2023 IEEE 15th International Conference on ASIC (ASICON)

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ASICON 2023

PROGRAM

Oct. 24th. - Oct. 27th. , 2023

Platinum Hanjue Hotel, Nanjing, China

IEEE Beijing Section

FUDAN UNIVERSITY

NANJING UNIVERSITY

CAS
IEEE CIRCUITS AND SYSTEMS SOCIETY

SSCS

ELECTRON DEVICES SOCIETY

IET

2023 IEEE 15th International Conference on ASIC (ASICON)

ASICON 2023

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Platinum Hanjue Hotel, Nanjing, Chna

Sponsored by

IEEE Beijing Section
Fudan University
Nanjing University
National IC Innovation Center

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IEEE CASS
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IET Shanghai Network
Chinese Institute of Electronics (CIE)

Organized by

Fudan University

Contents

Welcome to ASICON 2023

Due to the challenges posed by the global COVID-19 pandemic and its profound impact on international travel, we were compelled to adapt ASICON 2021 into a virtual event. Today, we stand in a different landscape as the pandemic is behind us, allowing us to return to the tradition of hosting an in-person conference. On behalf of the ASICON 2023 organizing committee, it is our distinct pleasure and honor to extend a heartfelt welcome to all attendees. We sincerely appreciate your participation, which makes this event possible.

ASICON 2023 marks the 15th installment of this esteemed conference series, originating in 1994. Scheduled to take place from October 24th to 27th, 2023, in the picturesque city of Nanjing, China, we are eager to rekindle the spirit of collaboration and innovation that defines this gathering. With your active engagement and contributions, we aspire to make this year's in-person meeting even more engaging and successful.

While the term "ASIC" has traditionally had a narrower interpretation, ASICON has embraced a broader definition, signifying Advanced Semiconductor Integrated Circuits. This shift acknowledges the comprehensive technical scope that ASICON encompasses within the realm of integrated circuits. The conference serves as a global platform where VLSI circuit designers, ASIC users, System Integrators, IC manufacturers, device engineers, and CAD/CAE tool developers come together to share their latest advancements, developments, and research findings. It is also a hub where academics and industry professionals converge to foster networking and exchange valuable information.

ASICON 2023 has thoughtfully curated a program that includes five expert-led tutorials on the inaugural day of the conference. Furthermore, we are honored to announce the participation of eight world-renowned academic and industry leaders who will deliver keynote speeches during the plenary sessions from October 25th to 27th.

Over the years, ASICON has significantly impacted both industry and academia, serving as a catalyst for progress and collaboration. We are eager to uphold this venerable tradition and look forward to achieving new milestones at this year's face-to-face conference.

Once again, a warm welcome to ASICON 2023. Let us unite, share, and innovate as we embark on this exciting journey of discovery and collaboration. Thank you for being an integral part of this remarkable event.

General Co-Chairs of ASICON 2023

Jan Van der Spiegel
Zhiliang Hong
Yong Lian
Ting-Ao Tang
Yi Shi
Hongxia Liu

Oct. 24th, 2023

Conference Committee

Gerneral Co-Chairs

Name	Affiliation	Country/Area
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Ting-Ao Tang	Fudan University	China
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Simon, Ang	University of Arkansas	USA
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Song, Fei	Ubilinx technology, Inc	USA

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Gao, Hao	Eindhoven University of Technology	Netherlands
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Chen, Kuan-Neng	Yang Ming Chiao Tung University	Taiwan, China
Jerraya, Ahmed	CEA Tech	France
Lee, Ching-Ting	Cheng Kung University/ Yuan Ze University	Taiwan, China
Li, Pei-Wen	Chiao Tung University	Taiwan, China
Zhao, Weisheng	Beihang University	China
Simon, Ang	University of Arkansas	USA
Ng, Wai Tung	University of Toronto	Canada
Simoen, Eddy	IMEC	Belgium
Endo, Kazuhiko	Advanced Industrial Science and	Japan

	Technology (AIST)	
Zhang, Jian Fu	Liverpool John Moores University	United Kingdom
Zhang, Weidong	Liverpool John Moores University	United Kingdom
Xie, Ya-Hong	UCLA	USA
Kong, Moufu	University of Electronic Science & Technology of China	China

General Information

Conference Language

The official language is English. No simultaneous translation is available.

Conference Schedule

Date	Time	Event
Oct. 24th. Tue.	AM	Tutorial Session (T1)
	PM	Tutorial Session (T2)
Oct. 25th. Wed.	AM	Opening
		Keynote Session (K1, K2)
	PM	Parallel Sessions (A/B/C/D1)
		Parallel Sessions (A/B/C/D2)
		Poster Session (P1)
	Evening	Reception
Oct. 26th. Thur.	AM	Keynote Session (K3)
		Parallel Sessions (A/B/C/D3)
	PM	Parallel Sessions (A/B/C/D4)
		Parallel Sessions (A/B/C/D5)
		Poster Session (P2)
Oct. 27th. Fri.	AM	Keynote Session (K4)
		Parallel Sessions (A/B/C/D6)
	PM	Parallel Sessions (A/B/C/D7)
		Parallel Sessions (A/B/C/D8)
	Evening	Closing & Banquet

Conference Site

The conference will be held in **Platinum Hanjue Hotel, Nanjing**

Tel: (+86) 025-66008888

Add: No.888 Xuanwu Avenue, Nanjing, Jiangsu, China

Registration Desk

The conference registration desk will be located at Platinum Hanjue Hotel. The conference registration will be open on Oct. 24th (8: 00~20: 00), Oct. 25th ~ Oct. 27th (8: 00~17: 45). And the registration desk will keep available at the same site throughout the whole conference.

Transportation

How to get to Nanjing Platinum Hanjue Hotel:

From Airport:

It takes about 53 minutes from Nanjing Lukou International Airport to Hotel by car. Taxi is recommended.

From Railway Station:

* Nanjing Railway Station: Taxi takes about 15 minutes to hotel;
* Nanjing South Railway Station: Taxi takes about 25 minutes to hotel

More details about the conference hotel booking, please visit

https://www.discoverchinatours.com/nanjing-asicon-2023-hotel.html

Weather

The average temperature during conference time in Nanjing is around 14℃~19℃.

Visa

All the foreign travelers to China must have a valid visa. Visas may be obtained from the Chinese Embassy or Consulate in most major cities around the world. A conference attendee will be mailed an official invitation letter for visa application after he or she fills and returns the Visa Application Form (http: //www.asicon.org) to asicon_org@fudan.edu.cn timely.

Awards

Excellent Student Paper Awards & Outstanding Young Scholar Paper Award will be announced at the banquet on Oct. 27th. To be qualified for these Best Paper Award, the paper must be presented by the student or scholar him- or herself (first author). The Technical Program Committee and Organizing Committee will choose best papers through public appraisal from the candidates.

Paper Presentation Information

The ASICON2023 will have oral and poster sessions. All the papers included in the conference program should be presented in English by one of the authors at the arranged sessions.

Oral Presentation

Presentation time:

Invited paper (25~30 minutes): 20~25 min talk + 5 min Q/A

Regular paper (12~15 minutes): 10~12 min talk + 2~3 min Q/A

Computer and digital projector will be provided in each meeting room.

Poster Presentation

Poster size: 120 cm (high) × 100 cm (wide)

Poster Session 1:

Setup time: 8: 30-17: 30 on Oct. 25th

Presentation time: 17: 45-18: 45 on Oct. 25th (on the spot)

Poster Session 2:

Setup time: 8: 30-17: 30 on Oct. 26th

Presentation time: 17: 45-18: 45 on Oct. 26th (on the spot)

Thumb pins, adhesive tapes, and scissors will be provided at the registration desk. The poster should be taken off by 21: 30 by the author if he or she would like to keep it. After that time, it will be removed and be regarded as being discarded by the authors.

Coffee Break

Complementary coffee/tea will be served in each morning/afternoon session. The break will take place in general at 10: 00-10: 15 during morning sessions and 15: 30-15: 45 during afternoon sessions. Due to time schedule of different sessions, the actual break time may have slight variation. Coffee/tea will be served in about half-hour duration.

Meeting Room Location

Meeting Room	Location
Grand Hall (Hall 210)	2nd Floor, Platinum Hanjue Hotel
Hall 202	2nd Floor, Platinum Hanjue Hotel
Hall 203	2nd Floor, Platinum Hanjue Hotel
Hall 207	2nd Floor, Platinum Hanjue Hotel
Hall 209	2nd Floor, Platinum Hanjue Hotel

Tutorial Session

Tuesday

Tuesday, October 24, 9: 00 – 18: 15

Tuesday, October 24, 9: 00 – 12: 15 Hall 209
Tutorial Session T1 Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Chixiao Chen, Fudan University, China

T-1 **Low-Power ADCs with Time-Domain Techniques** *(9: 00-10: 30)*
Prof. Qiang Li, University of Electronic Science and Technology of China, China

T-2 **Hardware/Software Co-Design of Deep Learning Accelerators** *(10: 45-12: 15)*
Prof. Yiyu Shi, University of Notre Dame, USA

Tuesday, October 24, 13: 30 – 18: 15 Hall 209
Tutorial Session T2 Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Wenzhong Bao, Fudan University, China

T-3 **Low-dimensional Semiconductors for High Performance, Low Power Electronics** *(13:30-15: 00)*
Prof. Yanqing Wu, Peking University, China

T-4 **Electronics and Optoelectronics Based on 2D Tellurium** *(15: 00-16: 30)*
Dr. Chaoliang Tan, The University of Hong Kong, Hong Kong, China

T-5 **Reliable In-memory Computing with Unreliable Devices and Circuits** *(16: 45-18: 15)*
Prof. Yu Cao, University of Minnesota, USA

Technical Session

Wednesday

Wednesday, October 25, 9: 00 –10: 30

Wednesday, October 25, 9: 00 –10: 30 Hall 210
Opening & Keynote Session K1 Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Bin Zhao, IEEE EDS, USA

K1-1 **Technology Innovations at the Heart of Engineering Humanitarian Solutions** *(9: 00-9: 45)*

Dr. Rakesh Kumar, Technology Connexions, USA

K1-2 **Let the Plants Do the Talking: Smart Agriculture by the Messages Received from Plants and Soil** *(9: 45-10: 30)*

Prof. Danilo Demarchi, Politecnico di Torino, Italy

Wednesday, October 25, 10: 45– 12: 15

Wednesday, October 25, 10: 45–12: 15 Hall 210
Keynote Session K2 Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Jyi-Tsong Lin, Sun Yat Sen University, Taiwan, China

K2-1 **Oxide Thin-Film Transistors and Integrations** *(10: 45-11: 30)*

Prof. Aimin Song, University of Manchester, The United Kingdom

K2-2 **Efficiency, Resilience, and Versatility in Memristive Neuromorphic Systems for AI on the Edge** *(11: 30-12: 15)*

Prof. Gert Cauwenberghs, UC San Diego, USA

Wednesday, October 25, 13: 30 – 15: 30

Wednesday, October 25, 13: 30 – 15: 30 Hall 209
Session A1: Mixed-Signal Circuit I Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Fan Ye, Fudan University, China

