

# ICSICT 2022 Technical Sessions Overview

Date	Time	Overview			
Oct.25	9:00-12:15	Tutorial Session T1			
	13:30-18:15	Tutorial Session T2			
Oct.26	8: 30-10: 30	Opening & Keynote Session K1			
	10: 45-12: 15	Keynote Session K2			
	13: 30-15: 30	Session A1 Advanced Device I	Session B1 Packaging & Advanced Process I	Session C1 Digital Circuit & Processor I	Session D1 Analog Circuit
	15: 45-17: 45	Session A2 Advanced Device II	Session B2 Advanced Process II	Session C2 Digital Circuit & Processor II	Session D2 Mixed-Signal Circuit I
	19: 00-21: 00	Poster Session 1: Device & Processing			
Oct.27	8: 30-10: 00	Keynote Session K3			
	10: 15-12: 15	Special Session A3 75th Anniversary of Transistor Invention	Session B3 Advanced Processing III	Session C3 Efficient AI Circuit	Session D3 Mixed-Signal Circuit II
	13: 30-15: 30	Session A4 Power Device	Session B4 Advanced Processing IV	Session C4 EDA I	Session D4 RF Circuit I
	15: 45-17: 45	Session A5 Compound Semi - SiC I	Session B5 NVM I: PCRAM	Session C5 EDA II	Session D5 RF Circuit II
	19: 00-21: 00	Poster Session 2: Circuit Technology			
Oct.28	8:15-10: 00	Keynote Session K4		Panal Discussion ( 9:00-10: 30 )	
	10: 15-12: 15	Session A6 Compound Semi - SiC II	Session B6 NVM II: MRAM, FERAM&RRAM	Session C6 Memory Circuit	Session D6 Clock & Optical Circuit
	13: 30-15: 30	Session A7 Compound Semi - GaN	Session B7 Reliability I	Session C7 Circuit for IoT and other applications	Session D7 Energy Management Circuit
	15: 45-17: 45	Session A8 Device Modeling	Session B8 Reliability II	Session C8 Photonics	Session D8 Biomedical Circuit
	19: 00-21: 00	Session A9 DTCO & Noise	Session B9 Chip Test and Reliability III	Session C9 MEMS & Sensors	

# Tutorial Session

**Tuesday**

**Tuesday, October 25, 9: 00 – 18: 15**

Tuesday, October 25, 9: 00 – 12: 15

**Tutorial Session T1**

**T1-1 Energy/Data-Autonomous AIoT CMOS Integrated Platform Using Localized Energy/Data Generation and Consumption (9: 00-10: 30)**

Prof. Kiichi Niitsu, Kyoto University, Japan

**T1-2 Circuit and System-Level Considerations towards a scalable trapped ion quantum computer and quantum metrology applications (10: 45-12: 15)**

Prof. Vadim Issakov, Braunschweig University of Technology, Germany

Tuesday, October 25, 13: 30 – 18: 15

**Tutorial Session T2**

**T2-1 Impact and applications of device imperfectness in emerging computing technologies (13:30-15: 00)**

Prof. Zheng Chai, Xi'an Jiaotong University, China

**T2-2 Photolithography, Process, Equipment, Material, Process Standards, and Future Outlook (15: 00-16: 30)**

Prof. Qiang Wu, Fudan University, China

**T2-3 Monolithic 3D integration for future optoelectronics (16:45-18: 15)**

Prof. Sanghyeon Kim, KAIST, Korea

# Technical Session

Wednesday

**Wednesday, October 26, 9: 00 –10: 30**

Wednesday, October 26, 9: 00 –10: 30

**Opening & Keynote Session K1**

**K1-1** **What Are 2D Materials Good For?** (9: 00-9: 45)

Prof. Eric Pop, Stanford University, USA

**K1-2** **The integration of Industry and Education Supports Interdisciplinary Achievements** (9: 45-10: 30)

Prof. Hanming Wu, Zhejiang University, China

**Wednesday, October 26, 10: 45– 12: 15**

Wednesday, October 26, 10: 45–12: 15

**Keynote Session K2**

**K2-1** **Toward 6G: From New Hardware Design to Wireless Semantic and Goal-Oriented Communication Paradigms** (10: 45-11: 30)

Emilio Calvanese Strinati, CEA Leti, France

**K2-2** **The Ecological Outcome of Pursuing Efficiency in ICT** (11: 45-12: 15)

Prof. David BOL, ECS group, ICTEAM Institute, UCLouvain, Belgium

**Wednesday, October 26, 13: 30 – 15: 30**

Wednesday, October 26, 13: 30 – 15: 30

**Session A1: Advanced Device I**

	<b>Title</b>
<b>A1-1</b>	<b>0505: Graphene and Bi<sub>2</sub>O<sub>2</sub>Se based Memristor, Neuromorphic Device and True Random Number Generator (invited)</b>
13:30 ~13:54	Bo Liu, Jing Ma, Chao-Sung Lai ( <i>Beijing University of Technology, China; Chang Gung University, Taiwan, China</i> )
<b>A1-2</b>	<b>0507: Sub-10nm Nanomesh Patterned on Suspended Graphene for Nanoscale Thermal Engineering (invited)</b>
13:54 ~14:18	Hiroshi Mizuta ( <i>Japan advanced institute of Science and Technology, Japan</i> )
<b>A1-3</b>	<b>0152: Parallel Dual-Gate Thin-File Transistors for Sensing and Neuromorphic Computing (invited)</b>
14:18 ~14:42	Yushen Hu, Man Wong ( <i>The Hong Kong University of Science and Technology, Hong Kong, China</i> )
<b>A1-4</b>	<b>0229: Sharp-Switching Devices with Positive Feedback Mechanisms Based on Silicon-On-Insulator Substrate</b>
14:42 ~14:54	Yingxin Chen, Haihua Wang, Jing Wan ( <i>Fudan University, China</i> )
<b>A1-5</b>	<b>0351: Impact of Nanosheet Pitch, Ambient Temperature, and Thermal Contact Resistance on Electrothermal Characteristics of Vertical Gate-All-Around Nanosheet FETs</b>
14:54 ~15:06	Siqi Yang, Xiaojin Li, Yabin Sun, Yanling Shi ( <i>East China Normal University, China</i> )
<b>A1-6</b>	<b>0369: Bias Temperature Instability Analysis of Nanosheet Based SRAM</b>
15:06 ~15:18	Yun-Qi Wang, Gao-Peng Li, Cong Li, Feng-Yu Kuang, Ou-Wen Li, Hai-Long You ( <i>Xidian University, China</i> )
<b>A1-7</b>	<b>0465: Lateral 2D TMDC Memristors – Experiment and Modeling</b>
15:18 ~15:30	Benjamin Spetzler, Zhansong Geng, Kai Rosnagel, Martin Ziegler, and Frank Schwierz ( <i>Technische Universität Ilmenau, Germany; Kiel University, Germany; Ruprecht Haensel Laboratory, Germany</i> )

Wednesday, October 26, 13: 30 – 15: 30  
**Session B1: Packaging & Advanced Process I**

	Title
<b>B1-1</b>	<b>0365: Surface Condition Optimization for Low Temperature Oxide Bonding in 3D Integration (invited)</b>
13:30 ~14:00	Tzu-Heng Hung, Kuan-Neng Chen ( <i>Yang Ming Chiao Tung University, Taiwan, China</i> )
<b>B1-2</b>	<b>0398: Challenges and Opportunities of China's IC Industry in the Post-Moore Era: Role of the Integration between Industry and Education in Supporting the Interdisciplinary Technology Transformation (invited)</b>
14:00 ~14:30	Ran Cheng, Qiao Teng, Jinchao Xu, Yongyu Wu, Dawei Gao, Hanming Wu ( <i>Zhejiang University, China; Zhejiang ICsprout Semiconductor, China</i> )
<b>B1-3</b>	<b>0501: A BEOL Layout Optimization Method for Advanced Logic Standard Library Cells (invited)</b>
14:30 ~15:00	Xianhe Liu, Yanli Li, Qiang Wu ( <i>Fudan University, China</i> )
<b>B1-4</b>	<b>0216: Study of Chord Signaling for High-Bandwidth Inter-Chiplet Communication</b>
15:00 ~15:15	Haoran Shen, Yuan Zhuang, Jianfei Jiang, Guanghui He, Zhigang Mao ( <i>Shanghai Jiao Tong University, China</i> )
<b>B1-5</b>	<b>0442: An Improved Darveaux Model to Predict Thermal Cycling Life of the Panel Level Package</b>
15:15 ~15:30	Shiqi Liang, Min Ren, Yuyu Peng, Chunying Zhou, Yong Chen, Zehong Li, Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )

Wednesday, October 26, 13: 30 – 15: 30  
**Session C1: Digital Circuit & Processor I**

	Title
<b>C1-1</b>	<b>0095: Design of Programmable Parallel Vision Processor (invited)</b>
13:30 ~14:00	Shuangming Yu, Liyuan Liu, Nanjian Wu ( <i>Institute of Semiconductors, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>C1-2</b>	<b>0074: Residual Spiking Neural Network on a Programmable Neuromorphic Hardware for Speech Keyword Spotting</b>
14:00 ~14:13	Chenglong Zou, Xiaoxin Cui, Shuo Feng, Guang Chen, Xinan Wang, Yuan Wang ( <i>Peking University, China</i> )
<b>C1-3</b>	<b>0246: SS-DGD: Scalable Short-Entry Dual-Grain Coherence Directoris</b>

14:13 ~14:25	Yuxin Tang, Yudi Qiu, Yanwei Liu, Jie Jiao, Peng Zhang, Yibo Fan ( <i>Fudan University, China; Peking University, China</i> )
<b>C1-4</b>	<b>0429: RG_VIPS: A Simple Cache Coherence Protocol Based on Region-Grain Directories</b>
14:25 ~14:38	Yan-Wei Liu, Yu-Di Qiu, Yu-Xin Tang, Jie Jiao, Peng Zhang, Yi-Bo Fan ( <i>Fudan University, China; Peking University, China</i> )
<b>C1-5</b>	<b>0221: An OSAA-CFAR Algorithm for 77GHz Millimeter-wave Radar</b>
14:38 ~14:50	Nuo Xu, Jiayi Wu, Bin Wang, Junyan Ren, Shunli Ma ( <i>Fudan University, China</i> )
<b>C1-6</b>	<b>0268: Research on Target Detection Algorithm For 77GHz Automotive Radar</b>
14:50 ~15:03	Jia-xi Wu, Nuo Xu, Bin Wang, Jun-Yan Ren, Shun-Li Ma ( <i>Fudan University, China</i> )
<b>C1-7</b>	<b>0422: A Low-power and High-accuracy Accelerator with Voice Classification for Keyword Spotting</b>
15:03 ~15:15	Tianyu Shao, Jun Han ( <i>Fudan University, China</i> )
<b>C1-8</b>	<b>0448: A Multiplication-Free FPGA Implementation of Multiple RLWE Encryption using Anti-Circulant Matrix</b>
15:15 ~15:30	Chen Yang, Fahong Zhang, Jianfei Wang, Yang Su ( <i>Xi'an Jiaotong University, China; Engineering University of PAP, China</i> )

<p>Wednesday, October 26, 13: 30 – 15: 30</p> <p><b>Session D1: Analog Circuit</b></p>
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	Title
<b>D1-1</b>	<b>0045: A Reference Current Source with Cascaded Nagata Current Mirrors Insensitive to Supply Voltage and Temperature</b>
13:30 ~13:45	Tianrui Feng, Hiroshi Tanimoto, Takafumi Kamio, Souma Yamamoto, Takashi Hosono, Shogo Katayama, Kakeru Ootomo, Anna Kuwana, Haruo Kobayashi ( <i>Gunma University, Japan; Kitami Institute of Technology, Japan</i> )
<b>D1-2</b>	<b>0067: Design of a 50MHz Bandwidth TIA Using Negative Capacitance</b>
13:45 ~14:00	Cong Tao, Liangbo Lei, Zhiliang Hong, Yumei Huang ( <i>Fudan University, China</i> )
<b>D1-3</b>	<b>0376: Spatial and Temporal Dynamics of Non-Uniform Active Resistor Networks</b>
14:00 ~14:15	Masashi Chiba, Kakeru Otomo, Shogo Katayama, Kanji Yoshihiro, Anna Kuwana, Haruo Kobayashi, Hiroshi Tanimoto ( <i>Gunma University, Japan; Kitami Institute of Technology, Japan</i> )

<b>D1-4</b>	<b>0194: A Sub-Nanosecond Delay Floating-voltage Level Shifter with Ultra-high dV/dt Immunity for GaN FETs Gate Driver Application</b>
14:15 ~14:30	Ke-yu Li, Shao-wei Zhen, Shen-hao Jiang, Hao Chen, Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D1-5</b>	<b>0284: A High-Speed Low-Power Dynamic Level Shifter with High dV/dt Immunity</b>
14:30 ~14:45	Yue Shi, Lichen Peng, Zhijian Zhang, Zekun Zhou, Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Chengdu University of Information Technology, China</i> )
<b>D1-6</b>	<b>0453: A 2-4GHz Adjustable Multi-phase Clock Generation Architecture Based on Passive IQ Phase Shifter and CML Circuit</b>
14:45 ~15:00	Chenghao Zhang, Miaomiao Li, Maliang Liu, Jiangbo Wei ( <i>Xidian University, China</i> )

### Wednesday, October 26, 15: 45-17: 45

Wednesday, October 26, 15: 45-17: 45

#### Session A2: Advanced Device II

	Title
<b>A2-1</b>	<b>0514: 2D Van Der Waals Heterostructures for Neuromorphic Applications (invited)</b>
15:45 ~16:08	Feng Miao ( <i>Nanjing University, China</i> )
<b>A2-2</b>	<b>0285: Parallel Dual-Gate Thin-Film Transistors for Sensing and Neuromorphic Computing (invited)</b>
16:08 ~16:31	Yushen Hu, Tengting Lei, Man Wong ( <i>The Hong Kong University of Science and Technology, Hong Kong, China</i> )
<b>A2-3</b>	<b>0512: The Road of 2D Semiconductors in Silicon Age (invited)</b>
16:31 ~16:54	Peng Zhou ( <i>Fudan University, China</i> )
<b>A2-4</b>	<b>0322: Investigation of the Temperature Dependence of Bulk-Si TFET and MFSB-TFET by TCAD Simulation</b>
16:54 ~17:04	Fangxing Zhang, Shen Cong, Lining Zhang, Qianqian Huang ( <i>Peking University, China</i> )
<b>A2-5</b>	<b>0189: A Micro Transfer-printer for High-accuracy Optoelectronic and Photonic Integration</b>

