Click here for campus map with conference locations

The 83rd Device Research Conference

June 22 - 25, 2025

	Sunday	
8:30 AM	**Young Professionals Workshop (Fitzpatrick CIEMAS Building, Schiciano A,B)**	
10:00 AM	Registration Opens (Fitzpatrick CIEMAS Building)	
1:00 PM	**Short Course 1: Heterogenous Integration at the BEOL: Challenges from Device to System Level - Session Chair: Biswajit Ray, Kai Ni; (Fitzpatrick Schiciano A)**	**Short Course 2: Fundamentals of Device Modeling Session Chair: Anant P. Anantram (Fitzpatrick Schiciano B)**
	Applications of Amorphous Oxide Semiconductor Transistors at Back-end-of-line (BEOL); Speaker: Shimeng Yu, Georgia Tech	From atoms to assemblies of III-nitride technology for high-frequency communication and sensing applications; Speaker: Shaloo Rakheja, University of Illinois, Urbana-Champaign
2:00 PM	Coffee Break	
2:15 PM	Unlocking Ultra-High Density and Energy-Efficiency in 3D Integrated Circuits with BEOL-Oxide Semiconductor Technology; Speaker Gong Xiao, National University of Singapore	Computational time-dependent quantum transpoort for spintronics and magnonics; Speaker: Branislav Nikolic, University of Delaware
3:15 PM	Coffee Break	
3:30 PM	The Future of Heterogeneous Integration: Challenges and Opportunities; Speaker: Madhavan Swaminathan, Penn State	First principles numerical modeling of optoelectronic and photonic devices; Speaker: Avik Ghosh, University of Virginia
4:30 PM	Coffee Break	
5:30 PM	Registration Closes	
6:00 PM	**DRC Welcome Reception: (Fitzpatrick CIEMAS Building, Atrium)**	

	Monday					
8:00 AM	Registration Opens (Fitzpatrick CIEMAS Building)					
9:00 AM	**Introduction and Conference Welcome (Fitzpatrick Schiciano A,B)**					
9:20 AM	**Plenary 1: Eli Yablonovitch Session Chair: Tania Roy (Fitzpatrick Schiciano A,B)**					
10:20 AM	Coffee Break					
10:40 AM	**Plenary 2: Nicky Lu Session Chair: Tania Roy (Fitzpatrick Schiciano A,B)**					
11:40 AM	**Editors Panel Lunch: (Fitzpatrick Schiciano A,B) -- For All Registered DRC Attendees** Session Chair: Saptarshi Das Olga Bubnova - Chief Editor, Nature Sensor Matthew Parker - Associate Editor Nature Electronics Miranda Vinay - Associate Editor Nature Reviews Electrical Engineering Becky Peterson - Applied Physics Letters Patrick Fay - IEEE Transaction of Electron Devices (TED) Chief Editors					
1:00 PM	**Award Session 1 - Session Chair: Thomas Kampfe (Fitzpatrick Schiciano A)**		**Award Session 2 - Session Chair: Greg Pitner (Fitzpatrick Schiciano B)**		**Award Session 3 - Session Chair: Morteza Kayyalha (Teer 203)**	
	1:00 PM	219 - A complementary 2D material-based one instruction set computer Student Author - Subir Ghosh, Penn State	1:00 PM	51 - A Comprehensive Modeling of Gate Stack Interlayer Engineering for Ferroelectric Vertical NAND Student Author - Minji Shon, Georgia Institute of Technology	1:00 PM	181 - AC Transconductance (AC-Gm) Method for Spatial and Energy Profiling of Bulk Traps in GaN MESFETs Student Author - Bingyu Zhang, Duke University

	1:20 PM	235 - Two-Terminal Self-Rectifying Metal-Insulator-MoS2 Optoelectronic Synapse for Neuromorphic Vision Systems Student Author - Isaiah Bernardino, Duke University	1:20 PM	146 - Engineering MSMFM Structure Composed of Compound Bi-Directional Selector and Ferroelectric Capacitor for High Density Capacitor Arrays Student Author - John Howe, University of Notre Dame	1:20 PM	152 - Demonstration of High Breakdown Field (5.3 MV/cm) in UWBG AlGaN-based Transistors Student Author - Seungheon Shin, The Ohio State University		
