

# Tutorial Session

**Tuesday, October 26, 9: 00 – 18: 15**

Tuesday, October 26, 9: 00 – 12: 15

**Tutorial Session T-1 & T-2**

**T-1 Ultra-Low-Power DTC-Based Fractional-N Digital PLL Techniques** *(9: 00-10: 30)*

Prof. Kenichi Okada, Tokyo Institute of Technology, Japan

**T-2 Highly-Programmable AI-Managed Sigma-Delta Converters – Application to Cognitive Radio** *(10: 45-12: 15)*

Prof. José M. de la Rosa, Prof. Luis Camuñas-Mesa, Institute of Microelectronics of Seville, IMSE-CNM (CSIC/University of Seville), Spain

Tuesday, October 26, 13: 30 – 18: 15

**Tutorial Session T-3 & T-4**

**T-3 IoT Waveforms for LEO Satellite Communications** *(13:30-15: 00)*

Prof. Guillaume Ferré, University of Bordeaux, France

**T-4 Fully-Integrated Voltage Regulators: From Single Point to 2-D Distribution** *(15: 15-16: 45)*

Prof. Yan Lu, University of Macau, Macau, China

**T-5 GaN Devices and GaN-Si CMOS Integration** *(17: 00-18: 30)*

Prof. Zhihong Liu, Xidian University, China

# Technical Session

## Wednesday

### Wednesday, October 27, 9: 00 –10: 30

Wednesday, October 27, 9: 00 –10: 30

#### Opening & Keynote Session K1

**K1-1    Creating New Values in Nano-Electronics Other Than Scaling (9: 00-9: 45)**

Prof. Takayusu Sakurai, University of Tokyo, Japan

**K1-2    Closing the Virtuous Cycle of AI for IC and IC for AI (9: 45-10: 30)**

Prof. David Z. Pan, Silicon Labs Endowed Chair Professor, University of Texas at Austin, USA

### Wednesday, October 27, 10: 45– 12: 15

Wednesday, October 27, 10: 45–12: 15

#### Keynote Session K2

**K2-1    Innovations at the One Planet Research Center - Technology at the Service of People and Planet (10: 45-11: 30)**

Prof. Chris Van Hoof, the One Planet Research Center in Gelderland, Netherlands

**K2-2    TFET Integrated Circuits: From Perspective Towards Reality (11: 30-12: 15)**

Dr. Amara, President of CAS Society, Terre des hommes Foundation, France

## Wednesday, October 27, 13: 30 – 15: 30

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### Session A1 : Digital Unit & Module

	Title
<b>1</b>	<b>0053: Divide and Conquer: Floating-Point Exponential Calculation Based on Taylor-Series Expansion</b>
13:30 ~13:45	Jianglin Wei, Anna Kuwana, Haruo Kobayashi and Kazuyoshi Kubo ( <i>Gunma University, Japan; Oyama National College of Technology, Japan</i> )
<b>2</b>	<b>0074: Design and Implementation of Full Adder in One-Transistor-One-Resistor RRAM Array</b>
13:45 ~14:00	Xiangyu Zhang, Feng Wei, Xiaoyan Liu and Xiaole Cui ( <i>Peking University Shenzhen Graduate School; Peking University</i> )
<b>3</b>	<b>0133: Energy-Efficient Approximate Floating-Point Multiplier Based on Ra-dix-8 Booth Encoding</b>
14:00 ~14:15	Rongyu Ding, Yi Guo, Heming Sun and Shinji Kimura ( <i>Waseda University, Japan; Waseda Research Institute for Science and Engineering, Japan</i> )
<b>4</b>	<b>0214: A fully asynchronous QDI mesh router based on 28nm standard cells</b>
14:15 ~14:30	Qingyun Zou, Xiaoxin Cui, Yi Zhong, Zhenhui Dai and Yisong Kuang ( <i>Peking University</i> )
<b>5</b>	<b>0300: Mutual Error Compensation based Area and Power Efficient Approximate Multiplier</b>
14:30 ~14:45	Renyuan Zhang, Xuetao Wang, Ziyu Wang, Anfeng Xue, Haichuan Yang, Yu Gong and Bo Liu ( <i>Southeast University</i> )
<b>6</b>	<b>0309: Low-Power Keyword Recognition Feature Extraction Circuit based on SRMFCC and Shared Multiplier for High Noise Background</b>
14:45 ~15:00	Zilong Zhang, Haichuan Yang, Xuan Zhang, Xiaoling Ding, Xuetao Wang, Yu Gong and Bo Liu ( <i>Southeast University</i> )
<b>7</b>	<b>0345: Effects of using Multi Voltage Threshold Transistors in Asynchronous Circuits</b>
15:00 ~15:15	Shahzad Haider, Song Chen ( <i>University of Science and Technology of China</i> )

Wednesday, October 27, 13: 30 – 15: 30

### Session B1 : Efficient AI Hardware

	Title
<b>1</b>	<b>0357: Parallel Stochastic Computing based Neural Network Accelerators (invited paper)</b>
13:30 ~14:00	Runsheng Wang ( <i>Peking University</i> )
<b>2</b>	<b>0370: System-Level Benchmarking of Chiplet-based IMC Architectures for Deep Neural Network Acceleration (invited paper)</b>
14:00 ~14:30	Gokul Krishnan , Sumit K. Mandal , Chaitali Chakrabarti , Jae-sun Seo , Umit Y. Ogras and Yu Cao ( <i>Arizona State University,USA; University of Wisconsin-Madison, USA</i> )
<b>3</b>	<b>0083: CCASM: A Computation- and Communication-Aware Scheduling and Mapping Algorithm for NoC-Based DNN Accelerators</b>
14:30 ~14:42	Xi Fan , Xuyan Wang , Yaoyao Ye, Xianglun Leng , Ningyi Xu and Guanghui He ( <i>Shanghai Jiao Tong University; PowerTensors.AI</i> )
<b>4</b>	<b>0157: Design of Multi-core Spiking Neural Network Chip Based on Butterfly Network</b>
14:42 ~14:54	Hao Jiang , Jinsong Wei , Jikai Lu , Tuo Shi and Qi Liu ( <i>University of Science and Technology of China; Zhejiang Lab; Institute of Microelectronics of the Chinese Academy of Sciences; Fudan University</i> )
<b>5</b>	<b>0255: Combining Max Pooling and ReLU Activation Function in Stochastic Computing</b>
14:54 ~15:06	Lixing Li, Deyang Chen, Xiaoyong Xue and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>6</b>	<b>0277: A CNN Hardware Accelerator Designed for YOLO Algorithm Based on RISC-V SoC</b>
15:06 ~15:18	Xinyu Qin, Xudong Liu and Jun Han ( <i>Fudan University</i> )
<b>7</b>	<b>0322: An Always-on Ultra-Low Power Speaker Verification Accelerator based on Binary Weighted Neural Network with System Co-optimization</b>
15:18 ~15:30	Haige Wu , Xuan Zhang , Xiaoling Ding , Ziyu Wang , Anfeng Xue , Yu Gong and Bo Liu ( <i>Southeast University</i> )

Wednesday, October 27, 13: 30 – 15: 30  
**Session C1 : Analog & Mixed-Signal**

	Title
<b>1</b>	<b>0186: Classical Mathematics and Analog/Mixed-Signal IC Design (invited paper)</b>

13:30 ~14:00	Haruo Kobayashi, Xueyan Bai, Yujie Zhao, Shuhei Yamamoto, Dan Yao, Manato Hirai, Jianglin Wei, Shogo Katayama and Anna Kuwana ( <i>Gunma University, Japan</i> )
<b>2</b>	<b>0057: A Three-Stage Comparator with High Speed and Low Power</b>
14:00 ~14:15	Jingqi Wang, Fan Ye and Junyan Ren ( <i>Fudan University</i> )
<b>3</b>	<b>0289: A High Linearity and Low Noise Anti-Aliasing Filter for ADCs</b>
14:15 ~14:30	Hao Chi, Jun Xu, Fan Ye and Junyan Ren ( <i>Fudan University</i> )
<b>4</b>	<b>0305: Design of A Reference Buffer with Ultralow Output Resistance for High-speed ADCs</b>
14:30 ~14:45	Bingbing Ma, Longbo Fan, Wei Li, Hongtao Xu ( <i>Fudan University</i> )
<b>5</b>	<b>0333: An 800MS/s, 6.7b ENOB Bootstrap Switching S/H IC for Wideband Direct RF Sub-Sampling Receiver in 45 nm CMOS</b>
14:45 ~15:00	Shuai Liu, Hao Xu and Na Yan ( <i>Fudan University</i> )

<p style="text-align: center;">Wednesday, October 27, 13: 30 – 15: 30  <b>Session D1 : Device Simulation</b></p>
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	<b>Title</b>
<b>1</b>	<b>0055: Status and Trends in Nanoelectronic Devices For the Ultimate Integration of ICs (invited paper)</b>
13:30 ~14:00	Francis Balestra ( <i>Univ. Grenoble Alpes; CNRS; Grenoble INP; IMEP-LAHC, France</i> )
<b>2</b>	<b>0192: Revolutionary SOI Devices with Ultrathin Body(invited paper)</b>
14:00 ~14:30	Sorin Cristoloveanu ( <i>CNRS &amp; UGA, France</i> )
<b>3</b>	<b>0201: TCAD Simulation of Novel Semiconductor Devices(invited paper)</b>
14:30 ~15:00	Tapas Dutta, Cristina Medina-Bailon, Ali Rezaei, Daniel Nagy, Fikru Adamu-Lema, Nikolas Xeni, Yassine Abourrig, Naveen Kumar, Vihar P. Georgiev and Asen Asenov ( <i>University of Glasgow, United Kingdom</i> )
<b>4</b>	<b>0279: A Novel Trench MOSFET with p-Pillar and RSO Accumulation Layer for Improved Performance(invited paper)</b>
15:00 ~15:30	Moufu Kong, Ke Huang, Bin Wang, Cong Liu, Bo Yi and Hongqiang Yang ( <i>University of Electronic Science and Technology of China</i> )

## Wednesday, October 27, 15: 45-17: 45

Wednesday, October 27, 15: 45-17: 45  
**Session A2 : Processor & Signal Processing**

