extreme Environments
Tim Comyn, Tim Stevenson, Chuangnan Wang
Ionix Advanced Technologies LTD, United Kingdom

8385: Ultrasonic Evaluation of an Equine Leg with Small Bucked Shin Using a Heterogeneous Anisotropic Digital Model
Takamitsu Maeda{1}, Shouta Kitajima{1}, Mami Matsukawa{1}, Koh Chiba{3}, Hiroshi Mita{2}, Norihisa Tamura{2}
{1}Doshisha University, Japan; {2}JRA Equine Research Institute, Japan; {3}Nagasaki University, Japan

8387: Underwater Sensing Applications Using Capacitive Micromachined Ultrasonic Transducers (CMUTs)
Meghana Vishwanatha{2}, Karman Selvam{1}, Nooshin Saeidi{2}, Maik Wiemer{1}, Harald Kuhn{2}
{1}Fraunhofer ENAS, Germany; {2}Fraunhofer ENAS, TU Chemnitz, Germany

8454: Deep-Learning Imaging Enhancement of Amplitude Steered Array Beamforming
Chun-Yi Chen, Tzu-Hsien Sang, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

8507: Multifrequency Encoding in PINNs for Precision Wave Equation Modeling in Inhomogeneous Media
Shaikhah Alkhadhr{1}, Mohamed Almekkawy{2}
{1}Kuwait University, Kuwait; {2}Pennsylvania State University, United States

8687: Highly Accurate Blind Source Separation in Passive Sonar Using Demon Preprocessing on Time Domain
Taehoon Her, Sangheon Lee, Jaesok Yu
Daegu Gyeongbuk Institute of Science&Technology, Korea

8699: A Wristband Coupling Microfluidics and PMUTs for Wearable Ultrasonic Monitoring
Chenyang Yu, Yongquan Ma, Qiutong Lin, Wei Pang, Wei Wei, Huimin Li, Pengfei Niu
Tianjin University State Key Laboratory of Precision Measurements Technology and Instrumer, China

8853: Ultrasonic Wireless Power Transfer Using Frequency Steerable Acoustic Transducers for Autonomous Guided Waves-Based Inspection Systems
Stefano Taccetti{1}, Federica Zonzini{3}, Matteo Zauli{2}, Masoud Mohammadgholiha{3}, Aldo Romani{4}, Luca De Marchi{3}
{1}ARCES-University of Bologna, Italy; {2}CIRI ICT - University of Bologna, Italy; {3}DEI - University of Bologna, Italy; {4}DEI/ARCES - University of Bologna, Italy

8894: Prediction of Acoustic Micro-Droplet Volumes: A Deep Learning Approach
Jinfeng Meng{1}, Youta Huang{1}, Yanyan Yu{1}, Minhua Lu{1}, Xin Chen{1}, Weibao Qiu{2}
{1}School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen University, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

8904: Blind Extraction of Spot Weld Features for Real-Time Resistance Spot Weld Process Monitoring
Aryaz Baradarani, Roman Gr. Maev
Tessonics Inc and University of Windsor, Canada

Poster Session #3: C3aP-20: General Physical Acoustics (PGP) 2
Location: P03 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7053: Super-Resolution Mapping of Wave Field Using a Receiver from a Far Distance
Jian-Yu Lu
University of Toledo, United States

7473: Accurate Synthesis of Acoustic Holograms Using Field Matching
Noé Jiménez{1}, Diana Andrés{2}, Alba Eroles-Simó{2}, Rosa P. Calpe-Fortea{2}, Juan J. Rodriguez-García{2}, Francisco Camarena{2}
{1}Consejo Superior de Investigaciones Científicas, Spain; {2}Universitat Politècnica de València, Spain

7558: Sub-Wavelength Energy Focusing Through a Fabry-Pérot Based MHz Elastic Extraordinary Acoustic Transmission System
Jiacheng Chen{3}, Thibaut Devaux{3}, Remi Rouffaud{3}, Eun Bok{1}, Marc Lethiecq{3}, Oliver Wright{2}, Lionel Haumesser{3}
{1}Department of Physics, Yonsei University, Wonju 26493, Korea; {2}Graduate School of Engineering, Osaka University, Yamadaoka 2-1, Suita, Osaka 565-0871, Japan; {3}GREMAN UMR7347, Université de Tours, CNRS, INSA CVL, Tours, France

7609: Elastic Constants of Aragonite Natural Mineral: High-Precision Ultrasonic Pulse-Echo Study
Andrei Sotnikov, Hagen Schmidt
Leibniz IFW Dresden, Germany

7705: Tolerances Effect on Laser Structured Silicon-Based Multi Fourier-Horn Ultrasonic Nebulizer
Wail Al-Mogahed{1}, Sebastian Voigt{1}, Philipp J. Mehner{1}, Georgi Paschew{2}, Andreas Richter{2}, Jan Mehner{1}
{1}Chemnitz University of Technology, Germany; {2}Technische Universität Dresden, Germany

7803: Effect of the Finite Length of a Metamaterial on its Property of Suppressing Ultrasonic Propagation in Solid Structures
Toshihiko Sugiura, Kyogo Sato, Keisuke Nishida
Keio University, Japan

8902: Metamaterial Inspired New Class of Ultrasonic Shear Horizontal (SH) Surface Wave Sensors with Extremely Large Mass Sensitivity
Piotr Kiełczyński
Institute of Fundamental Technological Research, Poland

7465: Towards Viscoacoustic Full-Waveform Inversion for In-Vivo Ultrasound Computed Tomography
Ines Elisa Ulrich{1}, Christian Boehm{1}, Patrick Marty{1}, Naiara Korta Martiartu{3}, Koen van Dongen{2}, Xose Luis Dean-Ben{1}, Daniel Razansky{1}, Andreas Fichtner{1}
{1}ETH Zurich, Switzerland; {2}TU Delft, Netherlands; {3}University of Bern, Switzerland

Poster Session #3: C3bP-20: MTN: Brain and Cancer Theranostics
Location: P03 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Ayache Bouakaz, INSERM
Tao Sun, Northwestern University

7058: Acoustically Mediated Delivery of Anti-Cancer Drugs in a 3D Spheroid Model
Marie Roy{3}, Corentin Alix{3}, Julien Burlaud-Gaillard{4}, Damien Fouan{3}, William Raoul{2}, Ayache Bouakaz{3}, Thierry Lecomte{2}, Noboru Sasaki{1}, Sophie Serrière{3}, Jean-Michel Escoffre{3}
{1}Hokkaido university, Japan; {2}Inserm 1069 N2Cox, France; {3}Inserm 1253 iBraiN, France; {4}Inserm 1259 Mavivh, France

7701: Detection of Tumor Stiffness and Vasculature Changes Using Harmonic Motion Imaging and Ultrasound Localization Microscopy Following Power-Doppler-Guided Sonoporation
Yangpei Liu, Sua Bae, Shiqi Hu, Elisa Konofagou
Columbia University, United States

7740: Ultrasound-Assisted Targeted Delivery of Drug-Loaded Nanoparticles for Retinoblastoma Treatment
Jun Hong Park, Sourabh Mehta, Ramasamy Paulmurugan, Jeremy Dahl
Stanford University, United States

8069: Employing Focused Ultrasound to Enhance Gallium-68 Radiotracer Delivery Across the Blood-Brain Barrier for Improved PET Imaging of β-Amyloid in Transgenic Alzheimer's Disease Mice
Wenjing Li, Xiaochuan Zha, Xiaoyu Zhang, Haixin Dai, Suyun Pu, Rui Xu, Xinya Yao, Zonghua Luo, Bingbing Cheng
School of Biomedical Engineering, ShanghaiTech University, China

8773: Enhanced Nanoparticle Delivery Into Intracranial Glioma Using Rapid Short-Pulse Ultrasound Observed by Two-Photon Microscopy Intravital Imaging
Yiluo Xu, Ji Zhang, Mengni Hu, Kaili Chen, Siping Chen, Xin Chen, Gaixia Xu, Zhourui Xu, Yuanyuan Shen
Shenzhen University, China

8804: Ultrasound Molecular Imaging to Characterize Pro and Anti-Immune Markers Using Clinically Translatable Targeted MBs
Mahsa Bataghva{1}, Farbod Tabesh{1}, Chung-Hsin Wang{2}, Charly Kang{2}, Ramasamy Paulmurugan{1}, Steven Machtaler{4}, Ahmed El Kaffas{3}
{1}Stanford University, United States; {2}Trust Bio-Sonics, Taiwan; {3}University of California San Diego, United States; {4}University of Saskatchewan, Canada

8712: Concurrent Optical and Acoustic Droplet Vaporization Using a Single Optical Fiber as a Minimally Invasive Treatment Delivery Platform
Ching-Ting Huang, Zhe-Wei Gu, Pai-Chi Li
National Taiwan University, Taiwan

Poster Session #3: C3bP-21: MSR: Deep Learning
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Cameron Smith, Imperial College London

7081: Super Resolution ULM with Learned-Temporal Deep Unfolding
Yhonatan Kvich{2}, Ruud van Sloun{1}, Yonina Eldar{2}
{1}Eindhoven University of Technology, Netherlands; {2}Weizmann Institute of Science, Israel

7737: A Novel Approach to Ultrasound Super-Resolution via Deep Learning and Structured Illumination Sequences
Hyunsu Choi{2}, Qi You{3}, Yike Wang{3}, Jaesok Yu{1}, Pengfei Song{3}, Jihun Kim{2}
{1}DGIST, Korea; {2}Kangnam University, Korea; {3}University of Illinois Urbana-Champaign, United States

7877: Model-Based Ultrasound Localization Microscopy in the RF Domain
Vincent van de Schaft{1}, Oudom Somphone{2}, Ruud van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips, France

7889: Direct Diffusion Bridge for High-Frame Image Generation in Ultrasound Localization Microscopy
Shaoze Zhang, Hengrong Lan, Rui Wang, Xingyue Wei, Zhe Chen, Yiwei Liu, Jianwen Luo, Zuo-Xiang He
Tsinghua University, China

8085: Fast and Robust Ultrasound Localization Microscopy in Low-Contrast Environments Leveraging Deep Learning
Jiatao Qian{1}, Ying Zhou{3}, Zeping Gao{2}, Gaole Sai{1}, Hairong Zheng{3}, Teng Ma{3}
{1}College of Integrated Circuits and Optoelectronic Chips, Shenzhen Technology University, China, China; {2}Harbin Institute of Technology, School of Instrumentation Science and Engineering, Harbin, China, China; {3}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

8260: Attention USR-Net: An End-to-End Mapped Ultrasound Localization Microscopy
Fengling Meng, Huaying Li, Yinran Chen
Xiamen University, China

8365: Deep Unfolded Super-Localization in Ultrafast Ultrasound Imaging
Vassili Pustovalov, Duong-Hung Pham, Denis Kouamé
IRIT Laboratory, France

8442: 3D Ultrasound Localization Microscopy Using Object Detection Model
Xilun Liu, Mohamed Almekkawy
Pennsylvania State University, United States

8903: Neural Network Super-Resolution Microbubble Velocity Measurement Based on Multi-Inception UNet
Yizhuang Xie{1}, Yu Qiang{1}, Tianli Wang{2}, Weibao Qiu{1}, Yanyan Yu{3}
{1}Paul C.Lauterbur Research Center for Biomedical lmaging, Shenzhen Institute of Advanced Technolo, China; {2}School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen University, China; {3}School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen University, Shenzhen, China

Poster Session #2: C3aP-21: ASD-P SAW Devices
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00

7255: SAW Resonator Reflector Design for Gamma Loading Improvement
Yiliu Wang, Tommy Komatsu
Skyworks Solutions, Inc., United States

7280: Optimized Acoustic Mirror Stack for Layered LLSAW Devices Using Thin $LiNbO_3$ Plates
Sho Nagatomo{1}, Hiromu Okunaga{1}, Masakazu Mimura{1}, Tetsuya Kimura{2}
{1}Murata Manufacturing Co., Ltd., Japan; {2}Resonant Inc.,, United States

7419: Analysis of Longitudinal Leaky SAW with Phase Velocity of Near 10000 m/s on $LiNbO_3$/SiC Bonded Structure
Ryo Takei{1}, Masashi Suzuki{1}, Shoji Kakio{1}, Yasushi Yamamoto{2}
{1}University of Yamanashi, Japan; {2}Yamamoto-ADEC LLC, Japan

7675: Measurement of Temperature, Dynamic Strain Amplitude and Spectra Using a Single SAWR
Shane Winters, Mauricio Pereira Da Cunha
University of Maine, United States

7800: Ultra-Wideband SH-SAW Filters Using 30°Y-Cut $LiNbO_3$/SiO_2/Poly-Si/Si Multilayered Substrates
Yang Chang{2}, Shuxian Wu{1}, Luyao Liu{2}, Qiaozhen Zhang{2}, Feihong Bao{3}, Jie Zou{1}
{1}Fudan University, China; {2}Shanghai Normal University, China; {3}University of Electronic Science and Technology of China, China

7919: Vector Measurement of Nonlinear Responses Generated by SAW/BAW RF Devices Using Lock-In Amplifiers
Temma Doi, Tatsuya Omori
Chiba University, Japan

7927: High Frequency Hetero Acoustic Layer SAW Resonator Using Quartz Thin Plate on Sapphire
Shota Tanakura, Michio Kadota, Shuji Tanaka
Tohoku University, Japan

7939: High-Frequency Temperature-Stable SAW Filters Based on a Heterogeneous Integrated Multilayered Structure
Yuhan Xiang, Sicong Guo, Xiaomin Chen, Qidong Zhong, Xiuying Zhang, Changjian Zhou
South China University of Technology, China

7951: High-Sensitive Vector Visualization of Nonlinear Harmonic Responses Generated in RF-SAW Devices
Yasuhiro Kawaguchi, Gai Hiroki, Tatsuya Omori
Chiba university, Japan

7976: The Suppression of Transverse Modes in POI SAW Resonators with Selective Thinning of Silicon Substrate
Menghui Li, Mengke Qi, Yuanhang Chen, Yimin Cheng, Liang Cao, Xiaojing Mu
Chongqing University, China

8309: Enhanced Coupling Coefficient of Surface Acoustic Wave on AlN Film/High Velocity Substrates with Periodical Trough Structure
Huiling Liu{1}, Qiaozhen Zhang{3}, Hao Sun{2}, Xiuli Gao{2}, Nan Wang{1}, Yuandong Gu{1}
{1}College of Microelectronics, Shanghai University, China, China; {2}Institutional Center for Shared Technologies and Facilities, Shanghai Institute of Microsystem and I, China; {3}Shanghai Normal University, China

8333: 5.8-GHz Coupled Shear SAW Resonator Based on Z-Cut $LiNbO_3$/SiO_2/Si Substrate
Jie Chen, Kai Yang, Fuhong Lin, Haoran Tao, Jiming Fang, Chengjie Zuo
University of Science and Technology of China, China

8377: Study on Intermodulation Distortion in I.H.P. Saw Utilizing a Nonlinear FEM Model
Luyang Liu, Wenxuan Li, Jinyi Ma, Ruchuan Shi, Han Tao
Shanghai Jiao Tong University, China

8768: Double-Mode SAW Resonator Filter: Synthesis and Physical Interpretation Based on Conventional Topologies
Angel Romero, Ricardo Pampliega, Jordi Verdú, Pedro de Paco
Universidad Autónoma de Barcelona, Spain

8774: Transverse Resonance Suppression of AlN-Based Surface Acoustic Wave Resonators Using Trench Structure
Yuanhang Qu, Yan Liu, Xiang Chen, Xiyu Gu, Zesheng Liu, Min Wei, Jiaqi Ding, Chengliang Sun
Wuhan university, China

7602: Automatic Filter Design Algorithm Based on Machine Learning and Synthesis
Lihang Liao{1}, Xiangyu Zou{2}, Zhiyuan Wang{1}, Chen Ma{1}, Feixuan Huang{1}, Xi He{1}, Qinghua Ren{1}, Fengyuan Yang{1}, Yiming Ma{1}, Jianlin Chen{1}, Nan Wang{1}
{1}Shanghai University, China; {2}UNIVISTA, China

Poster Session #3: C3aP-22: TMU: Piezoelectric Micromachined Ultrasonic Transducers 2
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7216: Technology for Piezoelectric Micromachined Ultrasonic Transducers with Adaptive Acoustic Channel Geometry and Chip Size
Chris Stoeckel, Shubham Mulay, Katja Meinel, Joern Bankwitz, Jan Seiler, Dirk Ullmann, Danny Reuter
Fraunhofer ENAS, Germany

7365: Crosstalk Reduction in Piezoelectric Transducer Arrays Using Laser Micro-Machining
Alexis Carrion, Maxime Bilodeau, Nicolas Quaegebeur, Patrice Masson
Université de Sherbrooke, Canada

7570: Development and Characterization of PMUTs Using Enhanced Cavity SOI (EC-SOI) Wafers
Cyril Baby Karuthedath{2}, Abhilash Thanniyil Sebastian{2}, Juha Larismaa{1}, Katja Parkkinen{1}, Teuvo Sillanpaa{2}
{1}Okmetic Oy, Finland; {2}VTT Technical Research Centre of Finland, Finland

7574: Wideband and High-Sensitivity 1D PMUT Array Transducers
Kenji Suzuki, Naoki Shimizu, Hikaru Yagi, Yuta Nakayama, Takashi Mizuno
Konica Minolta, Inc., Japan

7611: AlScN and PZT-Based MEMS Transducers for Airborne Ultrasound Applications
Fabian Stoppel, Johannes Fankhänel, Christian Eisermann, Thorsten Giese, Isa Pieper
Fraunhofer ISIT, Germany

7861: Convex Bimorph PMUT for High Transmission Efficiency
Shin-Ichiro Umemura{2}, Yoshitaka Tadaki{1}
{1}MemsCore, Japan; {2}Tohoku University, Japan

7989: Piezoelectric Micromachined Ultrasonic Transducer (PMUT) Based on Bilayer X-Cut Lithium Niobate
Xiaoxi Zhao, Michiel Pertijs, Tomás Manzaneque
Delft University of Technology, Netherlands

7997: Imaging with a Row-Column (RC) Addressed PMUT Array
Sanjog Vilas Joshi, Sina Sadeghpour, Rui Esteves, Chen Wang, Michael Kraft
KU Leuven, Belgium

8002: Application of Continuous Wavelet Transform for Time-of-Flight Ranging Applications Using Air-Coupled pMUTs
Mantalena Sarafianou{1}, David Sze Wai Choong{1}, Duan Jian Goh{1}, Srinivas Merugu{1}, Yul Koh{1}, Peter Hyun Kee Chang{1}, Qing Xin Zhang{1}, Domenico Giusti{2}, Alberto Leotti{2}, Rossana Scaldaferri{2}, Madan Kunnavakkam{2}
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}ST Microelectronics, Italy; {2}ST Microelectronics, Singapore

8046: A Study on PVD PZT and Sc0.2Al0.8N PMUTs in Series and Parallel Connection for Optimizing Acoustic Performance
David Choong{1}, Daniel Chen{1}, Mantalena Sarafianou{1}, Duan Jian Goh{1}, Jihang Liu{1}, Merugu Srinivas{1}, Qing Xin Zhang{1}, Peter Chang{1}, Sagnik Ghosh{1}, Prakasha Chigahalli{1}, Yul Koh{1}, Domenico Giusti{2}, Alberto Leotti{2}, Liugi Barretta{2}
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}STMicroelectronics, Italy; {3}Università degli Studi Roma Tre, Italy

8188: A Multi-Frequency-Based Broadband ScAlN PMUT Array
Jingqi Chen{2}, Hanzhang Liu{2}, Yinjie Ma{2}, Zhengyu Li{2}, Xiaoxiang Gao{2}, Chuan Chen{2}, Zunliang Wang{2}, Xiaoduo Zhang{1}, Hui Li{1}, Feng Yin{2}
{1}Nanjing Sheng Xi Xing Yin Technology Limited, China; {2}Southeast University, China

8310: A High Fill-Factor High Density Large PMUT Phased Array
Hanzhang Liu{2}, Jingqi Chen{2}, Yinjie Ma{2}, Zhengyu Li{2}, Xiaoxiang Gao{2}, Chuan Chen{2}, Zunliang Wang{2}, Xiaoduo Zhang{1}, Hui Li{1}, Feng Yin{2}
{1}Nanjing Sheng Xi Xing Yin Technology Limited, China; {2}Southeast University, China

8419: Dual-Port Differential PZT pMUT with Bias-Tunable Displacement for Air-Coupled Ranging Applications
Junxiang Cai, Yiwei Wang, Tao Wu
Shanghaitech university, China

8555: Wideband Air-Coupled Piezoelectric MEMS Ultrasonic Transceiver
Seyedfakhreddin Nabavi, Mathieu Gratuze, Frederic Nabki
Ecole de technologie superieure, Canada

8619: Advanced 3D Packaging for Integrated 2D PMUT Arrays and Front-End Circuits
Alessandro Stuart Savoia{2}, Monica La Mura{2}, Mohammad Mahdi Dehghan Pir{2}, Enrico Boni{4}, Alessandro Ramalli{4}, Piero Tortoli{4}, Dutta Rahul{1}, Vempati Srinivasa Rao{1}, David Ho Soon{1}, Carlo Luigi Prelini{3}, Mark Shaw{3}, Domenico Giusti{3}
{1}Institute of Microelectronics, Singapore; {2}Roma Tre University, Italy; {3}STMicroelectronics, Italy; {4}University of Florence, Italy

8783: Electrode Coverage Design for Optimal Performance of Clamped Circular PMUTs
Aleksander Bajt{2}, Chris Stoeckl{1}, Katja Meinel{1}, Shubham Mulay{3}, Annett Krusch{3}, Jan Seiler{3}, Frank Vanselow{2}, Gabriele Schrag{4}
{1}Franhofer ENAS, Germany; {2}Fraunhofer EMFT, Germany; {3}Fraunhofer ENAS, Germany; {4}Technical University of Munich, Germany

Poster Session #3: C3bP-22: MTN: Theranostic Treatment Monitoring
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Avinoam Bar Zion, Technion

7060: 3D Monitoring of Microbubble Cavitation Activities with Row-Column Addressed Arrays
Hui Zhu, Yi Zeng, Xiran Cai
Shanghaitech University, China

7276: Monitoring the Post-Activation Patterns of High-Concentration, Heterogeneously Distributed Intratumoral Nanodroplets
Anqi Huang{1}, Qiquan Ruan{1}, Ziyan Jia{1}, Haitao Wu{1}, Kangyi Feng{1}, Mingxi Wan{1}, Yujin Zong{2}
{1}School of Life Science and Technology, Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

7327: High-Resolution Monitoring of Microbubble Cavitation Activity with the Cross-Correlated Angular Spectrum Method
Yi Zeng{1}, Hui Zhu{1}, Shukuan Lu{2}, Xiran Cai{1}
{1}ShanghaiTech university, China; {2}Xi'an Jiaotong University, China

7784: Spatio-Temporal Evolution of an Encapsulated Microbubble Dynamics During a Low-Intensity Focused Acoustic Vortex Excitation
Qingqin Zou{1}, Shifang Guo{1}, Yujin Zong{2}, Mingxi Wan{2}
{1}Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedi, China; {2}Xi'an Jiaotong University, China

7999: Super-Resolution Passive Cavitation Mapping with Accelerated Iterative Deconvolution
Shukuan Lu, Ruibo Su, Mingxi Wan
Xi'an Jiaotong University, China

8128: Ultrasound Tomography with a Ring-Array Ultrasound Transducer for Image-Guided Activation of Phase-Change Nanodroplets
Yan Yan{2}, David Bustamante{2}, Gaofei Jin{2}, Catalina Spatarelu{1}, Geoffrey Luke{1}, Mohammad Mehrmohammadi{2}
{1}Dartmouth College, United States; {2}University of Rochester Medical Center, United States

8899: Image Guidance of a Phased Array Transducer for Neuromodulation
Allison Dockum, Tony Phipps, Malachy Newman, Robert Treuting, Jiro Kusunose, Adam Neumann, Thilo Womelsdorf, Charles Caskey
Vanderbilt University, United States

Poster Session #3: C3bP-23: MCA: New Contrast Agents and Novel Imaging
Location: P06 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Louise Denis, CNRS, Sorbonne University

7113: Improvement of Contrast Ratio in Second Harmonic Component by Burst-Wave-Aided Contrast-Enhanced Active Doppler Ultrasonography
Kenji Yoshida{1}, Masaaki Omura{2}, Shinnosuke Hirata{1}, Tadashi Yamaguchi{1}
{1}Chiba University, Japan; {2}University of Toyama, Japan

7335: Influence of Tween 20 on the Formation and Acoustic Properties of Monodisperse Microbubbles Produced by Flow-Focusing
Chunjie Tan, Chang Lu, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

7360: Pulse Inversion Imaging with Nanobubble Ultrasound Contrast Agents
Dana Wegierak{1}, John Williams{2}, Volodymyr Rohatchuk{2}, Lauren Wirtzfeld{2}, Muhammad Khan{3}, Michael Kolios{3}, Agata Exner{1}
{1}Case Western Reserve University, United States; {2}FujiFilm Visualsonics, Canada; {3}Toronto Metropolitan University, Canada

8119: A High-Throughput, Cost-Effective Photobioreactor for the Production of Echogenic Gas Vesicles
Eleonora Muñoz-Ibarra, Byung Park, Baptiste Heiles, David Maresca
TU Delft, Netherlands

8194: Stability Analysis of Monodisperse Microbubbles Composed of Different Lipid Formulations
Chang Lu, Hongyi Zhang, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

8605: A Comparative Study of Contrast Enhanced Ultrasound Imaging Using Deep Learning vs. Amplitude Modulation: An In-Vivo Investigation
Thomas Lisson{1}, Mariam Fouad{1}, Jasmin Baier{2}, Anne Rix{2}, Fabian Kießling{2}, Georg Schmitz{1}
{1}Ruhr University Bochum, Germany; {2}RWTH Aachen, Germany

8886: Characterisation of an Almost 'Off the Shelf' Nanodroplet Formulation for Pre-Clinical Research
Paveekorn Supteranon{2}, Hilde Metzger{2}, Faraz Amini Boroujeni{2}, Carmel Moran{1}, Paul Prentice{2}, Helen Mulvana{2}
{1}University of Edinburgh, United Kingdom; {2}University of Glasgow, United Kingdom