	1:40 PM	196 - Single-step Synthesis of In-plane 1T'-2H Heterophase MoTe2 for Low-Resistance Contacts Studeent Author - Ye Lin, UIUC	1:40 PM	183 - Enabling SRAM Scaling with Monolithic 3D Integration of 2D FETs Student Author - Muhtasim Ul Karim Sadaf, Penn State	1:40 PM	228 - A Custom End-to-End Modeling Suite for Ferroelectric Devices Student Author - Golam Mahmud Samdani, University of Illinois Urbana-Champaign (UIUC)		
	2:00 PM	89 - High performance scaled n-type MoS2 field effect transistors Student Author - Najam Sakib, Penn State	2:00 PM	159 - Robust Charge-Trapping Memory with Enhanced Retention for CAM-Based Computing Student Author - Jiazheng Chen, Duke University	2:00 PM	97 - Sub-Nanosecond Ferroelectric Polarization Dynamics in HZO FeCAP Student Author - Mor M. Dahan, Technion - Israel Institute of Technology		
	2:20 PM	190 - Overcoming Mobility-Stability Trade-off by Gate Stack Engineering in BEOL Compatible Ga Doped In2O3 MOSFETs Student Author - Dyutimoy Chakraborty, Georgia Institute of Technology	2:20 PM	40 - Atomistic simulations of failure mechanisms in ultrascaled HfOx RRAM arrays Student Author - Manasa Kaniselvan, ETH Zurich	2:20 PM	93 - FeFET-Based Time-Domain In-Memory Computing Macro with Tunable Delay Calibration Student Author - Jeries Mattar, Technion - Israel Institute of Technology		
2:40 PM	Coffee Break							
3:00 PM	**Wide Band Gap 1 - Session Chair: Spyridon Pavlidis; (Fitzpatrick Schiciano A)**		**Focus Topic: 2D materials 1 - Session Chair: Shaloo Rakheja; (Fitzpatrick Schiciano B)**		**Focus Topic: Heterogeneous Integration 1 - Session Chair: Cosmi Lin; (Teer 203)**		**Neuromorphic Computing & Memory Tech 1 - Session Chair: Raisul Islam; (Hudson 125)**	
	3:00 PM	6 - Advancing transistor technologies with GaN, GeSn and TiO2 materials Invited Author - Yuping Zeng, University of Delaware	3:00 PM	What's Needed to Make 2D Semiconductors Useful for Electronics? Invited Author - Eric Pop, Stanford	3:00 PM	Multifunctional MOSCAP-based Heterogeneous Integrated Photonics Invited Author - Di Liang, University of Michigan	3:00 PM	102 - Recent progress in PCM-based Analog In-memory computing: Embedded neural processing units and novel device concepts Invited Author - Abu Sebastian, IBM Zurich
	3:30 PM	223 - Robustness of GaN HEMT at 800 ÂºC in N2 and Air Ambient Presenter - Ajay Kumar Visvkarma, Dept. of Electrical Engineering, The Pennsylvania State University	3:30 PM	46 - van der Waals dielectrics for threshold engineering in large area 2D field effect transistors Student Author - Dipanjan Sen, Penn State University	3:30 PM	New Paradigm Enabled by Heterogeneous Integration and Advanced Packaging Activity at Arizona State University Invited Author - Hongbin Yu, Arizona State University	3:30 PM	201 - Reconfigurable SiGe and Ge nano-sheet FETs: from charge selection and NDR functionality to ferroelectrically enhanced neuromorphic operability Invited Author - Walter M. Weber, TU Wien

	3:50 PM	84 - High Temperature Characterization of RF Losses in GaN on High-Resistivity Si and SiC Substrates up to 500°C Student Author - Ashley Goodnight, Massachusetts Institute of Technology	3:50 PM	229 - Ion-based Resistive Switching in 2D Material-based Devices Invited Author - Max Lemme, RWTH Aachen	4:00 PM	Advancements in Black Phosphorus Inks for Silicon Photonic Devices Invited Author - Chad Husko, Iris Light Technologies, Inc.	4:00 PM	216 - In-Memory Computing Approaches for Large Language Models, Kolmogorov-Arnold Networks, and Optimization Invited Author - John Paul Strachan, Forschungszentrum Jülich Germany