	Title
<b>1</b>	<b>0117: Energy-aware Retinaface: A Power Efficient Edge-Computing SOC for Face Detector in 40nm</b>
15:45 ~16:00	Miao Sun, Yingjie Cao and Patrick Yin Chiang ( <i>Fudan University; TiMESiNTELLi Inc.</i> )
<b>2</b>	<b>0148: A Dual-rail Based Dynamic Voltage and Frequency Scaling for Wide-Voltage-Range Processor</b>
16:00 ~16:15	Yongjie Lu, Weifeng He ( <i>Shanghai Jiao Tong University</i> )
<b>3</b>	<b>0203: A Hierarchical Fault Injection System for RISC-V Processors Targeting Single Event Upsets in Flip-Flops</b>
16:15 ~16:30	Jiyuan Bai, Xiang Wang, Zikang Zhang, Chang Cai and Gengsheng Chen ( <i>Fudan University</i> )
<b>4</b>	<b>0248: Hardware Design of Gaussian Kernel Function for Non-Linear SVM Classification</b>
16:30 ~16:45	Yuanfa Wang, Yu Pang, Huan Huang, Qianneng Zhou and Jiasai Luo ( <i>Chongqing University of Posts and Telecommunications</i> )
<b>5</b>	<b>0256: An Enhanced DSP Block Architecture for FPGA Supporting Multi-operands Addition Operation</b>
16:45 ~17:00	Sanlin Chen, Gang Cai and Zhihong Huang ( <i>Aerospace Information Research Institute, Chinese Academy of Sciences; University of Chinese Academy of Sciences</i> )
<b>6</b>	<b>0259: Design and Implement of Median Filter toward Remote Sensing Images Based on FPGA</b>
17:00 ~17:15	Yalong Pang, Shuai Jiang, Bowen Cheng, Weiwei Liu and Yuhang Wu ( <i>Beijing Institute of Spacecraft System Engineering</i> )
<b>7</b>	<b>0329: Design and Implementation of A High-speed Configurable 2D MI CFAR Detector</b>
17:15 ~17:30	Xiangying Tao, Duoli Zhang, Min Wang, Yan Ma and Yukun Song ( <i>Hefei University of Technology</i> )

<p style="text-align: center;">Wednesday, October 27, 15: 45-17: 45</p> <p style="text-align: center;"><b>Session B2 : Computing-in/near-Memory I</b></p>
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	Title
<b>1</b>	<b>0099: Challenge and Trend of SRAM Based Computation-in-Memory Circuits for AI Edge Devices (invited paper)</b>
15:45 ~16:15	Xin Si, Yongliang Zhou , Jun Yang and Meng-Fan Chang ( <i>National Tsing Hua University, Taiwan,China; Southeast University</i> )
<b>2</b>	<b>0366: Training, Programming, and Correction Techniques of Memristor Crossbar Neural Networks with Non-Ideal Effects such as Defects, Variation, and Parasitic Resistance (invited paper)</b>
16:15 ~16:45	Tien Van Nguyen, Jiyong An, Seokjin Oh, and Kyeong-Sik Min ( <i>Kookmin University, Korea</i> )
<b>3</b>	<b>0375: Current Research Status and Future Prospect of the In-Memory Computing (invited paper)</b>
16:45 ~17:15	Shifan Gao, Fan Yang , Liang Zhao , and Yi Zhao ( <i>China Nanhu Academy of Electronics and Information Technology; Zhejiang University</i> )
<b>4</b>	<b>0358: Intra-array Non-Idealities Modeling and Algorithm Optimization for RRAM-based Computing-in-Memory Applications</b>
17:15 ~17:30	Chenyang Zhao, Jinbei Fang, Jingwen Jiang, Zhiwang Guo, Xiaoyong Xue and Xiaoyang Zeng ( <i>Fudan University</i> )

<p style="text-align: center;">Wednesday, October 27, 15: 45-17: 45</p> <p style="text-align: center;"><b>Session C2 : Data Converter</b></p>
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	Title
<b>1</b>	<b>0369 : A Timing Mismatch Background Calibration Technique with High-Precision Skew Estimation(invited paper)</b>
15:45 ~16:15	Zhifei Lu, Xizhu Peng, Zhaofeng Ren, He tang and Bin Guo ( <i>University of Electronic Science and Technology of China; Konka Group Co.,Ltd</i> )
<b>2</b>	<b>0173: A 10bit 1.6GS/s Current-steering DAC in 40nm CMOS</b>
16:15 ~16:30	Yukun Zhang, Xinpeng Xing ( <i>Tsinghua University</i> )
<b>3</b>	<b>0207: Low Power Readout Integrated Circuit with PFM-based ADCs Employing Residue Quantization for Uncooled Infrared Imagers</b>
16:30 ~16:45	Ye Zhou, Shanzhe Yu, Wengao Lu, Dunshan Yu, Yacong Zhang and Zhongjian Chen ( <i>Peking University; Peking University Information Technology Institute (Tianjin Binhai)</i> )

<b>4</b>	<b>0236: Testing and trimming methods of high-resolution and large swing for ADC based on ATE</b>
16:45 ~17:00	Liran Li, Pengcheng Xiao, YuBo Wang, Yi Hu, Yuan Guan, Kun Wang, Dameng Li and Shaojie Luo ( <i>Fudan University; Beijing Zhixin Microelectronics Co., Ltd; National Grid Zhejiang Electric Power Corporation</i> )
<b>5</b>	<b>0310: Advances in Continuous-time MASH <math>\Delta\Sigma</math> Modulators</b>
17:00 ~17:15	Liang Qi, Xinyu Qin, Sai-Weng Sin, Chixiao Chen, Fan Ye, Guoyong Shi and Guoxing Wang ( <i>Shanghai Jiao Tong University; University of Macau, Macao, China; Fudan University</i> )
<b>6</b>	<b>0323: A 5.75nA<sub>RMS</sub> Resolution Sigma Delta based Sinusoidal Current Generator for in situ Calibration of Electrochemical Bio sensors</b>
17:15 ~17:30	Yizhou Jiang, Han Jin, Chenjie Dong and Yajie Qin ( <i>Fudan University</i> )
<b>7</b>	<b>0371: A 5 bit High Linearity, Binary Recombination Redundancy Sub SAR ADC in 300 MS/s , 14 bit Pipelined SAR ADC</b>
17:30 ~17:45	Guoyao Wu , Ziwei Li, Yutong Zhao, Fan Ye and Junyan Ren ( <i>Fudan University</i> )

<p style="text-align: center;">Wednesday, October 27, 15: 45-17: 45</p> <p style="text-align: center;"><b>Session D2 : Novel Device I</b></p>
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	<b>Title</b>
<b>1</b>	<b>0150: Design Techniques of Gate Driver for SiC MOSFET's Applications (invited paper)</b>
15:45 ~16:15	Zekun Zhou, Jianwen Cao and Bo Zhang ( <i>University of Electronic Science and Technology of China; State key Laboratory of Electronic Thin Films and Integrated Devices</i> )
<b>2</b>	<b>0169: TCAD simulation of trench-gate IGBTs for prediction of carrier lifetime requirements for future scaled devices (invited paper)</b>
16:15 ~16:45	Masahiro Watanabe ( <i>Tokyo Institute of Technology, Japan</i> )
<b>3</b>	<b>0327: Recent Progress of Double/Dual-Gate Silicon IGBT Technologies (invited paper)</b>
16:45 ~17:15	Toshiro Hiramoto, Takuya Saraya ( <i>The University of Tokyo, Japan</i> )
<b>4</b>	<b>0056: Semi-superjunction IGBT with Floating P-pillar and P-ring for Low Losses and High Breakdown Voltage</b>
17:15	Min Hu, Weidan Li, Mingmin Huang, Chang Chen and Min Gong ( <i>Sichuan</i> )

~17:30	<i>University)</i>
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Wednesday, October 27, 17: 45 – 18: 45
Wednesday, October 27, 17: 45 – 18: 45 Poster Session I

	Title
<b>P1-1</b>	<b>0081: A Heterogeneous HEVC Video Encoder System Based on Two-Level CPU-FPGA Computing Architecture</b>
	Yudi Qiu, Jie Jiao, Yuxin Tang, Yanwei Liu, Jianyu Ren, Xiaoyang Zeng and Yibo Fan ( <i>Fudan University</i> )
<b>P1-2</b>	<b>0132: Adaptive Convergence Method of Notch Frequency in Noise Spread Spectrum for Pulse Coding Switching DC-DC Converter</b>
	Gui-Yi Dong, Shogo Katayama, Yifei Sun, Yasunori Kobori, Anna Kuwana and Haruo Kobayashi ( <i>Gunma University, Japan</i> )
<b>P1-3</b>	<b>0134: A Multiplier-less Transform Architecture with the Diagonal Data Mapping Transpose Memory for The AVS3 Standard</b>
	Zhijian Hao, Fa Xu, Guoqing Xiang, Peng Zhang, Xiaoyang Zeng and Yibo Fan ( <i>Fudan University; Peking University</i> )
<b>P1-4</b>	<b>0171: An Efficient Module Arithmetic Logic Unit in Dual Field for Internet of Things Applications</b>
	Han Zeng, Wei Li, Tao Chen and Longmei Nan ( <i>PLA Information Engineering University</i> )
<b>P1-5</b>	<b>0178: Ultra-low-voltage Low-power Self-adaptive Static Pulsed Latch</b>
	Peiyi Zhao, Zisong Wang, Congyi Zhu, Tom Springer, Jacob Anabi, Yinshui Xia and Lingli Wang ( <i>Chapman University, USA; University of California, USA; Nanjing University; Ningbo University; Fudan University</i> )
<b>P1-6</b>	<b>0219: Small Object Detection in Aerial Images</b>
	Ruoyu Zhang, Mingge Jing, Yibo Fan and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>P1-7</b>	<b>0221: A Hardware Efficient Approximate Shift Multiplier with High Accuracy</b>
	Qiang Li, Xuemei Fan, Jian Chen, Hongwei Li and Hao Li ( <i>Southeast University</i> )
<b>P1-8</b>	<b>0226: Physical Coding Sublayer for 32Gbps SerDes Based on JESD204C</b>
	Xiaozhe Wang, Lingzhi Su, Xiyuan Du, Yongzhen Chen and Jiangfeng Wu ( <i>Tongji University</i> )
<b>P1-9</b>	<b>0229: An Efficient Demultiplexer Design in Quantum-dot Cellular Automata</b>

	Jianguo Ni and Zhufei Chu ( <i>Ningbo University</i> )
<b>P1-10</b>	<b>0281: Mutli-level Regression Anchor-free Object Detection</b>
	Yi Zhou, Minge Jing, Fa Xu, Yibo Fan and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>P1-11</b>	<b>0306: Design of Majority Logic Based 4-bit Approximate Subtractors and its Application in Divider</b>
	Chuanhe Shang and Zhufei Chu ( <i>Ningbo University</i> )
<b>P1-12</b>	<b>0330: E/D Mode Logic Cells and Series-to-Parallel Interface with Less Transistors and Better Structure Consistence in GaAs Process</b>
	Shijie Chen, Tao Yang, Xiang Li, Jian Yang, Liang Qi and Yong Wang ( <i>University of Electronic Science and Technology of China; Nanhu Laboratory, Jiaying, China; Northern Institute of Electronic Equipment of China</i> )
<b>P1-13</b>	<b>0342: A 65nm Reliable Near-Subthreshold Standard Cells Design Using Schmitt Trigger</b>
	Jinliang Han, Yongzhong Wen, Yuejun Zhang, Pengjun Wang and Huihong Zhang ( <i>Ningbo University; Wenzhou University</i> )
<b>P1-14</b>	<b>0084: A High Precision Positive Temperature Circuit Using DEM Technique</b>
	Hang Liu, Yu Jin, XinHang Li, Duli Yu, Kedu Han and Heming Sun ( <i>Beijing University of Chemical Technology; Beijing advanced Innovation Center for Soft Matter Science and Engineering; Chinese Academy of Sciences; Waseda University, Japan</i> )
<b>P1-15</b>	<b>0110: A Low Power Real-Time DC Removal Circuit for PPG Readout</b>
	Tingting Wei, Qiong Wang, Zhu Yuan and Zhiliang Hong ( <i>Fudan University</i> )
<b>P1-16</b>	<b>0111: Design of a Bandgap Reference Circuit with Ultra-low Temperature Coefficient</b>
	Xinsheng Wang and Chunyang Bai ( <i>Harbin Institute of Technology</i> )
<b>P1-17</b>	<b>0161: A High Efficiency Re-configurable Step-down Switched Capacitor DC-DC Converter for Medical Implants Application</b>
	Qianhui Fan, Wensi Wang, Xu Liu, Qiang Gao and Shuqi Geng ( <i>Beijing University of Technology</i> )
<b>P1-18</b>	<b>0208: A Review of PPG/NIRS Acquisition ASIC and System</b>
	Zhen Lu, Ting Yi and Zhiliang Hong ( <i>Fudan University</i> )
<b>P1-19</b>	<b>0211: A Four Modes and Smooth Transition Non-inverting Buck-Boost Converter</b>
	Chengzhi Xu and Lianxi Liu ( <i>Xidian University</i> )