17:04 ~17:14	Yuxuan Wang, Guanyu Li, Yuchang Kong, Youdou Zheng, Yi Shi ( <i>Nanjing University, China; Science and Technology on Monolithic Integrated Circuits and Modules Laboratory, China</i> )
<b>A2-6</b>	<b>0296: Silicon Nanowire Transistor Integrated with Phase Change Gate</b>
17:14 ~17:24	Yan-Dong Ge, Wei-Hua Han, Chong Yang, Jun-Dong Chen and Xiao-Di Zhang ( <i>Institute of Semiconductors, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>A2-7</b>	<b>0537: Computing-in-Memory with Memristor: From Material and Device Explorations to STCO (Invited)</b>
17:24 ~17:45	Huaqiang Wu ( <i>Tsinghua University, China</i> )

<p>Wednesday, October 26, 15: 45-17: 45</p> <p><b>Session B2: Advanced Process II</b></p>
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	Title
<b>B2-1</b>	<b>0212: Low-Temperature Recrystallization and Contact Process Technology for 3D Sequential Integration (invited)</b>
15:45 ~16:15	Bao Tong Zhang, Shuang Sun, Yuan Cheng Yang, Ran Bi, Hai Xia Li, Hong Xu Liao, Ming Min Shi, Zong Wei Shang, Xiao Yan Xu and Ming Ling ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )
<b>B2-2</b>	<b>0323: Hollow Airgap Technology for CMOS Maximum Interconnect Capacitance Reduction (invited)</b>
16:15 ~16:45	Clarissa Prawoto, Zichao Ma, Ying Xiao, Salahuddin Raju, and Mansun Chan ( <i>The Hong Kong University of Science and Technology, Hong Kong, China</i> )
<b>B2-3</b>	<b>0374: Demonstration of HfO<sub>2</sub>-Based Gate Stacks with Ultralow Interface State Density and Leakage Current on Ge pMOSFET by Adding Hafnium into GeO<sub>x</sub> Interfacial Layer (invited)</b>
16:45 ~17:15	Hui-Hsuan Li, Shang-Chiun Chen, Yu-Hsien Lin and Chao-Hsin Chien ( <i>Yang Ming Chiao Tung University, Taiwan, China; United University, Taiwan, China</i> )
<b>B2-4</b>	<b>0197: Fabrication of Slanted Grating Utilizing Reaction Ion Beam Etching: The Role of CHF<sub>3</sub> and O<sub>2</sub> Etching Atmosphere</b>
17:15 ~17:30	Na Liu, Guojian Ding, Guankong Mo, Jia Shi, Qi Feng, Ping Yu, Xiaohui Wang, Wenjun Xu, Yikai Zhang, Pingjuan Niu, Yang Wang, Haiqiang Jia, Hong Chen ( <i>Tiangong University, China; Songshan Lake Materials Laboratory, China; Chinese Academy of Sciences, China</i> )
<b>B2-5</b>	<b>0204: Impact of Sputtering Atmosphere on Residual Stress in RF Magnetron Sputtering PZT Thin Films</b>
17:30 ~17:45	Yikai Zhang, Wenjun Xu, Guojian Ding, Pingfan Ning, Qi Feng, Ping Yu, Xiaohui Wang, Na Liu, Pingjuan Niu, Yang Wang, Haiqiang Jia, Hong Chen ( <i>Tiangong</i>



	<i>University, China; Songshan Lake Materials Laboratory, China; Institute of Physics, Chinese Academy of Sciences, China)</i>

<p>Wednesday, October 26, 15: 45-17: 45  <b>Session C2: Digital Circuit &amp; Processor II</b></p>
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	Title
<b>C2-1</b>	<b>0228: A Survey of Approximation based Hardware Acceleration Techniques for Deep Neural Networks (invited)</b>
15:45 ~16:15	Siyuan Liang, Ke Chen, Bi Wu, Weiqiang Liu ( <i>Nanjing University of Aeronautics and Astronautics, China</i> )
<b>C2-2</b>	<b>0159: Cache-Major: A Hardware Architecture and Scheduling Policy for Improving DRAM Access Efficiency in GEMV</b>
16:15 ~16:30	Jinhui Cheng, Xuanzhi Liu, Yue Cao, Wenjun Zhang, Zhongze Han, Bo Peng, Yixuan Liu, Donglin Zhang, Yongkang Han, Xiaoxin Xu, Jianguo Yang ( <i>University of Science and Technology of China, China; Zhejiang Lab, China; Institute of Microelectronics of the Chinese Academy of Science, China</i> )
<b>C2-3</b>	<b>0379: Efficient Crest Factor Reduction Scheme for OFDM Systems</b>
16:30 ~16:45	Congying Zhou, Minghao Jiang, Weibo Li, Yongzhen Chen, Jiangfeng Wu ( <i>Tongji University, China</i> )
<b>C2-4</b>	<b>0343: FPGA Logic Cell Improvements for Popcount Computation in BNN</b>
16:45 ~17:00	Zhengjie Li, Weilin Cong, Jinmei Lai ( <i>Fudan University, China; Chengdu Sino Microelectronic Technology Co., Ltd, China</i> )
<b>C2-5</b>	<b>0132: A High Throughput Fully Parallel FFT with CSD Constant Multiplier</b>
17:00 ~17:15	Siqi He, Hongyi Zhang, Liyu Lin, Yun Chen, Xiaoyang Zeng ( <i>Fudan University, China</i> )
<b>C2-6</b>	<b>0215: A Four-Phase Self-Timed Ring Based True Random Number Generator on FPGA</b>
17:15 ~17:30	Haoang Gu, Fangyu Deng, Qin Wang, Naifeng Jing, Jianfei Jiang ( <i>Shanghai Jiao Tong University, China</i> )
<b>C2-7</b>	<b>0078: An Arbitrary Orders Dynamic Reconfigurable FIR Digital Filter with Symmetric Circuit Structure</b>
17:30 ~17:45	Guang-Hao Guo, Run-Jiang Dou, Nan-Jian Wu, Li-Yuan Liu ( <i>Institute of Semiconductors, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )

<p>Wednesday, October 26, 15: 45-17: 45  <b>Session D2: Mixed-Signal Circuit I</b></p>
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	Title
<b>D2-1</b>	<b>0218: Challenges for Waveform Sampling and Related Technologies (invited)</b>
15:45 ~16:15	Haruo Kobayashi, Kentaroh Katoh, Shuhei Yamamoto, Yujie Zhao, Shogo Katayama, Jianglin Wei, Yonglun Yan, Dan Yao, Xueyan Bai, Anna Kuwana ( <i>Gunma University, Japan</i> )
<b>D2-2</b>	<b>0065: A 1GS/s Highly Linear Voltage-to-Time Converter with Rail-to-Rail Input Range for Time Domain ADCs</b>
16:15 ~16:30	Yutong Zhao, Fan Ye, Junyan Ren ( <i>Fudan University, China</i> )
<b>D2-3</b>	<b>0185: A 12 Bit 250 MS/s Voltage-Time Domain Hybrid ADC</b>
16:30 ~16:45	Yutong Zhao, Fan Ye, Junyan Ren ( <i>Fudan University, China</i> )
<b>D2-4</b>	<b>0478: A 12bit 39ps two-step Time-to-Digital Converter in 40nm CMOS</b>
16:45 ~17:00	Xuxi Liu, Zhao Zhang, Tao Yin, Rui Wu ( <i>Aerospace Information Research Institute, Chinese Academy of Sciences, China; Institute of Semiconductors, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>D2-5</b>	<b>0455: A 49.5<math>\mu</math>W Multichannel Time-to-Digital Converter with 2D/3D Imaging Fusion for APD LiDAR Sensors</b>
17:00 ~17:15	Ruipeng Yang, Bing Zhang, Youze Xin, Yiyun Xie, Yaixin Li, Fuwei Chen, Zirui Wang, Li Geng ( <i>Xi'an Jiaotong University, China</i> )
<b>D2-6</b>	<b>0117: A 9.1<math>\mu</math>W Capacitance-to-Digital Converter for Pressure Sensor Systems</b>
17:15 ~17:30	Qing-Jiang Xia, Ya-Cong Zhang, You, Fei Zhou, Wen-gao Lu ( <i>Peking University, China</i> )
<b>D2-7</b>	<b>0348: A Self-Heating-Followed Non-Uniformity Calibration Circuit for Silicon Diode Uncooled IRFPA</b>
17:30 ~17:45	Ye Zhou, Siyuan Ye, Wengao Lu, Dunshan Yu, Yacong Zhang, Zhongjian Chen ( <i>Peking University, China</i> )

**Wednesday, October 26, 19: 00 – 21: 00**

Wednesday, October 26, 19: 00 – 21: 00

**Poster Session I**

	<b>Title</b>
<b>P1-1</b>	<b>0025: Block Copolymer-assisted Carbon Nanotube Gas Sensor on SOI Substrate</b>
	Bao-Lin Zhang, Zi-Li Li, Ling-Kuan Meng, Jing-Wan and Shi-Sheng Xiong ( <i>Fudan University, China; Beijing Institute of Carbon-based Integrated Circuit, China</i> )
<b>P1-2</b>	<b>0033: Overcome the IBIS Model Overclocking Issue for SDRAM Interface</b>
	Jianbin Liu, Maosong Ma, Jingwei Cheng ( <i>Changxin Memory Technologies, China</i> )
<b>P1-3</b>	<b>0076: The Electrical-thermal Coupling Modeling about Large Periphery RF GaN HEMT on Si employing by Through Wafer Via Structure</b>
	Zhen-Tao Wei, Yi-Zhou Jiang, Ying-Sheng Wang, Wei Huang, Zhi-Qiang Xiao, Wei Zhang ( <i>Fudan University, China; Nanjing Electronic Device Institute, China; Wuxi Microelectronics Scientific and Research Center, China</i> )
<b>P1-4</b>	<b>0080: An Ultralow Loss Insulated Gate Bipolar Transistor with a Punch-Through NPN Transistor</b>
	Ping Li, Rongyao Ma, Zhiyu Yang, Jingwei Guo, Zhi Lin, Shengdong Hu ( <i>Chongqing University, China; China Resources Microelectronics (Chongqing) Limited, China</i> )
<b>P1-5</b>	<b>0115: A Novel SiC Trench MOSFET with Improved Short-circuit Capability through an Integrated JFET Region</b>
	Zhengxiang Liao, Xiaochuan Deng, Tao Zhu, Xu Li, Hao Wu, Yi Wen and Xuan Li ( <i>University of Electronic Science and Technology of China, China; Beijing Institute of Smart Energy, China</i> )
<b>P1-7</b>	<b>0137: Impact of Ge Profiles on Base Current Degradation Induced by Neutron-Induced Displacement Damage in SiGe HBT</b>
	Jia-Nan Wei, Xiao-Jun Fu, Xiang Du, Pei-Jian Zhang, Ting Luo, Jin-Xin Zhang ( <i>Science and Technology on Analog Integrated Circuit Laboratory, China; Southwest China Research Institute of Electronic Equipment, China; Xidian University, China</i> )
<b>P1-8</b>	<b>0146: Silicon-on-Insulator MOSFET for Nucleic Acid Detection: Different Performance between N-Channel and P-Channel</b>
	Haihua Wang, Yingxin Chen, Zekun Zhao, Yu-Long Jiang, Jing Wan ( <i>Fudan University, China</i> )
<b>P1-10</b>	<b>0157: Novel Organometal Halide Perovskites for Room Temperature NO<sub>2</sub> Gas Sensor</b>
	Weiwei Li, Shazrah Shahzad, HuaiPeng Wang, Yilin Sun, Xingwen Suo, Guotong Geng, Dan Xie ( <i>Academy of Military Sciences, China; Tsinghua University, China; Beijing Institute of Technology, China</i> )
<b>P1-12</b>	<b>0186: A Monolithic GaN LDO Based on 12 V/0.5 μm GaN-on-Si Power Technology Achieving 20 ns Settling Time and 22 MHz UGF</b>
	Peng Wang, Yi-Zhou Jiang, Dong-Sheng Liu, You Zhang, Wen-Hong Li, Wei Huang,

	Zhi-Qiang Xiao, Yi-Wu Qiu, Xin-Jie Zhou, Hong-Qiang Yang, Wei Zhang ( <i>Fudan University, China; Wuxi Microelectronics Scientific and Research Center, China; University of Electronic Science and Technology of China, China</i> )
<b>P1-13</b>	<b>0192: All-GaN Two-stage Turn-off Circuits for Over-current Protection in GaN Monolithic Power ICs</b>
	Chao Liu, Zheng Cheng, Ruize Sun, Wanjun Chen, Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Institute of Electronic and Information Engineering of UESTC in Guangdong, China</i> )
<b>P1-14</b>	<b>0193: Low Loss Trench IGBT with Variable Doping Layer in P-base for Improving Turn-off Capability</b>
	Pengcheng Xing, Yuxiao Yang, Xiaorui Xu, Chao Liu, Ruize Sun, and Wanjun Chen ( <i>University of Electronic Science and Technology of China, China</i> )
<b>P1-15</b>	<b>0238: Using Compact Model to Verify IGZO RO Performance for Engineering Application</b>
	Yu Yong, Jing Liang, Nan Yang, De-Yuan Xiao, Jian-Peng Jiang, Jing-Rui Guo, Ling-Fei Wang, Di Geng, Lan-Song Ba, Hong-Gang Liang, Ya-Nan Lu, Dan Wang, Yu-Ke Li, Xiao-Ming Yin, Long Huang, Jiang-Liu Shi, Gui-Lei Wang, Yan-Zhe Tang, Hong-Wen Li, Bryan Kang, Abraham Yoo, Kan-Yu Cao, Ling Li, Chao Zhao ( <i>Beijing Superstring Academy of Memory Technology, China; ChangXin Memory Technologies, Inc., China; Institute of Microelectronics of the Chinese Academy of Sciences, China</i> )
<b>P1-16</b>	<b>0242: Dual Active Layer Mg-Doped InZnO Thin-Film Transistors with Ultra-Low Indium Doping</b>
	Chun-Feng Hu, Zhongfei Zou, Mingxiang Wang and Xin-Ping Qu ( <i>Info Vision Optoelectronics (Kunshan) Co., Ltd, China; Soochow University, China; Fudan University, China</i> )
<b>P1-17</b>	<b>0243: High-performance 4H-SiC Schottky UV Photodiodes by 1000 °C RTP for High-temperature Ultraviolet Detection</b>
	Feng-Yu Du, Qing-Wen Song, Xiao-Yan Tang, Hao Yuan, Yan-Cong Liu, Yu Zhou, Ze-Yu-Lin Zhang, and Yu-Ming Zhang ( <i>Xidian University, China; Xidian-Wuhu Research Institute, China</i> )
<b>P1-18</b>	<b>0247: Sensitivity Enhancement in MEMS Resonators based on Exceptional Points</b>
	Man-Na Zhang, Li-Feng Wang, Lei Dong and Qing-An Huang ( <i>Southeast University, China</i> )
<b>P1-19</b>	<b>0273: An Automatic Parameter Extraction Method Based on Autoencoder for PIN Diode Model</b>
	YuLi, Wu Dai, Kexing Geng, Lining Zhang, Runsheng Wang, Ru Huang ( <i>Peking University, China</i> )

