IEEE EDTM 2024
3rd – 6th March 2024
Bengaluru, India

Technical Program

Final Conference Schedule

Day 0 (3rd March 2024, Sunday)		
Start Time	**Stop Time**	**Agenda**
09:30 AM	11:00 AM	Tutorials and Short Courses
11:00 AM	11:30 AM	Tea, Coffee, Networking
11:30 AM	01:00 PM	Tutorials and Short Courses
01:00 PM	02:30 PM	Lunch, Networking
02:30 PM	04:00 PM	Tutorials and Short Courses
04:00 PM	04:30 PM	Tea, Coffee, Networking
04:30 PM	06:00 PM	Tutorials and Short Courses
07:30 PM	10:00 PM	Dinner, Networking

Day 1 (4th March 2024, Monday)		
Start Time	**Stop Time**	**Agenda**
09:00 AM	09:30 AM	Inauguration
09:30 AM	10:20 AM	Plenary – 1
10:20 AM	11:10 AM	Plenary – 2
11:10 AM	11:30 AM	Tea, Coffee, Networking
11:30 AM	01:00 PM	Parallel Sessions (1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H)
01:00 PM	02:00 PM	Lunch, Networking
02:00 PM	03:30 PM	Parallel Sessions (2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2J)
03:30 PM	03:45 PM	Tea, Coffee, Networking
03:45 PM	05:15 PM	Parallel Sessions (3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H)
05:15 PM	05:45 PM	Tea, Coffee, Networking
06:00 PM	07:30 PM	Poster Session 1, IEEE Young Professionals Event
06:30 PM	07:30 PM	Evening Panel Session 1
08:00 PM	10:30 PM	Dinner - General Chair’s Reception

Day 2 (5th March 2024, Tuesday)		
Start Time	**Stop Time**	**Agenda**
09:00 AM	09:50 AM	Plenary – 3
09:50 AM	10:40 AM	Plenary – 4
10:40 AM	11:00 AM	Tea, Coffee, Networking
11:00 AM	01:00 PM	Parallel Sessions (4A, 4B, 4C, 4D, 4E, 4F, 4G, 4H)
01:00 PM	02:00 PM	Lunch, Networking
02:00 PM	03:30 PM	Parallel Sessions (5A, 5B, 5C, 5D, 5E, 5F, 5G, 5H)
03:30 PM	03:45 PM	Tea, Coffee, Networking
03:45 PM	05:15 PM	Parallel Sessions (6A, 6B, 6C, 6D, 6E, 6F, 6G, 6H)
05:15 PM	05:45 PM	Tea, Coffee, Networking
06:00 PM	07:30 PM	Poster Session 2, IEEE WiEDS Event
06:30 PM	07:30 PM	Evening Panel Discussion 2
08:00 PM	10:30 PM	Dinner

Day 3 (6th March 2024, Wednesday)		
Start Time	**Stop Time**	**Agenda**
09:30 AM	10:20 AM	Plenary – 5
10:20 AM	10:45 AM	Tea, Coffee, Networking
10:45 AM	12:45 PM	Parallel Sessions (7A, 7B, 7C, 7D, 7E, 7F, 7G, 7H)
12:45 PM	02:00 PM	Lunch, Networking
02:00 PM	04:00 PM	Parallel Sessions (8A, 8B, 8C, 8D, 8E, 8F), Student Research Forum
04:00 PM	04:30 PM	Tea, Coffee, Networking
05:00 PM	06:00 PM	Cultural Event
06:00 PM	07:00 PM	Closing Ceremony, Awards
07:00 PM	09:30 PM	Thanksgiving Dinner

Tutorials

T1. Wide Bandgap Devices for RF and Power Applications	
Session Date and Time: 3rd March 2024 (Sunday), 09:30 AM – 01:00 PM	
Session Room: Audi 4	
Session Chair: Sushobhan Avasthi; *Indian Institute of Science Bangalore, India*	
[T1-1]	**09:30 AM – 11:00 AM**
GaN Power Transistors: Technology and Applications	
Ken Shono; *Transphorm Japan*	
[T1-2]	**11:30 AM – 01:30 PM**
GaN Microwave/RF Transistors: From Fundamentals to Emerging Trends	
Digbijoy Nath; *Indian Institute of Science Bangalore, India*	

T2. Reliability in Advanced Semiconductor Devices	
Session Date and Time: 3rd March 2024 (Sunday), 09:30 AM – 01:00 PM	
Session Room: Audi 5	
Session Chair: Taiki Uemura; *Samsung Electronics, South Korea*	
[T2-1]	**09:30 AM – 11:00 AM**
A Device to Circuit Framework for Aging (BTI, HCD) in Advanced Technology Nodes	
Souvik Mahapatra; *Indian Institute of Technology Bombay, India*	
[T2-2]	**11:30 AM – 01:00 PM**
Insulators for Devices based on 2D Materials	
Tibor Grasser; *Institute of Microelectronics, TU Wien, Austria*	

T3. Artificial Neural Networks	
Session Date and Time: 3rd March 2024 (Sunday), 09:30 AM – 01:00 PM	
Session Room: Audi 8	
Session Chair: Shubham Sahay; *Indian Institute of Technology Kanpur, India*	
[T3-1]	**09:30 AM – 11:00 AM**
In-Memory Computing for Artificial Neural Networks	
Abu Sebastien; *IBM Research Zurich, Switzerland*	
[T3-2]	**11:30 AM – 01:00 PM**
Biologically Realistic Artificial Neural Networks	
Veeresh Deshpande; *Indian Institute of Technology Bombay, India*	

T4. TCAD and Compact Modeling	
Session Date and Time: 3rd March 2024 (Sunday), 09:30 AM – 01:00 PM	
Session Room: Audi 9	
Session Chair: Avinash Lahgere; *Indian Institute of Technology Kanpur, India*	
[T4-1]	**09:30 AM – 10:30 AM**
Compact Modeling: General Introduction and Modeling of Statistical Variability	
Gert-Jan Smit; *NXP Semiconductors, The Netherlands*	
[T4-2]	**10:30 AM – 11:30 AM**
MOSFET Characterisation and Modeling for Cryogenic Applications	
Thomas Bedecarrats; *CEA-Leti, Grenoble, France*	
[T4-2]	**12:00 PM – 01:00 PM**
TCAD-based Compact Model Parameter Extraction of Si and SiC High Power Devices	
D. Vinay Kumar; *Synopsys India*	

Short Courses

SC1. Advances in Logic Devices	
Session Date and Time: 3rd March 2024 (Sunday), 02:30 PM – 06:00 PM	
Session Room: Audi 4	
Session Chair: Saurabh Lodha; *Indian Institute of Technology Bombay, India*	
[SC1-1]	**02:30 PM – 04:00 PM**
Logic Technology Roadmap	
Gaurav Thareja; *Applied Materials, USA*	
[SC1-2]	**04:30 PM – 06:00 PM**
Nanosheet-based Transistor Architectures for Advanced CMOS Scaling	
Hans Mertens; *IMEC Leuven, Belgium*	

SC2. Advances in Memory Technologies	
Session Date and Time: 3rd March 2024 (Sunday), 02:30 PM – 06:00 PM	
Session Room: Audi 8	
Session Chair: Udayan Ganguly; *Indian Institute of Technology Bombay, India*	
[SC2-1]	**02:30 PM – 04:30 PM**
DRAM and NAND Memories: Technology and Design Perspectives	
Partha Parthasarathy; *Micron Technology, India*	
[SC2-2]	**05:00 PM – 06:00 PM**
DRAM Scaling: History and Innovation	
Sungho Jang; *Samsung Electronics, South Korea*	

SC3. Semiconductor Packaging Technology	
Session Date and Time: 3rd March 2024 (Sunday), 02:30 PM – 06:00 PM	
Session Room: Audi 9	
Session Chair: Shree Prakash Tiwari; *Indian Institute of Technology Jodhpur, India*	
[SC3-1]	**02:30 PM – 04:00 PM**
Fan-out Semiconductor Packaging: Evolution, Current Status and Future Trends	
Santosh Kumar; *Reliance, India*	
[SC3-2]	**04:30 PM – 06:00 PM**
Recent Advancements in Interconnect Materials and Technologies in Semiconductor Packaging	
Nilesh Badwe; *Indian Institute of Technology Kanpur, India*	

Evening Panel Discussions

Date and Time: 4th March 2024 (Monday), 06:00 PM – 07:00 PM
Session Room: Audi 1
Moderator: Ramgopal Rao; *BITS Pilani, India*
Is there no scope for deep tech semiconductor start-ups in India?
Panelists: Chandrasekhar Nair (Bigtec Private Ltd.), Suryaprakash Konnanuru (CTO, Ideaspring Capital), Shantanu Chaturvedi (VP, Transition VC), Dipanjan Gope (CEO, Simyog Technology Private Limited)

Date and Time: 5th March 2024 (Monday), 06:00 PM – 07:00 PM
Session Room: Audi 1
Moderator: Saptarshi Das; *Pennsylvania State University, USA*
Is Quantum the new Nano?
Panelists: Manish Chhowala (University of Cambridge, UK), Ritesh Agarwal (University of Pennsylvania, USA), Hitoshi Wakabayashi (Tokyo Institute of Technology, Japan), Samit Ray (Indian Institute of Technology Kharagpur, India)

Plenary Talks

Date and Time: 4th March 2024 (Monday), 09:30 AM – 11:10 AM	
Session Room: Grand Ballroom	
Session Chair: Ramgopal Rao; *BITS Pilani, India*	
Plenary 1	**09:30 AM – 10:20 AM**
Semiconductor – the Next 75 Years?	
Chenming Hu; *University of California Berkeley, USA*	
Plenary 2	**10:20 AM – 11:10 AM**
GaN Technology enabling Power Electronics	
Sameer Pendharkar; *Texas Instruments, USA*	

Date and Time: 5th March 2024 (Tuesday), 09:00 AM – 10:40 AM	
Session Room: Grand Ballroom	
Session Chair: Navakant Bhat; *Indian Institute of Science Bangalore, India*	
Plenary 3	**09:00 AM – 09:50 AM**
Semiconductor Systems Driving AI	
Balajee Sowrirajan; *Samsung Electronics, India*	
Plenary 4	**09:50 AM – 10:40 AM**
From Ferroelectric Materials to Enhanced Semiconductor Devices	
Thomas Mikolajick; *NaMLab GmbH, Germany*	

Date and Time: 6th March 2024 (Wednesday), 09:30 AM – 10:20 AM	
Session Room: Grand Ballroom	
Session Chair: TBD	
Plenary 5	**09:30 AM – 10:20 AM**
Simulation and Analytics in the Angstrom Era	
Srinivas Raghvendra; *Synopsys, USA*	

ORAL SESSIONS

1A. CMOS Technology Scaling	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 1	
Session Chair: Krishna Bhuwalka, *Huawei, Belgium*	
[1A-1] [Keynote]	**11:30 AM – 12:00 PM**
CMOS 2.0: The era of CMOS heterogeneous scaling [I_001]	
Julien Ryckaert; *IMEC, Leuven, Belgium*	
[1A-2] [Keynote]	**12:00 PM – 12:30 PM**
Semiconducting Oxide Transistors for Future Microelectronics [I_002]	
Suman Datta; *Georgia Institute of Technology, Atlanta, USA*	
[1A-3] [Keynote]	**12:30 PM – 01:00 PM**
Speeding device innovation with integrated materials solutions [I_003]	
Milind Weling; *Merck KGaA, Darmstadt, Germany*	

1B. RF, Millimetre and Terahertz Technologies, Circuits and Systems	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 9	
Session Chair: Dipankar Saha, *Indian Institute of Technology Bombay, India*	
[1B-1] [Invited]	**11:30 AM – 11:55 AM**
The Next Generation RF and Power Devices: Heterogenous Integration with Diamond [I_004]	
Martin H H Kuball; *University of Bristol, UK*	
[1B-2] [Invited]	**11:55 AM – 12:20 PM**
Advances in Millimetre-Wave III-N Transistor Performance through Polarization-Graded Heterostructures [I_005]	
Patrick Fay; *University of Notre Dame, Notre Dame, USA*	
[1B-3] [Invited]	**12:20 PM – 12:45 PM**
Modeling of Charge and Current in N-polar GaN heterostructures and transistors [I_006]	
Arvind Ajoy; *Indian Institute of Technology Palakkad, India*	
[1B-4] [Invited]	**12:45 PM – 01:10 PM**
Guidelines for Overcoming the Practical Limitations for the Fabrication of THz Sources with GaN Planar Gunn Diodes [I_007]	
Javier Mateos; *University of Salamanca, Salamanca, Spain*	

1C. TCAD and Manufacturing	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 2	
Session Chair: Avirup Dasgupta, *Indian Institute of Technology Roorkee, India*	
[1C-1] [Invited]	**11:30 AM – 12:00 PM**
Semiconductor Roadmap Challenges and TEL Innovation [I_008]	
Noritaka Yokomori; *Tokyo Electron Ltd., /TEL Venture Capital/ Tokyo Electron Miyagi Ltd., /TEL Technology Center America Inc.*	
[1C-2] [Invited]	**12:00 PM – 12:30 PM**
Understanding the Influence of By-Products in Shaping Feature Profiles during Plasma Etching [I_009]	
Samit Barai; *Applied Materials, India*	
[1C-3] [Invited]	**12:30 PM – 01:00 PM**
ComputLitho – An Indigenous Optical Lithography Simulator with Novel Features [I_010]	
Pardeep Kumar; *Applied Materials, India*	

