



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)<sup>1</sup> (1. Qualcomm)

10:45am **ES1-2: Breaking the Resource Monopoly from Industries: Sustainable and Reliable LLM Serving By Recycling Outdated and Resource-Constrained GPUs**  
» [Dr. Tianlong Chen](#) (United States)<sup>1</sup> (1. Assistant Professor at The University of North Carolina at Chapel Hill)

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)<sup>1</sup> (1. Peking University)

10:45am **ES2-2: ADC Architectures and Techniques for Biomedical and Sensor Interfaces**  
» [Prof. Minkyu Je](#) (Korea, Republic of)<sup>1</sup> (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)<sup>1</sup> (1. IBM)

10:45am **ES3-2: Attack-Resistant Crypto Hardware Accelerators for Secure Platforms**  
» [Dr. Sanu Mathew](#) (United States)<sup>1</sup> (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)<sup>1</sup> (1. Korea University)

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

9:15am **Circuits Insights I - Circuits Insights**  
*Grand Ballroom*

12pm **Circuits Insights II - Networking Lunch**  
*Grand Ballroom*

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)



Continued from **Sunday, 13 April**

- 1:30pm **ES1-3: Deploying LLMs on the Edge: A HW/SW Co-Design Perspective**  
» [Dr. Debabrata Mohapatra](#) (United States)<sup>1</sup> (1. Meta)
- 3:15pm **ES1-4: LLM Innovation with User Data**  
» [Prof. Xiaozhong Liu](#) (United States)<sup>1</sup> (1. Associate Professor at Worcester Polytechnic Institute)
- 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: Continuous-Time Delta-Sigma Modulators Architectures**  
» [Prof. Nima Maghari](#) (United States)<sup>1</sup> (1. University of Florida)
- 3:15pm **ES2-4: Digital Calibration Techniques for High-Speed Pipelined ADCs**  
» [Dr. Huseyin Dinc](#) (United States)<sup>1</sup> (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)<sup>1</sup> (1. Rice University)
- 3:15pm **ES3-4: Reuse-Centric Design for Ubiquitous Hardware Security - From Circuits to Machine Learning Algorithms**  
» [Prof. Massimo Alioto](#) (Singapore)<sup>1</sup> (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: Wireless Power Transfer to Implantable Medical Devices**  
» [Prof. Mehdi Kiani](#) (United States)<sup>1</sup> (1. Penn State University)
- 3:15pm **ES4-4: TBD**  
» [Prof. Ierald Yoo](#) (Korea, Republic of)<sup>1</sup> (1. Seoul National University)
- 1:30pm **Circuits Insights III - Circuit Insights**  
*Grand Ballroom*
- 5pm **SSCS Bingo Networking Night**  
*Skyline Ballroom*

**Monday, 14 April**

- 8:30am **Welcome and Opening Remarks**  
*Grand Ballroom*
- 8:50am **Session 1: Keynote Session**  
*Grand Ballroom*
- 8:50am **TBD**  
» [Dr. Scott Hanson](#) (United States)<sup>1</sup> (1. Chief Technology Officer, Founder, Ambiq)
- 9:40am **Break**  
*Grand Ballroom Foyer*