<b>P1-20</b>	<b>0288: High Sensitivity of Parity Time Symmetric Piezoelectric Resonator Systems at Exceptional Point</b>
	Zhenyu Wei, Jianqiu Huang, and Qing-an Huang ( <i>Southeast University, China</i> )
<b>P1-21</b>	<b>0324: TCAD Simulation Performance of VGAA for 4F2 High Density DRAM Cell</b>
	Wen-Qi Wang, Xiang Liu, Yong Yu, De-Yuan Xiao, Lan-Song Ba, Hong-Gang Liang, Jing Liang, Jong-Sung Jeon, Xing-SongSu, Qing-Hua Han, Jing-Fei Zhu, Jing-Heng Meng, JinDai, Hong-Bo Sun, Gui-Lei Wang, Yan-Zhe Tang, Hong-Wen Li, Wei-Feng Xu, Bryan Kang, Abraham Yoo, Kan-Yu Cao, Chao Zhao ( <i>Beijing Superstring Academy of Memory Technology, China; ChangXin Memory Technologies, Inc., China</i> )
<b>P1-22</b>	<b>0297: High-Voltage Amorphous IGZO TFTs with a Drift Region Implemented by an Ultrathin ITO Capping Layer</b>
	Zuoxu Yu, Guangan Yang, Hao Tian, Tingrui Huang, Siyang Liu, Weifeng Sun, Wangran Wu ( <i>Southeast University, China</i> )
<b>P1-23</b>	<b>0299: A Comparative Study of Self-Heating Effects in 3nm Node GAAFETs and FinFETs</b>
	Pan Zhao, Song-Han Zhao, Yan-Dong He, Gang Du ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )
<b>P1-24</b>	<b>0301: Empirical Analytical Inductance Calculation and Inductance to DC Resistance Ratio Optimization of On-Chip Solenoid Magnetic-Core Inductors</b>
	Linfeng Chen, Rongxiang Wu ( <i>University of Electronic Science and technology of China, China</i> )
<b>P1-25</b>	<b>0304: 650V Planar Anode Gate Super-junction IGBT with Superior <math>V_{on}</math>-<math>E_{off}</math> Trade-off</b>
	Luping Li, Zehong Li, Peng Chen, Qiansheng Rao, Yuanzhen Yang, Jiali Wan, Tongyang Wang, Yishang Zhao, and Min Ren ( <i>University of Electronic Science and technology of China, China</i> )
<b>P1-26</b>	<b>0312: A SPAD Readout Circuit Based on Column-Level Event-Driven Time-to-Digital Converter</b>
	Yun-Hao Fu, Zhong-Yuan Zhao, Zhuang Zhao, Jie-Chen Li, Yu-Chun Chang ( <i>Jilin University, China</i> )
<b>P1-27</b>	<b>0317: 200-V ITO Thin-Film Transistors with the Stair-ITO Drift Region</b>
	Tingrui Huang, Zuoxu Yu, Guangan Yang, Hao Tian, Weifeng Sun, Wangran Wu ( <i>Southeast University, China</i> )
<b>P1-28</b>	<b>0320: LTRNet: A Lightweight Topography Recognition Network</b>
	Yixuan Liu, Tianhui Song, Yun Chen ( <i>Fudan University, China</i> )
<b>P1-29</b>	<b>0336: An Applied Model for HCI and Lifetime Prediction of LDMOSFET</b>

	Tao Chen, Yabin Sun, Yanling Shi, Xiaojin Li, Yun Liu ( <i>East China Normal University, China</i> )
<b>P1-30</b>	<b>0337: The Performance Enhancement of Polysilicon Microbolometer in Standard CMOS Technology with Si<sub>3</sub>N<sub>4</sub> Film</b>
	Yao-Zu Guo, Hao-Lan Ma, Sheng Xu, Wei Zhu, Xiao-Li Ji ( <i>Nanjing University, China</i> )
<b>P1-31</b>	<b>0339: Responsivity Enhancement of CMOS Microbolometer with Two-Dimensional Al Grating</b>
	Hao-Lan Ma, Yao-Zu Guo, Sheng Xu, Wei Zhu, and Xiao-Li Ji ( <i>Nanjing University, China</i> )
<b>P1-32</b>	<b>0368: Piezoelectric Micromachined Ultrasonic Transducers with Center Support Membrane</b>
	Yan Wang, Weijiang Xu, Leming He, Junyan Ren ( <i>Université Polytechnique Hauts-de-France, France; INSA Hauts-de-France, France; Fudan University, China</i> )
<b>P1-33</b>	<b>0401: A Novel Gate-Controlled Lateral Thyristor based Pixel for Low-Light Image Sensors</b>
	Ke-Yang Sun, Li-Yang Pan, Zhe-yao Wang ( <i>Tsinghua University, China</i> )
<b>P1-34</b>	<b>0405: Design of a Novel MEMS Implantable Blood Pressure Sensor and Stress Distribution of Parylene-based Coatings</b>
	Zhi-Wei You, Lei Wei, Ming-Liang Zhang, Fu-Hua Yang, Xiao-Dong Wang ( <i>Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>P1-35</b>	<b>0406: A Novel High-Performance Tunneling Field-Effect Transistor Ternary Inverter</b>
	Yi Zhu, Hongliang Lu, Yuming Zhang, Jiale Sun, Zhijun Lyu, Bin Lu ( <i>Xidian University, China; Institute of Microelectronics Technology, China; Shanxi Normal University, China</i> )
<b>P1-36</b>	<b>0407: Impact of RDF and WFV in Vertically Stacked Nanosheet-FET</b>
	Ou-Wen Li, Cong Li, Yun-Qi Wang, Feng-Yu Kuang, Shan-Lin Cheng ( <i>Xidian University, China</i> )
<b>P1-37</b>	<b>0408: Thermoelectromechanical Coupling of MEMS Graphene Resonators</b>
	Lei Wei, Zhi-Wei You, Ming-Liang Zhang, Fu-Hua Yang, Xiao-Dong Wang ( <i>Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>P1-38</b>	<b>0424: Study on Single Event Burnout Effect for 700V Double-RESURF SOI LDMOS</b>
	Cong Gao, Xin Zhou, Langtao Chen, Ming Qiao, Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )

<b>P1-39</b>	<b>0438: Research on TeraFET Detector Based on Controllable Drain Current Enhancement</b>
	Dan Zhang, Kang Li ( <i>Xidian University, China</i> )
<b>P1-40</b>	<b>0443: Novel Ultralow-On-Resistance SOI LDMOS with Strain-Induced Mobility Enhancement and Electric Field Modulation</b>
	Mingzhe Li, Baoxing Duan, Yintang Yang ( <i>Xidian University, China</i> )
<b>P1-41</b>	<b>0450: A Comparative Study on of Single Event Irradiation Effects between Trench MOSFET and Split-gate-trench MOSFET</b>
	Min Ren, Yining Wu, Shiheng Yu, Xinzhang Lai, Ningze Zhuo, Zehong Li, Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Jiangsu Changjing Electronics Technology Co.LTD, China</i> )
<b>P1-42</b>	<b>0451: Modulating Thermally Activated Hole Transport in a Multi-Channel Silicon Nanowire Transistor by Single Acceptor-Induced Traps</b>
	Jun-Dong Chen, Wei-Hua Han, Yan-Dong Ge, Xiao-Di Zhang and Fu-Hua Yang ( <i>Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )

**Thursday**

**Thursday, October 27, 8: 30 – 10: 00**

Thursday, October 27, 8: 30 – 10: 00

**Keynote Session K3**

**K3-2 In-Sensor and In-Memory Computing for TinyML** (*9: 15-10: 00*)

Prof. Kea-Tiong (Samuel) Tang, Tsing Hua Univ., Taiwan, China



## Thursday, October 27, 10: 15 – 12: 15

Thursday, October 27, 10: 15 – 12: 15

### Special Session A3: 75th Anniversary of Transistor Invention

	Title
<b>A3-1</b>	<b>0519: History of Transistor Invention: 75th Anniversary (invited)</b>
10:15 ~10:42	Hiroshi Iwai ( <i>Yang Ming Chiao Tung University, Taiwan, China; Tokyo Institute of Technology, Japan</i> )
<b>A3-2</b>	<b>0483: Emerging Ultra-low Power Devices Based on Mechanism Engineering for Diverse Applications (invited)</b>
10:42 ~11:09	Qianqian Huang ( <i>Peking University, China</i> )
<b>A3-3</b>	<b>0258: Challenges and Possible Solutions for High Performance Sustainable Nanoelectronics (invited)</b>
11:09 ~11:36	Francis Balestra ( <i>IMEP-LAHC, France</i> )
<b>A3-4</b>	<b>0250: Perfecting High-<math>\kappa</math>/Ge and /InGaAs Interfaces - Push for Ultimate CMOS and Emerging Cryogenic Electronic Devices (invited)</b>
11:36 ~12:03	L. B. Young, Y. H. G. Lin, H. W. Wan, Y. T. Cheng, C. K. Cheng, C. H. Hsu, T. W. Pi, J. Kwo, and M. Hong ( <i>Taiwan Univ., Taiwan, China; Synchrotron Radiation Research Center, Taiwan, China; Tsing Hua University, Taiwan, China</i> )
<b>A3-5</b>	<b>0174: Carrier Transport Characteristics in Ultra-Thin-Body InGaAs-On-Insulator nMOSFETs</b>
12:03 ~12:15	Xiao-Yu Tang, Yi Zhao ( <i>Nanjing Institute of Technology, China; Zhejiang University, China; East China Normal University, China</i> )

Thursday, October 27, 10: 15 – 12: 15

### Session B3: Advanced Processing III

	Title
<b>B3-2</b>	<b>0490: Organic and Flexible Devices Based on Metal-Containing Organic Semiconductors (invited)</b>
10:45 ~11:15	Qiang Zhao ( <i>Nanjing University of Posts &amp; Telecommunications, China</i> )
<b>B3-3</b>	<b>0498: A MEOL Logic Layout Optimization Recommendation Under 3 nm CFET Architecture and Beyond (invited)</b>
11:15 ~11:45	Yanli Li, Qiang Wu, Xianhe Liu ( <i>Fudan University, China</i> )

<b>B3-4</b>	<b>0207: Interfacial Engineering for High-Performance DPPT-TT Polymer <math>\mu\mu\mu</math> and Mobility of <math>3 \text{ cm}^2\text{V}^{-1} \text{ s}^{-1}</math></b>
11:45 ~12:00	Xilin Lai, Chunyan Zhao, Ming He ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )
<b>B3-5</b>	<b>0222: New Variable Selective Etching Technology for Thick SOI Devices</b>
12:00 ~12:15	Teng Liu, Wen-Tong Zhang, Zhi-Li Zhang, Hua Song, Nai-Long He, Sen Zhang, Zhao-Ji Li and Bo Zhang ( <i>University of Electronic Science and Technology of China, China; CSMC Technologies Corporation, China</i> )

<p>Thursday, October 27, 10: 15 – 12: 15</p> <p><b>Session C3: Efficient AI Circuit</b></p>
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	Title
<b>C3-1</b>	<b>0199: A Hardware-Aware Neural Architecture Search Pareto Front Exploration for In-Memory Computing (invited)</b>
10:15 ~10:45	Ziyi Guan, Wenyong Zhou, Yuan Ren, Rui Xie, Hao Yu, and Ngai Wong ( <i>The University of Hong Kong, Hong Kong, China; Southern University of Science and Technology, China</i> )
<b>C3-2</b>	<b>0467: Hybrid IMC Architecture for Robust DNN Acceleration (invited)</b>
10:45 ~11:15	Gokul Krishnan, Zhenyu Wang, Li Yang, Injune Yeo, Jian Meng, Rajiv V. Joshi, Nathaniel C. Cady, Deliang Fan, Jae-sun Seo, Yu Cao ( <i>Arizona State University, USA; IBM T. J. Watson Research Center, USA; State University of New York Polytechnic, USA</i> )
<b>C3-3</b>	<b>0171: An Underwater Image Enhancement Fusion Network</b>
11:15 ~11:30	Leiyou Wang, Donghui Wang ( <i>Institute of Acoustics, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>C3-4</b>	<b>0402: A 8.5 fJ/Addition Dynamic Analog 8-3 Compressor for Energy Efficient Computing-in-Memory Macros</b>
11:30 ~11:45	Peizhe Li, Jinshan Zhang, Wenning Jiang, and Chixiao Chen ( <i>Fudan University, China</i> )
<b>C3-5</b>	<b>0410: Multi-patch Localization Spiking Neural Network for Object Detection</b>
11:45 ~12:00	Shuo Feng, Jian Cao, Ling Zhang, Guang Chen, Juntong Yan, Feng Ling, Xiangcheng Liu, Jinming Che, Xiaoxin Cui, Yuan Wang ( <i>Peking University, China</i> )
<b>C3-6</b>	<b>0413: A Low Power Speech Recognition Processor with Precision Recoverable CRNN</b>
12:00 ~12:15	AnFeng Xue, Han Yan, RenYuan Zhang, XueTao Wang, Hao Zhang, Hao Cai, Bo Liu ( <i>Southeast University, China; Nanjing Research Institute of Electronics Technology,</i>

	<i>China)</i>
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<p>Thursday, October 27, 10: 15 – 12: 15  <b>Session D3: Mixed-Signal Circuit II</b></p>
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	Title
<b>D3-1</b>	<b>0506: A Background Calibration Technology for Pipelined ADCs Using Sub-Range Code Bin Reshaping (invited)</b>
10:15 ~10:45	Yutao Peng, Lingfeng Bian, Hang Liu, Xizhu Peng and He Tang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D3-2</b>	<b>0165: Digital Calibration Method of Timing Skew in Time-Interleaved ADC</b>
10:45 ~11:00	Xiyuan Du, Li Zhang, Yunchuan Wang, Fengyi Mei, Yongzhen Chen, Jiangfeng Wu ( <i>Tongji University, China</i> )
<b>D3-3</b>	<b>0416: A 6b 800MS/s SAR ADC With Speed-Enhanced SAR Logic and Grouped DAC Capacitors</b>
11:00 ~11:15	Yuxuan Zhang, Yutong Zhao, Jingchao Lan, Fan ye, Yufeng Xie and Junyan Ren ( <i>Fudan University, China</i> )
<b>D3-4</b>	<b>0209: A 2.44-microwatt 93.2-dB SNDR <math>\Delta\Sigma</math> ADC based on Swing-Enhanced Floating Inverter Amplifier with 60× Power/Bandwidth Scalable Range</b>
11:15 ~11:30	Yuzhen Kou, Yibo Zhao, Yaopeng Hu, Menglian Zhao, Zhichao Tan ( <i>Zhejiang University, China</i> )
<b>D3-5</b>	<b>0456: A 11-Bit Single-Slope ADC with A High-Speed PDH for Intensity Information Detection Applying in TOF Sensor</b>
11:30 ~11:45	Yaoxin Li, Bing Zhang, Zirui Wang, Ruipeng Yang, Yiyun Xie, Youze Xin ( <i>Xi'an Jiaotong University, China</i> )
<b>D3-6</b>	<b>0213: A 40MSps Ping-Pong S&amp;H Front-end for TI ADC with Variable Gain in 0.18<math>\mu</math>m CMOS Process</b>
11:45 ~12:00	Xinlei Song, Tianxiang Wu, Jiang Hou, Hao Su, Biao Hu, Shunli Ma ( <i>Fudan University, China; The 24th Research Institute of China Electronics Technology Group Corporation, China</i> )
<b>D3-7</b>	<b>0434: A Column-parallel SAR/SS ADC with Multi-column Shared Capacitor DAC for CMOS Image Sensor</b>
12:00 ~12:15	Hejiu Zhang, Zhichao Fang, Ningmei Yu, Nan Lv, Zhongjie Guo ( <i>Xi'an University of Technology, China</i> )