	4:10 PM	5 - Physical Insight into GaN HEMT Channel Temperature using Fermi Kinetics Transport Student Author - Carter Mayfield, Michigan State University	4:20 PM	27 - Electronic Devices from 2D Materials - A twelve years' short journey Invited Author - Joerg Appenzeller, Purdue University	4:30 PM	113 - Melting-free Nitride Phase-Change Memory: A Path Towards Low Energy Consumption Invited Author - Yi Shuang, Tohoku University	4:30 PM	236 - Hardware acceleration of reconfigurable dendritic computation Student Author - Andrew Pannone, Penn State University
	4:30 PM	12- Study of GaN JFET gate leakage induced by heavy ion irradiation Student Author - Yuxin Du, The Pennsylvania State University						
4:50 PM	Break							
5:10 PM	**Poster Pitches 1 - Session Chair: Cosmi Lin; (Fitzpatrick Schiciano A)**		**Poster pitches 2 - Session Chair: Xu Zhang; (Fitzpatrick Schiciano B)**		**Poster pitches 3 - Session Chair: Sarah Swisher; (Teer 203)**			
6:10 PM - 8:30 PM	**Poster Session with Bar and Light Snacks: (Fitzpatrick CIEMAS Building, Atrium)** *list of posters provided at bottom of this program*							
6:30 PM	Registration Closes							
8:30 PM	End of Day 2							
	Tuesday							
7:30 AM	Registration Opens (Fitzpatrick CIEMAS Building)							
8:30 AM	**Plenary 3: Suman Dutta Session Chair: Tania Roy (Fitzpatrick Schiciano A,B)**							
9:30 AM	Coffee Break							
9:50 AM	**Wide Band Gap 2 - Session Chair: Sriram Krishnammorthy (Fitzpatrick Schiciano A)**		**Focus Topic: Oxide semiconductors 1 - Session Chair: Sarah Swisher (Fitzpatrick Schiciano B)**		**Emerging Devices 1 - Session Chair: Alwin Daus (Teer 203)**		**Neuromorphic Computing & Memory Tech 2 - Session Chair: Raisul Islam (Hudson 125)**	
	9:50 AM	192 - Novel GaN-based optoelectronic devices enabled by tunnel junctions Invited Author - Greg Muziol, Unipress Poland	9:50 AM	94 - Innovative BEOL Oxide-Based Devices as Key Enablers for High-Performing Heterogeneous Systems Invited Author - Valeria Bragaglia, IBM Zurich	9:50 AM	11 - All Optically Modulated Back end of Line Compatible Flexible Memristive Synapses for Image Recognition and Logic Application Student Author - Manoj Kumar Rajbhar, King Abdullah University of Science and Technology (KAUST)	9:50 AM	156 - Ultralow-power Computing with Oscillator Circuits for Neural Networks and Ising Machines Invited Author - Rehan Kapadia, U Southern California

	10:20 AM	165 - Edge emitting 265 nm UV-C LEDs by MBE on bulk AlN substrates Student Author - Shivali Agrawal, Cornell University	10:20 AM	58 - Record Six-Stack Hybrid CMOS Transistors: Advancing Vertical Integration for Ultra-Dense Logic Circuits (WITHDRAWN) Presenter - Saravanan Yuvaraja, King Abdullah University of Science and Technology	10:10 AM	36 - Ultra-compact Integrated Photonic Devices Enabled by Digital Metamaterials and Emerging Phase Change Materials Invited Author - Berardi Sensale-Rodriguez	10:20 AM	144 - Leveraging Capacitance Modulation of ReRAM for CMOS-ReRAM Image Sensor Student Author - Salil Chourasia, IIT Madras
	10:40 AM	173 - Reducing the Operating Voltage of AlGaN-Based Deep-Ultraviolet Light Emitting Diodes by MBE on AlN Student Author - Sheena (Hsin Wei) Huang, Cornell University	10:40 AM	114 - Interface-Driven Performance and Thermal Effects in Dual-Gated ITO Transistors Presenter - Sumaiya Wahid, Stanford University	10:40 AM	Avalanche heterojunction phototransistors for direct-view night vision Invited Author - Lawrence Lee (Larry), UIUC	10:40 AM	117 - Fundamental Limitations on Neural Network Density due to Memristor Variability with Temperature Student Author - Nirmal Solanki, Indian Institute of Technology Gandhinagar