Poster Session #3: C3aP-23: MSD: Systems and Devices
Location: P06 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Roger Zemp, University of Alberta

7022: Design and Implementation of a Multifunctional FPGA-Based System for Intravascular Ultrasound Imaging and Therapy
Amauri Assef{1}, Joaquim Maia{1}, Paula Moura{1}, Phuong Vu{2}, Adeoye Olomodosi{2}, Stephan Rojas{2}, Brooks Lindsey{2}
{1}Federal University of Technology - Parana (UTFPR), Brazil; {2}Georgia Institute of Technology, United States

7156: Sub-Nyquist Ultrasound Prototype: Hardware and Algorithm
Alon Mamistvalov, Danah Yatim, Shlomi Savariego, Moshe Namer, Nimrod Glazer, Yonina C. Eldar
Weizmann Institute of Science, Israel

7211: A Highly Integrated Ultrasound Open Platform to Develop and Test Advanced Techniques for Ultraportable Scanners
Valentino Meacci, Lorenzo Castrignano, Paolo Verdi, Alessandro Ramalli, Piero Tortoli, Enrico Boni
University of Florence, Italy

7385: Real-Time 3D Ultrafast Ultrasound Beamformer with FPGA
Zhengchang Kou, Marcia Yu, Michael Oelze
University of Illinois Urbana-Champaign, United States

7825: In Vivo Dual-Channel Widefield GCaMP Imaging Using Transparent Ultrasound Transducer
Young Hun Kim, Martin Prieto, Chunfu Lin, Yichi Zhang, Kamyar Firouzi, Merritt Maduke, Kim Butts Pauly, Butrus Khuri-Yakub
Stanford University, United States

7969: A Matrix Array for Volumetric Imaging Using a Microbeamforming ASIC
Benjamin Guerif, Victor Finel, David Savery, Philippe Vince, Claire Bantignies, Sophana Kok, Marie-Coline Dumoux, Emmanuel Montauban, Maxime Benchemoul, Martin Flesch, Guillaume Ferin
VERMON - Innovation department, France

8181: Design and Implementation of a FPGA-Based Airborne Ultrasound Sensing and Radiation Phased Array Device
Cheng-Fong Li, Man-Yung Yang, Guo-Wei Hong, Hao-Li Liu
Department of Electrical Engineering, National Taiwan University, Taiwan

8427: Anti-Reflective Microengineered Substrate for In Vitro Ultrasound Neuromodulation
Gandhika Wardhana, Tiago Costa, Massimo Mastrangeli
Delft University of Technology, Netherlands

8938: Design of Photoacoustic Modular Helmet for Neonatal Neurocritical Care
Ananya Tandri, Keshuai Xu, Emad Boctor, Jeeun Kang
Johns Hopkins University, United States

Poster Session #3: C3bP-24: MSD: Systems and Devices: Applications
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7545: Drug Release by Synergy Effect of Hydrogel Microcarrier Containing Microbubbles with Ultrasound Irradiation
Ryuto Yamakawa{2}, Hiroaki Onoe{1}, Yuta Kurashina{2}
{1}Keio University, Japan; {2}Tokyo University of Agriculture and Technology, Japan

7596: An Integrated Framework for Treatment Path Planning Based on Optical Markers for Robot-Assisted Focused Ultrasound Therapy in the Brain
Zhanchong Ou, Lukas Lindenroth, Antonios Pouliopoulos
King's College London, United Kingdom

7882: Towards Real Time GPU Decoding of Complete Complementary Coded Synthetic Transmit Aperture
Mohamed Tamraoui, Emmanuel Roux, Hervé Liebgott
Creatis, France

8059: Non-Invasive Evaluation System of Cells by Surface Acoustic Wave Device with Micro-Walled Chamber
Shun Koda{2}, Takahiro Yamada{3}, Hiroaki Onoe{1}, James Friend{3}, Yuta Kurashina{2}
{1}Keio University, Japan; {2}Tokyo University of Agriculture and Technology, Japan; {3}University of California, San Diego, United States

8223: Investigation of Real-Time Capabilities of the Qualcomm Snapdragon 8 for a Fourier-Based Imaging Algorithm
Franz Richter{2}, Edgar Manfred Gustav Dorausch{1}, Cornelius Kühnöl{1}, Pascal Stöver{2}, Omid Chaghaneh{1}, Julian Kober{1}, Tönnis Trittler{1}, Jochen Hampe{1}, Gerhard Fettweis{3}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Technical University of Dresden, Germany; {2}Technical University of Dresden, Germany; {3}Vodafone Chair Mobile Communications Systems, Technical University of Dresden, Germany

8511: Vendor-Independent Non-Intrusive Synchronization Signals Capture from Clinical Ultrasound Machines
Keshuai Xu{1}, Jintan Zhang{1}, Laeben Lester{2}, Jeeun Kang{2}, Emad Boctor{1}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University School of Medicine, United States

8716: 3D Catheter Localization Using a Dual-Frequency IVUS Transducer for Computational Fluid Dynamics-Based Stenosis Severity Evaluation
Hsuan-Yu Liu{2}, Weiwei Shao{1}, Yaoyao Cui{1}, Pai-Chi Li{2}
{1}Chinese Academy of Sciences, China; {2}National Taiwan University, Taiwan

Poster Session #3: C3aP-24: MIS: Image Formation 1
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Hervé Liebgott, University of Lyon

7436: Using Windowed Radon Transform to Measure Local Coherence Independently of Speed-of-Sound Variations in Plane-Wave Imaging
Samuel Beuret, Jean-Philippe Thiran
EPFL, Switzerland

7533: The Effect of a Bipolar Transmitter on Chirps and Binary Coded Excitations
Mudabbir Tufail Bhatti, Jørgen Arendt Jensen
Technical University of Denmark, Denmark

7711: Compact Implicit Neural Representations for Plane Wave Images
Mathilde Monvoisin{1}, Yuxin Zhang{2}, Diana Mateus{2}
{1}LS2N, France; {2}LS2N, Centrale Nantes, France

7873: Efficient Pulse Compression of Barker Coded Excitation for Portable Ultrasound Imaging System
Myeonghun Han, Jaeyeop Jang, Changhan Yoon
Inje university, Korea

8126: Matrix Approach for Harmonic Ultrasound Imaging
Thibaud Vernier{3}, William Lambert{4}, Nicolas Etaix{4}, Mathias Fink{2}, Foucauld Chamming'S{1}, Alexandre Aubry{2}
{1}Institut Bergonié, France; {2}Institut Langevin, France; {3}Institut Langevin / Supersonic Imagine, France; {4}Supersonic Imagine, France

8444: A Novel Nonlinear Frequency Compounding Method for B-Mode Imaging
Yuling Chen, Ching-Hua Chou, Ting-Lan Ji, Albert Gee, Zhao Ling Lu, Dave Napolitano, Donald Liu, Xiaowen Hu, Alejandro Garcia-Uribe, Satchi Panda, Wenli Bai
Mindray Innovation Center Silicon Valley, United States

8476: A Generalized SNR to Quantify Lesion Detectability for Modern Adaptive Beamformers
Siegfried Schlunk, Brett Byram
Vanderbilt University, United States

8578: Exploring Uncertainty Quantification for Ultrasound Beamforming
Silvia Seoni, Massimo Salvi, Kristen Meiburger
Politecnico di Torino, Italy

8688: Contrast Enhancement for Ring-Echo Image: A Probability Weighting Approach to Synthetic Aperture Reconstruction
Tianhan Tang{2}, Toshihide Iwahashi{2}, Atsushi Otsubo{2}, Takashi Azuma{1}
{1}Lily MedTech Inc., Japan; {2}University of Tokyo, Japan

8854: Coded Excitation Imaging with Tobe Arrays
Mudabbir Tufail Bhatti{2}, Tarek Kaddoura{3}, Muhammad Rahim Sobhani{3}, Darren Dahunsi{3}, Roger Zemp{3}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}Technicl university of Denmark, Denmark; {3}University of Alberta, Canada

Poster Session #3: C3aP-25: MTC: Tissue Characterization - Methods
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7248: Shear Wave-Induced Time-Varying Echo Envelope Statistics to Enhance Image Contrast of In Silico Inclusions
Arnaud Héroux, François Destrempes, Guy Cloutier
University of Montreal Hospital Research Center, Canada

7340: Spatial Coherence Segmentation for the Improvement of Backscatter Coefficient Estimates
George West{2}, Michael Lowe{1}, Peter Huthwaite{1}, Jeff Bamber{2}, Emma Harris{2}
{1}Imperial College London, United Kingdom; {2}Institute of Cancer Research, United Kingdom

7682: Towards Dual-Probe Abdominal Pulse-Echo Speed-of-Sound Imaging
Michael Jaeger{2}, Vera van Hal{1}, Richard Lopata{1}, Hans-Martin Schwab{1}
{1}Eindhoven University of Technology, Netherlands; {2}University of Bern, Switzerland

8678: Polar-Space Frequency Domain Filtering for Pulse-Echo Speed of Sound Imaging with a Convex Probe
Haotian Chen{1}, Jingyi Zuo{2}, Yuanbin Zhu{2}, Md Rizwanul Kabir{2}, Aiguo Han{2}
{1}University of Illinois Urbana-Champaign, United States; {2}Virginia Tech, United States

8952: Uncertainty Decomposition and Error Margin Detection of Homodyned-K Distribution in Quantitative Ultrasound
Dorsa Ameri{1}, Ali K. Z. Tehrani{1}, Ivan M. Rosado-Mendez{2}, Hassan Rivaz{1}
{1}Concordia University, Canada; {2}University of Wisconsin-Madison, Canada

8953: Simultaneous Estimation of the Nonlinearity Parameter and Attenuation Coefficient with the Gauss-Newton Levenberg-Marquardt Algorithm
María Luisa Montero, Roberto Lavarello, Andres Coila
Pontificia Universidad Católica del Perú, Peru

8959: Evaluation of Nonlinearity Parameter Estimation in Convex Transducers Using the Depletion Method
Rodolfo Huacasi Turpo, Andres Coila
Pontificia Universidad Católica del Perú, Peru

8960: Improving Spatial Resolution in Local Attenuation Imaging via Combination of Reference Frequency Method and Homomorphic Filtering
Kun-Lin Liu, Meng-Lin Li
National Tsing Hua University, Taiwan

Poster Session #3: C3aP-26: MPA: Advancements in Photoacoustic Imaging Systems
Location: P09 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Eno Hysi, University of Toronto

7152: Improving Axial Resolution in Photoacoustic Imaging Using Dual-Frequency Multi-Segment Ultrasonic Array
Weixia Cheng{2}, Ruochong Zhang{1}, Renzhe Bi{1}, Zheng Fan{2}
{1}Agency for Science, Technology and Research, Singapore; {2}Nanyang Technological University, Singapore

7770: Development of Illumination Method Using Spatial Phase Modulator for Non-Contact Optical Ultrasound Microscope
Kazuki Tamura, Shinpei Okawa
Hamamatsu University school of medicine, Japan

8231: Fibre-Optic Photoacoustic Beacon and 2D Sparse Sensor Array for 3D Tracking of Needles
Christian Baker{2}, Weidong Liang{2}, Richard Colchester{4}, Peng Lei{1}, Francois Joubert{2}, Sebastien Ourselin{2}, Simeon West{5}, Athanasios Diamantopoulos{3}, Adrien Desjardins{4}, Wenfeng Xia{2}
{1}GBA Institute of Collaborative Innovation, China; {2}King's College London, United Kingdom; {3}St.Thomas' Hospital, United Kingdom; {4}University College London, United Kingdom; {5}University College London Hospital, United Kingdom

8588: Coded Aperture Row Column Addressed Arrays for 3D Photoacoustic Imaging
Nizar Guezzi, Dongkyu Jung, Jaesok Yu
Daegu Gyeongbuk Institute of Science and Technology, Korea

8745: Three-Dimensional Photoacoustic Imaging Based on Synthetic Aperture Focusing on Rotating Single Linear Array Transducer
Ryo Murakami{2}, Yang Wang{2}, Ryosuke Tsumura{1}, Yichuan Tang{2}, Haichong Zhang{2}
{1}National Institute of Advanced Industrial Science and Technology, Japan; {2}Worcester Polytechnic Institute, United States

8948: Flexible Array Curvature and Sound Speed Estimations with a Maximum Spatial Lag-One Coherence Metric
Jiaxin Zhang, Kai Ding, Muyinatu Bell
Johns Hopkins University, United States

7904: SmartDAQ: Intelligent Data Acquisition System Enables Low-Latency Photoacoustic Imaging System
Yuwei Zheng, Ruixi Sun, Yuting Shen, Daohuai Jiang, Fengyu Liu, Feng Gao, Fei Gao
ShanghaiTech University, China

Poster Session #3: C3bP-25: MSD: Monitoring and Control Applications
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Baptiste Pialot, University of Florence

7467: Novel Wireless Elastic Ultrasonic Technology for Continuous Bladder Surveillance
Yu-Tzu Liu{1}, Qifa Zhou{3}, Cheng-Hsin Chuang{2}, Jian-Xing Wu{2}
{1}National Chin-Yi University of Technolog, Taiwan; {2}National Sun Yat-sen University, Taiwan; {3}University of Southern California, United States

8228: 3D Ultrasound Imaging with Active Instrumented Needle Tip Tracking: An Ex-Vivo Study
Javad Rostami{1}, Christian Baker{1}, Weidong Liang{1}, Simeon West{3}, Sunish Mathew{2}, Adrien Desjardins{2}, Edward Zhang{2}, Paul Beard{2}, Tom Vercauteren{1}, Sebastien Ourselin{1}, Laura Peralta Pereira{1}, Wenfeng Xia{1}
{1}Kings College London, United Kingdom; {2}University College London, United Kingdom; {3}University College London Hospitals NHS Foundation Trust, United Kingdom

8428: Machine Learning-Supported Closed-Loop Focused Ultrasound for Targeted Drug Delivery in the Brain
Hohyun Lee, Victor Menezes, Cynthia Baseman, Jae Hyun Kim, Pranav Premdas, Samhita Padmanabhan, Costas Arvanitis
Georgia Institute of Technology, United States

8503: Design of an Array Transducer for Localizing Microbubble Activity Through the Skull
Malachy Newman{1}, Jiro Kusunose{2}, M. Anthony Phipps{2}, Allison Dockum{1}, Ainsley McDonald-Boyer{1}, Charles Caskey{2}
{1}Vanderbilt University, United States; {2}Vanderbilt University Medical Center, United States

Poster Session #3: C3bP-26: MIS: Image Segmentation
Location: P09 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Flora Estermann, University of Lyon

7295: A Novel Approach for Automated Segmentation of Left Ventricle Based on Bidirectional Myocardium to Endocardium Translation Using Generative Adversarial Network
Noreen Fatima, Sajjad Afrakhteh, Libertario Demi
University of Trento, Italy

7911: Multifaceted Analysis of Carpal Tunnel Syndrome: Simultaneous Ultrasound Median Nerve Segmentation and CTS Classification Enabled by Deep Learning
Lin Hong-Kun{4}, Chiu Ting-Hsuan{2}, Wang Hao-Jen{1}, Lee Chia-Yen{3}
{1}National Taiwan University, Taiwan; {2}National Tsing Hua University, Taiwan; {3}National United University, Taiwan; {4}National Yang Ming Chiao Tung University, Taiwan

7962: Transformer-Based Knowledge Distillation for Echocardiography Image Segmentation
Sang-Yun Kim{2}, Seok-Hwan Oh{2}, Guil Jung{2}, Young-Min Kim{2}, Hyeonjik Lee{2}, Myeong-Gee Kim{1}, Hyuk-Sool Kwon{3}, Hyeon-Min Bae{2}
{1}Barreleye, Korea; {2}KAIST, Korea; {3}Seoul National University Bundang Hospital, Korea

8095: Advancing 3D ICE: Challenges and Deep Learning Strategies in Atrium Segmentation
Martina Casagrande, Quan Nguyen, Ivan Dudurych, Christoph Hennersperger, Stefan Wörz
LUMA Vision, Germany; LUMA Vision, Ireland

8488: Left Ventricular Myocardium Segmentation in 3D Echocardiography Incorporating Transfer Learning
Somayeh Akbari{1}, Konstantina Papangelopoulou{1}, Oana Munteanu-Mirea{2}, Jan D'Hooge{1}
{1}KU Leuven, Belgium; {2}University of Craiova, Belgium

Poster Session #3: C3aP-27: MIS: Tissue Classification and Characterization 2
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Pauline Muleki Seya, University of Lyon

8110: A Novel Neural Network for Intelligent Diagnosis of Prostate Cancer Based on Depth-Wise Separable Convolution and Attention Mechanism Using Ultrasound B-Mode Images
Yuzhan Huang{3}, Hengrong Lan{3}, Shuai Fu{1}, Luo Liao{2}, Qiong He{3}, Jianwen Luo{3}
{1}Department of ultrasound,Beijing university third hospital, China; {2}Peking University, China; {3}Tsinghua University, China

8160: Diagnostic Performance of Ultrasound Radiomics for At-Risk Non-Alcoholic Steatohepatitis and Significant Fibrosis
Gangqiao Xie{4}, Rui Wang{3}, Yong-Sheng Xia{2}, Shun-Ping Chen{2}, Xingyue Wei{3}, Zhiqiang Li{3}, Lijie Huang{3}, Qiong He{3}, Ming-Hua Zheng{1}, Lai Wei{4}, Jianwen Luo{3}
{1}Department of Hepatology, The First Affiliated Hospital of Wenzhou Medical University, China; {2}Department of Ultrasonography, The First Affiliated Hospital of Wenzhou Medical University, China; {3}School of Biomedical Engineering, Tsinghua University, China; {4}School of Clinical Medicine, Tsinghua University, Beijing, China, China

8472: Application of Transfer Learning for Breast Cancer Diagnosis Based on Three-Dimensional Ultrasound Images
Xinyi Wen{1}, Yang Xiao{2}, Sijie Chen{1}, Yanyan Yu{1}, Minhua Lu{1}, Xin Chen{1}, Weibao Qiu{2}
{1}School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen University, Shenzhen, China; {2}Shenzhen Institutes of Advanced Technology, China

8668: Guiding Ultrasound Breast Tumor Classification with Human-Specified ROI: A Differentiable Class Activation Map Approach
Haotian Chen{2}, Zikui Wang{1}, Aiguo Han{3}
{1}Stanford University, United States; {2}University of Illinois Urbana-Champaign, United States; {3}Virginia Tech, United States

8689: Interpretable Convolutional Neural Network for Predicting MRI Proton Density Fat Fraction from Liver Ultrasound Images: An Attention-Based Multiple Instance Learning Approach
Thodsawit Tiyarattanachai{1}, Luyao Shen{1}, Lindsey Negrete{1}, Krishna Bhatraju{1}, Neha Antil{1}, Aya Kamaya{1}, Ahmed El Kaffas{2}
{1}Stanford University, United States; {2}University of California San Diego, United States

8697: Preliminary Feature Extraction for Small Lesion Classification in Sonomammographic Images
Anna Pawlowska, Norbert Zolek
Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland

Poster Session #3: C3bP-27: TMI: Biomedical Transducers
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Brooks Lindsey, Georgia Institute of Technology

7178: Optimal Driving Conditions and Angles for an Ultrasound-Actuated Needle Device
Youheng Zeng{2}, Ashraf Agweder{1}, Graeme McLeod{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

7240: A Design and Manufacture of Sparse Hemispherical Ultrasonic Phased Array
Na Li{1}, Zihao Chen{3}, Chunlong Fei{4}, Zhihai Qiu{2}
{1}Guangdong Institute of Intelligence Science and Technology, China; {2}Guangdong Institute of intelligent Science and technology, China; {3}Hong Kong Polytechnic University, Hong Kong; {4}Xidian university, China

7288: Development of a 40/100 MHz Dual-Frequency Miniature Ultrasound Probe for Intravascular Ultrasound Imaging
Yashuo He, Xi Liu, Jiayi Zhang, Chang Peng
ShanghaiTech University, China

7536: Development of a Photoacoustic Transmitter-Based Drug Delivery System for Enhanced Particle Penetration in Tissue-Mimicking Gel
Jinyi Li, Hyoung Won Baac
Sungkyunkwan University, Korea; Sungkyunkwan University, China

8055: A Transparent Transducer for Intravascular Ultrasound and Photoacoustic Imaging
Min Su{1}, Chaorui Qiu{2}, Fei Li{2}, Weibao Qiu{1}
{1}Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China; {2}Xi'an Jiaotong University, China

8384: Can Wearable Ultrasound Sensors Enhance Early Detection of DVT? Exploring Optimized Designs & Functionalities
Nicholas Nowicki{1}, Mohammad Hossein Amini{2}, Haley Abramson{1}, Joshua Punnoose{1}, Constantin Smit{1}, Kelley Kempksi Leadingham{1}, Aliaksei Pustavoitau{1}, Amir Manbachi{1}
{1}Johns Hopkins University, United States; {2}University of Toronto, Canada

8440: Quarter-Wave Electrostrictive Sapphire-Backed Transducer (QUEST) TOBE Arrays
Mohammad R. Sobhani{1}, Negar Majidi{3}, Nathaniel Bly{3}, Roger Zemp{2}
{1}CliniSonix Inc., Canada; {2}CliniSonix Inc. & University of Alberta, Canada; {3}University of Alberta, Canada

8457: Transcranial Acoustoelectric Imaging (tABI) of Seizure Activity in Human Head Model with Neuronavigation
Nadia Abu Farha{1}, Margaret Allard{1}, Teodoro Trujillo{1}, Sehyuk Park{1}, Stephen Cowen{1}, Nan-Kuei Chen{1}, Paul Larson{1}, Martin Weinand{1}, Matt O'Donnell{2}, Jinbum Kang{2}, Russell Witte{1}
{1}UA, United States; {2}UW, United States

8707: Wearable Ultrasound Blood Pressure Monitoring System for Cardiovascular Health
Yu Chu, Xiangming Xue, Sipan Liu, Huaiyu Wu, Ali Onder Biliroglu, Omer Oralkan, Xiaoning Jiang
North Carolina State University, United States

8727: Body-Conforming Multi-Modal Sensing with Surface Electromyography Sensors and a Flexible Linear Ultrasound Array
Sunho Moon{1}, Xiangming Xue{2}, Vidisha Ganesh{2}, Darpan Shukla{1}, Yong Zhu{1}, Nitin Sharma{2}, Xiaoning Jiang{1}
{1}North Carolina State University, United States; {2}North Carolina State University and University of North Carolina-Chapel Hill, United States

8735: Enhancing Thrombolysis Efficiency with Acoustic Vortex: Microscale Mechanistic Study and Experimental Validation
Ning-Hsuan Chen, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

8740: Acoustic Metastructure-Lensed Multi-Focal Sonicator Designs for High-Throughput Therapeutic Ultrasound Testing In Vitro
Jinwook Kim{1}, Sandeep Kasoji{2}, Paul Dayton{3}
{1}Kyungpook National University, Korea; {2}Triangle Biotechnology, United States; {3}University of Carolina at Chapel Hill, United States

8836: A Dual-Frequency Linear Array Transducer with Co-Focusing Structure for HD Contrast and Harmonic Imaging
Weichang Wu
Chinese Academy of Sciences, China

Poster Session #3: C3bP-28: MIS: Assisted Ultrasound Imaging and Scanning
Location: P11 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7075: Drag-Based Key-Point Control for Myocardial Infarction Echocardiography Video Generation
Guil Jung{2}, Seok-Hwan Oh{2}, Myeong-Gee Kim{1}, Young-Min Kim{2}, Hyeon-Jik Lee{2}, Sang-Yun Kim{2}, Hyuk-Sool Kwon{3}, Hyeon-Min Bae{2}
{1}Barreleye, Korea; {2}KAIST, Korea; {3}Seoul National University Bundang Hospital, Korea

7367: Quantifying Elevational vs. Azimuthal Transducer Motion for Novice User Guidance
Sean Flannery, Shyam Bharat, Jonathan Sutton
Philips, United States

7379: Automated Assessment of Uterine Coverage in Blind Sweep Obstetric Imaging Protocol
Elizabeth Herbst, Sean Flannery, Shyam Bharat, Jonathan Sutton
Philips, United States

7392: Towards Automated Image Quality Assessment in Ultrasound Imaging
Mahesh Raveendranatha Panicker{3}, Madhavanunni A N{2}, Gayathri M{1}
{1}Fujifilm VisualSonics Inc, Netherlands; {2}Indian Institute of Technology Palakkad, India; {3}Singapore Institute of Technology, Singapore

7518: Maximum Information Line-Scanning by Anatomical Manifold Tracking
Wessel van Nierop, Oisín Nolan, Ben Luijten, Ruud van Sloun
Eindhoven University of Technology, Netherlands

7645: Automatic Blind Sweep Laterality Detection
Sean Flannery, Navaneetha Krishnan, Manikanda Krishnan, Leili Salehi, Shyam Bharat, Jonathan Sutton
Philips, India; Philips, United States

7776: Sensorless Force Estimation for Robotic Ultrasound Imaging Using CNN-RNN Based Network
Qian Liu, Eunbin Choi, Suhyun Park
Ewha Womans University, China; Ewha Womans University, Korea

7821: Priori Model and Image Feedback-Based Automatic Ultrasound Scanning Probe Position and Attitude Control Method
Haorui Huang{2}, Boheng Zhang{1}, Yi Shen{1}, Mingjian Sun{1}
{1}Harbin Institute of Technology, China; {2}Harbin Institute of Technology, Weihai, China

Poster Session #3: C3aP-28: MEL: Shear Waves - From Established to New Applications
Location: P11 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Bao-Yu Hsieh, Chang Gung University

7259: Development of High Frequency Ultrasound Shear Wave Elastography for Preclinical Liver Investigation: A Pilot Study
Lenin Chinchilla{2}, Gilles Renaud{3}, Marion Regnier{3}, Fadila Rayah{3}, Pierre Monbernard{3}, Catherine Postic{3}, Anthony Novell{1}, Jean-Luc Gennisson{1}
{1}BioMaps - Université Paris Saclay - CNRS, France; {2}BioMaps - Université Paris-Saclay, France; {3}Institut Cochin - INSERM U1016, France