1D. Emerging Memory Technologies	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 8	
Session Chair: Tomoya Sanuki; *Kioxia*	
[1D-1] [Keynote]	**11:30 AM – 12:00 PM**
Embedded STT-MRAM for automotive applications [I_011]	
Johannes Mueller; *GlobalFoundries, Dresden, Germany*	
[1D-2] [Invited] [I_012]	**12:00 PM – 12:30 PM**
Status and perspectives of embedded Phase Change Memories	
Andrea Redaelli; *STMicroelectronics, Milan, Italy*	
[1D-3] [Invited] [I_013]	**12:30 PM – 01:00 PM**
3D Memory and Thermal Management: Challenges in System Level Design	
Preeti Ranjan Panda; *Indian Institute of Technology Delhi, India*	

1E. Ferroelectric Materials and Devices I	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 6+7	
Session Chair: Sourav De; *National Yang Ming Chiao Tung University, Taiwan*	
[1E-1] [Invited]	**11:30 AM – 11:55 AM**
Ferroelectric spin orbit devices for ultra-low power computing [I_014]	
Jean Philippe Attane; *Spintec, Grenoble, France*	
[1E-2] [Invited]	**11:55 AM – 12:20 PM**
Ferroelectrics and their Application in Non-Traditional Computing [I_100]	
Nikhil Shukla; *University of Virginia, USA*	
[1E-3] [Invited]	**12:20 PM – 12:45 PM**
Ferroelectric Capacitive Memory based on Metal-Ferroelectric-Semiconductor structure [I_015]	
Gong Xiao; *National University of Singapore, Singapore*	
[1E-4]	**12:45 PM – 01:00 PM**
Ferroelectric Gate Stack Engineering with Tunnel Dielectric Insert for Achieving High Memory Window in FEFETs for NAND Applications [P_442]	
Dipjyoti Das[1,3], Hyeonwoo Park[1], Zekai Wang[1], Chengyang Zhang[1], Prasanna Venkatesan Ravindran[1], Chinsung Park1, Nashrah Afroze[1], Po-Kai Hsu[1], Mengkun Tian[1], Hang Chen[1], Winston Chern[1], Suhwan Lim[2], Kwangsoo Kim[2], Kijoon Kim[2], Wanki Kim[2], Daewon Ha[2], Shimeng Yu[1], Suman Datta[1], and Asif Khan[1]; *[1]Georgia Tech, USA; [2]Samsung Electronics Co. Ltd, South Korea; [3]NIT Silchar, India*	
[1E-5]	**01:00 PM – 01:15 PM**
A Novel Complementary Ferroelectric FET based Compressed Multibit Content Addressable Memory with High Area- and Energy-Efficiency [P_169]	
Weikai Xu[1], Jin Luo[1], Boyi Fu[1], Zhiyuan Fu[1], Kaifeng Wang[1], Chang Su[1], Qianqian Huang[1,2,3], and Ru Huang[1,2,3]; *[1]School of Integrated Circuits, Peking University, China; [2]Beijing Advanced Innovation Center for Integrated Circuits, China; [3]Chinese Institute for Brain Research, China.*	

1F. WBG Device Applications	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 3	
Session Chair: Sayak Dutta Gupta; *Indian Institute of Technology Madras, India*	
[1F-1] [Keynote]	**11:30 AM – 12:00 PM**
Distributed polarization doping unleashes ultrawide bandgap electronics with Aluminum Nitride [I_016]	
Debdeep Jena; *Cornell University, USA*	
[1F-2] [Invited]	**12:00 PM – 12:25 PM**
High Voltage and High Frequency GaN HEMTs on the novel substrates [I_017]	
Tian Li Wu; *National Yang Ming Chiao Tung University, Taiwan*	
[1F-3] [Invited]	**12:30 PM – 01:00 PM**
Battery Charger Process Technologies [I_018]	
Mehul Shah; *Renesas Electronics, USA*	

1G. Packaging Materials	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 5	
Session Chair: Nilesh Badwe; *Indian Institute of Technology Kanpur, India*	
[1G-1] [Invited]	**11:30 AM – 12:00 PM**
Semiconductor Packaging Materials Enabling Next Generation of Power Electronics and High Performance Computing Applications [I_019]	
Ram K. Trichur; *Henkel, California, USA*	
[1G-2] [Invited]	**12:00 PM – 12:30 PM**
Advanced Materials for Power Electronics [I_020]	
Ravi Bhatkal; *MacDermid Alpha Electronics Solutions, India*	
[1G-3]	**12:30 PM – 12:45 PM**
Polymer Dielectrics for Electronic Packaging: Curing Dynamics of an Epoxy Resin Blend [P_270]	
Siddharth Saraswati, Deepak Arora; *Indian Institute of Technology Jodhpur, India*	

1H. 2D Sensors	
Session Date and Time: 4th March 2024 (Monday), 11:30 AM – 01:00 PM	
Session Room: Audi 4	
Session Chair: Shree Prakash Tiwari; *Indian Institute of Technology Jodhpur, India*	
[1H-1] [Keynote]	**11:30 AM – 12:00 PM**
Water-based, defect-free and biocompatible 2D material inks for printed electronics [I_021]	
Cinzia Casiraghi; *University of Manchester, UK*	
[1H-2] [Invited]	**12:00 PM – 12:30 PM**
Graphene based sensors for light and THz radiation [I_022]	
Daniel Neumaier; *University of Wuppertal, Germany*	
[1H-3]	**12:30 PM – 12:45 PM**
Ultra-Sensitive Humidity Sensor based on 2D GeS Nanoflakes [P_281]	
Deepak Sharma[1] , Rahul Kumar[2] , Neha Sakhuja[3] , Ayan Pal[1] , and Navakanta Bhat[1]; *[1]IISc Bangalore, India; [2]PDEU Gandhinagar, India; [3]Micron Technology Inc, Hyderabad, India*	
[1H-4]	**12:45 PM – 01:00 PM**
Vertically Aligned 2-D MoS2 based High performance Humidity Sensor [P_412]	
Prajjwal Shukla[1], Rahul Gond[1], Prakhar Singh[2], Bhanu Prakash[2], Brajesh Rawat[1]; [1]*Indian Institute of Technology Ropar, India; [2]INST Mohali, Punjab, India*	

2A. Design Technology Co-Optimization I	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 1	
Session Chair: Rahul Rao; *IBM India*	
[2A-1] [Keynote]	**02:00 PM – 02:30 PM**
DTCO Evolution From 2D to 3D [I_023]	
Dureseti Chidambarrao; *IBM, USA*	
[2A-2] [Invited]	**02:30 PM – 03:00 PM**
DTCO Role in Semiconductor Industry beyond the End of Pitch Scaling [I_024]	
Arup Ratan Saha; *Synopsys, India*	
[2A-3]] [Invited]	**03:00 PM – 03:30 PM**
Structural Optimization and Vt Offering of 2nd Generation MBCFET to Enhance Power-Performance Efficiency [I_025]	
Sang Hyeon Lee; *Samsung, South Korea*	

2B. Neuromorphic Computing I	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 9	
Session Chair: Abu Sebastien; *IBM Research, Zurich*	
[2B-1] [Keynote]	**02:00 PM – 02:30 PM**
Neuromorphic computing with emerging memory and 2D semiconductors [I_026]	
Daniele Ielmini; *Politecnico di Milano, Italy*	
[2B-2] [Invited] [I_027]	**02:30 PM – 03:00 PM**
Materials and devices for energy efficient spiking neuromorphic chips at the Edge	
Adrian Ionescu; *EPFL, Switzerland*	
[2B-3]	**03:00 PM – 03:15 PM**
Revealing Unique Scaling Effects of Random Telegraph Noise and Electron Injection Stochasticity in Stochastic Resonance with Floating Gate based Neurons [P_288]	
Akira Goda, Chihiro Matsui, Ken Takeuchi; *Tokyo University, Tokyo, Japan*	
[2B-4]	**03:15 PM – 03:30 PM**
Noise Analysis of Readout Chain in FDSOI-based 1T-APS for In-Sensor Vector-Matrix-Multiplication [P_314]	
Yi Xiao[1], Zheng Zhou[1], Yijiao Wang[2], Jiaqi Li[1], Guihai Yu[1], Shiyang Li[1], Haozhang Yang[1], Lixia Han[1], Ruiqi Chen[1], Peng Huang[1], Xiaoyan Liu[1], Jinfeng Kang[1]; *[1]Peking University, China; [2]Beihang University, China*	

2C. TCAD Simulation	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 2	
Session Chair: Pardeep Kumar; *Applied Materials, India*	
[2C-1] [Keynote]	**02:00 PM – 02:30 PM**
The evolving role of TCAD in pushing the boundaries of technology innovation [I_028]	
Aveek Sarkar; *Synopsys, USA*	
[2C-2] [Keynote]	**02:30 PM – 03:00 PM**
A Device to Circuit Reliability Framework for BTI and HCD Aging [I_029]	
Souvik Mahapatra; *Indian Institute of Technology Bombay, India*	
[2C-3] [Invited]	**03:00 PM – 03:30 PM**
Layout and Process Dependent Modeling and Simulation of High-Voltage 4H-SiC Power Devices [I_030]	
D. Vinay Kumar; *Synopsys, India*	

2D. Ferroelectric Memories	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 8	
Session Chair: Johannes Mueller; *GlobalFoundries, Dresden, Germany*	
[2D-1] [Invited]	**02:00 PM – 02:25 PM**
Recent advances in hafnia-based ferroelectric random access memories [I_031]	
Laurent Grenouillet; *CEA-Leti, France*	
[2D-2] [Invited]	**02:25 PM – 02:50 PM**
Ferro-electronics for next generation memory and NAND storage technology [I_032]	
Asif Khan; *Georgia Institute of Technology, Atlanta, USA*	
[2D-3] [Invited]	**02:50 PM – 03:15 PM**
Investigation of Endurance Degradation in Silicon-Doped Hafnium Oxide (HSO) and Zirconium-Doped Hafnium Oxide (HZO) based FeFET Memory [I_033]	
Pardeep Duhan; *Indian Institute of Technology Ropar, India*	
[2D-4]	**03:15 PM – 03:30 PM**
Experimental Investigation of EM Side Channel and FI Attacks on Commercial FRAM Chips [P_248]	
Bhanu Prakash Goswami, Manan Suri; *Indian Institute of Technology Delhi, India*	

2E. 2D Materials and Devices I	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 6+7	
Session Chair: Alwin Daus; *Freiburg University, Germany*	
[2E-1] [Keynote]	**02:00 PM – 02:30 PM**
2D-materials based transistors for logic: process achievements and path forward [I_034]	
Inge Asselberghs; *IMEC, Belgium, Germany*	
[2E-2] [Invited]	**02:30 PM – 02:55 PM**
Industry integration of 2D FETs: possible paths and the main challenges [I_035]	
Yury Illarionov; *Southern University of Science and Technology, China*	
[2E-3] [Invited]	**02:55 PM – 03:20 PM**
Monolithic Integration of 2D-Material SRAM Cells [I_036]	
Vita Pi-Ho Hu; *National Taiwan University, Taipei, Taiwan*	
[2E-4]	**03:20 PM – 03:35 PM**
Enhancing doping efficiency to achieve high performance p-type 2D field effect transistors [P_037]	
Saptarshi Das; *Pennsylvania State University, USA*	

2F. High Power Device Reliability	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 3	
Session Chair: Kalya Shubhakar, *SUTD Singapore*	
[2F-1] [Invited]	**02:00 PM – 02:25 PM**
Understanding the role of encapsulation layers under wet conditions on the reliability of power devices [I_037]	
Luigi Balestra; *University of Bologna, Italy*	
[2F-2] [Invited]	**02:25 PM – 02:50 PM**
From Planar to Vertical GaN-on-Si Power Devices: Reliability Challenges to Efficient Power Conversion [I_038]	
Nicolo Zagni; *University of Modena et Reggio Emilia, Italy*	
[2F-3] [Invited]	**02:50 PM – 03:15 PM**
Investigation of Radiation effect on Power Semiconductor Devices [I_039]	
Tan Cher Ming; *Chang Gung University, Taiwan*	
[2F-4]	**03:15 PM – 03:30 PM**
Gate Leakage Current analysis using Bayesian Deconvolution for Accurate Electron/Hole Trapping Characterizations in 4H-SiC MOSFETs [P_072]	
Shivendra Singh[1], Tian-Li Wu[1] and Yogesh Chauhan[2]; *[1]International College of Semiconductor Technology, National Yang Ming Chiao Tung University, Taiwan; [2]Indian Institute of Technology Kanpur, India*	

2G. Packaging – Mechanical Properties and Reliability	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 5	
Session Chair: Deepak Arora; *Indian Institute of Technology Kanpur, India*	
[2G-1] [Invited]	**02:00 PM – 02:30PM**
Prepreg-based FCBGA for Advanced Packaging Substrate [I_040]	
Ken Lee; *Simmtech Co., South Korea*	
[2G-2] [Invited]	**02:30 PM – 03:00 PM**
Reliability of Heterogeneous Integration (HI) Systems: Reliability Roadmap to Respond to the needs of HI Roadmap Stakeholders [I_041]	
Abhijit Dasgupta; *University of Maryland, USA*	
[2G-3]	**03:00 PM – 03:15 PM**
High Temperature Mechanical Properties of Nano-twinned Copper [P_343]	
Gulnaz Parween[1], Bo-Yan Chen[2], Dinh-Phuc Tran[2], Chih Chen[2] and Nilesh Badwe[1]; [1]*Indian Institute of Technology Kanpur, India;* [2]*National Yang Ming Chiao Tung University, Taiwan*	
[2G-4]	**03:15 PM – 03:30 PM**
Effect of collet on the die stress during die pick-up [P_012]	
Siva Sai Kishore Palli[1], Venkata Rama Satya Pradeep Vempaty[1], Wen How Sim[2], Harjashan Veer Singh[3]; [1]*Micron Technology Operations, India;* [2]*Micron Semiconductor Asia Operations, Singapore;* [3]*Micron Technology Inc., USA*	