	11:00 AM	High-Performance Ultra-Wide Bandgap AlGaN and Ga2O3 Devices Invited Author - Siddharth Rajan, Ohio State University	11:00 AM	96 - Effect of Capping Layer Under Forming Gas Anneal for Back-End-of-Line Oxide Semiconductor FETs Presenter - Saketh Ram Mamidala, IBM Research Europe	11:10 AM	73 - Electrical and Optical Synapses based on Inorganic Lead-Halide Perovskites for Neuromorphic Computing Invited Author - Samit K. Ray	11:00 AM	176 - Nb-Silicide Featuring a Record Low ~2.9×10-9 ohm-cm2 Contact Resistivity for DRAM Peripheral FinFETs Invited Author - Ritam Sarkar, IMEC
			11:20 AM	145 - ITO Contact Optimization for Enhancement Mode BEOL MOSFETs Presenter - Karl-Magnus Persson, The Finnish Technology Research Center VTT				
11:40 AM	**Lunch Break** (see map for places to eat: Brodhead Center, Bryan Center)							
12:50 PM	**Wide Band Gap 3 - Session Chair: Esmat Farzana (Fitzpatrick Schiciano A)**		**Focus Topic: Oxide semiconductors 2 - Session Chair: Greg Pitner (Fitzpatrick Schiciano B)**		**Emerging Devices 2 - Session Chair: Daphne Chen (Teer 203)**		**Ferroelectric 1 - Session Chair: Raisul Islam (Hudson 125)**	
	1:00 PM	217 - High performance gallium oxide devices: status and challenges Invited Author - Uttam Singisetti, U Buffalo	1:00 PM	107 - Oxide Semiconductors TFTs Integration in CMOS BEOL: Device Considerations for Enabling Novel Applications Invited Author - Michiel van Setten, IMEC	1:00 PM	78 - Electrochemical Devices for Sweat-Based Health and Sports Monitoring Invited Author - Luisa Petti	1:00 PM	168 - Accumulation and Relaxation of Single-Domain Polarization in Nanoscale Ferroelectric-Gate Metal-Oxide Transistors Presenter - Yanjie Shao, Massachusetts Institute of Technology
	1:30 PM	241 - Advancing the State of β-Ga2O3 Power Devices Invited Author - Man Hoi Wong, Hong Kong University of Science and Technology	1:30 PM	167 - Dipole Engineered Gate Stacks in AOS Channel FETs to Overcome the VT-ION Tradeoff Student Author - Emmanuel Quezada, Georgia Institute of Technology	1:30 PM	101 - Scalable, Low-Cost Approaches for MIS Photoelectrodes for Photoelectro-chemical Water Splitting and Green Hydrogen Generation Invited Author - Edward Yu	1:20 PM	162 - Inter-grain Interactions in Polycrystalline Hafnium-Zirconium-Oxide Ferroelectrics Student Author - Revanth Koduru, Purdue University

	2:00 PM	180 - Multi-fin β-Ga2O3 Vertical FinFET with Field Oxide Exhibiting a Breakdown Voltage of 1.8 kV and a Record PFOM of 1 GW/cm2 Presenter - Saurav Roy, University of California Santa barbara	1:50 PM	69 - Investigation and Reduction of Thermal Resistance in Gate-All-Around Indium Tin Oxide Nanosheet Field-Effect Transistors Student Author - Young Suh Song, Stanford University	2:00 PM	106 - Aqueous Nanotube Inks for Mixed and Single Chirality CNT-TFTs Presenter - Brittany N. Smith, Duke University	1:40 PM	194 - Endurance Enhancement in Low Operating Voltage Scavenged SOI FEFETs Student Author - Chinsung Park, SK hynix
	2:20:00 PM	174 - Demonstration of KV-Class β-Ga2O3 Junction Barrier Schottky Diodes with Space-Modulated JTE and 1V Turn-on Voltage Student Author - Advait Gilankar, Arizona State University	2:10 PM	226 - A Comprehensive Study of Room Temperature Bias Stress Instability in Dual-Gated ITO FETs using a Modified On-the-Fly Method Student Author - Md Sazzadur Rahman, Duke University	2:20 PM	118 - Reconfigurable Antenna based on Solution-Processed MoS2 Memristors Student Author - Changwoo Pyo, UNIST	2:00 PM	197 - Frequency-Dependent Wake-Up in Ferroelectric Hf0.5Zr0.5O2 Devices Student Author - Tyra Espedal, Microsystems Technology Laboratories, MIT