<p><b>Thursday, October 27, 13: 30 – 15: 30</b></p>
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Thursday, October 27, 13: 30 – 15: 30

**Session A4: Power Device**

	<b>Title</b>
<b>A4-1</b>	<b>0298 : A New Type of Homogenization Field Power Semiconductor Devices (invited)</b>
13:30 ~14:00	Wen-tong Zhang, Zhao-ji Li, Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A4-2</b>	<b>0048: Ultralow Loss Lateral Insulated Gate Bipolar Transistor with U-shape Trench Anode</b>
14:00 ~14:15	Jie Wei, Pengchen Zhu, Kemeng Yang, Kaiwei Dai, Jie Li, and Xiaorong Luo ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A4-3</b>	<b>0081: A Novel Approach to Suppress the Inhomogeneous Reverse Recovery Behavior of the Body Diode in Superjunction MOSFET</b>
14:15 ~14:30	Ping Li, Rongyao Ma, Zhiyu Yang, Jingwei Guo, Zhi Lin, Shengdong Hu ( <i>Chongqing University, China; China Resources Microelectronics (Chongqing) Limited, China</i> )
<b>A4-4</b>	<b>0180: A Novel Full Tun-on Reverse-Conducting IGBT with Enhanced Carrier Concentration Modulation in Collector Side</b>
14:30 ~14:45	Chao Liu, Guoyun Wu, Meng Wei, Xiaorui Xu, Pengcheng Xing, Ping Zhang, Ruize Sun, Wanjun Chen, Zhaoji Li, and Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Sichuan Aerospace Liaoyuan Science and Technology Co., LTD, China</i> )
<b>A4-5</b>	<b>0306: A Novel Use of the Shielded Gate in SGT MOSFETs as the Voltage Sensing Terminal</b>
14:45 ~15:00	Yang Yang, Yi-Shang Zhao, Ling-Xuan Huang, Yu-Jia Chen, Lu-Ping Li, Tong-Yang Wang, and Zi-Ming Xia ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A4-6</b>	<b>0474: A Novel Insulating-Pillar Superjunction with Vertical Insulators: Breakthrough of Specific ON-Resistance Limit</b>
15:00 ~15:15	Xinghao Tong, Hongji Pei, Wenxi Zhen, Haimeng Huang, Zimin Zhang , Junji Cheng , Bo Yi, and Hongqiang Yang ( <i>University of Electronic Science and Technology of China, China; Institute of Electronic and Information Engineering of UESTC in Guangdong, China; Priosemi Technology Limited Company, China</i> )
<b>A4-7</b>	<b>0476: Optimization of Specific ON-Resistance of Superjunction Device with Two-Zones Variation Vertical Doping Profile</b>
15:15 ~15:30	Wenjun Li, Haimeng Huang, Zimin Zhang, Junji Cheng, Bo Yi , Hongqiang Yang, and Zhiming Wang ( <i>University of Electronic Science and Technology of China, China; Institute of Electronic and Information Engineering of UESTC in Guangdong, China; Priosemi Technology Limited Company, China</i> )

Thursday, October 27, 13: 30 – 15: 30  
**Session B4: Advanced Processing IV**

	Title
<b>B4-1</b>	<b>0504: A CDU Budget and Process Window Study with EUV Lithography for 3 nm CFET Logic Processes and an Outlook for Future Generations (invited)</b>
13:30 ~14:00	Qiang Wu, Yanli Li, Liu Xianhe, Xiaona Zhu, Shaofeng Yu ( <i>Fudan University, China</i> )
<b>B4-2</b>	<b>0513: Moire Schottky Barriers for Lower Contact Resistances on layered MoS<sub>2</sub> (invited)</b>
14:00 ~14:30	J Robertson, Z Zhang ( <i>Cambridge University, UK</i> )
<b>B4-3</b>	<b>0427: Correlation of Wake-up effect in Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> Ferroelectrics with Antiferroelectric Properties</b>
14:30 ~14:45	Shuman Zhong, Danyang Chen, Yulong Dong, Tianning Cui, Liying Wu, Jingquan Liu, Mengwei Si, XiuYan Li ( <i>Shanghai Jiao Tong University, China</i> )
<b>B4-4</b>	<b>0462: Investigation of Rs Sensitivity to Titlt Angle on 300mm High Current/ Ion Implanter</b>
14:45 ~15:00	Xiaoxu Kang, Zhenghui Chu, Jiwei Liu, Xiaolan Zhong, Min Zhang, Xiaoqiang Zhou, Kaiyan Zang, Duanxiang Yang, Guanyuan Zhao, Jin Li, Ran Nie, Tao Wu ( <i>Shanghai IC R&amp;D Center, Shanghai, China; Beijing Zhongkexin Electronics Equipment Co., Ltd, China; ShanghaiTech University, China</i> )
<b>B4-5</b>	<b>0110: Design and Formation of SiO<sub>2</sub>/SiC interfaces with Low Interface State Via Phosphorus Ions Implantation in SiC Power MOSFETs</b>
15:00 ~15:15	Maojiu Luo, Cunhao Gong, Hang Chen, and Yourun Zhang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>B4-6</b>	<b>0131: Ultralow On-Resistance Integrated Vertical DMOS Embedded into 0.18μm BCD Process</b>
15:15 ~15:30	Feng Lin, Chaoqi Xu, Li Lu, Shuxian Chen, Zhihan Zhu, Siyang Liu, Weifeng Sun, Haisheng Miao, Wenwen Zhang, Hong Shao, Yixin Dai ( <i>Southeast University, China; CSMC Technologies Corporation, China</i> )

Thursday, October 27, 13: 30 – 15: 30  
**Session C4: EDA I**

	Title
<b>C4-1</b>	<b>0233: Efficient SPICE Modeling of Ta<sub>2</sub>O<sub>5</sub>-Based Bipolar RRAM Device Including Monte Carlo Simulation (invited)</b>
13:30	Wanlan Yang, Jiahao Li, Xing Zhou ( <i>Nanyang Technological University, Singapore</i> )

~14:00	
<b>C4-2</b>	<b>0084: A Quantile-Based SUM/MAX Operating Method for Statistical Timing Analysis</b>
14:00 ~14:15	Leilei Jin, Jiajie Xu, Wenjie Fu, Xiao Shi ( <i>Southeast University, China</i> )
<b>C4-3</b>	<b>0088: GNN-based TICER for RC Reduction on Large-scale Interconnect</b>
14:15 ~14:30	Leyun Tian, Yuyang Ye, Hao Yan ( <i>Southeast University, China</i> )
<b>C4-4</b>	<b>0163: Automated Design Space Exploration of Coarse-Grained Reconfigurable Architecture via Bayesian Optimization</b>
14:30 ~14:45	Huizhen Kuang, Su Zheng, Lingli Wang ( <i>Fudan University, China</i> )
<b>C4-5</b>	<b>0210: Virtual-Path-Based Timing Optimization for VLSI Global Placement</b>
14:45 ~15:00	Weijie Chen, Haishan Huang, Min Wei, Peng Zou, and Jianli Chen ( <i>Fuzhou University, China; Fudan University, China</i> )

<p>Thursday, October 27, 13: 30 – 15: 30</p> <p><b>Session D4: RF Circuit I</b></p>
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	Title
<b>D4-1</b>	<b>0459: Microwave Transistors – The Backbone of 5G and Beyond Communication Systems (invited)</b>
13:30 ~13:54	Frank Schwierz, Martin Ziegler, and Juin J. Liou ( <i>Technische Universität Ilmenau, Germany; Shenzhen University, China</i> )
<b>D4-2</b>	<b>0027: Low Pass Filter of the Sallen-Key Family with Main Parameters' Independent Adjustment</b>
13:54 ~14:06	Darya Denisenko, Nikolay Prokopenko, Anna Bugakova ( <i>South Federal University, Russia; Don State Technical University, Russia; Institute for Design Problems in Microelectronics of RAS, Russia</i> )
<b>D4-3</b>	<b>0039: The THz Modeling with an Improved Small-Signal Circuit for InP HEMTs</b>
14:06 ~14:18	Wen-Jie Sun, Yang Chen, Heng Fang, Xian Lai, Jin-Xing Wei, Yong Zhang, Bo Yan ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D4-4</b>	<b>0073: A 300GHz On-chip Twin Dipoles Antenna Using Artificial Magnetic Conductor and Back Reflector with 52% Radiation Efficiency</b>
14:18 ~14:30	Mingfeng Cai, Lei Zhang, and Yan Wang ( <i>Tsinghua University, China</i> )
<b>D4-5</b>	<b>0217: Active 4<sup>th</sup>-Order N-path Filter with Wide Tuning Bandwidth Range</b>

14:30 ~14:42	Jia-Hao Liang, Shuo-Xiong Yang, Qing-Yang Dong, Wei Huang, Wei-Jun Luo ( <i>Institute of Microelectronics, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China</i> )
<b>D4-6</b>	<b>0307: A High Efficiency S-band Power Amplifier Based on GaN-on-Si with Bandwidth of 1 GHz</b>
14:42 ~14:54	Shuoxiong Yang, Qingyang Dong, Wei Huang, Xing Jiang, Jiahao Liang, Weijun Luo ( <i>University of Chinese Academy of Sciences, China; Institute of Microelectronics, Chinese Academy of Sciences, China</i> )
<b>D4-7</b>	<b>0397: A Nonlinear GaN HEMT Modeling with the gm2 and gm3 Validation</b>
14:54 ~15:06	Heng Fang, Yang Chen, Wen-Jie Sun, Xian Lai, Jin-Xing Wei, Bo Yan, Rui-Min Xu ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D4-8</b>	<b>0270: A 5-8 GHz Wideband and Low Phase Noise Cross-Coupled LC VCO Using 6-bit DCCA in 40nm CMOS Process</b>
15:06 ~15:18	Yang Jiang, Chao Shen, Tianxiang Wu, Hao Chen, Shunli Ma, Junyan Ren ( <i>Fudan University, China; The 24th Research Institute of China Electronics Technology Group Corporation, China</i> )

### Thursday, October 27, 15: 45 – 17: 45

Thursday, October 27, 15: 45 – 17: 45  
**Session A5: Compound Semi - SiC I**

	Title
<b>A5-1</b>	<b>0471: A Novel Heterotype SiC Superjunction MOSFET with Improved Both Forward and Reverse Performance (invited)</b>
15:45 ~16:15	Moufu Kong, Shurui Li, Zeyu Cheng, Ning Yu, Bo Yi, Sen Gong ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A5-2</b>	<b>0079: Simulation Study of a Novel 4H-SiC Split Gate Double Trench MOSFET with Side Wall Gate</b>
16:15 ~16:30	Zixun Chen, Jinping Zhang, and Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A5-3</b>	<b>0153: Half trigger operation mode of 4H-SiC Diode Avalanche Shaper</b>
16:30 ~16:45	Deng-Yao Guo, Yu Zhou, Xiao-Yan Tang, Qing-Wen Song, Yu-Ming Zhang ( <i>Xidian University, China</i> )
<b>A5-4</b>	<b>0200: A 1400V SiC LDMOS with P-tops and P-buffer for Ultra-low Specific Resistance</b>
16:45	Yong Gu, Chengwu Pan, Xiaona Wang, Jie Ma, Siyang Liu, Long Zhang, Weifeng Sun

~17:00	<i>(Southeast University, China)</i>
<b>A5-5</b>	<b>0224: A Novel Double Trench 4H-SiC MOSFET with Integrated Schottky Barrier Diode</b>
17:00 ~17:15	Jinping Zhang, Qinglin Wu, Hua Zou, Bo Zhang <i>(University of Electronic Science and Technology of China, China)</i>
<b>A5-6</b>	<b>0230: Surge Current Failure Mechanism of 650V Double-Trench SiC MOSFETs</b>
17:15 ~17:30	Junhou Cao, Jiaying Wei, Zhaoxiang Wei, Hangbo Zhao, Hao Fu, Siyang Liu, Weifeng Sun <i>(Southeast University, China)</i>
<b>A5-7</b>	<b>0237: 4H-SiC Trench MOSFET with Integrated Heterojunction Diode for Optimizing Switching Performance</b>
17:30 ~17:45	Chun-Ying Zhou, Min Ren, Xi Li, Rong-Yao Ma, Xin Zhang, Fang Zheng, Shi-Qi Liang, e-Hong Li, Bo Zhang <i>(University of Electronic Science and Technology of China, China; China Resources Microelectronics Co. LTD, China)</i>

Thursday, October 27, 15: 45 – 17: 45

**Session B5: NVM I: PCRAM**

	<b>Title</b>
<b>B5-1</b>	<b>0267: Melting-Free Phase-change Memory for Associative Learning (invited)</b>
15:45 ~16:15	Da-You Zhang, Si-Qi Wang, Zi-Jian Tang, Xiang-Shui Miao and Yu-Hui He <i>(Huazhong University of Science and Technology, China)</i>
<b>B5-2</b>	<b>0362: Relaxation in GeSe Ovonic Threshold Switching Device (invited)</b>
16:15 ~16:45	W. Zhang, Z. Chai, P. Freitas, J. F. Zhang, John Marsland <i>(Liverpool John Moores University, UK)</i>
<b>B5-3</b>	<b>0510: Recent Progress in Phase Change Materials and Devices (invited)</b>
16:45 ~17:00	You Yin <i>(Gunma University, Japan)</i>
<b>B5-4</b>	<b>0147: A Fully Parallel On-Die ECC Architecture with High Area Reduction and RAS Enhancement for HBM3</b>
17:00 ~17:15	Run-Jin Wu, Feng Chen, Cheng-Jer Yang, Feng Xu, OneGyun Na, Ying-Qi Yang <i>(University of Science and Technology of China, China; ChangXin Memory Technologies. Inc., China; Quantum Nebula Microelectronics Technology Co., China)</i>
<b>B5-5</b>	<b>0195: A 7T1R Nonvolatile SRAM with High Stability, Low Delay and Low Power Consumption Embedded with Transmission Gates (TGs)</b>
17:15 ~17:30	Yangyang Zhu, Yingjian Xia, Shenghua Cheng, Yue Sun, Xiaohu Wang <i>(Dalian University of Technology, China)</i>
<b>B5-6</b>	<b>0236: Impact of MOS Interface on Non-Volatile Mobile-Ionic Field-Effect</b>