	Title
A1-1	**0520: Utilizing Order Statistics for Low-Power Analog Circuit Design in Scaled CMOS Technologies (invited)**
13:30 ~13:54	Mahfuzul Islam *(Kyoto University, Japan)*
A1-2	**0331: Ultra-Low-Power and High-Accuracy CMOS Temperature Sensor (invited)**
13:54 ~14:18	Jing Li, Luhan Yang, Dongjian Chen, Zhong Zhang, Qihui Zhang, Ning Ning, Qi Yu *(University of Electronic Science and Technology of China, China)*
A1-7	**0285: CMOS Terahertz Detector and Image Sensor (invited)**
14:18~ 14:42	Liyuan Liu *(Chinese Academy of Sciences, China)*
A1-3	**0295: A Region of Interest Technique for Event Driven Typed SPAD Readout Circuit**
14:42 ~14:54	Minwei Hu, Chenggong Wan, Lixia Zheng, Jin Wu *(Southeast University, China)*
A1-4	**0297: A SPAD Relative Address Coding for Lateral Resolution Improvement in Coincidence Detection**
14:54 ~15:06	Chenggong Wan, Lixia Zheng, Jin Wu *(Southeast University, China)*
A1-5	**0333: A 64×64 active and passive imaging readout circuit based on HgCdTe-LMAPD**
15:06 ~15:18	Rixian Tang, Ruiming Zhong, Jin Wu, Lixia Zheng (*Southeast University, China*)
A1-6	**0442: Loop Oscillation Analysis of MEMS Resonant Pressure Sensor Readout Circuit**
15:18 ~15:30	Tao Lu, Tao Yin, Wei Wang, Huan-ming Wu, Li-yuan Liu *(Yunnan Normal University, China; Institute of Semiconductors, Chinese Academy of Sciences, China; University of Chinese Academy of Science, China; Ningbo University, China)*

Wednesday, October 25, 13: 30 – 15: 30	Hall 202
Session B1: Digital Circuit I	Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Yun Chen, Fudan University, China	

	Title
B1-1	**0329: An Energy-efficient Approximate DCT Design for Image Processing (Invited)**
13:30 ~14:00	Xu Wang, Ke Chen, Chenghua Wang, Weiqiang Liu *(Nanjing University of Aeronautics and Astronautics, China)*
B1-2	**0401: High-Performance Rejection Sampling Hardware Circuit Design for Kyber**
14:00 ~14:15	Yang Wang, Huihong Zhang, Yuejun Zhang, Hongshuai Wei, Pengjun Wang, Tengfei Yuan, Chengjie Wang *(Ningbo University, China; Wenzhou University, China)*
B1-3	**0402: An Architecture of a Single-Event Tolerant D Flip-flop Using Full-Custom Design in 28nm Process**
14:15 ~14:30	Yuanxin Tian, Yuejun Zhang, Huihong Zhang, Liang Wen, Pengjun Wang, Zhiyi Li *(Ningbo University, China; China Coast Guard Academy, China; Wenzhou University, China)*
B1-4	**0403: Full-custom Design of Improved Carry Adder Circuit for CLBs**
14:30 ~14:45	Mengfan Xu, Yuejun Zhang, Huihong Zhang, Liang Wen, Tengfei Yuan, Pengjun Wang, Zhiyi Li (*Ningbo University, China; China Coast Guard Academy, China; Wenzhou University, China*)
B1-5	**0437: Design of PUF Circuit Based on Charge Leakage of Cascade Dynamic Gate**
14:45 ~15:00	Xudong Wu, Gang Li, Pengjun Wang *(Wenzhou University, China)*
B1-6	**0445: Design of Lightweight Strong Arbiter PUF Circuit Based on MOSFET Threshold Loss**
15:00 ~15:15	Xilong Shao, Xuejiao Ma, Gang Li *(Wenzhou University, China; Wenzhou University of Technology, China)*
B1-7	**0473: Efficient Search Path Reduction for NB-LDPC Codes with T-EMS Algorithm**
15:15 ~15:30	Xuewei Quan, Houren Ji, Xiaohu You, Chuan Zhang (*Southeast University, China; Purple Mountain Laboratories, China*)

Wednesday, October 25, 13: 30 – 15: 30	Hall 203
Session C1: Novel Device I	Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Chen Wang, Fudan University, China	

	Title

C1-1	**0480: Spintronic In-Memory-Computing: from Devices to Circuits (Invited)**
13:30 ~14:00	Yue Zhang (Beihang University, China)
C1-2	**0482: Van Der Vaals Semiconductor Heterojunction Spintronic Devices (Invited)**
14:00 ~14:30	Kaiyou Wang (*Institute of Semiconductors, Chinese Academy of Sciences, China*)
C1-3	**0486: Building a Spiking Sensory Neuron with Oxide-Based Neuromorphic Devices (Invited)**
14:30 ~15:00	Mengjiao Pei, ChangJin Wan *(Nanjing University, China)*
C1-4	**0489: Integrated Memristor Networks and Chips for Neuromorphic Computing (Invited)**
15:00 ~15:30	Yuchao Yang *(Peking University, China)*

Wednesday, October 25, 13: 30 – 15: 30 Hall 207

Session D1: Processor Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Jun Han, Fudan University, China

	Title
D1-1	**0481: Exploring Machine Learning Adoption in Customisable Processor Design (Invited)**
13:30 ~13:54	Jose G. F. Coutinho, Ce Guo, Tim Todman, Wayne Luk *(Imperial College London, The United Kingdom)*
D1-2	**0535: Hardware Acceleration of Functional Encryption (invited)**
13:54~ 14:18	Makoto Ikeda *(The University of Tokyo, Japan)*
D1-3	**0300: General Vector Instruction Extension for GF(2^m) Polynomial Operation in Post-quantum Cryptography**
14:18 ~14:30	Honglin Kuang, Yifan Zhao, Yi Sun, Jun Han *(Fudan University, China)*
D1-4	**0316: MUG5: Modeling of Universal Chiplet Interconnect Express (UCIe) Standard Based on gem5**
14:30 ~14:42	Xiaoyan Li, Zizheng Dong, Shuaipeng Li, Sai Gao, Jianfei Jiang, Guanghui He, Zhigang Mao *(Shanghai Jiao Tong University, China)*
D1-5	**0374: Coupled Data Prefetch and Cache Partitioning Scheme for CPU-Accelerator System**

14:42 ~14:54	Zengshi Wang, Chao Fu, Jun Han *(Fudan University, China)*
D1-6	**0430: A Multi-mode Convolution Coprocessor Based on RISC-V Instruction Set Architecture**
14:54 ~15:06	Wenqiang Gong, Fang Zhou, Fen Ge *(Nanjing University of Aeronautics and Astronautics, China)*
D1-7	**0448: Permutation-Based Approximate Multiplier with High Accuracy**
15:06 ~15:18	Kunlong Li, Yunfei Dai, Zhen Li, Lingli Wang *(Fudan University, China)*
D1-8	**0484: Design of a Data Transmission Control Unit in a Multi-core DSP System**
15:18 ~15:30	Hu Ge, Qiao Yuan, Yuhao Zhang, Yukun Song, Zhenmin Li *(Hefei University of Technology, China; Space Star Technology Co., Ltd, China)*

Wednesday, October 25, 15: 45-17: 45

Wednesday, October 25, 15: 45-17: 45 Hall 209

Session A2: Mixed-Signal Circuit II Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Jing Li, University of Electronic Science and Technology of China, China

	Title
A2-1	**0252: Back to the Analog Neural Network and Linear Circuit Theory (Invited)**
15:45 ~16:15	Haruo Kobayashi, Manato Hirai, Kakeru Otomo, Shogo Katayama, Xueyan Bai, Masashi Chiba, Zifei Xu, Dan Yao, Lengkhang Nengvang, Minh Tri Tran, Kanji Yoshihiro, Anna Kuwana, Takato Ooide, Hiroshi Tanimoto, Yuji Gendai, Jianglin Wei *(Gunma University, Japan; Kitami Institute of Technology, Japan; Yibin University, China)*
A2-2	**0536: A Sinusoidal Fitting-Based Digital Foreground Calibration Technique for Pipelined ADC (Invited)**
16:15 ~16:30	Beicheng Xue, Zhifei Lu, Wei Zhang, He Tang, Xizhu Peng *(University of Electronic Science and Technology of China, China)*
A2-3	**0305: A 59.99dB SNDR 1.13mW Ping-pong NS SAR ADC for 3-D Transesophageal Echocardiography**
16:30 ~16:42	Jing Li, Tianci Zhang, Yingchen Liu, Penghao Jiang, Zhong Zhang, Qihui Zhang，Ning Ning, Qi Yu *(University of Electronic Science and Technology of China, China)*
A2-4	**0341: Analysis and Modeling of Non-ideal Effects in SAR ADC**

16:42 ~16:54	Yaxin Zeng, Xi Feng, Hao Xu, Na Yan *(Fudan University, China; Beijing Smartchip Semiconductor Technology Co., Ltd, China)*
A2-5	**0360: A 77.8dB-SNDR 25MHz-BW 2nd-order NS Pipelined SAR ADC with 4th-order Gain-Error-Shaping**
16:54 ~17:06	Guolong Fu, Li Tian, Yanbo Zhang, Shubin Liu, Zhangming Zhu *(Xidian University, China)*
A2-6	**0406: A 32GS/s 7bit TI-SAR ADC in 28nm for 32Gb/s ADC-Based SerDes Receiver**
17:06 ~17:18	Jun Chen, Fengyi Mei, Mingzhe Liu, Yongzhen Chen, Jiangfeng Wu *(Tongji University, China)*
A2-7	**0412: Pipelined-SAR ADC Calibration Technique Based on Gain-Bit Weights**
17:18 ~17:30	Hang Ling, Yifei Bai, Fengyi Mei, Huajun Yao, Yongzhen Chen, Jiangfeng Wu *(Tongji University, China)*

Wednesday, October 25, 15: 45-17: 45 Hall 202

Session B2: Digital Circuit II Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Chuan Zhang, Southeast University, China

	Title
B2-1	**0222: Design of Multi-Mode Digital Signal Processing Circuit for Digital Transmitters**
15:45 ~16:00	Changgu Yan, Yun Yin, Hongtao Xu *(Fudan University, China)*
B2-2	**0356: A Speed Up Method towards DDR Subsystem Functional Verification in SoC**
16:00 ~16:15	Yande Jiang, Na Chen, Huiquan Wang, Guangda Zhang, Jun Xia, Xiaobo Yan *(Academy of Military Sciences, China; Beijing University of Technology, China; Nanhu Laboratory, China)*
B2-3	**0384: A Decision-Based CORDIC Hardware for Arc Tangent Calculation**
16:15 ~16:30	Haoyu Wu, Liyu Lin, Haodong Sun, Xiaoyang Zeng, Yun Chen *(Fudan University, China)*
B2-4	**0398: Ternary Multiply-Accumulate Circuit Based on Domino Structure**
16:30 ~16:45	Hanyu Shi, Yuejun Zhang, Huihong Zhang, Qikang Li, Pengjun Wang *(Ningbo University, China; Wenzhou University, China)*
B2-5	**0399: A 7nm-Based Decodable Self-Resetting Regfile Circuit**
16:45	Wanlong Zhao, Yuejun Zhang, Mingze Ren, Liang Wen, Pengjun Wang *(Ningbo*

~17:00	*University, China; China Coast Guard Academy, China; Wenzhou University, China*)
B2-6	**0405: An Efficient Hash Computing Unit for Kyber Algorithm**
17:00 ~17:15	Hongshuai Wei, Yuejun Zhang, Huihong Zhang, Yang Wang, Tengfei Yuan, Chengjie Wang, Pengjun Wang *(Ningbo University, China; Wenzhou University, China)*
B2-7	**0472: Hardware Implementation of Chromatic Dispersion Compensation in Finite Fields**
17:15 ~17:30	Zhenhao Ji, Ruiyang Ji, Mingyuan Ding, Xiangning Song, Xiaohu You, Chuan Zhang *(Southeast University, China; Purple Mountain Laboratories, China)*
B2-8	**0474: Low-Complexity GAI-BP Detection for MIMO Systems with Threshold-updating Strategy**
17:30 ~17:45	Wenyu Huang, Yifan Shi, Wenyue Zhou, Jiaqian Ling, Xiaohu You, Chuan Zhang *(Southeast University, China; Purple Mountain Laboratories, China)*