7416: High-Resolution Ultrasound Elastography for Ocular Tissue Elasticity of Glaucoma Patients
Chi-Feng Chang, Galo Apolo Aroca, Junhang Zhang, Xunan Liu, Runze Li, Benjamin Xu, Qifa Zhou
University of Southern California, United States

7520: Adaptive Gaussian Filter for Reflective Wave Mitigation in Continuous Shear Wave Elastography for Liver Diagnosis
Naoki Tano{3}, Ren Koda{2}, Shunichiro Tanigawa{1}, Naohisa Kamiyama{1}, Yoshiki Yamakoshi{2}, Marie Tabaru{3}
{1}ge healthcare, Japan; {2}gunma university, Japan; {3}tokyo institute of technology, Japan

7713: Single Track Location Shear Wave Spectroscopic Imaging of Bio-Rheology
Siladitya Khan, Fan Feng, Zimeng Gao, Stefanie Hollenbach, Marvin Doyley, Stephen McAleavey
University of Rochester, United States

8468: Corneal Stiffness Assessment Using Ultrafast Shear Wave Elastography Based on Acoustic Radiation Force: Ex Vivo Study
Qiao Wang{1}, Chengzhi Yang{1}, Pengfei Xu{1}, Zhaofu Pu{2}, Diya Wang{1}
{1}School of Life Science and Technology, Xi'an Jiaotong University, China; {2}Shanghai Aerospace Electronic Technology Institute, Shanghai, China, China

8725: Ultrasonographic Evaluation of Vascular Response to Mechanical Compression During Induced Gingival Inflammation
Jaeman Woo{4}, Oliver Kripfgans{4}, I-Ching Wang{3}, Ankita Samal{3}, Amanda Rodriguez Betancourt{2}, J. Christopher Fenno{4}, Hsun-Liang Chan{1}
{1}Ohio State University, United States; {2}University of Illinois, United States; {3}University of Iowa, United States; {4}University of Michigan, United States

Poster Session #3: C3aP-29: MIS: 3D Ultrasound Imaging
Location: P12 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Sébastien Salles, CNRS

7613: Conformal Prediction for Explainable AI and Lesion Detection in 3D Cranial Ultrasound
Flora Estermann{3}, Valérie Kaftandjian{4}, Philippe Guy{4}, Philippe Quetin{1}, Philippe Delachartre{2}
{1}CH Avignon, France; {2}CREATIS (INSA Lyon), France; {3}CREATIS & LVA (INSA Lyon), France; {4}LVA (INSA Lyon), France

7726: 3D Deep Adaptively Efficient Attention Model to Segment Automated Breast Ultrasound
Hyunsu Jeong {2}, Chiho Yoon{3}, Hyunseok Lim{5}, Jongjun Won{5}, Gongning Luo{1}, Mingwang Xu{1}, Namkug Kim{6}, Chulhong Kim{2}
{1}Harbin Institute of Technology, Faculty of Computing, Korea; {2}Pohang University of Science and Technology, Convergence IT Engineering, Korea; {3}Pohang University of Science and Technology, Department of Electrical Engineering, Korea; {5}University of Ulsan College of Medicine, Department of Medical Science, Korea; {6}University of Ulsan, Department of Biomedical Engineering, Korea

7799: Advancing 3D Ultrasound Vasculature Imaging: Robust Frequency Domain Denoising with Row-Column Addressed Array
Dongkyu Jung, Nizar Guezzi, Sangheon Lee, Jaesok Yu
DGIST, Tunisia; DGIST, Korea

7890: Development of Machine Learning Based Classification Method for Carotid Plaques Using Portable 3D Ultrasound
Duo Xu{1}, Haibin Zhang{1}, Yunqian Huang{2}, Man Chen{2}, Rui Zheng{1}
{1}ShanghaiTech University, China; {1}ShanghaiTech University, Canada; {2}Tongren Hospital, China

8045: 3D Ultrafast ICE Image-Based In Vivo Ablation Catheter Tip Detection
Sebastian Herz, Martina Casagrande, Raja Bandaru, Christoph Hennersperger, Stefan Wörz
LUMA Vision, Netherlands; LUMA Vision, Germany

8065: Prostate Cancer Detection in Multimodal Ultrasound Imaging Using 3D Gray-Level Cooccurrence Matrix Texture Features
Florian Delberghe{2}, Simona Turco{2}, Giuseppe Valvano{1}, Wim Zwart{1}, Hessel Wijkstra{2}, Massimo Mischi{2}
{1}Angiogenesis Analytics, Netherlands; {2}Eindhoven University of Technology, Netherlands

Poster Session #3: C3bP-29: MPA: Digital Phantoms, Image Reconstruction, and Machine Learning
Location: P12 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Adrien Desjardins, University College London

7405: Unsupervised Neural Representation for Limited-View Photoacoustic Imaging Reconstruction
Youshen Xiao, Bowei Yao, Yuting Shen, Xiran Cai, Fei Gao
ShanghaiTech University, China

7408: Photoacoustic Digital Eye and Image Reconstruction in 3D
Sheng Liao{2}, Fan Zhang{2}, Yuwei Zheng{2}, Shangqing Tong{2}, Yuting Shen{2}, Feng Gao{2}, Hulin Zhao{1}, Fei Gao{2}
{1}Chinese PLA General Hospital, China; {2}ShanghaiTech University, China

7931: Model-Based Image Reconstruction for Linear Array Optoacoustic Imaging
Roberto Scardigno{2}, Silvia Seoni{3}, Christoph Dehner{1}, Antonio Brunetti{2}, Domenico Buongiorno{2}, Guillaume Zahnd{1}, Kristen Meiburger{3}
{1}iThera Medical, Germany; {2}Politecnico di Bari, Italy; {3}Politecnico di Torino, Italy

8213: 3D Photoacoustic Digital Brain and Multi-Speed-of-Sound Image Reconstruction
Fan Zhang{2}, Shangqing Tong{2}, Ruixi Sun{2}, Sheng Liao{2}, Yuwei Zheng{2}, Feng Gao{2}, Hulin Zhao{1}, Fei Gao{2}
{1}Chinese PLA General Hospital, China; {2}ShanghaiTech University, China

8308: Optical Tuning of Tissue-Mimicking Copolymer-in-Oil Gel for Multispectral Photoacoustic Imaging
Azin Khodaverdi, Magnus Cinthio, Esbjörn Reistad, Tobias Erlöv, Malin Malmsjö, Sophia Zackrisson, Nina Reistad
Lund University, Sweden

8529: Improving Transcranial Photoacoustic Imaging Using Deep Learning: A Numerical Study
Yu-Tong Wang{1}, Matthew Olmstead{1}, Hyungjoo Park{1}, Zixuan Tian{2}, Aiguo Han{3}, Yun Jing{1}
{1}Penn State University, United States; {2}University of Illinois Urbana-Champaign, United States; {3}Virginia Tech, United States

8538: Digital Phantoms for Quantitative Ultrasound and Photoacoustic Characterization of Thrombosis
Momina Masood, Sullivan Lauderdale, Alycen Wiacek
Oakland University, United States

8558: Machine Learning for the Prediction of Kidney Fibrosis: Comparison of Ultrasound and Photoacoustic Imaging
Omar Falou{2}, Zina Kamel{1}, Danielle Azar{1}, Maeashah Haque{2}, Elizabeth Berndl{2}, Darren Yuen{3}, Eno Hysi{3}, Michael C. Kolios{2}
{1}Lebanese American University, Lebanon; {2}Toronto Metropolitan University, Canada; {3}University of Toronto, Canada

C4L-01: MIM: New Imaging Techiques 2
Location: 506 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Magnus Cinthio, Lund University

7598: Longitudinal Vascular Monitoring of Acute and Diabetic Kidney Diseases with 3D Renal Ultrafast Ultrasound Doppler Imaging
Donghyeon Oh, Donghyun Lee, Jinseok Heo, Jooyoung Kweon, Uijung Yong, Jinah Jang, Yong Joo Ahn, Chulhong Kim
Pohang University of Science and Technology (POSTECH), Korea

7656: Quantifying Image Degradation Due to Skull Microstructure in Transcranial Ultrasound
Shriya Kapoor, Brooks D. Lindsey
Georgia Institute of Technology, United States

7785: A Novel Transmission Sequence and Motion Compensation for Improving Coherent Plane Wave Compounding of Rapidly Moving Targets
Jiyuan Du, Bingbing He, Xun Lang, Yufeng Zhang, Guang Shi
Yunnan University, China

8646: A Chitosan-Based Adhesive Hydrogel for Hands-Free Ultrasound Sensing
David Lemonnier{1}, Ahmed Bashatah{1}, Rajaram Kaveti{2}, Erica King{1}, Siddhartha Sikdar{1}, Amay Bandodkar{2}, Parag Chitnis{1}
{1}George Mason University, United States; {2}North Carolina State University, United States

7610: A Framework for Real-Time Visualization of Experimental and Simulated Ultrasound Images in Augmented Reality
Francois Gaits{3}, Gauthier Bouyjou{3}, Enrico Boni{2}, Alessandro Ramalli{2}, Piero Tortoli{2}, Adrian Basarab{1}, Nicolas Mellado{3}
{1}Centre de Recherche en Acquisition et Traitement de l'Image pour la Santé (CREATIS), INSA Lyon, France; {2}Department of Information Engineering, University of Florence, Italy; {3}Institut de Recherche en Informatique de Toulouse (IRIT), France

7182: Frequency-Differencing Method to Kickstart Waveform Inversion Without Cycle Skipping
Rehman Ali, Trevor Mitcham, Nebojsa Duric
University of Rochester, United States

C4L-02: MSR: Brain 1
Location: 701A (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Olivier Couture, Sorbonne University
Jean Provost, Polytechnique Montreal

8895: Robotic Compounding for Whole-Brain Non-Invasive 3D Ultrasound Localization Microscopy
Hatim Belgharbi, Francisco Santibanez, Paul Dayton, Gianmarco Pinton
University of North Carolina at Chapel Hill, United States

8516: Microbubble Track-Based Functional Ultrasound Localization Microscopy for Awake Mouse Imaging with High Sensitivity and Spatial Resolution
Yike Wang, Matthew Lowerison, Yirang Shin, Bing-Ze Lin, Qi You, Pengfei Song
University of Illinois Urbana Champaign, United States

7432: Super-Resolution Ultrasound Imaging of Cerebral Vasculature in Mice with Intracranial Glioma Xenograft
Zhifan Yu, Haoming Lin, Zidan Wang, Siping Chen, Xin Chen, Xinyu Zhang, Yuanyuan Shen
Shenzhen University, China

8659: Combined 3D Dynamic Contrast Enhanced Cerebrospinal Fluid Flow Imaging and Ultrasound Localization Microscopy
Bing-Ze Lin{2}, Yirang Shin{2}, Matthew R. Lowerison{2}, Qi You{1}, Daniel Llano{3}, Pengfei Song{2}
{1}Department of Bioengineering, UIUC, United States; {2}Department of Electrical and Computer Engineering, UIUC, United States; {3}Department of Molecular and Integrative Physiology, UIUC, United States

7350: Contrast Free High-Resolution Microvessel Imaging in Mouse Brain and Eye: Using Nonlinear Beamforming Technique with High Frequency Ultrasound Array
Zhengchang Kou{1}, Junhang Zhang{2}, Qifa Zhou{2}, Michael Oelze{1}
{1}University of Illinois Urbana-Champaign, United States; {2}University of Southern California, United States

C4L-03: MIS: Image and Signal Processing in Ultrasound Imaging 1
Location: 701B (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Jonathan Mamou, Weill Cornell Medicine
Adrian Basarab, University of Lyon

7361: Fast Spline Interpolation Using GPU Acceleration
Sebastian Kazmarek Præsius, Jørgen Arendt Jensen
Technical University of Denmark, Denmark

8720: Automatic Anatomical Classification, Tracking and Optimal Frame Selection During Transcranial Sonography for Midbrain Evaluation for Parkinson's Disease
Xinyi Wang{1}, Hongyu Kang{1}, Shuai Li{1}, Yu Sun{3}, Fangxian Li{2}, Xin Sun{2}, Chao Hou{2}, Saikit Lam{1}, Wei Zhang{2}, Yongping Zheng{1}
{1}Department of Biomedical Engineering, The Hong Kong Polytechnic University, Hong Kong; {2}Department of Ultrasound, Beijing Tiantan Hospital, Capital Medical University, China; {3}Research Institute of Smart Ageing, The Hong Kong Polytechnic University, Hong Kong

7094: Accuracy Vs Privacy: A Federated Learning Approach for Lung Ultrasound Pattern Classification
Umair Khan{4}, Leonardo Custode{4}, Andrea Smargiassi{3}, Riccardo Inchingolo{3}, Francesco Tursi{1}, Veronica Narvena{1}, Elena Torri{2}, Tiziano Perrone{2}, Libertario Demi{4}, Giovanni Iacca{4}
{1}Azienda Socio Sanitaria Territoriale di Lodi, Italy; {2}Humanitas Gavazzeni di Bergamo, Italy; {3}Policlinico Universitario Fondazione Agostino Gemelli, Italy; {4}University of Trento, Italy

8582: Automated Segmentation of M-Mode Lung Ultrasound Images Obtained from a Single-Element Wearable Ultrasonic Sensor
Khoa Tran{1}, Yuu Ono{1}, Sreeraman Rajan{1}, Robert Arntfield{2}
{1}Carleton University, Canada; {2}Western University, Canada

8913: CMUT-Based Passive Cavitation Detector for Microbubble Localization
Reza Pakdaman Zangabad, M. Sait Kilinc, Costas Arvanitis, F. Levent Degertekin
Georgia Institute of Technology, United States

8401: Broadband Ultrasound Transducers for Blood Vessel Detection During Fine Needle Aspiration Procedures
Benjamin Kreager{2}, Huaiyu Wu{2}, Wei-Yi Chang{1}, Jian Tian{1}, Xiaoning Jiang{2}
{1}CTS Advanced Materials, United States; {2}North Carolina State University, United States

8106: Three-Dimensional Local Shear-Wave Viscoelastographic Estimation by System Identification for Prostate Cancer Localization
Xueting Li{2}, Florian Delberghe{2}, Simona Turco{2}, David M Mills{3}, Kirk Wallace{3}, Giuseppe Valvano{1}, Wim Zwart{1}, Hessel Wijkstra{2}, Massimo Mischi{2}
{1}Angiogenesis Analytics, Netherlands; {2}Eindhoven University of Technology, Netherlands; {3}GE HealthCare, United States

8567: Estimation of Tissue Viscoelasticity Through Twin Peak Method and Shear Wave Elastography
Shuvrodeb Adhikary{2}, Matthew Urban{1}, Murthy Guddati{2}
{1}Mayo Clinic, United States; {2}NC State University, United States

7095: Shear Wave Propagation Speed Reflects the Interstitial Pressure State Within Poroelastic Tissues: Analysis of the Confounding Factors
Ariana Cihan{2}, Kristyna Holko{2}, Luxi Wei{1}, Hendrik Vos{1}, Charlotte Debbaut{2}, Patrick Segers{2}, Annette Caenen{3}
{1}Erasmus MC, Netherlands; {2}Ghent University, Belgium; {3}KU Leuven, Belgium

7835: In a Blinded Reader Study, VisR RE and RV Yield Higher AUC Than ARFI PD for Breast Cancer Diagnosis
Anna Phillips, Caterina Gallippi
University of North Carolina at Chapel Hill, United States

7850: Phase Velocity Estimation Using Point Limited Shear Wave Elastography
Wiktor Jachym{1}, Matthew Urban{2}, Piotr Kijanka{1}
{1}AGH University of Krakow, Poland; {2}Mayo Clinic, United States

8577: Evaluating the Safety and Efficacy of Acoustic Radiation Force Elastography in Assessing the Mechanical Properties of the Crystalline Lens
Christian Zevallos-Delgado{1}, Taye Mekonen{1}, Chaitanya Duvvuri{1}, Leana Rohman{3}, Justin Schumacher{2}, Manmohan Singh{1}, Michael Twa{1}, Giuliano Scarcelli{2}, Fabrice Manns{3}, Kirill Larin{1}, Salavat Aglyamov{1}
{1}University of Houston, United States; {2}University of Maryland, United States; {3}University of Miami, United States

C4L-05: Nonlinear Acoustics (PNL) 2
Location: 701D (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Lei Zhang, Institute of Materials Research and Engineering, Agency for Science, Technology and Research

7844: Evolution of Phononic Frequency Combs in Curved Piezoelectric Micromachined Ultrasonic Transducers (PMUTs) Under Single-Tone Actuation
Praveen Kumar, Linet Thomas, Sahana D, Chandrashekar Ln, Antony Jeyaseelan, Gayathri Pillai
Indian Institute of Science, India

8416: Nonlinearity Analysis of Dual Electrodes Piezoelectric Micromachined Ultrasonic Transducer
Junxiang Cai, Mingye Du, Tao Wu
Shanghaitech university, China

7722: The Nonlinear Formulation and Analysis of Frequency-Temperature Relations of Vibrations of Quartz Crystal Plates
Jiahui Liang{1}, Ji Wang{1}, Longtao Xie{1}, Yook-Kong Yong{2}, Xixi Wang{3}, Shiyung Pao{4}
{1}Ningbo University, China; {2}Rutgers University, United States; {3}TXC (Ningbo) Corporation, China; {4}TXC Corporation, Taiwan

7147: Experimental Studies on Power and Frequency Dependences of Nonlinear Products in TC-SAW Devices
Viateur Iragire, Yuanyuan Liu, Jingfu Bao, Ken-Ya Hashimoto
UESTC, China; UESTC, Japan

8508: Phononic Frequency Combs in Beam Structures
Yook-Kong Yong
Rutgers University, United States

8355: Designated-Point Sound Delivery Based on Nonlinear Effect at Ultrasonic Focus
Guanjun Yin{1}, Yanna Tang{1}, Pan Li{2}, Jianzhong Guo{1}
{1}Shaanxi Normal University, China; {2}Weinan Normal University, China

C4L-06: ASD SAW Devices 2
Location: 701E (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Hagen Schmidt, IFW Dresden
Natalya Naumenko, National University of Science and Technology MISIS

8237: Selectively Tuning the In-Plane Orientation of Resonators in SAW Filters for Flatter Out-of-Band Characteristics
Jinbo Wu{2}, Shibin Zhang{1}, Liping Zhang{2}, Pengcheng Zheng{1}, Xiaoli Fang{1}, Xuedi Tian{1}, Xinjian Ke{1}, Kai Huang{1}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}XOI Technology Company Ltd., China

7680: Filter Performances for 5G Bands Based on SCAW Design on POI
Sylvain Ballandras, Eric Michoulier, Emilie Courjon, Tony Makdissy, Alexandre Clairet, Thierry Laroche, Florent Bernard, Gabrielle Aspar, Cédrick Chappaz, Christophe Didier, Saly Ndiaye, Alexandre Raveski, Roland Guerre, Aziz Alami-Idrissi
SOITEC SA, France

7143: 8 GHz Harmonic Surface Acoustic Wave Ladder Filters with Grooved Al Electrodes in $LiNbO_3$ Substrate
Michio Kadota, Fuyuko Yamashita, Shuji Tanaka
Tohoku university, Japan

8207: High Frequency LLSAW Filters with Higher Order Modes Elimination Based on $LiNbO_3/SiO_2$/Sapphire Substrate
Boyuan Xiao{3}, Sulei Fu{3}, Huiping Xu{3}, Peisen Liu{3}, Qiufeng Xu{3}, Xinchen Zhou{3}, Qiaozhen Zhang{1}, Rui Wang{3}, Cheng Song{3}, Fei Zeng{3}, Weibiao Wang{2}, Feng Pan{3}
{1}Shanghai Normal University, China; {2}SHOULDER Electronics Limited., China; {3}Tsinghua University, China

7505: Study of Monolithic Multiband SAW Filters for S-Band
Mijing Sun{2}, Liping Zhang{3}, Shibin Zhang{2}, Pengcheng Zheng{2}, Juxing He{2}, Xinjian Ke{2}, Kai Huang{2}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information, China; {2}Shanghai Institute of Microsystem and Information Technology, China; {3}Shanghai Xin Ou Integration Technology Co., Ltd., China

7763: Demonstration of Spurious-Free and Low-Loss X-Band SAW Filter
Liping Zhang{2}, Shibin Zhang{1}, Mijing Sun{1}, Jinbo Wu{2}, Pengcheng Zheng{1}, Xiaoli Fang{1}, Dongchen Sui{1}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}Shanghai Xin Ou Integration Technology Co., Ltd, China

C4L-07: TMU: Capacitive Micromachined Ultrasonic Transducers 1
Location: 701F (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Omer Oralkan, NC State University
Erik Vilain Thomsen, Technical University of Denmark

7464: Next Generation Collapse Mode CMUT Towards DC Bias-Free
Rob van Schaijk, Pieter Robaeys, Marta Saccher, Micha In 'T Zandt, Peter Timmermans, Eugene Timmering, Johan Klootwijk
Philips, Netherlands

8923: CMUT-Based Focused Ultrasound Transmit Array for Blood-Brain Barrier Opening in Small Animal Models
Sait Kilinc, Benjamin Skowronski, Reza Zangabad, Jeremy Colton, Costas Arvanitis, Levent Degertekin
Georgia Institute of Technology, United States

8680: Demonstration of Vector Flow Imaging with CMUT Arrays on a Rotating Disc Phantom
Eda Begum Erdogan{2}, Nairit Das{2}, Geraldi Wahyulaksana{1}, Erdem Sennik{2}, Ali Onder Biliroglu{2}, Jeffrey Ketterling{1}, Yalcin Yamaner{2}, Omer Oralkan{2}
{1}Cornell University, United States; {2}North Carolina State University, United States

8075: Nonlinear Difference-Frequency Ultrasound via Dual-Annular Capacitive Micromachined Ultrasonic Transducer Array
Keun Young Huh{1}, Dong Hun Kim{1}, Dong-Hyun Kang{1}, Young Seok Kwon{1}, So-Yun Shin{1}, Soo Jin Kim{2}, Byung Chul Lee{1}
{1}Bionics Research Center, Korea Institute of Science and Technology (KIST), Korea; {2}School of Electrical Engineering, Korea University, Korea

8815: Preliminary Demonstration of Pulse-Echo Imaging with a Long Monolithic Flexible CMUT Array for Conformal Sonography
Amirhossein Omidvar, Robert Rohling, Edmond Cretu, Mark Cresswell, Antony J Hodgson
University of British Columbia, Canada

8137: Fabrication and Characterization of a Large Scale 512+512 Anodically Bonded Row-Column Addressed CMUT Array
Kitty Steenberg, Erik Vilain Thomsen, Rune Sixten Grass, Jørgen Arendt Jensen
Technical University of Denmark, Denmark

C4L-08: Towards Application
Location: 701G (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Alexander Martin, Nagoya Institute of Technology

8073: Piezoelectric Films for Surface Haptics
Sebastjan Glinsek, Juliette Cardoletti, Rao Nagmalleswar, Longfei Song, Emmanuel Defay
Luxembourg Institute of Science and Technology, Luxembourg

8010: Investigating Self-Heating of Domain Wall Memristor Devices Using Scanning Thermal Microscopy
Lindsey Lynch, Kristina Holsgrove, Marty Gregg, Raymond McQuaid
Queen's University Belfast, United Kingdom

8102: Electrical Properties and Stability Study on Lead-Free Homo- and Heterovalent Substituted $Bi_{0.5}Na_{0.5}TiO_3$ Thin Films for Energy Storage
Herbert Kobald{1}, Alexander Kobald{1}, Ivana Panzic{1}, Marco Deluca{2}
{1}Materials Center Leoben Forschung GmbH, Austria; {2}Silicon Austria Labs, Austria

9149: Functionality and Friction: Mapping the Three-Dimensional Vector Nanoelectromechanics of Conventional and Weak Ferroelectrics
Roger Proksch
Asylum Research, United States

7837: Improved AFM Measurement Accuracy and Precision Using Quadrature Phase Differential Interferometry for Tip Displacement Sensing
Roger Proksch, Aleksander Labuda, Joel Lefever, Jason Li, Ben Ohler, Taesung Lee, David Beck
Oxford Instruments Asylum Research, Korea; Oxford Instruments Asylum Research, United States

C4L-09: Doped Hafnium Oxide - Devices/Material 2
Location: 701H (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Alexander Martin, Nagoya Institute of Technology

8077: FeFET Gate Stack Performance Improvement via Heterogeneous Co-Doped Ferroelectric Thin Films
Shouzhuo Yang{1}, David Lehninger{1}, Fred Schöne{1}, Konrad Seidel{1}, Maximilian Lederer{1}, Gerald Gerlach{2}
{1}Fraunhofer IPMS-CNT, Germany; {2}TU Dresden, Germany

8730: Material Engineering for Ferroelectric NAND Flash Memory
Cheol Seong Hwang
Seoul National University, Korea

8717: Electrode and Interface Engineering Toward Low Voltage Operating Ferroelectric Random-Access-Memory
Min Hyuk Park
Seoul National University, Korea

7649: Reliability Enhancement of (Hf,Zr)O_2 Ferroelectric Thin Film Through Process Optimization of Novel Molybdenum Nitride Electrode
Hyojun Choi, Kun Yang, Ju Yong Park, Sun Young Lee, Hyun Woo Jeong, Hyeong Seok Choi, Jaewook Lee, Dong In Han, Min Hyuk Park
Seoul National University, Korea

7814: Ultrathin Ferroelectric Hafnia Membranes with Metastable Phases
Yufan Shen{2}, Kosuke Ooe{1}, Xueyou Yuan{3}, Tomoaki Yamada{3}, Shunsuke Kobayashi{1}, Mitsutaka Haruta{2}, Daisuke Kan{2}, Yuichi Shimakawa{2}
{1}Japan Fine Ceramics Center, Japan; {2}Kyoto University, Japan; {3}Nagoya University, Japan

C4L-10: Ferroelectric Thin Films 3
Location: 702 (TaiNEX 2)
16:30 - 18:00
Session Chair(s): Jerome Wolfman , CNRS/Université de Tours

8328: Electro-Optic Effect in Ferroelectric Thin Films: From Classical Perovskites to Emerging Fluorites and Wurtzites
Tomoaki Yamada{4}, Shinya Kondo{3}, Xueyou Yuan{2}, Kotoko Abe{2}, Kazuki Okamoto{5}, Hiroshi Funakubo{5}, Lei Meng{1}, Takanori Nagasaki{2}
{1}Beijing University of Technology, China; {2}Nagoya University, Japan; {3}Nagoya University/Okayama University, Japan; {4}Nagoya University/Tokyo Institute of Technology, Japan; {5}Tokyo Institute of Technology, Japan