	<b>Transistor with Amorphous ZrO<sub>2</sub> Dielectric</b>
17:30 ~17:45	Huan Liu, Qiyu Yang, Jing Li, Lulu Chou, Chengji Jin, Jiajia Chen, Xaio Yu, Yan Liu, Genquan Han, Yue Hao ( <i>Zhejiang Lab, China; Xidian University, China</i> )

<p>Thursday, October 27, 15: 45 – 17: 45</p> <p><b>Session C5: EDA II</b></p>
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	Title
<b>C5-1</b>	<b>0487: Intelligent and Interactive Analog Layout Design Automation (invited)</b>
15:45 ~16:15	Yibo Lin, Xiaohan Gao, Haoyi Zhang, Runsheng Wang, Ru Huang ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )
<b>C5-2</b>	<b>0211: An Efficient Global Router for Large-scale Congestion-driven Routing</b>
16:15 ~16:30	Haishan Huang, Weijie Chen, Zhijie Cai, Jiarong Huang, and Jianli Chen ( <i>Fuzhou University, China; Fudan University, China</i> )
<b>C5-3</b>	<b>0290: Convex Optimization-Based Inverse Reinforcement Learning in Design Space Exploring</b>
16:30 ~16:45	Yi-Fan Jin, Yin-Shui Xia, Xiao-Jing Zha ( <i>Ningbo University, China</i> )
<b>C5-4</b>	<b>0305: Multi-Constant Multiplication Optimization Based on Common Sub-Expression Elimination</b>
16:45 ~17:00	Jiawen Cheng, Songlin Lyu, Yun Shao, Yong Xiao, Wenjian Yu ( <i>Tsinghua University, China; Giga Design Automation Co., Ltd., China</i> )
<b>C5-5</b>	<b>0333: OrderMap: A CGRA Mapping Algorithm based on DFG Analysis and Graph Homomorphism</b>
17:00 ~17:15	Jiangnan Li, Su Zheng, Lingli Wang, Wenbo Yin ( <i>Fudan University, China</i> )

<p>Thursday, October 27, 15: 45 – 17: 45</p> <p><b>Session D5: RF Circuit II</b></p>
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	Title
<b>D5-1</b>	<b>0082: Ultra-Low Power 2.4 GHz Receiver Design Techniques for IoT Applications (invited)</b>
15:45 ~16:15	Aasish Boora, Bharatha Kumar Thangarasu, and Yeo Kiat Seng ( <i>Singapore University of Technology and Design, Singapore</i> )
<b>D5-2</b>	<b>0325: A 5.15-5.85 GHz GaN Doherty Power Amplifier MMIC for WLAN Applications (invited)</b>
16:15 ~16:45	Lina Liao, Jiafu Lin, Wanli Wang, Xiguang Chen, Chenkai Deng, Qing Wang, Hongyu Yu ( <i>Southern University of Science and Technology, China; Hatchip Limited,</i>

	<i>China)</i>
<b>D5-3</b>	<b>0125: A 31.2dBm Pout, 40.7% Peak DE, 2.4GHz Quadrature Doherty Power Amplifier Based on Current Mode RFDAC Architecture</b>
16:45 ~16:57	Ling-Yun Shi, Tao Wang, Di Hua, Zhi-Liang Hong ( <i>Fudan University, China</i> )
<b>D5-4</b>	<b>0262: A 23-33GHz Transmitter in 65-nm CMOS Achieving 22.8-dB Gain and 14.5dBm Psat for 5G Communication System</b>
16:57 ~17:09	Chaofan Zeng, Xu Chen, Nuo Xu, Xinlei Song, Chao Shen, Shunli Ma ( <i>Fudan University, China</i> )
<b>D5-5</b>	<b>0271: A Broadband and High Speed CML Divider with Inductor Peaking in 40-nm SMIC</b>
17:09 ~17:21	Chao Shen, Yang Jiang, Tianxiang Wu, Huarui Cui, Shunli Ma, Junyan Ren ( <i>Fudan University, China; The 24th Research Institute of China Electronics Technology Group Corporation, China</i> )
<b>D5-6</b>	<b>0315: A 38-48 GHz Power Amplifier with 23-dB Gain 18.5-dBm Psat and 28% PAE in 65-nm CMOS</b>
17:21 ~18:33	Ruolan Chen, Weiping Wu, Lei Zhang, and Yan Wang ( <i>Tsinghua University, China</i> )
<b>D5-7</b>	<b>0358: A 26-39.5 GHz Two-Path Voltage-Combined Power Amplifier with Bandwidth Broadening Technique in 22nm FD-SOI</b>
18:33 ~18:45	Xun Cao, Shunli Ma ( <i>Fudan University, China</i> )

**Thursday, October 27, 19: 00 – 21: 00**

Thursday, October 27, 19: 00 – 21: 00  
**Poster Session II**

	Title
<b>P2-1</b>	<b>0031: A 1-5 GHz High Speed, Low Jitter, High Accuracy Duty-Cycle Corrector Circuit</b>
	Ting Sun, Qi Yu, Shubo Tao, Zhong Zhang, Kejun Wu, Jing Li, Ning ( <i>University of Electronic Science and Technology of China, China</i> )
<b>P2-2</b>	<b>0043: A 13-bit Energy-Efficient SAR-Assisted Cyclic ADC for CMOS Image Sensor</b>
	Zheng Nie, Hao Li, Dong-Sheng Liu, Ang Hu, Jia-Hao Lu, Hai Li ( <i>Huazhong University of Science and Technology, China; Tysin Technology (Kunshan) Co., Ltd, China</i> )

<b>P2-3</b>	<b>0046: An Artificial Case to Evaluate the Scalability Bottleneck of a Simulator (undetermined)</b>
	Amy Rao, Kevin Kerns ( <i>Synopsys Co., Ltd, USA</i> )
<b>P2-4</b>	<b>0054: A Low-cost and Configurable Hardware Architecture of Sparse 1-D CNN for ECG Classification</b>
	Jiahao Lu, Dongsheng Liu, Ang Hu, Cong Zhang, Changwen Mo, Runhua Guo, Hai Li ( <i>Huazhong University of Science and Technology, China; Zhuhai Jusheng Technology CO., Ltd, China; Tysin Technology (Kunshan) Co., Ltd, China</i> )
<b>P2-5</b>	<b>0056: Design of Security Detection Digital Sensor System Based on FPGA</b>
	Dejian Li, Xu Zhao, Jiaming Zhang, Zonglin Li, Jiajie Hu, Yuanhui Yang, Dongsheng Liu, Hai Li ( <i>Beijing Smart-chip Microelectronics Technology Co. Ltd., China; Huazhong University of Science and Technology, China; Tysin Technology (Kunshan) Co., Ltd, China</i> )
<b>P2-6</b>	<b>0059: Current Sensing Interface Based on Noise-Shaped Pulse Width Modulation</b>
	Hengzhuang Shi, Lin He, Yufeng Guo, Zhikuang Cai ( <i>Nanjing University of Posts and Telecommunications, China</i> )
<b>P2-7</b>	<b>0064: Evaluation and Analysis of Domestic ATE based on IC Testing Application</b>
	Kun YU, Jianhua QI ( <i>Peking University, China; SINO IC Technology Co., Ltd., China</i> )
<b>P2-8</b>	<b>0070: Analysis and Design of Continuous-Time Incremental Sigma-Delta Modulators with Extended Counting Technique</b>
	Tingting Wei, Qiong Wang, Zhu Yuan, Jiahui Lai, Xiaoyang Zeng, Zhiliang Hong ( <i>Fudan University, China</i> )
<b>P2-9</b>	<b>0077: A Controllable Luminance Neural Camera</b>
	Fa xu, Yujie Huang, Xiaoyang Zeng, Ming'e Jing, Yibo Fan ( <i>Fudan University, China</i> )
<b>P2-10</b>	<b>0091: A 10-bit 1MS/s SAR Quantizer with Differential Charge Compensation for 2Vp-p Signal Range</b>
	Zhu Yuan, Tingting Wei, Zhiliang Hong ( <i>Fudan University, China</i> )
<b>P2-11</b>	<b>0135: BICMOS Residue Amplifier with Base Current Compensation Technique in High-speed Pipelined ADC</b>
	Junjie Jing, Lingxiao Shen, Fule Li, Chun Zhang, Zhihua Wang ( <i>Tsinghua University, China</i> )
<b>P2-12</b>	<b>0138: Design of Adaptive Transmission NoC based on Packet and Circuit Switching Mechanism</b>
	Shu-Ming Zeng, Wei Ni, Ya-Xuan Zhang, Yu-Kun Song, Duo-Li Zhang ( <i>Hefei</i>

	<i>University of Technology, China)</i>
<b>P2-13</b>	<b>0148: Implementation of Classic McEliece Key Generation Based on Goppa Binary Code</b>
	Jiaming Zhang, Dongsheng Liu, Jiahao Lu, Aobo Li, Changwen Mo, Jiye Tian, Hai Li ( <i>Huazhong University of Science and Technology, China; Zhuhai Jusheng Technology CO., Ltd, China; Tysin Technology (Kunshan) Co., Ltd, China)</i> )
<b>P2-14</b>	<b>0154: Modeling Attack Resistant Arbiter PUF based on Dynamic Finite Field Matrix Multiplication Scheme</b>
	Shanshan Shi, Zhengtai Chang, Benqing Guo, Yao Wang ( <i>Zhengzhou University, China; Chengdu University of Information Technology, China)</i> )
<b>P2-15</b>	<b>0155: A High-performance Hardware Accelerator Using a Fusion Approach of Convolution and Pooling</b>
	Chen Yang, Yishuo Meng, Kaibo Huo, Yuheng Xia, Kuizhi Mei ( <i>Xi'an Jiaotong University, China)</i> )
<b>P2-16</b>	<b>0170: Luminance Weighted Color Constancy</b>
	Yuxin Gao, XianKui Xiong, Dong Xu, XuanPen Zhu, Yibo Fan ( <i>Fudan University, China)</i> )
<b>P2-17</b>	<b>0176: Characterization of Reliabilities of 22 nm UTBB FDSOI Ring Oscillators</b>
	Chang Cai, Kai Zhao, Jian Yu, Gengsheng Chen, Mingjie Shen, Bingxu Ning, Jun Yu ( <i>Fudan University, China)</i> )
<b>P2-18</b>	<b>0181: An OTA Controlled Voltage Boost to Bias the Photodiode in OEICs</b>
	You-Run Zhang, Deng-Fu Zhang, Peng Ding, Jia-Ning Zhang, Yi Ou, Shao-Wei Zhen, Shi-Jie Kang, Yong-Ming Sun, Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Chongqing Optoelectronics Research Institute, China)</i> )
<b>P2-19</b>	<b>0182: Design of a Highly Compact On-Chip Temperature Sensor with Ultra-Low Power based on 40nm CMOS</b>
	Shan Lu, Danyu Wu, Linzhen Wu ( <i>Institute of microelectronics of the Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China)</i> )
<b>P2-20</b>	<b>0184: Performance Evaluation of Algorithms for Optimizing Processor Simulator Parameters</b>
	Jianyu Ren, Yudi Qiu, Yibo Fan ( <i>Fudan University, China)</i> )
<b>P2-21</b>	<b>0208: IGBT Drive Optocoupler with Desaturation Detection and Active Miller Clamp</b>
	Shao-Wei Zhen, Shi-Jie Kang, Peng Ding, Jia-Ning Zhang, Yi Ou, You-Run Zhang, Deng-Fu Zhang, Yong-Ming Sun, Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Chongqing Optoelectronics Research Institute, China)</i> )

<b>P2-22</b>	<b>0223: Low-Power Computing Unit based on Heterogeneous Approximate Structure for Binary Convolutional Neural Network</b>
	Ziyu Wang, Qingwen Wei, Anfeng Xue, Xuetao Wang, Hao Zhang, Hao Cai, Bo Liu ( <i>Southeast University, China; Nanjing Research Institute of Electronics Technology, China</i> )
<b>P2-23</b>	<b>0239: HRPoseFormer: High-Resolution Transformer for Human Pose Estimation via Multi-Scale Token Aggregation</b>
	Xiao-Wei YU, Geng-Sheng Chen ( <i>Fudan University, China</i> )
<b>P2-24</b>	<b>0245: Research on Inter-core Communication of Multicore Cryptoprocessor with Considering Memory Optimization</b>
	Jun-hao Lang, Wei Li, Long-mei Nan, Tao Chen ( <i>Information Engineering University, China</i> )
<b>P2-25</b>	<b>0249: Reconfigurable KECCAK Hardware Design for Lattice-based Post-Quantum Cryptography on the RISC-V Architecture</b>
	Hui-Qin Li, Tao Chen, Wei Li, Long-Mei Nan ( <i>Information Engineering University, China</i> )
<b>P2-26</b>	<b>0253: A High-performance RISC-V Co-processor Architecture for Fast IP Processing</b>
	Xinjie Kong, Weiliang He, Jun Han ( <i>Fudan University, China</i> )
<b>P2-27</b>	<b>0254: A Hardware Friendly Demosaicking Algorithm based on Edge Sensing</b>
	Jiarui Liu, Yuxin Gao, Xiankui Xiong, Dong Xu, Xuanpeng Zhu, Yibo Fan ( <i>Fudan University, China; ZTE Corporation, China</i> )
<b>P2-28</b>	<b>0257: A Linearization Technique for Cryogenic Infrared Readout Circuit</b>
	Bin Wang, Zhong-jie Guo, Yang-le Wang, You-mei Guo, Rui-ming Xu, Xin-qi Cheng ( <i>Xi'an University of Technology, China</i> )
<b>P2-29</b>	<b>0260: Hybrid Attention Spatial-Temporal Network for Video Saliency Prediction</b>
	Qi-Yun Dong, Geng-Sheng Chen ( <i>Fudan University, China</i> )
<b>P2-30</b>	<b>0272: A 12-bit 20MS/s Asynchronous SAR ADC</b>
	Nanou Jiang, Lingxin Meng, Menglian Zhao, Zhichao Tan ( <i>Zhejiang University, China</i> )
<b>P2-31</b>	<b>0276: A Design Space Exploration Method for Cryptographic Processors</b>
	Mengni Bie, Wei Li, Tao Chen ( <i>Information Engineering University, China</i> )
<b>P2-32</b>	<b>0289: Design of Differential Amplifier with Cross-coupled Connection by Organic TFTs</b>
	Fanzhao Meng, Baohui Xu, Zhigan Wang, Jun Li, and Jie Liang ( <i>Shanghai University,</i>