Wednesday, October 25, 15: 45-17: 45 Hall 203

Session C2: Novel Device II Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Ziyu Liu, Fudan University, China

	Title
C2-1	**0259: Complementary Field-Effect Transistors: From Silicon to 2D Materials (Invited)**
15:45 ~16:09	Mansun Chan *(The Hong Kong University of Science and Technology, Hong Kong, China)*
C2-2	**0525: Atomic LEGO for Future Computing (Invited)**
16:09 ~16:33	Feng Miao *(Nanjing University, China)*
C2-3	**0478: Silicon Based 2D Flash Memory (Invited)**
16:33 ~16:57	Peng Zhou *(Fudan University, China)*
C2-4	**0502: Hybird 2D/CMOS Microchips for Memristive Applications (Invited)**
16:57 ~17:21	Mario Lanza *(King abdullah University of Science and Technology, Saudi Arabia)*
C2-5	**0515: Defect and Interface Engineering of Two Dimensional Materials (Invited)**
17:21 ~17:45	Zhenhua Ni *(Southeast University, China)*

Wednesday, October 25, 15: 45-17: 45	Hall 207
Session D2: SoC	Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Ziyu Guo, Fudan University, China	

	Title
D2-1	**0490: Scalable Highly Integrated Quantum Bit Error Correction System by Classical Electronics (Invited)**
15:45 ~16:15	Kazutoshi Kobayashi *(Kyoto Institute of Technology, Japan)*
D2-2	**0500: A Non-Centralized Routing Scheme with Phase Caching CDR for Nanosecond-Level Optical Switching Systems (Invited)**
16:15 ~16:45	Xin Lu, Heng Zhang, Leilei Wang, Tao Fang, Chunhui Zhang, Feng Wang, Yashe Liu, Xiangfei Chen, Li Du, Yuan Du *(Nanjing University, China; Huawei Tech. Co., Ltd, China)*
D2-3	**0416: A low-power daisy-chain controller implemention in BMS based on power mode switching**
16:45 ~17:00	Xinhao Xu, Yongzhen Chen, Jiangfeng Wu *(Tongji University, China)*
D2-4	**0464: Peripheral Hardware System Design for a Neuromorphic Chip**
17:00 ~17:15	Wang Shi, Jian Cao, Guang Chen, Xuan Wang, Shengrong Liu, Yawei Ding *(Peking University, China)*

Wednesday, October 25, 17: 45 – 18: 45

Wednesday, October 25, 17: 45 –18：45	
Poster Session I	Platinum Hanjue Hotel 2nd Floor

	Title
P1-1	**0203: Design of Analog Front-end for Human Resistance Monitoring Technology**
	Zitong Zhu, Wensi Wang, Wenjing Wang *(Beijing University of Technology, China)*
P1-2	**0213: An Ultra-low-power Temperature Sensor with an Accuracy of +0.6/-1 ℃ from -30 ℃ to 90 ℃**
	Hanyang Wang, Zhonghan Shen, Hao Min *(Fudan University, China; Shanghai Quanray Electronics CO. LTD, China)*
P1-3	**0227: Multi-channel 600V-level Driver for Piezoelectric-Electrohydrodynamic Hybrid Inkjet Printer**
	Jae-Hyoun Park *(Korea Electronics Technology Institute, Korea)*

P1-4	**0243: A DC Offset Cancellation Circuit Using Digital Assistance Technique and Self-Calibrating Comparator for RF Transceiver**
	Zhiyuan Cao, Zirui Jin, Dongsheng Liu, Chengcheng Zhang *(Huazhong University of Science and Technology, China)*
P1-5	**0246: An Improved Frequency Compensation Scheme for a Low Quiescent Current Low Dropout Voltage Regulator with Wide Input Voltage and Load Current Range**
	Wenjun Li, Bingjie Chen, Jianhua Feng *(Peking University, China)*
P1-6	**0271: A Dual-mode Broadband Image Sensor Based on Graphene-CMOS Integration**
	Ye Lin, Yang Xiao, Jingjing Lv, Li Du, Yuan Du *(Nanjing University, China)*
P1-7	**0313: An Adaptive Current Source IGBT Gate Driver Based on Current and Voltage Slope Feedback to Reduce EMI**
	Chang Liu, Shuohan Yang, Qingyue Zhou, Run Min, Desheng Zhang, Yinyu Wang, Shuo Zhang, Qiaoling Tong *(Huazhong University of Science and Technology, China)*
P1-8	**0315: A Bandgap Voltage Reference with Low Temperature Coefficient and High PSRR Designed for LDO**
	Yuzi Wang, Xichen Duan, Kai Sun, Peng Huang, Liuyang Zhang, Jie Liang *(Shanghai University, China)*
P1-9	**0324: A Fully-Integrated Analog Front-End for Carbon-Based Short-Wave Infrared Image Sensor**
	Weirong Xi, Jianhua Jiang, Chengying Chen (*Xiamen University of Technology, China; Peking University, China*)
P1-10	**0328: Design of Smooth Mode Transition Buck-Boost Converter Based on Adaptive Offset Cancellation**
	Shenhao Jiang, Hao Chen, Shaowei Zhen, Keyu Li, Xin Chen, Liang Huang, Yongsheng Du, Bo Zhang *(University of Electronic Science and Technology of China, China; Suplet Co., Ltd., China)*
P1-11	**0347: A High Precision Capacitive Isolation Amplifier for Current Sensing Applications**
	Yonghui Wu, Yiwei Liu, Shaowei Zhen, Yanliang Li, Yikang Li, JiaNing Zhang, Yi Ou, Bo Zhang *(University of Electronic Science and Technology of China, China; Chongqing Optoelectronics Research Institute, China)*
P1-12	**0351: A Low Power Consumption and Higher Performance DDR5 Receiver Based on a Direct Feedback DFE and Dedicated Reference Voltage for 1st TAP**

	DFE
	Elaine Tang, Chris Eom, Jake Jung, Brian Lee *(Design center CXMT, China)*
P1-13	**0352: Pseudo Differential DQS Receiver for Eliminating Channel Hi-z Noise**
	Xueyan Zhang, Chris Eom, Jake Jung, Brian Lee, Gaoyuan Pang *(Design center CXMT, China)*
P1-14	**0426: A High-Throughput Luma Mapping with Chroma Scaling Decoder for Versatile Video Coding**
	Zekai He, Wei Li, Leilei Huang, Yibo Fan *(Fudan University, China; East China Normal University, China)*
P1-15	**0410: A Cost-efficient Hybrid Gate Driver For SiC MOSFETs and IGBTs**
	Yue Shi, Jinyang He, Zhijian Zhang, Zekun Zhou, Bo Zhang *(University of Electronic Science and Technology of China, China; Chengdu University of Information Technology, China)*
P1-16	**0422: An Improved Delay Cell with Low Power Consumption and Strong Driving Capability**
	Cai Tian, Shunli Ma, Wenzhong Bao, Tianxiang Wu *(Fudan University, China*)
P1-17	**0429: A High Precision Current Sampling Circuit with Rail-to-Rail Common-Mode Input Range**
	Zekun Zhou, Yun Dai, Jianli Lou, Yue Shi, Bo Zhang *(University of Electronic Science and Technology of China, China; Chengdu University of Information Technology)*
P1-18	**0434: A High Precision CMOS Temperature Detector with Curvature Calibration Technique**
	Weizhen Cai, Xiaobo Chen, Xiaoming Liu, Jianjun Zhou *(Shanghai Jiao Tong University, China)*
P1-19	**0438: A High-precision Current Detection Circuit for Battery Management System**
	Pu-Sen Wu, HaoXue, Byambajav Ragchaa, LiJi Wu, Zhenhui Zhang, Xiangmin Zhang *(Heilongjiang University, China; Tsinghua University, China; Beijing National Research Center for Information, Science and Technology, China)*
P1-20	**0458: A PSR Enhancement Scheme: An Overview of Feed-Forward Ripple Cancellation Technique**
	Wentao Zheng, Xiaohang Wang, Libo Qian *(Ningbo University, China; Xidian University, China)*
P1-21	**0245: Linearity Analysis for Charge Domain In-memory Computing**
	Heng Zhang, Yuan Du, Li Du *(Nanjing University,China)*

P1-22	**0269: A Low-Delay Self-Interference Cancellation Chip with Channel Sounding Capability**
	Jiarui Chen, Shunyang Chen, Menglei Zhu, Xiaoguo Huang, Guangqi Zhen *(Science and Technology on Communication Information Security Control Laboratory, China)*
P1-23	**0311: High Frame Rate High Precision ROIC with Pixel-level CCO-Based ADC for Infrared FPAs**
	Haolin Lu, Ye Zhou, Wengao Lu, Yacong Zhang, Zhongjian Chen *(Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China)*
P1-24	**0314: A 128-electrodes Neural Probe with 30*55 μm^2 Channel Area Low-power CCO-based ADC**
	Weixiong Qiu, Shihui Sun, Yufei Ai, Wengao Lu, Yacong Zhang, Zhongjian Chen *(Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China)*
P1-25	**0321: A Pattern Cancel DAC system design methodology for FMCW radar**
	Yue Lin, Hongtao Xu *(Fudan University, China)*
P1-26	**0367: A CT DSM with DAC Scaling Technique for Direct Neural Recording Front-End**
	Yuekai Liu, Jinlei Pan, Liang Qi *(Shanghai Jiao Tong University, China)*
P1-27	**0370: A Low-Complexity Timing Skew Mismatch Calibration Method for Time-Interleaved ADCs**
	Sujuan Liu, Shibo Li, Xudong Sun *(Beijing University of Technology, China)*
P1-28	**0371: A Transient-Enhanced Digital-LDO With Adaptive Clock-Edge Control**
	Guoqiang Song, Wenxin Yan, Junhui Zhang, Lin He *(Nanjing University of Posts and Telecommunications, China)*
P1-29	**0387: Dual Code Channel Hybrid Readout Circuit Based on High Precision Photoelectric Encoders**
	Feng-Wei Wang, Yun-Hao Fu, Yu-Chun Chang, Fei Wang, Dong-Xu Zhao *(University of Chinese Academy of Sciences, China; Jilin University, China; Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, China)*
P1-30	**0418: High Performance Bootstrap Switch for 14 bit SAR ADC with Redundancy in SMIC 180nm**
	Jing Yuan, Tianxiang Wu, Shunli Ma, Wenzhong Bao *(Fudan University, China)*
P1-31	**0419: A 300MS/s 57.6dB SNDR Single-Channel SAR ADC with Accelerated SAR Logic**