<b>P1-20</b>	<b>0212: High Precision AFE Design Methodology for Wearable EEG Acquisition</b>
	Chao Yuan, Ting Yi and Zhiliang Hong ( <i>Fudan University</i> )
<b>P1-21</b>	<b>0233: Analysis of SAR ADC Quantization Error and Nonlinearity in PMCW Automotive Radar</b>
	Tao Zhong, Yuekang Guo and Jing Jin ( <i>Shanghai Jiao Tong University</i> )
<b>P1-22</b>	<b>0241: A 4x Folding Voltage-to-Time Converter with Adjustable Conversion Gain and Offset for Time-based ADC</b>
	Yucheng Bao, Zhijie Chen, Boyong Jin and Peiyuan Wan ( <i>Beijing University of Technology</i> )
<b>P1-23</b>	<b>0282: A 6-bit, 1GS/s Digital to Analog Converter for Automotive Ethernet PHY</b>
	Xinyao Zhang, Zunkai Huang, Yingqi Feng, Junkai Zhang, Li Tian, Yongxin Zhu, Hui Wang and Songlin Feng ( <i>Chinese Academy of Sciences; University of Chinese Academy of Sciences</i> )
<b>P1-24</b>	<b>0291: Modeling and Analysis of Injection Factor Based on Injection-locked LC Oscillator</b>
	Xin Kewei, Li Bing, Ding Haiyang, Bao Lei and Li Haipeng ( <i>National University of Defense Technology</i> )
<b>P1-25</b>	<b>0299: A High-Efficiency Charge Pump for AMOLED Display Driver IC</b>
	Junkai Zhang, Zunkai Huang, Quanze Li, Xinyao Zhang, Li Tian, Yongxin Zhu, Hui Wang and Songlin Feng ( <i>Chinese Academy of Sciences; University of Chinese Academy of Sciences</i> )
<b>P1-26</b>	<b>0336: A String-in-string-out 256 Bits eFuse Using Full-custom Design in 55nm Process</b>
	Yang Li, Yuejun Zhang, Steve Yang, Shimin Du and Ye Lin ( <i>Ningbo University; Ningbo Semiconductor International Corporation</i> )
<b>P1-27</b>	<b>0337: A Segmented and Linear Frequency Controller for Flyback Converters</b>
	Yue Shi, Zuao Wang, Zekun Zhou, Zhuo Wang and Bo Zhang ( <i>Chengdu University of Information Technology; University of Electronic Science and Technology of China</i> )
<b>P1-28</b>	<b>0069: A Single Photon Detector Readout Circuit Based on 0.18 <math>\mu\text{m}</math> CMOS Technology</b>
	Yunhao Fu, Zhongyuan Zhao, Hongbo Zhang, Jiaqi Jiang and Yuchun Chang ( <i>Jilin University</i> )
<b>P1-29</b>	<b>0126: A Low Power 8-bit 2b/Cycle SAR ADC with Multiple Calibration Techniques</b>
	Yushi Chen, Yuan Yuan, Hualian Tang and Yiqi Zhuang ( <i>Xidian University; Science</i> )

	<i>and Technology on Low-Light-Level Night Vision Laboratory)</i>
<b>P1-30</b>	<b>0139: High Frame Rate High Linearity Low Power DROIC for 30μm-Pitch Cryogenic Infrared FPAs</b>
	Yuze Niu, Yuting Gu, Fengqing Liu, Fei Zhou, Shanzhe Yu, Wengao Lu and Yacong Zhang ( <i>Peking University</i> )
<b>P1-31</b>	<b>0140: An Adaptive Equalization Algorithm for High Speed SerDes</b>
	Miaomiao Wu, Zhengbin Pang <sup>2</sup> , Fangxu Lv, Jianjun Shi, Heming Wang, Tao Liu, Dechao Lu and Zheng Wang ( <i>Air Force Engineering University; National University of Defense Technology</i> )
<b>P1-32</b>	<b>0141: A 16-bit Pixel-level ADC Based on Ring Oscillator for 30μm Pitch 320 ×256 LWIR FPAs</b>
	Yuze Niu, Bingxin Liu, Jiaqi Kong, Fei Zhou, Shanzhe Yu, Wengao Lu, Yacong Zhang and Zhongjian Chen ( <i>Peking University</i> )
<b>P1-33</b>	<b>0142: A CMOS Time-of-Flight Image Sensor with High Dynamic Range Digital Pixel</b>
	Shanzhe Yu, Yacong Zhang, Fei Zhou, Wengao Lu, Shuyu Lei and Zhongjian Chen ( <i>Peking University; ABAX Sensing Electronic Technology</i> )
<b>P1-34</b>	<b>0188: A low noise fully-integrated readout electronic with pile-up rejector for particle detector</b>
	Kangwei Ma, Fei Zhou, Yacong Zhang, Wengao Lu and Zhongjian Chen ( <i>Peking University</i> )
<b>P1-35</b>	<b>0190: A High-Precision Delta Sigma ADC with Chopper in BMS</b>
	Yongsheng Wang, Wentao Lu, Jin Wang, Kai Cheng, Fangfa Fu and Fengchang Lai ( <i>Harbin Institute of Technology</i> )
<b>P1-36</b>	<b>0227: An Input Buffer for 4 GS/s 14-b Time-Interleaved ADC</b>
	Li Zhang, Yunchuan Wang, Fengyi Mei, Yongzhen Chen and Jiangfeng Wu ( <i>Tongji University</i> )
<b>P1-37</b>	<b>0228: A 68.36 dB 12bit 100MS/s SAR ADC with a Low-noise Comparator in 14-nm CMOS FinFet</b>
	Yan Zheng, Jingchao Lan, Fan Ye and Junyan Ren ( <i>Fudan University</i> )
<b>P1-38</b>	<b>0250: Algorithm/Hardware Co-Design Configurable SAR ADC with Low Power for Computing-in-Memory in 28nm CMOS</b>
	Zhiwang Guo, Deyang Chen and Xiaoyong Xue ( <i>Fudan University</i> )
<b>P1-39</b>	<b>0257: Digital Calibration of Capacitor Mismatch and Gain Error in Pipelined</b>

	<b>SAR ADCs</b>
	Yunchuan Wang, Li Zhang, Fengyi Mei, Yongzhen Chen and Jiangfeng Wu ( <i>Tongji University</i> )
<b>P1-40</b>	<b>0272: A 12-bit 800MS/s Pipelined A/D Converter</b>
	Haoran Wang and Fule Li ( <i>Tsinghua University</i> )
<b>P1-41</b>	<b>0318: A Second-Order Passive Noise-Shaping SAR ADC Using the LMS-Based Mismatch Calibration</b>
	Jing Li, Hang Xiao, Qihui Zhang, Zhong Zhang, Wenjie Huang, Ning Ning and Qi Yu ( <i>University of Electronic Science and Technology of China</i> )
<b>P1-42</b>	<b>0372 : A Wide-Range 12b 150MS/s P-SAR ADC with Open-Loop Residue Amplifier for Ultrasound AFE</b>
	Ziwei Li, Yutong Zhao, Guoyao Wu, Fan Ye and Junyan Ren ( <i>Fudan University</i> )
<b>P1-43</b>	<b>0087: A Fourth Order Chebyshev Complex Band-pass Filter Design with Filter Solution</b>
	Ruijie Yan, Lihan Cui and Zhiliang Hong ( <i>Fudan University</i> )
<b>P1-44</b>	<b>0146: Design of Wideband Phase Modulator for 2.4~5.25 GHz Digital Polar Transmitter</b>
	Haoliang Zhu, Zhiqun Li, Zhennan Li and Yan Yao ( <i>Southeast University</i> )
<b>P1-45</b>	<b>0199: A Digital to Time Converter Assisted TA-TDC with High Resolution for Low Power ADPLL in 22nm CMOS</b>
	Liu Wang, Guojing Ye and Yumei Huang ( <i>Fudan University; RealMega Microelectronics technology (Shanghai) Co. Ltd</i> )
<b>P1-46</b>	<b>0242: New Linearization Implementations Improving IIP3 of Wideband LNTA by More than 14dB</b>
	Cong Tao, Liangbo Lei, Jiangli Huang, Zhipeng Chen, Yumei Huang and Zhiliang Hong ( <i>Fudan University</i> )
<b>P1-47</b>	<b>0288: A 6-bit Active Phase Shifter with Quadrature Outputs</b>
	Yujie Wu, Gang Zhang, Yongzhen Chen and Jiangfeng Wu ( <i>Tongji University</i> )