2H. Microfluidics and MEMS Sensors	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 4	
Session Chair: Deleep R. Nair; *Indian Institute of Technology Madras, India*	
[2H-1] [Invited]	**02:00 PM – 02:25 PM**
DNA extraction and detection with paper-fluidic device for urinary tract infections [I_042]	
Siddharth Tallur, *Indian Institute of Technology Bombay, India*	
[2H-2] [Invited]	**02:25 PM – 02:50 PM**
Advances in Microvalve and Micro Pre-concentrator Technology for the Space Atmosphere Monitor Instrument: From Research to the International Space Station [I_043]	
Mina Rais Zadeh, *California Institute of Technology, USA*	
[2H-3]	**02:50 PM – 03:05 PM**
Dummy device-based feedthrough cancellation for PZT on Silicon microcantilever for viscosity sensing [P_419]	
Javed Nadindla[1], Akshay Kumar[1], Sudhanshu Tiwari[2], Rudra Pratap[1] and Gayathri Pillai[1]; *[1]Indian Institute of Science Bangalore, India, [2]Purdue University, USA*	
[2H-4]	**03:05 PM – 03:20 PM**
Cost-Effective Processing of Flexible Tactile Sensors for e-skin Applications [P_475]	
Sachin Sharma, Sumit Choudhary, Ranbir Singh, Gopi Shrikanth Reddy and Satinder Kumar Sharma; *Indian Institute of Technology Mandi, India*	

2J. Technology For Future Chips	
Session Date and Time: 4th March 2024 (Monday), 02:00 PM – 03:30 PM	
Session Room: Audi 9	
Session Chair: David Fried; *Lam Research, USA*	
[2J-1] [Keynote]	**02:00 PM – 02:30 PM**
Backside Interconnects for Power Delivery – Design, Manufacturability & Yield [I_044]	
Manjunath Shamanna; *Intel, USA*	
[2J-2] [Invited]	**02:30 PM – 03:00 PM**
Enabling Next Generation CMOS Scaling Through Materials Engineering and Process Technology Innovations [I_045]	
Mehul Naik; *Applied Materials, USA*	
[2J-3]	**03:00 PM – 03:15 PM**
Conjugated Polymer Single-Crystal Thin Films for Trap-Free SCLC Transport [P_077]	
Chunyan Zhao, Xilin Lai, Xinrui Guo, Ming He, Ru Huang; *Peking University, China*	
[2J-4]	**03:15 PM – 03:30 PM**
High quality PVD-MoS2 film on plasma-ALD-SiO2 underlaying material for CFET integration [P_212]	
Naoki Matsunaga, Shinya Imai, Takanori Shirokura, Kazuo Tsutsui, Kuniyuki Kakushima, Hitoshi Wakabayashi; *Tokyo Institute of Technology, Japan*	

3A. Semiconductor Device Characterization	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 1	
Session Chair: Krishna Bhuwalka, *Huawei, Belgium*	
[3A-1] [Invited]	**03:45 PM – 04:15 PM**
Recent Advances in Functional Data Analysis for Electronic Devices [I_046]	
Shahed Reza; *Sandia National Laboratories, USA*	
[3A-2]	**04:15 PM – 04:30 PM**
Emerging Germanium Channel Devices on Si Platform for Next-Generation Semiconductor Technology [P_517]	
Sumit Choudhury, Satinder K. Sharma; *Indian Institute of Technology Mandi, India*	
[3A-3]	**04:30 PM – 04:45 PM**
Characterizing Analog Figure of Merits of 5nm Technology Node FinFETs from 10K to 400K [P_448]	
Shivendra Singh Parihar, Anirban Kar, Weike Wang, Kimihiko Imura, Yogesh Singh Chauhan; *Indian Institute of Technology Kanpur, India*	
[3A-4]	**04:45 PM – 05:00 PM**
Investigation of Self-Heating Effect on the Void Embedded SOI MOSFETs [P_141]	
Yizhan Liu, Xiaoyan Liu; *Peking University, China*	
[3A-5]	**05:00 PM – 05:15 PM**
New Steep Subthreshold Slope Device "Gate-Controlled Carrier Injection SOI-Transistor" [P_084]	
Haruki Yonezaki, Takayuki Mori, Jiro Ida; *Kanazawa Institute of Technology, Japan*	

3B. Neuromorphic Computing II	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 9	
Session Chair: Sandip Lashkare; *Indian Institute of Technology Gandhinagar, India*	
[3B-1] [Keynote]	**03:45 PM – 04:15 PM**
Fully Integrated Memristor Chip for Edge Learning [I_047]	
Huaqiang Wu; *Tsinghua University, China*	
[3B-2] [Invited]	**04:15 PM – 04:45 PM**
Advancing Cognitive Systems: Leveraging Memristive Technologies in CMOS Circuit Design for Neuromorphic Edge Computing [I_048]	
Erika Covi; *University of Groningen, The Netherlands*	
[3B-3] [Invited]	**04:45 PM – 05:15 PM**
Resistive Memories based on Insulator-Semiconductor Structures Achieved via Controlled Oxidation of 2D Layered Materials [I_049]	
Antonio Lombardo; *University College London, UK*	
[3B-4]	**05:15 PM – 05:30 PM**
Novel Low-power and High-speed Memristor based Digital Circuit Design on Neuromorphic Hardware	
Manas Ranjan Tripathy; *SRAM Technical University, AP, India*	

3C. TCAD and Device Modeling	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 2	
Session Chair: Oves Badami; *Indian Institute of Technology Hyderabad, India*	
[3C-1]	**03:45 PM – 04:15PM**
TCAD Simulations: Bridging the Gap between Theory and Experimentation	
Arun Kumar Singh; *Punjab Engineering College, Chandigarh, India*	
[3C-2]	**04:15 PM – 04:30 PM**
Performance Projection of Negative Capacitance Complementary FET (NC-CFET): Device-Circuit Co-design [P_226]	
Abhishek Kumar, Anand Bulusu, Avirup Dasgupta; *Indian Institute of Technology Roorkee, India*	
[3C-3]	**04:30 PM – 04:45 PM**
Design Space Exploration of Negative Capacitance Effect in MFIM Structure: A 3D Phase Field Approach [P_076]	
Aayush[1], Girish Pahwa[2], Yogesh Singh Chauhan[1]; [1]*Indian Institute of Technology Kanpur, India;* [2]*University of California Berkeley, USA*	
[3C-4]	**04:45 PM – 05:00 PM**
Thermal Impedance Model For Multifinger SiGe HBTs [P_376]	
Shubham Pande[1], Nidhin K[2], Suresh Balanethiram[3], Shon Yadav[4], and Anjan Chakravorty[1]; [1]*Indian Institute of Technology Madras, India;* [2]*Intel Bengaluru;* [3]*NIT Karaikal;* [4]*GlobalFoundries, Bengaluru, India*	
[3C-5]	**05:00 PM – 05:15 PM**
Quantum Confinement Imposed Constraints in ULP Circuits with Junctionless FET [P_147]	
Sandeep Semwal[1], Nivedita Rai[1], Rohit Kumar Nirala[1], Manish Gupta[2] and Abhinav Kranti[1]; [1]*Indian Institute of Technology Indore, India;* [2]*Birla Institute of Technology and Science-Pilani, Goa*	

3D. Ferroelectric FETs	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 8	
Session Chair: Pardeep Duhan; *Indian Institute of Technology Ropar*	
[3D-1] [Invited]	**03:45 PM – 04:15 PM**
Perspective Roadmap of Advanced HfO2-based Ferroelectric Field Effect Transistors [I_050]	
Sourav De; *National Yang Ming Chiao Tung University, Taiwan*	
[3D-2]	**04:15 PM – 04:30 PM**
Exploring Charge Trapping Dynamics in Si:HfO2-FeFETs by Temperature-Dependent Electrical Characterization [P_323]	
Mor Mordechai Dahan[1], Emanuel Ber[1], Or Levit[1], Halid Mulaosmanovic[2], Stefan Dünkel[2], Johannes *Müller[2], Sven Beyer[2] and Eilam Yalon[1]; [1]Technion-Israel Institute of Technology, Israel; [2]GlobalFoundries Fab1 LLC & Co., Germany*	
[3D-3]	**04:30 PM – 04:45 PM**
Dopant-Dependent Flicker Noise of Hafnium Oxide Ferroelectric Field Effect Transistor [P_175]	
Yannick Raffel, Sourav De and Daniel Hessler; *Fraunhofer IPMS, CNT, Dresden, Germany*	
[3D-4]	**04:45 PM – 05:00 PM**
Spike-Time Dependent Plasticity in HfO2-Based Ferroelectric FET Synapses [P_121]	
Masud Rana SK[1] , Sourodeep Roy[1] , Maximilian Lederer[2] , Yannick Raffel[2] , Luca Pirro[3] , Talha Chohan[3] , Konrad Seidel[2] , Sourav De[2] , Bhaswar Chakrabarti[1]; 1*Indian Institute of Technology Madras, India; [2]Fraunhofer IPMS, CNT, Dresden, Germany; [3]GlobalFoundries, Dresden, Germany*	
[3D-5]	**05:00 PM – 05:15 PM**
Design Space for Scaled Ferroelectric Mirror Bit Technology for High-Density NVM Storage [P_452]	
Paritosh Meihar[1], Rowtu Srinu[1], Halid Mulaosmanovic[2], Stefan Dunkel[2], Sven Beyer[2] and Udayan Ganguly[1]; [1]*Indian Institute of Technology Bombay, India; [2]GlobalFoundries, Dresden*	

3E. Neuromorphic Devices	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 6+7	
Session Chair: Daniele Ielmini; *Politecnico di Milano, Italy*	
[3E-1] [Invited]	**03:45 PM – 04:10 PM**
Large-scale Integrated Circuits with 2D MoS2 for Neuromorphic Computing [I_051]	
Andras Kis; *EPFL, Switzerland*	
[3E-2] [Invited]	**04:10 PM – 04:35 PM**
Compute-in-Memory Hardware using 2D Materials-based Memristive Crossbar Array for Convolution Neural Networks [I_052]	
Samarth Jain; *National University of Singapore, Singapore*	
[3E-3] [Invited]	**04:35 PM – 05:00 PM**
Smart Multifunctional Memory Devices that can Sense, Store and Compute [I_053]	
Nazek Elatab; *KAUST, Saudi Arabia*	
[3E-4] [Invited]	**05:00 PM – 05:25 PM**
Spintronics-Based Neuromorphic and Ising Computing [I_054]	
Debanjan Bhowmik; *Indian Institute of Technology Bombay, India*	

3F. SiC based Power Devices	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 3	
Session Chair: Sukhendu Deb Roy; *ROHM Semiconductor India*	
[3F-1] [Keynote]	**03:45 PM – 04:15 PM**
SiC Materials and Devices for Future Green Society [I_055]	
Shin-ichi Nishizawa; *Kyushu University, Japan*	
[3F-2] [Invited]	**04:15 PM – 04:45 PM**
Soitec SmartCut™ technology combined with SiC material: SmartSiC™ engineering substrate for high-voltage power applications [I_056]	
Walter Schwarzenbach; *Soitec, France*	
[3F-3] [Invited]	**04:45 PM – 05:15 PM**
On the Design of the Drift Layer in Silicon Carbide Power Devices for Improved Breakdown Voltage and Short Circuit Performance [I_057]	
Shreepad Karmalkar, *Indian Institute of Technology Bhubaneswar*	

3G. Memory and Metallization Reliability	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 5	
Session Chair: Nilesh Goel; *BITS Pilani Dubai Campus*	
[3G-1] [Invited]	**03:45 PM – 04:15 PM**
Intermetallic compounds for future ULSI metallization [I_058]	
Junichi Koike; *Tohoku University, Japan*	
[3G-2]	**04:15 PM – 04:30PM**
Study of Trap Generation in NAND Flash Tunnel Oxide using TCAD [P_090]	
Anuj Kumar[1] , Ravi Tiwari[1] , Mohit Bajaj[2] , Denis Dolgos[3] , Lee Smith[4] , Souvik Mahapatra[1]; *[1]Indian Institute of Technology Bombay, India; [2]Synopsys India Pvt. Ltd., India; [3]Synopsys LLC, Zurich, Switzerland; [4]Synopsys Inc., Mountain-View, CA, USA*	
[3G-3]	**04:30 PM – 04:45 PM**
On the Prevalence of Row Hammer Attacks in FeFET Based Memory Systems [P_096]	
Shubham Pande, Bhaswar Chakrabarti and Anjan Chakravorty; *Indian Institute of Technology Madras, India*	
[3G-4]	**04:45 PM – 05:00 PM**
Impact of Free Layer Thickness and Damping Factor Variation on the Performance of Spin Orbit Torque Neuron-based of Spiking Neural Networks [P_53]	
Shafin Bin Hamid and Md Zunaid Baten; *Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh*	
[3G-5]	**05:00 PM – 05:15 PM**
Reliable resistive switching of two-dimensional material based flexible memristor [P_145]	
Conghui Zhang[1], Xin Liu[1], Tingting Han[2], Peisong Liu[3] and Fei Hui[1]; *[1]Zhengzhou University, China; [2]Soochow University, China; [3]Henan University, China*	

3H. Yield and Manufacturing	
Session Date and Time: 4th March 2024 (Monday), 03:45 PM – 05:15 PM	
Session Room: Audi 10	
Session Chair: Shinichi Yoshida; Sony, Japan	
[3H-1] [Invited]	**03:45 PM – 04:10 PM**
New paradigm of Yield analysis in Big Data and AI Era in Semiconductor Manufacturing [I_059]	
Jeffrey David; *PDF Solutions, USA*	
[3H-2]	**04:10 PM – 04:25 PM**
Expediting manufacturing safe launch with Big Data AI/ML analytic solutions on the cloud [P_440]	
Helen Yu; *Renesas Electronics, USA*	
[3H-3] [Invited]	**04:25 PM – 04:50 PM**
Manufacturing readiness to Zero DPPM [I_060]	
Tanya Nigam; *SemTecPro, Sunnyvale, USA*	
[3H-4] [Invited]	**04:50 PM – 05:15 PM**
Semiconductor Fabs & Sustainability [I_061]	
Neela Ayalasomayajula; *Applied Materials, India*	