			2:30 PM	200 - Optimization is Key to High-Temperature Reliability in Oxide-Semiconductor FETs Student Author - Jack Evans, Stanford University			2:20 PM	16 - Memory Window Narrowing in HfZrO2/Si FeFETs: Physical Origins, Challenges, and Mitigation Strategies Invited Author - Shinichi Takagi, University of Tokyo
2:50 PM	Coffee Break							
3:00 PM	**Wide Band Gap 4 - Session Chair: Spyridon Pavlidis (Fitzpatrick Schiciano A)**		**Focus Topic: Oxide semiconductors 3 - Session Chair: Sarah Swisher (Fitzpatrick Schiciano B)**		**Ferroelectric 2 - Session Chair: Thomas Kampfe (Teer 203)**			
	3:00 PM	115 - 9.5 kV AlGaN/GaN Schottky Barrier Diodes with Hydrogen Plasma Guard Array Termination Student Author - Dawei Wang, ASU	3:00 PM	Heterogeneous & monolithic integration of devices at the BEOL Invited Author - Becky Peterson, University of Michigan	3:00 PM	77 - FeFETs Enabling Energy-Efficient Neuromorphic Approaches for Data Clustering Invited Author - Rashmi Jha, University of Cincinnati		
	3:20 PM	215 - Manipulating 2DEG in AlGaN/GaN Heterostructures for RF and Power Electronics Applications Invited Author - Keisuke Shinohara, Teledyne	3:30 PM	169 - 20-50 nm channel length single-gate a-IGZO TFTs with superior gate control and reduced short-channel effects Student Author - Chankeun Yoon, The University of Texas at Austin	3:30 PM	251 - Toward Scalable Ferroelectric Nitride Devices: MOCVD Growth and Characterization of AlBN Thin Films Student Author - Scott Wicker, UT Austin (Late News)		
	3:50 PM	182 - BAWFET: A Monolithically Integrated RF FET Amplifier + BAW Filter on a Multifunctional AlN Platform Student Author - Wenwen Zhao, Cornell University	3:50 PM	179 - Design criteria for Short-Channel Effect Mitigation through Optimized Source/Drain Electrode in Highly Scaled a-IGZO TFTs Student Author - Juhan Ahn, University of Texas at Austin	3:50 PM	240 - Nanoscale Ferroelectric Devices for In-Memory Computing Invited Author - Wenjuan Zhu, UIUC		

	4:10 PM	189 - Record JFOM (> 11.5 THz·V) for ultra-wide bandgap high frequency Al0.62Ga0.38N channel HEMT Student Author - Jiahao Chen, University of Wisconsin-Madison	4:10 PM	171 - Device-Circuit Co-Design for Computing with Back-End-of-Line Compatible Memory Devices Invited Author - Veeresh Vidyadhar Deshpande, IIT Bombay	4:20 PM	99 - Impact of Charge Trapping and Ferroelectric Polarization on the Memory Window in HfOx FeFETs Probed by Dynamic Measurements Student Author - Gilad Zilberman, Technion - Israel Institute of Technology		
	4:30 PM	20 - Ultra-High Frequency Zinc-Oxide Schottky Diodes for Large-Area Wireless Systems Student Author - Xiaoyang Ma, Department of Electrical and Computer Engineering, Princeton University						
4:50 PM	Break							
5:00 PM	tral R&D Labs	**Industry Session: (Fiztpatrick Schiciano A,B)** **Session Chair - Sriram Krishnamoorthy, Daphne Chen** John Lu - Micron Keisuke Shinohara - Teledyne Scientific Valeria Bragaglia - IBM Zurich Salim El Kazzi - Aixtron Lihong Cao - ASE (US) Han Wui Then - Intel						
5:30 PM	Registration Closes							
6:00 PM	**Shuttle to Conference Banquet** -- Pick-up is at traffic circle at end of Science Dr (short distance from Teer building); if prefer to walk it is ~1 mile *shuttles will run continuously between Science Dr circle and the Wa-Duke Inn until 10pm*							
6:30 PM	**Conference Banquet Begins: (Washington Duke Inn, Presidential Ballroom)**							
8:00 PM	Award and Valedictory							
