



Sunday, 13 April

9am **Educational Session 1: Mastering LLMs: A Deep Dive into Software Models, Hardware Challenges, Security and Reliability**
Olympia
Chaired by: Shanshan Xie (United States) and Prof. Yoonmyung Lee (Korea, Republic of)

9am **ES1-1: Enabling Generative AI on Mobile SoCs using Hardware-Model Co-Design**
» [Dr. Paul Whatmough](#) (United States)¹ (1. Qualcomm)

10:45am **ES1-2: Deploying LLMs on the Edge: A HW/SW Co-Design Perspective**
» [Dr. Debabrata Mohapatra](#) (United States)¹ (1. Meta)

9am **Educational Session 2: High Precision Converters and Digital Calibration Techniques**
Michelangelo
Chaired by: Prof. Shaolan Li (United States) and Dr. Yong Liu (United States)

9am **ES2-1: Noise-Shaping SAR ADCs: From Fundamentals to Recent Advances**
» [Prof. Xiyuan Tang](#) (China)¹ (1. Peking University)

10:45am **ES2-2: TBD**
» [Prof. Minkyu Je](#) (Korea, Republic of)¹ (1. Korea Advanced Institute of Science and Technology)

9am **Educational Session 3: Security or Privacy From Hardware to Systems**
Aquitania
Chaired by: Dr. Kevin Tien (United States) and Mingu Kang (United States)

9am **ES3-1: Bringing the zero-trust model to hardware: From systems to silicon**
» [Dr. Sandhya Koteswara](#) (United States)¹ (1. IBM)

10:45am **ES3-2: Attack-Resistant Crypto Hardware Accelerators for Secure Platforms**
» [Mr. Sanu Mathew](#) (United States)¹ (1. Intel Corporation)

9am **Educational Session 4: Advanced Biomedical Interfaces**
Brittannic
Chaired by: Prof. Constantine Sideris (United States) and Dr. Yaoyao Jia (United States)

9am **ES4-1: Efficient and Effective Implantable Neural Stimulation: Challenges and Circuit Solutions**
» [Prof. Hyung-Min Lee](#) (Korea, Republic of)¹ (1. Korea University)

10:45am **ES4-2: On-chip signal processing and compression for brain-computer interfaces**
» [Prof. Dante Gabriel Muratore](#) (Netherlands)¹ (1. Delft University of Technology)

12:15pm **Lunch Break (on own)**

1:30pm **Educational Session 1: Mastering LLMs: A Deep Dive into Software Models, Hardware Challenges, Security and Reliability**
Olympia
Chaired by: Prof. Yoonmyung Lee (Korea, Republic of) and Shanshan Xie (United States)

1:30pm **ES1-3: Breaking the Resource Monopoly from Industries: Sustainable and Reliable LLM Serving By Recycling Outdated and Resource-Constrained GPUs**
» [Dr. Tianlong Chen](#) (United States)¹ (1. Assistant Professor at The University of North Carolina at Chapel Hill)

3:15pm **ES1-4: LLM Innovation with User Data**
» [Prof. Xiaozhong Liu](#) (United States)¹ (1. Associate Professor at Worcester Polytechnic Institute)



Continued from **Sunday, 13 April**

- 1:30pm **Educational Session 2: High Precision Converters and Digital Calibration Techniques**
Michelangelo
Chaired by: Dr. Yong Liu (United States) and Prof. Shaolan Li (United States)
- 1:30pm **ES2-3: TBD**
» [Prof. Nima Maghari](#) (United States)¹ (1. University of Florida)
- 3:15pm **ES2-4: Digital Calibration Techniques for High-Speed Pipelined ADCs**
» [Dr. Huseyin Dinc](#) (United States)¹ (1. ADI)
- 1:30pm **Educational Session 3: Security or Privacy From Hardware to Systems**
Aquitania
Chaired by: Mingu Kang (United States) and Dr. Kevin Tien (United States)
- 1:30pm **ES3-3: Securing Ubiquitous Devices with Ultra-Lightweight Circuit Primitives**
» [Prof. Kaiyuan Yang](#) (United States)¹ (1. Rice University)
- 3:15pm **ES3-4: Reuse-Centric Design for Ubiquitous Hardware Security - From Circuits to Machine Learning Algorithms**
» [Prof. Massimo Alioto](#) (Singapore)¹ (1. Department of Electrical and Computer Engineering, National University of Singapore)
- 1:30pm **Educational Session 4: Advanced Biomedical Interfaces**
Brittannic
Chaired by: Dr. Yaoyao Jia (United States) and Prof. Constantine Sideris (United States)
- 1:30pm **ES4-3: TBD**
» [Prof. Mehdi Kiani](#) (United States)¹ (1. Penn State University)

- 3:15pm **ES4-4: TBD**
» [Prof. Jerald Yoo](#) (Korea, Republic of)¹ (1. Seoul National University)

5pm **SSCS Bingo Networking Night**

Monday, 14 April

- 8:30am **Welcome and Opening Remarks**
Grand Ballroom
- 8:50am **Session 1: Keynote Session**
Grand Ballroom
- 9:40am **Break**
Grand Ballroom Foyer
- 10:05am **Analog Circuits and Techniques I - Session 2: Analog Building Blocks and Sensing Circuits**
Grand Ballroom
Chaired by: Chilun Lo (United States) and Soo Youn Kim (Korea, Republic of)
- 10:05am **2-1: A direct digitizing, 1MHz bandwidth, 28fA/√Hz current sensing front-end based on a mixed-signal integrator-differentiator TIA in 28nm CMOS**
» [Mr. David-Peter Wiens](#) (Germany)¹, [Mr. Ahmed Abdelaal](#) (Germany)¹, [Mr. Bjoern Driemeyer](#) (Germany)¹, [Dr. Joachim Becker](#) (Germany)¹, [Dr. John Kauffman](#) (Germany)¹, [Prof. Maurits Ortmanns](#) (Germany)¹ (1. University of Ulm)
- 10:30am **2-2: A 0.6V Supply Ultra-Compact Voltage Reference Exploiting MOS Threshold Correlations**
» [Dr. Matthias Eberlein](#) (Germany)¹, [Mr. Sebastian Ruppig](#) (Germany)¹ (1. Fraunhofer EMFT)



Continued from Monday, 14 April

10:55am **2-3: A 16 GΩ input impedance amplifier with flicker noise reduction for neural recording applications**
 » [Dr. Iyotindra Shakya](#) (United States)¹, Mr. Faraz Adin (United States)¹, Prof. Gabor Temes (United States)¹ (1. Oregon State University)

11:20am **2-4: Multi-electroanalytical method capable, duty-cycled, 0.36 mm² electrochemical frontend, achieving 170dB current sensing range with extended compliance voltage adopting feedforward cancellation**
 » [Dr. Amrith Sukumaran](#) (Switzerland)¹, Mr. Francesco CARUSO (Switzerland)¹, Mr. Régis CATTENOZ (Switzerland)¹, Mr. Bas PUTTER (Switzerland)¹, Mr. Jean-Luc NAGEL (Switzerland)¹, Mr. Ioannis STERGIOU (Switzerland)¹, Mr. Guillaume BOUILLY (Switzerland)¹, Mr. Stéphane EMERY (Switzerland)¹ (1. CSEM)

11:45am **2-5: A 14-Cell Battery Monitoring AFE with 1mV Total Measurement Error and Integrated Electrochemical Impedance Spectroscopy**
 » [Mr. Xining Zhang](#) (China)¹, Mr. Yuxiang Tang (China)¹, Mrs. Yaohua Pan (China)², Mr. Wenhui Qin (China)², Mr. Jian Ye (China)², Dr. Shaoyu Ma (China)², Mr. Yun Sheng (China)², Prof. Zhiliang Hong (China)¹, Prof. Jiawei Xu (China)¹ (1. Fudan University, 2. Novosense Microelectronics)

10:05am **Wireless Transceivers and RF/mm-Wave Circuits and Systems I - Session 3: Voltage Controlled Oscillators and Power Amplifiers Olympia**
 Chaired by: Hamed Rahmani (United States) and Padmanava Sen (Germany)

10:05am **3-1: A 28-GHz 189.2-dBc/Hz FoM 360° Phase-Shifting Quadrature Oscillator Without Phase Ambiguity Achieving 0.13° RMS Phase Error Under 2° Phase Resolution**
 » [Mr. Hongkun Li](#) (China)¹, Dr. Yiyang Shu (China)², Prof. Xun Luo (China)² (1. ee.hkli@hotmail.com, 2. University of Electronic Science and Technology of China)

10:30am **3-2: A 4.6-6GHz Self-Injection LC Oscillator Exploiting 2nd Harmonic Extraction and Self-Mixing to Achieve 5-35kHz 1/f³ Phase Noise Corner and 201dB FoMT**
 » [Mr. Bahram Jafari Akinabad](#) (Canada)¹, Dr. Sankaran Aniruddhan (India)², Dr. Shahriar Mirabbasi (Canada)¹, Dr. Sudip Shekhar (Canada)¹ (1. University of British Columbia, 2. Indian Institute of Technology Madras)

10:55am **3-3: A 104-to-132 GHz 16-way Power Amplifier Using Enhanced Magnetic Coupling Cavity Achieving 21.2 dBm Output Power in 28nm Bulk CMOS**
 » [Mr. Ziyuan Guo](#) (China)¹, Prof. Wei Deng (China)¹, Mr. Weiqi Zheng (China)¹, Prof. Haikun Jia (China)¹, Mr. Hongliang Wu (China)¹, Mr. Qiuyu Peng (China)¹, Dr. Fuyuan Zhao (China)¹, Mr. Xiangyu Nie (China)¹, Ms. Xinyu Jiang (China)¹, Mr. Junyang Yin (China)¹, Mr. Xiaochuan Duo (China)¹, Mr. Huanyu Ge (China)¹, Dr. Dongze Li (China)¹, Prof. Baoyong Chi (China)¹ (1. Tsinghua University)

11:20am **3-4: An Ultra-Compact Wideband-Linearized Power Amplifier Achieving 0.24° AM-PM Distortion and Supporting 64-/256-/1024-/4096-QAM**
 » [Dr. Jingshang Dong](#) (China)¹, Prof. Pei Qin (China)¹, Prof. Haoshen Zhu (China)¹, Prof. Xiang Yi (China)¹, Prof. Wenjie Feng (China)¹, Prof. Wenquan Che (China)¹, Prof. Quan Xue (China)¹ (1. South China University of Technology)

10:05am **Power Management I - Session 4: SC-based Power Conversion Michelangelo**
 Chaired by: Alan Roth (United States) and Min-Woo Ko (Canada)

10:05am **4-1: An SC-first Hybrid SCVR with 4xCF Continuously Scalable-Conversion Ratio SC Achieving 92.5% Peak Efficiency**
 » [Dr. Yuanfei Wang](#) (Macao)¹, Mr. Zhiyuan Zhang (Macao)¹, Mr. Ziyang Zhong (Macao)¹, Prof. Yihan Zhang (Hong Kong)², Prof. Rui P. Martins (China)¹, Prof. Mo Huang (Macao)¹ (1. University of Macau, 2. Hong Kong University of Science and Technology)



Continued from Monday, 14 April

10:30am **4-2: A LEGO-Like Easy-Stacking Step-Up SC Converter with Ultra-High and Wide VCR Using All Input-Stress-Only Devices**
 » [Dr. Shousheng Han](#) (China)¹, Mr. Fei Song (China)², Mr. Zhongyao Zhu (China)², Prof. Xiaoming Wu (China)³, Prof. Hanjun Jiang (China)³, Prof. Tianling Ren (China)³, Prof. Yan Lu (China)³ (1. Tsinghua University and University of Macau, 2. University of Macau, 3. Tsinghua University)

10:55am **4-3: A 5V-Input, 12.5-to-45V-Output Reconfigurable Hybrid Boost Converter with an SC-Based Parallel Auxiliary Cell Achieving 96.8% Peak Efficiency**
 » [Dr. Gyeong-Gu Kang](#) (United States)¹, Prof. Minjie Chen (United States)¹, Prof. Hyun-Sik Kim (Korea, Republic of)² (1. Princeton University, 2. KAIST)

11:20am **4-4: A 6.87W 3.7-5V Input 12.6-24V Output Switched-Capacitor Sigma Converter with Multiple Voltage Domains**
 » [Mr. Lingfeng Zhu](#) (China)¹, Dr. Chen Hu (China)¹, Prof. Wing Hung Ki (Hong Kong)², Dr. Xun Liu (China)³, Prof. Xiaosen Liu (China)⁴, Prof. Junmin Jiang (China)¹ (1. Southern University of Science and Technology, 2. Hong Kong University of Science and Technology, 3. Chinese University of Hong Kong, 4. Tsinghua University)

10:05am **Data Converters I - Session 5: Incremental ADCs**
Aquitania
 Chaired by: Prof. Sai-Weng Sin (Macao) and Yong Lim (Korea, Republic of)

10:05am **5-1: (INVITED) Reducing the Impact of Non-Idealities on Incremental Delta-Sigma ADCs by Reconfiguration: A Review**
 » Mr. Omar Ismail (Germany)¹, Mr. Paul Kaesser (Germany)¹, [Prof. Maurits Ortmanns](#) (Germany)¹ (1. University of Ulm)

10:55am **5-2: A 50-kHz BW 92.1-dB SNDR Incremental ADC Using a Back-End Sampling Two-Step NS-SAR Architecture with Concurrent Gain-Error + Noise Suppression**
 » [Mr. Tzu-Han Wang](#) (United States)¹, Mr. Chenyang Li (United States)¹, Mr. Dong-Suk Kang (United States)¹, Mr. Ken Li (United States)¹, Mr. Xitie Zhang (United States)¹, Mr. Wei-En Lee (United States)¹, Prof. Visvesh Sathe (United States)¹, Prof. Shaolan Li (United States)¹ (1. Georgia Institute of Technology)

11:20am **5-3: A 16-bit Incremental ADC Enabled by An Efficient Shooting Integrator with Inherent Noise Reduction**
 » [Dr. Bo Wang](#) (Qatar)¹, Prof. Amine Bermak (Qatar)¹, Prof. Man-Kay Law (Macao)² (1. Hamad Bin Khalifa University, 2. University of Macau)

11:45am **5-4: A 133.6-µW 1kHz-BW Multi-bit 2nd-order Incremental ADC Achieving 115.4-dB SNDR with Low-Cost Coarse-Sorting DEM and Zip Extended-Counting**
 » [Mr. Yajie Zhao](#) (China)¹, Mr. Yongjie Ye (China)¹, Mr. Shaokai Yuan (China)¹, Prof. Yajie Qin (China)¹ (1. Fudan University)