4A. Gate-All-Around (GAA) Devices	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 1	
Session Chair: Sujith Subramaniam; *IMEC Belgium*	
[4A-1] [Invited]	**11:00 AM – 11:25 AM**
Forksheet Field-Effect Transistors for Area Scaling and Gate-Drain Capacitance Reduction in Nanosheet-based CMOS Technologies [I_062]	
Hans Mertens; *IMEC, Belgium*	
[4A-2] [Invited]	**11:25 AM – 11:50 AM**
Stacked Complementary Field-Effect Transistors: Promises and Challenges [I_063]	
Mansun Chan; *Hong Kong University of Science & Technology, Hong Kong*	
[4A-3] [Invited]	**11:50 AM – 12:15 PM**
GAA Technology Innovations for 2nm Logic node and Beyond [I_064]	
El Mehidi BAzizi; *Applied Materials, USA*	
[4A-4]	**12:15 PM – 12:30 PM**
Towards Improved Nanosheet-Based Complementary Field Effect Transistor (CFET) Performance Down to 42nm Contacted Gate Pitch [P_013]	
Thomas Chiarella, Philippe Matagne, Hans Mertens, Maryam Hosseini, Xiuju Zhou, Pierre Eyben, Hiroaki Arimura, Anshul Gupta, Olivier Richard, Christel Drijbooms, Rudy Caluwaerts, Naoto Horiguchi, Jérôme Mitard; *IMEC, Belgium*	
[4A-5]	**12:30 PM – 12:45 PM**
Multi-VT Options at Scaled Vertical Pitch in Gate-All-Around Nanosheet Devices by Independent Inner-Outer Work-function Tuning [P_268]	
Gautam Gaddemane[1], Krishna Bhuwalka[2], Gerhard Rzepa[3], Pieter Schuddinck[1], Hiroaki Arimura[1], Philippe Matagne[1], Hao Wu[2], Naoto Horiguchi[1], Geert Hellings[1], Changze Liu[2]; [1]*IMEC Belgium;* [2]*Huawei Technologies Belgium;* [3]*GTS Austria*	
[4A-6]	**12:45 PM – 01:00 PM**
Dissecting Parasitic Capacitance in Nanosheet FETs: An Analytical Perspective [P_167]	
Aishwarya Singh, Om Maheshwari and Nihar Mohapatra; *Indian Institute of Technology Gandhinagar, India*	

4B. In-Memory Computing I	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 9	
Session Chair: Manan Suri; *Indian Institute of Technology Delhi*	
[4B-1] [Keynote]	**11:00 AM – 11:30 AM**
Ferroelectric Non-volatile Capacitive Synapse for Charge Domain Compute-in-Memory [I_065]	
Shimeng Yu; *Georgia Institute of Technology, Atlanta, USA*	
[4B-2] [Invited]	**11:30 AM – 12:00 PM**
Computation-in-Memory (CiM) for AI Accelerators & Neuromorphic Computing [I_066]	
Ken Takeuchi; *University of Tokyo, Japan*	
[4B-3] [Invited]	**12:00 PM – 12:30 PM**
Can we Engineer Energy Efficient Switching Devices with High-k for In-Memory Applications? [I_067]	
Durga Misra; *New Jersey Institute of Technology, USA*	
[4B-4]	**12:30 PM – 12:45 PM**
RRAM IMC based efficient Analog Carry Propagation and Multi-bit MVM [P_379]	
Chithambara Moorthii J, M Vineeth Mourya, Harshit Bansal, Deepak Verma and Manan Suri; *Indian Institute of Technology Delhi, India*	
[4B-5]	**12:45 PM – 01:00 PM**
A New 1C1T1R nv-TCAM with Simultaneously Hybrid Ferroelectricity and Memristor Layers Feasible for Ultra-highly-dense and High-performance In-memory-searching [P_070]	
Y. L. Hsueh[1], R. Q. Lin[1], Y. X. Huang[1], Y. H. Lin[1], K. H. Chang[1], T. H. Shen[1], E R. Hsieh[1] and S Simon Wong[2]; [1]*National Central University, Taoyuan city, Taiwan;* [2]*Stanford University, USA*	

4C. Cryogenic CMOS Compact Modeling	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 2	
Session Chair: Arvind Ajoy; *Indian Institute of Technology Palakkad, India*	
[4C-1] [Invited]	**11:00 AM – 11:30 AM**
Compact Modeling of Advanced MOSFETs for Cryogenic IC Design [I_068]	
Girish Pahwa; University of California Berkeley, USA	
[4C-2] [Invited]	**11:30 AM – 12:00 PM**
A Methodology for PDK Re-Centring Using TCAD and Experimental Data for Cryogenic Temperatures [I_069]	
Tapas Dutta; *University of Glasgow, UK*	
[4C-3]	**12:00 PM – 12:15 PM**
Analysis and Modeling of Negative Transconductance in Zero-Threshold Voltage MOSFETs at Cryogenic Temperatures [P_345]	
Wajid Manzoor, Aloke K. Dutta and Yogesh Singh Chauhan; *Indian Institute of Technology Kanpur, India*	
[4C-4]	**12:15 PM – 12:30 PM**
Cryogenic Compact Modeling for Sub-5nm Fin Width Bulk FinFETs for Quantum Computing Applications [P_304]	
Deepesh Sharma, Sumreti Gupta, Sujit Kumar Singh and Abhisek Dixit; *Indian Institute of Technology Delhi, India*	
[4C-5]	**12:30 PM – 12:45 PM**
A Physics-Oriented Model of Cryogenic MOSFETs including the Subthreshold Kink Effects [P_116]	
Xinyue Zhang, Fangxing Zhang, Zirui Wang, Runsheng Wang, Ru Huang and Lining Zhang; *Peking University, China*	
[4C-6]	**12:45 PM – 01:00 PM**
Extension of ASM-HEMT Framework for Cryogenic Temperatures [P_036]	
Mohammad Nazir, Raghvendra Dangi, Mohammad Zaid, Ahtisham Pampori and Yogesh Singh Chauhan; *Indian Institute of Technology Kanpur, India*	

4D. 2D Materials and Devices II	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 6+7	
Session Chair: Yury Illarionov; *Southern University of Science and Technology, China*	
[4D-1] [Invited]	**11:00 AM – 11:25 AM**
TMDC channel for low-power-density 3D-stacked FETs [I_070]	
Hitoshi Wakabayashi; *Tokyo Institute of Technology, Japan*	
[4D-2] [Invited]	**11:25 AM – 11:50 AM**
Ultra-clean interfaces between 2D MoS2, contact metals, and high K dielectrics [I_071]	
Manish Chhowala; *University of Cambridge, UK*	
[4D-3] [Invited]	**11:50 AM – 12:05 PM**
Guidelines of wafer scale growth for 2D integration FAB readiness [I_092]	
Salim El Kazzi; *Aixtron, Germany*	
[4D-4]	**12:05 PM – 12:20 PM**
Reduction of contact resistance to PVD-MoS2 film using aluminum–scandium alloy (AlSc) edge contact [P_215]	
Shinya Imai, Ryosuke Kajikawa, Takamasa Kawanago, Iriya Muneta, Kazuo Tsutsui, Tetsuya Tatsumi, Shigetaka Tomiya, Kuniyuki Kakushima and Hitoshi Wakabayashi; *Tokyo Institute of Technology, Japan*	
[4D-5]	**12:20 PM – 12:45 PM**
Robust Growth of Electronic Grade p-type Large Area 2D WSe2 and High-performance PMOS Transistor [P_258]	
Biswajeet Nayak[1], Rupali Verma[2], Purbasha Ray[1], Suman Kumar Chakraborty[1], Mayank Shrivastava[2], and Prasana Kumar Sahoo[1]; [1]*Indian Institute of Technology Kharagpur;* [2]*Indian Institute of Science Bangalore*	
[4D-6]	**12:45 PM – 01:00 PM**
Enhanced optoelectronic and electrical characteristics in nanopatterned 2D dielectric (hBN)/ semiconductor (WS2) field effect transistors [P_359]	
Poulomi Chakrabarty, Sera Sen, Srilagna Sahoo and Saurabh Lodha; *Indian Institute of Technology Bombay, India*	

4E. AI/ML in Process Control	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 8	
Session Chair: Tomasz Brozek; *PDF Solutions, USA*	
[4E-1] [Keynote]	**11:00 AM – 11:30 AM**
Chips Making Chips: How Virtualization, Digital Twins and Machine Learning are Accelerating the Spiral of Innovation [I_072]	
David Fried; *Lam Research, USA*	
[4E-2] [Invited]	**11:30 AM – 11:55 AM**
AI driven Process Diagnostic & Control: Device Manufacturing [I_073]	
Jae-Yong Park; *Samsung, USA*	
[4E-3]	**11:55 AM – 12:10 PM**
Enabling process control though predictive design and virtual metrology for high product mix manufacturing [P_011]	
Hyung Joo Lee[1], Sanghyun Choi[1], Sudheesh Krishnankutty[2], Raghavendra Botta[2], Nathan Greeneltch[3] and Srividya Jayaram[3]; [1]*Siemens EDA, South Korea;* [2]*Siemens EDA, India;* [3]*Siemens EDA, USA*	
[4E-4] [Invited]	**12:10 PM – 12:35 PM**
Coupling Reactor-scale and Feature-Scale Simulations: ProcessTwin™ for Unit Processes [I_074]	
Rajesh Sathiyanarayanan; *Applied Materials, India*	
[4E-5] [Invited]	**12:35 PM – 01:00 PM**
Virtual Process Modeling and Virtual Fabrication in Semiconductor Manufacturing Training [I_075]	
Dinesh Munireddy; *Lam Research, USA*	

4F. Package Manufacturing	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 3	
Session Chair: Gokul Kumar; *Micron Technologies, USA*	
[4F-1] [Keynote]	**11:00 AM – 11:30 AM**
Predictive Modeling and Design for Board Level Solder Joint Reliability under Temperature Cycling [I_128]	
Faxing Che, *Micron Technologies, Singapore*	
[4F-2] [Keynote]	**11:30 AM – 12:00 PM**
Innovative Wafer Level Equipment Solutions for Heterogeneous Integration [I_077]	
Chee Ping Lee; *Lam Research, USA*	
[4F-3] [Invited]	**12:00 PM – 12:30 PM**
Heterogeneous Integration for Multi Chiplet Advanced Packaging [I_078]	
Surya Bhattacharya; *Institute of Microelectronics, Singapore*	
[4F-4]	**12:30 PM – 12:45 PM**
Evolution of Maskless Digital Lithography A game-changer for Advanced Semiconductor Packaging [P_068]	
Ashwini Aggarwal; *Applied Materials, India*	

4G. Logic, Memory and 2D Material Reliability	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 5	
Session Chair: Souvik Mahapatra; *Indian Institute of Technology Bombay, India*	
[4G-1] [Invited]	**11:00 AM – 11:30 AM**
Nanoscale Insights into the Degradation Mechanisms of 2D Dielectrics [I_080]	
Kalya Shubhakar, *SUTD Singapore*	
[4G-2]	**11:30 AM – 11:45 AM**
Impact of Gate Insulator Process on NBTI in FinFETs and Resulting Ring Oscillator Degradation Under Normal and Overclocking Usage Conditions [P_119]	
Arnav Shaurya Bisht, Payel Chatterjee and Souvik Mahapatra, *Indian Institute of Technology Bombay, India*	
[4G-3]	**11:45 AM – 12:00 PM**
Unveiling the Hidden Impact of Self-Heating on Ferroelectric FinFET and FDSOI based In-Memory Computing [P_137]	
Swetaki Chatterjee[1,2], Nistha Baruah[2,3], Swati Deshwal[1], Anirban Kar[1,4], Om Prakash[2], Shivendra Singh Parihar[1,2], Yogesh Singh Chauhan[1], and Hussam Amrouch[4]; [1]*Indian Institute of Technology Kanpur, India;* [2]*University of Stuttgart, Germany;* [3]*National Institute of Technology Silchar, India;* [4]*Technical University of Munich (TUM), Germany*	
[4G-4]	**12:00 PM – 12:15 PM**
A TCAD Framework for HCD in n-MOSFETs for PMIC Applications [P_263]	
Himanshu Diwakar, Souvik Mahapatra; *Indian Institute of Technology Bombay, India*	
[4G-5]	**12:15 PM – 12:30 PM**
Impact of Area-to-Perimeter Ratio Layout Effect on TDDB in 45-nm PDSOI N-channel FETs [P_058]	
Asifa Amin[1], Aarti Rathi[1], Purushothaman Srinivasan[2], Oscar Huerta Gonzalez[2] and Abhisek Dixit[1]; [1]*Indian Institute of Technology Delhi, India;* [2]*GlobalFoundries, Malta, NY, USA*	
[4G-6]	**12:30 PM – 12:45 PM**
Ultra-Fast Oxide Traps in Sub-20-nm DRAM Technology: from Characterization to Physical origin identification [P_051]	
Da Wang[1], Yong Liu[1], Yongkang Xue[1], Pengpeng Ren[1], Zixuan Sun[2], Zirui Wang[2], Yueyang Liu[3], Zhijun Cheng[4], Haiyang Yang[4], Xiangli Liu[4], Blacksmith Wu[4], Kanyu Cao[4], Runsheng Wang[2], Zhigang Ji[1] and Ru Huang[2]; [1]*Shanghai Jiao Tong University, China;* [2]*Peking University, China;* [3]*Chinese Academy of Sciences, China;* [4]*Changxin Memory Technologies, Inc., China*	