8:30 PM	**Rump Session: (Washington Duke Inn, Presidential Ballroom)** **Session Chair: Alwin Daus, Huamin Li**							
10:00 PM	End of Day 3							
	Wednesday							
7:00 AM	Registration Opens (Fitzpatrick CIEMAS Building)							
8:20 AM	**EMC and DRC Joint Plenary: (The Duke Chapel,** with satellite viewing available in Fitzpatrick Schiciano A,B**)**							
9:20 AM	Coffee Break							
9:50 AM	**Modeling & Simulations -** **Session Chair: Sarah Swisher** **(Wilkinson 126)**		**Focus Topic: 2D materials 2 -** **Session Chair: Yury Illarionov** **(Wilkinson 021)**		**Spin & Quantum 1 -** **Session Chair: Alwin Daus** **(Hudson 125)**			

	9:50 AM	151 - A Novel De-Mirroring Approach for Capacitance and Resistance Extraction in Complementary FET: A Quasi-Static Small Signal Model Student Author - Sandeep Kumar, Indian Institute of Technology Bhubaneswar	9:50 AM	34 - Wafer-scale Memristors based on Atomic Layer Deposited WS2 Student Author - Yuan Fa, AMO GmbH	9:50 AM	72 - Spintronic Devices for Thermodynamically Guided Analog Computing Invited Author - Louis Hutin, CEA Leti		
	10:10 AM	133 - Modeling of Metal-Intercalated DNA – The Fundamental Electrical Properties Invited Author - Anant M. P. Anantram- U Washington	10:10 AM	108 - Advances in MOCVD growth of wafer-scale 2D transition metal dichalcogenides Invited Author - Joan Redwing, Penn State University	10:20 AM	80 - Neuromorphic and Ising Computing using Emerging Non-Volatile Memory Devices for Edge Applications: Wireless Communication and Robotics Invited Author - Debanjan Bhowmik, IIT Bombay		
	10:40 AM	35 - Design 2D Field-Effect Transistors by Machine-Learning-Assisted Quantum Transport Approach Invited Author - Jing Guo, U Florida	10:40 AM	49 - Enabling 300 mm CVD solutions for 2D materials seamless integration into CMOS manufacturing Invited Author - Salim EL Kazzi, Aixtron	10:50 AM	56 - Spintronic Devices for Edge AI Hardware and Quantum Control Invited Author - Jayasimha Atulasimha, Virginia Commonwealth University		
	11:10 AM	218 - Theory of Two-Dimensional Materials: Dielectrics and Contacts Invited Author - William Vandenberghe, UT Dallas	11:10 AM	57 - 2D Material Integration on Si CMOS Back-End-of-Line Invited Author - Miika Soikkeli, VTT Finland	11:20 AM	250 - Three-Dimensional Stacking of Functional 2D Materials for Optoelectronic Reservoirs Student Author - Anirban Chowdhury, Penn State University (Late News)		
11:40 AM	**Lunch Break** (see map for places to eat: Brodhead Center, Bryan Center)							
1:00 PM	**Focus Topic: Heterogeneous Integration 2 - Session Chair: Bhaswar Chakrabarti (Wilkinson 126)**		**Focus Topic: Heterogeneous Integration 3 - Session Chair: Han Wui Then (Wilkinson 021)**		**Spin & Quantum 2 - Session Chair: Morteza Kayyalha (Hudson 125)**			
	1:00 PM	127 - Strain Tuned WSe2/ReS2 Heterostructure using Piezoelectric Thin Film Student Author - Shreyasi Das, Indian Institute of Technology Bombay	1:00 PM	185 - Gate Controlled Nonreciprocal Critical Current in a Superconductor Oxide Interface Student Author - Christopher Luth , The University of Texas at Austin	1:00 PM	Nonlinear NEMS Resonators for Probing Spin Texture Dynamics and Quantum Transduction Invited Author - Xiao-xiao Zhang, Univ. of Florida		
	1:20 PM	Empowering AI with Advanced Packaging Technology for Chiplets and Heterogeneous Integration Invited Author - Lihong Cao, Advanced Semiconductor Engineering, Inc.	1:20 PM	42 - Improving the thermal management of electronic devices with diamond films Invited Author - Joana Catarina Mendes, Universidade de Aveiro Portugal	1:30 PM	44 - Near Zero Field Magnetoresistance: An Analytical Tool for Materials Physics in Solid State Electronics and a Phenomenon with Great Potential for Quantum Sensors Invited Author - Patrick Lenahan, Penn State University		