8052: Dielectric Response of $SrTiO_3$ Thin Films Under AC Field
Nobuo Nakajima{1}, Kai Kamijo{1}, Jun-Ichi Adachi{2}, Yasuhiro Niwa{2}, Sou Yasuhara{3}, Shintaro Yasui{3}
{1}Hiroshima University, Japan; {2}IMSS, KEK, Japan; {3}Tokyo Institute of Technology, Japan

7484: Ferroelectricity of Ce-Mn Substituted ZnO Thin Films
Isaku Kanno, Atsuhiro Tamai, Sanghyo Kweon, Hideaki Adachi
Kobe University, Japan

C4L-11: Resonant Sensors for Environmental Monitoring
Location: 703 (TaiNEX 2)
16:30 - 18:00

8995: Piezoelectric Resonant Sensors for Smart Environmental Monitoring
Hoe Joon Kim
DGIST, Korea

7955: Residual Stress Analysis in ScAlN Micro-Diaphragm for High Sensitivity and Wide Range Pressure Sensing
Jihang Liu{1}, Daniel Ssu-Han Chen{1}, Goh Duan Jian{1}, David Choong Sze Wai{1}, Merugu Srinivas{1}, Huamao Lin{1}, Qing Xin Zhang{1}, Peter Chang Hyun Kee{1}, Domenico Giusti{2}, Alberto Leotti{2}, Filippo D'ercoli{2}, Carla Lazzari{2}, Riccardo Tacchin
{1}Institute of Microelectronics, Singapore; {2}ST Microelectronics, Italy

8504: Experimental Demonstration of a Plasmonically-Enhanced Vacuum-Packaged LVR-Based Gas Sensor
Aurelio Venditti, Farah Ben Ayed, Pietro Simeoni, Zhenyun Qian, Matteo Rinaldi
Northeastern University, United States

8247: Magnetic Surface Acoustic Waves Sensors (MSAW) Based on Love Waves: Towards the Nano-Tesla Detection
Prince Mengue{1}, Yang Yang{2}, Laurine Meistersheim{1}, Sami Hage-Ali{1}, Cecile Floer{1}, Sébastien Petit{1}, Demba Ba{1}, Michel Hein{1}, Omar Elmazria{1}
{1}Institut Jean Lamour, France; {2}School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, China

7534: Thin $LiNbO_3$ Shear Horizontal Acoustic Plate Mode Biosensor
Caíque Veras{1}, Julien Delprato{1}, Samuel Queste{2}, Thibault Ricart{3}, Delphine Rolland{1}, Elisa Soulat{1}, Pierre Perreau{1}, Thomas Alava{1}, Pascal Mailley{1}, Marie Bousquet{1}, Alexandre Reinhardt{1}
{1}CEA-Leti, France; {2}FEMTO-ST, France; {3}Smart R&D, France

C4L-12: MTH: Advanced Therapeutic Ultrasound Technologies
Location: 500 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Mohammad Mehrmohammadi, University of Rochester Medical Center
Mathieu Pernot, ESPCI Paris

7482: Numerical Model of Transthoracic Ultrasound Propagation for Non-Invasive Cardiac Ultrasound Therapy
Clara Magnier{5}, Gauthier Amis{1}, Wojciech Kwiecinski{1}, Daniel Suarez Escudero{1}, Elie Mousseaux{2}, Guillaume Goudot{3}, Emmanuel Messas{3}, Mathieu Pernot{4}
{1}Cardiawave, France; {2}Hôpital Européen Georges Pompidou, APHP, Radiologic Department, France; {3}Hôpital Européen Georges Pompidou, APHP, Vascular Medicine Department, France; {4}Physics for Medicine Paris, Inserm, ESPCI PSL Paris, CNRS, France; {5}Physics for Medicine Paris, Inserm, ESPCI PSL Paris, CNRS, Cardiawave, France

7679: A Pre-Clinical MR-Guided All-in-One Focused Ultrasound System for Murine Brain Studies
Tarana Parvez Kaovasia, Sarah Duclos, Dinank Gupta, Kourosh Kalayeh, Mario Fabiilli, Douglas Noll, Jonathan Sukovich, Aditya Pandey, Timothy Hall, Zhen Xu
University of Michigan, United States

7744: Noise Suppression Algorithm with Convolutional Neural Network (CNN) for Ultrasound Imaging During High-Intensity Focused Ultrasound Exposure
Ryo Takagi{2}, Kazuki Tamura{1}, Kazuyo Ito{3}
{1}Hamamatsu University, Japan; {2}National Institute of Advanced Industrial Science and Technology (AIST), Japan; {3}Tokyo University of Agriculture and Technology, Japan

8117: Acoustic Waveform Optimization for Improved Mild Hyperthermia in Cancer Therapy
David Bustamante{1}, Yan Yan{2}, Nebojsa Duric{2}, Mohammad Mehrmohammadi{2}
{1}University of Rochester, United States; {2}University of Rochester Medical Center, United States

7950: Dual-Mode Ultrasound Interstitial Catheter for Robot-Assisted Ultrasound-Navigation-Guided Conformal HIFU Therapy: In-Vitro Experimental Validation
Thomas Biscaldi{2}, Romain L'huillier{1}, Laurent Milot{1}, W. Apoutou N'djin{2}
{1}Department of Radiology, Hospices Civils de Lyon, Lyon, France, France; {2}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, F-69003, LYON, France

7787: Low-Intensity Pulsed Ultrasound Improved the Obesity-Associated Cardiac Dysfunction in Mice
Min He, Jingsong Dong, Dean Ta
Fudan University, China

C4L-13: Compact Optical Clocks and Novel Techniques
Location: 501 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Ekkehard Peik, Physikalisch-Technische Bundesanstalt

8882: Optical Clocks in the Field
Martin Boyd, Arman Cingoz, Abijith Kowligy, Micah Ledbetter, Guthrie Partridge, Parth Patel, Evan Popp, Akash Rakholia, Frank Roller, Jonathan Roslund, Dan Sheredy, Jamil Abo-Shaeer
Vector Atomic, United States

8239: A Compact Rubidium Optical Clock Based on Modulation Transfer Spectrum
Chen Zhendong{2}, Ruoao Yang{2}, Qiaohui Yang{2}, Tianyu Liu{2}, Ya Wang{1}, Jie Miao{2}, Duo Pan{2}, Jianjun Wu{2}, Zhigang Zhang{2}, Jingbiao Chen{2}
{1}Beijing University of Posts and Telecommunications, China; {2}Peking university, China

7439: Continuous Two-Photon Spectroscopy on the 1S0 – 1D2 Transition of 88Sr
Kai Suekane, Hidetoshi Katori
University of Tokyo, Japan

C4L-14: Acoustic Imaging and Microscopy (NAI) and Flow Measurement (NFM)
Location: 503 (TaiNEX 1**)**
16:30 - 18:00
Session Chair(s): Mami Matsukawa, Doshisha University
David Weik, TU Dresden

7329: High-Frequency 3D Ultrasonic Phased-Array Imaging Based on Piezoelectric Transmitter and Ultra-Multiple Laser Scan
Yoshikazu Ohara{2}, Takumi Yamada{2}, Yuto Fujikawa{2}, Timothy J. Ulrich{1}, Sinan Li{3}
{1}Los Alamos National Laboratory, Texas A&M University, United States; {2}Tohoku University, Japan; {3}Verasonics Inc., United States

7859: Position- and Posture-Estimation Method in Bathroom Using Spatial Ultrasound
M. Shahrul Amir Kamarulzaman, Shun Sato, Ryotaro Ohara, Yuto Yasuda, Shintaro Izumi, Hiroshi Kawaguchi
Kobe University, Japan

8074: Feasibility of Detecting and Imaging Deeply Buried Voids Using GHz Half Wavelength Contact Acoustic Microscopy
Benoit Quesson{2}, Douwe van Willigen{2}, Lars Hörchens{2}, Anne Maaike Gerritsma{2}, Janusz Bogdanowicz{1}, Cong Chen{1}, Paul van Neer{2}
{1}IMEC, Belgium; {2}TNO, Netherlands

8030: Ultrasonic Imaging and Profilometry Using Synthetic Aperture with MHz PMUTs in Air
David Choong, Mantalena Sarafianou, Duan Jian Goh, Sagnik Ghosh, Yul Koh
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

8369: Flow Evaluation Using a Transparent Cerebral Artery Model with an Aneurysm
Koki Akiyoshi, Tomoya Ikeda, Naoki Hashimoto, Mami Matsukawa
Doshisha University, Japan

8376: Flow Angle Determination for a Heart Phantom Using Transverse Oscillation
Evangelos Vouros, Billy Yiu, Jorgen Arendt Jensen
Denmark's technical University, Denmark

C4L-15: Machine Learning for Ultrasonics, Ferroelectrics and Frequency Control
Location: 507 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Bruno Grandi Sgambato, Imperial College London

7332: Harnessing Implicit Volume Representation with an Absolute Rotating Coordinate System for Precise Volume Estimation and Sampling
Tal Grutman, Tali Ilovitsh
Department of Biomedical Engineering, Tel Aviv University, Israel

7565: Database-Driven High-Throughput Solid-State Synthesis and Characterization of $BiFeO_3$-$BaTiO_3$ Ceramics for Energy Applications
Udo Eckstein, Michel Kuhfuß, Tobias Fey, Kyle Webber
Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

7658: A Multilevel Sensing Adversarial Framework for Signal Recovery in Ultrafast Ultrasound
Jiajing Zhang, Wei-Ning Lee
University of Hong Kong, Hong Kong

7691: Multiple Pregnancy Detection from Ultrasound Blind Sweeps
Leila Kalantari, Subhendu Seth, Manikanda Krishnan, Sutton Jonathan, Melanie Jutras, Anuradha Anuradha
Philips, United States; Philips, India

8397: Synthesizing Ultrasound Datasets Using Mask Conditional Diffusion Models
Harsh Suthar, Prasad Sudhakar, Naveen Paluru, Avinash Gopal, Pavan Annangi
GE HealthCare, India; GE HealthCare, United States

8809: AMHR: Autoencoding Multi-Plane Holographic Reconstruction for Accurate Acoustic Manipulation
Hao Quan, Wei Zhou, Xinjia Li, Long Meng
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

C4L-16: MTN: Brain Theranostics
Location: 502 (TaiNEX 1)
16:30 - 18:00
Session Chair(s): Tali Ilovitsh, Tel Aviv University
Tommaso Di Ianni, UCSF

9008: Breaking Barriers: Transforming the Diagnosis and Treatment of Brain Diseases Through Focused Ultrasound
Hong Chen
Washington University in St. Louis, United States

7301: Enhanced Capillary Delivery with Nanobubble-Mediated Blood-Brain Barrier Disruption and Advanced High Resolution Vascular Segmentation
Roni Gattegno, Lilach Arbel, Noa Riess, Hila Shinar, Sharon Kats, Tali Ilovitsh
Tel Aviv University, Israel

7275: Transcranial Monitoring of Microbubble Dynamic Changes After Focused Ultrasound Blood-Brain Barrier Opening with Super-Resolution Ultrasound Imaging
Sua Bae, Stephen Lee, Elisa Konofagou
Columbia University, United States

8922: Closed Loop Non-Invasive Cerebral Neuromodulation Using Focused Ultrasound and 4D Functional Ultrasound Imaging in Rats

Rebecca Jones{2}, Ryan Deruiter{1}, Francisco Santibanez{2}, Paul Dayton{2}, Gianmarco Pinton{2}
{1}Mayo clinic, United States; {2}University of North Carolina at Chapel Hill, United States

7849: Antidepressant-Loaded Liposome-Microbubbles with Focused Ultrasound in Depression Disorders Treatment

Chen-Cheng Tasi, Chia-Wei Lin, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

Day 4: Thursday, September 26

D1L-01: MEL: Vascular Elasticity Imaging
Location: 506 (TaiNEX 1)
8:30 - 10:00
Session Chair(s): Richard Lopata, Eindhoven University of Technology
Matthew Urban, Mayo Clinic

7162: Strain Imaging in Abdominal Aortic Aneurysms Using Bistatic Coherent Dual-Transducer Ultrasound
Vera van Hal{2}, Hans-Martin Schwab{2}, Marc van Sambeek{1}, Richard Lopata{2}
{1}Catharina Hospital Eindhoven, Netherlands; {2}Eindhoven University of Technology, Netherlands

7836: A Physics Informed Neural Network Approach for Determining Spatially Varying Arterial Stiffness Using Ultrasound Imaging: FD Simulation and Experimental Plaque Phantom Validation
Tuhin Roy, Paul Kemper, Nima Mobadersany, Elisa Konofagou
Columbia University, United States

8250: Effect of Flow on Wave Velocity in a Vascular Phantom and in Human Common Carotid Arteries
Charles Capron{1}, Hyoung-Ki Lee{2}, Yuqi Wang{1}, Matthew Urban{1}
{1}Mayo Clinic, United States; {2}Philips, United States

8404: Comparing Time-to-Peak and Radon Transform for Group Velocity Measurements in Human Common Carotid Arteries
Charles Capron{1}, Yuqi Wang{1}, Hyoung-Ki Lee{2}, Matthew Urban{1}
{1}Mayo Clinic, United States; {2}Philips, United States

8585: Protocols for Robust In Vivo Carotid Arterial Stiffness Estimation Using Arterial Dispersion Ultrasound Vibrometry
Tuhin Roy{1}, Hyoung-Ki Lee{2}, Charles Capron{3}, Francisco Lopez-Jimenez{3}, Gina Hesley{3}, James Greenleaf{3}, Matthew Urban{3}, Murthy Guddati{4}
{1}Columbia University (formerly NC State University), United States; {2}Intravascular Ultrasound, Philips, Inc., United States; {3}Mayo Clinic, Rochester, United States; {4}NC State University, United States

8214: Volumetric Evaluation of Human Carotid Plaque Composition by Plane Wave-Tracked Variance of Acceleration Imaging with a 2D Matrix Transducer
Roshan Roshankhah, Keerthi Anand, Shureed Qazi, Caterina Gallippi
University of North Carolina at Chapel Hill, United States

D1L-02: MSR: Brain 2
Location: 701A (TaiNEX 2)
8:30 - 10:00
Session Chair(s): Pengfei Song, University of Illinois Urbana-Champaign

8641: Blood Pulse Wave Velocity Measurements in the Entire Mouse Brain Using Transcranial Dynamic Ultrasound Localization Microscopy
Alice Wu{2}, Jonathan Porée{2}, Nin Ghigo{2}, Alexis Leconte{2}, Gerardo Ramos-Palacios{1}, Stephen Lee{2}, Abbas Sadikot{1}, Michaël Chassé{3}, Jean Provost{2}
{1}McGill University, Canada; {2}Polytechnique Montreal, Canada; {3}Universite de Montreal, Canada

7546: Ultrasound Localization Microscopy to Observe of Neonatal Cerebral Vascular Reorganization During Neurovascular Interventions
Louise Denis{2}, Simone Schwarz{3}, Emmanuel Nedoschill{4}, Adrian Adrian Buehler Regensburger{1}, Vera Danko{4}, Henriette Mandlbaum{4}, Francisco Nikola Brevis N Reinhard D{3}, Martin Friedhelm Schlunz-Henda Brassel{3}, Joachim Jorg Wolfe Jungert{1}, Ch
{1}Friedrich-Alexander-Universitaet Erlangen-Nuermberg, Germany; {2}LIB (Sorbonne Universite, CNRS, INSERM), Germany; {2}LIB (Sorbonne Universite, CNRS, INSERM), France; {3}Sana Clinics Duisburg, Germany; {4}University Hospital Erlangen, Germany; {5}University of Duisburg-Essen, Germany

7096: Transcranial 3D Ultrasound Localization Microscopy (3D-ULM) in Awake Mice
Georges Chabouh{1}, Louise Denis{1}, Myriam Abioui-Mourgues{2}, Denis Vivien{2}, Cyrille Orset{2}, Olivier Couture{1}
{1}Laboratoire d'imagerie biomédicale Sorbonne Université CNRS INSERM, France; {2}Normandie University, UNICAEN, INSERM UMR-S U1237, France

8593: 3D Super-Resolution Ultrasound Mouse Brain Vascular Atlas and Characterization
Jingwen Zhu, Shusei Kawara, Kai Riemer, Bingxue Wang, Jipeng Yan, Sophie Morse, James Choi, Simon Schultz, Meng-Xing Tang
Imperial College London, United Kingdom

8007: Non-Invasive Transcranial Whole Brain Functional Ultrasound and Ultrasound Localization Microscopy in Mice Using Multilinear Probe
Mathis Vert{2}, Mohamed Nouhoum{1}, Adrien Bertolo{1}, Thomas Deffieux{2}, Nathalie Ialy-Radio{2}, Sophie Pezet{2}, Bruno Osmanski{1}, Mickaël Tanter{2}
{1}Iconeus, France; {2}INSERM, France

8887: Non-Invasive Volumetric Ultrasound Localization Microscopy Detects Vascular Change in Longitudinal Study of Mice with Alzheimer's Disease
Rebecca Jones{2}, Ryan Deruiter{1}, Paul Dayton{2}, Gianmarco Pinton{2}
{1}Mayo Clinic, United States; {2}University of North Carolina at Chapel Hill, United States

D1L-03: MSD: Advanced Systems and Implementations
Location: 701B (TaiNEX 2)
8:30 - 10:00
Session Chair(s): Enrico Boni, University of Florence
Arun Kumar Thittai, Indian Institute of Technology Madras

8643: Developing a Dual-Function Ultrasound System for Sonodynamic Therapy Through High Frequency Ultrasound
Yi-Hsiang Chuang, De-Quan Chen, Ling-Hsuan Yang, Tzu-Yu Lin, Ping-Ching Wu, Chih-Chung Huang
National Cheng Kung University, Taiwan

8857: Three-Dimensional Ultrasound Imaging Scanner Driven by Low Voltage Multilayer Piezoelectric Ceramics
Xiaoxiao Liu, Boquan Wang, Liyuan He, Zhiyi Wen, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

7561: A Hybrid Open Scanner for Advanced Real-Time Ultrasound Imaging
Giulio Bonciani, Francesco Guidi, Piero Tortoli, Claudio Giangrossi, Alessandro Dallai, Enrico Boni, Alessandro Ramalli
Dept. of Information Engineering, University of Florence, Italy

7356: Ultrasound Over Ethernet: Pathway to Enormous Channel Count Ultrasound System
Zhengchang Kou, Marcia Yu, Qinglin Ge, Wesley Pang, Michael Oelze
University of Illinois Urbana-Champaign, United States

7207: Hardware Description Language Versus High-Level Synthesis for the FPGA Implementation of Ultrasound Beamformers: A Comparative Analysis
Valentino Meacci, Alessandro Dallai, Stefano Ricci, Enrico Boni, Piero Tortoli, Alessandro Ramalli
University of Florence, Italy

7128: Scalable Ultrasound Research Platforms for 1024/2048/4096 Channels — Technical Feasibility
Marcin Lewandowski, Mateusz Walczak
us4us Ltd., Poland

D1L-04: MTH: Drug Delivery 1
Location: 701C (TaiNEX 2)
8:30 - 10:00

7093: Nanodroplets-Enhanced Tumor Fractionation Synergizes with Checkpoint Inhibition for Advanced Cancer Therapy
Bar Glickstein, Tali Ilovitsh
Tel Aviv University, Israel

7354: Non-Invasive Gene Delivery to Brain Lymphatic System Using an Imaging Phased Array and Ultra-Short Focused Ultrasound Pulses
Fotios Tsitsos{1}, Alec Batts{1}, Daniella Jimenez{1}, Nancy Kwon{1}, Samantha Gorman{1}, Rashell Ramirez{1}, Hadrien Padilla{1}, Konstantina Kaplani{2}, Maria Kanellopoulou{2}, Stavros Taraviras{2}, Elisa Konofagou{1}
{1}Columbia University, United States; {2}University of Patras, Greece

7498: Enhanced Delivery of Carboplatin and Panobinostat to the Murine Brain After Focused Ultrasound-Induced Blood-Brain Barrier Opening for the Treatment of Diffuse Midline Glioma
Chris Payne, Anisia Talianu, Antonios Pouliopoulos
Kings College London, United Kingdom

8696: Transdermal Penetration Effect of Sequential Ultrasound Irradiation in the kHz and MHz Bands on Biopolymer Drug Models
Kengo Matsubara{2}, Yuta Kurashina{2}, Kentaro Nakamura{1}
{1}Tokyo Institute of Technology, Japan; {2}Tokyo University of Agriculture and Technology, Japan

8713: Ultrasound-Mediated Microbubbles Dressing Increases the Efficacy of Piroxicam Gel for Hand Arthritis
Kuo-Lung Lai{1}, Pin-Yen Huang{2}, Ai-Ho Liao{2}, Pai-Chi Li{1}
{1}National Taiwan University, Taiwan; {2}National Taiwan University of Science and Technology, Taiwan

8824: Long Lasting Effect of Ultrasound Neuromodulation on Improvement of Motor Symptoms in Parkinson's Disease
Houminji Chen, Haowen Duan, Junjie Zou, Lili Niu, Hairong Zheng
Shenzhen Institute of Advanced Technology, CAS, China

D1L-05: Acoustic Tweezers & Particle Manipulation (PAT) 1
Location: 701D (TaiNEX 2)
8:30 - 10:00

7952: PMUT-Based Acoustic Tweezer for Programmable Particle Manipulation
Chenfang Yan, Tong Jin, Yun Zhang, Zijie Zhao, Yuang Li, Wenchang Zhang, Yang Zhao, Chenjun Huang, Hang Gao
Institute of Microelectronics of the Chinese Academy of Sciences, China

7813: Microdroplet Generation and Manipulation via Ultrasonic Atomization and Ultrasonic Levitation
Zhiyi Wen{1}, Zijian Wang{1}, Kun Wang{1}, Wada Yuji{2}, Dawei Wu{1}, Kentaro Nakamura{1}
{1}Future Interdisciplinary Research of Science and Technology, Tokyo Institute of Technology, Japan; {1}Future Interdisciplinary Research of Science and Technology, Tokyo Institute of Technology, China; {2}Nanjing University of Aeronautics and Astronautics, China

7678: Waveguide Based Acoustic Levitation Device for Moving Objects in a Large Volume
Sören Soennecken{2}, Jan Helge Dörsam{2}, Christoph Haugwitz{2}, Axel Jäger{1}, Sonja Wismath{2}, Nils Demuth{2}, Mario Kupnik{2}
{1}Arculus GmbH, Germany; {2}Technische Universität Darmstadt, Germany

7483: Multi-Directional Patterning of Micro-Scale Particles Using a One-Sided Ultrasound Transducer Array
Rick van Bergen, Bart Groenen, Daniëlle Duffhues, Richard Lopata, Carlijn Bouten, Hans-Martin Schwab
Eindhoven University of Technology, Netherlands

7274: Time-Sharing Acoustic Tweezers for Multiple Particles Manipulation
Juan Zhou, Laixin Huang, Weibao Qiu, Fei Li, Hairong Zheng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

7921: Acoustic Field Measurement by Midair Scanning of an Acoustically Levitated Microphone
Keisuke Hasegawa{1}, Tasuku Mizuno{2}
{1}Saitama University, Japan; {2}University of Tokyo, Japan

D1L-06: ABD BAW Devices 2
Location: 701E (TaiNEX 2)
8:30 - 10:00
Session Chair(s): Yao Zhu, Institute of Microelectronics, ASTAR
Shuji Tanaka, Tohoku University

7576: Investigation of Bragg Reflectors for Polarity-Inverted AlN BAW Resonators Operating at Super High Frequency
Ruidong Qin, Congquan Zhou, Wentong Dou, Zhiqiang Mu, Wenjie Yu
State Key Laboratory of Materials for Integrated Circuits, China

7181: ScAlN BAW Resonator Technology with Coupling Coefficients Up to 21% for High Performance Filter Design
Romain Gerbe, Yuefei Yang, Daniel Hou
Global Communication Semiconductors, LLC, United States

8288: Impact of a Trap-Rich Layer on the Performance of D-BAW Resonators
Weiwei Hu, Youliang Wang, Duan Feng, Jie Zou
Shenzhen Newsonic Technologies Co.Ltd, China

7815: Wafer-Level Integration of Film Bulk Acoustic Resonator on 8 Inch LNOI Substrate
Xinghua Wang, Chen Liu, Li Chen, Zhonghua Gu, Ying Zhang, Merugu Srinivas, Wenjia Yang, Hock Koon Lee, Qingxin Zhang, Huamao Lin, Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore

7309: Periodic Structure of Narrow FBARs Operating on SH1 Mode in Ln Membrane Solidly Mounted on SiC Substrate
Victor Plessky{3}, Naiqing Zhang{2}, Nan Xu{1}, Seniz Esra Küçük{1}, Luis Guillermo Villanueva{1}
{1}ANEMS Lab, EPFL, Switzerland; {2}Huawei Technologies Co., Ltd., China; {3}Huawei Technologies Oy (Finland) Co. Ltd, Finland

8165: New Method for Evaluating Intrinsic Mechanical Q Factor of ScAlN, AlN, and ZnO Films Using Attenuation Estimation by Pulse-Echo Technique
Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

D1L-07: TMU: Piezoelectric Micromachined Ultrasonic Transducers 1
Location: 701D (TaiNEX 2)
8:30 - 10:00
Session Chair(s): Stefan Rupitsch, Friedrich-Alexander University

8283: Curved Cantilever Actuated ScAlN PMUT for Enhanced Linearity and Transmit Sensitivity
Shyam Trivedi{1}, Duan Jian Goh{1}, Prakasha Chigahalli Ramegowda{1}, David Sze Wai Choong{1}, Jihang Liu{1}, Daniel Chen{1}, Yong Shun Teo{1}, Srinivas Merugu{1}, Hong Yan{1}, Qing Xin Zhang{1}, Yul Koh{1}, Alberto Leotti{2}, Ravi Shankar{2}, Naadaa Ghul
{1}Agency for Science, Technology and Research (ASTAR), Singapore; {2}STMicroelectronics, Singapore