## Thursday

**Thursday, October 28, 8: 30 – 10: 00**

Thursday, October 28, 8: 30 – 10: 00

### **Keynote Session K3**

**K3-1 Quantum Computing: a Journey of... 300°K (8: 30-9: 15)**

Dr. Victor Grimblatt, Synopsys Chile R&D Center, Chile

**K3-2 Quantum Computing in Nanoscale CMOS using Position-Based Charge Qubits  
(9: 15-10: 00)**

Dr. Bogdan Staszewski & Elena Blokhina, University College Dublin, Ireland

## Thursday, October 28, 10: 15 – 12: 15

Thursday, October 28, 10: 15 – 12: 15

### Session A3 : Image Processing

	Title
<b>1</b>	<b>0073: A Streaming Feature Extraction Accelerator using DPCM Image Compression Technique for SLAM Applications</b>
10:15 ~10:30	Zhiyuan Wang, Zhuo Zhang and Haowen Chen ( <i>Zhejiang University</i> )
<b>2</b>	<b>0120: Knowledge Distillation for U-Net Based Image Denoising</b>
10:30 ~10:45	Wenshu Chen, Liyuan Peng, Yujie Huang, Minge Jing and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>3</b>	<b>0194: Arbitrary Style Transfer via Learning to Paint in the Feature Domain</b>
10:45 ~11:00	Yujie Huang, Yi xuan Liu , Minge Jing, Mingyu Wang, Xiaoyong Xue, Xiao yang Zeng and Yibo Fan ( <i>Fudan University</i> )
<b>4</b>	<b>0224: An Energy-Efficient Image Denoising Accelerator with Depth-wise Separable Convolution and Fused-Layer Architecture</b>
11:00 ~11:15	Xuyang Duan, Ruiqi Xie and Jun Han ( <i>Fudan University</i> )
<b>5</b>	<b>0230: Mini-HOG: An Area-efficient and Low-power HOG Accelerator with SW/HW co-design for Real-time Pedestrian Detection</b>
11:15 ~11:30	Ruiqi Xie, Jun Han ( <i>Fudan University</i> )
<b>6</b>	<b>0268: Research of Scale Recurrent Generative Network on Image Inpainting</b>
11:30 ~11:45	Ziyi Zhang, Dong Lyu and Wei Xu ( <i>Fudan University</i> )
<b>7</b>	<b>0298: A Hardware Architecture for Adaptive Loop Filter in VVC Decoder</b>
11:45 ~12:00	Xin Wang, Heming Sun, Jiro Katto and Yibo Fan ( <i>Fudan University; Waseda University, Japan; 3JST, PRESTO, 4-1-8 Honcho, Kawaguchi, Saitama, Japan;, Waseda University, Japan; State Key Laboratory of Mobile Network and Mobile Multimedia Technology</i> )
<b>8</b>	<b>0363: EG-HRNet: An Efficient High-Resolution Network Using Ghost-Modules for Human Pose Estimation</b>
12:00 ~12:15	Yiting Wang, Zhenyin Zhang and Gengsheng Chen ( <i>Fudan University</i> )

Thursday, October 28, 10: 15 – 12: 15 <b>Session B3 : Computing-in/near-Memory II</b>
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	Title
<b>1</b>	<b>0359: BATMANN: A Binarized-All-Through Memory-Augmented Neural Network for Efficient In-Memory Computing(invited paper)</b>
10:15 ~10:45	Yuan Ren, Rui Lin, Jie Ran, Chang Liu, Chaofan Tao, Zhongrui Wang, Can Li and Ngai Wong ( <i>The University of Hong Kong, Hongkong, China</i> )
<b>2</b>	<b>0061: Design of Analog CMOS-Memristive Neural Network Circuits for Pattern Recognition</b>
10:45 ~11:00	Bo Li, Mingjie Yang and Guoyong Shi ( <i>Shanghai Jiao Tong University</i> )
<b>3</b>	<b>0168: RRAM-based Analog-Weight Spiking Neural Network Accelerator with in-situ Learning for IoT Applications</b>
11:00 ~11:15	Jikai Lu, Jinsong wei, Junjie An, Chenggao Zhang, Tuo Shi and Qi Liu ( <i>University Of Science And Technology Of China; Zhejiang Lab; Institute of Microelectronics of the Chinese Academy of Sciences; Fudan University</i> )
<b>4</b>	<b>0295: A 40-nm 202.3nJ/Classification Neuromorphic Architecture Employing In-SRAM Charge-Domain Compute</b>
11:15 ~11:30	Chang Liu, Zihao Xuan and Yi Kang ( <i>University of Science and Technology of China</i> )
<b>5</b>	<b>0304: Adaptive Weight Mapping Strategy to Address the Parasitic Effects for ReRAM-based Neural Networks</b>
11:30 ~11:45	Xiaoqing Zhao, Longjun Liu, Liang Si, Keyang Pan, Hongbin Sun and Nanning Zheng ( <i>Institute of Artificial Intelligence and Robotics;Xi'an JiaotongUniversity</i> )

Thursday, October 28, 10: 15 – 12: 15 <b>Session C3 : RF Circuit I</b>
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	Title
<b>1</b>	<b>0071: A New Degeneration Technique for 60 GHz Triple Cascode Wideband Low Noise Amplifier (invited paper)</b>
10:15 ~10:45	Thurein Aung, Mahalingam Nagarajan and Kiat Seng Yeo ( <i>Engineering Product Development Singapore University of Technology and Design, Singapore</i> )
<b>2</b>	<b>0109: A 300GHz CMOS Transceiver Targeting 6G (invited paper)</b>
10:45 ~11:15	Minoru Fujishima ( <i>Hiroshima University, Japan</i> )
<b>3</b>	<b>0266: A 79GHz 5-bit Phase Shifter With <math>\pi</math>-Network in 28-nm CMOS</b>

11:15 ~11:30	Xu Chen, Junyan Ren and Shunli Ma ( <i>Fudan University</i> )
<b>4</b>	<b>0264: A 22-33 GHz Wideband CMOS LNA Using Low-k Non-inverting MCCRs for 5G mmW Communication Applications</b>
11:30 ~11:45	Yangyun Zhang , Yuting Xiang , Xinjie Zhang , Chunqi Shi, Runxi Zhang and Jinghong Chen ( <i>East China Normal University; University of Houston, USA</i> )
<b>5</b>	<b>0136: An 4<sup>th</sup>-order N-path Bandpass Filter with a Tuning Range of 1-30 GHz and OOB Rejection &gt; 30 dB in 28 nm CMOS</b>
11:45 ~12:00	Xi Wang, Junyan Ren and Shunli Ma ( <i>Fudan University</i> )

<p style="text-align: center;">Thursday, October 28, 10: 15 – 12: 15</p> <p style="text-align: center;"><b>Session D3 : Novel Device II</b></p>
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	Title
<b>1</b>	<b>0051: A split-gate SiC trench MOSFET with embedded unipolar diode for improved performances</b>
10:15 ~10:30	Zheng Wu, Chao Xia, Bo Yi, Junji Cheng, HaiMeng Huang, MouFu Kong, HongQiang Yang and WenKun Shi ( <i>University of Electronic Science and Technology of China</i> )
<b>2</b>	<b>0106: Impact of Evaporated AuNP Thickness on Pseudo-MOS and Its Application in Direct MicroRNA-375 Detection</b>
10:30 ~10:45	Haihua Wang, Song He, Kai Xiao, Yu-Long Jiang and Jing Wan ( <i>Fudan University</i> )
<b>3</b>	<b>0155: A Vertical Thin Layer pLDMOS with Linear doping realizing ultra-low Ron,sp</b>
10:45 ~11:00	Bo Yi, Zheng Wu, Junji Cheng, HaiMeng Huang, MouFu Kong and HongQiang Yang ( <i>University of Electronic Science and Technology of China</i> )
<b>4</b>	<b>0175: The Impact of Incident Wavelength and Incident Intensity on Light-modulated Subthreshold Swing Effect</b>
11:00 ~11:15	YX. Chen, K. Xiao, HH. Wang and J. Wan ( <i>Fudan University</i> )
<b>5</b>	<b>0246: Analysis of Switching Characteristics of Wide SOA and High Reliability 100 V N-LDMOS Transistor with Dual RESURF and Grounded Field Plate Structure</b>
11:15 ~11:30	Anna Kuwana, Jun-ichi Matsuda and Haruo Kobayashi ( <i>Gunma University, Japan</i> )

<b>6</b>	<b>0269: A New <math>\text{Ga}_2\text{O}_3</math>Trench Schottky Barrier Diode with Improved Forward Conduction Characteristics</b>
11:30 ~11:45	Moufu Kong, Zewei Hu, Jiacheng Gao, Zongqi Chen, Jiaxin Guo, Sadaf Ali Nafees, Bo Yi and Hongqiang Yang ( <i>University of Electronic Science and Technology of China</i> )

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

Thursday, October 28, 13: 30 – 15: 30  
**Session A4: Information Security**

	Title
<b>1</b>	<b>0030 : Electromagnetic Side Channel Analysis: Principles, Attacks, Counter-measures, and Security Opportunities(invited paper)</b>
13:30 ~14:00	Cassi Chen, Gang Qu ( <i>Winston Churchill Highschool, Maryland, USA; University of Maryland, UAS</i> )
<b>2</b>	<b>0177: Hardware Acceleration of Elliptic-Curve based Crypto-Algorithm, ECDSA and Pairing Engines(invited paper)</b>
14:00 ~14:30	Makoto Ikeda ( <i>the University of Tokyo, Japan</i> )
<b>3</b>	<b>0164: A Reliable Multi-information Entropy Glitch PUF Using Schmitt Trigger Sampling Method for IoT Security</b>
14:30 ~14:45	Li Ni, Pengjun Wang, Yuejun Zhang, Jia Chen, Lewei Li and Huihong Zhang ( <i>Ningbo University; Wenzhou University</i> )
<b>4</b>	<b>0331: Matrix Encryption based Anti-Machine Learning Attack Algorithm for Strong PUF</b>
14:45 ~15:00	Ziyu Zhou, Gang Li, Pengjun Wang and Ming Ye ( <i>Wenzhou University</i> )

Thursday, October 28, 13: 30 – 15: 30  
**Session B4 : Memory Device & Circuit I**

	Title
<b>1</b>	<b>0260:Chalcogenides for Their Application to Phase-Change-Memory-Based Synaptic Devices (invited paper)</b>
13:30 ~14:00	You Yin ( <i>Gunma University, Japan</i> )
<b>2</b>	<b>0033: Research on Transparent Resistive Random Memory Based on Lanthanum-based High-k Medium(invited paper)</b>
14:00	Hongxia Liu, Guodu Han and Dong Wang ( <i>Xidian University</i> )

~14:30	
<b>3</b>	<b>0079: A Novel Hybrid Nonvolatile SRAM for Suppressing Leakage Power Using Tunnel FET</b>
14:30 ~14:45	Xiaofeng Hong and Hao Cai ( <i>Southeast University</i> )
<b>4</b>	<b>0130: Ultra-low Power Access Strategy for Process-Voltage-Temperature Aware STT-MRAM</b>
14:45 ~15:00	You-You Zhang, Lirida Naviner and Hao Cai ( <i>Southeast University; 19 place Marguerite Perey Palaiseau, France</i> )
<b>5</b>	<b>0159: A Self-regulating Dynamic Reference Sensing Scheme with Balanced Trade-Off between Read Disturbance and Sensing Margin</b>
15:00 ~15:15	Jia-le Cui, Hai-bin Wang and Hao Cai ( <i>Southeast University; Hohai University</i> )
<b>6</b>	<b>0222: An 8Kb 40-nm 2T2MTJ STT-MRAM Design with 2.6ns Access Time and Time-Adjustable Writing Process</b>
15:15 ~15:30	Xianwu Hu, Dongyang Li, Yu Wang, Jiayun Feng, Zizhao Ma, Shaohao Wang, Tai Min and Yufeng Xie ( <i>Fudan University; Fuzhou University; Xi'an Jiaotong University</i> )