10:05am **Digital Circuits and SoCs I - Session 6: Forum: Hardware and Architectural Strategies for Building Cutting-edge AI Platforms**
Brittannic
 Chaired by: Sumanth Kamineni (United States) and Prof. Visvesh Sathe (United States)

12pm **Lunch Break (on own)**

1:30pm **Analog Circuits and Techniques II - Session 7: Panel: Do we really need a linear-gain amplifier anymore?**
Grand Ballroom
 Chaired by: Anne-Johan Annema (Netherlands) and Devrim Aksin (United States)



Continued from **Monday, 14 April**

1:30pm	<p>Wireless Transceivers and RF/mm-Wave Circuits and Systems II - Session 8: Advancements in Low-Power Wireless Technologies <i>Olympia</i></p> <p>Chaired by: Tong Zhang (United States) and Najme Ebrahimi (United States)</p>
1:30pm	<p>8-1: A 0.5V 0.55mm² Bias-Current-Free BLE Transceiver With 1-Bit Delay-Based Demodulation for Energy-Harvesting IoT Applications</p> <p>» Mr. Liqun Feng (China)¹, Mr. Xuansheng Ji (China)¹, Ms. Qianxian Liao (China)¹, Mr. Longhao Kuang (China)¹, Mr. Yunzhao Nie (China)¹, Mr. Jiahao Zhao (China)¹, Prof. Woogeun Rhee (China)¹, Prof. Zhihua Wang (China)² (1. Tsinghua University, 2. School of Integrated Circuits, Tsinghua University)</p>
1:55pm	<p>8-2: A Passive Crystal-Less Tag Demonstrating Battery-Free GSM-CW/5G-NR Downlink and BLE-to-BLE/BLE-to-WiFi/WiFi-to-WiFi Multi-Channel-Hopping Uplink with Smartphones</p> <p>» Mr. Qijing Xiao (China)¹, Dr. Changgui Yang (China)², Dr. Yunshan Zhang (China)², Dr. Ziyi Chang (China)¹, Mr. Cheng Chen (China)², Mr. Xin Hu (China)¹, Mr. Weixiao Wang (China)¹, Mr. Guanjie Gu (China)¹, Prof. Yuxuan Luo (China)¹, Prof. Bo Zhao (China)¹ (1. Zhejiang University, 2. Microaiot)</p>
2:20pm	<p>8-3: D-band Dicke switch based Passive Imager with 0.13K NETD in 28nm CMOS Technology</p> <p>» Ms. Zahra Mohseni (United States)¹, Mr. Sajjad Sabbaghi (United States)¹, Dr. Hai Yu (United States)², Mr. Peixin Han (United States)³, Prof. Q. Gu (United States)¹ (1. Georgia Institute of Technology, 2. NVIDIA Corporation, 3. University of California, Davis)</p>
2:45pm	<p>8-4: A 1.8Gb/s 8GHz PSK-UWB Transceiver with Extended PPM/PWM Modulation and Embedded Carrier Spreading</p> <p>» Ms. Luhua Lin (China)¹, Dr. Bowen Wang (China)¹, Mr. Longhao Kuang (China)¹, Prof. Woogeun Rhee (China)¹, Prof. Zhihua Wang (China)² (1. Tsinghua University, 2. School of Integrated Circuits, Tsinghua University)</p>

1:30pm	<p>Power Management II - Session 9: Power Converter Techniques <i>Michelangelo</i></p> <p>Chaired by: Raveesh Magod (United States) and Edevaldo Pereira (United States)</p>
1:30pm	<p>9-1: A 30V Step-Up Regulator with Shunt-Current-Reuse Controller for >85% Efficiency over 200µA-100mA Loading Range</p> <p>» Dr. Yue Zhao (China)¹, Mr. Pengda Qu (China)¹, Dr. Guangshu Zhao (Macao)², Prof. Feng Luo (China)¹, Prof. Yang Jiang (Macao)², Prof. Zhiming Xiao (China)¹ (1. Nankai University, 2. University of Macau)</p>
1:55pm	<p>9-2: A Fast-transient Buck Converter with One-Cycle-Balancing Control for Single and Consecutive Load Steps</p> <p>» Mr. Zihao Tang (Macao)¹, Prof. Rui P. Martins (China)¹, Prof. Mo Huang (Macao)¹ (1. University of Macau)</p>
2:20pm	<p>9-3: A Pseudo-4-Phase Buck Converter with 94.1% Efficiency, 1mV Output Ripple and Fast Transient Response</p> <p>» Mr. Yu-Chen Kuo (Taiwan)¹, Mr. Yu-Ting Huang (Taiwan)¹, Prof. Ke-Horng Chen (Taiwan)¹, Mr. Kuo-Lin Zheng (Taiwan)², Mr. Ying-Hsi Lin (Taiwan)³, Mr. Shian-Ru Lin (Taiwan)³, Mr. Tsung-Yen Tsai (Taiwan)³, Prof. Xi Zhu (Australia)⁴ (1. National Yang Ming Chiao Tung University, 2. Chip-GaN Semiconductor Company, 3. Realtek Semiconductor, 4. University of Technology Sydney)</p>
2:45pm	<p>9-4: A 300-kHz 3-Level Flyback Converter Achieving 93% Peak Efficiency and 50% Reduction in Transformer Size</p> <p>» Mr. Yuanzhuo Wu (Macao)¹, Prof. Rui P. Martins (China)¹, Prof. Mo Huang (Macao)¹ (1. University of Macau)</p>
1:30pm	<p>Emerging Technology I - Session 10: Emerging Paradigms for AI, HPC, and Edge Computation <i>Aquitania</i></p> <p>Chaired by: Dr. Kevin Tien (United States) and Tathagata Srimani (United States)</p>



Continued from Monday, 14 April

1:30pm **10-1: (INVITED) Analog-AI Hardware Accelerators for low-latency Transformer-based Language Models (Invited)**

» [Dr. Geoffrey W. Burr](#) (United States)¹, Dr. Hsin-yu Tsai (United States)¹, Dr. Irem Boybat (Switzerland)², Dr. William A. Simon (Switzerland)², Mr. Julian Büchel (Switzerland)², Mr. Athanasios Vasilopoulos (Switzerland)², Dr. Pritish Narayanan (United States)¹, Dr. Andrea Fasoli (United States)¹, Mr. Kohji Hosokawa (Japan)³, Dr. Manuel Le Gallo (Switzerland)², Mr. Masatoshi Ishii (Japan)³, Mr. Yasuteru Kohda (Japan)³, Mr. Atsuya Okazaki (Japan)³, Dr. An Chen (United States)¹, Dr. Charles Mackin (United States)¹, Ms. Elena Ferro (Switzerland)², Dr. Kaoutar El Maghraoui (United States)⁴, Dr. Hadjer Benmezziane (Switzerland)², Dr. Timothy Philicelli (United States)⁵, Dr. Corey Lammie (Switzerland)², Mr. Alexander M. Friz (United States)¹, Mr. Jose Luquin (United States)¹, Dr. Shubham Jain (United States)⁴, Dr. Abu Sebastian (Switzerland)², Dr. Vijay Narayanan (United States)⁴ (1. IBM Research - Almaden, 2. IBM Research Europe, 3. IBM Tokyo Research Laboratory, 4. IBM T. J. Watson Research Center, 5. IBM Albany Nanotech)

2:20pm **10-2: A Reconfigurable Potts Machine with Successive Boundary Approximation Annealing for Solving Combinatorial Optimization Problems**

» [Dr. Yifeng Zhou](#) (China)¹, Mr. Xin Hao (China)¹, Mr. Qinchao Cai (China)¹, Prof. Lei Liao (China)¹, Prof. Zhuojun Chen (China)¹ (1. Hunan University)

2:45pm **10-3: 16 Arrays of 32 All-to-all Coupled CMOS Oscillators for AI Inference and Combinatorial Optimization**

» [Dr. Hai Li](#) (United States)¹, Dr. James Ayers (United States)¹, Dr. Anni Lu (United States)¹, Dr. You Li (United States)¹, Dr. Dmitri Nikonov (United States)¹, Dr. Yongping Fan (United States)¹, Dr. Ian Young (United States)¹ (1. Intel Corporation)

1:30pm **Digital Circuits and SoCs II - Session 11: ASIC and Accelerators**

Brittannic
Chaired by: Muya Chang and Divya Prasad

1:30pm **11-1: SparseTrim: A Neural Network Accelerator Featuring On-Chip Decompression of Fine-Grained Sparse Model with 10.1TOPS/W System Energy Efficiency**

» [Ms. Jieyu Li](#) (China)¹, Prof. Weifeng He (China)¹, Mr. Boran Jiang (China)¹, Mr. Xinyu Wang (China)¹, Prof. Guanghui He (China)¹, Mr. Dingxuan Liu (China)², Prof. Mingoo Seok (United States)³ (1. Shanghai Jiao Tong University, 2. Aicxtek Technologies Co., Ltd., 3. Columbia University)

1:55pm **11-2: AJPEG: A 26.4-pj/pixel, 252-fps, 128x128 Image Sensor with an In-Sensor Analog DCT Processor for Data Compression**

» [Mr. Rentao Wan](#) (United States)¹, Mr. Yichen Xu (United States)¹, Prof. Dong-Woo Jee (Korea, Republic of)², Prof. Mingoo Seok (United States)¹ (1. Columbia University, 2. Ajou University)

2:20pm **11-3: An 209TOPS/W Reinforcement Learning Processor with Full Speculation Exploitation and Inference-Training Parallel Processing**

» Mr. Shih-Hao Chen (Taiwan)¹, Mr. Ping-Sheng Wu (Taiwan)¹, [Mr. Brian Dean Soon](#) (Taiwan)¹, Mr. Chao-Hung Chen (Taiwan)², Mr. Chih-Wei Liu (Taiwan)², Mr. Chun-Lung Hsu (Taiwan)², Prof. Chia-Hsiang Yang (Taiwan)¹ (1. National Taiwan University, 2. Industrial Technology Research Institute)

2:45pm **11-4: Aspen: A 630 FPS Real-Time Posit-Based Unified Accelerator for Extended Reality Perception Workloads**

» [Ms. Kathleen Feng](#) (United States)¹, Mr. Kartik Prabhu (United States)¹, Mr. Kai Bartolone (United States)¹, Mr. Jeffrey Yu (United States)¹, Prof. Priyanka Raina (United States)¹ (1. Stanford University)

3:10pm **Break**
Grand Ballroom Foyer

3:35pm **Analog Circuits and Techniques III - Session 12: Advancements in Low-Power, High-Performance Analog Sensing and Interface Technologies**

Grand Ballroom
Chaired by: Prof. Edoardo Bonizzoni (Italy) and Prof. Linxiao Shen (China)



Continued from Monday, 14 April

3:35pm **12-1: (INVITED) Recording Front-End Electronics for Large-Scale Implantable Brain-Computer Interfaces: A Design Perspective**
 » Dr. Xiaohua Huang (Netherlands)¹, [Prof. Dante Gabriel Muratore](#) (Netherlands)¹ (1. Delft University of Technology)

4:25pm **12-2: A 4.82- μ W 183.4dB-FoMSNDR CT Incremental Tracking-Zoom Sensor Readout Frontend with Floating-Gm-CCO Integrator**
 » [Mr. Haoyang Luo](#) (China)¹, Mr. Zongnan Wang (China)¹, Mr. Jiarui Wang (China)¹, Mr. Bingrui Li (China)¹, Dr. Zilong Shen (China)¹, Ms. Yang Liu (China)¹, Prof. Xiaojie Duan (China)¹, Prof. Yuan Wang (China)¹, Prof. Xiyuan Tang (China)¹ (1. Peking University)

4:50pm **12-3: A Fully-Dynamic Capacitive Touch Sensor with Tri-level Energy Recycling and Compressive Sensing Technique Achieving 1513 Hz Framerate and 10.66 pJ/step Energy Efficiency**
 » [Mr. Xiangdong Feng](#) (China)¹, Mr. zhiyu wang (China)¹, Mr. Haoyang Li (China)¹, Mr. Jiaqing Li (China)¹, Mr. Guanglong Wu (China)², Mr. Wei Wang (China)², Mr. Weijin Lin (China)¹, Mr. Xin Hu (China)¹, Mr. Weixiao Wang (China)¹, Mr. Zhong Tang (China)³, Mr. Yuyan Liu (Netherlands)⁴, Mr. Qinwen Fan (Netherlands)⁴, Mr. Hua Liu (China)⁵, Mr. Jianqiu Chen (China)⁵, Prof. Yuxuan Luo (China)¹, Prof. Bo Zhao (China)¹ (1. Zhejiang University, 2. Microaiot, 3. Vango Technologies, 4. Delft University of Technology, 5. Shanghai Hynitron Technology Co.,Ltd)

3:35pm **Data Converters II - Session 13: High-Speed Nyquist ADCs**
Olympia
 Chaired by: Thomas Brown (United States) and Haiyang (Henry) Zhu (United States)

3:35pm **13-1: A Timing-Robust 10b 13GS/s ADC with Analog Fourier Transform Based Frequency Interleaving**
 » [Mr. Xingchen Chao](#) (China)¹, Mr. Yunqiang Xu (China)¹, Mr. Qiang Yu (China)¹, Prof. Qiang Li (China)¹ (1. University of Electronic Science and Technology of China)

4pm **13-2: A 12.5GS/s 14.7mW 4 \times TI Pipelined Hybrid TD-SAR ADC with Residual Time-Voltage Amplification**
 » [Mr. Haoyu Li](#) (Macao)¹, Mr. Boyang Wang (Macao)¹, Mr. Hongjiang Chen (Macao)¹, Prof. Sai-Weng Sin (Macao)¹, Mr. Yutao Peng (China)², Prof. Xizhu Peng (China)², Prof. He Tang (China)², Prof. Chao Fan (China)³, Prof. Liang Qi (China)⁴, Prof. Rui P. Martins (China)¹, Prof. Mingqiang Guo (Macao)¹ (1. University of Macao, 2. University of Electronic Science and Technology of China, 3. Xi'an Jiaotong University, 4. Shanghai Jiao Tong University)