7320: A Force Feedback Controlled Piezoelectric Micromachined Ultrasonic Transducers (PMUT) with Tunable Dynamic Performance
Tingzhong Xu, Rodrigo Tumolin Rocha, Damiano Caponi, Claire Bourquard
Silicon Austria Labs GmbH, Austria

8235: Rectangular PMUT Phased Array with High Fill-Factor and High SPL
Lei Zhao, Chong Yang, Yiwei Guo, Yipeng Lu
Peking University, China

8037: Hybrid Air-Coupled Rangefinder with Sputtered PVD PZT and $Sc_{0.2}Al_{0.8}N$ PMUTs for Pulse-Echo Applications
David Choong{1}, Daniel Chen{1}, Mantalena Sarafianou{1}, Duan Jian Goh{1}, Jihang Liu{1}, Merugu Srinivas{1}, Qing Xin Zhang{1}, Peter Chang{1}, Sagnik Ghosh{1}, Prakasha Chigahalli{1}, Yul Koh{1}, Domenico Giusti{2}, Alberto Leotti{2}, Carla Lazzari{2},
{1}Institute of Microelectronics (IME), Agency for Science, Technology and Research (ASTAR), Singapore; {2}STMicroelectronics, Italy

8152: Differentially Driven Dual-Electrode Air-Coupled AlN PMUTs with Enhanced Transmission Efficiency
Chun-Yu Chou, Sheng-Shian Li
National Tsing Hua University, Taiwan

8652: A Multifunctional Piezoelectric MEMS Actuator for Tweeter and Ultrasonic Range-Finding Transmitter
Yale Wang, Mingchao Sun, Shaobo Gong, Wei Pang, Miaojie Liu, Menglun Zhang
Tianjin University, China

D1L-08: TMI: Diagnostic and Therapeutic Transducers
Location: 701G (TaiNEX 2)
8:30 - 10:00

8733: Multi-Frequency Ultrasonic Transducer with Asymmetric Backing Layer for Conformal Tumor Ablation
Kang Chen, Xiao Chen, Yonggen Zhu, Tongqin Liu, Jianming Wen
Zhejiang Normal University, China

8954: Design and Characterization of Transrectal Benign Prostatic Hyperplasia Histotripsy Therapy Transducers
Yashwanth Nanda Kumar, Wayne Kreider, Kaizer Contreras, Matthew Bruce, Yak-Nam Wang, Stephanie Totten, George R. Schade, Adam D. Maxwell
University of Washington, United States

7192: High-Intensity Focused Ultrasound Linear Array and System for Skin Care Treatment
Juhwan Kim{1}, Jinwoo Kim{1}, Eui-Ji Shin{2}, Jin Ho Chang{1}
{1}DGIST, Korea; {2}Sogang University, Korea

8373: Single-Crystal 2-D Matrix Array-Based Theranostic Ultrasound System for Osteoarthritic Applications
Minsu Kang{1}, Seongwoo Koo{1}, Donghun Han{1}, Youngeun Choi{1}, Seungwan Jang{1}, Jaybum Park{3}, Yoonsang Jeong{2}, Sang-Goo Lee{2}, Tai-Kyong Song{3}, Heechul Yoon{1}
{1}Dankook University, Korea; {2}iBULe Photonics, Korea; {3}Sogang University, Korea

7547: Optimization of Beamforming Strategy Applied to a Dual Core Probe for US-Guided Sonoporation
Juline Cloet{1}, Remi Rouffaud{1}, Mathieu Legros{3}, Jean-Michel Escoffre{2}, Damien Fouan{2}, Franck Levassort{1}, Dominique Certon{1}
{1}GREMAN UMR7347, Université de Tours, CNRS, INSA CVL, Tours, France; {2}Université de Tours, INSERM, Imaging Brain & Neuropsychiatry iBraiN U1253, 37032, Tours, France; {3}VERMON SA, Tours, France

8279: A Forward-Viewing 3 mm Endovascular Dual-Mode Therapy/Imaging Transducer for Thrombosis Characterization and Stroke Thrombectomy
Phuong Vu, Stephan Strassle Rojas, Adeoye Olomodosi, Caroline Ott, Brooks Lindsey
Georgia Tech, United States

D1L-09: MIS: Echocardiography
Location: 701H (TaiNEX 2)
8:30 - 10:00
Session Chair(s): Mathieu Pernot, ESPCI Paris

8572: Sparse EWI: Towards an Automated and Real Time Arrhythmia Mapping Technique
Christina Proestaki, Melina Tourni, Yik Tung Tracy Ling, Elisa Konofagou
Columbia, United States

8627: Lagrangian Beamforming in High-Frame Rate Echocardiography: In-Silico Validation and In-Vivo Applications in Large Animals and in Humans
Jonathan Poree{4}, Alexis Leconte{4}, Pierre Emmanuel Noly{3}, Mathieu Glorion{2}, Ahmed Menaouar{1}, Nicolas Noiseux{1}, Jean Provost{4}
{1}Centre de recherche du CHUM, Canada; {2}Hopital Foch, France; {3}Institut de Cardiologie de Montreal, Canada; {4}Polytechnique Montréal, Canada

8124: Automation of Myocardial Mechanical Activation Mapping
Vahid Mohammadi Safarzadeh, Konstantina Papangelopoul, Marta Orlowska, Hans Dierckx, Jan D'Hooge
KU Leuven, Belgium

7062: Cardiac Anatomic-Aware Echocardiography Wall Motion Estimation
Seok-Hwan Oh{1}, Guil Jung{1}, Sang-Yun Kim{1}, Myeong-Gee Kim{1}, Young-Min Kim{1}, Hyeon-Jik Lee{1}, Hyuk-Sool Kwon{2}, Hyeon-Min Bae{1}
{1}Korea Advanced Insitute of Science and Techonology, Korea; {2}Seoul National University Bundang Hospital, Korea

7595: Adaptive Multilevel Thresholding for SVD-Based Clutter Filtering in Ultrafast Transthoracic Coronary Flow Imaging
Yizhou Huang, Ruud van Sloun, Massimo Mischi
Eindhoven University of Technology, Netherlands

8366: Automatic Regional Image Quality Estimation for Echocardiography Using Deep Learning
Gilles Van De Vyver, Lasse Løvstakken, Svein-Erik Måsøy, Håvard Dalen, Bjørnar Grenne, Espen Holte, Erik Smistad
Norwegian university of science and technology, Norway

D1L-10: Process Control and Industrial Ultrasound (NPC)
Location: 702 (TaiNEX 2)
8:30 - 10:00
Session Chair(s): Edward Haeggstrom, University of Helsinki

7548: Quantifying Two-Phase Mass Transfer in Electrochemically Gas Evolving Electrodes Using Scanning Acoustic Microscopy
Zehua Dou{3}, Hannes Rox{1}, Zyzi Ramos{4}, Robert Baumann{2}, Xuegeng Yang{1}, Andrés Lasagni{2}, Peter Czurratis{4}, Kerstin Eckert{1}, Juergen Czarske{3}, David Weik{3}
{1}Institute of Fluid Dynamics, Helmholtz-Zentrum Dresden-Rossendorf, Germany; {2}Institute of Manufacturing Science and Engineering, Dresden University of Technology, Germany; {3}Laboratory of Measurement and Sensor System Technique, Dresden University of Technology, Germany; {4}PVA TePla Analytical Systems GmbH, Germany

7346: High-Speed Observations of Acoustic Droplet Ejection of a Shear-Thinning Polymer Solution in an External High-Voltage Electric Field
Joni Mäkinen{2}, Nobuki Kudo{1}, Jere Hyvönen{2}, Mamoru Hashimoto{1}, Edward Hæggström{2}, Ari Salmi{2}
{1}Faculty of Information Science and Technology, Hokkaido University, Japan; {2}Faculty of Science, University of Helsinki, Finland

8027: Real-Time Edge Computing Empowered Airborne Ultrasound Imaging System with Cost-Effective Single Chip Integration
Geng-Shi Jeng{2}, Po-Syun Chen{1}, Jia-Zhang Li{2}, Bi-Cheng Shih{2}, Wei-Cheng Tian{1}
{1}Delta Electronics, Taiwan; {2}National Yang Ming Chiao Tung University, Taiwan

8592: Where Others Can't Go – Polymer-Based CMUTs for Non-Destructive Testing in the High Ultrasonic Noise Environment of Ultrasonic Welding
Jonas Welsch{2}, Dominik Görick{1}, Robert Rohling{2}, Edmond Cretu{2}, Carlos Daniel Gerardo{2}, Martin Angerer{2}
{1}Deutsches Zentrum für Luft - und Raumfahrt e.V., Germany; {2}University of British Columbia, Canada

8099: Acoustic Cavitation Enhanced Delamination of Technology Critical Metals from Electronic Waste Using Green Solvents
Ben Jacobson, Shida Li, Paul Daly, Andrew Feeney, Paul Prentice
University of Glasgow, United Kingdom

7429: Utilization of Ultrasonic Testing for the Evaluation of Multilayered SPF/DB Components in the Aerospace Industry
Chao Zhang, Xin Fu, Jun-Ting Yang, Li-Yang Yao, Kai-Wen Xie, Pei-Wen Guo, Bing-Yang Wang
AVIC Manufacturing Technology Institute, China

D1L-11: Wearable Devices 1
Location: 703 (TaiNEX 2)
8:30 - 10:00

7230: Insole Ballistocardiography for Unobtrusive Respiratory and Heart Rate Monitoring Using 3D-Printed Piezoelectric Sensors
Bastian Latsch, Alexander A. Altmann, Omar Ben Dali, Romol Chadda, Niklas Schäfer, Kilian Schäfer, Muhammad Bilal Khan, Jan Helge Dörsam, Felix Herbst, Suppelt Sven, Oliver Gutfleisch, Mario Kupnik
Technische Universität Darmstadt, Germany

7480: Low-Cost Flexible Ultrasound Patch for Blood Pressure Measurement
Zilong Li, Hangfeng Zhang, Xuechun Wang, Lei Su
Queen Mary University of London, United Kingdom

7605: An Ultra-Thin and Low-Power Wearable Bladder Volume Monitor Based on PMUT
Huimin Li{2}, Wanli Yang{2}, Xingli Xu{2}, Yongquan Ma{2}, Wei Wei{2}, Zhuochen Wang{1}, Wei Pang{2}, Pengfei Niu{2}
{1}Beijing University of Chemical Technology College of Mechanicaland Electrical Engineering, China; {2}Tianjin University State Key Laboratory of Precision Measurements Technology and Instrument, China

8066: A Miniatured and Wearable Photoacoustic Sensing System for Blood Pressure Monitoring
Yexing Fang, Haixia Zhang, Yipeng Lu
Peking university, China

8322: Wrist-Based Continuous Blood Pressure Monitoring Utilizing Miniature, High-Resolution, Thin-Film Ultrasound Arrays
Struan Smith, Manel Pelayo, Cameron Dick, Blair Rocks, Daniel Irving, Dave Hughes
Novosound, United Kingdom

8357: Vector Flow Mapping Using Textile-Based Flexible Ultrasound Probe
Takumi Noda, Seiichi Takamatsu, Michitaka Yamamoto, Takashi Azuma, Ichiro Sakuma, Naoki Tomii
University of Tokyo, Japan

D1L-12: Photoacoustics (NPA) 2
Location: 500 (TaiNEX 1)
8:30 - 10:00
Session Chair(s): Wenfeng Xia, King's College London
Xiran Cai, ShanghaiTech University, China

7016: Efficient Deep Model-Based Optoacoustic Image Reconstruction
Christoph Dehner, Guillaume Zahnd
iThera Medical GmbH, Germany

8278: Modulated Asynchronous Optical Sampling for Flexible Pump-Probe Spectroscopy
Matthias Velsink, Maksym Illienko, Komal Chaudhary, Stefan Witte
ARCNL, Netherlands

8340: Multi-Foci Compressive Sensing Photoacoustic Endomicroscopy Through a Multimode Optical Fibre
Tianrui Zhao{1}, Edward Zhang{2}, Sebastien Ourselin{1}, Paul Beard{2}, Wenfeng Xia{1}
{1}King's College London, United Kingdom; {2}University College London, United Kingdom

8978: Handheld Laser Diode Based Photoacoustic Imaging System
Hamid Moradi, Nienke Helvoort, Tim Salcudean, Robert Rohling
University of British Columbia, Canada

7087: Optimal Near-Infrared Wavelength Range for Photoacoustic Imaging of Mouse Brain Vasculature During Transcranial Ultrasound Applications
Tieming Liu
King's College London, United Kingdom

8474: Multispectral Photoacoustic Imaging of Breast Cancer Tissue
Junhao Zhang, Junior Arroyo, Muyinatu Bell
Johns Hopkins University, United States

D1L-13: GNSS and TWSTFT for Time and Frequency Transfer
Location: 501 (TaiNEX 1)
8:30 - 10:00
Session Chair(s): Huang-Tien Lin, National Time and Frequency Standards Lab

7142: Continuous GPS PPP-AR Frequency Transfer Links
Bin Jian, Marina Gertsvolf
National Research Council Canada, Canada

8754: Pre-Alignment Measures for GPS Satellites Prior to All-in-View Weighting
Wen-Hung Tseng
Telecommunication Laboratories, Chunghwa Telecom Co., Ltd., Taiwan

7026: Assessment of Time Synchronization Error Using Different GNSS Clock Products
Tzu-Pang Tseng{1}, Pei-Jung Kuo{1}, Yi-Hsuan Tsai{1}, Wen-Hung Tseng{3}, Kun-Lin Chen{2}, Cheng-Yung Huang{2}, Wen-Hao Yeh{2}, Yung-Fu Tsai{2}
{1}National Cheng Kung University, Taiwan; {2}Taiwan Space Agency, Taiwan; {3}Telecommunication Laboratories, Chunghwa Telecom Co., Ltd., Taiwan

8039: Precise Disciplined BVA OCXO for a Radio Telescope Observatory
Geomarr Van Tonder{2}, Johan Burger{2}, Ole Petter Rønningen{1}, Renier Siebrits{2}
{1}Fugro Norway AS, South Africa; {2}SARAO, South Africa

7876: Experiment of Asia-Europe TWSTFT Link Using New Satellite Express-80
Zhe Gao
National Time Service Center,Chinese Academy of Sciences, China

D1L-14: Ultrasound Tomography Spotlight
Location: 503 (TaiNEX 1)
8:30 - 10:00
Session Chair(s): Sangpil Yoon, University of Oklahoma

8794: The Role of Ultrasound Tomography in Breast Cancer Diagnosis and Management
Nebojsa Duric
University of Rochester, United States

7420: Evaluating a 1024TX / 256RX Research System with a 1024-Element Ring Probe for Ultrasound Tomography
Marcin Lewandowski, Ziemowit Klimonda, Jakub Rozbicki, Piotr Jarosik
us4us Ltd., Poland

7139: Operando Temperature Mapping in Li-Ion Batteries with Ultrasonic Travel-Time Tomography
Shengyuan Zhang{2}, Peng Zuo{1}, Zheng Fan{2}
{1}Advanced Remanufacturing and Technology Centre, Singapore; {2}Nanyang Technological University, Singapore

7380: Enhancing Contrast in Circular-View Photoacoustic Computed Tomography Systems
Soheil Hakakzadeh{1}, Zahra Kavehvash{1}, Mohammad Mehrmohammadi{2}
{1}Sharif Univ. of Tech., Iran; {2}University of Rochester Medical Center, United States

D1L-15: Optical Synthesizers and VCOs
Location: 507 (TaiNEX 1)
8:30 - 10:00
Session Chair(s): Franklin Ascarunz, SpectraDynamics

7724: Opto-THz Synthesizer at 3 THz with Hz Stability
Brendan Heffernan, James Greenberg, Antoine Rolland

7105: Division of Two Highly Correlated Lasers for Ultra-Stable Microwave Generation
Bibo He{3}, Jiachuan Yang{3}, Fei Meng{2}, Chenbo Zhang{3}, Yani Zuo{1}, Yige Lin{1}, Zhangyuan Chen{3}, Zhanjun Fang{1}, Xiaopeng Xie{3}
{1}National Institute of Metrology, China; {2}National Institute of Metrology, Peking University, China; {3}Peking University, China

7766: A Digital Control for the Ultra-Stable Laser System
Danyang Zhu{1}, Qi Shen{1}, Can Xia{2}
{1}Hefei National Laboratory for Physical Sciences at the Microscale and School of Physical Sciences, China; {2}University of Science and Technology of China, China

8458: Frequency Division of THz Signals by Dual-Mode Injection Locking of a Chip-Based Modelocked Laser
William McGrew{2}, Di Huang{1}, James Greenberg{2}, Brendan Heffernan{2}, Keisuke Nose{2}, Peter Delfyett{1}, Antoine Rolland{2}
{1}CREOL, University of Central Florida, United States; {2}Imra America, United States

7002: Area-Efficient and Coupling Noise Suppressive Voltage-Controlled Oscillator
Sheng-Lyang Jang{2}, Wei-Che Lin{2}, Jiun-Yu Sung{2}, Mao-Hsiu Hsu{1}, Wen-Cheng Lai{3}
{1}Dep. of Electro-Optical Engineering, National Formosa University, Taiwan; {2}Dep. of Electronic Engineering, National Taiwan University of Science and Technology, Taiwan; {3}Min Chi University of Technology, Taiwan

8330: Microcomb-Based 900 GHz Wave Generation and its Phase Noise Measurement
Brendan Heffernan{2}, Lou Kanger{1}, James Greenberg{2}, Keisuke Nose{2}, William McGrew{2}, Maxim Karpov{1}, John Jost{1}, Antoine Rolland{2}
{1}Enlightra, Switzerland; {2}IMRA America, Inc., United States

D1L-16: Thin Films (PTF)
Location: 502 (TaiNEX 1**)**
8:30 - 10:00

8499: Growth of 33°Y-$LiNbO_3$ Films on High-Temperature Stable Bragg Mirrors for High-Frequency BAW Resonators
Sondes Boujnah{2}, Lilia Arapan{2}, José Manuel Carmona Cejas{3}, Marta Clement{3}, Quentin Micard{2}, Mihaela Ivan{2}, Vincent Astié{1}, Jean-Manuel Decams{1}, Samuel Margueron{2}, Ausrine Bartasyte{2}
{1}Annealsys, France; {2}FEMTO-ST Institute, France; {3}UPM, Spain

8166: Extraction of Mechanical Properties of Acoustic Bragg Reflector in 6 GHz Range by Pulse Echo Technique
Motoshi Suzuki, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

9000: Ferroelectric ScAlN Thin Films for Periodically Polarization Inverted BAW Resonators
Takahiko Yanagitani
Waseda University, Japan

8171: Intrinsic k_t^2 Evaluation Method from HBAR Without Substrate Removal Using the Difference Between Dielectric Constant ε^T and ε^s
Hiroki Uchida, Kohei Ekida, Yohkoh Shimano, Takahiko Yanagitani
Waseda University,ZAIKEN, Japan

8383: Characteristics of Thickness-Shear-Mode Resonators with c-Axis-Parallel-Oriented ZnO Films Grown by Limiting Particle Irradiation Direction During RF Sputtering
Yuya Yoshida{1}, Naoki Tomiyama{1}, Shinji Takayanagi{1}, Takahiko Yanagitani{2}
{1}Doshisha University, Japan; {2}Waseda University, Japan

Coffee Break
Location: Exhibit Hall - 7F (TaiNEX 2)
10:00 - 10:30

D2L-01: MTC: High Frequency Tissue Characterization
Location: 506 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Michael Kolios, Ryerson University
Kazuyo Ito, Tokyo University of Agriculture and Technology

8893: GHz Ultrasonic Imaging of Tissue with Force-Driven Tissue Elastography
Anuj Baskota{2}, Lê Thiện Thành{3}, Đỗ Danh Cường{3}, Bui Van Giang{3}, Amit Lal{1}
{1}Cornell University, Geegah Inc, United States; {2}Geegah Inc, United States; {3}Vin University, Vietnam

7807: Biochemical Characterization of Three-Dimensional Cultured Cancer Spheroids with High-Frequency Quantitative Ultrasound
Kazuyo Ito, Yuta Iijima, Tomoki Misumi, Daisuke Yoshino
Tokyo University of Agriculture and Technology, Japan

7672: High-Frequency Quantitative Ultrasound Measurements of the Anterior Sclera In Vivo to Predict Myopia Progression
Cameron Hoerig{2}, Quan V. Hoang{1}, Jonathan Mamou{2}
{1}Singapore Eye Research Institute, Singapore; {2}Weill Cornell Medicine, United States

7703: Quantitative Ultrasonography of Vitreous Echodensity Based on Double Nakagami Distribution
Ladan Yazdani{2}, Cameron Hoerig{2}, Justin H. Nguyen{1}, Jonathan Mamou{2}, J. Sebag{1}, Jeffrey A. Ketterling{2}
{1}VMR Institute for Vitreous Macula Retina, United States; {2}Weill Cornell Medicine, United States

7516: Small-Window Entropy Based on Fast Multivariate Empirical Mode Decomposition for Characterization of Human Skin Aging
Yuzhen Li{2}, Bingbing He{2}, Xun Lang{2}, Yufeng Zhang{2}, Ying Wang{2}, Ningtao Zhang{1}
{1}Yunnan Betani Biotechnology Group Co.,Ltd, China; {2}Yunnan University, China

8553: Ultrasound Characterization of Oral Soft Tissues In Vivo Using the Burr Speckle Model
Daria Poul{4}, Ankita Samal{3}, Amanda Rodriguez Betancourt{2}, Carole Quesada{4}, Hsun-Liang Chan{1}, Oliver Kripfgans{4}
{1}Ohio State University, United States; {2}University of Illinois Chicago, United States; {3}University of Iowa, United States; {4}University of Michigan, United States

D2L-02: MEL: (Pre) Clinical Elastography and Safety Monitoring
Location: 701A (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Po Hsiang Tsui, Chang Gung University

7253: Relationships Between Diaphragm Mechanical Muscle Work Quantified by Ultrasound Shear Wave Elastography and Diaphragm Glucose Metabolism Assessed with 18F-Fluorodeoxyglucose PET-MRI in Humans
Axel Nierding{4}, Eloise Chamalet{7}, Julie Goettelmann{7}, Corentin Cornu{2}, Thomas Similowski{6}, Philippe Gervais{3}, Florent Besson{2}, Damien Bachasson{5}, Jean-Luc Gennisson{1}
{1}BioMaps - Université Paris Saclay - CNRS, France; {2}BioMaps - Université Paris-Saclay, France; {3}BioMaps - Université Paris-Saclay - CEA, France; {4}BioMaps - Université Paris-Saclay - Sorbonne Université, France; {5}Inserm - Sorbonne université, France; {6}Inserm APHP Sorbonne université, France; {7}Sorbonne université, France

8906: In Vivo Assessment of Diaphragm in Early-Stage Duchenne Muscular Dystrophy: Shear Wave Elasticity Imaging in Mdx Mice
Jeehyun Lee{2}, Nia Myrie{3}, Woojin Han{4}, Young Jang{1}, Andrés García{2}, Stanislav Emelianov{2}
{1}Emory School of Medicine, United States; {2}Georgia Tech, United States; {3}Georgia Tech & Emory University, United States; {4}Icahn School of Medicine at Mount Sinai, United States

8112: Evaluation of the Natural Shear Wave in Mitral Regurgitation Mice Model Through High Frequency Ultrasound Imaging
Tzu-Chun Lin, Guo-Xuan Xu, Chih-Chung Huang
National Cheng Kung University, Taiwan

7266: Increased Mechanical Index Safely Enhances Shear Wave Elastography Quality
Scott Schoen Jr{2}, Sunethra Dayavansha{2}, Michael Wang{1}, Rimon Tadross{1}, Mike Washburn{1}, Anthony Samir{2}
{1}GE Healthcare, United States; {2}Harvard Medical School and Massachusetts General Hospital, United States

8759: Study on Preoperative HIFU Focus Prediction Using Harmonic Motion Imaging
Yao Ran, Jiahong Xu, Xinwang Shi, Yijing Liu, Dejia Cai, Xiaowei Zhou
Chongqing Medical University, China

7811: Radiotherapy Dosimetry Reader for Polymer Gel Dosimeters with 3D Shear Wave Elasticity Imaging
Wei-Cheng Hsiao{1}, Yu-Hsuan Lin{2}, Chia-Lun Yeh{3}, Yu-Chieh Kao{4}, Chun-Hsu Yao{2}, Bao-Yu Hsieh{1}
{1}Chang Gung University, Taiwan; {2}China Medical University, Taiwan; {3}National Taiwan University, Taiwan; {4}National Yang Ming Chiao Tung University, Taiwan

D2L-03: MBB: Coherence Factor & Diverging Wave Imaging
Location: 701B (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Chih-Chung Huang, National Cheng Kung University
Orcun Göksel, Uppsala University

7542: Directional Coherence Factor for Volumetric Ultrasound Imaging with Matrix Arrays
Xiaochuan Wu, Wei-Ning Lee
University of Hong Kong, Hong Kong

8337: 3D Myocardial Coronary Contrast Enhanced Diverging Wave Imaging Based on Coherence Factor and Pulse-Inversion Bubblet Decorrelation: In Vitro Study
Pengfei Xu{1}, Xipeng Chen{1}, Xiheng Huang{1}, Mingxi Wan{2}, Diya Wang{1}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

8931: Coherence-Based Optimization Using Cumulative Spatial Lags to Estimate Sound Speed in Plane Wave Images of Coherent and Incoherent Targets
Jiaxin Zhang, Yunlong Zhu, Muyinatu Bell
Johns Hopkins University, United States

7466: Variational Ultrasound Channel Data Compression with a Scale Hyperprior
Beatrice Federici, Massimo Mischi, Ruud van Sloun
Eindhoven University of Technology, Netherlands

7491: Enhancing Diverging Wave Ultrasound Imaging with the Iterative Adaptive Approach
Mahsa Sotoodeh Ziksari, Sven Peter Näsholm, Andreas Austeng, Are Charles Jensen
University of Oslo, Norway

7538: Active Inference for Closed-Loop Fetal Doppler Ultrasound
Beatrice Federici, Ruud van Sloun, Massimo Mischi
Eindhoven University of Technology, Netherlands

D2L-04: MBF: Novel Clutter Filtering and Signal Processing Techniques
Location: 701C (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Oliver Kripfgans, University of Michigan-Ann Arbor