<p style="text-align: center;">Thursday, October 28, 13: 30 – 15: 30</p> <p style="text-align: center;"><b>Session C4 : RF Circuit II</b></p>
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	Title
<b>1</b>	<b>0195: An Efficient Optimization Method of RF Passive Components Using RBF Model (invited paper)</b>
13:30 ~14:00	Sen Yin, Wenfei Hu, Wenyan Zhang, Ruitao Wang, Jian Zhang and Yan Wang ( <i>Tsinghua University</i> )
<b>2</b>	<b>0355: Latest Development on Non-Contact Vital Signs (NCVS) Sensor Systems Using Software Defined Radio (SDR) (invited paper)</b>
14:00 ~14:30	D.Y.C. Lie, Y. Liu , Y. Tchatchoua , C. Sweeney , P.E. Lie and T.Q. Nguyen ( <i>Texas Tech University, USA; Texas Tech University Health Sciences Center (TTUHSC), USA</i> )
<b>3</b>	<b>0067: Integrated Homodyne Receiver Chip Design with Dual-Band Antenna</b>
14:30 ~14:45	Wen-Cheng Lai ( <i>National Yunlin University of Science and Technology, Taiwan, China</i> )
<b>4</b>	<b>0283: A Novel RFID Architecture Supporting Accurate Clock Transfer for Backscatter Communication</b>
14:45	Yichao Zhang, Wenjie Xu, Na Yan and Hao Min ( <i>Fudan University</i> )

~15:00	
<b>5</b>	<b>0316: A 60 GHz Broadband Wearable Antenna for Body-to-Body Communications</b>
15:00 ~15:15	Yutong Zhang , Na Yan, Ghazanfar Ali Safdar and Masood Ur-Rehman ( <i>Fudan University; University of Bedfordshire, United Kingdom; University of Glasgow, United Kingdom</i> )

<p style="text-align: center;">Thursday, October 28, 13: 30 – 15: 30</p> <p style="text-align: center;"><b>Session D4 : Novel Device III</b></p>
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	Title
<b>1</b>	<b>0042: Stability Analysis of Monolithic GaN MIS-HEMT Comparator with Device PBTI and Circuit Stress Tests (invited paper)</b>
13:30 ~13:54	Ang Li, Yi Shen, Ziqian Li, Yuhao Zhu, Huiqing Wen and Wen Liu ( <i>Xi'an Jiaotong-Liverpool University</i> )
<b>2</b>	<b>0046: E-mode p-FET-bridge HEMT: Toward High <math>V_{TH}</math>, Low Reverse-conduction Loss and Enhanced Stability (invited paper)</b>
13:54 ~14:18	Mengyuan Hua, Junting Chen, Chengcai Wang, Lingling Li, Ling Liu, Zheyang Zheng, and Kevin J. Chen ( <i>Southern University of Science and Technology; The Hong Kong University of Science and Technology, Hong Kong, China</i> )
<b>3</b>	<b>0060: Effects of Charge Generation and Trapping on the X-ray Response of Strained AlGaIn/GaN HEMTs (invited paper)</b>
14:18 ~14:42	Peng Wang, En Xia Zhang, Daniel M. Fleetwood, Peng Fei Wang, Michael W. McCurdy, Ji-Tzouh Lin, Michael L. Alles, Jim L. Davidson, Bruce W. Alphenaar and Ronald D. Schrimpf ( <i>Vanderbilt University, USA; University of Louisville, USA</i> )
<b>4</b>	<b>0149: Fin-Nanochannel devices of GaN-based Metal-Oxide-Semiconductor High-Electron Mobility Transistors (invited paper)</b>
14:42 ~15:06	Ching-Ting Lee, Jhang-Jie Jia, and Hsin-Ying Lee ( <i>Yuan Ze University, Taiwan, China; National Cheng Kung University, Taiwan, China; National Cheng Kung University, Taiwan, China</i> )
<b>5</b>	<b>0249: InAlN/GaN HEMTs on Si with 0.18-<math>\Omega</math>·mm Contact Resistance and 2.1-A/mm Drain Current Density (invited paper)</b>
15:06 ~15:30	Yang Jiang ,Fangzhou Du, Zepeng Qiao, Wei-Chih Cheng, Jiaqi He, Xinyi Tang, Feifei Liu, Lei Wen, Qing Wang and Hongyu Yu ( <i>Southern University of Science and Technology, Shenzhen Institute of Wide-bandgap Semiconductors, Shenzhen Smartchip Microelectronics Technology Co. Ltd.</i> )

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

Thursday, October 28, 15: 45 – 17: 45

### Session A5: Circuit for Medical

	Title
<b>1</b>	<b>0386: Multi-Physiological Parameters Integrated Medical System for Home Healthcare Application (invited paper)</b>
15:45 ~16:15	Feng Zou, Zhenming Wang, Song Ma, Liubin Li and Yuhua Cheng ( <i>Shanghai Research Institute of Microelectronics, Peking University; Peking University; Shanghai Soap Co., Ltd.</i> )
<b>2</b>	<b>0057: An ECG Automatic Detection System with Baseline Drift Removal Based on SG Filter</b>
16:15 ~16:30	Jiangbo Wei, Chenghao Zhang, Jiaji Ma, Zhihang Li and Maliang Liu ( <i>Xidian University</i> )
<b>3</b>	<b>0213: A Two-Stage Time-Division Multiplexing AFE with Input Impedance Boosting DDA for EEG Signal Acquisition</b>
16:30 ~16:45	Di Gao, Lianxi Liu ( <i>Xidian University</i> )
<b>4</b>	<b>0220: A Review and Perspective on Electrode Patch-Based Fetal ECG Monitoring ASIC</b>
16:45 ~17:00	Weiqi Zhi, Ting Yi and Zhiliang Hong ( <i>Fudan University</i> )
<b>5</b>	<b>0223: High-Input-Impedance Amplifiers Design for Dry-Electrode Biopotential Acquisition: A Review</b>
17:00 ~17:15	Peizhuo Wang, Ting Yi and Zhiliang Hong ( <i>Fudan University</i> )

Thursday, October 28, 15: 45 – 17: 45

### Session B5 : Memory Device & Circuit II

	Title
<b>1</b>	<b>0068: Reliability Issues in Charge-Trap 3D NAND Flash Memories and Optimization Strategies (invited paper)</b>
15:45 ~16:10	Jiezhi Chen ( <i>Shandong University</i> )
<b>2</b>	<b>0198: True Random Number Generator Based on Switching Probability of Volatile Ge<sub>x</sub>Se<sub>1-x</sub>ovonic Threshold Switching Selectors (invited paper)</b>
16:10	Z. Chai, P. Freitas, W. Zhang, J. F. Zhang and J. Marsland ( <i>Liverpool John Moores</i> )

~16:35	<i>University, United Kingdom; Xi'an Jiaotong University)</i>
<b>3</b>	<b>0338: Large Coercive Field in Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub>-based Capacitors with Gd Top Electrode(invited paper)</b>
16:35 ~17:00	Xiaoyue Zhao, Minghao Shao, Houfang Liu, Ruiting Zhao, Xichen Sun, Xiao Liu, Xiaoming Wu, Yi Yang and Tian-Ling Ren ( <i>Tsinghua University</i> )
<b>4</b>	<b>0275: Novel 15T SRAM Cell for Low Voltage High Reliability Application</b>
17:00 ~17:15	Yongkang Han, Yulin Zhao, Qiao Hu, Xuanzhi Liu, Bo Peng, Haijun Jiang, Jianguo Yang and Xiaoyong Xue ( <i>Fudan University; Institute of Microelectronics of the Chinese Academy of Sciences; University of Science and Technology of China</i> )
<b>5</b>	<b>0276: Research on Two-dimensional MXenes Based Synaptic Devices for the Future In-memory Computing</b>
17:15 ~17:30	Chun Zhao, Tianshi Zhao, Zongjie Shen, Yixin Cao, Yina Liu, Li Yang, Ivona Z Mitrovic, Eng Gee Lim and Ce Zhou Zhao ( <i>Xi'an Jiaotong-Liverpool University; University of Liverpool, United Kingdom</i> )
<b>6</b>	<b>0339: A HfO<sub>2</sub> Ferroelectric Capacitor based 10T2C High Reliability Non-Volatile SRAM for Low Power IoT Applications</b>
17:30 ~17:45	Jing Li, Yulin Zhao, Bo Peng, Xuanzhi Liu, Qiao Hu, Sheng Dai, Jianguo Yang and Yuejun Zhang ( <i>Ningbo University; Institute of Microelectronics of the Chinese Academy of Sciences; University of Science and Technology of China</i> )

<p style="text-align: center;">Thursday, October 28, 15: 45 – 17: 45</p> <p style="text-align: center;"><b>Session C5 : RF Circuit III</b></p>
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	Title
<b>1</b>	<b>0354: 0.5W X-Band SOI 4-Channel Beamforming TR IC (invited paper)</b>
15:45 ~16:15	Nan Li, Zengqi Wang, Weitian Liu, Qiao Zhang, Jichao Zhan, Na Yan, Tingting Han, Mi Tian, Weiqiang Zhu, Zhijian L and Jianhua Lu ( <i>Archwave Microelectronics Co; Fudan University</i> )
<b>2</b>	<b>0135: A C-Band Power Amplifier with Over-Neutralization Technique and Coupled-Line MCR Matching Methods for 5G Communication in 0.25-μm GaAs</b>
16:15 ~16:30	Zhiyang Zhang, Junyan Ren and Shunli Ma ( <i>Fudan University</i> )
<b>3</b>	<b>0144: A 0.9V 0.1-4GHz LNTA in 28-nm CMOS Achieving +11.3dBm IIP3 With Self-loaded Linearization Technique</b>
16:30 ~16:45	Fan Chen, Wei Li, Chuanguo Wang and Hongtao Xu ( <i>Fudan University</i> )
<b>4</b>	<b>0361: An Integrated System Evaluation Engine for Cross-Domain Simulation</b>

	<b>and Design Optimization of High-Speed 5G Millimeter-Wave Wireless SoCs</b>
16:45 ~17:00	Weimin Shi, Fuzhan Chen, Xinyi Liu, Chongyun Zhang, Zilu Liu, Tianxin Min, Bo Xu, Li Wang, Jian Kang and C. Patrick Yue ( <i>Integrated Circuits Design Center; The Hong Kong University of Science and Technology, Hong Kong, China</i> )

Thursday, October 28, 15: 45 – 17: 45 <b>Session D5 : Advance Process I</b>
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	Title
<b>1</b>	<b>0092: Designer Germanium Quantum-dot Arrays for CMOS Quantum Electronic Devices (invited paper)</b>
15:45 ~16:15	I-Hsiang Wang, Pei-Wen Li ( <i>National Yang Ming Chiao Tung University, Taiwan, China</i> )
<b>2</b>	<b>0070: NMOS LSI Development from 1970's to the beginning of 1980's (invited paper)</b>
16:15 ~16:45	Hiroshi Iwai ( <i>National Yang Ming Chiao Tung University, Taiwan, China</i> )
<b>3</b>	<b>0090: Enabling Monolithic Heterogeneously Integrated Si/III-V Technology Platform (invited paper)</b>
16:45 ~17:15	Siau Ben Chiah , Xing Zhou and Kenneth Eng Kian Lee ( <i>Nanyang Technological University, Singapore; Low Energy Electronic Systems, Singapore</i> )
<b>4</b>	<b>0302: Channel Stress Engineering Through Source/Drain Recess Optimization and Its Process Variation Study for 5 nm-node FinFETs</b>
17:15 ~17:30	Dawei Wang, Tao Liu , Xin Sun, Kun Chen, Jingwen Yang, Chunlei Wu, Min Xu and David Wei Zhang ( <i>Fudan University; Shanghai Integrated Circuit Manufacturing Innovation Center Co.</i> )