4:25pm **13-3: A 13b 2GS/s Time-Domain Pipelined ADC with Split-CDAC Ping-Pong Residue Transfer and PVT-Robust Self-Tracker Time Amplifier**
 » [Dr. Xin Zhao](#) (China)¹, Prof. Dengquan Li (China)¹, Mr. Feida Wang (China)¹, Mr. Depan Li (China)¹, Prof. Yi Shen (China)¹, Dr. Hongzhi Liang (China)¹, Prof. Zhangming Zhu (China)¹ (1. Xidian University)

4:50pm **13-4: A 32GS/s 8b 16 \times Time-interleaved Hybrid ADC with Self-Detection Offset Calibration, DLL-Based TLBSB PVT Variation Calibration and VTC Gain Self-Tracking.**
 » [Dr. Hongzhi Liang](#) (China)¹, Dr. Jun Chang (China)¹, Dr. Yixiao Luo (China)¹, Dr. Zeyu Peng (China)¹, Mr. Weimin Zhou (China)¹, Dr. Li Dang (China)¹, Dr. Yue Cao (China)¹, Dr. Haolin Han (China)¹, Prof. Yi Shen (China)¹, Prof. Shubin Liu (China)¹, Prof. Ruixue Ding (China)¹, Prof. Zhangming Zhu (China)¹ (1. Xidian University)

5:15pm **13-5: A 17.4fJ/conv.-step, 202 μ m², 1.5GS/s and PVT-Tolerant 7-bit Charge-Injection SAR ADC in 28nm CMOS Using a Background-Calibrated 1-bit Metastability Detector and a gm-Boosted StrongARM Comparator**
 » [Ms. Chaeun Lee](#) (Korea, Republic of)¹, Dr. Jongho Kim (Korea, Republic of)¹, Prof. Jintae Kim (Korea, Republic of)¹ (1. Konkuk University)

3:35pm **Power Management II cont'd - Session 9: Power Converter Techniques**
Michelangelo
 Chaired by: Raveesh Magod (United States) and Edevaldo Pereira (United States)



Continued from Monday, 14 April

- 3:35pm **9-5: A Zero-Voltage-Switching Buck Converter with Conduction-Loss-Minimized ZVS Operation and Auxiliary Inductor Transient Reuse Technique Achieving up to 8.3% Efficiency Improvement and 42% Voltage Droop Reduction**
 » [Ms. Qingqing Min](#) (China)¹, Dr. Jingyi Yuan (China)¹, Prof. Lin Cheng (China)¹ (1. University of Science and Technology of China)
- 4pm **9-6: : A 96.1% Efficiency 48V-to-IBV GaN Power Converter with Full-Wave Temperature-Compensated Current Sensing and Adaptive Slope Emulation Achieving 4.3% Full-Temperature Sensing Error for AI Data Center Applications**
 » [Mr. Yike Fang](#) (China)¹, Mr. Wei He (China)², Mr. Jie Zou (China)², Prof. Xiang Gao (China)¹, Prof. Lenian He (China)¹, Prof. Xugang Ke (China)¹ (1. Zhejiang University, 2. Primechip Semiconductor)
- 4:25pm **9-7: A 25-nA Modified Hybrid Ladder Converter with Efficient Output-Capacitor Charge Recycling and 90% Battery Lifetime Extension**
 » [Mr. Jianxin yang](#) (Macao)¹, Prof. Rui P. Martins (China)¹, Prof. Mo Huang (Macao)¹ (1. University of Macau)
- 4:50pm **9-8: An Up-to-70-V Output Hybrid Boost Converter with Halved Voltage Stress Achieving 7-W Output Power and 73.8% Peak Efficiency at CR of 14**
 » [Mr. Dingxuan Zhang](#) (China)¹, Mr. Tianrui Lyu (China)¹, Prof. Jianping Guo (China)¹ (1. Sun Yat-sen University)

3:35pm **Emerging Technology I cont'd -
 Session 10: Emerging Paradigms for AI, HPC, and Edge Computation**
Aquitania
 Chaired by: Dr. Kevin Tien (United States) and Tathagata Srimani (United States)

- 3:35pm **10-4: (INVITED) Demonstration of Logic-Block Performance-Power-Area Gain by 1st Generation Back Side Power Delivery Network for SoC and HPC Applications beyond 2nm Node**
 » [Dr. Hidenobu Fukutome](#) (Korea, Republic of)¹, Mr. Jinkyu Kim (Korea, Republic of)¹, Mr. Jaehoon Shin (Korea, Republic of)¹, Mr. Jeewoong Kim (Korea, Republic of)¹, Dr. Yongwoo Lee (Korea, Republic of)¹, Mr. SOOHANG CHAE (Korea, Republic of)¹, Mr. Byeolhae Eom (Korea, Republic of)¹, Dr. YunSuk Nam (Korea, Republic of)¹, Dr. Minseung Lee (Korea, Republic of)¹, Dr. Seungseok Ha (Korea, Republic of)¹, Dr. EunGuk Chung (Korea, Republic of)¹, Dr. Seung Hun Lee (Korea, Republic of)¹, Dr. Sunjung Kim (Korea, Republic of)¹, Dr. Keun Hwi Cho (Korea, Republic of)¹, Dr. Kyoung Woo Lee (Korea, Republic of)¹, Dr. Dong-Won Kim (Korea, Republic of)¹, Dr. Hag-Ju Cho (Korea, Republic of)¹, Dr. Ken Rim (Korea, Republic of)¹, Dr. Jaihyuk Song (Korea, Republic of)¹ (1. Samsung Electronics)

- 4:25pm **10-5: A 40nm 4Mb High-Reliability STT-MRAM Achieving 18ns Write-Time and 94.9% Wafer-Level-Die-Yield across -55°C-to-125°C**
 » [Mr. Yaoru HOU](#) (China)¹, Mr. Haoran Du (China)¹, Mr. Jiongzhe Su (China)¹, Mr. Yibo Liu (China)¹, Mr. Zhenghan Fang (China)¹, Mr. Jiale Cui (China)¹, Mr. Shuyu Wang (China)¹, Ms. Chenxing Liu-sun (China)¹, Mr. Xuezhao Wu (Hong Kong)², Mr. Zhihua Xiao (Hong Kong)², Prof. Bo Liu (China)¹, Prof. Xin Si (China)¹, Prof. Jun Yang (China)¹, Prof. Qiming Shao (Hong Kong)², Prof. Hao Cai (China)¹ (1. southeast university, 2. Hong Kong University of Science and Technology)

- 4:50pm **10-6: ISPI: A 2-Wire Improved Serial Peripheral Interface with Automatic Routing Algorithm for 2-D In-Textile Distributed Computing and Storage Systems**
 » [Mr. Zhenghong Chen](#) (United States)¹, Mr. Braden Desman (United States)¹, Ms. Anjali Agrawal (United States)¹, Mr. Will Farrell (United States)², Mr. Jim Owens (United States)², Dr. Daniel Truesdell (United States)¹, Prof. Benton Calhoun (United States)¹ (1. University of Virginia, 2. Nautilus Defense LLC)

3:35pm **Digital Circuits and SoCs II cont'd -
 Session 11: ASIC and Accelerators**
Brittannic
 Chaired by: Muya Chang and Divya Prasad



Continued from **Monday, 14 April**

- 3:35pm **11-5: A 40nm 0.05-1.4uJ/inference Sample-Wise-Adaptive Spiking Neural Network Processor with Dynamic Neuron-Pruning and Unstructured-Model-Aware Architecture**
 » [Mr. Jingqiao Yang](#) (China)¹, [Mr. Zikai Zhu](#) (China)¹, [Ms. Longrun Xv](#) (China)¹, [Mr. Anqin Xiao](#) (China)¹, [Mr. Ziyi Yang](#) (China)¹, [Prof. Lirong Zheng](#) (China)¹, [Prof. Zhuo Zou](#) (China)¹ (1. Fudan University)
- 4pm **11-6: A 28nm 3.14 TFLOPS/W BF16 LLM Fine-Tuning Processor with Asymmetric Quantization Computing for AI PC**
 » [Mr. Xinyuan Lin](#) (China)¹, [Mr. Leran Huang](#) (China)², [Mr. Chenhan Wei](#) (China)¹, [Mr. Wenbin Jia](#) (China)¹, [Mr. Hedi Wang](#) (China)¹, [Mr. Wenxun Wang](#) (China)¹, [Mr. Weichen Gao](#) (China)¹, [Prof. Hongyang Jia](#) (China)¹, [Prof. Sheng Zhang](#) (China)², [Prof. Huazhong Yang](#) (China)¹, [Prof. Yongpan Liu](#) (China)¹ (1. Tsinghua University, 2. Tsinghua Shenzhen International Graduate School)
- 4:25pm **11-7: An 83.16-TOPS/W Voltage-Scalable Time-Domain CNN Accelerator with Full-Swing Delay Cell and Gray-Code TDC in 28-nm CMOS**
 » [Mr. Sangsu Jeong](#) (Korea, Republic of)¹, [Mr. Huiwon Yun](#) (Korea, Republic of)¹, [Mr. Dongkwon Lee](#) (Korea, Republic of)¹, [Mr. Sunwoo Lee](#) (Korea, Republic of)¹, [Mr. Minyoung Kang](#) (Korea, Republic of)¹, [Prof. Dongsuk Jeon](#) (Korea, Republic of)¹ (1. Seoul National University)
- 4:50pm **11-8: (INVITED) Demonstration of Fast OTA Chirp-Based Beam Training using Analog TTD Array with Millimeter Wave Testbed for applications in Radar Systems**
 » [Mr. Aditya Wadaskar](#) (United States)¹, [Mr. Hesam Abbasi](#) (United States)², [Mr. Sreeni Poolakkal](#) (United States)², [Mr. Yen-Chin Wang](#) (United States)¹, [Mr. Benjamin Domae](#) (United States)¹, [Prof. Subhanshu Gupta](#) (United States)², [Dr. Danijela Cabric](#) (United States)¹ (1. University of California Los Angeles, 2. Washington State University)

5:30pm **Welcome Reception & Best Paper Candidate Poster Session**
Harborside Pavilion

Tuesday, 15 April

- 8am **Analog Circuits and Techniques IV - Session 14: Innovations in High-Performance Analog and Mixed-Signal Circuit Design**
Grand Ballroom
 Chaired by: Antonio Liscidini (Canada) and Ping-hsuan Hsieh (Taiwan)
- 8am **14-1: A Resistive Dynamic Bias Comparator with Flying Capacitors Achieving 129µVrms Input-Referred Noise at 1GS/s in 28nm FD-SOI**
 » [Mr. Byeongjin Son](#) (Korea, Republic of)¹, [Mr. Heungsik Eum](#) (Korea, Republic of)¹, [Mr. Hyeonjun Pi](#) (Korea, Republic of)¹, [Prof. Youngcheol Chae](#) (Korea, Republic of)¹ (1. Yonsei University)
- 8:25am **14-2: A -117.1dB THD Audio Decoder Utilizing Single Vector Quantizer for Simultaneous Mismatch and ISI Shaping**
 » [Mr. Yuxiang Tang](#) (China)¹, [Mr. Yijie Li](#) (China)¹, [Mr. Kaiwen Zhou](#) (China)¹, [Mr. Qi Luo](#) (China)¹, [Mr. Xining Zhang](#) (China)¹, [Mr. Yongda Ma](#) (China)¹, [Prof. Zhiliang Hong](#) (China)¹, [Prof. Jiawei Xu](#) (China)¹ (1. Fudan University)
- 8:50am **14-3: A 22.0-to-28.4GHz 192.2dBc/Hz FoM and 206.2dBc/Hz FoMA Dual-Core VCO Using Circular-Inverse-Class-F Topology under Standard Supply Voltage in 65nm CMOS process**
 » [Mr. HuanYu Ge](#) (China)¹, [Prof. Haikun Jia](#) (China)¹, [Prof. Wei Deng](#) (China)¹, [Prof. Baoyong Chi](#) (China)¹ (1. Tsinghua University)
- 9:15am **14-4: A 106.1dB DR, 450µA Idle Current Class-H Piezoelectric MEMS Micro-Speaker Driver with Envelope Tracking, Digital and Analog Inputs and Less Than 2.1µs Latency**
 » [Dr. Francesco Rezzi](#) (Italy)¹, [Dr. Vittorio Colonna](#) (Italy)¹, [Dr. Gabriele Gandolfi](#) (Italy)¹, [Dr. Samuele Fusetto](#) (Italy)¹, [Dr. Michele Chiabrera](#) (Italy)¹, [Dr. Alessandro Savo](#) (Italy)¹, [Dr. Maurizio Costagliola](#) (Italy)¹, [Dr. Ruggiero Stella](#) (Italy)¹, [Dr. Matteo Bulzi](#) (Italy)¹, [Dr. Sebastian Radosav](#) (Italy)¹, [Dr. Domenico Granozio](#) (Italy)¹, [Dr. Giuseppe Alfieri](#) (Italy)¹, [Dr. Alessandro Gemelli](#) (Italy)², [Prof. Piero Malcovati](#) (Italy)², [Prof. Edoardo Bonizzoni](#) (Italy)² (1. Inventvm Semiconductor SRL, 2. University of Pavia)



Continued from **Tuesday, 15 April**

8am	<p>Wireless Transceivers and RF/mm-Wave Circuits and Systems III - Session 15: Panel: mmWave/THz Design: A New Paradigm or a Repeat of History with Faster Transistors?</p> <p><i>Olympia</i></p> <p>Chaired by: Dr. Mark Oude Alink (Netherlands) and Prof. Taiyun Chi (United States)</p>
8am	<p>Power Management III - Session 16: Application-Specific Power Management</p> <p><i>Michelangelo</i></p> <p>Chaired by: Sriharsh Pakala (United States) and Mauro Leoncini (Italy)</p>
8am	<p>16-1: A Multi-Level Power Management Architecture for Battery-Powered SPAD Drivers with Supply Intrinsic Quenching and 10-ns Dead Time</p> <p>» Mr. Wenshuo Zhu (United States)¹, Ms. Xuan Sun (United States)¹, Dr. Xin Zhang (United States)², Dr. Cheng Huang (United States)¹ (1. Iowa State University, 2. IBM T. J. Watson Research Center)</p>
8:25am	<p>16-2: A Parallel-Input Energy-Recycling Power Management Unit with Continuous MPPT for Magnetoelectrically Powered mm-Scale Bio-Implants</p> <p>» Mr. Yiwei Zou (United States)¹, Mr. Huan-Cheng Liao (Taiwan)¹, Mr. Wei Wang (United States)¹, Mr. Wonjune Kim (United States)¹, Mr. Yumin Su (United States)¹, Dr. Jacob Robinson (United States)¹, Prof. Kaiyuan Yang (United States)¹ (1. Rice University)</p>
8:50am	<p>16-3: A 30-110V Resonant Buck-Boost Power-Bus Charger Achieving 50-A Peak Laser-Current Pulse Generation in 2ns for MHz-Frequency Automotive LiDAR Transmitter</p> <p>» Mr. Hangxiao Ma (Macao)¹, Mr. Qiaobo Ma (Macao)¹, Mr. Xuchu Mu (Macao)¹, Prof. Yang Jiang (Macao)¹, Prof. Rui P. Martins (China)¹, Prof. Pui-In Mak (Macao)¹ (1. University of Macau)</p>