8979: High Resolution Power Doppler Imaging Using Hyper-Beamformation
Zi-Yao Hung, Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

7117: An Automated and Generalizable Technique for Left Ventricle Segmentation in 2D Echocardiography Utilizing Generative Adversarial Network
Sajjad Afrakhteh, Noreen Fatima, Libertario Demi
University of Trento, Italy

7370: Denoising 3D Speckle Tracking Using Physically Informed Neural Networks
Hassan Nahas, Christopher Kallweit, Rebekah Maffett, Alfred Yu
University of Waterloo, Canada

8352: Cauchy-Norm-Based Sparse-SVD Method for Ultrafast Ultrasound Small Blood Flow Clutter Filtering
Haotian Wu{1}, Shaoyuan Yan{1}, Dean Ta{1}, Jean-Gabriel Minonzio{2}, Kailiang Xu{1}
{1}Fudan University, China; {2}Universidad de Valparaíso, Chile

8816: Blood Flow Velocity Measurement with Ultrasound Speckle Decorrelation Analysis
Jianbo Tang, Yongchao Wang
Southern University of Science and Technology, China

7907: Complementary Coded Multiplane Wave Sequence for SNR Increase in 3D Ultrafast Power Doppler Ultrasound Imaging
Mohamed Tamraoui, Emmanuel Roux, Hervé Liebgott
Creatis, France

D2L-05: General NDE Methods (NDE)
Location: 701D (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Lorenzo Capineri, Università degli Studi di Firenze
Hervé Liebgott, University of Lyon

8662: Ultrasonic Geometrical Full Waveform Inversion for Defect Characterisation
Fan Shi{1}, Xiao Yin{1}, Xuexin An{1}, Peter Huthwaite{2}
{1}Hong Kong University of Science and Technology, Hong Kong; {2}Imperial College London, United Kingdom

7718: Ultrasonic Resonance Monitoring for the Curing of Adhesive Bonds Between Metal Plates
Naoki Mori, Toru Hakkaku, Takahiro Hayashi
Osaka University, Japan

8286: Ultrasonic Phased Array Imaging of Gas Evolution in a Lithium-Ion Battery
Wuke Xu, Fan Shi
HKUST, Hong Kong

8301: Accelerating Total Focusing Method Using Sparse Arrays with Modified Coherence Factor Weighting for Nondestructive Testing
Abhinav Singh, Himanshu Shekhar
IIT Gandhinagar, India

8314: Detection of Surface Icing Based on Piezoelectric Micromachined Ultrasonic Transducers (PMUTs)
Ting Xie{2}, Junhao Wang{2}, Chong Yang{1}, Jiao Xia{1}, Wei Wang{1}, Yipeng Lu{1}
{1}School of Integrated Circuits, Peking University, China; {2}School of Software and Microelectronics, Peking University, China

8748: Evaluation of the Defect Orientation Based on Reflective Correlation Indexing
Ambuj Kumar Gautam{1}, Ching-Chung Yin{2}, Bishakh Bhattacharya{1}
{1}Indian Institute of Technology Kanpur, India; {2}National Yang Ming Chiao Tung University, Taiwan

D2L-06: ASD SAW Devices 3
Location: 701E (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Shuji Tanaka, Tohoku University
Sylvain Ballandras, Soitec

7396: The Influence of PSC on SAW Devices Based on SiC Substrates
Ming Li, Kai Huang, Zongyang Liu, Xin Xia, Kunpeng Li, Gongbin Tang
Shandong university, China

7719: Characterization of Acoustic Losses in Interdigitated VHF to mmWave Piezoelectric M/NEMS Resonators
Luca Colombo, Gabriel Giribaldi, Ryan Tetro, Jack Guida, Walter Gubinelli, Luca Spagnuolo, Nicol Maietta, Siddhartha Ghosh, Matteo Rinaldi
Northeastern University, United States

7987: Broadband Spurious Mitigation of LLSAW Devices on Rotated Y-Cut $LiNbO_3/SiO_2/SiC$
Peisen Liu{4}, Sulei Fu{4}, Huiping Xu{4}, Boyuan Xiao{4}, Qiufeng Xu{4}, Xinchen Zhou{4}, Shuai Zhang{1}, Qiaozhen Zhang{2}, Rui Wang{4}, Cheng Song{4}, Fei Zeng{4}, Weibiao Wang{3}, Feng Pan{4}
{1}Jiangnan University, China; {2}Shanghai Normal University, China; {3}SHOULDER Electronics Limited, China; {4}Tsinghua University, China

7395: Low Insertion Loss Band 1+3+7 Hexaplexer Using Spurious-Suppressed I.H.P. SAW Filter
Motoki Ozasa, Naoto Yoshida, Yasuaki Shin, Noriyoshi Ota
Murata Manufacturing Co., Ltd., Japan

7304: 5-GHz Wideband Acoustic Filter with FBW of 20% Based on Z-Cut Lithium Niobate
Jiming Fang, Kai Yang, Fuhong Lin, Jie Chen, Haoran Tao, Chengjie Zuo
University of Science and Technology of China, China

D2L-07: TPF: Applications of Piezoelectrics and Ferroelectrics 1
Location: 701F (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Jessica Liu, Qualcomm Inc.
Enrico Boni, University of Florence

7973: Ultrasound Tactile Stimulation Based on Pattern Interference Radiation Force
Min Seok Kim, Young Jin Cho, Min Chul Kim, Chang Hoon Lee, Kwan Kyu Park
Hanyang University, Korea

7470: Piezoelectrical Micro-Tapper based Three-Dimensional Optical Coherence Elastography for In Vivo Dermatology Applications
Tianyu Zhang{1}, Zhengshuyi Feng{2}, Yilong Zhang{1}, Chunhui Li{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

7637: Monolithic Wideband Air-Coupled Ultrasonic Transducer Based on Additively Manufactured Ferroelectrets
Alexander Anton Altmann{1}, Sven Suppelt{1}, Max Ruhl{1}, Stephan Schaumann{1}, Bastian Latsch{1}, Omar Ben Dali{1}, Sergey Zhukov{1}, Dennis Flachs{2}, Xiaoqing Zhang{3}, Christiane Thielemann{2}, Heinz von Seggern{1}, Mario Kupnik{1}
{1}Technische Universität Darmstadt, Germany; {2}TH Aschaffenburg, Germany; {3}Tongji University, China

8844: Processing of Single Crystal-Like Lead-Free Porous Textured Piezoelectric Ceramics
Ajeet Kumar, Hamideh Khanbareh, Chris Bowen
University of Bath, United Kingdom

8883: Stability of Fractional Vortex Ultrasound via a Piezoelectric Transducer
Jing Wang{1}, Huaiyu Wu{1}, Chengzhi Shi{2}, Xiaoning Jiang{1}
{1}NC State University, United States; {2}University of Michigan, United States

8036: Stress Analysis of Additively Manufactured Lattice Structures for Incorporation in Langevin Ultrasonic Transducers
Ehsan Malekipour, Margaret Lucas
University of Glasgow, United Kingdom

D2L-08: MIM: fUS & Microvascular Imaging
Location: 701G (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Matthew Bruce, University of Washington

7659: Imaging Human Brain Activity in Freely Moving Subjects with Sonotranslucent Skull Implants Using Functional Ultrasound (fUS)
Sadaf Soloukey, Luuk Verhoef, Michael Brown, Frits Mastik, Bastian Generowicz, Djaina Satoer, Clemens Dirven, Marion Smits, Sebastiaan Koekkoek, Arnaud Vincent, Chris de Zeeuw, Pieter Kruizinga
Erasmus MC, Netherlands

8350: Selective Plane Functional Ultrasound Using Sound-Sheet Imaging
Rick Waasdorp{1}, Twan Gouwerok{1}, Eleonora Muñoz-Ibarra{1}, Flora Nelissen{2}, Valeria Gazzola{2}, Baptiste Heiles{1}, David Maresca{1}
{1}Delft University of Technology, Netherlands; {2}Netherlands Institute for Neuroscience, Netherlands

7599: Real Time Automatic Detection and Quantification of Physiological Parameters During Functional Ultrasound Imaging of Brain Activity
Nicolas Zucker{2}, Isabella Hurvitz{2}, Thomas Deffieux{2}, Fabrice Arcizet{1}, Pierre Pouget{1}, Nathalie Ialy-Radio{2}, Sophie Pezet{2}, Mickael Tanter{2}
{1}Institut de la Vision Paris, France; {2}Physics for Medicine Paris, France

8587: Towards 4D Functional Ultrasound Imaging of the Human Brain
Luuk Verhoef, Jason Voorneveld, Sadaf Soloukey, Pieter Kruizinga
Erasmus MC, Netherlands

7777: Functional Connectivity Remodeling by Acute Subanesthetic Ketamine
Tommaso Di Ianni, Valeria Grasso, Laura Cho, Joseph Tennyson
University of California San Francisco, United States

7756: An Online rPCA Approach for Ultrafast Ultrasound Microvascular Clutter Filtering
Yinran Chen{2}, Baohui Fang{2}, Lijie Huang{1}, Jianwen Luo{1}
{1}Tsinghua University, China; {2}Xiamen University, China

D2L-09: MIS: Image Formation 2
Location: 701H (TaiNEX 2)
10:30 - 12:00

8590: Limited View Ultrasound Tomography: Theory and a Deep Learning Approach
Yixuan Wu, Baichuan Jiang, Emad Boctor
Johns Hopkins University, United States

7371: Global Speed-of-Sound Estimation Using a Single Unfocused Transmission
Pat De la Torre, Di Xiao, Marina Mourtzakis, Alfred Yu
University of Waterloo, Canada

7460: A Total-Variation Regularizer with Partially Known Support for Pulse-Echo Speed-of-Sound Imaging
Samuel Beuret, Jean-Philippe Thiran
EPFL, Switzerland

7588: Continuous Bernoulli Distribution for More Realistic Ultrasound Reconstruction with NeRF
Yimeng Dou, Tomy Varghese
University of Wisconsin-Madison, United States

8513: Ultrafast Volumetric Mills Cross Electronic Scanning (MiXES) Using Electrostrictive Row-Column Arrays
Michael Caulfield{2}, Tyler Henry{2}, Tarek Kaddoura{2}, Darren Dahunsi{2}, Mohammad Rahim Sobhani{1}, Roger Zemp{2}
{1}CliniSonix, Canada; {2}University of Alberta, Canada

8986: Improved Row-Column-Addressed Array Imaging with Retrospective Filtering
Chung-Shiang Mei, Wei-Hsiang Shen, Meng-Lin Li
National Tsing Hua University, Taiwan

D2L-10: Signal Processing (NSP)
Location: 702 (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Jafar Saniie, Illinois Institute of Technology
Aryaz Baradarani, Tessonics

7526: Coded Excitation Enabled Miniature Ultrasound Acquisition Platform
Connor Challinor, Frederic Cegla
Imperial College London, United Kingdom

7918: Inspection and Classification of Redistribution Layer(RDL) Based on Principle Component Analysis of High Dimensional Ultrasound Signal
Min Seok Kim, Hyeong Geun Jo, Hyun Su Kim, Kwan Kyu Park
Hanyang University, Korea

7698: 3D Ultrasonic Self-Supervised Segmentation for Composite Components
Shaun McKnight, Vedran Tunukovic, Ehsan Mohseni, Gareth Pierce, Charles Macleod
University of Strathclyde, United Kingdom

7932: Precise Resonance Frequency Tracking Based on a DSP-Implemented Virtual Vector Voltmeter
Jan Helge Dörsam{3}, Sven Suppelt{3}, Tobias Bossert{3}, Alexander Anton Altmann{3}, Claas Hartmann{3}, Christoph Haugwitz{3}, Yannick Schroedel{1}, Tino Lang{1}, Anne Harth{2}, Christoph Heyl{1}, Mario Kupnik{3}
{1}Deutsches Elektronen-Synchrotron, Germany; {2}Hochschule Aalen, Germany; {3}Technische Universität Darmstadt, Germany

7968: Coded Emissions for Enhanced Ultrasonic Imaging Quality in NDT
Ralph Abi Rizk{2}, Ewen Carcreff{2}, Sébastien Bourguignon{1}, Nans Laroche{2}, Clément Huneau{1}, Jérôme Idier{1}
{1}LS2N, France; {2}TPAC, France

8700: The Application of Multiple-Instance Learning in Acoustic Signal Analysis for Focused Ultrasound-Induced Blood-Brain Barrier Opening Prediction
Haixin Dai{1}, Wenjing Li{1}, Yifan Feng{2}, Ji Hu{2}, Bingbing Cheng{1}
{1}School of Biomedical Engineering, ShanghaiTech University, China; {2}School of Life Science and Technology, ShanghaiTech University, China

D2L-11: Wearable Devices 2
Location: 703 (TaiNEX 2)
10:30 - 12:00

7616: Ultrathin Wearable Patch for Skincare Assessment with High-Frequency MEMS Ultrasound
Wei Wei{2}, Xingli Xu{2}, Liang Zhang{2}, Yongquan Ma{2}, Zhuochen Wang{1}, Wei Pang{2}, Huimin Li{2}, Wanli Yang{2}, Pengfei Niu{2}
{1}Beijing University of Chemical Technology College of Mechanicaland Electrical Engineering, China; {2}Tianjin University State Key Laboratory of Precision Measurements Technology and Instrument, China

7925: Towards Natural Multi-DoF Prosthesis Control with Distributed Ultrasound
Bruno Grandi Sgambato{2}, Halla Hakami{2}, Xingchen Yang{2}, Deren Y. Barsakcioglu{2}, Anette Jakob{1}, Marc Fournelle{1}, Alison H. McGregor{2}, Meng-Xing Tang{2}, Dario Farina{2}
{1}Fraunhofer IBMT, Germany; {2}Imperial College London, United Kingdom

8258: Monitoring of Muscular Loading with Wireless Wearable Ultrasound and Machine Learning
Giulia Core, Magda Czech, Cameron Dick, Struan Smith, Blair Rocks, Claire Thring, Dan Irving, Dave Hughes
novosound, United Kingdom

7745: Feasibility of Wearable and At-Home Applications of Pulse Wave Imaging: Evaluation of Central Arterial Mechanics Using a Rigid PMUT Array In Vivo
Parth Gami{1}, Jessica Xie{1}, Tuhin Roy{1}, Pengcheng Liang{1}, Paul Kemper{1}, Marco Travagliati{2}, Leonardo Baldasarre{2}, Stephen Bart{2}, Elisa Konofagou{1}
{1}Columbia University, United States; {2}TDK-InvenSense, Italy; {2}TDK-InvenSense, United States

7721: Multi-Site Wearable Ultrasound Can Track Muscle Function Symmetry During Rehabilitation
Erica King{1}, Morgan Lamarre{1}, Gabriel Gibson{1}, Ahmed Bashatah{1}, Theodore Croy{2}, Margaret Jones{1}, Qi Wei{1}, Siddhartha Sikdar{1}, Parag Chitnis{1}
{1}George Mason University, United States; {2}Liberty University, United States

7670: Effective Imaging Window Analysis for Wearable Ultrasound Device Using Fetal MRI
Baichuan Jiang{2}, Keshuai Xu{2}, Ernest Graham{1}, Russell Taylor{2}, Mathias Unberath{2}, Jeeun Kang{1}, Emad Boctor{2}
{1}Johns Hopkins Medical Institute, United States; {2}Johns Hopkins University, United States

D2L-12: Opto-Acoustics & Phononics (POA & PPN) 1
Location: 500 (TaiNEX 1)
10:30 - 12:00

8072: Towards Efficient Microwave to Optical Signal Transduction Using Confocal High Overtone Lateral Bulk Acoustic Wave Resonators (cXBARs)
Elnaz Shokati, Krishna Coimbatore Balram
University of Bristol, United Kingdom

8093: Picosecond Acoustic Interferometry for Characterizing Properties of SiO_2 Layer in POI Materials
Pingxu Chen{2}, Xianrui Shi{2}, Siyi Tian{2}, Longyue Liang{1}, Tao Han{2}
{1}NanoLN, China; {2}Shanghai Jiao Tong University, China

8753: Full Field Laser Ultrasound for Defect Imaging
Zi Wen Tham, Santhakumar Sampath, Yi Fan Chen, Lei Zhang
Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore

7218: Broadband Optical Probing of Ultrafast Strain Waves
Thomas van Den Hooven{1}, Paul Planken{2}
{1}Advanced Research Center for Nanolithography (ARCNL), Netherlands; {2}Advanced Research Center for Nanolithography (ARCNL) / University of Amsterdam (UvA), Netherlands

8390: Toward Achieving Critical Coupling in Phononic Integrated Circuits
Mahmut Bicer, Krishna Coimbatore Balram
University of Bristol, United Kingdom

7221: Phononic Crystal Based Acoustic Sorting of Gas Vesicles-Containing Bacteria
Laixin Huang, Yuanyuan Wang, Min Su, Wei Zhou, Feiyan Cai, Long Meng, Fei Yan, Fei Li, Hairong Zheng
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China

D2L-13: Next Generation Time and Frequency Transfer: From SI Second to PNT
Location: 501 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Marina Gertsvolf, National Research Council Canada

8324: News from the Consultative Committee for Time and Frequency: Redefinition of the Second and a Continuous Coordinated Universal Time (UTC)
Patrizia Tavella
BIPM Time Department, France

7245: Robust Onboard Timescale Generation for Next-Generation GNSS
Christian Trainotti{1}, Gabriele Giorgi{1}, Christoph Günther{2}
{1}German Aerospace Center (DLR), Germany; {2}Technical University of Muich (TUM) & CoNavCo, Germany

8828: Ultra-Precise Phase Stable Frequency Transfer for Next Generation Radio Telescopes
Michael Kriele, Charles Gravestock, Edward Gluszak, Neethu Thomas, Eric Tyler, Jeremy Martin, Sascha Schediwy
University of Western Australia, Australia

9011: Time Transfer Developments Within the Proposed EU C-PNT Ecosystem
Lukasz Bonenberg{1}, Beatrice Motella{1}, Matteo Paonni{1}, Joaquim Fortuny-Guasch{1}, Magnus Danielson{2}
{1}EC JRC, Italy; {2}NetInsight, Sweden

D2L-15: Quartz and Lithium Niobate Resonators
Location: 507 (TaiNEX 1)
10:30 - 12:00

7290: The Optimization of Inverted-Mesa Type Quartz Crystal Resonators with the Consideration of Effects of Structural Parameters
Shih-Yung Pao{1}, Ji Wang{2}, Zong-De Lin{1}, Tzu-Hsiu Peng{1}
{1}TXC, Taiwan; {2}TXC(NGB), China

7529: 10.5-GHz Coupled Longitudinal and Shear SAW Resonator with High Electromechanical Coupling Coefficient of 18%
Zhongbin Dai, Liyan Li, Jiaxin Dong, Chengjie Zuo
University of Science and Technology of China, China

7305: 12-GHz Spurious-Free Fin-Mounted Lamb Wave Resonator with Half-Electrode Reflectors
Kai Yang, Jiming Fang, Fuhong Lin, Yiming Wang, Jie Chen, Meijuan Li, Haoran Tao, Chengjie Zuo
University of Science and Technology of China, China

8674: Thin Film ST-Cut Quartz on Silicon Micromechanical Resonators with Ultra-Low Power On-Chip Ovenization
Gianluca Piazza, Xinyi Fang, Bokyung Suh
Carnegie Mellon University, United States

7643: High Figure of Merit A3 Mode Lithium Niobate Acoustic Resonators from 30 to 60 GHz
Vakhtang Chulukhadze, Jack Kramer, Naveed Ahmed, Tzu-Hsuan Hsu, Omar Barrera, Ian Anderson, Sinwoo Cho, Joshua Campbell, Ruochen Lu
UT Austin, United States

D2L-16: Modelling & Inversion (PMI)
Location: 502 (TaiNEX 1)
10:30 - 12:00
Session Chair(s): Ines Elisa Ulrich, Federal Institute of Technology Zurich (ETH Zurich)
Koen van Dongen, Delft University of Technology

7960: Vortex-Encoded Waveform Inversion for Fast Musculoskeletal Tomography
Chenchen Zhou, Guoao Ma, Ying Li, Kailiang Xu, Dean Ta
Fudan University, China

8655: OpenMP Accelerated Nonlinear Ultrasound Simulations with the DDiscontinuous Galerkin Method
Jacob Honer, Drew Murray, Robert McGough
Michigan State University, United States

7677: An Open-Source GPU-Based Acoustic Simulator for Fast and Accurate Modeling of Acoustic Scattering
Zixuan Tian{2}, Yun Jing{1}, Aiguo Han{3}
{1}Pennsylvania State University, United States; {2}University of Illinois Urbana-Champaign, United States; {3}Virginia Tech, United States

7431: Numerical Model for Predicting Nanobubble Dynamics at Low Frequencies for Theranostic Applications
Ilia Mezdrokhin, Tali Ilovitsh
Tel Aviv University, Israel

8963: Modeling of Nonlinear Wave Propagation on GPUs for Focused Ultrasound Treatment Planning
Maxim Solovchuk
National Health Research Institutes, Taiwan

8654: An Approximate Analytical Three-Dimensional Time-Domain Green's Function for Shear Wave Attenuation with Power Law Exponent Y = 1/2
Robert McGough
Michigan State University, United States

Lunch
Location: Exhibit Hall - 7F (TaiNEX 2)
12:00 - 13:00

D3L-01: MTC: Liver Tissue Characterization 1
Location: 506 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Tadashi Yamaguchi, Chiba University
Michael Oelze, University of Illinois

7773: Quantitative Liver Steatosis Assessment with Harmonic Imaging Based Ultrasound Attenuation Coefficient Estimation
Jingke Zhang, Ping Gong, Chengwu Huang, U-Wai Lok, Shanshan Tang, Chenyun Zhou, Wenwu Ling, Lulu Yang, Hui Liu, Jieyang Jin, Kendra Petersen, Kate Knoll, Kathryn Robinson, Kymberly Watt, Matthew Callstrom, Shigao Chen
Mayo Clinic, United States

7946: Non-Invasive HIV Viral Load Prediction Based on Liver Quantitative Ultrasound
Yuzhan Huang{3}, Xingyue Wei{3}, Hengrong Lan{3}, Fei Ji{2}, Meng Yang{2}, Qiong He{3}, Wei Lv{1}, Jianwen Luo{3}
{1}Department of infectious diseases, Peking Union Medical Colloge Hospital, China; {2}Department of Ultrasonography, Peking Union Medical Colloge Hospital, China; {3}Tsinghua University, China

8443: A Multi-Parametric Model for Progression of Metabolic Dysfunction-Associated Steatohepatitis (MASH) in Humans
Jihye Baek{3}, Sergio Sanabria{3}, Ignacio Oyarzabal{1}, Jose Echevarria-Uraga{2}, Carlos Quesada{4}, Jeremy Dahl{3}, Kevin Parker{5}
{1}3University of Deusto, Spain; {2}Galdakao-Usansolo Hospital, Spain; {3}Stanford University, United States; {4}University of Deusto, Spain; {5}University of Rochester, United States

7180: Shear Wave Viscoelastography for Liver Cancer Assessment: Preliminary Results
Iman Rafati, Ladan Yazdani, Maxime Barat, Elige Karam, Audrey Fohlen, Bich Ngoc Nguyen, Hélène Castel, An Tang, Guy Cloutier
University of Montreal Hospital Research Center (CRCHUM), Canada

8950: Improved Ultrasound Attenuation Coefficient Estimation Using Spectral Normalization with Homomorphic Filtering: Validation with Clinical Liver Data
Kun-Lin Liu{2}, Chiao-Yin Wang{1}, Po-Hsiang Tsui{1}, Meng-Lin Li{2}
{1}Chang Gung University, Taiwan; {2}National Tsing Hua University, Taiwan

7308: Basic Study on the Comprehensive Evaluation of Acoustic and Electrical Properties in Fatty Liver
Miyu Nagaoka{3}, Koichi Ito{2}, Kenji Yoshida{1}, Shinnosuke Hirata{1}, Tadashi Yamaguchi{1}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}Chiba university, Japan; {3}Graduate School Science and Engineering, Chiba University, Japan

D3L-02: MTH: Cavitation Based Therapy and Blood Brain Barrier Opening
Location: 701A
13:00 - 14:30
Session Chair(s): Zhen Xu, University of Michigan

7699: Non-Invasive Adeno-Associated Viral Gene Delivery to the Brain in Non-Human Primates with Cavitation-Guided Focused Ultrasound
Alec Batts{1}, Robin Ji{1}, Sua Bae{1}, Sergio Jimenez-Gambin{1}, Fotis Tsitsos{1}, Nancy Kwon{1}, Vincent Ferrera{1}, Jared Smith{2}, Elisa Konofagou{1}
{1}Columbia University, United States; {2}REGENXBIO Inc., United States

8569: Microbubble Induced Erosion of a Collagen-Based Vessel Occlusion Model with a Novel Forward-Looking Ultrasound Catheter
Jingjing Liu, Alex Wright, Bradley Strauss, Kullervo Hynynen, David Goertz
Sunnybrook Research Institute, Canada

8862: Histotripsy Dose Selection Impacts Tumor-Free Survival in an Orthotopic Liver Cancer Model
Tejaswi Worlikar, Man Zhang, Hanna Kim, Timothy Hall, Clifford Cho, Zhen Xu
University of Michigan, United States

7091: In Vivo Aberration Correction of Histotripsy Using Acoustic Cavitation Emissions
Ellen Yeats{3}, Ning Lu{2}, Greyson Stocker{1}, Mahmoud Komaiha{3}, Jonathan Sukovich{3}, Zhen Xu{3}, Timothy Hall{3}
{1}Histosonics, Inc, United States; {2}Stanford University, United States; {3}University of Michigan, United States

7336: Partial Boiling Histotripsy with 1.1/3.3MHz Inducing Immune Response in 4T1 Murine Breast Tumor Model
Yanshu Jing{1}, Jie Deng{1}, Tingting Qi{1}, Juntao Chang{1}, Weihao Sun{1}, Quan Zhang{1}, Mingxi Wan{2}, Mingzhu Lu{1}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

D3L-03: MTN: Brain Delivery and Cancer Therapy
Location: 701B (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Karla Mercado-Shekhar, Indian Institute of Technology Gandhinagar
Antonios Pouliopoulos, King's College London