<b>Thursday, October 28, 17: 45 – 18: 45</b>
Thursday, October 28, 17: 45 – 18: 45 <b>Poster Session II</b>

	Title
<b>P2-1</b>	<b>0039: An Efficient Hardware Architecture for Epileptic Seizure Detection Using EEG Signals Based on 1D-CNN</b>
	Lingsong Zhu, Dongsheng Liu, Jiahao Lu, Lai Wei and Xuan Cheng ( <i>Huazhong University of Science and Technology</i> )
<b>P2-2</b>	<b>0196: Scalable Systolic Array Multiplier Optimized by Sparse Matrix</b>
	RiMing Jia, Tu Xu and YuChun Chang ( <i>Dalian University of Technology</i> )

<b>P2-3</b>	<b>0197: Effective Register Allocation for Configurable VLIW Crypto-Processor</b>
	Aiqing Wu, Mengni Bie, Longmei Nan and Wei Li ( <i>China Institute of Information Science and Technology; Fudan University</i> )
<b>P2-4</b>	<b>0287: A High-Efficient and Configurable Hardware Accelerator for Convolutional Neural Network</b>
	Hui Zhang, Zhaojie Li, Heqing Yang, Xu Cheng and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>P2-5</b>	<b>0307: A Fine-grained Sparse Neural Network Accelerator for Image Classification</b>
	Hao Zhang, Aorui Gou, Yibo Fan and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>P2-6</b>	<b>0314: Exploiting Dynamic Bit Sparsity in Activation for Deep Neural Network Acceleration</b>
	Yongshuai Sun, Naifeng Jing ( <i>Shanghai Jiao Tong university</i> )
<b>P2-7</b>	<b>0332: A Multi-conductance States Memristor-based CNN Circuit Using Quantization Method for Digital Recognition</b>
	Zhecheng Guo, Yuejun Zhang, Suling Xu, Zhixin Wu and Wanlong Zhao ( <i>Ningbo University</i> )
<b>P2-8</b>	<b>0341: Optimization of Node-clustering-based DAG Partition Targeting NVDLA Architecture</b>
	Shijie Hu, Gaoming Du, Jiashen Li, Zhenmin Li, Wei Ni, Yongsheng Yin and Xiaolei Wang ( <i>Hefei University of Technology</i> )
<b>P2-9</b>	<b>0086: MMV Batch Look Ahead Orthogonal Matching Pursuit (MBLAOMP) Algorithm for Joint Sparse Recovery</b>
	Sujuan Liu, Chengkai Cui, Xiaoyao Lv and Yuhao Liu ( <i>Beijing University of Technology</i> )
<b>P2-10</b>	<b>0237: A High-Performance Mel-scale Frequency Cepstral Coefficients Digital Circuit Used on Keyword-Spotting Chip</b>
	Jiankun Huang, Xinjie Feng, Congying Zhou and Yongzhen Chen ( <i>Tongji University</i> )
<b>P2-11</b>	<b>0308: An Analytical Jitter Transfer Model for Mueller-Muller Clock and Data Recovery Circuits</b>
	Tao Liu, Fangxu Lv, Bin Liang, Heming Wang, Jianye Wang and Miaomiao Wu ( <i>National University of Defense Technology</i> )
<b>P2-12</b>	<b>0163: A CPU-FPGA Based Heterogeneous Accelerator for RepVGG</b>
	Yiliang Guo, Mingjun Jiang, Feng Dong, Kehua Yu, Ke Chen, Wei Qu and Jianfei Jiang ( <i>Shanghai Jiao Tong University; iQIYI Science &amp; Technology Co., Ltd.</i> )

<b>P2-13</b>	<b>0186: Characterization and Classification of Heavy Ion Induced Failures in FPGA-based Logical Circuits</b>
	Shuai Gao, Chang Cai, Bingxu Ning, Ze He and Jie Liu ( <i>Institute of Modern Physics, Chinese Academy of Science; University of Chinese Academy of Sciences; Fudan University; Shanghai Fudan Microelectronics Group</i> )
<b>P2-14</b>	<b>0303: Implementation of A CRNN-based Low-power Keyword Recognition System on FPGA</b>
	Limo Guo, PengXu Lin, Lei Guo and Bo Liu ( <i>Southeast University</i> )
<b>P2-15</b>	<b>0216: An ECG Acquisition System with Piezoelectric Energy Harvesting for Low Power Healthcare Devices</b>
	Yu Huang, Puqing Yang and Zhaofeng Zhang ( <i>Shanghai Advanced Research Institute; ShanghaiTech University; University of Chinese Academy of Sciences</i> )
<b>P2-16</b>	<b>0293: 16-Channel Readout Circuit Based on Graphene Electrolyte-gated Field-effect Transistors (EGFETs) for Nucleic Acid Testing</b>
	Wei Zhang , Yunlin Liu, Zhibo Chen, Yating Zou, Yizhou Jiang, Yajie Qin and Lu Ye ( <i>Fudan University</i> )
<b>P2-17</b>	<b>0235: A Novel Tri-input Schottky Barrier FET Exhibiting Three-Input Series Switching Function</b>
	Xuejie Zhang, Zhidi Jiang, and Jianping Hu ( <i>Ningbo University</i> )
<b>P2-18</b>	<b>0243: Development and Characterization of High Temperature Plasma Nitridation Process for Advanced CMOS Technology Application</b>
	Xiaoxu Kang, Xiaolan Zhong, Zhangfa Chen, Zhengkai Dao, Qiang Zhang, Hao Wan, Yamin Zhou, Ming Li, Yingjia Guo, Ran Nie and Tao Wu ( <i>Shanghai IC R&amp;D Center; ShanghaiTech University; Shanghai Engineering Research Center of Energy Efficient and Custom AI IC</i> )
<b>P2-19</b>	<b>0274: Monolithically Integrated PWM Circuit Based on AlGaIn/GaN MIS-HMETs for All-GaN Smart Power System</b>
	Yi Shen, Ziqian Li, Ang Li and Wen Liu ( <i>Xi'an Jiaotong-Liverpool University</i> )
<b>P2-20</b>	<b>0346: Fabrication of High-performance a-IGZO Thin-film Transistor with Post-annealing Treatment</b>
	Tiantian Pi, Dongqi Xiao, Hui Yang, Xiaohan Wu, Wenjun Liu, Shijin Ding and David Wei Zhang ( <i>Fudan University</i> )
<b>P2-21</b>	<b>0078: Deep Analysis of the SSN at LPDDR5 IO Interface</b>
	Maosong Ma, Jianbin Liu, Xinhua Cai and Honglong Shi ( <i>Changxin Memory Technology</i> )

<b>P2-22</b>	<b>0082: Pitch Device Design in 10 nm-Class DRAM Process through DTCO</b>
	Yangzhe Tang, Zhongming Liu, Weibing Shang, Fengqing Zhang, Bernard Wu, Zhong Kong, Hongwen Li, Hong Ma and Kanyu Gao ( <i>Changxin Memory Technology</i> )
<b>P2-23</b>	<b>0088: A 2-stage with 3-stack 1-tap DFE Sense Amplifier based on Dual Reference for High Speed &amp; Low Power DRAM Interface</b>
	Yinchuan Gu, Chris Eom, Jake Jung, Brian Lee, Edwin Kim and Kanyu Cao ( <i>Changxin Memory Technology</i> )
<b>P2-24</b>	<b>0089: Adaptive OCD and ODT Control for Channel S/I Enhancement in DDR4 SDRAM</b>
	Yanwu Du, Chris Eom, Jake Jung, Brian Lee, Edwin Kim, Kanyu Cao ( <i>Changxin Memory Technology</i> )
<b>P2-25</b>	<b>0100: Resistive Switching Characteristics of <math>HfO_x/Al_2O_3</math> Nano-multilayers Structure Memristor Fabricated by Atomic Layer Deposition</b>
	Jian Liu, Ke Wang, Xiaolong Zhou, Xiaopeng Xiao, Yongming Tang, Zhongyuan Ma, Kunji Chen ( <i>East China University of Technology; Nanjing University</i> )
<b>P2-26</b>	<b>0158: Modified Peripheral MRAM Sensing for In-memory Boolean Logic</b>
	Zhong-Jian Bian, Xiaofeng Hong, Juntong Chen and Hao Cai ( <i>Southeast University</i> )
<b>P2-27</b>	<b>0321: A Semi-Floating Gate Transistors In-Memory Computing design with 40.14 TOPS/W for matrix-multiplication with frequently updated weight</b>
	Yukai Lin, Yu Wang, Xianwu Hu, Jiayun Feng, Gan Wen, Xiankui Xiong, Haidong Tian and Yufeng Xie ( <i>Fudan University; ZTE Corporation; State Key Laboratory of Mobile Network and Mobile Multimedia Technology</i> )
<b>P2-28</b>	<b>0334: A ReRAM-based 10T2R SRAM Using Power-off Recovery Function for Reducing Power</b>
	Sheng Dai, Yuejun Zhang, Huihong Zhang and Jing Li, Ye Lin ( <i>Ningbo University</i> )
<b>P2-29</b>	<b>0340: A Three-valued Adder Circuit Implemented in ZnO Memristor with Multi-resistance States</b>
	Zhixin Wu, Yuejun Zhang, Shimin Du, Zhecheng Guo and Wanlong Zhao ( <i>Ningbo University</i> )
<b>P2-30</b>	<b>0050: A Novel Etch Scheme to Form Sloped Profile by Standard Anisotropic CMOS Process</b>
	Ming Li, Xiaoxu Kang and Xiaolan Zhong ( <i>Shanghai IC R&amp;D Center</i> )
<b>P2-31</b>	<b>0105: Process Optimization for CMOS Compatible MEMS Capacitive Acoustic Sensor</b>