9:15am	<p>16-4: A 40.68MHz Dual-Output Wireless Power Transfer System Achieving 149.7mW Maximum Power and 90.3%/51.2% RX/E2E Efficiency with 8mm-Diameter RX Coil</p> <p>» Mr. Tianqi Lu (Netherlands)¹, Prof. Sijun Du (Netherlands)¹ (1. Delft University of Technology)</p>
8am	<p>Systems and Security I - Session 17: Next-Generation Systems: From Datacenters to the Edge</p> <p><i>Aquitania</i></p> <p>Chaired by: Monodeep Kar (United States) and Dr. Baibhab Chatterjee (United States)</p>
8am	<p>17-1: TD-dAJC: A 2pj/pixel Time-Domain Weight and Integrating-MAC based direct-Analog-to-MJPEG Compression for Video Sensor Nodes</p> <p>» Mr. Gourab Barik (United States)¹, Mr. Harshit Naman (United States)¹, Mr. Yudhajit Ray (United States)¹, Dr. Shreyas Sen (United States)¹ (1. Purdue University)</p>
8:25am	<p>17-2: A 28-nm Real-Time Reinforcement Learning Processor for Mapless Autonomous Navigation with Unified Actor-Critic Network and Inference-on-Request Scheduling</p> <p>» Mr. Juyoung Oh (Korea, Republic of)¹, Ms. Jie-Xin Liu (Taiwan)², Mr. Yi-Chen Teng (Taiwan)², Prof. Hsueh-Cheng Wang (Taiwan)², Prof. Dongsook Jeon (Korea, Republic of)¹ (1. Seoul National University, 2. National Yang Ming Chiao Tung University)</p>
8:50am	<p>17-3: Forward Error Correction Requirements for Data Center Connectivity</p> <p>» Mr. Han-Mo Ou (United States)¹, Mr. Gene Lee (United States)¹, Prof. Naresh Shanbhag (United States)¹ (1. University of Illinois at Urbana-Champaign)</p>
9:15am	<p>17-4: A 0.14μJ per-Acquisition Frequency-Domain GPS Correlator Using Adaptive Compressive Sampling</p> <p>» Mr. Jung-jin Park (United States)¹, Mr. Julian Arenas (United States)¹, Mr. Kevin Patino-Sosa (United States)¹, Prof. Visvesh Sathe (United States)¹ (1. Georgia Institute of Technology)</p>



Continued from Tuesday, 15 April	
8am	<p>Digital Circuits and SoCs III - Session 18: Digital Compute-in-Memory <i>Brittannic</i> Chaired by: Ashwin Lele (United States) and Ningyuan Cao (United States)</p>
8am	<p>18-1: A 28nm 20.9-137.2 TOPS/W Output-Stationary SRAM Compute-in-Memory Macro Featuring Dynamic Look-ahead Zero Weight Skipping and Runtime Partial Sum Quantization » Mr. Xiaofeng Hu (United States)¹, Dr. HanGyeol Mun (United States)¹, Mr. Jian Meng (United States)¹, Mr. Yuan Liao (United States)¹, Mr. Amitesh Sridharan (United States)², Dr. Jae-sun Seo (United States)¹ (1. Cornell Tech, 2. Arizona State University)</p>
8:25am	<p>18-2: A 28nm Value-Wise Hybrid-Domain Compute-In-Memory Macro with Heterogeneous Memory Fabric and Asynchronous Sparsity Manager » Mr. Yuanzhe Zhao (Macao)¹, Dr. Yang Wang (China)², Mr. Yuheng Wang (Macao)¹, Mr. Heng Xie (Macao)¹, Prof. Yan Zhu (Macao)¹, Prof. Rui P. Martins (Macao)¹, Prof. Chi-Hang Chan (Macao)¹, Prof. Shouyi Yin (China)², Prof. Minglei Zhang (Macao)¹ (1. University of Macau, 2. Tsinghua University)</p>
8:50am	<p>18-3: Pro-Cache-CIM: A 28nm 69.4TOPS/W Product-Cache-based Digital-Compute-in-Memory Macro Leveraging Data Locality Pattern in Vision AI tasks » Mr. Wenbin Jia (China)¹, Mr. Yifan He (China)¹, Mr. Xiang Li (China)², Mr. Yixuan Xie (China)¹, Ms. Zongle Huang (China)¹, Mr. Wenxun Wang (China)¹, Mr. Boju Chen (China)¹, Mr. Yaolei Li (China)¹, Prof. Jinshan Yue (China)³, Prof. Xueqing Li (China)¹, Prof. Huazhong Yang (China)¹, Prof. Hongyang Jia (China)¹, Prof. Yongpan Liu (China)¹ (1. Tsinghua University, 2. Tsinghua Shenzhen International Graduate School, 3. Institute of Microelectronics of the Chinese Academy of Sciences)</p>
9:15am	<p>18-4: A 52.03TOPS/W DCIM-Based Accelerator with FlashAttention and Sparsity-Aware Alignment for LLMs » Prof. Bo Liu (China)¹, Mr. Xingyu Xu (China)¹, Mr. Yang Zhang (China)¹, Mr. Xilong Kang (China)¹, Mr. Qingwen Wei (China)¹, Mr. Zihan Zou (China)¹, Prof. Jun Yang (China)¹, Prof. Hao Cai (China)¹, Prof. Xin Si (China)¹ (1. southeast university)</p>

9:40am	<p>Break <i>Grand Ballroom Foyer</i></p>
10:05am	<p>Analog Circuits and Techniques V - Session 19: Forum: Potential of Open Source Design for Analog/Mixed Signal IC Education <i>Grand Ballroom</i> Chaired by: Jorge Marin (Chile) and Nazanin Neshatvar (United Kingdom)</p>
10:05am	<p>Emerging Technology II - Session 20: Panel: Wireline and Lightwave Interconnects - The Shifting Boundary in the AI Era <i>Olympia</i> Chaired by: Win-san (Vince) Khwa (Taiwan)</p>
10:05am	<p>Power Management III cont'd - Session 16: Application-Specific Power Management <i>Michelangelo</i> Chaired by: Sriharsh Pakala (United States) and Mauro Leoncini (Italy)</p>
10:05am	<p>16-5: A 93.9% Peak Efficiency 3V-to-40V-Input GaN-based DC-DC Converter with Unified Reliability and Efficiency Adaptive Control » Mr. Zhaoping Wang (United States)¹, Mr. Yichen Xu (United States)¹, Dr. Suhwan Kim (United States)², Dr. Nachiket Desai (United States)², Dr. Minxiang Gong (United States)², Dr. Ram Krishnamurthy (United States)², Dr. Xin Zhang (United States)³, Prof. Mingoo Seok (United States)¹ (1. Columbia University, 2. Intel, 3. IBM T. J. Watson Research Center)</p>
10:30am	<p>16-6: A Fully Integrated Adaptive-MPP-Shifting Rectifier for Piezoelectric Energy Harvesting Outputting 580µW at 10V-VOC » Ms. Xinling Yue (Netherlands)¹, Mr. Wenyu Peng (Netherlands)¹, Prof. Sijun Du (Netherlands)¹ (1. Delft University of Technology)</p>



Continued from **Tuesday, 15 April**

10:55am

16-7: A 0.49W 120-230VRMS to 8-12VDC Power Converter with Switched-Capacitor Regulation and Rectifier Short Flipping Achieving Maximized Bridge Conduction Time

» [Mr. Tianqi Lu](#) (Netherlands)¹, [Mr. Xianglong Li](#) (Netherlands)¹, [Mr. Wenyu Peng](#) (Netherlands)¹, [Prof. Sijun Du](#) (Netherlands)¹ (1. Delft University of Technology)

11:20am

16-8: An 81.0% Peak Efficiency, 1.0W/cm³ Miniaturized 5V/1A AC-DC Converter using a Highly-Integrated Primary-Side Active Clamp Flyback Controller with Adaptive Frequency and Zero-Voltage Switching

» [Mr. Akiyoshi Tanaka](#) (United States)¹, [Ms. Shan He](#) (United States)¹, [Mr. Reza Mounesi](#) (United States)², [Dr. Xinjian Liu](#) (United States)¹, [Mr. Omar Faruq](#) (United States)¹, [Ms. Nugaira Gahan Mim](#) (United States)¹, [Dr. Daniel Truesdell](#) (United States)¹, [Prof. Adel Nasiri](#) (United States)², [Prof. Benton Calhoun](#) (United States)¹ (1. University of Virginia, 2. University of South Carolina)

10:05am

Digital Circuits and SoCs III cont'd - Session 18: Digital Compute-in-Memory

Brittannic

Chaired by: [Ashwin Lele](#) (United States) and [Ningyuan Cao](#) (United States)

10:05am

18-5: A 22nm 29.3TOPS/W End-to-End CIM-Utilization-Aware Accelerator with Reconfigurable 4D-CIM Mapping and Adaptive Feature Reuse for Diverse CNNs and Transformers

» [Ms. Jin Wang](#) (China)¹, [Mr. Moxiao Lou](#) (China)¹, [Mr. Zhengke Yang](#) (China)¹, [Mr. Ruijie Peng](#) (China)¹, [Mr. Humiao Li](#) (China)¹, [Mr. Weirong Dong](#) (China)¹, [Mr. Haoran Lyu](#) (China)¹, [Mr. Yida Li](#) (China)¹, [Prof. Jiamin Li](#) (China)¹, [Prof. Hao Yu](#) (China)¹, [Prof. Jerald Yoo](#) (Korea, Republic of)², [Prof. Longyang Lin](#) (China)¹ (1. Southern University of Science and Technology, 2. Integrated Microsystems Laboratory Department of Electrical and Computer Engineering Seoul National University)

10:30am

18-6: A One-Shot Floating-Point Compute-in-Memory Macro Featuring PVT Robustness and Mismatch Tolerance for Edge LLMs

» [Mr. Yuanzhe Zhao](#) (Macao)¹, [Mr. Heng Xie](#) (Macao)¹, [Mr. Zijian Wang](#) (Macao)¹, [Mr. Chunlin Tian](#) (Macao)¹, [Prof. Li Li](#) (Macao)¹, [Prof. Yan Zhu](#) (Macao)¹, [Prof. Rui P. Martins](#) (China)¹, [Prof. Chi-Hang Chan](#) (Macao)¹, [Prof. Minglei Zhang](#) (Macao)¹ (1. University of Macau)

10:55am

18-7: (INVITED) Tracking Fmax Degradation of a RISC-V CPU with Synthesizable Odometer Aging Sensors

» [Ms. Tahmida Islam](#) (United States)¹, [Mr. Junkyu Kim](#) (United States)¹, [Mr. Hanzhao Yu](#) (United States)¹, [Prof. Chris Kim](#) (United States)¹ (1. University of Minnesota)

12pm

Session 21: Keynote Luncheon

Skyline Ballroom

1:30pm

Wireless Transceivers and RF/mm-Wave Circuits and Systems IV - Session 22: High Performance Transceivers

Grand Ballroom

Chaired by: [Mustafijur Rahman](#) (India) and [Prof. Vadim Issakov](#) (Germany)

1:30pm

22-1: A CMOS 228-324GHz RF Domain Quadrature Receiver with a Broadband Harmonic-Enhanced LO Generator

» [Dr. Weiping Wu](#) (China)¹, [Mrs. Xun Bao](#) (China)¹, [Mr. Shi Chen](#) (China)¹, [Mr. Jingze Wang](#) (China)¹, [Mrs. Shulan Chen](#) (China)¹, [Prof. Yan Wang](#) (China)¹, [Prof. Lei Zhang](#) (China)¹ (1. School of Integrated Circuits, Tsinghua University)

1:55pm

22-2: A 22-to-32 GHz 4-Beam 32-Element Polarization Reconfigurable Fully-Connected Fully-Bidirectional MIMO Transceiver for Emerging Space-air-ground-sea Integrated Network

» [Mr. Junlong Gong](#) (China)¹, [Prof. Wei Deng](#) (China)¹, [Mr. Shulin Yao](#) (China)¹, [Prof. Haikun Jia](#) (China)¹, [Ms. Xinyu Jiang](#) (China)¹, [Mr. Xiangyu Nie](#) (China)¹, [Ms. Dongfang Li](#) (China)¹, [Mr. Hongliang Wu](#) (China)¹, [Dr. Chuanming Zhu](#) (China)¹, [Dr. Xiangrong Huang](#) (China)¹, [Prof. Baoyong Chi](#) (China)¹ (1. Tsinghua University)



Continued from Tuesday, 15 April

2:20pm **22-3: A 6-18-GHz Reflectionless Blocker-canceling Mixer-first Receiver with Maximum 55.6-dB Out-of-band Rejection for Satellite Communication Systems**

» Mr. Kai Li (China)¹, Mr. Jialei Wu (China)¹, Prof. Keping Wang (China)¹ (1. Tianjin University)

2:45pm **22-4: A Compact Reconfigurable 24-29.5/38-43.5GHz Phased Array Transceiver Front-End with Self-Interference Rejection and Wideband IF Supporting TDD/FDD Operation**

» Mr. Qin Chen (China)¹, Dr. Xuhao Jiang (China)¹, Dr. Xuanxuan Yang (China)², Dr. Yuchen Liang (China)², Dr. Ziang Zhang (China)², Mr. Junbo Liu (China)², Mr. Yifei Hu (China)², Dr. Depeng Cheng (China)³, Dr. Long He (China)³, Prof. Xu Wu (China)¹, Prof. Lianming Li (China)¹ (1. Southeast University, Purple Mountain Laboratories, 2. southeast university, 3. Purple Mountain Laboratories)

1:30pm **Emerging Technology III - Session 23: Cryogenic and Silicon Photonic ICs**

Olympia

Chaired by: Andrea Ruffino (Switzerland) and Juhwan Yoo (United States)

1:30pm **23-1: (INVITED) Integrated photonic-electronic deep neural networks: from sub-nanosecond image classification to PVT-tolerant activation functions**