4H. Si, SiGe, III-V Technologies for RF Applications	
Session Date and Time: 5th March 2024 (Tuesday), 11:00 AM – 01:00 PM	
Session Room: Audi 4	
Session Chair: Suresh Balanethiram; *National Institute of Technology Puducherry*	
[4H-1] [Invited]	**11:00 AM – 11:25 AM**
CMOS and SiGe Technologies for SATCOM Circuits and Systems [I_081]	
Venkata Vanukuru; *GlobalFoundries, India*	
[4H-2] [Invited]	**11:25 AM – 11:50 AM**
Next Generation SiGe HBTs for Energy Efficient Microwave Power Amplification [I_082]	
Soumya Ranjan Panda; *University of Bordeaux, France*	
[4H-3] [Invited]	**11:50 AM – 12:15 PM**
Class BJF-1: Pushing the boundaries of the performance of RF Power Amplifiers [I_083]	
Merlyne De Souza; *University of Sheffield, UK*	
[4H-4]	**12:15 PM – 12:30 PM**
InP/GaInP Composite-Collector for Improved Breakdown Voltage in the InP/GaAsSb DHBTs [P_399]	
Akshay Kumar Mahadev Arabhavi[1], Sara Hamzeloui[1], Wei Quan[2], Filippo Ciabattini[1], Olivier Ostinelli[1] and Colombo Bolognesi[1]; [1]*MWE Laboratory, ETH-Zurich, Switzerland;* [2]*Albis Optoelectronics AG, Switzerland*	
[4H-5]	**12:30 PM – 12:45 PM**
Device Design Guidelines for Improved power Amplification using SFP LDMOS Transistor [P_153]	
Rutu Patel, Om Maheshwari and Nihar R. Mohapatra; *Indian Institute of Technology Gandhinagar, India*	
[4H-6]	**12:45 PM – 01:00 PM**
Characterization and Experimental Validation of Self Heating in RF LDMOS Transistor using BSIM-BULK Model [P_431]	
Ayushi Sharma[1], Shivendra Singh Parihar[1], Yawar Hayat Zarkob[1], Weike Wang[2], Kimihiko Imura[2], Praveen Dwivedi[1] and Yogesh Singh Chauhan[1]; [1]*Indian Institute of Technology Kanpur, India;* [2]*MaxLinear Inc., Carlsbad, California, USA*	

5A. Alternate Devices and Computing Options	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 1	
Session Chair: Kaushik Nayak; *Indian Institute of Technology Hyderabad*	
[5A-1] [Keynote]	**02:00 PM – 02:30 PM**
Integrated Ferroelectric Devices for Energy Efficient Computing [I_084]	
Sayeef Salahuddin; *University of California Berkeley, USA*	
[5A-2] [Invited]	**02:30 PM – 03:00 PM**
Reliable Brain-inspired Computing using Ferroelectric Transistors: Hope or Hype? [I_085]	
Hussam Amrouch; *Technical University Munich, Germany*	
[5A-3] [Invited]	**03:00 PM – 03:30 PM**
Scalable Silicon Qubit Operation for Large-Scale Integrated Quantum Computer [I_086]	
Ryuta Tsuchiya; *Hitachi Cambridge Laboratory, UK*	

5B. Flash Memories	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 9	
Session Chair: Tomoya Sanuki; *Kioxia*	
[5B-1] [Invited]	**02:00 PM – 02:30 PM**
3D NAND Scaling Paradigm in the AI Era [I_087]	
Akira Goda; *Micron Technologies, USA*	
[5B-2] [Invited]	**02:30 PM – 03:00 PM**
Unmasking Vulnerabilities: The Provocative Dance of Device Physics in Flash Storage Security [I_088]	
Biswajit Ray; *Colorado State University, USA*	
[5B-3]	**03:00 PM – 03:15 PM**
Cycling Condition Impacts on 3D QLC NAND Reliability [P_235]	
M. Dean Sciacca[1], Trinadhachari Kosuru[2] and Nikolaos Papandreou[3]; [1]*IBM, USA;* [2]*IBM, India;* [1]*IBM Research Europe, Switzeland*	

5C. Ab-initio Simulation and Modeling	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 2	
Session Chair: Rajat Bishnoi; *Micron India*	
[5C-1] [Invited]	**02:00 PM – 02:30 PM**
Ab initio Modeling of quantum transport in low-dimensional materials and devices [I_089]	
Sabyasachi Tiwari; *The University of Texas at Austin, USA*	
[5C-2]	**02:30 PM – 02:45 PM**
First principles Modeling perspective for 2D channel – 3D oxide interfaces [P_039]	
Fabian Ducry, Benoit Van Troeye, Cesar J. L. de la Rosa, Gouri S. Kar, Geoffrey Pourtois and Aryan Afzalian; *IMEC, Belgium*	
[5C-3]	**02:45 PM – 03:00 PM**
Ohmic Au-MoS2 Contacts Enabled by Re Adsorbed MoS2 Source/Drain Regions: An Ab-initio Quantum Transport Study [P_221]	
Saurabh Kharwar, Soham Sinha and Tarun Kumar Agarwal; *Indian Institute of Technology Gandhinagar, India*	
[5C-4]	**03:00 PM – 03:15 PM**
Understanding and Predicting the Activation Energy of Oxygen Migration in Pr0.5Ca0.5MnO3 : A DFT study [P_211]	
Shashank Inge, Aditya Narayan Pandey, Udayan Ganguly and Amrita Bhattacharya; *Indian Institute of Technology Bombay, India*	
[5C-5]	**03:15 PM – 03:30 PM**
Position-dependent Voltage-controlled Switching of Perpendicular Ferromagnet on a Topological Insulator: A micromagnetic simulation study [P_312]	
Vinod Naik Bhukya, Rik Dey and Yogesh Singh Chauhan; *Indian Institute of Technology Kanpur, India*	

5D. Thin Film Devices	
Session Date and Time: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 6+7	
Session Chair: Pavan Nukala; *Indian Institute of Science Bangalore, India*	
[5D-1] [Invited]	**02:00 PM – 02:30 PM**
Materials and Device Technologies for Low-Temperature Integration [I_090]	
Alwin Daus; *University of Freiburg, Germany*	
[5D-2] [Invited]	**02:30 PM – 03:00 PM**
Formation techniques for upper active channels in monolithic 3D integration [I_091]	
Rino Choi; *Inha University, South Korea*	
[5D-4]	**03:00 PM – 03:15 PM**
Comparative Analysis of Switching Efficiency of GeTe and VO2 based RF Switches [P_303]	
Abhishek Mishra, Yogesh Singh Chauhan and Amit Verma; *Indian Institute of Technology Kanpur, India*	
[5D-5]	**03:15 PM – 03:30 PM**
Tailoring SWNT Thin-Film Transistor Performance: The Role of CuI Heterostructures [P_386]	
Dhananjay Mishra, Seung Gi Seo and Sung Hun Jin; *Incheon National University, South Korea*	

5E. Sensors and Biosensors I	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 8	
Session Chair: Shweta Agarwala; *Aarhus University, Denmark*	
[5E-1] [Keynote]	**02:00 PM – 02:30 PM**
Printed Electronic Cyrogels for in-vivo Plant Monitoring [I_093]	
Gregory Whiting; University of Colorado Boulder, USA	
[5E-2]	**02:30 PM – 02:45 PM**
Ultrasensitive Photo-Thermal Multimodal Sensory based on Self-Doping Modulation of Bi2O2Se Semiconductor [P_032]	
Liu Shuo, Xu Lei, Liu Junling, Huang Ru and He Ming; *Peking University, China*	
[5E-3]	**02:45 PM – 03:00 PM**
Physisorption Interaction of Nucleobases on ZrGeTe4 Using Density Functional Theory Study for Biomolecule Sensing [P_451]	
Mohd Mufeed, Ankit Sirohi and Jawar Singh; *Indian Institute of Technology Patna, India*	
[5E-4]	**03:00 PM – 03:15 PM**
Performance improvement of trap charge infused MoS2 based TFET photosensor by dielectric engineering [P_041]	
Jagritee Talukdar and Bhaskaran Muralidharan; *Indian Institute of Technology Bombay, India*	

5F. Integrated Photonics I	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 3	
Session Chair: Gauri Karve; *IMEC Belgium*	
[5F-1] [Invited]	**02:00 PM – 02:25 PM**
Perspectives on active optical component integration for next generation integrated photonics [I_094]	
Sandeep Saseendran; *IMEC, Belgium*	
[5F-2] [Invited]	**02:25 PM – 02:50 PM**
Graphene on silicon carbide as a mid-IR metamaterial [I_095]	
Francesca Iacopi; *University of Technology Sydney, Australia*	
[5F-3] [Invited]	**02:50 PM – 03:15 PM**
On-Chip THz Silicon Topological Photonics for 6G to XG Wireless [I_096]	
Ranjan Singh, *Nanyang Technological University, Singapore*	
[5F-4]	**03:15 PM – 03:30 PM**
Bistable Photon Pair Generation in Silicon Microring Resonator Integrated with Pump Rejection Filter [P_428]	
Arnab Goswami, Ram Mohan Rao Boyapati and Bijoy Krishna Das; *Indian Institute of Technology Madras, India*	

5G. Ga2O3 based Power Devices	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 5	
Session Chair: Harshit Agarwal; *Indian Institute of Technology Jodhpur, India*	
[5G-1] [Invited]	**02:00 PM – 02:25 PM**
Device Engineering for Ultra-Wide Bandgap Gallium Oxide and III-Nitride Electronics [I_097]	
Siddharth Rajan; *Ohio State University, USA*	
[5G-2] [Invited]	**02:25 PM – 02:50 PM**
Development of vertical Ga2O3 power devices and their processing technologies [I_098]	
Masataka Higashiwaki; *Osaka Metropolitan University / National Institute of Information and Communications Technology, Japan*	
[5G-3]	**02:50 PM – 03:05 PM**
High-k dielectric integration to improve breakdown characteristics of β-Ga2O3 Schottky diode [P_425]	
Pooja Sharma, Yeshwanth Parasubotu and Saurabh Lodha; *Indian Institute of Technology Bombay, India*	
[5G-4]	**03:05 PM – 03:20 PM**
Exploring Phase and Bandgap Variations in Gallium Oxide Using Mist-based Chemical Vapor Deposition System [P_336]	
Shiv Kumar[1], Arnab Mondal[2], Anand Pandey[1], Subhashis Das[2] and Ankush Bag[1]; *[1]Indian Institute of Technology Guwahati, India; [2]Indian Institute of Technology Mandi, India*	
[5G-5]	**03:20 PM – 03:35 PM**
LPCVD Grown n-Ga2O3 on p-GaN and Demonstration of p-n Heterojunction Behavior [P_401]	
Arnab Mondal[1], Arpit Nandi[2], Manoj Yadav[3] and Ankush Bag[4]; *[1]Indian Institute of Technology Mandi, India; [2]University of Bristol, United Kingdom; [3]TU Wein, Austri; [4]Indian Institute of Technology Guwahati, India*	

5H. SOI Devices for RF Applications	
Session Date: 5th March 2024 (Tuesday), 02:00 PM – 03:30 PM	
Session Room: Audi 4	
Session Chair: Venkata Vanukuru; *GlobalFoundries, India*	
[5H-1] [Keynote]	**02:00 PM – 02:30 PM**
RF SOI Technology Advances for 5G Front End Modules [I_099]	
Alfred Chong; *GlobalFoundries, Singapore*	
[5H-2]	**02:30 PM – 02:45 PM**
Experimental Study on 22 nm FD-SOI CMOS Devices for MM-Wave Switch Applications [P_331]	
Kishore Bantupalli, Santosh Kumar Gedela and Venkata Vanukuru; *GlobalFoundries, India*	
[5H-3]	**02:45 PM – 03:00 PM**
Experimental Studies of Extended Drain MOSFET in 130-nm SOI Technology for Power Amplifier Design [P_048]	
Binoy Kumar Paul[1], Santosh Kumar Gedela[1], Rui Tze Toh[2] and Venkata Narayana Rao Vanukuru[1]; *[1]GlobalFoundries, India; [2]GlobalFoundries, Singapore*	
[5H-4]	**03:00 PM – 03:15 PM**
SSROI (super-steep retrograde on insulator) substrates for RF switch and LNA device performance enhancement [P_316]	
Hideki Takeuchi; *Atomera Inc., USA*	
[5H-5]	**03:15 PM – 03:30 PM**
Validation of Dynamically Depleted Symmetric BSIM-SOI Compact model for RF SOI T/R Switch Applications [P_231]	
Debashish Nandi[1], Chetan Kumar Dabhi[2], Dinesh Rajasekaran[2], Naveen Karumuri[3], Sreenidhi Turuvekere[3], Balaji Swaminathan[3], Srikanth Srihari[3], Anupam Dutta[3], Chenming Hu[2] and Yogesh Singh Chauhan[1]; *[1]Indian Institute of Technology Kanpur, India; [2]Berkeley Device Modelling Center, University of California, Berkeley, CA, USA; [3]GlobalFoundries Inc., Bangalore, KA, India*	