	Ming Li, Xiaoxu Kang and Xiaolan Zhong ( <i>Shanghai IC R&amp;D Center</i> )
<b>P2-32</b>	<b>0350: Development of MEMS Capacitive Mirror Structure with CMOS Compatible Process</b>
	Wei Liu, Chengpeng Duan, Defu Guo, Peng Wang, Hanlin Qin, Shuai Yuan and Qinwei Ou ( <i>Xi'an Zhongke Lead IR-Tech Co., Ltd.; Xidian University</i> )
<b>P2-33</b>	<b>0040: A Phased-array Optoelectronic Detector using Phase-difference Filtering Technology for Incremental Encoder Application</b>
	Jiaqi Jiang, Hongbo Zhang, Yunhao Fu and Yuchun Chang ( <i>Jilin University</i> )
<b>P2-34</b>	<b>0075: Reconfigurable Clock Tree Design Methodology for Wide Voltage Scaling Using Custom Buffer</b>
	Xuexiang Wang, Yiran Sun and Mingming Fang ( <i>Southeast University</i> )
<b>P2-35</b>	<b>0107: A Fast Aging-aware Static Timing Analysis Prediction Frame of Digital Integrated Circuits</b>
	Jiahui Hu, Changhao Yan, Chao Guo, Ronggui Jiang, Dian Zhou and Xuan Zeng ( <i>Fudan University</i> )
<b>P2-36</b>	<b>0112: A New Sparsity Preserving Model Order Reduction Algorithm for Multi-terminal RC Networks</b>
	Xin Chen, Lin Pan and Yangxin Xiang ( <i>Tongji University</i> )
<b>P2-37</b>	<b>0270: Efficient High-Level Synthesis of Approximate Computing Circuits via Multi-fidelity Modeling</b>
	Yingqi Li, Fan Yang, Changhao Yan and Xuan Zeng ( <i>Fudan University</i> )
<b>P2-38</b>	<b>0311: Time Constant Estimation Method for Block RC Circuits with Application to Power Grid Analysis</b>
	Chen Dong, Limin Hao, Guoyong Shi, Zhenya Zhou and Minghou Cheng ( <i>Shanghai Jiao Tong University; Beijing Huada Emphyrean Software Co. Ltd.</i> )
<b>P2-39</b>	<b>0122: Fabrication, Characterization and Modeling of CVD based Amorphous Silicon Resistor</b>
	Wei Liu ,Chengpeng Duan, Defu Guo, Hanlin Qin, Renwang Ma, Shuai Yuan and Qinwei Ou ( <i>Xi'an Zhongke Lead IR-Tech Co., Ltd.; Xidian University</i> )
<b>P2-40</b>	<b>0125: Superjunction MOSFET with Trench Schottky Contact and Embedded High-k Insulator for Excellent Reverse Recovery</b>
	Rui Li, Mingmin Huang, Xi Zhang, Min Hu, Zhimei Yang, Yao Ma and Min Gong ( <i>Sichuan University</i> )
<b>P2-41</b>	<b>0238: A Process Optimization Method for Carrier Stored Trench Bipolar</b>

	<b>Transistor (CSTBT) Device</b>
	Hang Xu, Dong-Hui Zhao, Hao Zhu, Qing-Qing Sun and David Wei Zhang ( <i>Fudan University</i> )
<b>P2-42</b>	<b>0335: A Novel Power PiN Diode with p-type Schottky Anode and Trench Oxide for Improving Reverse Recovery</b>
	Weidan Li, Mingmin Huang, Yun Li, Zhimei Yang and Min Gong ( <i>Sichuan University</i> )
<b>P2-43</b>	<b>0362: AlGaIn/GaN HEMTs with Electric Field Modulation Effect: A Comprehensive Study</b>
	Haijun Guo, Chunwei Zhang, Hao Kan and Chao Cao ( <i>University of Jinan; Shandong University</i> )
<b>P2-44</b>	<b>0044: Impact of Hydrogen Anneal on Peripheral PMOS NBTI and Array Transistor GIDL in DRAM</b>
	Xiong Li, Huangxia Zhu, Xiaolin Guo, Cajun Mu, Peng Feng, Qi-a Xu, Blacksmith Wu and Kanyu Cao ( <i>ChangXin Memory Technologies</i> )
<b>P2-45</b>	<b>0187: The Study of Parameters variation of nMOSFET Affacted by the HCI</b>
	Zhang Xiaowen, Lin Xiaoling and Gao Rui ( <i>Science and Technology on Reliability Physics and Application of Electronic Component Laboratory</i> )

## Friday

**Friday, October 29, 8: 30 – 10: 00**

Thursday, October 29, 8: 30 – 10: 00

### **Keynote Session K4**

- K4-1** **Always-On Sensor Nodes Entirely Powered by Sustainable Energy Sources – Enabling a Smarter, Greener and Better World** (8: 30-9: 15)  
Prof. Massimo Alioto, National University of Singapore, Singapore
- K4-2** **Emerging Non-Volatile Memories for Storage and Computing** (9: 15-10: 00)  
Prof. Ming Liu, Academician of CAS, Institute of Microelectronics of CAS, Frontier Institute of chip & System, Fudan University, China

## Friday, October 29, 10: 15– 12: 15

Friday, October 29, 10: 15 – 12: 15

### Session A6 : EDA Technology I

	Title
<b>1</b>	<b>0353: Modeling and Simulation of the Electromigration for Interconnects Design and Reliability Prediction (invited paper)</b>
10:15 ~10:45	Xiaoyan Liu ( <i>Peking University</i> )
<b>2</b>	<b>0200: Machine Learning in Nanometer AMS Design-for-Reliability (invited paper)</b>
10:45 ~11:15	Tinghuan Chen, Qi Sun and Bei Yu ( <i>Chinese University of Hong Kong, Hongkong, China</i> )
<b>3</b>	<b>0118: High-Dimensional Bayesian Optimization for Automated Analog Circuit Design via Add-Graph Structure</b>
11:15 ~11:30	Yan Wang, Changhao Yan, Dian Zhou and Xuan Zeng ( <i>Fudan University</i> )

Friday, October 29, 10: 15 – 12: 15

### Session B6 : Imaging Sensor I

	Title
<b>1</b>	<b>0047: Novel Photodetectors and Image Sensors based on SOI Substrate (invited paper)</b>
10:15 ~10:45	Jiaxing Zuo, Jing Wan ( <i>Fudan University</i> )
<b>2</b>	<b>0205: ZnO Wheatstone bridge for UV light detection (invited paper)</b>
10:45 ~11:15	Wenbo Peng, Xiaochuan Guo, Yahui Cai, Shuwen Guo, Xiaolong Zhao, Yongning He ( <i>Xi'an Jiaotong University</i> )
<b>3</b>	<b>0251: All-Inorganic Two-Dimensional Ruddlesden-Popper Perovskite Cs<sub>2</sub>PbI<sub>2</sub>Cl<sub>2</sub> Nanosheet Films for Self-Powered, Visible-Blind UV Photodetectors (invited paper)</b>
11:15 ~11:45	Yanshuang Ba, Sunjie HuangFu, Miaomiao Li, Junxiao Ma, Weidong Zhu, Dazheng Chen, He Xi, Jincheng Zhang, Chunfu Zhang and Yue Hao ( <i>Xidian University</i> )

Friday, October 29, 10: 15 – 12: 15

### Session C6 : Power Management

	Title
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<b>1</b>	<b>0114: A Cold-Start SECE and BUCK-SECE Hybrid Rectifier for Piezoelectric Energy Harvester</b>
10:15 ~10:30	Hongyu Lu, Yinshui Xia ( <i>Ningbo University</i> )
<b>2</b>	<b>0210: A High-Sensitivity , Low-Power Dual-Band RF Energy Harvesting and Managing System for Bio-Potential Acquisition</b>
10:30 ~10:45	Yuyuan Tian, Lianxi Liu ( <i>Xidian University</i> )
<b>3</b>	<b>0267: Multi-Output SEIPC Multiplied Boost Converter with Exclusive Control</b>
10:45 ~11:00	Yuki Sekine, Shogo Katayama, Yasunori Kobori, Anna Kuwana and Haruo Kobayashi ( <i>Gunma University, Japan</i> )
<b>4</b>	<b>0348: A Dual Path Hybrid Step-Up Converter with Enhanced Drive Voltage for Low Voltage Applications</b>
11:00 ~11:15	Hailiang Xiong, Qingbing Zhao, Rui Yang, Zeya Xie, Shaowei Zhen, Dongmin Ding and Bo Zhang ( <i>University of Electronic Science and Technology</i> )
<b>5</b>	<b>0349: A Battery Powered Hybrid Dual-Path Step-Up DC-DC Converter with Output Powered Bootstrap Driver</b>
11:15 ~11:30	Qingbing Zhao, Hailiang Xiong, Rui Yang, Zeya Xie, Shaowei Zhen, Dongmin Ding and Bo Zhang ( <i>University of Electronic Science and Technology</i> )

<p>Friday, October 29, 10: 15 – 12: 15</p> <p><b>Session D6 : Advanced Process II</b></p>
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	<b>Title</b>
<b>1</b>	<b>0365: Controlled Domain Wall Directions within Nanodevices Integrated on the Surface of LiNbO3 Single Crystals (invited paper)</b>
10:15 ~10:45	Jun Jiang , Jie Sun , Chao Wang and Anquan Jiang ( <i>Fudan University</i> )
<b>2</b>	<b>0077: Optimization of Protective Layer Process for Micro-bridge Structure based MEMS/Sensors Application</b>
10:45 ~11:00	Bo Zhang , Xiaoxu Kang and Xiaolan Zhong ( <i>Shanghai Huahong Grace Semiconductor Manufacturing Corporation; Shanghai IC R&amp;D Center</i> )
<b>3</b>	<b>0182: Investigate Performance of In2O3-based NO2 Gas Sensor with Rod Array Structure</b>
11:00 ~11:15	Hsin-Ying Lee <sup>1</sup> , Li-Yi Jian , and Ching-Ting Lee ( <i>National Cheng Kung University, Taiwan, China; Yuan Ze University, Taiwan, China</i> )

<b>4</b>	<b>0373: Self-powered Electrochromic Windows for Smart Home by Hybridizing Enhanced Perovskite Solar Cells</b>
11:15 ~11:30	Qi Jiabin, Qiu Feilong, Zhao Yi ( <i>China Nanhu Academy of Electronics and Information Technology</i> )
<b>5</b>	<b>0374: Combined-solvent engineering of HPbI 3 for efficient FAPbI 3 perovskite solar cells</b>
11:30 ~11:45	Wentao Tang, Xudong Yang, Yi Zhao ( <i>Nanhu Research Institute of China Electronics Technology Corporation; Zhejiang University; Shanghai Jiao Tong University</i> )

## Friday, October 29, 13: 30 – 15: 30

Friday, October 29, 13: 30 – 15: 30

### Session A7: EDA Technology II

	Title
<b>1</b>	<b>0093: Machine Learning based SET Propagation Prediction for Large Scale Integrated Circuits</b>
13:30 ~13:45	Ruiqiang Song, Jiageng Shi, Jinjin Shao and Xiaoyu Zhang ( <i>National University of Defense Technology</i> )
<b>2</b>	<b>0145: Power Optimization with Reinforcement Learning in Logic Synthesis</b>
13:45 ~14:00	Chenghao Yang and Yinshui Xia ( <i>Ningbo University</i> )
<b>3</b>	<b>0204: Highly Efficient Modulo Loop Pipeline For High Level Synthesis</b>
14:00 ~14:15	Chang Wu, Jundong Xie and Kexin Wang ( <i>Fudan University</i> )
<b>4</b>	<b>0231: CongestNN: An Bi-Directional Congestion Prediction Framework for Large-Scale Heterogeneous FPGAs</b>
14:10 ~14:30	Chenyue Ma, Yifeng Xiao, Sifei Wang, Jun Yu and Jianli Chen ( <i>Fudan University</i> )
<b>5</b>	<b>0232: Analytical Global Placement for Heterogenous FPGAs Based on the eDensity Model</b>
14:30 ~14:45	Huimin Wang, Xingyu Tong, Runming Shi, Sifei Wang, Jun Yu and Jianli Chen ( <i>Fudan University</i> )
<b>6</b>	<b>0343: A Practical High-Level Synthesis Framework</b>
14:45 ~15:00	Aoxiang Qin, Minghua Shen and Nong Xiao ( <i>Sun Yat-sen University</i> )