	Muxi Zou, Xiaodi Feng, Tianxiang Wu, Shunli Ma, Junyan Ren *(Fudan University, China)*
P1-32	**0420: A Multi-channel 12-bits 100MS/s SAR ADC in 65nm CMOS**
	Yigang Wei, Tianxiang Wu, Shunli Ma, Junyan Ren *(Fudan University, China)*
P1-33	**0423: A High Gain and Wide Bandwidth Dual-Power CMOS Op-amp for High-Speed ADCs Application**
	Xiaodi Feng, Muxi Zou, Tianxiang Wu, Shunli Ma *(Fudan University, China)*
P1-34	**0457: A Novel 16-bit ADC Based on Third-order Σ-Δ Modulator with Zero Optimization**
	Yanming Li, Mengyao Liu, Lufang Zhang *(Chang'an University, China)*
P1-35	**0253: A Broadband Voltage Controlled Oscillator with Multi-Band Output**
	Boming Su, Sikai Chen, Peiyin Cai, Tao Peng, Yi Wu, Guochi Huang *(Fujian Normal University, China; Key Laboratory of OptoElectronic Science and Technology for Medicine of Ministry of Education, China; Fujian Provincial Engineering Technology Research Center of Photoelectric Sensing Application, China)*
P1-36	**0318: A Driver Amplifier with Configurable Transformer Based Matching Networks in 65-nm CMOS**
	Hangbiao Li, Ran Zhang, Kai Zhang, Xiaodong Zhao, Zhiqing Liu and Shuai Liu (*Southwest China Institute of Electronics Technology, China)*
P1-37	**0421: A 15GHz Class-C VCO with Two-stage Buffer in 0.15-μm GaAs**
	Lei Wu, Tianxiang Wu, Shunli Ma, Junyan Ren *(Fudan University, China)*
P1-38	**0431: Fast locking Sampling PLL Using Phase Error Eliminator**
	Shengyuan Zhou, Chao Yang, Sheng Wang, Ziyao Xia, Xiaoming Liu, Jing Jin *(Shanghai Jiao Tong University, China)*
P1-39	**0433: A Wideband Inductorless LNA Employing Dual-Loop Feedback for Low-Power Applications**
	Zhaolin Yang, Yuyang Chen, Xiaoming Liu, Jing Jin, Jianjun Zhou *(Shanghai Jiao Tong University, China)*
P1-40	**0436: A 30GHz Bidirectional PA/LNA with Transformer-Based Switchable RC Matching Network**
	Hanqi Gao, Zhaolin Yang, Xiaoming Liu, Jing Jin, Jianjun Zhou *(Shanghai Jiao Tong University,China)*
P1-41	**0208: A 10Gbps high-speed、 low-noise optical receiver based on CMOS 45nm technology**

	Wenli Liao, Daifa Gao, Chengying Chen, Yufei Huang *(Xiamen University of Technology, China)*
P1-42	**0435: A 24/48 Gb/s NRZ/PAM-4 Dual-Mode Transmitter with 3-tap FFE in 28 nm CMOS**
	Jiaxu Zhou, Yichao Lin, Bo Wang, Jing Jin, Shan Wang, Tingting Mo *(Shanghai Jiao Tong University, China; Montage Technology Co. Ltd., China; SJTU-Montage IC Design Frontier Technology Joint Lab, China)*
P1-43	**0529: A NOVEL PROGRAMMABLE RESISTANCE AND CAPACITANCE NETWORK FOR HIGH-PRECISION ANALOG DESIGN**
	Zhu Kejia *(Common Mode Semiconductor, China)*

Thursday

Thursday, October 26, 8: 30 – 10: 00

Thursday, October 26, 8: 30 – 10: 00 Hall 210
Keynote Session K3 Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Haruo Kobayashi, Gunma University, Japan

K3-1 **RF Acoustic Wave Devices in Mobile Communications --- Aliens from Jupiter** *(8: 30-9: 15)*
Prof. Ken-ya Hashimoto, University of Electronic Science and Technology of China, China

K3-2 **The Back-gate of UTBB FDSOI Transistor: a Magic Knob for Analog and Mixed Cells** *(9: 15-10: 00)*
Prof. Gilles Jacquemod, Université Côte d'Azur, France

Thursday, October 26, 10: 15 – 12: 15

Thursday, October 26, 10: 15 – 12: 15 Hall 209

Session A3: Analog Circuit I Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Haruo Kobayashi, Gunma University, Japan

	Title
A3-1	**0493: Transmitter IC Enabling Magnetic Field Shaping for High-Efficiency Wireless Charging of Multiple Receivers(invited)**
10:15 ~10:45	Hao Qiu, Xusheng Zhang, Junji Chen, Yi Shi, Makoto Takamiya *(Nanjing University, China; The University of Tokyo, Japan)*
A3-2	**0235: A 23-nA Quiescent Current Output-Capacitorless LDO Regulator for IoT Devices**
10: 45 ~11:00	Shengnan Zhou , Cheng Huang, Rui P. Martins, Yan Lu, Xiangyu Mao *(University of Macau, Macao, China; Iowa State University, Ames, USA)*
A3-3	**0268: A Low Ripple Frequency-Feedback PFM-PWM Buck Converter with Seamless Mode Transition**
11:00 ~11:15	Zhong Zhao ,Bo Zhang, Ping Luo,Zhiyuan Zhang; Jiahang Fan, Hao Chen *(University of Electronic Science and technology of China, China)*
A3-4	**0298: Current Balancing Strategy based on Threshold Midpoint Adjustment for Interleaved Constant Frequency Hysteresis Control Buck Converter**
11:15 ~11:30	Yinyu Wang, Wenjun Tang, Desheng Zhang, Run Min, Shuo Zhang, Wenxuan Tan, Wanyang Wang, Liying Zhu, Chang Liu, Qiaoling Tong *(Huazhong University of Science and Technology, China; Beijing Academy of Space Technology, China)*
A3-5	**0309: An Analog Assisted Dual Loop Hybrid LDO Based on Adaptive Clock**
11:30 ~11:45	Xichen Duan, Yuzi Wang, Peng Huang, Kai Sun, Liuyang Zhang, Jie Liang *(Shanghai University, Shanghai, China; Peng Cheng Laboratory, China)*
A3-6	**0319: A Fast-Transient Right-Half-Plane Zero-Free Hybrid Buck-Boost Converter**
11:45 ~12:00	Hao Chen, Shenhao Jiang, Yajuan He, Hailiang Xiong, Xin Chen, Hongyang Wu, Liang Huang, Yongsheng Du, Bo Zhang, Shaowei Zhen *(University of Electronic Science and Technology of China, China; Suplet Co., Ltd., Beijing, China)*
A3-7	**0456: Sub-50mV Bootstrap Clock Booster and Integrated Cold Start for Thermoelectric Energy Harvesting**
12:00 ~12:15	Haizhun Wang, Xiudeng Wang, Yinshui Xia *(Ningbo University, China; Xidian University, China)*

Thursday, October 26, 10: 15 – 12: 15 Hall 202

Session B3: AI Circuit I Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Runsheng Wang, Peking University, China

	Title
B3-1	**0485： Mitigating Non-Ideality Issues of Analog Computing-In-Memory In DNN-Based Designs(invited)**
10:15 ~10:40	Chi-Tse Huang, An-Yeu Wu *(Taiwan University, Taiwan, China)*
B3-2	**0508: Benchmarking Heterogeneous Integration with 2.5D/3D Interconnect Modeling(invited)**
10:40 ~11:05	Zhenyu Wang, Jingbo Sun, Alper Goksoy, Sumit K. Mandal, Jae-sun Seo, Chaitali Chakrabarti, Umit Y. Ogras, Vidya Chhabria, and Yu Cao*(Arizona State University, USA; University of Wisconsin-Madison, USA; Indian Institute of Science, India)*
B3-3	**0216: An 842nW Wearable Inter-Patient Cardiac Arrhythmia Monitoring Processor with a Feature Engine-Based Artificial Neural Network**
11:05 ~11:17	Zihao Ye, Xuecong Lu, Shuai Wang, Bing Li *(Shenzhen University, China)*
B3-4	**0231: An Area-Power-Efficient Multiplier-less Processing Element Design for CNN Accelerators**
11:17 ~11:29	Jiaxiang Li, Masao Yanagisawa, Youhua Shi *(Waseda University, Japan)*
B3-5	**0292: A Domain-Specific DMA Structure for Per-channel Processing-based CNN Accelerator**
11:29 ~11:41	Yi Chen, Mengni Bie, Tao Chen, Longmei Nan, Yiran Du, Wei Li *(Information Engineering University, China)*
B3-6	**0323: A 28nm 15.09nJ/inference Neuromorphic Processor with SRAM-Based Charge Domain in-Memory-Computing**
11:41 ~11:53	Yuchao Zhang, Zihao Xuan, Yi Kang *(University of Science and Technology of China , China)*
B3-7	**0334: UACT: A Unified Energy-efficient Computing Architecture for CNN and TCNN**
11:53 ~12:05	Yufan Chen, Xuyang Duan, Jun Han *(Fudan University, China)*

Thursday, October 26, 10: 15 – 12: 15 Hall 203

Session C3: Power & Compound Device I Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Moufu Kong, University of Electronic Science and Technology of China, China

	Title
C3-1	**0521: Hetero-Integration of Ga_2O_3 Bipolar Devices Toward Power Electronics(invited)**
10:15 ~10:45	Hehe Gong, Jiandong Ye *(Nanjing University, China)*
C3-2	**0229: Inversion-Mode InGaAs FinFETs for Logic and RF Applications(invited)**
10:45 ~11:15	Jing-Yuan Wu,Mu-Yu Chen; Edward. Yi Chang *(Yang-Ming Chiao-Tung University, Taiwan, China)*
C3-3	**0503: A Scalable Compact Model for High-Frequency GaN-HEMTS(invited)**
11:15 ~11:45	Xing Zhou, Siau Ben Chiah *(Nanyang Technological University, Singapore; New Silicon Corporation Pte Ltd, Singapore)*
C3-4	**0214: An Ultra-Low Specific On-Resistance LDMOS With Segmented LOCOS In 0.18μm BCD Process Platform**
11:45 ~12:00	Jun Huang, Ning Ning, Renxiong Li, Qi Ding, Yutuo Guo, Yu Wang, Kunqin He, Yaxin Liu, Lulu Peng *(United Microelectronics Center Co., Ltd., China)*
C3-5	**0337: A Highly Automated and Rapid Datasheet Driven Empirical Modeling Process of SiC MOSFETs with High Accuracy and Robust Convergence**
12:00 ~12:15	Zhenbo Rao, Yan Wang *(Tsinghua University, China)*

Thursday, October 26, 10: 15 – 12: 15 Hall 207

Session D3: FPGA Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Jinmei Lai, Fudan University, China

	Title
D3-1	**0273: OpenPARF: An Open-Source Placement and Routing Framework for Large-Scale Heterogeneous FPGAs with Deep Learning Toolkit(invited)**
10:15 ~10:45	Jing Mai, Jiarui Wang, Zhixiong Di, Guojie Luo, Yun Liang, Yibo Lin *(Peking University, China; Southwest Jiaotong University, China; Beijing Advanced Innovation Center for Integrated Circuits, China)*
D3-2	**0219: A Low-complexity Max Unpooling Architecture for CNNs**

10:45 ~11:00	Xiaojun Zhang, Chenshi Zhu, Qin Han, Zhengrong Wang, Dexue Zhang *(Shandong University of Science and Technology, China; State key Laboratory of High-end Server and Storage Technology,China)*
D3-3	**0262: Hardware Acceleration Linear Matrix Solvor Based on FPGA**
11:00 ~11:15	Rui Shi, Yunfan Zuo, Kelong Zhang, Hao Yan *(Southeast University, China)*
D3-4	**0280: Efficient FPGA Routing Architecture Exploration Based on Two-Stage MUXes**
11:15 ~11:30	Jide Zhang, Kaixiang Zhu, Kaichuang Shi, Hao Zhou, Lingli Wang *(Fudan University, China)*
D3-5	**0395: High-Performance BLS12-381 Pairing Engine on FPGA**
11:30 ~11:45	Anawin Opasatian, Makoto Ikeda *(The University of Tokyo, Japan)*
D3-6	**0407: A Compilation Toolchain of Neural Networks for FPGA Backend**
11:45 ~12:00	Jun Zeng, Panfeng Wang, Haili Wang, Fuchun Sun, Hailong Yao *(Tsinghua University,China; Hercules Microelectronics Co., Ltd., China; University of Science and Technology Beijing, China)*
D3-7	**0415: An Accurate Area Model for FPGA Circuits at advanced technologies**
12:00 ~12:15	Yanze Li, Jianfan Zhang, Zhichao Wei, Jian Wang, Jinmei Lai *(Fudan University, China)*