» Mr. Amirreza Shoobi (United States)¹, Mr. Alexander Geers (United States)¹, Mr. Anish Mondal (United States)¹, Dr. Kaisarbek Omirzakhov (United States)¹, Dr. Farshid Ashtiani (United States)¹, Prof. Firooz Aflatouni (United States)¹ (1. University of Pennsylvania)

2:20pm **23-2: A 4.6-373K Functional 800MS/s 12b Buffer-then-Amplify Charge-Pump-Based Pipelined TI-SAR ADC with Integrated-Active-Hold Technique**

» Mr. Kaoru Yamashita (Japan)¹, Prof. Kentaro Yoshioka (Japan)², Mr. Christian Ziegler (Germany)¹, Prof. Vadim Issakov (Germany)¹, Prof. Hiroki Ishikuro (Japan)² (1. Technical University of Braunschweig, 2. Keio University)

2:45pm

23-3: A PMOS-Based Deep Cryogenic CMOS Temperature Sensor Achieving a Range from 10K to 410K with a Relative Inaccuracy of 0.5% (3σ)

» Mr. Xingyu Qi (China)¹, Mr. Yingzhe Sha (China)¹, Prof. Xufeng Kou (China)², Prof. Xiaoyong Xue (China)¹, Prof. Peng Wang (China)³, Prof. Zhangcheng Huang (China)¹, Prof. Qi Liu (China)¹, Prof. Ming Liu (China)¹ (1. Fudan University, 2. Shanghai Institute of Technical Physics, Chinese Academy of Sciences, 3. Shanghai Institute of Technical Physics, Chinese Academy of Sciences)

1:30pm

Power Management IV - Session 24: Hybrid DC-DC Converters

Michelangelo

Chaired by: Prof. Mo Huang (Macao) and Dr. Suhwan Kim (United States)

1:30pm

24-1: (INVITED) Where is the Inductor: A Review and Comparison of the Hybrid DC-DC Buck Topologies

» Mr. Zhiguo Tong (Macao)¹, Mr. Wenjie Yang (Macao)², Dr. Shousheng Han (China)¹, Dr. Junwei Huang (Macao)², Dr. Xiangyu Mao (Macao)², Prof. Yan Lu (China)³ (1. Tsinghua University and University of Macau, 2. University of Macau, 3. Tsinghua University)

2:20pm

24-2: A 94.5%-Peak-Efficiency Dual-Path Single-Inductor Dual-Output Converter with Reduced Inductor Current and Output Voltage Ripple

» Mr. Baochuang Wang (China)¹, Prof. Lin Cheng (China)¹ (1. University of Science and Technology of China)

2:45pm

24-3: A 100A 48-60V to 1V Hybrid LLC Resonant Converter with 51mV Droop for a 70A/20ns Load Transient

» Mr. Zeguo Liu (China)¹, Mr. Zhiren Luo (China)¹, Mr. Xiangan You (China)², Mr. Dongjie Ye (China)¹, Mr. Weiyi Tang (China)¹, Mr. Qinyang Wang (China)¹, Dr. Qidong Wang (China)², Dr. Jianliang Shen (China)³, Prof. Lin Cheng (China)¹ (1. University of Science and Technology of China, 2. Institute of Microelectronics of the Chinese Academy of Sciences, 3. Information Engineering University)



Continued from Tuesday, 15 April

1:30pm **Wireline and Optical Communications Circuits and Systems I - Session 25: High-speed Wireline and Optical Communication Aquitania**
 Chaired by: Shenggao (Victor) Li (United States) and Luca Ravezzi (United States)

1:30pm **25-1: (INVITED) A 224Gb/s 3pj/bit 42dB Insertion Loss Post-FEC Error Free Transceiver in 3-nm FinFET CMOS**
 » Dr. Dirk Pfaff (Canada)¹, Dr. Muhammad Nummer (Canada)¹, Dr. Noman Hai (Canada)¹, Dr. Jingjing Xia (Canada)¹, Mr. Kai Ge Yang (Canada)¹, Mr. Mohammad-Mahdi Mohsenpour (Canada)¹, Mr. Choon-Haw CH Leong (Canada)¹, Dr. Marc-Andre LaCroix (Canada)¹, Mr. Babak Zamanlooy (Canada)¹, Mr. Tom Eeckelaert (Canada)¹, Mr. Dmitry Petrov (Canada)¹, Mr. Mostafa Haroun (Canada)¹, Mr. Carson Dick (Canada)¹, Mr. Alif Zaman (Canada)¹, Mr. Haitao Mei (Canada)¹, Dr. Tahseen Shakir (Canada)¹, Mr. Carlos Carvalho (Canada)¹, Mr. Howard Huang (Canada)¹, Mr. Ralph Mason (Canada)¹, Mrs. Fahmida Brishty (Canada)¹, Mrs. Ifrah Jaffri (Canada)¹, Mr. David Yokoyama-Martin (Canada)¹ (1. Synopsys, Inc.)

2:20pm **25-2: An 800GbE PAM-4 PHY transceiver that supports 42dB copper and direct-drive optical applications in 7nm**
 » Mr. Chang Liu (United States)¹, Dr. Burak Catli (United States)¹, Dr. Yong Liu (United States)¹, Mr. Anand Vasani (United States)¹, Dr. Guansheng Li (United States)¹, Mr. Kun Chuai (United States)¹, Dr. Lakshmi Rao (United States)¹, Mr. Yang Liu (United States)¹, Dr. Xin Meng (United States)¹, Mr. Jiawen Zhang (United States)¹, Mr. Tim He (United States)¹, Dr. Batu Dayanik (United States)¹, Dr. Vadim Milirud (United States)¹, Dr. Meisam Honarvar Nazari (United States)¹, Dr. Hyo Gyuem Rhew (United States)², Dr. Derui Kong (United States)¹, Mr. Arvindh Iyer (United States)¹, Mr. Nan Wang (United States)¹, Dr. Alireza Nilchi (United States)¹, Dr. Aminghasem Safarian (United States)¹, Dr. Ray Wang (United States)¹, Dr. Hyung-Joon Jeon (United States)¹, Dr. Xiaochen Yang (United States)¹, Dr. Boyu Hu (United States)¹, Dr. Jerry Han (United States)¹, Mr. Adesh Garg (United States)¹, Mr. Kumar Thasari (United States)¹, Dr. Heng Zhang (United States)¹, Dr. Namik Kocaman (United States)¹, Mr. Ali Nazemi (United States)¹, Dr. Delong Cui (United States)¹, Dr. Afshin Momtaz (United States)¹, Dr. Jun Cao (United States)¹ (1. Broadcom Inc, 2. now with Samsung Electronics)

2:45pm **25-3: A 100Gb/s Transmitter with Digital Pre-Distortion and MUX-Merged Voltage-Mode Driver Achieving 3-times INLPP Improvement in 28-nm CMOS**
 » Mr. Chenxi Han (China)¹, Dr. Xiaoteng Zhao (China)¹, Mr. Qi Zhang (China)¹, Dr. Yuan Liu (China)¹, Mr. Yuhao Zhang (China)¹, Dr. Hongzhi Liang (China)¹, Dr. Yukui Yu (China)¹, Prof. Shubin Liu (China)¹, Prof. Zhangming Zhu (China)¹ (1. Xidian University)

1:30pm **Biomedical Technologies and Applications I - Session 26: Advanced Biopotential Interfaces Brittannic**
 Chaired by: Sahil Shah (United States) and Prof. Youngcheol Chae (Korea, Republic of) and Shih-Chii Liu (Switzerland)

1:30pm **26-1: (INVITED) In-Ear EEG Auditory Neurofeedback Towards Unobtrusive Sleep Enhancement**
 » Mr. Min Lee (United States)¹, Mr. Zhaoyi Liu (United States)¹, Mr. Abhinav Uppal (United States)¹, Dr. Jiahao Song (United States)², Dr. Akshay Paul (United States)², Dr. Florian Chapotot (United States)³, Dr. Esra Tasali (United States)³, Dr. Yuchen Xu (United States)², Prof. Gert Cauwenberghs (United States)¹ (1. University of California San Diego, 2. Institute for Neural Computation, 3. University of Chicago)

2:20pm **26-2: A 32-channel 85.4dB SNDR Time-multiplexed Neural Recording Front-end Achieving within-conversion Artifact Recovery**
 » Mr. Arindam Mandal (United States)¹, Dr. Chi-Hsiang Huang (United States)¹, Mr. Julian Arenas (United States)¹, Mr. Wei-En Lee (United States)¹, Mr. Philip Anschutz (United States)¹, Dr. Amanda Jacob (United States)², Dr. Keshav Ramachandra (United States)², Prof. Samuel Sober (United States)², Prof. Muhannad Bakir (United States)¹, Prof. Shaolan Li (United States)¹, Prof. Visvesh Sathe (United States)¹ (1. Georgia Institute of Technology, 2. Emory University)

2:45pm **26-3: An Implantable Fully-Packaged Current-Controlled Wireless Near-Adiabatic Neural Stimulator Achieving 71.7% Peak Efficiency and 13.5% Efficiency Variation Across Supported Stimulation Current Range**
 » Mr. Hong Liao (China)¹, Mr. Wentao Ma (China)¹, Ms. Xiaoxu Yang (China)¹, Ms. Jianfang Nie (China)¹, Ms. Bingfang Wang (China)¹, Mr. Zhiqiang Chang (China)¹, Prof. Yin Fang (China)¹, Prof. Miao Meng (China)¹ (1. Tongji University)



Continued from Tuesday, 15 April	
3:10pm	Break <i>Grand Ballroom Foyer</i>
3:35pm	Wireless Transceivers and RF/mm-Wave Circuits and Systems IV cont'd - Session 22: High Performance Transceivers <i>Grand Ballroom</i> Chaired by: Prof. Vadim Issakov (Germany) and Mustafijur Rahman (India)
3:35pm	22-5: A 0.9mm² SDR Receiver in 40-nm CMOS Covering 10-72GHz Using Inductor-Less Edge-combining based LO Quintupler » <u>Mr. Haoyu Bai</u> (China) ¹ , Ms. Ling Hao (China) ¹ , Dr. Dong Wang (China) ¹ , Ms. Keer Gao (China) ¹ , Mr. Han Huang (China) ¹ , Mr. Jiazheng Zhou (China) ¹ , Mr. Jiaqi He (China) ¹ , Prof. Junhua Liu (China) ¹ , Prof. Huailin Liao (China) ¹ (1. Peking University)
4pm	22-6: A Packaged D-band Transmitter with a Multifeed Lens Antenna Achieving 25.3dBm Single-element EIRP for 2-D Scalable Arrays » <u>Mr. Hang Wang</u> (United States) ¹ , Dr. Hao Guo (United States) ¹ , Dr. Xiaohan Zhang (United States) ¹ , Dr. Taiyun Chi (United States) ¹ (1. Rice University)
4:25pm	22-7: A 14.08-Gb/s 256-QAM 60GHz Phased-Array Transceiver with Switchable Tertiary-Coil Transformer T/R Switch and Customizable-Sized Cascade Phase-Invariant VGAs » <u>Mr. Xuwei Li</u> (China) ¹ , Dr. Depeng Cheng (China) ² , Mr. Jing Feng (China) ¹ , Mr. Xin Chen (China) ¹ , Mr. Rui Cao (China) ¹ , Mr. Lei Luo (China) ¹ , Mr. Haipeng Duan (China) ¹ , Prof. Dongming Wang (China) ³ , Prof. Lianming Li (China) ³ (1. southeast university, 2. Purple Mountain Laboratories, 3. Southeast University, Purple Mountain Laboratories)
4:50pm	22-8: A 27-39GHz 48Gbit/s 8-Channel Phased Array Transceiver Frontend with Broadband TX/RX Co-Design Optimization » <u>Mr. Niccolò Villaggi</u> (Switzerland) ¹ , Mr. Yuqi Liu (Switzerland) ¹ , Dr. Tzu-Yuan Huang (Switzerland) ¹ , Prof. Sensen Li (United States) ² , Prof. Taiyun Chi (United States) ³ , Prof. Hua Wang (Switzerland) ¹ (1. ETH Zurich, 2. The University of Texas at Austin, 3. Rice University)

3:35pm	Emerging Technology IV - Session 27: Forum: Probabilistic Computing <i>Olympia</i>
3:35pm	Power Management IV cont'd - Session 24: Hybrid DC-DC Converters <i>Michelangelo</i> Chaired by: Prof. Mo Huang (Macao) and Dr. Suhwan Kim (United States)
3:35pm	24-4: A 1.8V Input, 96.5% Efficiency, 4.05A/mm² FoM, Three-Level Dual-Path Hybrid Buck Converter with Mitigated Capacitive Inrush Current and Seamless DVS Across a Wide 0.4-to-1.5V Output Range » <u>Mr. Jae-Hyun Kim</u> (Korea, Republic of) ¹ , Mr. Jun-Gi Lee (Korea, Republic of) ¹ , Dr. Hyunki Han (Korea, Republic of) ¹ , Prof. Hyun-Sik Kim (Korea, Republic of) ¹ (1. KAIST)
4pm	24-5: An Inductor-First Hybrid Buck-Boost Converter Featuring Seamless Single-Mode Operation, 97.2% Peak Efficiency, and 565mA/mm³ Current Density with Ultra-Compact 1mm³-Volume Inductor » <u>Mr. Hyunjun Park</u> (Korea, Republic of) ¹ , Mr. Yunho Lee (Korea, Republic of) ¹ , Mr. Minsu Kim (Korea, Republic of) ¹ , Dr. Woojoong Jung (Korea, Republic of) ¹ , Mr. Hongseok Kim (Korea, Republic of) ¹ , Prof. Hyung-Min Lee (Korea, Republic of) ¹ (1. Korea University)
4:25pm	24-6: A 98.5% Peak Efficiency 2/3-Phase Buck-or-Boost Converter With VCR-Independent Loss Optimization and Unconditional RHP Zero Elimination Achieving 2.76A/mm²-Current-Density and 6.5µs Recovery » <u>Mr. Xiongjie Zhang</u> (Macao) ¹ , Ms. Xinman Li (Macao) ¹ , Prof. Yang Jiang (Macao) ¹ , Prof. Zhangming Zhu (China) ² , Prof. Rui P. Martins (China) ¹ , Prof. Pui-In Mak (Macao) ¹ (1. University of Macau, 2. Xidian University)
4:50pm	24-7: A 12V/24V-to-1V Shared Switched-Capacitor Multi-Inductor Multi-Output Converter with 90.9%/89.5% Peak Efficiency and Negligible Cross Regulation » <u>Ms. Yiling Xie</u> (China) ¹ , Prof. Jianping Guo (China) ¹ (1. Sun Yat-sen University)



