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**									
11:00-12:30					**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 / 13:00-13:30 / 13:30-14:00	**Lunch**													
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 (Nicholas X Fang)		**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)						