	1:50 PM	230 - Heterogeneous and Monolithic 3D Integration of Low-Thermal-Budget 2D Materials & Oxide Semiconductor-Based Devices for Future In-Memory Computing and Photonics Invited Author - Aaron Thean, NUS	1:50 PM	104 - Crystal Heterogenous Integration (CHI) of III-Nitride Semiconductors with Applications to Visible Photonic Integrated Circuits Invited Author - Fred Kish, North Carolina State University	2:00 PM	214 - Energy Efficient Spin-Orbit-Torque Devices for Memory and Computing by New Materials, New Physics and Voltage Control Invited Author - Jian-Ping Wang, U Minnesota		
	2:20 PM	50 - Monolithic three-dimensional integration of complementary single-crystalline silicon transistors Invited Author - Qing Cao, UIUC	2:20 PM	231 - How cool is diamond? for heat extraction and integration Invited Author - Srabanti Chowdhury, Stanford University				
2:50 PM	Coffee Break							
3:10 PM	**Wide Band Gap 5 - Session Chair: Henryk Turski (Wilkinson 126)**		**Focus Topic: Memory Technology - Session Chair: Bhaswar Chakrabarti (Wilkinson 021)**					
	3:10 PM	67 - Beryllium-Incorporated ScAlN/GaN HEMTs with Low Off-Current Presenter - Jie Zhang, University of Michigan	3:10 PM	213 - Ferroelectrics for future 3D NAND storage technology Invited Author - Asif Khan, Georgia Institute of Technology				
	3:30 PM	26 - Characterization of MOS channels having AlSiO/AlN/GaN gate structures on m-plane and c-plane: mobility, threshold voltage, and its stability Invited Author - Tetsuo Narita, Tokyo Central R&D Labs	3:40 PM	Evolution of 3D NAND Flash Invited Author - Mohan Dunga, Western Digital				
	4:00 PM	158 - Estimation of threshold hole density in single Shockley stacking fault expansion and its suppression through proton implantation in 4H-SiC PiN Diodes Presenter - Atsushi Shimbori, University of Texas at Austin	4:10 PM	234 - Enhancing 3D NAND flash endurance via thermal annealing: A step towards everlasting SSDs Student Author - Matchima Buddhanoy, Colorado State University				
	4:30 PM	136 - 19 mW/μm² and 28 % PAE at 94 GHz for 0.30-μm Transferred InP/GaAsSb DHBT on Si-HR Student Author - Abdelmalek Zemour, IEMN-CNRS/STMicrolectronics	4:30 PM	224 - Variability in Ferroelectric Hf0.5Zr0.5O2: Physical Insights and Implications for Memory Applications Invited Author - Sumeet Gupta, Purdue University				
4:50 PM	Break							
5:30 PM	**End of DRC 2025**							

Monday 6:10 PM - 8:30 PM	List of DRC Posters		
Poster Number	ID	Title	
Poster 1	131	Design and optimization of β-Ga2O3 junction barrier Schottky diodes incorporating p-Cu2O heterojunction Student Author - Prabhat Prajapati, Indian Institute of Technology Bombay	Award Nomination
Poster 2	81	Reproducibility of 10 kV-class NiO/Ga2O3 Heterojunction Rectifiers and Switching Performance Student Author - Jian-Sian Li, University of Florida	Award Nomination
Poster 3	149	High BFOM (> 300 MW/cm2) Al0.65Ga0.35N Channel MISHEMT with > 2kV breakdown voltage Student Author - Khush Gohel, University of Wisconsin Madison	Award Nomination
Poster 4	139	MoO3 Decoration for On-demand Directly Grown MoS2 Transistor Arrays Student Author - Anthony Cabanillas, University at Buffalo, The State University of New York	Award Nomination
Poster 5	233	Redefining Conductance Method for Bulk Trap Characterization in GaN MESFETs Student Author - Xianduo Zhao, Duke University	Award Nomination