Thursday, October 26, 13: 30 – 15: 30

Thursday, October 26, 13: 30 – 15: 30 Hall 209
Session A4: Analog Circuit II Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Hao Qiu, Nanjing University, China

	Title
A4-1	**0340: Passiveless Digitally Controlled Oscillator With Embedded PVT Detector Using 40-nm CMOS (invited)**
13:30 ~13:55	Ralph Gerard B. Sangalang, You-Wei Shen, Shiva Reddy, Lean Karlo S. Tolentino, Chua-Chin Wang *(Sun Yat-Sen University, Taiwan, China; The National Engineering University, Philippines; Technological University of the Philippines, Philippines)*
A4-2	**0516: A Bang-Bang Phase Detector for PAM-N Signaling(invited)**
13:55 ~14:20	Johar Abdekhoda, Li Wang, Reza Sarvari, Chik Patrick Yue *(The Hong Kong University of Science and Technology, Hong Kong, China; Sharif University of Technology, Iran)*

A4-3	**0463: Design of Chip-to-PCB Matching Network for Millimeter-Wave On-Chip Transmitter and On-PCB Antenna (invited)**
14:20 ~14:45	Zilu Liu, Li Wang, Hamed Fallah, C.Patrick Yue (*The Hong Kong University of Science and Technology, Hong Kong, China*)
A4-4	**0210: A Low Jitter Current-Mode Multiplying Delay-Locked Loop Applied to High-Precision TDC**
14:45 ~15:00	Jin Sun, Jiahao Hu, Ziqi Song, Qing Li, Dian He, Hujun Jia *(Xidian University,China)*
A4-5	**0342: An ADPLL Design Model Based on LoRa IoT Application**
15:00 ~15:15	Yiyun Mao, Haoyun Gao,Dejian Li, Hao Xu, Na Yan *(Fudan University, China; Beijing Smartchip Semiconductor Technology Co., Ltd, China)*
A4-6	**0343: A Vernier Time-to-Digital Converter with 1.5ps Resolution for an All-Digital Phase Locked Loop in 28nm CMOS**
15:15 ~15:30	Peifang Wu, Yan Liu, Xi Feng, Hao Xu, Na Yan *(Fudan University, China; Beijing Smartchip Semiconductor Technology Co., Ltd, China)*

Thursday, October 26, 13: 30 – 15: 30 Hall 202

Session B4: AI Circuit II Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Yuhui He, Huazhong University of Science and Technology, China

	Title
B4-1	**0230: A Unifying Tensor View for Lightweight CNNs(invited)**
13:30 ~14:00	Jason Chun Lok Li, Rui Lin, Jiajun Zhou, Edmund Yin Mun Lam, Ngai Wong *(The University of Hong Kong, Hong Kong, China)*
B4-2	**0495: Hardware-Specific Optimization for Mapping of Convolutional Neural Networks to Memristor Crossbars(invited)**
14:00 ~14:30	Seokjin Oh, Rina Yoon, Seungmyeong Cho and Kyeong-Sik Min *(Kookmin University, Korea)*
B4-3	**0233: A Time- And Energy-Efficient CNN With Dense Connections On Memristor-Based Chips**
14:30 ~14:45	Wenyong Zhou , Yuan Ren, Jiajun Zhou, Tianshu Hou, and Ngai Wong *(The University of Hong Kong, Hong Kong China; Shanghai Jiao Tong University, China)*
B4-4	**0312: An Optimized Dataflow Based Accelerator for Sparse Convolutional Neural Networks**
14:45	Xuran Ding, Guowang Su, Jun Zhang (*Central South University, China)*

~15:00	
B4-5	**0350: Loop-Tiling Based Compiling Optimization for CNN Accelerators**
15:00 ~15:15	Meiling Yang, Shan Cao, Wei Zhang, Yu Li, and Zhiyuan Jiang *(Shanghai University, China)*
B4-6	**0441: A Dynamic Codec with Adaptive Quantization for Convolution Neural Network**
15:15 ~15:30	Yichen Ouyang, Xianglong Wang, Gang Shi, Lei Chen, Fengwei An *(Southern University of Science and Technology, China)*

Thursday, October 26, 13: 30 – 15: 30 Hall 203

Session C4: Power & Compound Device II Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Rui Jin, Beijing Institute of Smart Energy, Huairou Laboratory, China

	Title
C4-1	**0488: Processes of p-GaN Gate HEMTs for High-efficiency and High-reliability Applications(invited)**
13:30 ~14:00	Junting Chen, Chengcai Wang, Zuoheng Jiang, Mengyuan Hua *(Southern University of Science and Technology, China)*
C4-2	**0522: Recess-Patterned Ohmic Contact Technology for AlGaN/GaN Heterostructures(invited)**
14:00 ~14:30	Xinyi Tang, Yang Jiang, Fangzhou Du, Nick Tao, Qing Wang, Hongyu Yu *(Southern University of Science and Technology, China; The University of Hong Kong, Hong Kong, China; Maxscend Microelectronics Company Limited, China)*
C4-3	**0277: A Novel SiC Superjunction Trench MOSFET with Integrated Heterojunction Diode for Improved Performance**
14:30 ~14:45	Moufu Kong, Ronghe Yan, Bingke Zhang, Ke Huang, Bo Yi, Hongqiang Yang *(University of Electronic Science and Technology of China, China)*
C4-4	**0462: Comprehensive Comparison of Temperature Performances for SiC Trench MOSFET with Integrated Side-wall Schottky Diode and Heterojunction**
14:45 ~15:00	Bo Yi, Haoran Hu, Yilin Guo, Junji Cheng, Haimeng Huang, MouFu Kong, WenKun Shi, HongQiang Yang *(University of Electronic Science and Technology of China, China; China Zhenhua Group Yong guang Electronics CO.LTD, China)*

Thursday, October 26, 13: 30 – 15: 30 Hall 207

Session D4: EDA I Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Zhaori Bi, Fudan University, China

	Title
D4-1	**0236: Logic Synthesis for Emerging Technologies(invited)**
13:30 ~14:00	Giovanni De Micheli *(EPFL, Lausanne, Switzerland)*
D4-2	**0528: TED Analog Circuit Optimization Framework: Toward Fully Automated Analog Design (invited)**
14:00~ 14:30	Yuan Wang, Qingsen Wu, Jian Xin, Qian Qin, Jinglei Hao, Xiongbo Zhang, Yuefan Wang, Lin Li, Zuochang Ye, Zhiping Yu, Yan Wang *(Tsinghua University, China; Xiamen University, China)*
D4-3	**0256: An Analytical Model for Domain-Specific Accelerator Deploying Sparse LU Factorization**
14:30 ~14:45	Shuaibo Huang, Jiang Sha, Longxing Shi *(Southeast University, China)*
D4-4	**0301: HDDB: a High Density Digital Waveform Storage Method**
14:45 ~15:00	Biwei Liu, Jiageng Shi, Wencheng Jiang, Zhenyu Zhao, Jie Zhou *(National University of Defense Technology, China)*
D4-5	**0349: An Efficient Scheduling Algorithm for Stream Computing**
15:00 ~15:15	Kexin Wang, Jundong Xie, Yiwei Wang, Chang Wu *(Fudan University,China)*
D4-6	**0379: HierSyn: Fast Synthesis for Large Hierarchical Designs**
15:15 ~15:30	Yishan Zhang, Zhiyong Zhang, Chang Wu *(Fudan University, China; Shanghai Fudan Microelectronics Group Co., Ltd, China)*

Thursday, October 26, 15: 45 – 17: 45

Thursday, October 26, 15: 45 – 17: 45 Hall 209

Session A5: Analog Circuit III Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Jiawei Xu, Fudan University, China

	Title
A5-1	**0281：A Pseudo Short-circuit Adaptive Zero Current Detection Method for SIBTO in AMOLED Driver**
15:45 ~16:00	Ziyuan Chu, Zehua Chen, Taijia Zhang, Xinyi Li, Yuyin Sun, Yimeng Zhang, Yuming Zhang *(Xidian University, China)*
A5-2	**0282：A 0.69% LED Current Error LED Driver with Hysteretic Current Control**

16:00 ~16:15	Zehua Chen, Ziyuan Chu, Taijia Zhang, Xinyi Li, Yuyin Sun, Yimeng Zhang, Yuming Zhang *(Xidian University, China)*
A5-3	**0303：A 256-channel 11-bit OLED Source Driver IC with Unit Current Calibration**
16:15 ~16:30	Shuaichen Mu, Xiaoyu Guo, Hongge Li *(Beihang University, China)*
A5-4	**0335: A 6-Gb/s Wireline Transmitter Design with 3-Tap FFE in 28nm CMOS Technology**
16:30 ~16:45	Bingrong Lyu, Fan Ye, Junyan Ren *(Fudan University, China)*
A5-5	**0391: A 115-325MHz Wideband Analog Baseband with 0.5dB-Step Variable Gain Amplifier and Six-order Reconfigurable Gm-C Lowpass Filter**
16:45 ~17:00	Wen Zuo, Wei Li, Yun Wang, Yue Lin, Hongtao Xu *(Fudan University, China; Zhuhai Fudan Innovation Institute, China; ICLegend Micro, China)*

Thursday, October 26, 15: 45 – 17: 45 Hall 202

Session B5: AI Circuit III Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Yufeng Xie, Fudan University, China

	Title
B5-1	**0224: Optimizing Supervised Learning of Deep Spiking Neural Network towards Memristor Crossbar Implementation(invited)**
15:45 ~16:15	Qi Chen, Dayou Zhan, Jiawei Fu, Yuhui He *(Huazhong University of Science and Technology, China)*
B5-2	**0479: Not your father's stochastic computing (SC)! Efficient yet Accurate End-to-End SC Accelerator Design(invited)**
16:15 ~16:45	Meng Li, Yixuan Hu, Tengyu Zhang, Renjie Wei, Yawen Zhang, Ru Huang, Runsheng Wang *(Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China)*
B5-3	**0205: A Model-Guided Underwater Image Enhancement Network**
16:45 ~17:00	Leiou Wang, Donghui Wang *(Chinese Academy of Science, China; University of Chinese Academy of Sciences, China)*
B5-4	**0238: Nonlinear modeling of MIMO antenna array power amplifiers based on time-delay neural network**
17:00 ~17:15	Yiwei Zhou, Weibo Li, Yongzhen Chen *(Tongji University, China)*

B5-5	**0400: A Performance-driven Neural Network Compiler for Multi-core Computing-In-Memory Accelerator**
17:15 ~17:30	Bokai Zeng, Chen Yang, Hui Zhao, Xiang Qiu *(Xi'an Jiaotong University, China; Flash Billion Semiconductor Co. Ltd., China)*
B5-6	**0404: A High-Performance YOLOV5 Accelerator for Object Detection with Near Sensor Intelligence**
17:30 ~17:45	Jiacheng Cao, Ziyi Yang, Jie Lu, Jinmei Lai *(Fudan University, China)*

Thursday, October 26, 15: 45 – 17: 45 Hall 203

Session C5: Power & Compound Device III Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Xinnan Lin, Anhui Polytechnic University, China