6A. Ferroelectric Materials and Devices II	
Session Date: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 1	
Session Chair: Saptarshi Das; *Pennsylvania State University, USA*	
[6A-1] [Invited]	**03:45 PM – 04:10 PM**
Wake up free robust ferroelectricity in solution-processed La:HfO2 thick films [I_101]	
Pavan Nukala; *Indian Institute of Science Bangalore, India*	
[6A-2]	**04:10 PM – 04:25 PM**
Multi-Level, Low-Voltage Programming of Ferroelectric HfO2/ZrO2 Nanolaminates Integrated in the Back-End-Of-Line [P_163]	
Ruben Hamming-Green[1,2], Saketh Ram Mamidala[1], Donato Francesco Falcone[1], Beatriz Noheda[2], Bert Jan Offrein[1], Laura Bégon-Lours[1,3]; *[1]IBM Research Europe, Zurich, Switzerland; [2]University of Groningen, Netherlands; [3]ETH Zürich, Switzerland*	
[6A-3]	**04:25 PM – 04:40 PM**
Recorded Ferroelectric Polarization Switching of Hf0.5Zr0.5O2 Capacitors Achieved by Thermal Rewake-up Operations [P_100]	
Zichong Zhang, Yifan Yang, Rui Su, Tonghui Lin, Xiangshui Miao, Xingsheng Wang; *Huazhong University of Science and Technology, China*	
[6A-4]	**04:40 PM – 04:55 PM**
A Novel Hafnia-based Ferroelectric Capacitor with Antiferroelectric Zirconia Seed Layer for High Ferroelectricity and Endurance [P_049]	
Mengxuan Yang, Kaifeng Wang, Bocheng Yu, Zhiyuan Fu, Chang Su, Ru Huang and Qianqian Huang; *Peking University, China*	
[6A-5]	**04:55 PM – 05:10 PM**
A novel hybrid-FE-layer FeFET with enhanced linearity for on-chip training of CIM accelerator [P_034]	
Yuejia Zhou, Ru Huang, Kechao Tang; *Peking University, China*	

6B. Unconventional Computing I	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 9	
Session Chair: Veeresh Deshpande; *Indian Institute of Technology Bombay*	
[6B-1] [Keynote]	**03:45 PM – 04:15 PM**
Atomic Lego for future computing [I_102]	
Feng Miao; *Nanjing University, China*	
[6B-2] [Invited]	**04:15 PM – 04:45 PM**
Scalable control and readout system for superconducting qubit devices [I_103]	
Vibhor Singh; *Indian Institute of Science Bangalore, India*	
[6B-3]	**04:45 PM – 05:00 PM**
Probabilistic Autonomous Data Acquisition Using Stochastic MTJ Based p-Bits [P_113]	
Saleh Bunaiyan, Feras Al-Dirini; *KFUPM, Saudi Arabia*	
[6B-4]	**05:00 PM – 05:15 PM**
Performance Comparison for Quantum Approximate Optimization Algorithm (QAOA) across Noiseless Simulation, Experimentally Benchmarked Noisy Simulation, and Experimental Hardware Platforms [P_228]	
Sanyam Singhal[1], Vandit Srivastava[2], Rohith P[2], Prateek Jain[3], Debanjan Bhowmik[1]; *[1]Indian Institute of Technology Bombay, India; [2]Indian Institute of Technology Bombay, India; [3]Fractal Analytics, India*	

6C. Design Technology Co-Optimization II	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 2	
Session Chair: Soumya Pandit; *Calcutta University, India*	
[6C-1] [Invited]	**03:45 PM – 04:15 PM**
Disrupting Conventional Chip Design through the Open Source EDA Ecosystem [I_104]	
Mehdi Saligane; *University of Michigan, USA*	
[6C-2] [Invited]	**04:15 PM – 04:45 PM**
SPICE Modeling of distance-dependent mismatch for competitive ADC/DAC design [I_105]	
Gert-jan Smit; *NXP Semiconductors, The Netherlands*	
[6C-3] [Invited]	**04:45 PM – 05:15 PM**
Enhancing design robustness accounting for process variations of multi-transistor designs [I_106]	
Ajoy Mandal; *Texas Instruments, India*	

6D. Optoelectronic Devices	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 6+7	
Session Chair: Rino Choi; *Inha University, South Korea*	
[6D-1] [Keynote]	**03:45 PM – 04:15 PM**
Emerging Semiconductor Nanostructures for Low Power Photonic and Piezotronic Devices [I_107]	
Samit Kumar Ray; Indian Institute of Technology Kharagpur, India	
[6D-2] [Invited]	**04:15 PM – 04:45 PM**
Utilizing Geometry and Topology for Designing On-Chip Chiral Photonic Infrastructure [I_108]	
Ritesh Agarwal; University of Pennsylvania, USA	
[6D-3]	**04:45 PM – 05:00 PM**
Visible-SWIR Sensitive Artificial Retina for Vision Sensors [P_272]	
Manoj Kumar, Kritika Bhattacharya and Samaresh Das; *Indian Institute of Technology Delhi, India*	
[6D-4]	**05:00 PM – 05:15 PM**
Scattering and Absorption Efficiency Analysis of Gold Nanospheres for Optoelectronic Applications [P_207]	
Chandan Upadhyay, Kamalesh Tripathy and Mitradip Bhattacharjee; *Indian Institute of Science Education and Research Bhopal, Bhopal, India*	

6E. Sensors and Biosensors II	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 8	
Session Chair: V V Raghavendra Sai; *Indian Institute of Technology Madras, India*	
[6E-1] [Keynote]	**03:45 PM – 04:15 PM**
Conformal sensors for wearables and nearables [I_110]	
Madhu Bhaskaran; *RMIT University, Australia*	
[6E-2] [Keynote]	**04:15 PM – 04:45 PM**
Conformal sensors for wearables and nearables [I_009]	
Ajay Agarwal; *Indian Institute of Technology Jodhpur, India*	
[6E-3]	**04:45 PM – 05:00 PM**
Dual-k Reconfigurable Silicon Nanowire Schottky Barrier Transistor for Biosensing Application [P_131]	
Anil Kumar, Sumit Kale; *Delhi Technological University, New Delhi, India*	
[6E-4]	**05:00 PM – 05:15 PM**
Leveraging Photo-patternable Nanocomposites for High Performance Tactile Neuromorphic Sensing [P_351]	
Nadeem Tariq Beigh, Faizan Tariq Beigh and Dhiman Mallick; *Indian Institute of Technology Delhi, India*	

6F. Integrated Photonics II	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 3	
Session Chair: Samit Kumar Ray; *Indian Institute of Technology Kharagpur, India*	
[6F-1]	**03:45 PM – 04:00 PM**
Design and Demonstration of Ring Assisted Mach Zehnder Interferometer Modulator in Fully-Monolithic 45 nm SOI GF Fotonix™ Platform [P_230]	
Riddhi Nandi, Pratyasha Priyadarshini and Rupa Gopinath; *GlobalFoundries, India*	
[6F-2]	**04:00 PM – 04:15 PM**
Comparison of Electro-Optical Characteristics of Simulated and Fabricated InGaN/GaN MQWs Green Light Emitting Diodes on c-Plane Sapphire [P_025]	
Indrani Mazumder, Kashish Sapra, Harshita Aagiwal, Ashok Chauhan, Manish Mathew, Priyavarat Prajapati, Bhoopendra Kumar Kushwaha, Arvind Kumar Singh, Ramakant Sharma, Bhawani Shankar, Prateek Kothari and Kuldip Singh; Ac*CSIR, India, CSIR-CEERI, Pilani, India*	
[6F-3]	**04:15 PM – 04:30 PM**
Study of Stress Compensation Layer for Enhancing Quantum Efficiency of InGaN/GaN-MQWs LEDs Within the Green-Gap Region [P_074]	
Chandra Prakash Singh and Kankat Ghosh; *Indian Institute of Technology Jammu, India*	
[6F-4]	**04:30 PM – 04:45 PM**
Deep-UV Nanowire LED with Step-Graded n-Type Electron Blocking Layer and Al2O3 Nanoparticles for Enhanced Performance [P_209]	
Samadrita Das, Trupti Ranjan Lenka and Fazal Ahmed Talukdar; *National Institute of Technology Silchar*	
[6F-5]	**04:45 PM – 05:00 PM**
Design & Characterization of Front End Electronics for Silicon Photomultiplier for imaging of hard X-rays using NaI (Tl) Scintillator [P_277]	
Shiv Kumar Goyal[1,2], Amisha P. Naik[1], Abhay Kumar[2] and Santosh Vadawale[2]; *[1]Nirma University, India; [2]Physical Research Laboratory, Ahmedabad, India*	

6G. Solar Cells	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 5	
Session Chair: Arun Kumar Singh; *Punjab Engineering College, Chandigarh, India*	
[6G-1] [Invited]	**03:45 PM – 04:15 PM**
Opportunities to make solar cells "greener" with organic photovoltaic devices [I_111]	
S. Sundar Kumar Iyer, *Indian Institute of Technology Kanpur, India*	
[6G-2] [P_140]	**04:15 PM – 04:30 PM**
Spatial Mapping of Inverted Metamorphic Triple Junction Solar Cells	
Vaishnavi Thakur, Bernice Mae Yu Jeco Espaldon and Yoshitaka Okada, *The University of Tokyo, Japan*	
[6G-3]	**04:30 PM – 04:45 PM**
A comparative study of two-step and three-step annealing processes for PVDF added FASnI3 film quality and solar cell [P_162]	
Basavaraju U[1,2], Yash Bajpai[1], Naga Hanumaiah[2] and Praveen C Ramamurthy[1]; [1]*Indian Institute of Science Bangalore, India;* [2]*Central Manufacturing Technology Institute, India*	
[6G-4]	**04:45 PM – 05:00 PM**
Tin-Based Quasi-2D Halide Perovskite Solar Cells with Alternating Cation in the Interlayer Space [P_172]	
Kelvin Nosakhare Eguavoen and Praveen C Ramamurthy; *Indian Institute of Science Bangalore, India*	

6H. GaN HEMTs for RF Applications	
Session Date and Time: 5th March 2024 (Tuesday), 03:45 PM – 05:15 PM	
Session Room: Audi 4	
Session Chair: Patrick Fay; *University of Notre Dame, Notre Dame, USA*	
[6H-1] [Keynote]	**03:45 PM – 04:10 PM**
A Compact Model for Trigate GaN based FinHEMTs [I_112]	
Amitava DasGupta; *Indian Institute of Technology Madras, India*	
[6H-2] [Invited]	**04:10 PM – 04:35 PM**
Advancements in GaN Modeling for Power and RF Applications: Insights from the ASM Model and Beyond [I_113]	
Sheikh Aamir Ahsan; *National Institute of Technology Srinagar, India*	
[6H-3]	**04:35 PM – 04:50 PM**
Fermi-Level Pinning Effect in Gate Region: A Case Study of Multi-Metal Gated AlGaN/GaN HEMT for High RF Linearity [P_225]	
Toiyob Hossain[1], Bejoy Sikder[1], Md. Tasnim Azad[1], Qingyun Xie[2], Mengyang Yuan[2], Eiji Yagyu[3], Koon Hoo Teo[4], Tomás Palacios[4] and Nadim Chowdhury[1]; *[1]Bangladesh University of Engineering and Technology, Dhaka, Bangladesh; [2]Massachusetts Institute of Technology, United States; [3]Mitsubishi Electric Corporation, Japan; [4]Mitsubishi Electric Research Laboratories, United States*	
[6H-4]	**04:50 PM – 05:05 PM**
Inspection of Trapping and Detrapping Dynamics in Fe- and C-doped GaN-based RF HEMTs by Filling Pulse-Dependent DCT Spectroscopy [P_105]	
P. Vigneshwara Raja[1], Vaidehi Vijay Painter[1], Raphael Sommet[2] and Jean-Christophe Nallatamby[2]; [1]*Indian Institute of Technology Dharwad, India; [2]XLIM Laboratory CNRS UMR 7252, France*	
[6H-5]	**05:05 PM – 05:20 PM**
A GaN Low Noise Amplifier Design Using Numerical Optimization [P_019]	
Neha Bajpai and Yogesh Singh Chauhan; *Indian Institute of Technology Kanpur, India*	

7A. Design Technology Co-Optimization III	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 1	
Session Chair: Hussam Amrouch; *Technical University Munich, Germany*	
[7A-1] [Keynote]	**10:45 AM – 11:15 AM**
An Efficient and Accurate DTCO Framework for Reliability and Variability-Aware Explorations of FinFETs, Nanosheets, and Beyond [I_114]	
Markus Karner; *Global TCAD Solutions, Austria*	
[7A-2] [Invited]	**11:15 AM – 11:45 AM**
Perspectives on Backside Power (PowerVia) [I_115]	
Manjunath Shamanna; *Intel, USA*	
[7A-3]	**11:45 AM – 12:00 PM**
DTCO of Nanosheet and Forksheet Architectures: Exploring Dielectric Walls, Contacting Schemes, and Active Regions for Optimized RO Performance [P_139]	
Gautam Gaddemane[1], Pieter Schuddinck[1], Krishna Bhuwalka[2], Gerhard Rzepa[3], Gioele Mirabelli[1], Philippe Matagne[1], Dmitry Yakimets[2], Hao Wu[2], Geert Hellings[1] and Changze Liu[1]; *[1]IMEC, Belgium; [2]Huawei, Belgium; [3]GTS, Austria*	
[7A-4]	**12:00 PM – 12:15 PM**
Scaling Options for GAA Nanosheet Based Devices: Role of Decoupling Inner- and Outer-Gate Lengths [P_267]	
Krishna Bhuwalka[1], Oskar Baumgartner[2], Hao Wu[1], Gerhard Rzepa[2], Dmitry Yakimets[1], Markus Karner[2] and Changze Liu[1]; *[1]Huawei, Belgium; [2]GTS, Austria*	