Continued from Tuesday, 15 April

3:35pm **Wireline and Optical Communications Circuits and Systems I cont'd -**

Session 25: High-speed Wireline and Optical Communication

Aquitania

Chaired by: Shenggao (Victor) Li (United States) and Luca Ravezzi (United States)

3:35pm

25-4: BASS-PLL: A Bandwidth Augmented Sub-Sampling PLL Achieving a Wide Bandwidth Above 30% of the Reference Frequency and a Worst Case FoMREF of -247.9dB at 3GHz with a Ring Oscillator

» [Ms. Xueke Cai](#) (China)¹, Ms. Tong Zhang (China)¹, Mr. Weihao Jie (China)¹, Ms. Yanling Zheng (China)¹, Mr. Deyong Li (China)¹, Ms. Yiwen Zhang (China)¹, Mr. Yang Zhao (China)¹, Prof. Yongfu Li (China)¹, Prof. Honglan Jiang (China)¹, Prof. Patrick Mercier (United States)², Prof. Hui Wang (China)¹ (1. Shanghai Jiao Tong University, 2. University of California San Diego)

4pm

25-5: A 0.3-to-10.1GHz 33.8fsRMS-Jitter Hybrid Injection-Locked Eight-Phase Clock Generator with Adaptive Mismatch Cancellation Technique for High-Speed Links in 28nm CMOS

» [Mr. Hongzhi Wu](#) (China)¹, Mr. Xuxu Cheng (China)¹, Mr. Liping Zhong (China)¹, Mr. Yangyi Zhang (China)¹, Mr. Weitao Wu (China)¹, Mr. Xiongshi Luo (China)¹, Prof. Alex Pan (China)¹ (1. Southern University of Science and Technology)

4:25pm

25-6: A DAC-based Transmitter with VCSEL Bias-Current Generation enabling 180 Gbit/s PAM-8 Electrical and 100 Gbit/s PAM-4 VCSEL-based Transmission in 22nm SOI

» [Mr. Urs Hecht](#) (Germany)¹, Dr. Philipp Scholz (Germany)¹, Mr. Patrick Kurth (Germany)¹, Mr. Frowin Buballa (Germany)¹, Ms. Helia Ordouei (Germany)¹, Prof. Friedel Gerfers (Germany)¹ (1. Technische Universität Berlin)

4:50pm

25-7: A CMOS Low-Noise BM-TIA Employing Current Injection Accelerator for 50G-PON with CM-Post-Amplifier Chip Connectivity

» [Mr. Yifei Xia](#) (China)¹, Mr. Zhixing Zhang (China)¹, Mr. Shuaizhe Ma (China)², Mr. Yuanhao Yao (China)¹, Mr. Ruixuan Yang (China)², Ms. Yuye Yang (China)², Mr. Jianyu Yang (China)², Prof. Li Geng (China)², Prof. Dan Li (China)² (1. Xi'an Jiaotong University, 2. Xi'an Jiaotong University)

3:35pm

**Biomedical Technologies and Applications I cont'd -
Session 26: Advanced Biopotential Interfaces**

Brittannic

Chaired by: Sahil Shah (United States) and Prof. Youngcheol Chae (Korea, Republic of) and Shih-Chii Liu (Switzerland)

3:35pm

26-4: A 6μW ECG-Recording ΔΣ Modulator with Internal-Capacitor-Flipping Technique for 34Vpp Common-Mode-Interference (CMI) Tolerance and 1Vpp Input Range

» [Ms. Jimin Koo](#) (Korea, Republic of)¹, Mr. Sein Oh (Korea, Republic of)¹, Dr. Yoontae Jung (Belgium)², Mr. Vincent Lukito (Korea, Republic of)¹, Prof. Sohmyung Ha (United Arab Emirates)³, Prof. Minkyu Je (Korea, Republic of)¹ (1. Korea Advanced Institute of Science and Technology, 2. IMEC, 3. New York University Abu Dhabi)

4pm

26-5: A Tripolar Stimulator with Return-Electrode-Based Charge-Pack Injection Technique for Charge Imbalance Correction in Spatiotemporal Stimulation

» [Mr. Jialei Wu](#) (China)¹, Ms. Simeng Yin (China)¹, Mr. Yixin Zhou (China)², Mr. Jianye Li (China)¹, Mr. Kai Li (China)¹, Prof. Xiaoyan Shen (China)³, Ms. Tinghui Sun (China)³, Mr. Xinlong Zhang (China)³, Prof. Keping Wang (China)¹ (1. Tianjin University, 2. southeast university, 3. Nantong University)

4:25pm

26-6: An 81.7MΩ-Input-Impedance 179.5dB-FOMSNDR 1.8VPP-Input-Range Noise-Shaping-SAR-Based Sensing Frontend with Dynamic Input-Impedance Boosting and Prediction-Assisted Mismatch-Shaping-DEM

» [Mr. Yiming Han](#) (United States)¹, Dr. Linran Zhao (United States)¹, Mr. Tzuping Huang (United States)¹, Dr. Alper Bozkurt (United States)², Dr. Yaoyao Jia (United States)¹ (1. The University of Texas at Austin, 2. North Carolina State University)



Continued from **Tuesday, 15 April**

4:50pm

26-7: A Scalable 256-Channel 12-mA 0.06%-Current-Mismatch 22-V Neurostimulator with Real-time Current Calibration and Compliance Monitoring

» [Mr. Po-Han Chen](#) (United States)¹, [Mr. Zhiheng Luo](#) (United States)¹, [Mr. Spencer Chang](#) (United States)¹, [Mr. Kristopher Ngo](#) (United States)¹, [Mr. Ritwik Vatsyayan](#) (United States)¹, [Mr. Jihwan Lee](#) (United States)¹, [Ms. Tara Porter](#) (United States)¹, [Prof. Drew Hall](#) (United States)¹, [Prof. Shadi Dayeh](#) (United States)¹, [Prof. Ian Galton](#) (United States)¹, [Prof. Hanh-Phuc Le](#) (United States)¹ (1. University of California San Diego)

5:30pm

CICC Conference Reception & Industry Information Session
Skyline Ballroom

Wednesday, 16 April

8:30am

Welcome
Grand Ballroom

8:50am

Session 27: Keynote Session
Grand Ballroom

9:40am

Break
Grand Ballroom Foyer

10:05am

Systems and Security II - Session 28: Next-Generation Systems: Hardware for Quantum and Secure Computing
Grand Ballroom
Chaired by: [Monodeep Kar](#) (United States) and [Dr. Baibhab Chatterjee](#) (United States)

10:05am

28-1: (INVITED) Cryogenic CMOS circuits for future scaled quantum computing systems: challenges and solutions

» [Dr. Bodhisatwa Sadhu](#) (United States)¹, [Dr. Kevin Tien](#) (United States)¹, [Dr. Sudipto Chakraborty](#) (United States)¹, [Dr. David Frank](#) (United States)¹, [Dr. Pat Rosno](#) (United States)², [Dr. Daniel Moertl](#) (United States)², [Dr. Mark Yeck](#) (United States)¹, [Dr. John Bulzacchelli](#) (United States)¹, [Dr. Daniil Frolov](#) (United States)¹, [Dr. Devin Underwood](#) (United States)¹, [Dr. Ken Inoue](#) (United States)², [Dr. Christian Baks](#) (United States)¹, [Dr. Daniel Ramirez](#) (United States)², [Dr. Jeremy Ekman](#) (United States)², [Dr. Ryan Black](#) (United States)², [Dr. Tim Schmerbeck](#) (United States)², [Dr. Ray Richetta](#) (United States)², [Dr. Dereje Yilma](#) (United States)², [Dr. Andrew Davies](#) (United States)², [Dr. Joseph Glick](#) (United States)¹, [Dr. Dorothy Wisnieff](#) (United States)¹, [Dr. Bryce Snell](#) (United States)², [Dr. John Timmerwilke](#) (United States)¹, [Dr. Raphael Robertazzi](#) (United States)¹, [Dr. George Zettles](#) (United States)², [Dr. Scott Lekuch](#) (United States)¹, [Dr. Scott Willenborg](#) (United States)², [Dr. Brian Gaucher](#) (United States)¹, [Dr. Daniel Friedman](#) (United States)¹ (1. IBM T. J. Watson Research Center, 2. IBM Systems)

10:55am

28-2: High-Entropy Analog-Based Strong PUF reaching 166 F2/bit Area-to-Entropy-ratio

» [Dr. Alessandro Catania](#) (Italy)¹, [Dr. Sebastiano Strangio](#) (Italy)¹, [Dr. Maksym Paliy](#) (Italy)¹, [Mr. Christian Sbrana](#) (Italy)², [Mr. Michele Bertozzi](#) (Italy)², [Prof. Giuseppe Iannaccone](#) (Italy)¹ (1. Department of Information Engineering, University of Pisa, 2. Quantavis s.r.l., 56126, Pisa)

11:20am

28-3: A 2455µm² 1.7Gbps Side-Channel Attack-Resistant Masked HMAC-SHA256 Accelerator in 4nm class CMOS

» [Mr. Sachin Taneja](#) (United States)¹, [Mr. Vikram Suresh](#) (United States)¹, [Mr. Raghavan Kumar](#) (United States)¹, [Mr. Vivek De](#) (United States)¹, [Mr. Sanu Mathew](#) (United States)¹ (1. Intel Corporation)

11:45am

28-4: A 54µW Design-Agnostic Clock, Voltage, and EM-Pulse Fault-Injection Attack Detection using Time-to-Voltage Conversion

» [Mr. Yudhajit Ray](#) (United States)¹, [Dr. Archisman Ghosh](#) (United States)¹, [Mr. Sarthak Antal](#) (United States)¹, [Dr. Shreyas Sen](#) (United States)¹ (1. Purdue University)



Continued from **Wednesday, 16 April**

- 10:05am **Wireless Transceivers and RF/mm-Wave Circuits and Systems V - Session 29: Forum: Emerging Techniques for Phase Locked Loops**
Olympia
Chaired by: Somnath Kundu (United States) and Sachin Kalia (United States)
- 10:05am **Data Converters III - Session 30: Continuous-Time ADCs**
Michelangelo
Chaired by: Chia-Hung Chen (Taiwan) and Jin-tae Kim (Korea, Republic of)
- 10:05am **30-1: (INVITED) Continuous-Time Delta-Sigma Modulator with SAR-Assisted Digital Noise Coupling**
» Mr. Kent Edrian Lozada (Korea, Republic of)¹, Dr. Ye-Dam Kim (Korea, Republic of)², Dr. Il-Hoon Jang (Korea, Republic of)², Prof. Seung-Tak Ryu (Korea, Republic of)¹ (1. Korea Advanced Institute of Science and Technology, 2. Samsung Electronics)
- 10:55am **30-2: A 0.16mm² 450MHz-BW 72dB-SNDR Continuous-time Pipeline ADC with APF+HPF and APF+FIR Hybrid Delay Alignment Techniques**
» Mr. Heyang Zhao (China)¹, Mr. Yuxuan He (China)¹, Mr. Yunsong Tao (China)¹, Mr. Zhishuai Zhang (China)¹, Prof. Yong Chen (China)¹, Prof. Yi Zhong (China)¹, Prof. Lu Jie (China)¹, Prof. Nan Sun (China)¹ (1. Tsinghua University)
- 11:20am **30-3: A Calibration-free 80MHz CT DSM using Dual Quantization and ISI Shuffler achieving 106.2dB SFDR**
» Mr. Ahmed Abdelaal (Germany)¹, Dr. John Kauffman (Germany)¹, Dr. Joachim Becker (Germany)¹, Mr. Matteo Dalla Longa (Austria)², Dr. Francesco Conzatti (Austria)², Prof. Maurits Ortmanns (Germany)¹ (1. University of Ulm, 2. Infineon Technologies)
- 11:45am **30-4: A Power-Efficient Jitter-Insensitive 3.2GHz 1-bit CT $\Delta\Sigma$ ADC with Direct Charge Dump Feedback**
» Dr. Yanquan Luo (China)¹, Prof. Lu Jie (China)¹, Prof. Nan Sun (China)¹ (1. Tsinghua University)

- 10:05am **Wireline and Optical Communications Circuits and Systems II - Session 31: Energy Efficient Wireline Interconnects**
Aquitania
Chaired by: Xi Chen (United States) and Prof. Alex Pan (China)
- 10:05am **31-1: A 0.055pJ/bit/dB 42Gb/s PAM-4 Wireline Transceiver with Consecutive Symbol to Center (CSC) Encoding and Classification for 26dB Loss in 16nm FinFET**
» Mr. Ramin Javadi (United States)¹, Prof. Tejasvi Anand (United States)¹ (1. Oregon State University)
- 10:30am **31-2: A 3ns Idle-Exit Latency 0.28-28Gb/s/pin Single-Ended NRZ Die-to-Die Interface with Energy-Efficient Receiver and Background Noise Compensation**
» Mr. Hyun-Seok Choi (Korea, Republic of)¹, Mr. Sunki Cho (Korea, Republic of)¹, Dr. Sanghee Lee (Korea, Republic of)², Ms. Hyeri Roh (Korea, Republic of)¹, Ms. Jeong-Eun Song (Korea, Republic of)¹, Mr. Honggyoo Ahn (Korea, Republic of)², Ms. Jihee Kim (Korea, Republic of)¹, Mr. Minchang Kim (Korea, Republic of)², Dr. Hankyu Chi (Korea, Republic of)², Prof. Deog-Kyoon Jeong (Korea, Republic of)¹, Prof. Woo-Seok Choi (Korea, Republic of)¹ (1. Seoul National University, Seoul, Korea, 2. SK Hynix)
- 10:55am **31-3: An Energy and Area-Efficient PAM-4 Data Coding Scheme with Embedded Supply Noise Stabilization for Single-Ended Memory Interface**
» Mr. Giyeong Heo (Korea, Republic of)¹, Mr. Younghwan Chang (Korea, Republic of)², Prof. Yong-un Jeong (Korea, Republic of)³, Dr. Jaekwang Yun (Korea, Republic of)⁴, Mr. Jusung Lee (Korea, Republic of)⁵, Mr. Shin-Hyun Jeong (Korea, Republic of)¹, Mr. Sanghyuk Seo (Korea, Republic of)¹, Prof. Suhwan Kim (Korea, Republic of)¹ (1. Seoul National University, Seoul, Korea, 2. S.LSI Business Division, Samsung Electronics, Korea, 3. Sejong University, 4. SK Hynix, 5. Samsung Electronics)



Continued from **Wednesday, 16 April**

11:20am

31-4: A 16nm 140-fj/b/dB Dual-Mode ENRZ/NRZ Serial Data Transceiver with Dynamic Voltage Scaling

» [Dr. Armin Tajalli](#) (Switzerland)¹, [Dr. Cosimo Aprile](#) (Switzerland)¹, [Dr. Milad Ataei](#) (Switzerland)¹, [Mr. Rolf Beerwerthe](#) (Germany)¹, [Mr. Dario Carneli](#) (Switzerland)¹, [Mr. Maik Fuhs](#) (Germany)¹, [Dr. Kiarash Gharibdoust](#) (Switzerland)¹, [Dr. Ali Hormati](#) (Switzerland)¹, [Mr. James Hudner](#) (Switzerland)¹, [Mr. Victor Perrin](#) (Switzerland)¹, [Prof. Amin Shokrollahi](#) (Switzerland)¹, [Mr. Richard Simpson](#) (Switzerland)¹, [Mr. Andrew Stewart](#) (United Kingdom)¹, [Mr. David Stauffer](#) (United States)¹, [Mr. Giuseppe Surace](#) (United Kingdom)¹, [Mr. Roger Ulrich](#) (Switzerland)¹, [Mr. Mark Venneborger](#) (Germany)¹, [Mr. Patrick Urban](#) (Germany)¹, [Mr. Anant Singh](#) (United Kingdom)¹ (1. Kandou Bus)

10:05am

Digital Circuits and SoCs IV - Session 32: Panel: The Impact of AI: A Job Creator or Destroyer?