	<i>China)</i>
<b>P2-33</b>	<b>0292: An Adoptive RX Equalizer based on Dual Reference DFE for Reflection &amp; ISI Reduction under Multi-drop Channel</b>
	Siman Li, Chris Eom, Jake Jung, Brian Lee ( <i>Design Center CXMT, China</i> )
<b>P2-34</b>	<b>0293: A Transmitter Equalizer Scheme with FFE and Internal Boost Scheme for Achieving over 6Gbps in DDR Interface</b>
	Elaine Tang, Chris Eom, Lynn Wang, Zhiqiang Zhang, Jake Jung, Brian Lee ( <i>Design Center CXMT, China</i> )
<b>P2-35</b>	<b>0294: Study of Millimeter Wave Circulators based on the Methods of Circular Polarization Isolation</b>
	Yiming Liao, Jiabing Liu, Xiaoli Ji ( <i>Nanjing university of science and technology, China; Nanjing University, China</i> )
<b>P2-36</b>	<b>0318: A Novel Triple Patterning Lithography Layout Decomposition Algorithm with Clustering</b>
	Xue-Xiang Wang, Jiang-Wei Liang ( <i>Southeast University, China</i> )
<b>P2-37</b>	<b>0330: Design of 2D DMA Controller for Crypto-engine in Video Stream Data Encryption Card</b>
	Yi-Fu Wang, Li Wei, Chen Tao, Long-Mei Nan ( <i>Information Engineering University, China</i> )
<b>P2-38</b>	<b>0338: A Novel Millimeter-wave Reflector Antenna with Sum-difference Network</b>
	Di Zhou, Li Zhang, Xiao-Li Ji and Yi-Ming Liao ( <i>Nanjing University, China; Nanjing university of science and technology, China</i> )
<b>P2-39</b>	<b>0341: Self-Calibration Readout Circuits for CMOS Microbolometers</b>
	Sheng Xu, Yao-Zu Guo, Xiang-Shun Kong, Hao-Yu Zhu, Hao-Lan Ma, Xiao-Li Ji ( <i>Nanjing University, China</i> )
<b>P2-40</b>	<b>0345: High-Flatness and Broadband Comb Generator Chip</b>
	Wang Yang, Qian Qi, Guo Yufeng, Zhang Yi ( <i>Nanjing Vocational University of Industry Technology, China; Nanjing University of Posts and Telecommunications, China</i> )
<b>P2-41</b>	<b>0349: Improved Complementary Bootstrap Switch Based on Negative Voltage Bootstrap Capacitance</b>
	Wei Zhao, Chao Cao, Jihui Fan, Zebiao Gan, Yuhao Duan, Haijun Guo, Hui Xu ( <i>Shandong University, China; University of Jinan, China</i> )
<b>P2-42</b>	<b>0352: Research and Design of RISC-V Four-Stage Out-of-Order Execution Processor</b>
	Jie Gao, Jun Zhang ( <i>Central South University, China</i> )

<b>P2-43</b>	<b>0361: Design of A Modulated Wideband Converter for Low-Speed Sampling of Sparse Analog Signals</b>
	Sujuan Liu, Zihao Wei, Xiaoyao Lyu ( <i>Beijing University of Technology, China</i> )
<b>P2-44</b>	<b>0367: Neutron and Total Ionizing Dose Irradiation Hardened LDO</b>
	Yucuo Wu, Ping Luo, Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>P2-45</b>	<b>0378: A Dynamic Range Control Generator Implemented with CHISEL</b>
	Jian Zhang, Jun Han ( <i>Fudan University, China</i> )
<b>P2-46</b>	<b>0390: Design and Analysis of a 3.58-4.46 GHz High Linearity and Low Noise CMOS LC-tank VCO</b>
	Nan Lv, Chang Li, Ningmei Yu, Hejiu Zhang, Zhongjie Guo ( <i>Xi'an University of Technology, China</i> )
<b>P2-47</b>	<b>0396: Compressors Evolution based High Speed and Energy Efficient Approximate Signed Multiplier</b>
	Na Xie, Renyuan Zhang, Han Yan, Chonghang Xie, Hao Zhang, Hao Cai, Bo Liu ( <i>Southeast University, China; Nanjing Research Institute of Electronics Technology, China</i> )
<b>P2-48</b>	<b>0400: Approximate Logic Synthesis and its Application in Image Signal Processor</b>
	Yukun Li, Zhen Li, Yifan Wang, Wenbo Zhang, Botao Xiong, Yanhua Ma, Zhaohan Li ( <i>Dalian University of Technology, China; Beijing Institute of Aerospace Control Devices, China</i> )
<b>P2-49</b>	<b>0409: Top-Down Design of 0.8~18GHz Wideband Reconfigurable Receiver Front End with Simulink</b>
	Lei Wang, Hao Xu, Tingting Han, Mi Tian, Weiqiang Zhu, Zhijian Li, Na Yan ( <i>Fudan University, China; Nanjing Electronic Equipment Institute, China</i> )
<b>P2-50</b>	<b>0417: A 12nA Quiescent Current and 86.2% Light-Load Efficiency Buck Converter with Sleep Time Control for IoT Applications</b>
	Yiwei Liu, Yonghu Wu, Shaowei Zhen, Sunze Zhou ( <i>University of Electronic Science and Technology, China</i> )
<b>P2-51</b>	<b>0418: Full-Chip Harmonic Balance Analysis in Parallel</b>
	Sen-Hua Dong, Xiao-Lue Lai, Zhen-Ya Zhou, Da-Ke Wu, Liu Yang, Jing Li, and Yan Wang ( <i>Tsinghua University, China; Empyrean Technology Co., ltd, China</i> )
<b>P2-52</b>	<b>0420: An Op-amp for 12bit 1.25GS/s Pipelined ADC with Negative Impedance Compensation in 65nm CMOS</b>
	Yihang Cheng, Lingxiao Shen, Fule Li, Chun Zhang, Zhihua Wang ( <i>Tsinghua</i>

	<i>University, China)</i>
<b>P2-53</b>	<b>0423: A Compressive Sensing Recovery Hardware Implementation Based on Half-Candidate Subspace Pursuit Algorithm</b>
	Sujuan Liu, Yuhao Liu, Jiajun Ma, Chengkai Cui, Xiaoyao Lyu ( <i>Beijing University of Technology, China</i> )
<b>P2-54</b>	<b>0426: An All-Neuron Spiking 2-D Path Integration and Map Representation Model Implemented on Neuromorphic Chips</b>
	Kefei Liu, Xiaoxin Cui, Yisong Kuang, Chenglong Zou, Yi Zhong, Kanglin Xiao, Yuan Wang ( <i>Peking University, China</i> )
<b>P2-55</b>	<b>0431: Autogenerating Training Set for Model Extraction of the Behavioral Model in RF Simulation Using Machine Learning Algorithm</b>
	Senhua Dong, Jinyu Zhang, Dake Wu, Zhenya Zhou, Liu Yang, Qiang Liu, Minghou Cheng, Xiaolue Lai, and Yan Wang ( <i>Tsinghua University, China; Empyrean Technology Co., Ltd., China</i> )
<b>P2-56</b>	<b>0441: A Fast Transient Response Capacitorless LDO with Slew Rate Enhancement Design</b>
	Yu-Zi Wang, Xichen Duan, Liuyang Zhang, and Jie Liang ( <i>Shanghai University, China; Peng Cheng Laboratory, China</i> )
<b>P2-57</b>	<b>0444: 0.1V Low Power Bandgap Reference For RRAM Storage Applications</b>
	Yongkang Han, Wenjun Zhang, Yue Cao, Haijun Jiang, Ruixi zhou, Xiaoxin Xu and Jianguo Yang ( <i>Zhejiang Lab, China; Institute of Microelectronics of the Chinese Academy of Sciences, China</i> )
<b>P2-58</b>	<b>0454: A 35GHz Cascode Power Amplifier with Neutralization Capacitors in 65nm CMOS</b>
	Meng Yu, Jincai Wen, Junhao Jia ( <i>Hangzhou Dianzi University, China</i> )
<b>P2-59</b>	<b>0458: Design of Computing Granularity Configurable Processor based on RISC-V Extended Instruction</b>
	Bin He, Ning-Mei Yu, Xing-Jia Wang, Meng Xu ( <i>Xi'an University of Technology, China</i> )
<b>P2-60</b>	<b>0515: High Throughput and Low Latency Hardware of Contrast Limited Adaptive Histogram Equalization Algorithm</b>
	Chao Zhang, Zhihan Zhang, Jiarui Liu, Yuxin Gao, Leilei Huang, Yibo Fan ( <i>Fudan University, China; East China Normal University, China</i> )
<b>P2-61</b>	<b>0517: Confidence Judgement Network: An Efficient Sample Filter for Lifelong Distillation</b>
	Zhenyin Zhang, Yue Xue, Gengsheng Chen ( <i>Fudan University, China</i> )



<b>P2-62</b>	<b>0518: LEAN: Local-Enhanced Attention Network for Bad Weather Image Restoration</b>
	Han-Qian Ying, Xiao-Min Li, Wei Xu ( <i>Fudan University, China; ZEKU Technology (Shanghai) Co., LTD, China</i> )

# Friday

**Friday, October 28, 8: 15 – 10: 00**

Friday, October 28, 8: 15 – 9: 00

## **Keynote Session K4**

**K4-1 Recent Progress in R&D Activities on SiC Power Devices and Its Social Implementation (8: 15-9: 00)**

Dr. Yasunori Tanaka, National Institute of Advanced Industrial Science and Technology (AIST), Japan

Friday, October 28, 9: 00 – 10: 30

## **Panal Discussion**

**Topic Challenges and Opportunities in the Quest to Extend the Moore's Law**

Kevin Cao, Arizona State University, ycao@asu.edu

Runsheng Wang, Peking University

**Panlist** Huaqiang Wu, Tsinghua University

Qiang Wu, Fudan University

Chuan Hu, Institute of Semiconductors, Guangdong Academy of Sciences

**Moderator** Shaofeng Yu, Fudan University

## Friday, October 28, 10: 15– 12: 15

Friday, October 28, 10: 15 – 12: 15  
**Session A6: Compound Semi - SiC II**

	Title
<b>A6-1</b>	<b>0477: Application of Machine Learning Method in the Modeling and Designing of Semiconductor Power Devices (invited)</b>
10:15 ~10:45	Yufeng Guo, Jing Chen, Jun Zhang, Qing Yao, Yuxuan Dai, Bin Guo, Renji Xia, Maolin Zhang, Man Li, Jiafei Yao ( <i>Nanjing University of Posts and Telecommunications, China</i> )
<b>A6-2</b>	<b>0259: A Novel Asymmetric Trench SiC MOSFET Embedded Unipolar Electron Channel with Improved Reverse Conduction Performance</b>
10:45 ~11:00	Jingwei Guo, Ping Li, Rongyao Ma, Shengdong Hu ( <i>Chongqing University, China; China Resources Microelectronics (Chongqing) Limited, China</i> )
<b>A6-3</b>	<b>0371: Electric-Magnetic-Thermal Co-simulation Method for SiC Gate Turn-off Thyristor Module</b>
11:00 ~11:15	Peng Yao, Yan Wang, Ruifeng Yue, Qiyu Zhong, Xianbing Li ( <i>Tsinghua University, China</i> )
<b>A6-4</b>	<b>0440: A Double Trench SiC Power MOSFET with Integrated Freewheeling Heterojunction Diode for Improved Third Quadrant Performance</b>
11:15 ~11:30	Zeyu Cheng, Moufu Kong, Ning Yu, Shurui Li, Bo Yi, Hongqiang Yang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A6-5</b>	<b>0475: A Rigorous Analysis of Specific ON-resistance for 4H-SiC Superjunction Devices</b>
11:30 ~11:45	Juncheng Xiong, Haimeng Huang, Zimin Zhang, Zhiming Wang, Guoyi Zhang ( <i>University of Electronic Science and Technology of China, China; Shenzhen Winsemi Microelectronics Company Ltd., China; Peking University, China</i> )
<b>A6-6</b>	<b>0479: Superjunction SiC TCOX-MOSFET: Study and Comparison</b>
11:45 ~12:00	Juncheng Zhang, Yunteng Jiang, Haimeng Huang, Zimin Zhang, Junji Cheng, Bo Yi Hongqiang Yang, and Zhiming Wang ( <i>University of Electronic Science and Technology of China, China; Shenzhen Winsemi Microelectronics Company Ltd., China</i> )
<b>A6-7</b>	<b>0069: Perhaps First Experimental Report of New 2D TCRFP Device</b>
12:00 ~12:15	Kaizhou Tan, Tian Xiao, Xiaoquan Li, Yunchen Wu and Xiaohui Yi ( <i>Science and Technology on Analog Integrated Circuit Laboratory, China; Analog Foundries Co., Ltd, China</i> )

Friday, October 28, 10: 15 – 12: 15  
**Session B6: NVM II: MRAM, FERAM&RRAM**

	Title
<b>B6-1</b>	<b>0281: Design Analysis of Ultra-Scaled MRAM Cells (invited)</b>
10:15 ~10:40	Simone Fiorentini, Wilton Laciell Loch, Mario Bendra, Nils Petter Jørstad, Johannes Ender, Roberto Lacerda de Orio, Tomáš Hadamek, Wolfgang Goes, Viktor Sverdlov, and Siegfried Selberherr ( <i>TU Wien, Austria; Silvaco Europe Ltd., United Kingdom</i> )
<b>B6-2</b>	<b>0497: Multi-Level Storage of Ferroelectric Domain Wall Memory (invited)</b>
10:40 ~11:05	Anquan Jiang ( <i>Fudan University, China</i> )
<b>B6-3</b>	<b>0508: Unified Insulator-Metal Transition and Resistive Switching Device for Memory, Computing and Sensing Applications (invited)</b>
11:05 ~11:30	Yimao Cai, Zongwei Wang, Lin Bao, Lindong Wu, Linbo Shan and Ru Huang ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )
<b>B6-4</b>	<b>0447: Investigation on High Resistance Variation of Bi-layer TaOx/HfO<sub>2</sub> RRAM Devices</b>
11:30 ~11:45	Nan Tang, Peng Huang, Yulin Feng, Xiaoyan Liu ( <i>Peking University, China</i> )
<b>B6-5</b>	<b>0457: Impact of the Semiconductor Substrate on Ferroelectric-like Characteristic in Amorphous Dielectric</b>
11:45 ~12:00	Fei Yu, Jing Li, Huan Liu, Chengji Jin, Xiao Yu, Yan Liu, Genquan Han, and Yue Hao ( <i>Xidian University, China; Zhejiang Lab, China</i> )
<b>B6-6</b>	<b>0302: A Novel Interface Trap 1T0C In-Ga-Zn Oxide DRAM Cell with Enhanced Data Retention</b>
12:00 ~12:15	Haisu Zhang, Lin Bao, Zongwei Wang, Yimao Cai, and Ru Huang ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )

Friday, October 28, 10: 15 – 12: 15  
**Session C6: Memory Circuit**

	Title
<b>C6-1</b>	<b>0094: Design Methodology and Trends of SRAM-Based Compute-in-Memory Circuits (invited)</b>
10:15 ~10:45	Fangyuan Dong, Xin Si and Meng-Fan Chang ( <i>Tsing Hua University, Taiwan, China</i> )
<b>C6-2</b>	<b>0482: Circuit and Training Techniques Compensating for Non-Ideal Effects in Memristor Neural Networks (invited)</b>
10:45	Seokjin Oh, Jiyong An, and Kyeong-Sik Min, ( <i>Kookmin University, Korea</i> )

~11:15	
<b>C6-3</b>	<b>0102: A Dual-Mode ReRAM CIM Macro for Low Power Memory-Augmented Neural Networks</b>
11:15 ~11:30	Deyang Chen, Zhiwang Guo, Jinbei Fang, Xiaoyong Xue ( <i>Fudan University, China</i> )
<b>C6-4</b>	<b>0205: A ReRAM-Based Nonvolatile Flip-Flop with Low Store Energy and High Restore Rate</b>
11:30 ~11:45	Yingjian Xia, Yangyang Zhu, Yue Sun, Shenghua Cheng, Xiaohu Wang ( <i>Dalian University of Technology, China</i> )
<b>C6-5</b>	<b>0329: Novel 2T DRAM by Storing Data in One Alternative Gate of a Double-Gate Transistor with a Low-leakage Oxide Transistor</b>
11:45 ~12:00	Zheng-Yong Zhu, Bok-Moon Kang, Wang Dan, Xie-Shuai Wu, Joohwan Son, Yong Yu, De-Yuan Xiao, Jin Dai, Gui-Lei Wang, Abraham Yoo, Kan-Yu Cao and Chao Zhao ( <i>Beijing Superstring Academy of Memory Technology, China; ChangXin Memory Technologies, Inc., China</i> )

<p>Friday, October 28, 10: 15 – 12: 15  <b>Session D6: Clock &amp; Optical Circuit</b></p>
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	Title
<b>D6-1</b>	<b>0034: A High Frequency Accuracy, High Stability and Tunable RC Oscillator</b>
10:15 ~10:28	Zhuang Zhao, Yan-Xue Gu, Yun-Hao Fu, Yu-Chun Chang ( <i>Jilin University, China</i> )
<b>D6-2</b>	<b>0160: An Accurate Peak and Noise Model of CTLE Applied to the Front End of CLKRX</b>
10:28 ~10:41	Shubo Tao, Ting Sun, Kejun Wu, Jing Li, Ning, Qi Yu ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D6-3</b>	<b>0383: A 3GHz Phase-Locked Loop Design for SerDes Application</b>
10:41 ~10:54	Yuting Yang, Bingrong Lyu, Fan Ye, Junyan Ren ( <i>Fudan University, China</i> )
<b>D6-4</b>	<b>0049: A Lock Time Improved Type-I PLL Using a Wide-Bandwidth PLL-Like Time Domain Digital-To-Analog Converter</b>
10:54 ~11:07	Fanyang Li, Yanqing Zhang, Gaowen Huang ( <i>Fuzhou University, China</i> )
<b>D6-5</b>	<b>0252: A 40nm CMOS Low-Power Multi-phase 4~8 GHz Frequency Divider with &lt;0.1 Phase Error</b>
11:07 ~11:20	Qiaoan Li, Wei Li, Yunyou Pu, Chuanguo Wang, Hongtao Xu, Jianhong Xiao ( <i>Fudan University, China; XINYI Information Technology Ltd, China</i> )

<b>D6-6</b>	<b>0133: A Fast and Resource-efficient GSOP Implementation for Optical Coherent Receiver</b>
11:20 ~11:33	Hongyi Zhang, Siqi He, Yun Chen, Xiaoyang Zeng ( <i>Fudan University, China</i> )
<b>D6-7</b>	<b>0173: A 44 Gbps PAM-4 Transmitter with Resistance Feedback 4:1 MUX in 65nm CMOS</b>
11:33 ~11:46	Ziqiang Wang, Dengjie Wang, Xin Wu, Jiawei Wang, Hao Xu, Chun Zhang, Hong Chen, Zhihua Wang ( <i>Tsinghua University, China</i> )
<b>D6-8</b>	<b>0225: A 20Gbuad NRZ/PAM4 Receiver Frontend in 65nm CMOS</b>
11:46 ~11:59	Xin Wu, Ziqiang Wang, Zeliang Zhao, Chun Zhang, Zhihua Wang ( <i>Tsinghua University, China</i> )
<b>D6-9</b>	<b>0421: A 40Gb/s PAM4 Baud-Rate CDR with Equal-Slope Algorithm</b>
11:59 ~12:12	Xiao Xiang, Wei-Xin Gai, Ai He, Bing-Yi Ye, Hao-Wei Niu, Hang Zhou ( <i>Peking University, China</i> )

## Friday, October 28, 13: 30 – 15: 30

Friday, October 28, 13: 30 – 15: 30  
Session A7: Compound Semi - GaN

	Title
<b>A7-1</b>	<b>0311: Recent Progress in GaON for Performance Enhancement of GaN-based Devices (invited)</b>
13:30 ~14:00	Mengyuan Hua, Junting Chen, Chengcai Wang ( <i>Southern University of Science and Technology, China</i> )
<b>A7-2</b>	<b>0106: Control Methodology and Experimental Demonstration of a 100-W 1-MHz GaN Buck Power Factor Correction (PFC) Converter</b>
14:00 ~14:12	Ruize Sun, Pengcheng Xing, Lidong Duan, Chao Liu, Wanjun Chen, Bo Zhang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>A7-3</b>	<b>0196: 960V Normally-off p-GaN Gate HEMT with High Threshold Voltage and Drain Current</b>
14:12 ~14:24	Junxian He, Wenjun Xu, Fangzhou Wang, Guojian Ding, Qi Feng, Ping Yu, Xiaohui Wang, Cheng Yu, Yujian Zhang, Ruize Sun, Miao He, Yang Wang, Wanjun Chen, Haiqiang Jia, Hong Chen ( <i>Guangdong University of Technology, China; Songshan Lake Materials Laboratory, China; University of Electronic Science and Technology of China, China; Institute of Physics, Chinese Academy of Sciences, China</i> )
<b>A7-4</b>	<b>0316: Analysis of Unclamped-Inductive-Switching Failure for P-GaN Gate HEMT</b>

	<b>and Protection Schemes</b>
14:24 ~14:36	Chengwu Pan, Yong Gu, Peigang Liu, Jie Ma, Long Zhang, Siyang Liu, Weifeng Sun ( <i>Southeast University, China</i> )
<b>A7-5</b>	<b>0491: Progress on Gallium Nitride-Based HEMT and Phototransistors (invited)</b>
14:36 ~15:06	Haochen Zhang, Haiding Sun ( <i>University of Science and Technology of China, China</i> )
<b>A7-6</b>	<b>0124: Millimeter-Wave AlGaIn/GaN HEMTs/Si Operated on 12V for 5G RF Handset Applications</b>
15:06 ~15:18	Dong-Sheng Liu, Peng Wang, Yi-Zhou Jiang, Wei Huang, Zhi-Qiang Xiao, Hong-Qiang Yang, Wei Zhang ( <i>Fudan University, China; Wuxi Microelectronics Scientific and Research Center, China; University of Electronic Science and Technology of China, China</i> )
<b>A7-7</b>	<b>0201: On-chip AlGaIn/GaN HEMTs with the Compatible Normally-off p-GaN Gate and Normally-on MIS Gate Fabrication Processes</b>
15:18 ~15:30	Yujian Zhang, Wenjun Xu, Fangzhou Wang, Guojian Ding, Qi Feng, Ping Yu, Xiaohui Wang, Cheng Yu, Junxian He, Ruize Sun, Miao He, Yang Wang, Wanjun Chen, Haiqiang Jia, Hong Chen ( <i>Guangdong University of Technology, China; Songshan Lake Materials Laboratory, China; University of Electronic Science and Technology of China, China; Institute of Physics, Chinese Academy of Sciences, China</i> )

<p>Friday, October 28, 13: 30 – 15: 30</p> <p><b>Session B7: Reliability I</b></p>
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	Title
<b>B7-1</b>	<b>0055: Study on Single-event Effects of 28nm FDSOI Transistors (invited)</b>
13:30 ~13:54	Hongxia Liu, Shupeng Chen, Shulong Wang ( <i>Xidian University, China</i> )
<b>B7-2</b>	<b>0053: Criteria for Selecting Statistical Distribution for the Amplitude of Random Telegraph Noise (invited)</b>
13:54 ~14:18	Kean Hong Tok, Mehzebaben Mehedi, Jian Fu Zhang, Zengliang Ye, Zhigang Ji, Weidong Zhang, and John Marsland ( <i>Liverpool John Moores University, UK</i> )
<b>B7-3</b>	<b>0328: Modeling of Channel Hot Electron Degradation in n-MOSFETs (invited)</b>
14:18 ~14:42	Karansingh Thakor, Himanshu Diwakar and Souvik Mahapatra ( <i>Indian Institute of Technology Bombay, India</i> )
<b>B7-4</b>	<b>0101: RC-Coupled SCR Devices for Advanced Nanoscale COMS Process</b>
14:42 ~14:54	Nanjin Li, Aoran Han, Xiaozong Huang, Le Chen, Yuxin Zhang, Jieling Li, Yi Liu, Jizhi Liu, Zhiwei Liu ( <i>University of Electronic Science and Technology of China, China</i> )
<b>B7-5</b>	<b>0309: Enhanced Field Limiting Rings for Improving Breakdown Voltage Stability</b>

14:54 ~15:06	Yi-Shang Zhao, Ze-Hong Li, Zi-Ming Xia, Yang, Jia-Li Wan, Lu-Ping Li, Tong-Yang Wang and Ji-Xian Zhu ( <i>University of Electronic Science and Technology of China, China</i> )
<b>B7-6</b>	<b>0340: Comparative Study on Degradation of the TFET and MOSFET</b>
15:06 ~15:18	Jiale Sun, Yuming Zhang, Hongliang Lu, Zhijun Lyu, Yi Zhu, Yuche Pan ( <i>Xidian University, China; Institute of Microelectronics Technology, China</i> )
<b>B7-7</b>	<b>0439: Phenomenon and Mechanism Investigation of the Cryogenic Random Telegraph Noise for 18 nm FDSOI CMOS</b>
15:18 ~15:30	Ying Sun, Xinze Li, Bing Chen, Ran Cheng ( <i>Zhejiang University, China</i> )

<p>Friday, October 28, 13: 30 – 15: 30</p> <p><b>Session C7: Circuit for IoT and other applications</b></p>
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	Title
<b>C7-1</b>	<b>0227: A Current-Reuse DDA-Based Analog Front End for Multi-Biological Signal Acquisition</b>
13:30 ~13:45	Jiaxi Xu, Xufeng Liao, Yuxiang Zhang, Lianxi Liu ( <i>Xidian University, China</i> )
<b>C7-2</b>	<b>0432: A Wide-Input High-Accuracy CMOS Peak Detector for WPT Systems</b>
13:45 ~14:00	Zhuoneng Li, Zhongming Xue, Yuhao Xiong, Shangzhou Zhao, Yongchao Zhang, Xihao Liu, Zhuoqi Guo, Li Geng ( <i>Xi'an Jiaotong University, China</i> )
<b>C7-3</b>	<b>0435: High Accuracy Analog Circuit for Neural Networks Computation in Parallel CMOS Image Sensors</b>
14:00 ~14:15	Qiang Bian, Ningmei Yu, Nan Lv, Hejiu Zhang, Zhongjie Guo, Lu Yuan ( <i>Xi'an University of Technology, China</i> )
<b>C7-4</b>	<b>0086: A CCO-Based Pixel-Level Readout Circuit for QWIP Focal Plane Array Imaging System</b>
14:15 ~14:30	Zi-Han Mu, Wen-Gao Lu, Yi Zhuo, Yu-Ze Niu, Zhong-Jian Chen, Ya-Cong Zhang ( <i>Peking University, China</i> )
<b>C7-5</b>	<b>0265: A 1.5GHz Low-jitter LVDS Transmitter in 0.18<math>\mu</math>m CMOS Technology</b>
14:30 ~14:45	Biao Hu, Tianxiang Wu, Xue Chen, Xu Chen, Nuo Xu, Xinlei Song, Shunli Ma ( <i>Fudan University, China; 24th Research Institute of China Electronics Technology Group Corporation, China</i> )
<b>C7-6</b>	<b>0516: A 60GHz Traveling-Wave SPDT Switch with HBM and CDM ESD Protection in 45nm SOI CMOS</b>
14:45 ~15:00	Weiquan Hao, Mengfu Di, Zijin Pan, Xunyu Li, Runyu Miao, Ned Cahoon and Albert Wang ( <i>University of California, USA; Skyworks Solutions, USA; GlobalFoundries,</i>



	USA)
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<p>Friday, October 28, 13: 30 – 15: 30</p> <p><b>Session D7: Energy Management Circuit</b></p>
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	Title
<b>D7-1</b>	<b>0286: Further Iot Market Expansion Owing to Innovative Thermal Energy Harvesting (invited)</b>
13:30 ~13:56	Maciej Haras, Naveed Ahmed and Thomas Skotnicki ( <i>Institute of High-Pressure Physics, Polish Academy of Sciences, Poland; Warsaw University of Technology, Poland</i> )
<b>D7-2</b>	<b>0111: Boost Converter with a Start-Up Strategy of Sharing Main Power NMOS for Scalable Cotton-yarn-based Battery</b>
13:56 ~14:09	Hao Wang, Ping Luo, Jiahao Chen, Zhiyuan He, Hao Song ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D7-3</b>	<b>0354: Programmable PMIC with 3 DC-DC Converters for Mobile AMOLED Display</b>
14:09 ~14:22	Yadong Wang, Fan Ye, Junyan Ren ( <i>Fudan University, China</i> )
<b>D7-4</b>	<b>0419: A Fully Integrated Fast Transient Dual-Loop Digital LDO Based on Adaptive Clock Frequency for Voltage Regulation Applications</b>
14:22 ~14:35	Xichen Duan, Yuzi Wang, Liuyang Zhang, and Jie Liang ( <i>Shanghai University, China; Peng Cheng Laboratory, China</i> )
<b>D7-5</b>	<b>0112: A Low Power Zero Current Detector for Synchronous Buck Converter</b>
14:35 ~14:48	Ping Luo, Hao Wang ( <i>University of Electronic Science and Technology of China, China</i> )
<b>D7-6</b>	<b>0241: A High Precision Voltage Reference Circuit for Battery Management System Chip of New Energy Electric Vehicle</b>
14:48 ~15:01	Byambajav Ragchaa, Xuhui He, Liji Wu, Xiangmin Zhang ( <i>Tsinghua University, China</i> )
<b>D7-7</b>	<b>0385: Double-Loop Compensation Technique for LDO with a Wide Load Range</b>
15:01 ~15:14	Yue Shi, Shiyuan Wang, Lichen Peng, Zekun Zhou, Bo Zhang ( <i>University of Electronic Science and Technology of China, China; Chengdu University of Information Technology, China</i> )
<b>D7-8</b>	<b>0232: A Dual-Mode Buck Converter with Mixed Analog and Digital Load Current Detector for IoT Application</b>
15:14 ~15:27	Chengzhi Xu, Xufeng Liao, Yongyuan Li, Lianxi Liu ( <i>Xidian University, China</i> )