8224: Low-Frequency Vascular Analysis of Dual-Mode Transcranial Focused Ultrasound Induced Brain Stimulation
Tzu-Tsen Hsieh{2}, Yung-Han Lee{1}, Bao-Yu Hsieh{3}, Hao-Li Liu{2}
{1}Department of Biomedical Engineering, National Taiwan University, Taiwan; {2}Department of Electrical Engineering, National Taiwan University, Taiwan; {3}Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taiwan

8477: Novel Fine Needle Aspiration-Paired Micro-Histotripsy for Cancer Biomarker Extraction and Diagnosis
Joy Wang{2}, Pradyumna Kedarisetti{2}, Ewan McAlister{2}, Matthew Mallay{1}, Jeremy Brown{1}, Frank Wuest{2}, Roger Zemp{2}
{1}Dalhousie University, Canada; {2}University of Alberta, Canada

7338: Combination of Nanobubble-Mediated Histotripsy and Chimeric Antibody-Based Receptor T (CAR-T) Cells for Cancer Therapy
Mike Bismuth, Ariel Werblowsky, Tali Ilovitsh

8682: Focused Ultrasound-Enhanced Spatial Drug Delivery via the Glymphatic Pathway in a Porcine Model
Siaka Fadera, Yimei Yue, Jinyun Yuan, Hong Chen
Washington University in St Louis, United States

8028: Thermosensitive Liposome Delivery to the Brain After FUS-Induced Blood-Brain Barrier (BBB) Opening for Glioblastoma Treatment
Paul Cressey, Chris Payne, Antonios Pouliopoulos, Maya Thanou
KCL, United Kingdom

8936: Passive Acoustic Synthetic-Aperture Processing Techniques for High Resolution Cavitation Mapping During Transcranial Blood-Brain Barrier Opening (BBBO) in the Clinic
Chunqi Li, Elisa E. Konofagou
Columbia University in the city of New York, United States

D3L-04: MEL: Diagnostic Markers and AI in Mechanical Characterization
Location: 701C (TaiNEX 2)
10:30 - 12:00
Session Chair(s): Mostafa Fatemi, Mayo Clinic

8591: Early Myocardial Infarction Detection in the Emergency Department Using Maximum and Minimum Principal Strain
Hannah Schleifer, Jad El Harake, Yik Tung Tracy Ling, Vincent Sayseng, Elisa Konofagou
Columbia University, United States

8463: Direct Ultrasound Cardiac Strain Imaging via Optical Flow Deep Learning
Chih-Wei Liao, Yen-Ting Liu, Min-Yen Hsieh, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

8634: Synthetic Shear Wave Elastography of the Liver Using a Standard B-Scan System Through Cross-Domain Transfer Learning with Conditional Generative Adversarial Network
Chun Hao Lu, Wei Cheng Hsiao, Bao Yu Hsieh, Po Hsiang Tsui
Chang Gung University, Taiwan

8501: Functional Time Harmonic Elastography of the Liver: Exploring Hepatic Stiffness Pulsation as a Diagnostic Marker
Tom Meyer{1}, Paul Spiesecke{1}, Brunhilde Wellge{1}, Caroline Zöllner{1}, Hans-Peter Müller{1}, Thomas Fischer{1}, Marvin Doyley{2}, Heiko Tzschätzsch{1}, Ingolf Sack{1}
{1}Charité - Universitätsmedizin Berlin, Germany; {2}University of Rochester, United States

8413: 3-D Multiparametric Ultrasound Imaging of Prostate Cancer: A Multi-Reader Study
Spencer Moavenzadeh{1}, Derek Chan{1}, Eric Adams{2}, Sriram Deivasigamani{2}, Srinath Kotamarti{2}, Mark Palmeri{1}, Thomas Polascik{2}, Kathryn Nightingale{1}
{1}Duke University, United States; {2}Duke University Medical Center, United States

8976: Quantitative Measurement of Elastic Heterogeneity and Anisotropy in Ischemia Reperfusion-Injured Porcine Kidneys Using Double-Profile Intersection (DoPIo) Elastography
Keita Yokoyama{2}, Sabiq Muhtadi{2}, Melissa Caughey{2}, Timothy Nichols{1}, Elizabeth Merricks{1}, Dwight Bellinger{1}, Caterina Gallippi{2}
{1}Univ. of North Carolina at Chapel Hill, United States; {2}Univ. of North Carolina at Chapel Hill and NC State Univ., United States

D3L-05: MIS: Image and Signal Processing in Ultrasound Imaging 2
Location: 701D (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Denis Kouame, University of Toulouse

8238: Multimodality Feature Decomposition and Fusion for Ultrasound Breast Cancer Diagnosis in BI-RADS Category 4
Zhikai Ruan{4}, Pengfei Xu{4}, Canxu Song{1}, Chaoyu Wang{4}, Jing Zhao{3}, Meng Chen{2}, Suoni Li{1}, Diya Wang{4}
{1}Shaanxi Provincial Cancer Hospital, China; {2}The First Affiliated Hospital of Xi'an Jiaotong University, China; {3}The Second Norman Bethune Hospital of Jilin University, China; {4}Xi'an Jiaotong University, China

7061: Breast Tumor Image Synthesis Based on Diffusion Probabilistic Model
Seok-Hwan Oh{2}, Guil Jung{2}, Myeong-Gee Kim{1}, Young-Min Kim{2}, Hyeon-Jik Lee{2}, Sang-Yun Kim{2}, Hyuk-Sool Kwon{3}, Hyeon-Min Bae{2}
{1}Barreleye, Korea; {2}Korea Advanced Insitute of Science and Techonology, Korea; {3}Seoul National University Bundang Hospital, Korea

8408: Uterine Contraction Propagation Estimation with 3D Transvaginal Ultrasound
Anyi Cheng{2}, Yizhou Huang{1}, Lin Xu{2}, Massimo Mischi{1}
{1}Eindhoven University of Technology, Netherlands; {2}ShanghaiTech University, China

8436: Novel Ultrasound Thermal Strain Imaging for Atherosclerosis Plaque Characterization: Image Acquisition, Processing, and In Vivo Results on a Porcine Model
Zhiyu Sheng{3}, Ran Wei{3}, Mengyue Chen{2}, Keishi Kohyama{3}, Matthew Wielgat{4}, Dhanansayan Shanmuganayagam{4}, Edith Tzeng{3}, Xuecang Geng{1}, Xiaoning Jiang{2}, Kang Kim{3}
{1}Blatek Industries, Inc., United States; {2}North Carolina State University, United States; {3}University of Pittsburgh, United States; {4}University of Wisconsin – Madison, United States

8645: New Ultrasound Technique for Detecting Kidney Stones Utilizing Spectral Broadening in Twinkling Artifacts
Seongjun Park, Ilseob Song, Jihun Jang, Yangmo Yoo
Sogang University, Korea

7995: Deep Learning of Cardiovascular Pulsing-Based Ultrasound Strain Imaging for Liver Fibrosis Detection
Hsien-Jung Chan, Bao-Yu Hsiao, Po-Hsiang Tsui
Chang Gung University, Taiwan

D3L-06: ASD SAW Devices 4
Location: 701E (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Karl Wagner, Qualcomm / RF360 Europe GmbH
Maximilian Pitschi, Qualcomm / RF360 Europe GmbH

7748: Quality Factor Improvement of 30° Y-Cut Lithium Niobate SH-SAW Resonators Using Double Busbar Structure
Wei Guo{3}, Shuxian Wu{1}, Yedi Zhou{3}, Xin Xu{3}, Qiaozhen Zhang{2}, Feihong Bao{3}, Xianqi Lin{3}, Jie Zou{1}
{1}Fudan University, China; {2}Shanghai Normal University, China; {3}University of Electronic Sicence and Technology of China, China

8984: High-Q Longitudinal Leaky SAW Resonators at > 4 GHz on $LiNbO_3/SiO_2/SiC$ Platform
Pengcheng Zheng, Shibin Zhang, Xinjian Ke, Mijing Sun, Xiaoli Fang, Juxing He, Dongchen Sui, Kai Huang, Xin Ou
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

7007: Impact of In-Plane Diffraction in TC-SAW Resonator
Yiming Liu, Yiwen He, Ting Wu, Fangyi Li, Jingfu Bao, Ken-Ya Hashimoto
University of Electronic Science and Techononlogy of China, China

7417: Study of Longitudinal Mode Suppression of SAW Resonators on $LiNbO_3/SiO_2/SiC$ Substrate
Xiaoli Fang{2}, Shibin Zhang{2}, Pengcheng Zheng{2}, Jinbo Wu{3}, Liping Zhang{3}, Xinjian Ke{2}, Juxing He{1}, Kai Huang{2}, Xin Ou{2}
{1}hanghai Institute of Microsystem and Information Technology, China; {2}Shanghai Institute of Microsystem and Information Technology, China; {3}Shanghai Xin Ou Integration Technology Co., Ltd., China

7753: Determination of Nonlinear Elastic Constants of Polycrystalline Metallic Materials Used in Surface Acoustic Wave Devices
Yasuo Cho{2}, Ryo Nakagawa{1}, Toshimaro Yoneda{1}, Takeshi Nakao{1}, Mamoru Ikeura{1}
{1}Murata Manufacturing Co., Ltd., Japan; {2}Tohoku University, Japan

7754: Direct Bonding of Piezoelectric Plates and Microfabricated Quartz Crystals for Next Generation SAW Resonators
Ko-Hei Sano{3}, Sho Nagai{1}, Yoshitaka Ono{1}, Yasuo Hayashi{1}, Takahiko Yanagitani{2}
{1}AGC Inc., Japan; {2}Waseda Univ., Japan; {3}Waseda Univ., AGC Inc., Japan

D3L-07: TPM: Piezoelectric Transducer Materials
Location: 701F (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Haley Nicole Jones, Pennsylvania State University
Marc Lethiecq, INSA Centre Val de Loire

7104: Material Properties of Hard and Soft Piezoelectric Ceramics from Cryogenic to High Temperatures
Sebastian Schlack{2}, Timo Scholehwar{2}, Frank Müller{2}, Jan Homberg{1}, Burhanettin Koc{1}
{1}Physik Instrumente (PI) GmbH & Ko. KG, Germany; {2}PI Cermaic GmbH, Germany

7632: Bandwidth Stability of a Nitinol Cascade Transducer at Elevated Temperatures
Yuchen Liu, Mahshid Hafezi, Andrew Feeney
University of Glasgow, United Kingdom

7843: Semi-Hard (Acceptor/Donor Co-Doped) PMN-PZT Single Crystals for Medical Ultrasound and NDT Applications
Dong-Ho Kim{1}, Moon-Chan Kim{1}, Myeong-Jae Yoon{1}, Song Won Ko{2}, Ho-Yong Lee{1}
{1}Ceracomp Co., Ltd., Korea; {2}Quest Integrity, United States

8962: Temperature, Electric Field, and Stress Dependence of Textured Mn-Doped PMN-PZ-PT Piezoceramics
Ahmet Erkan Gurdal, Danielle McKnight, Joseph Moretz, Safakcan Tuncdemir
QorTek, Inc., United States

8777: Pure Premium Quartz (PPQ) Synthesis for SAW Resonators Beyond the State of the Art
Delphine Picchedda{1}, Sylvain Ballandras{3}, Emilie Courjon{3}, Hugues Cabane{1}, Thomas Contiero{1}, Gabrielle Aspar{3}, Christophe Jacquier{1}, Florent Bernard{3}, Saly Ndiaye{3}, Audrey Burlon{1}, Jean-Marc Lesage{2}, Patricia Jeandel{1}
{1}cristal innov, France; {2}dga, France; {3}soitec frecnsys, France

8701: Piezoelectricity of 20nm $Hf_{0.5}Zr_{0.5}O_2$ Thin Film for NEMS Resonators Assessed by PFM
Haoqi Lyu{1}, Hai Zhong{3}, Wuhao Yang{1}, Zhuohui Liu{2}, Xiaorui Bie{1}, Chen Ge{2}, Xudong Zou{1}
{1}Aerospace Information Research Institute, Chinese Academy of Sciences, China; {2}Beijing National Laboratory for Condensed Matter Physics Institute of Physics, Chinese Academy of Sc, China; {3}School of Physics and Optoelectronics Engineering Ludong University, China

D3L-08: TMI: Intravascular Ultrasound Transducers
Location: 701G (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Chang Peng, ShanghaiTech University

7833: 18 MHz Forward-Viewing Intravascular Ultrasound (IVUS) 2D Array for Imaging Coronary Biomechanics
Stephan Strassle Rojas{1}, Brooks Lindsey{1}, Adeoye Olomodosi{1}, Amauri Assef{2}, Phuong Vu{1}, Travis Singh{1}
{1}Georgia Institute of Technology, United States; {2}Universidade Tecnológica Federal do Paraná, Brazil

7099: A High-Frequency Ring-Annular Ultrasound Array for Intravascular Ultrasound Imaging
Xi Liu, Yuanlong Li, Yashuo He, Chang Peng
Shanghaitech University, China

7920: Development of a Dual-Mode Imaging Catheter for Peripheral Intravascular Imaging
Peng Zhang{1}, Jianzhong Chen{2}, Yongchuan Li{3}, Yandong Yu{1}, Hairong Zheng{3}, Teng Ma{3}
{1}Harbin University of Science and Technology, China; {2}Nanjing University of Aeronautics and Astronautics, China; {3}Shenzhen Advanced Technology Research Institute, Chinese Academy of Sciences, China

8116: Multimodal Endoscopic Imaging System for Evaluating Atherosclerosis Plaques
Yuting Song{1}, Zhuoquan Chen{2}, Ruiming Kong{2}, Bing Wang{2}, Hairong Zheng{2}, Teng Ma{2}
{1}Harbin Institute of Technology, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

7179: Localization Accuracy of an Ultrasound-Actuated Needle Under Color Doppler Imaging: An Ex Vivo Study
Youheng Zeng{2}, Ashraf Agweder{1}, Guangyu Zhang{2}, Graeme McLeod{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

7115: A Miniature Ultrasonic Surgical Device Based on a Flextensional Configuration with a Pre-Stressed PZT Stack
Xuan Li, Margaret Lucas
University of Glasgow, United Kingdom

D3L-09: MBB: Artifact Removal & Passive Cavitation Imaging
Location: 701H (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Nick Bottenus, University of Colorado-Boulder

8604: Encoded Multi-Line Transmissions for the Removal of Crosstalk Artifacts
Nazli Javadi Eshkalak, Nick Bottenus
University of Colorado Boulder, United States

7209: Experimental Evaluation of Cross-Spectral Matrix Fitting for Passive Cavitation Imaging
Célestine Lachambre{2}, Adrian Basarab{1}, Barbara Nicolas{1}, Jean-Christophe Béra{3}, François Varray{1}, Bruno Gilles{3}
{1}Creatis, France; {2}Creatis /Labtau Université Claude Bernard, France; {3}Labtau, France

8565: Multiple Signal Classification for Passive Acoustic Cavitation Imaging
Nathan Caso, Bailin Ren, Tao Sun
Northeastern University, United States

8618: Frequency-Dependent F-Numbers Suppress Grating Lobes and Improve the Lateral Resolution in Line-by-Line Scanning
Martin Schiffner
Ruhr University Bochum, Germany

8601: Spatial Calibration for Swept Synthetic Aperture Imaging Using Differentiable Beamforming
Anet Sanchez, Jacob Spainhour, Isaac Martinez, Nick Bottenus
University of Colorado Boulder, United States

7928: High-Framerate B-Mode Ultrasound Imaging Using Continuous Emission
Axel Adam, Adrian Basarab, Barbara Nicolas, Hervé Liebgott
CREATIS, France

D3L-10: Structural Health Monitoring (NSH)
Location: 702 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Kui Yao, A Star
Jing Rao, Beihang Universit

7079: Electronic Design Considerations and System Development for Structural Health Monitoring with Ultrasonic Guided Waves
Lorenzo Capineri
Università degli Studi di Firenze, Italy

8191: Shear-Mode Ultrasonic Transducers Made from Thermal-Sprayed Piezoelectric Lead-Free Ceramic Coating
Jie Yin, Voon-Kean Wong, Percis Teena Christopher Subhodayam, David Boon Kiang Lim, Kui Yao
Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore

8834: From Defect Imaging to Material Characterization Using Ultrasonic Waves
Zheng Fan
Nanyang Technological University, Singapore

D3L-11: AlN-Based Resonators and Filters
Location: 703 (TaiNEX 2)
13:00 - 14:30
Session Chair(s): Wei-Chang Li, National Taiwan University

7023: Advancing RF Acoustic Resonators Through ScAlN Thin Film Technology
Yao Zhu
Institute of Microelectronics (IME), Agency for Science, Technology and Research, Singapore

7020: 13 GHz Acoustic Resonator with Q of 600 in High-Quality Thin-Film Aluminum Nitride
Sinwoo Cho{3}, Omar Barrera{3}, Hritik Bansal{2}, Michael Liao{2}, Ellie Wang{3}, Vakhtang Chulukhadze{3}, Jack Kramer{3}, Joshua Campbell{3}, Tzu-Hsuan Hsu{1}, Ian Anderson{3}, Mark Goorsky{2}, Ruochen Lu{3}
{1}National Tsing Hua University, Taiwan; {2}University of California, Los Angeles, United States; {3}University of Texas at Austin, United States

7220: SAW Resonators Based on High-Crystalline AlScN Film Grown by a Two-Step Method of MOCVD and PVD
Kai Yang, Jie Chen, Fuhong Lin, Han Qiu, Jiming Fang, Chengjie Zuo
University of Science and Technology of China, China

8371: Temperature Compensation Utilizing Duffing Effect in AlScN-on-Si Lamé-Mode Resonator for Oscillator Applications
Dicheng Mo, Shaurya Dabas, Banafsheh Jabbari, Roozbeh Tabrizian
University of Florida, United States

7639: A 3.6 GHz Radio Frequency Circulator Based on AlN FBAR Filters
Chin-Yu Chang{1}, Ya-Ching Yu{1}, Yu-Chi Hung{1}, Yung-Hsiang Chen{2}, Yelehanka Ramachandramurthy Pradeep{3}, Rakesh Chand{3}, Yens Ho{2}, Weileun Fang{1}, Sheng-Shian Li{1}, Ming-Huang Li{1}
{1}National Tsing Hua University, Taiwan; {2}Vanguard International Semiconductor Corporation, Taiwan; {3}Vanguard International Semiconductor Corporation Singapore PTE. Ltd., Singapore

D3L-12: Acoustic Tweezers & Particle Manipulation (PAT) 2
Location: 500 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): David Hyung Ham Kim, POSTECH

8125: Acoustic Tweezer Programmatically Reproduces the Infiltration Degree of Ethanol-Damaged Hepatobiliary Organoid by Tumor Spheroid
Jialong Li{2}, Dingyuan Liu{2}, Zepin Gao{2}, Mengting Sun{2}, Shuo Wang{2}, Ye Tian{1}, Hairong Zheng{2}, Teng Ma{2}
{1}Harbin Medical University, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

8121: Visualized Programmable Acoustic Manipulation for Macrophage In-Vivo
Dingyuan Liu, Ye Yang, Shuang Lei, Yongchuan Li, Hairong Zheng, Teng Ma
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

7140: Enhanced Gigahertz Acoustofluidic Chip for High-Throughput Nanoscale Bioparticle Separation
Qing Zhou, Haotian Sun, Shuying Wang, Weiwei Cui, Hao Zhang
Tianjin University, China

8980: Design and Implementation of Ergonomic Mid-Air Acoustic Tongs
Yusei Yokoyama, Kan Okubo
Tokyo Metropolitan University, Japan

D3L-13: High-performance Microwave Clocks
Location: 501 (TaiNEX 1)
13:00 - 14:30
Session Chair(s): Thomas McClelland, Frequency Electronics, Inc.

9020: New Avenues in Photonically Integrated Frequency References"
Liron Stern
Hebrew University of Jerusalem, Israel

8199: High Performance Industrial Optically-Pumped Cesium Beam Clock
Patrick Berthoud
Oscilloquartz SA, Switzerland

7741: Improvement of an Atomic Fountain Clock Accuracy Evaluation
Bin Jian, Scott Beattie, Claude Marceau, Marina Gertsvolf
National Research Council, Canada

8212: Development of Yb Ion Clocks for Next Generation Atomic Frequency References
Richard Overstreet, Xianli Zhang, Peter Cash, David Chandler
Microchip Inc., United States

8787: Pulsed Optically Pumped Rubidium Atomic Frequency Standard (POPRAFS): A Next Generation Atomic Clock
Daniel Clark, Martin Disla, Justin Lanfranchi, Huascar Ascarrunz, Christopher Presuto, Tuvia Eiger, Keshawn Smith, Jaroslaw Zacharski, Thomas McClelland
Frequency Electronics, Inc., United States

Poster Session #4: D4P-18: MIM: New Imaging Techiques & Systems
Location: P01 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Yangmo Yoo, Sogang University
Min Wu, Eindhoven University of Technology

8105: High-Contrast Ultrasound Imaging of Acoustic Bacteria with Hadamard-Encoded Pulses
Yueyuan Wang{1}, Haitao Wu{1}, Chaonan Zhang{1}, Zhuonan Chen{1}, Zhibo Zhu{1}, Kangyi Feng{1}, Mingxi Wan{2}, Yujin Zong{1}
{1}Xi'an Jiaotong University, China; {2}Xi'an Jiaotong University, China

7363: Image Homogenization and Field of View Expansion in Echocardiography Using Correlation-Based Ultrasound Imaging
Tamara Krpic{2}, Maxime Bilodeau{2}, David Martin{1}, Andrew Frizado{1}, Meaghan O'Reilly{1}, Nicolas Quaegebeur{2}, Patrice Masson{2}
{1}Sunnybrook Research Institute, Canada; {2}Université de Sherbrooke, Canada

7489: Fast Ultrasound Palmprint and Palm Veins Acquisition for Biometric Recognition
Monica Micucci{1}, Alessandro Ramalli{2}, Antonio Iula{1}
{1}University of Basilicata, Italy; {2}University of Firenze, Italy

7689: A Simulation Study on the Characteristics of Spatial Coherence to a Scattering Medium in Ultrasound
Zhiyuan Li{2}, Herve Liebgott{2}, Yue Zhao{1}, François Varray{2}
{1}Harbin Institue of Technology, China; {2}Universite Claude Bernard Lyon 1, France

7975: Ultrasound RF Data Compression Using 1-Bit Delta Encoding
Martijn Timmermans, Kyle van Oosterhout, Marco Fattori, Eugenio Cantatore
University of Technology Eindhoven, Netherlands

8636: Oscillatory Amplitude Modulation for Non-Linear Ultrasound Imaging
Oleksandra Gulenko, Stephen Alexander Lee, Jonathan Poree, Samuel Desmarais, Jean Provost
Polytechnique Montreal, Canada

8917: RUS-Sim: A Robotic Ultrasound Simulator Modeling Patient-Robot Interaction and Real-Time Image Acquisition
Xihan Ma, Yernar Zhetpissov, Haichong Zhang
Worcester Polytechnic Institute, United States

8961: A New Automated 3D Eye Scanning for Measuring an ONSD-ETD Index by Using a T-Shaped Array Ultrasound Transducer
Jichurl Shin, Ilseob Song, Yangmo Yoo
Sogang University, Korea

7041: Feasibility of Polyvinyl Chloride's as a Breast Ultrasound Phantom
Wadhhah Aldehani, Zhihong Huang, Sarah Savaridas
university of Dundee, United Kingdom

8570: Image Resolution Does Not Correlate with Perceived Image Quality for Medical Ultrasound Video Sequences
Edgar Dorausch, Antje Naas, Omid Chaghaneh, Cornelius Kühnöl, Tönnis Trittler, Julian Kober, Jochen Hampe, Gerhard Fettweis, Moritz Herzog
TU Dresden, Germany

Poster Session #4: D4P-19: General NDE Methods, Structural Health Monitoring, Material & Defect Characterization
Location: P02 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Bruce Drinkwater, University of Bristol
Johan Carlson, Lulea University of Technology

7581: Global Constraint for Temperature Compensation for Dynamic Time Warping of Guided Wave Ultrasound Signals
Narendra Kumar, Payal Gupta, Johan E. Carlson
LTU, Sweden

8198: Wide Area Condition Monitoring of Composite Wrapping on Pipes Using an Embedded Sparse Ultrasound Array
Matthew McInnes, Cameron Dick, Daniel Irving, Claire Thring, Dave Hughes
Novosound, United Kingdom

8257: Detection of a Notch Type Defect at 0°, 45° and 90° Orientations by a Network of Interdigitated Piezopolymer Transducers for Structural Health Monitoring
Lorenzo Capineri, Lorenzo Taddei
University of Florence, Italy

8888: Nondestructive Evaluation of Damaged in Concrete by Nonlinear Ultrasonic Technique and Acoustic Emission
Abhishek Sharma, Surendra Beniwal
IIT Jammu, India

7045: Investigation of the Potential of Ultrasound to Differentiate Archaeological Ceramic Shards from Different Sites and Historical Periods
Yara Osman{3}, Francois Vander Meulen{4}, Michael Lematre{3}, Francesca Di Napoli{2}, Philippe Husi{1}, Marc Lethiecq{3}
{1}CNRS, Tours University, France; {2}INRAP, France; {3}INSA Centre Val de Loire, France; {4}Tours University, France

7149: Study on Improving the S/N Ratio for Detecting Internal Defects in Concrete from a Moving Cart Equipped with LDVs
Tsuneyoshi Sugimoto{3}, Kazuko Sugimoto{3}, Yutaka Nakagawa{3}, Itsuki Uechi{3}, Noriyuki Utagawa{2}, Yasukazu Nihei{1}
{1}FUJIFILM Corp., Japan; {2}SatoKogyo Co.,Ltd., Japan; {3}Toin Univ. of Yokohama, Japan

7453: A High-Resolution Imaging Method for Delamination Damage Based on Energy Mapping and Data-Driven Reconstruction
Yitian Yan, Yaxun Gou, Yang Liu
Tianjin university, China

7635: Helical Guided Wave Imaging Through Multi-task Deep Learning Optimization
Zhao Wang, Xiao Ying, Junkai Tong, Yang Liu
Tianjin University, China

7636: Propagation Characteristics of Lamb Waves in Periodically Stiffened Structures
Xiao Ying{2}, Zhao Wang{2}, Yantao Liu{1}, Jian Li{2}, Yang Liu{2}
{1}Beijing Institute of Structure and Environment Engineering, China; {2}Tianjin University, China