Brittannic

Chaired by: [Shanshan Xie](#) (United States) and [Ashwin Lele](#) (United States)

12pm

Lunch (on own)

1:30pm

Systems and Security III - Session 33: Advancing System Designs with Chiplet Technology (CICC/CHISIC)

Grand Ballroom

Chaired by: [Richard Dorrance](#) (United States) and [Mingu Kang](#) (United States)

1:30pm

33-1: (INVITED) UCIe-Compliant Chiplet Interconnect Design Leveraging Cutting-Edge Packaging Technologies

» [Mr. Yu-lie Huang](#) (Taiwan)¹, [Mr. Mu-Shan Lin](#) (Taiwan)¹, [Mr. Chien-Chun Tsai](#) (Taiwan)¹, [Mr. Wei-Chih Chen](#) (Taiwan)¹, [Mr. Hsin-Hung Kuo](#) (Taiwan)¹, [Ms. Shu-Chun Yang](#) (Taiwan)¹, [Dr. Shenggao Li](#) (United States)¹ (1. tsmc)

2:20pm

33-2: (INVITED) A high-performance Passive Base System for distributed AI/Media acceleration

» [Dr. Tanay Karnik](#) (United States)¹, [Mr. Jainaveen Sundaram Priya](#) (United States)¹, [Dr. Srivatsa rangachar Srinivasa](#) (United States)¹, [Mr. Paolo Aseron](#) (United States)², [Dr. Ragh Kuttappa](#) (United States)¹, [Dr. Gauthaman Murali](#) (United States)¹, [Dr. Vinayak Honkote](#) (United States)¹, [Dr. Prerna Budhkar](#) (United States)¹, [Mr. Dileep Kurian](#) (United States)¹, [Mr. Ronald Kalim](#) (United States)¹, [Mr. Thomas P Thomas](#) (United States)¹, [Ms. Anuradha Srinivasan](#) (United States)¹ (1. Intel Corp, 2. Intel)

1:30pm

Wireless Transceivers and RF/mm-Wave Circuits and Systems VI - Session 34: Design Techniques for RF/mmWave CMOS Phased-Locked Loops

Olympia

Chaired by: [Hsieh-Hung Hsieh](#) (Taiwan) and [Aravind Nagulu](#) (United States)

1:30pm

34-1: A Fractional-N Cascaded PLL Employing the Calibration-free Noise-and-Spur Cancellation technique

» [Mr. Yongqi Hu](#) (China)¹, [Mr. Jue Huang](#) (China)¹, [Mr. Chenkang Ning](#) (China)¹, [Mr. Yumeng Yuan](#) (China)¹, [Prof. Hao Xu](#) (China)², [Prof. Na Yan](#) (China)², [Prof. Xufeng Kou](#) (China)³ (1. Shanghaitech University, 2. Fudan University, 3. Shanghaitech University, Shanghai, China)

1:55pm

34-2: A 37.5fs-rms Jitter and -254.1dB FoM Fractional-N Sampling PLL with Reference-Phase-Selection and Complementary-DTC achieving 8x DTC Range Reduction and Zero DTC Delay Offset

» [Mr. Yanchao Liu](#) (China)¹, [Mr. Kaihang Wang](#) (China)¹, [Mr. Yang Li](#) (China)¹, [Ms. Yuchen Liu](#) (China)¹, [Dr. Xiaohua Yu](#) (China)¹, [Dr. Ronghua Ni](#) (China)¹ (1. Fudan University)

2:20pm

34-3: A 0.18- μ s-Locking-Time Fractional-N PLL with Stochastic Gradient Descent Tuning Curve Fitting, Initial Phase Error Zeroing, and Random DSM Achieving 44.4-fs Jitter at Near-Integer Channel

» [Mr. Hongzhuo Liu](#) (China)¹, [Prof. Wei Deng](#) (China)¹, [Prof. Haikun Jia](#) (China)¹, [Prof. Baoyong Chi](#) (China)¹ (1. Tsinghua University)



Continued from Wednesday, 16 April

2:45pm
34-4: A 6.65-to-7.75GHz Fractional-N Digital PLL with Analog Pre-Distortion DTC Implementing 2nd/3rd-Order Calibration and Achieving -65.7dBc Fractional Spur and 154fs Integrated Jitter
 » [Mr. Daxu Zhang](#) (Japan)¹, Dr. Dingxin Xu (Japan)¹, Dr. Hongye Huang (Japan)¹, Mr. Waleed Madany (Japan)¹, Mr. Zezheng Liu (Japan)¹, Mr. Wenqian Wang (Japan)¹, Mr. Yuang Xiong (Japan)¹, Mr. Ashbir Aviat Fadila (Japan)¹, Mr. Duo Li (Japan)¹, Prof. Yuncheng Zhang (Japan)¹, Prof. Atsushi Shirane (Japan)¹, Prof. Kenichi Okada (Japan)¹ (1. Institute of Science Tokyo)

1:30pm
**Data Converters IV -
 Session 35: High-Resolution and Noise-Shaping ADCs**
Michelangelo
 Chaired by: Prof. Lu Jie (China) and Prof. Shaolan Li (United States)

1:30pm
35-1: A 48x OSR 105.4-dB SNDR 24-kHz BW CT Zoom ADC with Reset Tri-level DWA and On-chip Negative-R Calibration
 » [Mr. Yuyu Lin](#) (Macao)¹, Prof. Yan Zhu (Macao)¹, Prof. Rui P. Martins (Macao)¹, Prof. Chi-Hang Chan (Macao)¹ (1. University of Macau)

1:55pm
35-2: A 1V 9-86 fJ/conv.step 72.5dB-SNDR Level-Crossing Pipelined ADC with Triggered Sampling and Level Feedback
 » [Mr. Zexin Wang](#) (China)¹, Mr. Lingxin Meng (China)¹, Prof. Menglian Zhao (China)¹, Ms. Mengyu Li (China)¹, Prof. Shuang Song (China)¹, Prof. zhichao tan (China)¹ (1. Zhejiang University)

2:20pm
35-3: A 95.9-dB SNDR 10-kHz BW 3rd-order VCO-based CT ΔΣ Modulator Using a Phase-Time Two-Step Quantizer
 » [Mr. Ken Li](#) (United States)¹, Mr. Wei-En Lee (United States)¹, Mr. Xitie Zhang (United States)¹, Mr. Tian Xie (United States)¹, Mr. Tzu-Han Wang (United States)¹, Prof. Visvesh Sathe (United States)¹, Prof. Shaolan Li (United States)¹ (1. Georgia Institute of Technology)

2:45pm
35-4: A 20MHz-BW 12.3-ENOB NS SAR ADC with a 3rd-order Multi-Input Filter and a PVT-Robust Ratio-Based FIA
 » [Mr. Gabriele Zanoletti](#) (Italy)¹, Mr. Gabriele Bè (Italy)¹, Mr. Michele Rocco (Italy)¹, Mr. Luca Ricci (Italy)¹, Ms. Alessia Ceroni (Italy)¹, Prof. Salvatore Levantino (Italy)¹, Prof. Andrea Leonardo Lacaita (Italy)¹, Prof. Luca Bertulesi (Italy)¹, Prof. Andrea Bonfanti (Italy)¹, Prof. Carlo Samori (Italy)¹ (1. Politecnico di Milano)

1:30pm
**Biomedical Technologies and Applications II -
 Session 36: Communication Computing and Sensing Techniques in Biomedical Systems**
Aquitania
 Chaired by: Soner Sonmezoglu (United States) and Prof. Kaiyuan Yang (United States)

1:30pm
36-1: A Fully-Integrated Wireless Ingestible Drug Delivery Chip with Electrochemical Energy Harvesting and pH-Based MPPT
 » [Mrs. So-Yoon Yang](#) (United States)¹, Mr. Deniz Umut Yildirim (United States)¹, Dr. Saransh Sharma (United States)¹, Prof. Donghyeon Han (Korea, Republic of)², Dr. Rishabh Mittal (United States)³, Mrs. Husna Ellis (United States)¹, Mr. Jaehong Jung (United States)¹, Mr. Eunseok Lee (United States)¹, Mr. Yubin Cai (United States)¹, Prof. Giovanni Traverso (United States)¹, Prof. Anantha P. Chandrakasan (United States)¹ (1. Massachusetts Institute of Technology, 2. Chung-ang University, 3. MediaTek)

1:55pm
36-2: A Wearable Backscatter System Featuring Concurrent RF Harvesting and Bidirectional Communication with Commodity BLE Transceivers
 » [Mr. 纪熊](#) (China)¹, Mr. Yongling Zhang (China)¹, Mr. Junzai Chen (China)¹, Mr. Xiaoyu Li (China)¹, Mr. Jinrui Zuo (China)², Prof. Yan Wang (China)², Prof. Xiaoyi Wang (China)¹, Prof. Miao Meng (China)¹ (1. Tongji University, 2. Fudan University)



Continued from Wednesday, 16 April

2:20pm

36-3: A Wireless Biopotential Sensing Node with Simultaneous Body-Channel Communication by TX-Coupled 21 VPP Common-Mode Interference Suppression

» [Mr. Yingjie Zhu](#) (China)¹, [Mr. Ruizhi Liu](#) (China)¹, [Mr. Yiqing Lan](#) (China)¹, [Dr. Yilong Dong](#) (China)¹, [Mr. Zhenyu Guo](#) (China)¹, [Ms. Ruohan Wu](#) (China)¹, [Ms. Yuxin Chen](#) (China)¹, [Prof. Longyang Lin](#) (China)¹, [Prof. Jerald Yoo](#) (Korea, Republic of)², [Prof. Jiamin Li](#) (China)¹ (1. Southern University of Science and Technology, 2. Integrated Microsystems Laboratory Department of Electrical and Computer Engineering Seoul National University)

2:45pm

36-4: A Reconfigurable 0.69-1.02nJ/Classification Biomedical AI Processor for Intelligent Health Monitoring Devices

» [Mr. Yuanzhe Zhao](#) (Macao)¹, [Mr. Yuheng Wang](#) (Macao)¹, [Mr. Zijian Wang](#) (Macao)¹, [Prof. Yan Zhu](#) (Macao)¹, [Prof. Rui P. Martins](#) (China)¹, [Prof. Chi-Hang Chan](#) (Macao)¹, [Prof. Minglei Zhang](#) (Macao)¹ (1. University of Macau)

1:30pm

**Digital Circuits and SoCs V -
Session 37: Machine Learning and Energy Efficient SoCs**

Brittannic

Chaired by: [Gregory Chen](#) (United States) and [Prof. Visvesh Sathe](#) (United States)

1:30pm

37-1: (INVITED) Key, Value, Compress: A Systematic Exploration of KV Cache Compression Techniques

» [Ms. Neusha Javidnia](#) (United States)¹, [Ms. Bitu Darvish Rouhani](#) (United States)², [Prof. Farinaz Koushanfar](#) (United States)¹ (1. University of California San Diego, 2. NVIDIA)

2:20pm

37-2: A Phase-Locked Minimum-Energy-Point-Tracking Enabled by Unified-Clock-Power-and-Body-Bias Slack Regulation and PI-Ratio Based In-Situ Loop Gain Optimization with 97.4% Supply Voltage Margin Recovery at Minimum-Energy-Point in 28nm FDSOI

» [Mr. Minhyeok Jeong](#) (Korea, Republic of)¹, [Mr. Hyungmin Gi](#) (Korea, Republic of)², [Mr. Minsik Cho](#) (Korea, Republic of)¹, [Mr. Mingyu Kim](#) (Korea, Republic of)¹, [Mr. Donggyu Kim](#) (Korea, Republic of)¹, [Mr. Sungyong Park](#) (Korea, Republic of)², [Mr. Woonjae Lee](#) (Korea, Republic of)², [Mr. Seonho Kim](#) (Korea, Republic of)², [Mr. Yeohoon Yoon](#) (Korea, Republic of)³, [Mr. Shin Han](#) (Korea, Republic of)¹, [Mr. Donguk Seo](#) (Korea, Republic of)¹, [Prof. Jongmin Lee](#) (Korea, Republic of)⁴, [Prof. Yoonmyung Lee](#) (Korea, Republic of)¹ (1. Dept. of Electrical and Computer Engineering, Sungkyunkwan University, 2. Samsung Electronics, 3. Hyundai Motors Company, 4. Ajou University)

2:45pm

37-3: A High Accuracy and Ultra-Low Energy Environmental Sound Recognition Processor with Progressive Spectrogram Processing and Adaptive Weight Clustering based Online Learning