## Friday, October 28, 15: 45 – 17: 45

Friday, October 28, 15: 45 – 17: 45

### Session A8: Device Modeling

	Title
<b>A8-1</b>	<b>0061: MEMRISTOR CHIPS AND SYSTEMS FOR ENERGY-EFFICIENT LEARNING (invited)</b>
15:45 ~16:10	Chang Liu, Rui Yuan, and Yuchao Yang ( <i>Peking University, China; Chinese Institute for Brain Research (CIBR), China; Beijing Academy of Artificial Intelligence, China</i> )
<b>A8-2</b>	<b>0083: An Equivalent Channel Length Model for Junctionless Quadruple-Gate with Gate-Source/Drain Underlap MOSFET and Its Application for Subthreshold Current (invited)</b>
16:10 ~16:35	Yu-Ting Zhong, Yu-Yang Lin, Rong-Wei Ma, Fang-Yu Ye, and Te-Kuang Chiang ( <i>University of Kaohsiung, Taiwan, China</i> )
<b>A8-3</b>	<b>0062: An Automatic Integration Network Approach for Generic Device Charge Modeling</b>
16:35 ~16:49	Wu Dai, Fangxing Zhang, Kaifeng Wang, Yu Li, Yukun Tang, Qianqian Huang, Lining Zhang, Ru Huang ( <i>Peking University, China</i> )
<b>A8-4</b>	<b>0097: Study on Efficiency of Weight-Discretized BP Neural Network Algorithm Based on Memory Curves of Synaptic Transistor</b>
16:49 ~17:03	Yi-Ming Wang, Jia Song, Guo-Peng Li, Sheng Chen, Du-Li Yu, Yu-Tao Li ( <i>Beijing University of Chemical Technology, China; Beijing Normal University, China</i> )
<b>A8-5</b>	<b>0107: Study of Synthetic Electric Field Effects and Quantum Confinement Effects in Extremely Scaled Gate-All-Around Tunnel FET</b>
17:03 ~17:17	Yumin Xu, Boqian Shen, Dawei Wang, Tao Liu, Jingwen Yang, Kun Chen, Zhecheng Pan, Chunlei Wu, Min Xu, David Wei Zhang ( <i>Fudan University, China; Shanghai Integrated Manufacturing Innovation Center Co., Ltd, China</i> )
<b>A8-6</b>	<b>0202: An ANN-based Wide Temperature Range Electro-thermal Model for InP HBT with the Thermal Factor Consideration</b>
17:17 ~17:31	Junjun Qi, Hongliang Lu, Silu Yan, Ranran Zhao, Lin Cheng, Yuming Zhang ( <i>Xidian University, China</i> )
<b>A8-7</b>	<b>0116: Analysis of the Electrothermal Coupling Performance with Buried Power Rail Structure Introduction</b>
17:31 ~17:45	Songhan Zhao, Pan Zhao, Yandong He, Gang Du ( <i>Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China</i> )

Friday, October 28, 15: 45 – 17: 45

**Session B8: Reliability II**

	Title
<b>B8-1</b>	<b>0486: Cross-Layer Design for Reliability in Advanced Technology Nodes: An EDA Perspective (invited)</b>
15:45 ~16:10	Runsheng Wang, Zuodong Zhang, Zixuan Sun, Zizheng Guo, Yibo Lin, Ru Huang ( <i>Peking University, China</i> )
<b>B8-2</b>	<b>0485: Sub-ns Scale Mechanism Understanding on Self-heating and Hot Carrier Degradation in Scaled FinFETs (invited)</b>
16:10 ~16:35	Yiming Qu, Chu Yan, Yaru Ding, Xinwei Yu, Yi Zhao ( <i>East China Normal University, China; Zhejiang University, China; China Nanhu Academy of Electronics and Information Technology</i> )
<b>B8-3</b>	<b>0496: Sub-3 Nanometer Technology Nodes-based Ultra-thin Gate Stack by in Situ Transmission Electron Microscopy (invited)</b>
16:35 ~17:00	Xing Wu, Zuoyuan Dong ( <i>East China Normal University, China</i> )
<b>B8-4</b>	<b>0347: Total-Ionizing-Dose Effects in Nanotube Tunnel Field-Effect Transistor with Bias-Induced Electron-Hole Bilayer</b>
17:00 ~17:15	Xue-Ke Wang, Ya-Bin Sun, Zi-Yu Liu, Yun Liu, Xiao-Jin Li, Yan-Ling Shi ( <i>East China Normal University, China; Fudan University, China</i> )
<b>B8-5</b>	<b>0463: Study of Drain-current Collapse in AlGaN/GaN MIS-HEMTs with Different Gate Lengths</b>
17:15 ~17:30	Ye Liang, Yuanlei Zhang, Xiuyuan He, Yinchao Zhao, Miao Cui, Huiqing Wen, Wen Liu ( <i>Xi'an Jiaotong-Liverpool University, China; University of Liverpool, UK</i> )
<b>B8-6</b>	<b>0468: A Dielectric Breakdown Simulator Based on Monte Carlo Method</b>
17:30 ~17:45	Qing Tian, Dong Liu, Haoran Yu, Wentai Xia, Ran Cheng, Dawei Gao, Bing Chen ( <i>Zhejiang University, China; Zhejiang Laboratory, China</i> )

Friday, October 28, 15: 45 – 17: 45

**Session C8: Photonics**

	Title
<b>C8-1</b>	<b>0373: Heterostructure-Based Two-Dimensional WSe<sub>2</sub> Photodetectors: Devices and Applications (invited)</b>
15:45 ~16:10	Changjian Zhou, Cary Yang ( <i>South China University of Technology, China; Santa Clara University, USA</i> )
<b>C8-2</b>	<b>0509: Multifunctional Sensors Capable of In-Sensor Data Processing (invited)</b>
16:10	Ming He ( <i>Peking University, China</i> )

~16:35	
<b>C8-3</b>	<b>0511: Silicon Photonics Integrating Quantum Dot Lasers (invited)</b>
16:35 ~17:00	Yasuhiko Arakawa ( <i>The University of Tokyo, Japan</i> )
<b>C8-4</b>	<b>0220: Histogram-based Defogging Techniques for LiDAR (invited)</b>
17:00 ~17:30	Tzu-Hsien Sang and Chia-Ming Tsai ( <i>Yang Ming Chiao Tung University, Taiwan, China</i> )
<b>C8-5</b>	<b>0520: Addressing and Two-dimensional Driving of Droplets on Single-sided Continuous Optoelectrowetting Chip</b>
17:30 ~17:45	Enqing Liu, Cui Wang, Antoine Riaud, Jia Zhou ( <i>Fudan University, China</i> )

<p>Friday, October 28, 15: 45 – 17: 45</p> <p><b>Session D8: Biomedical Circuit</b></p>
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	Title
<b>D8-1</b>	<b>0489: A Low-Power Low-Pass Filter for Noise Suppression in Chopped Bioamplifiers (invited)</b>
15:45 ~16:15	Hui Wu, Jinbo Chen, Jie Yang, and Mohamad Sawan ( <i>Westlake University, China; Fudan University, China</i> )
<b>D8-2</b>	<b>0412: A Review on Direct Digital Conversion for Biomedical Signal Acquisition ICs (invited)</b>
16:15 ~16:45	Yalong Wan, Shuang Song, Menglian Zhao, Mengyu Li, Shiwei Wang, Zhichao Tan ( <i>Zhejiang University, China; University of Edinburgh, UK</i> )
<b>D8-3</b>	<b>0500: An Integrated System Design of Blood Pressure and Electrocardiograph Recordings for Home Healthcare Application (invited)</b>
16:45 ~17:15	Feng Zou, Hai Huang, Song Ma, Yuhua Cheng ( <i>Peking University, China; Hangzhou Mixchips Microelectronics Co., Ltd., China</i> )
<b>D8-4</b>	<b>0437: A 300kHz Bandwidth 1.66nV/Hz<sup>1/2</sup> Chopper Instrumentation Amplifier with Ripple Reduction Loop Using Multi-Rate Duty-Cycled Resistors</b>
17:15 ~17:30	Mingshi Han, Lei Zhang, and Yan Wang ( <i>Tsinghua University, China</i> )

<p><b>Friday, October 28, 19: 00 – 21: 00</b></p>
<p>Friday, October 28, 19: 00 – 21: 00</p> <p><b>Session A9: DTCO &amp; Noise</b></p>

	Title
<b>A9-1</b>	<b>0499: A CFET Unit Cell based MUX21 design strategy (invited)</b>
19:00 ~19:30	Xiao-Na Zhu, Chen-Cheng Wei, Rong-Zheng Ding, Shao-Feng Yu ( <i>Fudan University, China; Jiashan Fudan Institute, China</i> )
<b>A9-2</b>	<b>0071: 3D Electromigration Modelling for VLSI (invited)</b>
19:30 ~20:00	Cher Ming Tan, Abdul Shabir, Debraj Banerjee ( <i>Chang Gung University, Taiwan, China; Ming Chi University of Technology, Taiwan, China</i> )
<b>A9-3</b>	<b>0214: Investigation of Parasitic Capacitance Effects in V-GAA Transistor via 3D PEX Methodology</b>
20:00 ~20:15	Hong-Gang Liang, Yong Yu, De-Yuan Xiao, Jing-Fei Zhu, Jing Liang, Lan-Song Ba, Ji-Bin Leng, Zheng-Yong Zhu, Yong-Jie Li, Xing-Song Su, Kobe Weng, Li Bai, Yan-Zhe Tang, Hong-Bo Sun, Gui-Lei Wang, Hong-Wen Li, Wei-Feng Xu, Bryan Kang, Abraham Yoo, Kan-Yu Cao, Chao Zhao ( <i>Beijing Superstring Academy of Memory Technology, China; ChangXin Memory Technologies, Inc., China</i> )
<b>A9-4</b>	<b>0370: Investigate on DC Characteristics and NBTI of SiGe Core-Shell Nanosheet FET</b>
20:15 ~20:30	Shan-Lin Cheng, Song-Song Lv, Cong Li, Xiao-Yu Dong, Hai-Long You ( <i>Xidian University, China</i> )
<b>A9-5</b>	<b>0099: A CMOS Compatible In-sensor Computing Neural Network with Gate/Body-Tied PMOSFET Array</b>
20:30 ~20:45	An-Nan Xiong, Yi-Fei Fan, Shun-Qi Dai, Chen Xu, Jie George Yuan, Mansun Chan ( <i>The Hong Kong University of Science and Technology, Hong Kong, China; InnoHK Centers, Hong Kong, China; SmartSens Technology, USA</i> )
<b>A9-6</b>	<b>0381: Analysis and Modeling of a Novel Drift Field Implementation Method for Large-Area Photodiodes</b>
20:45 ~21:00	Quanze Li, Junkai Zhang, Zunkai Huang, Li Tian, Yongxin Zhu, Hui Wang, Songlin Feng, Changzhi Shi ( <i>Shanghai Advanced Research Institute, Chinese Academy of Sciences, China; University of Chinese Academy of Sciences, China; Shanghai United Imaging Microelectronics Technology Co, China</i> )

Friday, October 28, 19: 00 – 21: 00  
**Session B9: Chip Test and Reliability III**

	Title
<b>B9-1</b>	<b>0098: Power-Aware Testing in the Era of IoT (invited)</b>
19:00 ~19:30	Xiaoqing Wen ( <i>Kyushu Institute of Technology, Japan</i> )

<b>B9-2</b>	<b>0372: CDM Measurement for Bare Dies and Wafers (invited)</b>
19:30 ~20:00	Teruo Suzuki ( <i>Socionext Inc., Japan</i> )
<b>B9-3</b>	<b>0063: An Analog Wafer Map Clustering Model with Deep-Learning Based Data Augmentation and Feature Extraction</b>
20:00 ~20:15	Zijie Liu, Zheng Shi ( <i>Zhejiang University, China</i> )
<b>B9-4</b>	<b>0134: Multi-objective Optimization Hardening Design for Multiplier Circuit</b>
20:15 ~20:30	Chao Chen, Yan Li, Xu Cheng, Jun Han, Xiaoyang Zeng ( <i>Fudan University, China</i> )
<b>B9-5</b>	<b>0461: Radiation-Hardened High Current Low-Dropout Voltage Regulator for Space Applications</b>
20:30 ~20:45	Ruxue Yao, Hongliang Lu, Yuming Zhang, Yutao Zhang, Xu Chen, Zhichao Wei, Qingzhou Ji ( <i>Xidian University, China; China Academy of Space Technology, China; Xi'an Microelectronic Technology Institute, China</i> )

<p>Friday, October 28, 19: 00 – 21: 00</p> <p><b>Session C9: MEMS &amp; Sensors</b></p>
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	Title
<b>C9-1</b>	<b>0093: Parity-Time Symmetric MEMS (invited)</b>
19:00 ~19:25	Qing-An Huang ( <i>Southeast University, China</i> )
<b>C9-2</b>	<b>0183: Atomically Thin Nanoporous Graphene Based Artificial Ion-Selective MEMS Fluidic Devices (invited)</b>
19:25 ~19:50	Luda Wang ( <i>Peking University, China</i> )
<b>C9-3</b>	<b>0255: Ultra-Flexible Organic Photonic System for Detecting the Bio Signals (invited)</b>
19:50 ~20:15	Tomoyuki Yokota, Takao Someya ( <i>University of Tokyo, Japan</i> )
<b>C9-4</b>	<b>0264: Surrogate Model-based Multi-Object Worst Case Analysis for Shunt Capacitive RF MEMS Switch</b>
20:15 ~20:30	Chuangyuan Zeng, Xiao Shi, Xiaoping Liao, Hao Yan ( <i>Southeast University, China</i> )
<b>C9-5</b>	<b>0492: Integration of Droplet Transport and Mixing on EWOD</b>
20:30 ~20:45	Shang Gao, Xichuan Rui, Jia Zhou ( <i>Fudan University, China</i> )

<b>C9-6</b>	<b>0521: Selective Manipulation with Spiraling Transducer Acoustical Tweezers</b>
20:45 ~21:00	Siying Lin, Jia Zhou, Antoine Riaud, Michael Baudoin, Zhixiong Gong, Nicolars Berthet ( <i>Fudan University, China; Universite de Lille, France; Centrale Lille, France; Universite Polytechnique des Hauts-de-France, France; Institut Pasteur of Shanghai, Chinese Academy of Sciences, China</i> )