	Title
C5-1	**0206: Tradeoff Between the Breakdown Voltage and Specific On-Resistance of SOI RESURF LDMOS (invited)**
15:45 ~16:15	Yufeng Guo, Kemeng Yang, Jing Che, Man Li, Zhengfei Jiang, Jiafei Yao, Jun Zhang, Maolin Zhang *(Nanjing University of Posts and Telecommunications, China)*
C5-2	**0393: An Ultra-low Specific On-resistance SiC LDMOS Using Double RESURF and Field Plate Techniques(invited)**
16:15 ~16:45	Moufu Kong, Ning Yu, Jiaxin Guo, Zeyu Cheng, Rui Jin, Hongqiang Yang *(University of Electronic Science and Technology of China, China; Smart Energy Research Centre Huairou Laboratory, Future Science City, China)*
C5-3	**0451: Optimal design of short circuit robustness for high voltage and high power IGBTs(invited)**
16:45 ~17:15	Rui Jin, Ruifen Nie, Niannian Ge, Baohua Tian, Xiamin Hao, Feng He *(Beijing Institute of Smart Energy, Huairou Laboratory, China; State Grid Shanghai Electric Power Research Institute , China)*
C5-4	**0389: A Novel 1200-V Class SiC MOSFET With Schottky Barrier Diode for Improved third quadrant performance**
17:15 ~17:30	Moufu Kong, Hongfei Deng, Rui Jin, Zhi Lin, Bo Yi, Hongqiang Yang *(University of Electronic Science and technology of China, China; Smart Energy Research Centre Huairou Laboratory, Future Science City, China; Chongqing University, China)*
C5-5	**0413: Temperature Dependent Optimization for Specific On-Resistance for 900 V Superjunction MOSFETs: Numerical Calculation and Comparison**
17:30 ~17:45	Zonghao Zhan, Xi Wang, Keqiang Ma, Siliang Wang, Chenxing Wang, Haoyang Zhou, Haimeng Huang, Junji Cheng, Bo Yi, Hongqiang Yang *(University of Electronic Science and technology of China, China*)

Thursday, October 26, 15: 45 – 17: 45 Hall 207
Session D5: EDA II Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Giovanni De Micheli, EPFL, Lausanne, Switzerland

	Title
D5-1	**0362: Full-Chip Voltage Prediction via Graph Attention Based Neural Networks (invited)**
15:45 ~16:15	Yuan Li, Pingqiang Zhou *(Duke Kunshan University, China; ShanghaiTech University, China)*
D5-2	**0373: OpenILT: An Open Source Inverse Lithography Technique Framework(invited)**
16:15 ~16:45	Su Zheng, Bei Yu, Martin Wong *(Chinese University of Hong Kong, Hong Kong, China)*
D5-3	**0257: Finding All Solutions of Multi-terminal Numberlink Problem Utilizing Top-down ZDD Construction**
16:45 ~17:00	Xuanqi Li, Takashi Imagawa, Hiroyuki Ochi *(Ritsumeikan University, Japan; Meiji University, Japan)*
D5-4	**0266: Effective Analytical Placement for Advanced Face-to-Face-Bonded Circuit Designs**
17:00 ~17:15	Yuan Wen, Zhijie Cai, Xingyu Tong, Min Wei, Jianli Chen *(Fudan University, China)*

Thursday, October 26, 17: 45 - 18: 45

Thursday, October 26, 17: 45 – 18: 45
Poster Session II Platinum Hanjue Hotel 2nd Floor

	Title
P2-1	**0207: Cost-Efficient Soft Error Detection and Correction Flip-Flop Design for Nanoscale Technology**
	Hong-Chen Li, He Liu, Jie Li *(Heilongjiang University, China; Harbin Institute of Technology, China)*
P2-2	**0237: A Digital Receive Beamforming IC for High-Frequency Ultrasound Imaging System**
	Duo Sheng, Ying-Chi Chiu, Yun-Quan Li, You-Ning Lo, Chao-Kai Pai, and Ten-Ling Wang *(Fu Jen Catholic University, Taiwan, China)*

P2-3	**0247: A Spike-Sorting-Assisted Compressed Sensing Processor for High-Density Neural Interfaces**
	Qingzhen Wang, Wenxian Gu, Hengchang Bi, Liangjian Lyu, Deli Qiao, Xing Wu *(East China Normal University, China)*
P2-4	**0279: FPGA Implementation of High Critical Sparsity Orthogonal Matching Pursuit Algorithm for Compressed Sensing Reconstruction**
	Sujuan Liu, Jiajun Ma, Yichen Liang *(Beijing University of Technology, China)*
P2-5	**0338: Periodic Analysis of Adaptive LMS Filter in TIADC**
	Jiankun Li, Zepeng Lin, Fan Ye *(Fudan University, China)*
P2-6	**0344: Design and Implementation of a Special Operator for Neural Networks Based on Noise Reduction and Super Resolution**
	Hongli Tian, Xiaodi Xing, Jian Zhang, Shaodi Wang, Yuan Wang *(Peking University, China; Beijing Zhicun (Witmem) Technology Co., Ltd. China; Beijing Advanced Innovation Center for Integrated Circuits, China)*
P2-7	**0383: A Dynamic-Texture-Guided Fast Algorithm for Geometric Partitioning Mode of VVC**
	Xuehang Yang, Wei Li, Shushi Chen, Leilei Huang, Yibo Fan *(Fudan University, China; East China Normal University, China)*
P2-8	**0397: A Common Architecture for Digital Process of Ultrasonic Imaging System after AFE**
	Chongzheng Fang, Chenhui Zhou, Fan Ye *(Fudan University, China)*
P2-9	**0409: Complexity-Reduced Joint Calibration for Nonlinearity and I/Q Imbalance in Direct Conversion Transmitter**
	Weibo Li, Minghao Jiang, Yongzhen Chen, Jiangfeng Wu *(Tongji University, China)*
P2-10	**0439: A Deep Q Network Hardware Accelerator Based on Heterogeneous Computing**
	Guohui Zhang, Fen Ge, Fang Zhou *(Nanjing University, China)*
P2-11	**0447: A Low-power digital automatic gain control design in wireless communication receivers**
	Jiangshan Zhao, Jiankun Huang, Yongzhen Chen, Jiangfeng Wu *(Tongji University, China)*
P2-12	**0455: A Low-Complexity Algorithm for JPEG-LS-Based RAW Domain Compression**
	Yeping Zheng, Tingting Li, Wei Li, Faxing Lei, Jiarui Liu, Yibo Fan *(Fudan University, China)*

P2-13	**0468: A Method of Mapping Convolutional Neural Networks on Resource-limited NoC Platform**
	Jiantao Ye, Fen Ge, Fang Zhou *(Nanjing University, China)*
P2-14	**0471: Low Complexity Belief-selective Massage Passing (BsMP) Detector for SCMA Systems**
	Zhuangzhuang You, Xu Pang, Wenyue Zhou, Chao Ji, Xiaohu You, Chuan Zhang *(Southeast University, China)*
P2-15	**0475: Improved GAI-BP Detection for MIMO Systems Based on Message Post-processing**
	Ruiyang Ji, Wenyue Zhou, Xiaosi Tan, Xiaohu You, Chuan Zhang *(Southeast University, China)*
P2-16	**0270: Design and Implementation of High-speed Reconfigurable Multi-core Network Security Protocol Analyse Processor**
	Chen Guang, Li Binglong *(Information Engineering University, China)*
P2-17	**0450: Rabbit: An Efficient Verification Platform Base on Virtual Peripherals**
	Zhengyi Zhang, Yuanda Yang, Lingli Wang *(Fudan University, China)*
P2-18	**0260: Performance Error Evaluation of gem5 Simulator for ARM Server**
	Yudi Qiu, Shiyan Yi, Minge Jing, Xiankui Xiong, Dong Xu, Xuanpeng Zhu, Xiaoyang Zeng, Yibo Fan *(Fudan University, China; ZTE Corporation, China)*
P2-19	**0261: FlsGraph: A Parallel Architecture for Large-scale Graph Processing**
	Haohan Zhang, Song Cheng, Yi Kang *(University of Science and Technology of China, China)*
P2-20	**0242: Memory-Efficient Compression Based on Least-Squares Fitting in Convolutional Neural Network Accelerators**
	Hang Xu, Chenjia Xie, Xin Lu, Li Du, Yuan Du *(Nanjing University, China)*
P2-21	**0272: A Reusable AI acceleration Architecture based on Matrix Multiplication for Convolutional Neural Network with Digital Signal ProcessingTasks**
	Bisheng Chen, Xiayu Li, Jicheng Lu, Jun yu *(Fudan University, China; Shanghai Fudan Microelectronics Group Co., Ltd, China)*
P2-22	**0308: An NoC-based CNN Accelerator for Edge Computing**
	Jianing Gao, Qiming Shao, Fangyu Deng, Qin Wang, Naifeng Jing, Jianfei Jiang *(Shanghai Jiao Tong University, China)*
P2-23	**0461: DSSMNeRF: Depth Self-supervised MVS NeRF**

	Yixuan Tong, Gengsheng Chen, Wei Xu *(Fudan University, China)*
P2-24	**0264: A Digital Clock and Data Recovery Architecture with Precise Voting for Multi-Gigabit/s Links**
	Kaifan Jiang, Jun Yu *(Fudan University, China)*
P2-25	**0310: High-Performance Genomic Analysis Heterogeneous System Using OpenCL**
	Jianing Gao, Lingyi Liu, Qin Wang, Naifeng Jing, Jianfei Jiang *(Shanghai Jiao Tong University, China)*
P2-26	**0320: Optimizing Wirelength And Delay of FPGA Tile through Floorplanning Based on Simulated Annealing Algorithm**
	Honghong Long, Yanze Li, Jinmei Lai, Jian Wang *(Fudan University, China)*
P2-27	**0353: A Fast-Lock DLL with Prediction-Based Fast-Track FDL Structure for DDR5 SDRAMs**
	Gaoyuan Pang, Jake Jung, Chris Eom, Brian Lee *(Design center, CXMT, China)*
P2-28	**0248: Lithographic Hotspot Detection Using Adaptive Squish Pattern Sampling Combined with Faster RCNN**
	Jian Cui, Jian Zhang, Xuexiang Wang *(Southeast University, China)*
P2-29	**0254: An Enhanced Packing Algorithm for FPGA Architectures without Local Crossbar**
	Yuanqi Wang, Kaichuang Shi, Lingli Wang *(Fudan University, China)*
P2-30	**0348: A General-Purpose Compiler Design for Instruction-Based AI Accelerator Implementation**
	Mengxuan Wang, Yuan Linghu, Chang Wu *(Fudan University, China; Shanghai Fudan Microelectronics Group Co., Ltd, China)*
P2-31	**0417: An Automatic Optimization Method of Combinational Logic Loops in CGRA**
	Mingyang Chen, Yunhui Qiu, Kaixiang Zhu, Lingli Wang *(Fudan University, China)*
P2-32	**0459: Efficient Layout Pattern Matching Based On Local Information**
	Wuxin Ge, Chao Wang *(Southeast University, China)*
P2-33	**0467: Automatic Timing-Driven Top-Level Hardware Design for Digital Signal Processing**
	Wuqiong Zhao, Changhan Li, Zhenhao Ji, You You, Xiaohu You, and Chuan Zhang *(Southeast University, China)*