» [Dr. Lujie Peng](#) (China)¹, [Mr. Xiben Jiao](#) (China)¹, [Mr. Zhiyi Chen](#) (China)¹, [Mr. Junyu Yang](#) (China)¹, [Mr. Rui Hong](#) (China)¹, [Mr. Longke Yan](#) (China)¹, [Mr. Yu Long](#) (China)¹, [Mr. Xiao Chen](#) (China)², [Mr. Xiaoyu Miao](#) (China)², [Prof. Zheng Wang](#) (China)¹, [Prof. Zhengning Wang](#) (China)¹, [Prof. Liang Zhou](#) (China)¹, [Prof. Liang Chang](#) (China)¹, [Prof. Shanshan Liu](#) (China)¹, [Prof. Tae Hyoung Kim](#) (Singapore)³, [Prof. Jun Zhou](#) (China)¹ (1. University of Electronic Science and Technology of China, 2. China Micro Semicon, 3. Nanyang Technological University)

3:10pm

Break

Grand Ballroom Foyer

3:35pm

**Systems and Security III cont'd -
Session 33: Advancing System Designs with Chiplet Technology (CICC/CHISIC)**

Grand Ballroom

Chaired by: [Richard Dorrance](#) (United States) and [Mingu Kang](#) (United States)



Continued from Wednesday, 16 April

- 3:35pm **33-3: A 68 TOPS/W, 256MB SRAM Sparse GEMM Accelerator Tiled Across 16, 4nm Near Memory Compute (NMC) Chiplets Disaggregated 2.5D System**
 » [Dr. Srivatsa rangachar Srinivasa](#) (United States)¹, Dr. Prerna Budhkar (United States)¹, Dr. Gauthaman Murali (United States)¹, Dr. Vui Cheng Chua (United States)², Mr. Paolo Aseron (United States)², Dr. Vinayak Honkote (United States)¹, Dr. Ravishankar Iyer (United States)², Mr. Nilesh Jain (United States)², Mr. Dileep Kurian (United States)¹, Ms. Anuradha Srinivasan (United States)¹, Dr. Tanay Karnik (United States)¹ (1. Intel Corp, 2. Intel)
- 4pm **33-4: (INVITED) 3D-IC Chiplet Integrated Power Supply with LDO, SCVR, and Buck DC-DC Converter**
 » [Prof. Xiaosen Liu](#) (China)¹, Mr. Xichen Sun (China)¹, Mr. Haozhe Zhang (China)¹, Prof. Yan Wang (China)² (1. Tsinghua University, 2. School of Integrated Circuits, Tsinghua University)
- 4:50pm **33-5: On-Chip Circuit Harness Enabling Probe-Less, Position-Invariant and Massive Testing of Chiplets via Die Front/Back-Side Capacitive Coupling**
 » [Mr. Neelkamal Semwal](#) (Singapore)¹, Dr. Luigi Fassio (Singapore)¹, Prof. Massimo Alioto (Singapore)¹ (1. Department of Electrical and Computer Engineering, National University of Singapore)
- 3:35pm **Wireless Transceivers and RF/mm-Wave Circuits and Systems VI cont'd -
 Session 34: Design Techniques for RF/mmWave CMOS Phased-Locked Loops**
Olympia
 Chaired by: Hsieh-Hung Hsieh (Taiwan) and Aravind Nagulu (United States)
- 3:35pm **34-5: A 24.6-to-30.6GHz Magnetic-Isolated Sub-Sampling PLL with a Fast-Locking FLL Achieving 64.9fs Jitter, -253.3dB FoM_J, and -69.1dBc Reference Spur in 65nm CMOS**
 » [Mr. Hanzhang Cao](#) (China)¹, Ms. Chuqiao Wang (China)¹, Mr. Yanwei Liu (China)¹, Prof. Wen Wu (China)², Prof. Tongde Huang (China)², Prof. Xiaolong Liu (China)¹ (1. Southern University of Science and Technology, 2. Nanjing University of Science and Technology)

- 4pm **34-6: A 22.4-25.6GHz Ping-Pong Sub-Sampling PLL Featuring Unified Supply Voltage and Balanced 2nd Harmonic Extraction Achieving 45.8fsrms Jitter and -254.3dB FoM**
 » [Dr. Yunbo Huang](#) (China)¹, Prof. Zunsong Yang (China)², [Dr. Hongyu Ren](#) (China)², Prof. Rui P. Martins (China)¹, Prof. Yan Lu (China)³, Prof. Nan Sun (China)³, Prof. Nan Qi (China)⁴, Prof. Yong Chen (China)³ (1. University of Macau, 2. Institute of Microelectronics of the Chinese Academy of Sciences, 3. Tsinghua University, 4. Institute of Semiconductors, Chinese Academy of Sciences)
- 4:25pm **34-7: A 0.7-V 26.2-28.5 GHz Dual-Loop Double-Sampling PLL with Floating Capacitor OTA Based Gm-CP Achieving a 45.4-fsRMS Jitter**
 » [Dr. Jun Chang](#) (China)¹, Dr. Hongzhi Liang (China)¹, Dr. Yixiao Luo (China)¹, Dr. Zeyu Peng (China)¹, Dr. Zhe Li (China)¹, Prof. Yi Shen (China)¹, Prof. Shubin Liu (China)¹, Prof. Zhangming Zhu (China)¹ (1. Xidian University)
- 3:35pm **Data Converters IV cont'd -
 Session 35: High-Resolution and Noise-Shaping ADCs**
Michelangelo
 Chaired by: Prof. Shaolan Li (United States) and Prof. Lu Jie (China)
- 3:35pm **35-5: A 110μW 99.5dB-SNDR 20kHz-BW Intrinsically Linear CTDSM with Hybrid Gm-Boosting OTA and Tri-Level FIR DACs**
 » [Ms. Xinhang Xu](#) (China)¹, Mr. Yaohui Luan (China)¹, Mr. Jie Li (China)¹, Mr. Jihang Gao (China)¹, Mr. Kwok-Cheong Li (China)¹, Mr. Jiajia Cui (China)¹, Prof. Ru Huang (China)¹, Prof. Linxiao Shen (China)¹ (1. Peking University)
- 4pm **35-6: An 18-bit 183.9dB-FoM_S, DR MES/Calibration-Free Scalable Zoom ADC using Fully Passive Coarse Modulator and Gain-Linearity-Enhanced FIA with Sub-1ppm-THD at Full Scale Input in 65-nm CMOS**
 » [Dr. Yuke Shen](#) (China)¹, Prof. Shubin Liu (China)¹, Mr. Deao Wu (China)¹, Dr. Kui Wen (China)¹, Dr. Yanbo Zhang (China)¹, Prof. Yi Shen (China)¹, Prof. Zhangming Zhu (China)¹ (1. Xidian University)



Continued from Wednesday, 16 April

4:25pm **35-7: A 90.1dB SNDR, 180.2dB FoMSNDR, 10kHz BW Gm-C-based $\Delta\Sigma$ ADC with Capacitive Input Feedforward and Duty-Cycled Gm Technique**

» [Dr. Linran Zhao](#) (United States)¹, Mr. Yiming Han (United States)¹, Dr. Yaoyao Jia (United States)¹ (1. The University of Texas at Austin)

4:50pm **35-8: A 0.0022\,mm², 2\,GS/s Resettable VCO-Based ADC Without Quantization Noise Shaping**

» [Mr. Tao Lu](#) (China)¹, Mr. Zixiang Liu (China)¹, Mr. Hao Yang (China)¹, Prof. Sai-Weng Sin (Macao)², Prof. Robert Bogdan Staszewski (Ireland)³, Prof. Fujiang Lin (China)¹, Prof. Liheng Lou (China)¹, Prof. Yizhe Hu (China)¹ (1. University of Science and Technology of China, 2. University of Macau, 3. University college dublin)

3:35pm **Biomedical Technologies and Applications II cont'd - Session 36: Communication Computing and Sensing Techniques in Biomedical Systems**

Aquitania

Chaired by: Soner Sonmezoglu (United States) and Prof. Kaiyuan Yang (United States)

3:35pm **36-5: An Energy-Efficient Healthcare Chest Patch Interface with Multi-Domain On-Sensor Computing and Inter-Sensor Windowing**

» [Mr. Sanghyeon Cho](#) (Korea, Republic of)¹, Mr. Jeonghoon Cho (Korea, Republic of)¹, Mr. Hyunjoong Kim (Korea, Republic of)¹, Mr. You Jang Pyeon (Korea, Republic of)¹, Mr. Dong Kwan Kang (Korea, Republic of)¹, Mr. Yonggi Kim (Korea, Republic of)¹, Mr. Eui Sung Jung (Korea, Republic of)¹, Prof. Hoon Eui Jeong (Korea, Republic of)¹, Prof. Jae Joon Kim (Korea, Republic of)¹ (1. Ulsan National Institute of Science and Technology)

4pm **36-6: RPG-HBC: Reconfigurable Passive Galvanic Human Body Communication for Bioelectronic Implants under Varying Channel Conditions**

» [Mr. Yonghee Chang](#) (United States)¹, Mr. Wei Wang (United States)¹, Mr. Yiwei Zou (United States)¹, Prof. Kaiyuan Yang (United States)¹ (1. Rice University)

4:25pm

36-7: A 0.7pArms Electrochemical Readout IC for Continuous Monitoring of Antibody Biologics in Upstream Biomanufacturing

» Mr. Hung-Yu Hou (United States)¹, Ms. Ya-Chen Tsai (United States)¹, [Mr. Wei Foo](#) (United States)¹, Ms. Yan-Ting Hsiao (United States)¹, Prof. Jun-Chau Chien (United States)¹ (1. University of California, Berkeley)

3:35pm

Digital Circuits and SoCs V cont'd -

Session 37: Machine Learning and Energy Efficient SoCs

Brittannic

Chaired by: Gregory Chen (United States) and Prof. Visvesh Sathe (United States)

3:35pm

37-4: CCE: A 28nm Content Creation Engine with Asymmetric Computing, Semantic-Driven Instruction Generation and Collision-free Outlier Mapper for Video Generation

» [Dr. Chen Tang](#) (China)¹, Ms. Zongle Huang (China)¹, Mr. Wenxun Wang (China)¹, Mr. Yifan He (China)¹, Mr. Shupeifan (China)¹, Dr. Xiaoyu Feng (China)¹, Dr. Wenyu Sun (China)¹, Prof. Yongpan Liu (China)¹ (1. Tsinghua University)

4pm

37-5: A 22nm Resource-Frugal Hyper-Heterogeneous Multi-Modal System-on-Chip Towards In-Orbit Computing

» [Dr. quan cheng](#) (Japan)¹, Mr. qiufeng li (China)², Mr. Weirong Dong (China)², Mr. mingtao zhang (Japan)¹, Prof. Ruilin Zhang (Japan)¹, Prof. mingqiang huang (China)², Prof. Hao Yu (China)², Prof. yiyu shi (United States)³, Prof. hiromitsu awano (Japan)¹, Prof. takashi sato (Japan)¹, Prof. Longyang Lin (China)², Prof. masanori hashimoto (Japan)¹ (1. Kyoto University, 2. Southern University of Science and Technology, 3. University of Notre Dame)

4:25pm

37-6: A 748 GOPS/W RISC-V SoC with Reconfigurable Custom Instructions via a Synthesized eFPGA with 1.8 μ s Configuration Time in 22nm FinFET

» [Dr. Prashanth Mohan](#) (United States)¹, Mr. Siddharth Das (United States)¹, Dr. Ken Mai (United States)¹ (1. Carnegie Mellon University)



Continued from **Wednesday, 16 April**

4:50pm	<p>37-7: E-NPU: A 34~126nj/Class Event-Driven Adaptive Neural SoC with Signal-Dynamics-Aware Feature Clustering and Multi-model In-Memory Inference/Training for Personalized Medical Wearables</p> <p>» Mr. Fengshi Tian (Hong Kong)¹, Mr. Jinbo Chen (China)², Mr. Kunming Shao (Hong Kong)¹, Ms. Zilu Liu (Hong Kong)¹, Mr. Jiakun Zheng (Hong Kong)¹, Mr. Hui Wu (China)², Mr. Chaoming Fang (China)², Ms. Xiaomeng Wang (Hong Kong)¹, Mr. Ziyang Shen (China)², Mr. Pingcheng Dong (Hong Kong)¹, Dr. Yuan Yao (Hong Kong)¹, Dr. Xuliang Wang (China)³, Dr. Jie Yang (China)², Prof. Mohamad Sawan (China)², Prof. Chi-Ying Tsui (Hong Kong)¹, Prof. Kwang-Ting Cheng (Hong Kong)¹ (1. Hong Kong University of Science and Technology, 2. Westlake University, 3. Tsinghua University)</p>
5:15pm	<p>37-8: Opal: A 16nm Coarse-Grained Reconfigurable Array for Full Sparse ML Applications</p> <p>» Mr. Po-Han Chen (United States)¹, Mr. Bo Wun Cheng (United States)¹, Mr. Michael Oduoza (United States)¹, Mr. Zhouhua Xie (United States)¹, Mr. Kalhan Koul (United States)¹, Mr. Sai Gautham Ravipati (United States)¹, Mr. Yuchen Mei (United States)¹, Mr. Rupert Lu (United States)¹, Mr. Alex Carsello (United States)¹, Prof. Mark Horowitz (United States)¹, Prof. Priyanka Raina (United States)¹ (1. Stanford University)</p>
5:30pm	<p>CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Keynote 1: Chip to Chip Communication for Next Generation AI Datacenters</p> <p><i>Olympia</i></p>
6:15pm	<p>CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Networking Reception</p> <p><i>Skyline Ballroom</i></p>

Thursday, 17 April

7am	<p>CHISIC WORKSHOP REGISTRANTS ONLY - Breakfast (provided)</p> <p><i>Skyline Ballroom</i></p>
8am	<p>CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Workshop</p> <p><i>Brittannic</i></p>
10:05am	<p>Break</p> <p><i>Grand Ballroom Foyer</i></p>
10:20am	<p>CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Workshop</p> <p><i>Brittannic</i></p>
12:20pm	<p>Group Pictures</p> <p><i>Skyline Ballroom</i></p>
12:25pm	<p>CHISIC WORKSHOP REGISTRANTS ONLY - Lunch Break (provided)</p> <p><i>Skyline Ballroom</i></p>
1:25pm	<p>CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Workshop</p> <p><i>Brittannic</i></p>



Continued from **Thursday, 17 April**

3:25pm **Break**
Grand Ballroom Foyer

3:40pm **CHISIC WORKSHOP REGISTRANTS ONLY -
CHISIC Workshop**
Brittannic

5pm **CHISIC WORKSHOP REGISTRANTS ONLY -
CHISIC Workshop - Closing Ceremony**
Brittannic