7B. In-Memory Computing II	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 9	
Session Chair: Nicole Saulnier; *IBM Research, USA*	
[7B-1] [Keynote]	**10:45 AM – 11:15 AM**
Frontiers in AI Hardware: Deploying In-Memory Computing for Next-Gen Edge-AI Solutions [I_116]	
Nithin Chawla; *ST Microelectronics, USA*	
[7B-2] [Invited]	**11:15 AM – 11:45 AM**
Enhance Chip Connectivity and Functionality through RRAM-based Monolithic 3D Integration for Energy-Efficient Computing-In-Memory [I_117]	
Jianshi Tang; *Tsinghua University, China*	
[7B-3] [Invited]	**11:45 AM – 12:15 PM**
In-memory Computing: Across Times and Scales [I_118]	
Arindam Basu; *City University of Hong Kong, Hong Kong*	
[7B-4]	**12:15 PM – 12:30 PM**
Compensation of Conductance Mismatch with Redundant Bit-lines for RRAM-based Voltage Sensing Mode Computing-in-Memory [P_252]	
Yi Gao, Zongwei Wang, Zhizhen Yu, Lin Bao, Yimao Cai and Ru Huang; *Peking University, China*	
[7B-5]	**12:30 PM – 12:45 PM**
Accelerated Bit Slicing Technique for In-Memory Computing Using Multi-Input Resistive Random Access Memory [P_271]	
Jayatika Sakhuja[1], Radhika Joglekar[2], Sandip Lashkare[2] and Udayan Ganguly[1]; *[1]Indian Institute of Technology Bombay, India; [2]Indian Institute of Technology Gandhinagar, India*	

7C. ML based Device Modeling	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 2	
Session Chair: Harshit Agarwal; *Indian Institute of Technology Jodhpur, India*	
[7C-1] [Invited]	**10:45 AM – 11:15 AM**
Parametric Modeling Paradigms of Emergent Graphene-based Nano interconnects using Knowledge Based Machine Learning [I_119]	
Sourajeet Roy; *Indian Institute of Technology Roorkee, India*	
[7C-2]	**11:15 AM – 11:30 AM**
Training Free Parameter Extraction for Compact Device Models using Sequential Bayesian Optimization [P_377]	
Om Maheshwari, Aishwarya Singh and Nihar Ranjan Mohapatra; *Indian Institute of Technology Gandhinagar, India*	
[7C-3]	**11:30 AM – 11:45 AM**
A Neural Network based Fast Parameter Extraction of Compact Hot Carrier Degradation Model in FinFETs [P_213]	
Cong Shen[1], Yu Li[1], Wu Dai[1], Xinyue Zhang[1], Zirui Wang[1], Zhigang Ji[2], Lining Zhang[1], Runsheng Wang[1] and Ru Huang[1]; *[1]Peking university, China; [2]Shanghai Jiao Tong University*	
[7C-4]	**11:45 AM – 12:00 PM**
Neural Network Assisted Si-on-Nothing MOSFET Current-Voltage Modeling with Incremental Learning [P_155]	
Shuhan Wang, Zheng Zhou, Guihai Yu, Zili Tang, Jinghan Xu, Xiaoyan Liu and Xing Zhang; *Peking university, China*	
[7C-5]	**12:00 PM – 12:15 PM**
Accurate and fast electrostatic simulations of a double gate FETs using deep neural network [P_367]	
Avanish Kumar Singh[1], Aasim Ashai[2], Peram Sree Keerthan Reddy[1], Satya Aditi Dhaaipule[1], Biplab Sarkar[2] and Oves Badami[1]; *[1]Indian Institute of Technology Hyderabad, India; [2]Indian Institute of Technology Roorkee, India*	
[7C-6]	**12:15 PM – 12:30 PM**
Physics Informed Neural Network Based Time-Independent Schrodinger Equation Solver [P_133]	
Anant Singhal and Harshit Agarwal; *Indian Institute of Technology Jodhpur, India*	
[7C-7]	**12:30 PM – 12:45 PM**
Enhanced ANN for Accurate Current Prediction and Circuit Simulation in Nanosheet FETs [P_166]	
Om Maheshwari and Nihar Mohapatra; *Indian Institute of Technology Gandhinagar, India*	

7D. RRAM and OTS Selected Crossbar Arrays	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 3	
Session Chair: Sandip Lashkare; *Indian Institute of Technology Gandhinagar, India*	
[7D-1] [Invited]	**10:45 AM – 11:15 AM**
ReRAM: NVM for a New Generation [I_120]	
Amir Regev; Weebit Nano Ltd., Israel	
[7D-2] [Invited]	**11:15 AM – 11:45 AM**
Material Engineering for High Performance Memristive Devices [I_121]	
Vikas Rana; Forschungszentrum Juelich, Germany	
[7D-3]	**11:45 AM – 12:00 PM**
Cycles Dependent Resistive Switching of Au/ZnO/ITO-Coated PET Flexible Resistive Memory Devices [P_220]	
Sameen Azhar, Saikat Biswas, Argha Deep Paul and Rajat Mahapatra; National Institute of Technology Durgapur, India	
[7D-4]	**12:00 PM – 12:15 PM**
Ultra-High Endurance (>10^{12}) and High Drive-Current Selector in Sub-30nmΦ Cell using Stable Oxide Doped with As-Se Free High Melting-Point Compound [P_022]	
Yosuke Matsushima, Takeshi Iwasaki, Tadaomi Daibou, Takayuki Sasaki, Yutaro Shimoda, Zhu Qi, Masakazu Goto, Yuya Sato, Makoto Onizaki, Makoto Nagamine, Minoru Amano, Hiroki Kawai, Hiroki Tokuhira, Kenta Chokawa, Rina Takashima, Takayuki Tsukagoshi, Masumi Saitoh, Keiji Ikeda and Katsuyoshi Komatsu; Institute of Memory Technology Research & Development, Kioxia Corporation, Japan	
[7D-5]	**12:15 PM – 12:30 PM**
Probing Dit and Memory Window of Solution Processed Oxide [P_368]	
Atul Sachan and Sandip Mondal; Indian Institute of Technology Bombay, India	

7E. 2D Materials and Devices III	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 6+7	
Session Chair: Xuanyao (Kelvin) Fong; *National University of Singapore, Singapore*	
[7E-1] [Invited]	**10:45 AM – 11:10 AM**
Vacancy-assisted contact resistance engineering in monolayer and bilayer graphene devices [I_145]	
Jeevesh Kumar; *Indian Institute of Technology (ISM) Dhanbad, India*	
[7E-2] [Invited]	**11:10 AM – 11:35 AM**
Designer 2D materials and machine-learning assisted characterization [I_123]	
Shengxi Huang; *Rice University, USA*	
[7E-3]	**11:35 AM – 11:50 AM**
High-Speed Electrical Transient Thermometry of Monolayer MoS2 [P_340]	
Emanuel Ber and Eilam Yalon; *Technion – Israel Institute of Technology, Israel*	
[7E-4] [Invited]	**11:50 AM – 12:15 PM**
Sliding van der Waals Polytypes [I_122]	
Moshe Ben Shalom; *Tel Aviv University, Israel*	
[7E-5]	**12:15 PM – 12:30 PM**
Improved Resistive Switching and Synaptic characteristics on 2-D Graphene/MoS2/Graphene Memristor using O2 Plasma Irradiation [P_246]	
Kanupriya Varshney[1], Prajjwal Shukla[1], Bhanu Prakash[2], Devarshi Mrinal Das[1] and Brajesh Rawat[1]; [1]*Indian Institute of Technology Ropar, India;* [2]*INST, Mohali, India*	
[7E-6]	**12:30 PM – 12:45 PM**
Probing the Origin of Photocurrent in 2D Bilayer MoSe2-WSe2 Lateral Heterostructure [P_262]	
Purbasha Ray[1], Rupali Verma[2], Biswajeet Nyak[1], Suman Kumar Chakraborty[1], Mayank Shrivastava[2], Prasana Kumar Sahoo[1]; [1]*Indian Institute of Technology Kharagpur, India;* [2]*Indian Institute of Science, Bengaluru, India*	

7F. Process and Metrology	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 4	
Session Chair: Shawn Thomas; *Applied Materials, USA*	
[7F-1] [Invited]	**10:45 AM – 11:15 AM**
e-beam technology innovation for EUV, Gate all around logic and Advance Memory acceleration [I_124]	
Nitin Singh Malik; *Applied Materials, USA*	
[7F-2]	**11:15 AM – 11:30 AM**
Optical Probing of Charge Retention Time in Semiconductor/Dielectric Structure [P_264]	
Binit Mallick, Dipankar Saha, Anindya Datta and Swaroop Ganguly; *Indian Institute of Technology Bombay, India*	
[7F-3] [Invited]	**11:30 AM – 11:55 AM**
Atomic Layer Deposition from a Chemistry View [I_125]	
Xinwei Wang; *Peking University, China*	
[7F-4]	**11:55 AM – 12:10 PM**
Influence of ALD pulse times and deposition temperature on electrical properties and reliability of MIM decoupling capacitors based on Al-doped ZrO2 high-k dielectric in BEoL conditions [P_305]	
Konstantinos Efstathios Falidas[1], Kati Kühnel[1], Maximilian Everding[1], Malte Czernohorsky[1] and Johannes Heitmann[2]; *[1]Fraunhofer Institute for Photonic Microsystems (IPMS), Germany; [2]TU Bergakademie Freiberg, Germany*	
[7F-5]	**12:10 PM – 12:25 PM**
Roughness as an Important Metric for Si and SiGe Epi Growth [P_092]	
Yogendra Yadav[1], Piyush Bhatt[1], Rajesh Sathiyanarayanan[1] and Phillip Stout[2]; *[1]Applied Materials, India; [2]Applied Materials, United States*	
[7F-6]	**12:25 PM – 12:40 PM**
Monitoring Product Chip Health with In-die Quality Monitors [P_266]	
Tomasz Brozek[1], Alberto Piadena[2], Michele Quarantelli[2], Larg Weiland[1], Christopher Hess[1], Sharad Saxena[1], Yuan Yu[1], Rakesh Vallishayee[1] and Andrzej Strojwas[1]; *[1]PDF Solutions, USA; [2]PDF Solutions, Italy*	

7G. Package Design	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 3	
Session Chair: Nilesh Badwe; *Indian Institute of Technology Kanpur, India*	
[7G-1] [Keynote] I_126]	**10:45 AM – 11:15 AM**
Semiconductor Market Trends and Packaging Implications	
Glenn G. Daves, NXP Semiconductors, USA	
[7G-2] [Invited]	**11:15 AM – 11:45 AM**
Packaging Heterogeneous Integration (PHI): Maintaining the Scaling Golden Ratio [I_127]	
Arun Chandrasekhar, *Intel, India*	
[7G-3]	**11:45 AM – 12:00 PM**
Recurrent Neural Network (RNN) Based Signal Integrity Assessment for Coaxial-Through Glass Vias in Three-Dimensional Integration [P_197]	
Suyash Sachdeva, Madhu Kiran Kommukuri, Rajeevan Chandel and Rohit Dhiman; *National Institute of Technology Hamirpur, India*	
[7G-4	**12:00PM – 12:15 PM**
Leakage current based Thermal Design Approach for SSD Reliability [P_082]	
Ramesh Nallavelli[1], Prasad N V Nune[1], Suresh Reddy Yarragunta[1], Christopher Glancey[2], Gokul Kumar[2], Yeow Chon Ong[3] and Hong Wan Ng[3]; *[1]Micron Technology, India; [2]Micron Technology, United States; [3]Micron Technology, Singapore*	

7H. Printed Devices	
Session Date and Time: 6th March 2024 (Wednesday), 10:45 AM – 12:45 PM	
Session Room: Audi 5	
Session Chair: Shweta Agarwala; *Aarhus University, Denmark*	
[7H-1] [Keynote]	**10:45 AM – 11:15 AM**
In-Vitro Recording of Cellular Activities using Printed Carbon-based Transistors [I_129]	
Adrica Kyndiah; *Istituto Italiano di Tecnologia,Italy*	
[7H-2] [Invited]	**11:15 AM – 11:45 AM**
Highly flexible and conformable electronic systems a new generation of wearable devices [I_130]	
Piero Coseddu; *University of Cagliari, Canada*	
[7H-3] [Invited]	**11:45 AM – 12:00 PM**
Microfabrication of Prototypes of Millimeter-Band Electromagnetic Components by Using DLP 3D Printing and Magnetron Sputtering [P_354]	
Nikita M. Ryskin[1,2], Ivan S. Ozhogin[1,2], Andrei V. Starodubov[1,2], Alexey A. Serdobintsev[2] , Ilya O. Kozhevnikov[2] , Igor Sh. Bahteev[3] , Sergey Yu. Molchanov[1,3], Vishant[4] , Anand Abhishek[4] , and Niraj Kumar[4]; *[1]Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS, Russia; [2]Saratov State University, Russia; [3]Osipyan Institute of Solid State Physics RAS, Chernogolovka, Russia; [4]CSIR-Central Electronics Engineering Research Institute, India*	
[7H-4]	**12:00 PM – 12:15 PM**
Investigation of resistive switching in ink-jet printed zinc doped indium oxide-based devices [P_120]	
Manvendra Singh, Mohammed Hadhi Pp and Subho Dasgupta; *Indian Institute of Technology Bombay, India*	
[7H-5]	**12:15 PM – 12:30 PM**
Exploration of Solution Processed OFETs with PVP/P3HT interface for Synaptic Behavior Emulation [P_350]	
Somnath Bhattacharjee, Sachin Rahi, Gargi Konwar and Shree Prakash Tiwari; *Indian Institute of Technology Jodhpur, India*	
[7H-6]	**12:30 PM – 12:45 PM**
A System Level Integration of Wearable and Flexible Magnetoelectric Nanogenerators for Efficient Energy Harvesting [P_360]	
Nandan Murali, Dibyajyoti Mukherjee, Shashank Bhushan Das, Dhiman Mallick and Soutik Betal; *Indian Institute of Technology Delhi, India*	