P2-34	**0487: Integration Of Micro Surface Mount Components On Printed Circuit Board By micro-Transfer Printing**
	Qiang Cheng, ZhaoCong Wang, YingXong Song, Jian Chen, QianWu Zhang, Nan Ye *(Shanghai university, China)*
P2-35	**0221: Investigation of electrical characteristics of a novel FeFET-based relaxation oscillator**
	Chenyang Li, Chunsheng Jiang, Hongying Chen *(Guangxi Normal University, China)*
P2-36	**0258: A Novel TFET-MOSFET Hybrid SRAM for Ultra-Low-Power Applications**
	Renjie Wei, Kaifeng Wang, Zhixuan Wang, Libo Yang, Fangxing Zhang, Yongqin Wu, Ye Ren, Le Ye, Lining Zhang, Weihai Bu, Ru Huang, Qianqian Huang *(Peking University, China; Semiconductor Technology Innovation Center (Beijing), China; Chinese Institute for Brain Research, China; Beijing Advanced Innovation Center for Integrated Circuits, China)*
P2-37	**0332: Monolithic Logic Units based on DCFL Structure on p-GaN platform for GaN ICs**
	Maolin Pan, Qiang Wang, Yuhang Wang, Luyu Wang, Penghao zhang, Min Xu *(Fudan University, China)*
P2-38	**0465: A Novel Semi-superjunction SiC Trench MOSFET with Ultra-low Specific On-resistance**
	Zhaoyu Ai, Xinyang Chen, Yuxi Zhou, Haiyun Liu, Jing Feng, Moufu Kong *(University of Electronic Science and Technology of China, China)*
P2-39	**0215: Study on the Performance of Flexible Curved Inverted-F Antenna under Compound Deformation Condition**
	Xiangyu Dai, Jinghui Li, Zhengfang Qian *(Shenzhen University, China)*
P2-40	**0365: Glass Wet Deep Etching for Fabricating Biomimetic Devices in Biosensing**
	Yuxin Li, Jie Wang, Zijian Zhou, Jiayi Wu, Ming Yang, Enqi Wu and Lin Du *(University of Shanghai for Science and Technology, China)*
P2-41	**0265: A Modeling Study: Applying Carbon-Based Interconnects to BS-PDN Architecture**
	Baohui Xu, Rongmei Chen, Jie Liang *(Shanghai University, China; Interuniversity Microelectronics Centre (IMEC), Leuven, Belgium)*
P2-42	**0283: Design and Optimization of Ternary Inverter using Face Tunnel Field-Effect Transistor**
	Aoxuan Wang, Hongliang Lu, Yuming Zhang, Jiale Sun, Yi Zhu *(Xidian University, China)*

Friday

Friday, October 27, 8: 30 – 10: 00

Thursday, October 27, 8: 30 – 10: 00 Hall 210

Keynote Session K4 Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Zhiliang Hong, Fudan University, China

K4-1 **Sub-Terahertz Communication and Its Future towards 6G** *(8: 30-9: 15)*

Prof. Minoru Fujishima, Hiroshima University, Japan

K4-2 **Terahertz-Chip-Scale Systems for Intelligent Sensing and 6G Communication** *(9: 15-10: 00)*

Prof. Kaushik Sengupta, Princeton University, USA

Friday, October 27, 10: 15– 12: 15

Friday, October 27, 10: 15 – 12: 15 Hall 209
Session A6: Bio Circuit Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Yongzhen Chen, Tongji University, China

	Title
A6-1	**0240: Frontier Applications Research for Next-Generation Cardiovascular Health Monitoring Chip Design (invited)**
10:15~ 10:40	Hsientsai Wu *(Dong Hwa University, Taiwan, China)*
A6-2	**0491: An Integrated System of Blood Pressure and Electrocardiograph Recordings for Smart Home Healthcare Network (invited)**
10:40~ 11:05	Feng Zou, Hai Huang, Ye Yuan, Yuhua Cheng *（Peking University, China; Hangzhou Mixchips Microelectronics Co., Ltd. China）*
A6-3	**0386: A Three-stage Analog Low-Frequency Drift Calibration and DC Offset Correction Circuit for Ultrasonic AFE (invited)**
11:05~ 11:30	Fan Ye, Siqing Wu, Xinwei Yu, Xingtao Zhu, Junyan Ren *(Fudan University, China)*
A6-4	**0276: A High Linearity Large Time Constants Switched-Resistor Filter for Biomedical Applications**
11:30~ 11:45	Yajie Zhao, Yizhou Jiang, Weiming Hu, Yajie Qin *(Fudan University, China)*
A6-5	**0306: A Programmable High-Voltage Pulse Transmitter Circuit for 3-D Miniature Ultrasound Probes**
11:45~ 12:00	Jing Li, Penghao Jiang, Tianci Zhang, Yingchen Liu, Zhong Zhang, Qihui Zhang, Ning Ning, Qi Yu *(University of Electronic Science and Technology of China, China)*
A6-6	**0339: A 23.5μA Ultra-Low Standby Power Microphone ASIC with the Voice Activity Detection Based on A Level-Crossing ADC**
12:00~ 12:15	Wei Liu, Xuecong Lu, Yuxi Mao, Bing Li *(Shenzhen University, China)*

Friday, October 27, 10: 15 – 12: 15 Hall 202
Session B6: Reliability Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Kazutoshi Kobayashi, Kyoto Institute of Technology, Japan

	Title
B6-1	**0204: Design for EMI Immunity and ESD Protection for Wearable and Flexible**

	ICs (invited)
10:15~ 10:45	Xunyu Li, Weiquan Hao, Zijin Pan, Runyu Miao, Albert Wang *(University of California, USA)*
B6-2	**0290: A 2D Clock Interconnect Electromigration-Thermal Coupling Simulation Method Based on COMSOL**
10:45~ 11:00	Hongchao Zhang, Yunfun Zuo *(Southeast University, China)*
B6-3	**0322: Enhancing Temperature Immunity of Digital Circuit Against Aging : The Standard Cell Subset Method**
11:00~ 11:15	Mingyue Zheng, Wangyong Chen, Yaoyang Lyu, Haifeng Chen, Jiahui Chen, Linlin Cai *(Sun Yat-sen University, China; Guangdong Provincial Key Laboratory of Optoelectronic Information Processing Processing Chips and Systems, China)*
B6-4	**0361: Design of a Low Temperature Drift High Power Supply Rejection Bandgap Reference Circuit**
11:15~ 11:30	Junhui Ye, Dongyin Mao, Wentao Zheng *(Ningbo University, China)*

Friday, October 27, 10: 15 – 12: 15 Hall 203

Session C6: Photo Electron Device Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Anquan Jiang, Fudan University, China

	Title
C6-1	**0239: Ultra-flexible organic photovoltaics for powering wearable electronics(invited)**
10:15~ 10:39	Sixing Xiong, Kenjiro Fukuda, Takao Someya *(RIKEN,Japan;The University of Tokyo, Japan)*
C6-2	**0507: UTBB Based Photoelectric Field Effect Transistors for In-Sensor Computing (invited)**
10:39~ 11:03	Xiaoyan Liu *(Peking University, China)*
C6-3	**0512: Nanoscale Photodetectors for Infrared Sensing and Intelligent Recognition (invited)**
11:03~ 11:27	Weida Hu *(Shanghai Institute of Technical Physics, China)*
C6-4	**0286: An Active Pixel Sensor Array based on Compact Photoelectron In-situ Sensing Device (PISD)**
11:27~	Jiuhe Wang, Jian Liu, Yong Xu, Yulong Jiang, Jing Wan *(Fudan University, China;*

11:39	*Nanjing University of Posts and Telecommunication, China)*
C6-5	**0296: Comparisons of Photodiodes Based on Bulk-Silicon and Silicon-on-Insulator Substrates**
11:39~ 11:51	Siyuan Li, Yong Xu, Jing Wan *(Fudan University, China; Nanjing University of Posts and Telecommunication, China)*
C6-6	**0346: Photoelectron In-situ Sensing Device with embedded photodiode and interface passivation**
11:51~ 12:03	Yaoru Qu, Jian Liu, Yong Xu, Yulong Jiang, Jing Wan *(Fudan University, China; Nanjing University of Posts and Telecommunications, China)*
C6-7	**0364: Bi_2O_2Se/P3HT Heterotransistors for Broadband Photodetections with High Rhotoresponsivities of 10^6 A/W**
12:03~ 12:15	Xilin Lai, Lei Xu, Shuo Liu, Junling Liu, Ming He *(Peking University, China)*

Friday, October 27, 10: 15 – 12: 15 Hall 207

Session D6: Process Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. You Yin, Gunma University, Japan

	Title
D6-1	**0483: Selective Atomic Layer Deposition To Extend Moore's Law And Beyond: Surface Kinetic Tuning for Self-Aligned Growth (invited)**
10:15~ 10:42	Jin Yan, Kun Cao, Eryan Gu, Huilong Zhou, Rong Chen *(Huazhong University of Science and Technology, China)*
D6-2	**0497: A Future Analysis of The Forbidden Pitch In Photolithography In Advanced Technology Nodes (invited)**
10:42~ 11:09	Yanli Li *(Fudan University, China)*
D6-3	**0505: Noncontact Remote Doping for High-performance Two-dimensional Electronics(invited)**
11:09~ 11:36	Po-Heng Pao, Ren-Hao Cheng, Yi-Hsiu Huang, Yu-Ying Yang, Tzu-Hsien Sang, Chia-Ming Tsai, Chao-Hsin Chien *(Yang-Ming Chiao-Tung University, Taiwan, China)*
D6-4	**0513: Improved BEOL Design Rules With 45-Degree Local Interconnection (invited)**
11:36~ 12:03	Xianhe Liu *(Fudan University, China)*

D6-5	**0357: Controllable Growth of P3HT Single-Crystal Films for Organic Field-Effect Transistors**
12:03~ 12:15	Chunyao Zhao, Xilin Lai, Ming He *(Peking University, China)*

Friday, October 27, 13: 30 – 15: 30

Friday, October 27, 13: 30 – 15: 30 Hall 209
Session A7: RF Circuit Ⅰ Platinum Hanjue Hotel 2nd Floor
Session Chair: Prof. Yumei Huang, Fudan University, China

	Title
A7-1	**0241: Concurrent Multiband CMOS Low Noise Amplifier Design for Internet of Things Applications(invited)**
13:30~ 13:58	Peerapat Phetpadriew, Bharatha Kumar Thangarasu, Nagarajan Mahalingam, Zhenghao Lu, Cher Ming Tan, Kiat Seng Yeo *(Singapore University, Singapore; Tianjin University, China; Soochow University, China; Chang Gung University, Taiwan, China)*
A7-2	**0506: High-Speed, Low-Power, and Small-Area Optical Receiver in 65-nm CMOS（invited）**
13:58~ 14:26	Akira Tsuchiya, Toshiyuki Inoue, Keiji Kishine, Daisuke Ito, Yasuhiro Takahashi, Makoto Nakamura *(The University of Shiga Prefecture, Japan; Gifu University, Japan)*
A7-3	**0336: A Compact 7-10GHz GaN Low Noise Amplifier MMIC with Sub 0.3 dB Gain flatness**
14:26~ 14:39	Shuoxiong Yang, Qingyang Dong, Wei Huang, Xin Jiang, Yang Wang, Weijun Luo *(University of Chinese Academy of Sciences, China)*
A7-4	**0355: A 27-to-65-GHz CMOS Amplifier with Tunable Frequency Response**
14:39~ 14:52	Leshan Xu, Shunsuke Yabuki, Satoshi Tanaka, Takeshi Yoshida, Minoru Fujishima *(Higashihiroshima University, Japan)*
A7-5	**0392: A 4.7-to-18-GHz Ultra-Wideband Variable-Gain Balun-LNA Using 3rd-order-Band-Pass Input Matching in 40-nm CMOS**
14:52~ 15:05	Sicheng Han, Xueyin Wu, Wei Li, Yun Wang, Yue Lin, Hongtao Xu *(Fudan University, China; ICLegend Micro, China)*
A7-6	**0440: A 400M-510MHz On-Chip Transformer-Based RF Power Amplifier with 22.5dBm Output Power and 48% PAE**
15:05~	Chaoyang Zheng, Zhipeng Chen, Jianhua Lu, Yan Ma, Yumei Huang, Zhiliang Hong