Poster 6	43	Thermal Characterization of Diamond-Coated Scaled GaN HEMTs Towards All-Around Diamond Integration Student Author - Daniel Shoemaker, Pennsylvania State University	Award Nomination
Poster 7	153	Memory Window Improvement by Contact Depinning in Al1-xBxN FeFETs with ZnO Semiconductor Channel Student Author - Quyen Tran, Penn State University	Award Nomination
Poster 8	220	GaN Bootstrapping Amplifier IC Operating at up to 800 Â°C Temperature Student Author - Yixin Xiong, The Pennsylvania State University	Award Nomination
Poster 9	39	Volatile and Nonvolatile Resistive Switching in Lateral 2D MoS2 Memristors Student Author - Sofia Cruces, RWTH Aachen University	Award Nomination

Poster 10	85	Cryogenic Operation of HfTixOy-SiOz Bilayer RRAM Student Author - Siddharth Kurup, Georgia Institute of Technology	Award Nomination
Poster 11	222	Understanding the impact of contacts and top gate scaling on the reliability of nanoscale MoS2 FETs by TCAD modeling Student Author - Yezhu Lv, Southern University of Science and Technology	Award Nomination
Poster 12	37	Large-Area Implementation of Monolayer WS2 Double-Gate Vertical Sidewall Field-Effect Transistors for Area-Efficient Integrated Circuit Student Author - Jiwon Ma, Yonsei University	
Poster 13	53	Large-Scale Reconfigurable Logic Gate using Ambipolar WSe2 Field-Effect Transistors with Charge-Trapping Layer Student Author - Eunyeong Yang, Yonsei University	
Poster 14	122	Nanowire Feedback Field-Effect Transistor for Protein Sequencing: Overcoming the Nernst Limit with Memory Window Modulation Presenter - Naveen Kumar, University of Glasgow	
Poster 15	66	Ferroelectric ScAlN/AlGaN/GaN High-Electron-Mobility Transistors for High-Temperature Memory Applications Presenter - Jie Zhang, University of Michigan	
Poster 16	129	Linear variation of threshold voltage with back bias for 22nm FDSOI at cryogenic temperature Presenter - Fiheon Imroze, University of Glasgow	
Poster 17	86	High Temperature Characterization of III-Nitride Pressure Sensors Student Author - Makhluk Hossain Prio, Clemson University	
Poster 18	212	Aluminum Nitride based Ferroelectric Memory Devices – Testing Methodologies Student Author - Vamshi Kiran Gogi, University of Cincinnati	
Poster 19	112	Event Detection Pixel Sensor (EDPS) Circuit Using Phase Transition Material Student Author - Md Rahatul Islam Udoy, University of Tennessee, Knoxville	

Poster 20	237	Investigation of BTI at 85Â°C in Dual-Gated ITO FETs: Insights into Slow Recovery Dynamics Presenter - Arijit Sarkar, Duke University
Poster 21	160	Dynamic Compensation of Threshold-Voltage Shift in SiGe SB-FET for Operation in Ultra-wide Temperature Range Student Presenter - Christoph Beyer, Namlab gGmbH
Poster 22	164	ITO FET Based Capacitor-less Leaky Integrate and Fire Neuron Student Author - Aakash Deshpande, Indian Institute of Technology Bombay
Poster 23	186	Impact of Stoichiometric Optimization on Performance and Reliability of Zirconium Doped Hafnium-Based Ferroelectric Capacitors Student Author - Tanvir Haider Pantha, The University of Texas at Dallas
Poster 24	38	The Impact of Oxygen Exchange Layer on Tantalum Oxide ReRAM Performance Student Author - Rajas Mathkari, University At Albany
Poster 25	138	UWBG Ferroelectric ScAlN/AlGaN High-Electron Mobility Transistor Preenter - Md Tanvir Hasan, University of Michigan, Ann Arbor
Poster 26	105	Comprehensive TCAD Analysis of BEOL-Compatible In_2O_3 Thin-Film Transistors Presenter - Nilesh Pandey, The University of Texas at Austin
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