8A. GaN based Power Devices	
Session Date and Time: 6th March 2024 (Wednesday), 02:00 PM – 04:00 PM	
Session Room: Audi 1	
Session Chair: Jaya Jha; *Indian Institute of Technology (BHU) Varanasi, India*	
[8A-1] [Invited]	**02:00 PM – 02:25 PM**
Indigenous GaN on SiC MMIC Technology for Strategic Applications [I_131]	
Meena Mishra; *Solid State Physics Laboratory, New Delhi, India*	
[8A-2] [Invited]	**02:25 PM – 02:50 PM**
Modeling of the gate leakage and forward gate reliability in Schottky-gate p-GaN HEMTs [I_132]	
Carlo De Santi; *University of Milan, Italy*	
[8A-3] [Invited]	**02:50 PM – 03:15 PM**
Efficient and Reliable Enhancement Mode AlGaN/GaN HEMTs using novel P-type Oxide Engineering [I_146]	
Sayak Dutta Gupta; *Indian Institute of Technology Madras, India*	
[8A-4]	**03:15 PM – 03:30 PM**
Investigation of DC Characteristics in GaN-on-Si power MIS-HEMTs over a Wide Temperature Range (4 K to 550 K) for Space and Quantum Computing Applications [P_071]	
Anant Johari[1], Meng-Che Tsai[1], Minh Thang Trinh Ngo[1], Yi Yang[1], Tian-Li Wu[1], Ankur Gupta[2] and Rajendra Singh[2]; *[1]International College of Semiconductor Technology, National Yang Ming Chiao Tung University, Taiwan; [2]Indian Institute of Technology Delhi, India*	
[8A-5]	**03:30 PM – 03:45 PM**
A Comprehensive analysis of Interlayer variabilities in double-channel AlGaN/GaN HEMT heterostructure [P_101]	
Priyesh Kumar and Jhuma Saha; *Indian Institute of Technology Gandhinagar, India*	
[8A-6]	**03:45 PM – 04:00 PM**
Improved thermal stability at high temperature of operation (473K) in all epitaxy Nd2O3/AlGaN/GaN MOSHEMT [P_391]	
Umang Singh[1], Hannah Genath[2], Ritam Sarkar[1], Jan Kruegener[2], H. Joerg Osten[2] and Apurba Laha[1]; *Indian Institute of Technology Bombay, India; [2]Leibniz University, Germany*	

8B. In-Memory Computing III	
Session Date and Time: 6th March 2024 (Wednesday), 02:00 PM – 04:00 PM	
Session Room: Audi 5	
Session Chair: Arindam Basu; *City University of Hong Kong, Hong Kong*	
[8B-1] [Invited]	**02:00 PM – 02:25 PM**
Reimagining non-volatile memories for the Internet of Intelligent Things [I_133]	
Xuanyao Fong; *National University of Singapore, Singapore*	
[8B-2] [Invited]	**02:25 PM – 02:50 PM**
Neuromorphic computing: Bridging the gap between software and hardware [I_134]	
Sounak Dey; *Tata Consultancy Services, India*	
[8B-3] [Invited]	**02:50 PM – 03:15 PM**
Uncertainty Quantification at the Edge: *Know when your AI model doesn't know?* [I_135]	
Priyesh Shukla; *Samsung R&D Institute, India*	
[8B-4]	**03:15 PM – 03:30 PM**
Indigenous back-end-of-line compatible SiO2-based One-Time Programmable Memory for Secured Spiking Neural Network Inference Accelerator [P_393]	
Shreyas Deshmukh, Anmol Biswas, Abhishek Kadam, Ajay Singh, Veeresh Deshpande and Udayan Ganguly; *Indian Institute of Technology Bombay, India*	
[8B-5]	**03:30 PM – 03:45 PM**
A Novel Small-Signal Ferroelectric Memcapacitor based Capacitive Computing-In-Memory for Area- and Energy-Efficient Quantized Neural Networks [P_146]	
Weikai Xu, Jin Luo, Boyi Fu, Zhiyuan Fu, Kaifeng Wang, Chang Su, Qianqian Huang and Ru Huang; *Peking University, India*	
[8B-6]	**03:45 PM – 04:00 PM**
CMOS-RRAM based In-Memory Hamming Distance Calculation Technique [P_396]	
Manoj Kumar[1], Ming-Hung Wu[2], Tuo-Hung Hou[2] and Manan Suri[1]; *[1]Indian Institute of Technology Delhi, India; [2]National Yang Ming Chiao Tung University, Taiwan*	

8C. Ferroelectric/Memory Modeling	
Session Date and Time: 6th March 2024 (Wednesday), 02:00 PM – 04:00 PM	
Session Room: Audi 2	
Session Chair: Avirup Dasgupta, *Indian Institute of Technology Roorkee, India*	
[8C-1] [Invited]	**02:00 PM – 02:25 PM**
Stochastic Nonlinear Dynamical Modeling of SRAM Bitcells in Retention Mode [I_136]	
Léopold Van Brandt; *UCLouvain, Belgium*	
[8C-2]	**02:25 PM – 02:40 PM**
Physical Modeling of Hafnia-based 3D Ferroelectric Polarization Switching with Cylindrical Structure [P_227]	
Chang Su, Minyue Deng, Liang Chen, Kaifeng Wang, Zhiyuan Fu, Shaodi Xu, Ru Huang and Qianqian Huang; *Peking University, China*	
[8C-3]	**02:40 PM – 02:55 PM**
Modeling of Ferroelectric Thin Film Transistors with Amorphous Oxide Semiconductor Channel [P_112]	
Wei Zhang, Jianze Wang, Chen Sun, Zhen Wu, Xiao Gong and Xuanyao Fong; *National University of Singapore, Singapore*	
[8C-4]	**02:55 PM – 03:10 PM**
A Physics-based Compact Model for ULTRARAM Memory Device [P_047]	
Abhishek Kumar, M. Ehteshamuddin, Anand Bulusu, Shruti Mehrotra and Avirup Dasgupta; *Indian Institute of Technology Roorkee, India*	
[8C-5]	**03:10 PM – 03:25 PM**
Erase Efficiency Improvement of Ferroelectric FET with IGZO Channel by P-Type SnOx Layer [P_341]	
Jiahao Huang[1], Chengji Jin[2], Xiao Yu[2], Hongrui Zhang[2], Genquan Han[3] and Yan Liu[3]; *[1]Hangzhou Institute of Technology, Xidian University, China; [2]Zhejiang Lab, China; [3]School of Microelectronics, Xidian University, China*	
[8C-6]	**03:25 PM – 03:40 PM**
Proposal for True Random Number Generation in ferroelectric capacitors using noise-induced switching [P_180]	
Madhav Ramesh[1], Amit K Verma[2] and Arvind Ajoy[3]; *[1]Cornell University; [2]Indian Institute of Technology Kanpur, India; [3]Indian Institute of Technology Palakad, India*	
[8C-7]	**03:40 PM – 03:55 PM**
Write Error Rates of Field-Assisted Spin-Orbit-Torque Switching of Perpendicular Magnetic Tunnel Junctions [P_189]	
Sonalie Ahirwar and Tanmoy Pramanik; *Indian Institute of Technology Guwahati, India*	

8D. Unconventional Computing II	
Session Date and Time: 6th March 2024 (Wednesday), 02:00 PM – 04:00 PM	
Session Room: Audi 8	
Session Chair: Veeresh Deshpande; *Indian Institute of Technology Bombay, India*	
[8D-1] [Invited]	**02:00 PM – 02:30 PM**
Inventing what's next in AI hardware [I_137]	
Nicole Saulnier; *IBM Research, USA*	
[8D-2] [Invited]	**02:30 PM – 03:00 PM**
SONOS Non-volatile Memory Technology for Analog Neuromorphic Computing Applications [I_138]	
Ravi Kumar; *Infineon Technologies, USA*	
[8D-3]	**03:00 PM – 03:15 PM**
Exploiting Single Ferroelectric FET for Efficient Implementation of Majority Gate Function for Approximate Computing [P_060]	
Musaib Rafiq, Yogesh Singh Chauhan and Shubham Sahay; *Indian Institute of Technology Kanpur, India*	
[8D-4]	**03:15 PM – 03:30 PM**
Enhancement of Multi-Timescale Reservoir Computing Based on Homogeneous Hardware Platform with Controllable Ionic Dynamics [P_184]	
Zhen Yang, Teng Zhang, Keqin Liu and Yuchao Yang; *Peking University, China*	
[8D-5]	**03:30 PM – 03:45 PM**
On-Chip Write & Verify and Endurance Enhancer Circuits towards Multi-level RRAM Array [P_186]	
Quan Zhang, Longhao Yan, Yaoyu Tao, Ru Huang and Yuchao Yang; *Peking University, China*	
[8D-6]	**03:45 PM – 04:00 PM**
Efficient Implementation of Multiplexer and Full-Adder Functions Based on Memristor Arrays for In-memory Computing [P_089]	
Zhouchao Gan, Chenyu Zhang, Yinghao Ma, Dongdong Zhang, Xiangshui Miao and Xingsheng Wang; *Huazhong University of Science and Technology, Wuhan, China*	

8E. Magnetic, Straintronic and Quantum Computing Devices	
Session Date and Time: 6th March 2024 (Wednesday), 02:00 PM – 04:00 PM	
Session Room: Audi 6+7	
Session Chair: Hitoshi Wakabayashi; *Tokyo Institute of Technology, Japan*	
[8E-1] [Invited]	**02:00 PM – 02:30 PM**
A Materials-Device Co-Design Framework for Realizing CMOS Charge Qubits Using Germanium Quantum Dots/Si-based barriers [I_139]	
Pei Wen-Li; *National Yang Ming Chiao Tung University, Taiwan*	
[8E-2] [Invited]	**02:30 PM – 03:00 PM**
Straintronic Micro-Antennas [I_140]	
Supriyo Bandyopadhyay; *Virginia Commonwealth University, USA*	
[8E-3]	**03:00 PM – 03:15 PM**
Light-Induced Static and Dynamic Magnetization Modulation in Magnetoelectric Heterostructure for Beyond-CMOS Devices [P_173]	
Pankaj Pathak, Ajay Kumar and Dhiman Mallick; *Indian Institute of Technology Delhi, India*	
[8E-4]	**03:15 PM – 03:30 PM**
Detection of Defect Density of States in Solution-Processed Quantum Devices [P_328]	
Himanshu Marothya, Vishwas Acharya and Sandip Mondal; *Indian Institute of Technology Bombay, India*	

8F. MEMS Devices	
Session Date and Time: 6th March 2024 (Wednesday), 02:00 PM – 04:00 PM	
Session Time: 02:00 PM – 04:00 PM	
Session Room: Audi 4	
Session Chair: Satinder K. Sharma; *Indian Institute of Technology Mandi, India*	
[8F-1] [Keynote]	**02:00 PM – 02:30 PM**
MEMS flexible electronics based on Meta structures [I_142]	
Hongyu Yu; *HKUST, Hong Kong*	
[8F-2] [Invited]	**02:30 PM – 02:55 PM**
Design, Fabrication, Characterization and Modeling of a 1GHz RF MEMS Resonator for Oscillator Applications [I_143]	
Deleep R. Nair; *Indian Institute of Technology Madras, India*	
[8F-3] [Invited]	**02:55 PM – 03:20 PM**
Strain-Mediated Bi-layered Magnetoelectric Devices for Microsystems Applications [I_144]	
Dhiman Mallick, *Indian Institute of Technology Delhi, India*	
[8F-4]	**03:20 PM – 03:35 PM**
Asymmetrically Configured MEMS Spiral Resonator with Ultrathin Internal Electrostatic Transduction [P_256]	
Satish Verma, Manjeet Kumar, Pawan Kumar and Bhaskar Mitra; *Indian Institute of Technology Delhi, India*	
[8F-5]	**03:35 PM – 03:50 PM**
Reservoir Computing with a MEMS Nonlinear Resonator for In-Sensor Computing [P_388]	
Faizan Tariq Beigh[1], Yu Chi Chuang[2], Nadeem Tariq Beigh[1], Priyanka Singh[1], Shashank Narain[1], Shreya Singla[1], Yi Chiu[2] and Dhiman Mallick[1]; *[1]Indian Institute of Technology Delhi, India; [2]National Yang Ming Chiao Tung University (NCTU), Taiwan*	
[8F-6]	**03:50 PM – 04:05 PM**
Design of High Isolation Low Loss MEMS Ohmic Switch for Radio Frequency Applications [P_418]	
Piyush Kumar, Niharika Narang, Ashok Kumar Dhakar, Ashwini Kumari, Khanjan Joshi and Pushparaj Singh; *Indian Institute of Technology Delhi, India*	

POSER SESSIONS

Poster Session - 1 (P1)
Session Date and Time: 4th March 2024 (Monday), 06:00 PM – 07:30 PM
Session Room: Audi 2 + Audi 3
Track – Advanced Memory Technologies (AMT)
[P1-1] Impact of Doping CsPbBr3 with Organic Iodide Salts on Memory Performance [P_126]
Bidisha Nath, Ashutosh Panchal, Praveen C Ramamurthy, Debiprosad Mahapatra and Gopalkrishna Hegde;
[P1-2] Trade-off Between Thermal Budget and Thickness Scaling: A Bottleneck on Quest for BEOL Compatible Ultra-Thin Ferroelectric Films Sub-5nm [P_149]
Chui-Yi Chiu, Sourav De, Chen-Yi Cho and Tuo-Hung Hou
[P1-3] Conductance change property of the ReRAM with Au-doped HfOx switching layer under DC voltage pulses [P_165]
Masakazu Tanaka, Shinji Okayasu, Tomohiro Shimizu, Takeshi Ito and Shoso Shingubara
[P1-4] Design Guidelines for Domain-Wall-Based-Synapse Devices – Thermal Stability and Depinning Current Requirements [P_178]
Guntas Kaur and Tanmoy Pramanik
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