15:18	*(Fudan University, China; Beijing Smartchip Microelectronics Technology Co., Ltd; China; Beijing Smartchip Semiconductor Technology Co., Ltd, China)*
A7-7	**0274: A 7W,2.5-5GHz Wideband GaN PA with Transformer-Based Matching Network**
15:18~ 15:30	Xiaohan Zhang, Tao Wang, Lingyun Shi, Di Hua, Zhiliang Hong *(Fudan University, China)*

Friday, October 27, 13: 30 – 15: 30 Hall 202

Session B7: NVM Ⅰ Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Viktor Sverdlov, Institute for Microelectronics, TU Wien, Austria

	Title
B7-1	**0255: Stochastic Computing Based on Volatile Ovonic Threshold Switching Devices (invited)**
13:30~ 13:54	Zhen Chai, Weidong Zhang, Jianfu Zhang *(Livepool John Moores University, United Kingdom; Xi'an Jiaotong University, China)*
B7-2	**0302: Doped Chalcogenides for High-Performance Phase Change Devices (Invited)**
13:54~ 14:18	You Yin *(Gunma University, Japan)*
B7-3	**0369: Development of 3D Resistance Memory with Multi-level Operation: Demonstration of QLC and Perspective (invited)**
14:18~ 14:42	Steve S. Chung *(Yang Ming Chiao Tung University, Taiwan, China)*
B7-4	**0504: Numerical Characterization of a 5-Layer(Pt/Ta/TaO/AlO/W) RRAM Device(invited)**
14:42~ 15:06	Jiahao Li, Wanlan Yang, Xing Zhou *(Nanyang Technological University, Singapore)*
B7-5	**0524: Device-architecture Co-optimization for RRAM-based In-memory Computing (invited)**
15:06~ 15:30	Yimao Cai, Yi Gao, Zongwei Wang, Lin Bao, Ling Liang, Qilin Zheng, Cuimei Wang, Ru Huang *(School of Integrated Circuits, Peking University, China; Beijing Advanced Innovation Center for Integrated Circuits, China)*

Friday, October 27, 13: 30 – 15: 30 Hall 203

Session C7: Advanced Device & DTCO Ⅰ Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Sixing Xiong, RIKEN, Japan

	Title
C7-1	**0372: TCAD Study on Strain Engineering in Vertical Channel Gate-all-around Transistor (invited)**
13:30~ 13:57	Ran Bi, Jianhuan Wang, Haixia Li, Baotong Zhang, Jianjun Zhang, Ming Li (*Peking University, China; Chinese Academy of Sciences, China; Beijing Academy of Quantum Information Sciences, China)*
C7-2	**0498: The Impact of Strain and Layout Dependent Effects on High Frequency Performance and Low Frequency Noise in Nanoscale Devices (invited)**
13:57~ 14:24	Jyh-Chyurn Guo, Chih-Shiang Chang (*Yang Ming Chiao Tung University, Taiwan, China*)
C7-3	**0509: A Simple New Line-Tunneling iTFET with Overlapping Between Gate and Source Contact (invited)**
14:24~ 14:51	Jyi-Tsong Lin, Kuan-Pin Lin (*Sun Yat-Sen University, Taiwan, China*)
C7-4	**0514: Nanodevices for The End of The Roadmap (invited)**
14:51~ 15:18	Francis Balestra (*IMEP-LAHC, France*)
C7-5	**0510: Steeper Subthreshold Swing Attained in Ge-Source Inductive Tunneling FET via Epitaxial Tunnel Layer for Suppressed Point Tunneling**
15:18~ 15:30	Yen-Chen Chang, Wei-Heng Tai, Jyi-Tsong Lin (*Sun Yat-Sen University, Taiwan, China*)

Friday, October 27, 13: 30 – 15: 30 Hall 207

Session D7: MEMS Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Rong Chen, Huazhong University of Science and Technology, China

	Title
D7-1	**0244: 3D MEMS Devices Fabricated On Ultrathin Cylindrical Substrate for Flexible Wearable Applications (invited)**
13:30~ 14:00	Zhuoqing Yang (*Shanghai Jiaotong University, China*)
D7-3	**0492: Intelligent Multimodal Sensors Based on Novel Electronic-Ionic Bi_2O_2Se Semiconductors (invited)**
14:00~	Xinrui Guo, Lei Xu, Qifeng Cai, Shuo Liu, Junling Liu, Ming He (*Peking University,*

14:30	*China*)
D7-4	**0519: Flexible Sensing Materials And Devices (invited)**
14:30~ 15:00	Qiang Zhao (*Nanjing University of Posts and Telecommunications, China*)
D7-5	**0408: Highly Reliable Physical Unclonable Function Based on ZnO-SnO_2 Gas Sensor**
15:00~ 15:15	Haonan He, Pengjun Wang, Xiangyu Li, Li Ni, Yuejun Zhang (*Ningbo University, China; Wenzhou University, China*)

Friday, October 27, 15: 45 – 17: 45

Friday, October 27, 15: 45 – 17: 45 Hall 209

Session A8: RF Circuit Ⅱ Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Akira Tsuchiya, The University of Shiga Prefecture, Japan

	Title
A8-1	**0523: Development of RF CMOS Technologies in the 1990s in Toshiba (invited)**
15:45~ 16:15	Hiroshi Iwai (*Yang Ming Chao Tung University, Taiwan, China*)
A8-2	**0267: A Dual-Core Quad_Mode VCO with Reconfigurable Magnetic Coupling Mode and Negative-Resistive Mode Switch**
16:15 16:30	Xiangjian Kong, Kai Xu, Qing Qiu, Mingchao Jian, Chunbing Guo (*Guangdong University of Technology, China; King's College London, The United Kingdom*)
A8-3	**0299: A 293-to-303 GHz Fundamental VCO with -4dBm Peak Output Power in 40nm CMOS**
16:30 16:45	Songlei Meng, Ziyang Deng, Yun Wang, Hongtao Xu (*Fudan University, China*)
A8-4	**0307: Suppression of Reflections and Elimination of Transmission Disparities in Differential Crossover Line Junctions**
16:45~ 17:00	Zhen Yan, Satoshi Tanaka, Takeshi Yoshida, Minoru Fujishima (*Hiroshima University, Japan*)
A8-5	**0345: A High Speed, Low Power and Low Phase Noise Divider for Wideband Application**
17:00~ 17:15	Xinyi Lin, Dejian Li, Hao Xu, Na Yan *(Fudan University, China; Beijing Smartchip Semiconductor Technology Co., Ltd, China)*

A8-6	**0394: A Compact 144% Fractional Bandwidth CMOS Power Amplifier With an Optimization of Synthesized High-Order Matching Network**
17:15~ 17:30	Yunhao Li, Wei Li, Yun Wang, Wei Luo, Yue Lin, Hongtao Xu (*Fudan University, China; ICLegend Micro, China)*

Friday, October 27, 15: 45 – 17: 45 Hall 202

Session B8: NVM Ⅱ Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Steve Chung, Yang Ming Chiao Tung University, Taiwan, China

	Title
B8-1	**0226: Fatigue-Free Ferroelectric Domain Wall Memory (invited)**
15:45~ 16:09	Anquan Jiang (*Fudan University, China*)
B8-2	**0376: Flash-based Computing-in-memory Architectures with High-accuracy and Robust Reliabilities for General-purpose Applications (invited)**
16:09~ 16:33	Yang Feng, Yueran Qi, Xuepeng Zhan, Jixuan Wu, Jiezhi Chen (*Shandong University, China*)
B8-3	**0494: Charge and Spin Transport in Semiconductor Devices (invited)**
16:33~ 16:57	Viktor Sverdlov, Siegfried Selberherr (*TU Wien Vienna, Austria*)
B8-4	**0532: Overcoming the challenges of ReRAM towards mass production from the perspectives of process, design and application (invited)**
16:57~ 17:21	Yefan Liu, Yunfeng Wu, Liang Chen, Polaron Cao, Yuliang Zhou, Vincent Zhang *(Innostar Inc, China)*
B8-5	**0278: ReMap: Reorder Mapping for Multi-level Uneven Distribution on Sparse ReRAM Accelerator**
17:21~ 17:33	Zhuo Chen, Zihan Zhang, Jianfei Jiang, Weiguang Sheng, Qin Wang, Naifeng Jing *(Shanghai Jiaotong University, China)*
B8-6	**0377: One-shot Read Processing to Enhance Cold Data Retention in Charge-trap TLC 3D NAND Flash**
17:33~ 17:45	Shaoqi Yang, Xiaohuan Zhao, Kenie Xie, Xuepeng Zhan, Jixuan Wu, Jiezhi Chen *(Shandong University, China)*

Friday, October 27, 15: 45 – 17: 45 Hall 203

Session C8: Advanced Device & DTCO Ⅱ Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Chai, Zheng, Xi'an Jiaotong Univeristy, China

	Title
C8-1	**0432: Hybrid Tunnel FET-CMOS Foundry Platform With Ultra-Low Leakage for Power-Constraint And Energy-Efficient Application (invited)**
15:45~ 16:12	Qianqian Huang (*Peking University, China*)
C8-2	**0496: Corner Rounding, What Can We Expect In Optical Microlithography (invited)**
16:12~ 16:39	Qiang Wu (*Fudan University, China*)
C8-3	**0534: Advanced Semiconductor Device Modeling: Status Challenge and Opportunity (invited)**
16:39~ 17:06	Yutao Ma *(Primarius Technologies Co., Ltd., China)*
C8-4	**0326: Matching Learning-Assisted Single-Event Transient Model of 12nm FinFETs for Circuit-Level Simulation**
17:06~ 17:19	Jianwen Lin, Linlin Cai, Yutao Chen, Haoyu Zhang, Wangyong Chen (*Sun Yat-Sen University, China*)
C8-5	**0359: A Continuous and Closed-form Trans-Capacitance Model for Double-Gate Junctionless Transistors**
17:19~ 17:32	Xingchen Xin, Chunsheng Jiang, Hongying Chen (*Guangxi Normal University, China*)
C8-6	**0511: An iTFET with Control Gate for Low Power Applications in RF and Digital Circuits**
17:32~ 17:45	Ho-Hin Tse, Zheng-Hong Zhong, Jyi-Tsong Lin (*Sun Yat-Sen University, Taiwan, China*)

Friday, October 27, 15: 45 – 17: 45 Hall 207

Session D8: Testing Platinum Hanjue Hotel 2nd Floor

Session Chair: Prof. Shunli Ma, Fudan University, China

	Title
D8-1	**0225: Signal Generation Technologies for Analog/Mixed-Signal IC Testing (invited)**
15:45~ 16:15	Haruo Kobayashi (*Gunma University, Japan*)
D8-2	**0232: Extracting statistical distributions of RTN originating from both acceptor-like and donor-like traps (invited)**

16:15~ 16:45	Kean H. Tok, Jian F. Zhang, James Brown, Zhigang Ji, Weidong Zhang (*Livepool John Moores University, United Kingdom; Shanghai Jiaotong University, China*)
D8-3	**0453: In Situ Device and System (invited)**
16:45~ 17:15	Shiyi Zhang, Xinyue Zheng, Mingyang Zhang, Zuoyuan Dong, Lan Li, Xiaomei Li, Xing Wu (*East China Normal University, China*)
D8-4	**0209: Receiver Characterization with On-Die Eye Monitor (ODEM) in LPDDR5 and DDR5 SDRAM**
17:15~ 17:30	Feng (Dan) Lin, Kang (Leo) Zhao (*Changxin Memory Technologies, China*)
D8-5	**0382: Ring Oscillators with identical Circuit Structure to Measure Bias Temperature Instability**
17:30~ 17:45	Daisuke Kikuta, Ryo Kishida, Kazutoshi Kobayashi (*Kyoto Institute of Technology, Japan; Toyama Prefectural University, Japan*)