7644: Programmable Ultrasound Phased-Array System for Industry 4.0
Marcin Lewandowski, Mateusz Walczak, Beata Witek
us4us Ltd., Poland

7750: Simulation-Based Multi-Pod Analysis for Reliability Evaluation of Phased Array UT(PAUT) in Butt Welds
Ilhyun Yoo{2}, Sungjong Cho{2}, Young Lae Kim{1}, Hyun Jun Kim{2}, Gi-Bum Lee{2}, Ik Keun Park{2}
{1}khnp central research institute, Korea; {2}seoul national university of science and technology, Korea

7826: Investigation of Ultrasonic Scattering from Multi-Layered Lithium-Ion Batteries
Pyung Sik Ma, Hyuk Lee, Yun-Ho Seo
Korea Institute of Machinery and Materials, Korea

8029: Ultrasonic Imaging Based on Compressed Sensing Data for Small Robots
Xiaoyu Sun, Anthony Croxford, Bruce Drinkwater
University of Bristol, United Kingdom

8215: Battery Status Monitoring Based on Advanced Ultrasonic Technology
Jiao Xia{1}, Ting Xie{2}, Yiwei Guo{2}, Junhao Wang{2}, Yipeng Lu{1}
{1}School of Integrated Circuits, Peking University, China; {2}School of Software and Microelectronics, Peking University, China

8944: High-Precision Battery State Assessment Method Based on Mode Decomposition and Data-Driven Approaches
Yaxun Gou, Yitian Yan, Yang Liu
Tianjin university, China

7046: Optimization of an Additive Manufacturing Process Using Ultrasound
Shafaq Zia, Johan E. Carlson, Pia Åkerfeldt
Luleå University of Technology, Sweden

7580: Estimation of Compound Layer Thickness and Porosity in Nitrocarburized Hardening
Johan Carlson, Payal Gupta, Narendra Kumar
Luleå University of Technology, Sweden

7653: Correlating Microstructural Inhomogeneity in Additive Manufactured Single-Phase Metals with Ultrasonic and Mechanical Properties
Junfei Tai, Zheng Fan
School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

7671: Towards Monitoring Water Content in Membrane Electrode Assembly of Low Temperature Fuel Cells Using Ultrasound
Zehua Dou{1}, Yuezhen Xu{1}, Zhiying Wei{1}, Hannes Emmerich{2}, Juergen Czarske{1}, David Weik{1}
{1}Chair of Measurement and Sensor System Technique, Dresden University of Technology, Germany; {2}Institute of Fluid Dynamics, Helmholtz-Zentrum Dresden-Rossendorf, Germany

7788: Crack Defect Characterization Using Raw Channel Data and DNN-Based Classifier
Yixiang Jia, Daler Rakhmatov
University of Victoria, Canada

8388: Nondestructive Ultrasonic Evaluation of Halt Degraded Multilayer Ceramic Capacitors
Haley Jones, Andrea Arguelles, Susan Trolier-McKinstry
Penn State University, United States

8613: Ultrasonic Characterization of Material Properties in Metal Components Additively Manufactures by Powder Bed Fusion
Kenneth Walton, Mikhail Skliar
University of Utah, United States

Poster Session #4: D4P-20: MEL: Elastography Developments using Phantoms
Location: P03 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

7764: Evaluation of a Mechanical Vibration System with Two End-Effectors for Longitudinal Shear Wave Viscoelastography: Simulations and In Vitro Studies Using Anisotropic Phantoms
Akash Chandra, Karla P. Mercado-Shekhar
Indian Institute of Technology Gandhinagar, India

7848: Vibrator-Based Shear Wave Elastography Using Local Phase Velocity-Based Imaging
Siswoyo Prasetyo{1}, Wei-Cheng Hsiao{1}, Chun-Tai Chen{2}, Chia-Lun Yeh{3}, Yu-Chieh Kao{4}, Bao-Yu Hsieh{1}
{1}Chang Gung University, Taiwan; {1}Chang Gung University, Indonesia; {2}China Medical University, Taiwan; {3}National Taiwan University, Taiwan; {4}National Yang Ming Chiao Tung University, Taiwan

7872: Shear Wave Attenuation Calculation Using Stockwell-Transform-Based Method
Piotr Kijanka{1}, Matthew Urban{2}, Hsiao-Chuan Liu{3}
{1}AGH University of Krakow, Poland; {2}Mayo Clinic, United States; {3}University of Southern California, United States

8302: Viscoelasticity Measurement of Polyacrylamide Gel Phantom Using Needle Shaker for Plane Shear Wave Generation
Shinnosuke Hirata, Hiroyuki Shiraishi, Ayumu Matsuda, Mikio Suga, Kenji Yoshida, Tadashi Yamaguchi
Chiba University, Japan

8435: Adaptive Compounding of Deep-Learning-Based Shear-Wave Elastograms
Xufei Chen, Massimo Mischi, Ruud J.G. van Sloun
Eindhoven University of Technology, Netherlands

8757: Monitoring HIFU Thermal Damage Based on Differential Acoustic Radiation Force Pulse Imaging
Yijing Liu, Xinwang Shi, Yao Ran, Xiaowei Zhou
Chongqing Medical University, China

8814: Implementation of SWE Algorithmic Unit (SAU) Using Conditional Generative Adversarial Networks (cGAN): Phantom Validation
Chun Hao Lu, Wei Cheng Hsiao, Bao Yu Hsieh, Po Hsiang Tsui
Chang Gung University, Taiwan

8822: High-Resolution and High Frame-Rate Ultrasound Strain Imaging (USI) with Null Subtraction Imaging (NSI) and Coded Planewaves
Bingze Dai{1}, Zhengchang Kou{2}, Michael Oelze{2}, Wei-Ning Lee{1}
{1}University of Hong Kong, Hong Kong; {2}University of Illinois Urbana-Champaign, United States

Poster Session #4: D4P-21: MBF: Vector Fow and 3D Volumetric Imaging
Location: P04 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Matthew Bruce, University of Washington

7214: A 3D Velocity Estimation Framework Unifying Transverse Oscillations and Multi-Angle Doppler
Raphael Dumas, Baptiste Pialot, Francois Varray
CREATIS, France

7252: 3-D High Frame Rate Vector Doppler in Deep and Large Volumes by a Multi-Probe Approach
Daniele Mazierli{2}, Piero Tortoli{2}, Joseph Hajnal{1}, Laura Peralta{1}, Alessandro Ramalli{2}
{1}King's College London, United Kingdom; {2}University of Florence, Italy

7513: Echo-Particle Tracking Velocimetry for Quantification of High Velocity Trans-Valvular Jets
Yichuang Han{2}, Pritesh Ramya{1}, Mathieu Pourquie{1}, Selene Pirola{1}, Johan Bosch{2}, Jason Voorneveld{2}
{1}Delft University of Technology, Netherlands; {2}Erasmus MC, University Medical Center, Netherlands

7862: Ultrafast Ultrasound Vector Doppler for Pulsatility Measurement in Rat Spinal Cord Small Vasculature
Shaoyuan Yan, Junjin Yu, Kailiang Xu
Fudan University, China

7914: Fourier Decoding of Cascaded Dual-Polarity Waves
Joosje de Bakker{1}, Charlotte Nawijn{2}, Tim Segers{2}, Chris de Korte{1}, Michel Versluis{2}, Anne Saris{1}, Guillaume Lajoinie{2}
{1}Radboud University Medical Center, Netherlands; {2}University of Twente, Netherlands

7990: Real-Time, High-Frame-Rate, Vector Doppler Ultrasound Imaging by a Hybrid Open Platform
Giulio Bonciani{1}, Alessandro Ramalli{1}, Adeline Bernard{2}, Francesco Guidi{1}, Piero Tortoli{1}, Damien Garcia{2}, François Varray{2}
{1}Dept. of Information Engineering, University of Florence, Florence, Italy, Italy; {2}Univ Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, CREATIS UMR 5220, Lyon, France

8563: Vector Flow Imaging in Laser Ultrasound Using Candidate-Aggregation Algorithm
Hyunwoo Song{2}, Emad Boctor{2}, Jeeun Kang{1}
{1}Johns Hopkins Medical Institution, United States; {2}Johns Hopkins University, United States

8785: Utilising Haemodynamic Modelling in Volumetric Ultrasound Simulation
Elliott Smith, Luzhen Nie, Thomas Carpenter, David Cowell, James McLaughlan, Steven Freear
University of Leeds, United Kingdom

8827: Ultrasound Speckle Decorrelation Analysis-Based Velocimetry for 3D-Velocity-Components Measurement Using a 1D Transducer Array
Jianbo Tang, Yongchao Wang
Southern University of Science and Technology, China

Poster Session #4: D4P-22: TMS: Transducer and System Modeling and Characterization
Location: P05 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Byung Chul Lee, Korea Institute of Science and Technology

7237: A User-Friendly Arbitrary-Waveform System for Ultrasound Neuromodulation in Freely Moving Mice
Zihao Chen{2}, Na Li{1}, Lei Sun{2}, Zhihai Qiu{1}
{1}Guangdong Institute of intelligent Science and technology, China; {2}Hong Kong Polytechnic University, Hong Kong

7270: A Novel Pulse Excitation Method for Single-Element Dual-Frequency Transducers
Jiaqi Li{1}, Weiwei Shao{1}, Xueru Yang{2}, Yaoyao Cui{1}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}University of Science and Technology of China, China

7315: Semi-Analytical Models for the Dynamic Characterization of Integrated Photonic Ultrasound Transducers
Sabiju Valiya Valappil{1}, Peter Harmsma{2}, Maurits van der Heiden{2}, Martin Verweij{1}, Paul van Neer{2}
{1}Delft University of Technology, Netherlands; {2}Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Netherlands

7323: An Investigation Into the Effects of Acoustical Coupling of Integrated Photonics Based Ultrasound Transducer (IPUT) Arrays
Anne Maaike Gerritsma{1}, Sabiju Valiya Vallapil{2}, Benoit Quesson{1}, Paul van Neer{1}, Maurits van der Heiden{1}, Martin Verweij{2}
{1}TNO, Netherlands; {2}TU Delft, Netherlands

7330: Machine Learning Strategies for Freeform PMUTs Design
Jiapeng Xu{1}, Zongru Shao{1}, Gabriele Schrag{2}, Tingzhong Xu{1}
{1}Silicon Austria Labs GmbH, Austria; {2}Technical University of Munich, Germany

7435: PyMUST: An Open-Source Python Library for the Simulation and Analysis of Ultrasound
Gabriel Bernardino{2}, Damien Garcia{1}
{1}CREATISs, France; {2}Universitat Pompeu Fabra, Spain

7509: Simulation and Characterization of a Large Divergent Elements Sparse Array (LDESA) Designed for 3D Imaging
Jean-Baptiste Jacquet{2}, Mohamed Tamraoui{1}, Emmanuel Roux{1}, Barbara Nicolas{1}, Jean-Luc Guey{3}, Pierre Kauffmann{3}, Etienne Coffy{3}, Hervé Liebgott{1}
{1}Creatis, France; {2}Creatis/Imasonic, France; {3}Imasonic, France

8042: Customised Miniature Ultrasonic Transducers for Soft Tentacle Robots in Medical Diagnosis
Yifei Wang{1}, Alistair Bacchetti{2}, James Chandler{2}, Pietro Valdastri{2}, Sandy Cochran{1}, Kwokho Lam{1}
{1}University of glasgow, United Kingdom; {2}University of leeds, United Kingdom

8312: 2D Phased Array Driving Scheme Optimization for Ultrasound Neuromodulation
Masoumeh Aqamolaei, Tiago L. Costa
Delft University of Technology, Netherlands

8405: Radiation Impedance of Large CMUT and PMUT Arrays
Erik Vilain Thomsen
DTU, Denmark

8672: Ultrasonic Authentication System Under Foldable Displays with Anisotropic Stiffener
Jessica Liu Strohmann, Hrishikesh Panchawag, Shawn Lin
Qualcomm, United States

8873: Modeling Non-Uniform PMUT Design Based on Physical Principles for Design Optimization
Jinghan Gan, Zhiwei You, Chong Yang, Yipeng Lu
Peking University, China

8958: Multiphysics Simulation of Acoustic Hologram-Lensed Piezoelectric Ultrasound Transducers
Howuk Kim{1}, Jinwook Kim{2}
{1}Inha University, Korea; {2}Kyunpook National University, Korea

Poster Session #4: D4P-23: MTC: Liver Tissue Characterization 2
Location: P06 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Shohei Mori, Tohoku University

7146: Development of a Method to Quantify Fatty Liver Using Multiple Quantitative Ultrasound Parameters with Conventional Clinical Ultrasound Scanner
Takuma Oguri{2}, Naohisa Kamiyama{2}, Hidekatsu Kuroda{1}, Tamami Abe{1}, Yuriko Mikami{1}
{1}Department of Internal Medicine, Division of Hepatology, Iwate Medical University, Japan; {2}Ultrasound General Imaging and Primary Care, GE HealthCare, Japan

7247: Hepatic Steatosis Grading Based on Ultrasound Radiofrequency Signals and One-Dimensional Deep Learning
Pedro Vianna, Arnaud Héroux, Emmanuel Montagnon, An Tang, Guy Cloutier
University of Montreal Hospital Research Centre, Canada

7537: Validation of Echo Interference Conditions in Diagnosis of Metabolic Dysfunction-Associated Steatohepatitis Using Envelope Statistics Under High-Frequency Ultrasound
Mami Shirai{1}, Tingzhen Zhang{1}, Kazuki Tamura{2}, Shohei Mori{3}, Shinnosuke Hirata{1}, Kenji Yoshida{1}, Tadashi Yamaguchi{1}
{1}Chiba University, Japan; {2}Hamamatsu University School of Medicine, Japan; {3}Tohoku University, Japan

7676: Impact of Elevational Aperture Blockage on Ultrasound Attenuation Imaging for Liver Fat Quantification
Man Nguyen, Gary Ng, Hua Xie
Philips Healthcare, United States

7805: Extraction of Fibrotic Tissues in Liver Using Multi-Rayleigh-Based Constant False Alarm Rate Method for Echo Envelope Statistics
Shohei Mori{2}, Shinnosuke Hirata{1}, Shin Yoshizawa{2}, Tadashi Yamaguchi{1}, Hiroyuki Hachiya{3}
{1}Chiba University, Japan; {2}Tohoku University, Japan; {3}Tokyo Institute of Technology, Japan

7894: Compound Echo-Envelope Statistics Imaging for Stable Quantitative Diagnosis of Liver Steatosis
Chihiro Nara{2}, Kenji Yoshida{1}, Tadashi Yamaguchi{1}, Shinnosuke Hirata{1}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}Graduate School of Science and Engineering, Chiba University, Japan

8255: Enhancing Liver Steatosis Classification: H-Scan Analysis of Handheld Ultrasound Data
Tina Gabriel{1}, Omid Chaghaneh{1}, Julian Kober{1}, Tönnis Trittler{1}, Edgar Manfred Gustav Dorausch{2}, Cornelius Kühnöl{2}, Jakob Schäfer{1}, Gerhard Fettweis{2}, Jochen Hampe{1}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, TU Dresden Faculty of Medicine Carl Gustav Carus, Germany; {2}Vodafone Chair Mobile Communications Systems, Department of Electrical Engineering, TU Dresden, Germany

8298: Ultrasound Fat Fraction Derived from Multimodal QUS Envelope Statistics Imaging for Assessing Pediatric Hepatic Steatosis Using Low-Frequency Ultrasound
Chiao-Shan Hsieh{1}, Chiao-Yin Wang{4}, Gi-Gin Lin{3}, Ming-Wei Lai{2}, Hsun-Chin Chao{2}, Chien-Chang Chen{2}, Po-Hsiang Tsui{4}
{1}Department of Biomedical Engineering, Chang Gung University, Taiwan; {2}Department of Pediatrics-G-I/Hepatology, Chang Gung Memorial Hospital at Linkou, Taiwan; {3}Department of Radiology, Chang Gung Memorial Hospital at Linkou, Taiwan; {4}Department of Radiology, Chang Gung University, Taiwan

Poster Session #4: D4P-24: Ultrasonic Motors & Actuators (PUM)
Location: P07 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Masaya Takasaki, Saitama University

7916: Study on Non-Contact Rotation Mechanism Using Single Ultrasonic Transducer - 2nd Report: Installation of Reflector
Toshikazu Hagio, Keisuke Hasegawa, Yuuji Ishino, Takeshi Mizuno, Masaya Takasaki
Graduate school of science and engineering , Saitama University, Japan

8380: Study on Noncontact Driving of Disk by Piezoelectric Transducer Under Cryogenic Condition
Takefumi Kanda, Koa Yasuda, Takumi Nishida, Kazuki Kubo, Daisuke Yamaguchi, Shuichi Wakimoto
Okayama University, Japan

8739: Optical Characteristics of an Ultrasound Gel Lens
Haruto Miki{1}, Kosuke Nakamura{2}, Yuki Harada{1}, Mami Matsukawa{1}, Daisuke Koyama{1}
{1}Doshisha University, Japan; {2}Yamaha Motor Co., Ltd., Japan

8863: Macro-Micro Modeling and Performance Analysis of Traveling Wave Ultrasonic Motors
Yufei Liang, Huafeng Li, Shengqiang Zhou
Nanjing University of Aeronautics and Astronautics, China

Poster Session #4: D4P-25: MBE LIPUS, Immunotherapy, and New Applications
Location: P08 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30
Session Chair(s): Srinath Rajagopal, National Physical Laboratory
Carmel Moran, University of Edinbugh

7271: Focused Ultrasound Combined with Microbubbles Enhances Stem Cell Migration
Jie-Wu Lin, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

7326: Feasibility of Using Acoustic Vortex for Biofilm Dislodging
Wei-Hao Chao, Ching-Hsiang Fan
National Cheng Kung University, Taiwan

7720: Low Intensity Pulsed Ultrasound Stimulation to Modulate Fat Cells and T Cell
Sydney Turner, Musarrat Amin, Adree Bhattacharjee, Sangpil Yoon
University of Oklahoma, United States

8269: Effects of Acoustic Parameters of Low-Intensity Ultrasound on Breast Cancer Cells and Applications in Neoadjuvant Chemotherapy
Yan Chen{1}, Kepeng Zhu{2}, Wenzhi Chen{1}, Alfred Ch Yu{3}, Xinxing Duan{1}
{1}Chongqing Medical University, China; {2}The Affiliated Nanchong Central Hospital of North Sichuan Medical College, China; {3}University of Waterloo, Canada

8770: Enrichment of Sperm via Acoustic Streaming for Fertilization In Vitro
Chunqiu Zhang{2}, Ning Rong{2}, Ziyi Lin{3}, Pengqi Li{1}, Long Meng{1}, Hairong Zheng{1}
{1}Key Laboratory of Biomedical Imaging Science and System, Chinese Academy of Sciences, China; {2}Key Laboratory of Biomedical Imaging Science and System Chinese Academy of Sciences, China; {3}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

Poster Session #4: D4P-26: MBF: In Vivo Blood Flow Imaging Applications
Location: P09 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:00
Session Chair(s): Azra Alizad, Mayo Clinic

7200: In Vivo Dynamic Coronary Blood Flow Imaging Through Adaptive Frame Selection Method
Deng-Yen Zhuang, Wei-Ting Chang, Chih-Chung Huang
National Cheng Kung University, Taiwan

7647: Towards Quantitative Assessment of Cerebral Vascular Autoregulation in Human Neonates Using Ultrafast Ultrasound Power Doppler
Nikan Fakhari{1}, Julien Aguet{1}, Minh Nguyen{2}, Luc Mertens{1}, Lynn Crawford{1}, Christoph Haller{1}, David Barron{1}, John Sled{1}, Jerome Baranger{1}, Olivier Villemain{1}
{1}Sickkids, Canada; {2}Texas Children's Hospital, United States

7661: Quantitative Assessment of Ultrasound Microvessel Imaging in Crohn's Disease
U-Wai Lok, Shanshan Tang, Ping Gong, Thomas Smyrk, Chengwu Huang, Kate Knoll, Kathryn Robinson, Shannon Sheedy, Jingke Zhang, Ryan Deruiter, Ahmed El Sadaney, Kendra Petersen, Joel Fletcher, John Knudsen, Shigao Chen, David Bruining
Mayo Clinic, United States

7759: In Vivo Pulsatility and Resistivity Measurement of Rat Spinal Cord Using Ultrafast Doppler Imaging: A Preliminary Study
Junjin Yu, Qiwen Hu, Kailiang Xu
Fudan University, China

7910: Validation of Ultrasound Doppler Velocity Measurements for Personalized Fluid-Structure Interaction Modeling of the Abdominal Aorta
Judith Fonken{2}, Milan Gillissen{2}, Eline van Engelen{2}, Marc van Sambeek{1}, Frans van de Vosse{2}, Richard Lopata{2}
{1}Catharina Hospital Eindhoven, Netherlands; {2}Eindhoven University of Technology, Netherlands

8411: Evaluating Color Doppler Twinkling During Hydrostatic Pressurization of Clinical and Polymethyl Methacrylate Biopsy Markers
Benjamin Wood{2}, Christine Lee{1}, Matthew Urban{1}
{1}Mayo Clinic, United States; {2}Mayo Clinic Graduate School of Biomedical Sciences, United States

8434: Evaluation of Structural Characteristics of Polymethyl Methacrylate Markers That Affect Their Twinkling Performance
Jay Puffer{1}, Benjamin Wood{2}, Christine Lee{1}, Matthew Urban{1}
{1}Mayo Clinic, United States; {2}Mayo Clinic Graduate School of Biomedical Sciences, United States

8461: Simultaneous Measurement of Umbilical Artery Diameter and Blood Velocity for Wave Reflection Measurement by Ultrafast Ultrasound
Jessica Peng{2}, Ruiyan Tan{2}, Rojan Saghian{3}, Christopher K. Macgowan{4}, John Kingdom{1}, Brian J. Nieman{2}, John G. Sled{2}
{1}Mount Sinai Hospital / Dept of Obstetrics & Gynaecology, University of Toronto, Canada; {2}Mouse Imaging Centre, Hospital for Sick Children / Dept of Medical Biophysics, University of Toronto, Canada; {3}N/A, Canada; {4}Translational Medicine, Hospital for Sick Children/Dept of Medical Biophysics, University of Toronto, Canada

8608: Assessment of Lower Extremity Blood Flow Variations in Response to Externally Induced Occlusion in Patients with Peripheral Arterial Disease Using Contrast-Free Ultrasound Imaging
Soroosh Sabeti, Rohit Nayak, Robert D. McBane, Mostafa Fatemi, Azra Alizad
Mayo Clinic, United States

Poster Session #4: D4P-27: Late Breaking News IFCS
Location: P10 (TaiNEX Hall 2, Area R-4F)
14:30 - 16:30

9084: Bi4Ti3O12-Based High-Temperature Piezoceramics with High Electrical Properties Prepared by A/B-Site Co-Doped
Xuanyu Chen, Bin Li, Yejing Dai
School of Materials, Sun Yat-sen University, China

9109: Modeling Piezoceramic Resonators and Stacks via Dynamic Stiffness Method
Wenxiang Ding{2}, Zhaofeng Liang{2}, Dan Chen{2}, Maxime Bavencoffe{1}, Marc Lethiecq{1}
{1}INSA Centre Val de Loire, France; {2}Shenzhen Polytechnic University, China

9110: Thermal Wave Detection Technique for High-Resolution XANES Spectroscopy of Lead and Platinum Metal Foils"
Sanjiv Kane{3}, Srinibas Satapathy{3}, Manvendra Singh{3}, Prashant Mehta{2}, Prafulla Jha{2}, Rajashri Urkude{1}
{1}Bhabha Atomic Research Centre, India; {2}M S University of Baroda, India; {3}Raja Ramanna centre for Advanced Technology, India

9111: $Ba_{0.5}Sr_{0.5}TiO_3$ Thin Film-Based Switchable High Overtone Bulk Acoustic Resonator on High Resistive Silicon
Shivakumar Chedurupalli{2}, Akhil Raman T S{2}, Sandeep Sharma Kongbrailatpam{1}, James Raju K C{2}
{1}Indian Institute of Science, India; {2}University of Hyderabad, India

9122: Focused Guided Surface Acoustic Waves in 30% Scandium Aluminum Nitride on Silicon Carbide
Jack Guida, Siddhartha Ghosh
Northeastern University, United States

9135: A Method for Enhanced-Resolution Ultrasound Imaging with HIFU Array Transducers
Cheolwoo Park{1}, Euiji Shin{2}, Yujeong Shin{1}, Jin Ho Chang{1}
{1}Daegu Gyeongbuk Institute of Science and Technology, Korea; {2}Sogang University, Korea

9141: Analysis of Resistive Switching Behavior and Related Oxygen Vacancy Modulation in TiO_2 Thin Films via AFM
Chaewon Gong, Sunghwan Park, Sang-Hee Ko Park, Seungbum Hong
KAIST, Korea

9143: Design and Realization of a Fully Differential SAW Filter Architecture for Bandwidth Enhancement
Supratik Bose, Raeann Jesma, Kongbrailatpam Sandeep Sharma, Gayathri Pillai
Indian Institute of Science, Bangalore, India

9145: Ultrasound Aberration Correction with Time-Reversal Techniques and Metamaterials
Chunguang Piao{1}, Byeongmin Kang{1}, Hak Joo Lee{1}, Inkyu Park{2}, Joshua Minwoo Kweun{3}
{1}Center for Advanced Meta-Materials, Korea; {2}Korea Advanced Institute of Science and Technology, Korea; {3}Korea Institute of Machinery & Materials, Korea

9150: 52 GHz 35% Scandium Doped Aluminum Nitride Overmoded Bulk Acoustic Resonator
Juhun Baek{1}, Stephan Barth{2}, Tom Schreiber{2}, Hagen Bartzsch{2}, Gianluca Piazza{1}
{1}Carnegie Mellon University, United States; {2}Fraunhofer Institute for Electron Beam and Plasma Technology FEP, Germany

9151: Research Progress on Precision Self-Sensing of Frequency Standards
Wei Zhou, Jiale Peng, Zhiqi Li
Xidian university, China; xidian university, Canada

Closing Ceremony
Location: 701A-D
16:30 - 18:00