Friday, October 29, 13: 30 – 15: 30 <b>Session B7 : Imaging Sensor II</b>
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	Title
<b>1</b>	<b>0049: 2D-Materials-Based Self-Driven Photodetectors (invited paper)</b>
13:30 ~13:55	Changjian Zhou ( <i>South China University of Technology</i> )
<b>2</b>	<b>0123: CMOS-Compatible Time-of-Flight 3D Imaging Sensors and System (invited paper)</b>
13:55 ~14:20	Shun-Qi Dai, Cristine jin Estrada, An-Nan Xiong, Chen Xu, Jie George Yuan and Mansun Chan ( <i>The Hong Kong University of Science and Technology, Hongkong, China; AI Chip Center for Emerging Smart Systems, Hongkong, China; SmartSens Technology</i> )
<b>3</b>	<b>0170: Pixel Design of Ultra-high Speed CMOS Image Sensor (invited paper)</b>
14:20 ~14:45	Peng Feng, Liyuan Liu and Nanjian Wu ( <i>Institute of Semiconductors, Chinese Academy of Sciences; Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences; Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences</i> )
<b>4</b>	<b>0193: A Single-Slope PWM Imaging Method for Multi-Mode Dynamic Vision Sensor</b>
14:45 ~15:00	Qijuan Wu, Mingyu Wang, Jingjing Liu and Wenhong Li ( <i>Fudan University</i> )
<b>5</b>	<b>0217: An Efficient Markov Random Field Based Denoising Approach for Dynamic Vision Sensor</b>
15:00 ~15:15	Xi Cheng, Haozhe Zhu, Jingjing Liu, Mingyu Wang and Xiaoyang Zeng ( <i>Fudan University</i> )
<b>6</b>	<b>0253: An Efficient Space Spatiotemporal Noise Filter for Dynamic Vision Sensor</b>
15:15 ~15:30	Bohan Feng, Xi Cheng, Jingjing Liu, Mingyu Wang, Wenhong Li and Zheng Zhou ( <i>Fudan University</i> )

Friday, October 29, 13: 30 – 15: 30 <b>Session C7 : Clock &amp; High Speed Circuit</b>
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	Title
<b>1</b>	<b>0063: A Charge Pump with Perfect Current Matching Applied to Phase-Locked Loop in 65nm CMOS</b>
13:30 ~13:45	Jintao Zu, Haigang Feng ( <i>Tsinghua University</i> )

<b>2</b>	<b>0095: A 5-156.25Gb/s high pin efficiency Receiver Based on CNRZ-5 for USR High-Speed Interface</b>
13:45 ~14:00	Zhang Geng, Fangxu Lv, Zhengbin Pang, Heming Wang, Dongbin Lv, Tao Liu and Jinwang Zhang ( <i>Air Force Engineering University; National University of Defense Technology</i> )
<b>3</b>	<b>0103: Adaptive DLL Update Scheme for Power Fluctuation Immunity Using Phase Error Detector</b>
14:00 ~14:15	Siman Li, Chris Eom, Jake Jung, Brian Lee, Edwin Kim and Kanyu Cao ( <i>Design Center CXMT</i> )
<b>4</b>	<b>0115: A 0.9V Supply 12.5Gb/s LVDS Receiver in 28nm CMOS Process</b>
14:10 ~14:30	Jinrong Li, Jue Wang, Xu Cheng, Yicheng Zeng and Xiaoyang Zeng ( <i>Xiangtan University; Fudan University</i> )
<b>5</b>	<b>0131: An Adaptive DFE Using Pattern-Dependent Data-Level Reference in 28nm CMOS Technology</b>
14:30 ~14:45	Ai He, Weixin Gai, Kai Sheng and Ninghuang Li ( <i>Peking University</i> )
<b>6</b>	<b>0215: An Enhanced SSCP for Frequency Drift Suppressing in SSPLL</b>
14:45 ~15:00	Chenyue Shi, Shengyuan Zhou and Jing Jin ( <i>Shanghai Jiao Tong University</i> )
<b>7</b>	<b>0347: Analysis of Single Events Effects on Supply Regulated LC-Tank Voltage-Controlled Oscillator</b>
15:00 ~15:15	Xi Chen, Qiancheng Guo, Hengzhou Yuan, Zhenyu Wu and Yang Guo ( <i>National University of Defense Technology</i> )

## Friday, October 29, 15: 45 – 17: 45

Friday, October 29, 15: 45 – 17: 45

### Session A8: Device Reliability

	Title
<b>1</b>	<b>0041:Electronic System Reliability Under Radiation Environment from Devices' Radiation Test (invited paper)</b>
15:45 ~16:15	Cher Ming Tan ( <i>Chang Gung University, Taiwan, China</i> )
<b>2</b>	<b>0096:Radiation Effects on Hafnia-Based Ferroelectric Tunneling Junctions (invited paper)</b>
16:15	Jinshun Bi ( <i>Institute of Microelectronics, chinese academy of sciences</i> )

~16:45	
<b>3</b>	<b>0054: An integrated method for extracting the statistical distribution of RTN time constants(invited paper)</b>
16:45 ~17:15	Mehzabeen Mehedi, Kean H. Tok, Jian F. Zhang, Zhigang Ji, Zengliang Ye, Weidong Zhang and John S. Marsland ( <i>Liverpool John Moores University, United Kingdom; Shanghai Jiaotong University</i> )
<b>4</b>	<b>0273: Simulation of SEU Response of Advanced 20 nm FDSOI SRAMs</b>
17:15 ~17:30	Chang Cai, Ze He, Jian Yu, Jie Liu, Gengsheng Chen, Jiyuan Bai and Jun Yu ( <i>Fudan University; Chinese Academy of Sciences</i> )

<p>Friday, October 29, 15: 45 – 17: 45</p> <p><b>Session B8 : Testing &amp; ESD Protection</b></p>
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	Title
<b>1</b>	<b>0160: CDM Measurement for Bare Dies and Wafers (invited paper)</b>
15:45 ~16:15	Teruo Suzuki ( <i>Socionext Inc, Japan</i> )
<b>2</b>	<b>0065: LSI Testing: A Core Technology to a Successful LSI Industry(invited paper)</b>
16:15 ~16:45	Xiaoqing Wen ( <i>Kyushu Institute of Technology, Japan</i> )
<b>3</b>	<b>0179: An Overview of Design, Fabrication, and Cooling Techniques of 3D-ICs (invited paper)</b>
16:45 ~17:15	Ibrahim M. Abdel-Motaleb ( <i>Northern Illinois University, USA</i> )
<b>4</b>	<b>0101: An On-chip Path Delay Measurement Sensor for Aging Monitoring</b>
17:15 ~17:30	Dongrong Zhang, Qiang Ren and Donglin Su ( <i>Beihang University</i> )
<b>5</b>	<b>0320: A LVTSCR-Based Compact Structure for Latch-up Immune</b>
17:30 ~17:45	Songyan Wang, Xiaomei Fan, Zhihua Zhu, Yingtao Zhang, Ruike Chen, Yao Wang and Juin J. Liou ( <i>Zhengzhou University</i> )

<p>Friday, October 29, 15: 45 – 17: 45</p> <p><b>Session C8: Clock Technology</b></p>
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	Title
<b>1</b>	<b>0072: Silicon-Base Flexible-Grid Mode and Wavelength-Selective Switch (invited paper)</b>

15:45 ~16:15	Weiwei Chen ( <i>Ningbo University</i> )
2	<b>0356: Design and Co-Simulation of QPSK and NRZ/PAM-4/PAM-8 VCSEL-Based Optical Links Utilizing an Integrated System Evaluation Engine (invited paper)</b>
16:15 ~16:45	Fuzhan Chen, Chongyun Zhang, Tianxin Min, Bo Xu, Quan Pan and C. Patrick Yue ( <i>The Hong Kong University of Science and Technology, Hongkong, China; Southern University of Science and Technology; LiPHY Communications Limited, Hongkong, China</i> )
3	<b>0360: Design and Verification of a 334-Mb/s DCO-OFDM Li-Fi Transceiver Using Integrated System Evaluation Engine (invited paper)</b>
16:45 ~17:15	Tianxin Min, Jian Kang, Bo Xu, Weimin Shi and C. Patrick Yue ( <i>The Hong Kong University of Science and Technology, Hong Kong, China; LiPHY Communications Limited, Hongkong, China</i> )
4	<b>0367: On-Chip Filter for Mitigating EMI-Related Common-Mode Noise in High-Speed PAM-4 Transmitter (invited paper)</b>
17:15 ~17:45	Zilu Liu, Rehan Azmat, Xinyi Liu, Li Wang and C. Patrick Yue ( <i>The Hong Kong University of Science and Technology, Hong Kong, China; LiPHY Communications Limited, Hongkong, China</i> )

# ASICON 2021 Technical Sessions Overview

Date	Time	Overview			
Oct.26	9:00-12:15	Tutorial Session T1 & T2			
	13:30-18:15	Tutorial Session T3 & T4 & T5			
Oct.27	8: 30-9: 00	Opening			
	9: 00-10: 30	Keynote Session K1-1 & K1-2			
	10: 45-12: 15	Keynote Session K2-1 & K2-2			
	13: 30-15: 30	Session A1 Digital Unit & Module	Session B1 Efficient AI Hardware	Session C1 Analog & Mixed-Signal	Session D1 Device simulation
	15: 45-17: 45	Session A2 Processor & Signal Processing	Session B2 Computing-in/near-Memory I	Session C2 Data Converter	Session D2 Novel Device I
	17: 45-18: 45	Poster Session I			
Oct.28	8: 30-10: 00	Keynote Session K3-1 & K3-2			
	10: 15-12: 15	Special Session A3 Image Processing	Session B3 Computing-in/near-Memory II	Session C3 RF Circuit I	Session D3 Novel Device II
	13: 30-15: 30	Special Session A4 Information Security	Session B4 Memory Device & Circuit I	Session C4 RF Circuit II	Session D4 Novel Device III
	15: 45-17: 45	Special Session A5 Circuit for Medical	Session B5 Memory Device & Circuit II	Session C5 RF Circuit III	Session D5 Advanced Process I
	17: 45-18: 45	Poster Session 2			
Oct.29	8: 30-10: 00	Keynote Session K4-1 & K4-2			
	10: 15-12: 15	Session A6 EDA Technology I	Session B6 Imaging Sensor I	Session C6 Power Management	Session D6 Advanced Process II
	13: 30-15: 30	Session A7 EDA Technology II	Session B7 Imaging Sensor II	Session C7 Clock & High Speed Circuit	
	15: 45-17: 45	Session A8 Device Reliability	Session B8 Testing & ESD Protection	Session C8 Optical Communication	
	19: 00-21: 00	Closing Ceromony			