Continued from **Monday, 14 April**

- 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)<sup>1</sup>, Mr. Ahmed Abdelaal (Germany)<sup>1</sup>, Mr. Bjoern Driemeyer (Germany)<sup>1</sup>, Dr. Joachim Becker (Germany)<sup>1</sup>, Dr. John Kauffman (Germany)<sup>1</sup>, Prof. Maurits Ortmanns (Germany)<sup>1</sup> (1. University of Ulm)
- 10:30am **2-2: A 0.6V Supply Ultra-Compact Voltage Reference Exploiting MOS Threshold Correlations**  
» [Dr. Matthias Eberlein](#) (Germany)<sup>1</sup>, Mr. Sebastian Ruppig (Germany)<sup>1</sup> (1. Fraunhofer EMFT)
- 10:55am **2-3: A 16 GΩ input impedance amplifier with flicker noise reduction for neural recording applications**  
» [Dr. Iyotindra Shakya](#) (United States)<sup>1</sup>, Mr. Faraz Adin (United States)<sup>1</sup>, Prof. Gabor Temes (United States)<sup>1</sup> (1. Oregon State University)
- 11:20am **2-4: Multi-electroanalytical method capable, duty-cycled, 0.36 mm<sup>2</sup> electrochemical frontend, achieving 170dB current sensing range with extended compliance voltage adopting feedforward cancellation**  
» [Dr. Amrith Sukumaran](#) (Switzerland)<sup>1</sup>, Mr. Francesco CARUSO (Switzerland)<sup>1</sup>, Mr. Régis CATTENOZ (Switzerland)<sup>1</sup>, Mr. Bas PUTTER (Switzerland)<sup>1</sup>, Mr. Jean-Luc NAGEL (Switzerland)<sup>1</sup>, Mr. Renil RAVANILLA (Switzerland)<sup>1</sup>, Mr. IOANNIS STERGIU (Switzerland)<sup>1</sup>, Mr. Guillaume BOUILLY (Switzerland)<sup>1</sup>, Mr. Pascal NUSSBAUM (Switzerland)<sup>1</sup>, Mr. Stéphane EMERY (Switzerland)<sup>1</sup> (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)<sup>1</sup>, Mr. Yuxiang Tang (China)<sup>1</sup>, Mrs. Yaohua Pan (China)<sup>2</sup>, Mr. Wenhui Qin (China)<sup>2</sup>, Mr. Jian Ye (China)<sup>2</sup>, Dr. Shaoyu Ma (China)<sup>2</sup>, Mr. Yun Sheng (China)<sup>2</sup>, Prof. Zhiliang Hong (China)<sup>1</sup>, Prof. Jiawei Xu (China)<sup>1</sup> (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)<sup>1</sup>, Dr. Yiyang Shu (China)<sup>1</sup>, Prof. Xun Luo (China)<sup>1</sup> (1. 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/f<sup>3</sup> Phase Noise Corner and 201dB FoMT**  
» [Mr. Bahram Jafari Akinabad](#) (Canada)<sup>1</sup>, Dr. Sankaran Aniruddhan (India)<sup>2</sup>, Dr. Shahriar Mirabbasi (Canada)<sup>1</sup>, Dr. Sudip Shekhar (Canada)<sup>1</sup> (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)<sup>1</sup>, Prof. Wei Deng (China)<sup>1</sup>, Mr. Weiqi Zheng (China)<sup>1</sup>, Prof. Haikun Jia (China)<sup>1</sup>, Mr. Hongliang Wu (China)<sup>1</sup>, Mr. Qiuyu Peng (China)<sup>1</sup>, Dr. Fuyuan Zhao (China)<sup>1</sup>, Mr. Junyang Yin (China)<sup>1</sup>, Dr. Dongze Li (China)<sup>1</sup>, Prof. Baoyong Chi (China)<sup>1</sup> (1. Tsinghua University)



Continued from Monday, 14 April

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)<sup>1</sup>, Prof. Pei Qin (China)<sup>1</sup>, Prof. Haoshen Zhu (China)<sup>1</sup>, Prof. Xiang Yi (China)<sup>1</sup>, Prof. Wenjie Feng (China)<sup>1</sup>, Prof. Wenquan Che (China)<sup>1</sup>, Prof. Quan Xue (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Zhiyuan Zhang (Macao)<sup>1</sup>, Mr. Ziyang Zhong (Macao)<sup>1</sup>, Prof. Yihan Zhang (Hong Kong)<sup>2</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Mo Huang (Macao)<sup>1</sup> (1. University of Macau, 2. Hong Kong University of Science and Technology)

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)<sup>1</sup>, Mr. Fei Song (China)<sup>2</sup>, Mr. Zhongyao Zhu (China)<sup>2</sup>, Prof. Xiaoming Wu (China)<sup>3</sup>, Prof. Hanjun Jiang (China)<sup>3</sup>, Prof. Tianling Ren (China)<sup>3</sup>, Prof. Yan Lu (China)<sup>3</sup> (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)<sup>1</sup>, Prof. Minjie Chen (United States)<sup>1</sup>, Prof. Hyun-Sik Kim (Korea, Republic of)<sup>2</sup> (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)<sup>1</sup>, Dr. Chen Hu (China)<sup>1</sup>, Prof. Wing Hung Ki (Hong Kong)<sup>2</sup>, Dr. Xun Liu (China)<sup>3</sup>, Prof. Xiaosen Liu (China)<sup>4</sup>, Prof. Junmin Jiang (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Paul Kaesser (Germany)<sup>1</sup>, [Prof. Maurits Ortmanns](#) (Germany)<sup>1</sup> (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)<sup>1</sup>, Mr. Chenyang Li (United States)<sup>1</sup>, Mr. Dong-Suk Kang (United States)<sup>1</sup>, Mr. Ken Li (United States)<sup>1</sup>, Mr. Xitie Zhang (United States)<sup>1</sup>, Mr. Wei-En Lee (United States)<sup>1</sup>, Prof. Visvesh Sathe (United States)<sup>1</sup>, Prof. Shaolan Li (United States)<sup>1</sup> (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)<sup>1</sup>, Prof. Amine Bermak (Qatar)<sup>1</sup>, Prof. Man-Kay Law (Macao)<sup>2</sup> (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)<sup>1</sup>, Mr. Yongjie Ye (China)<sup>1</sup>, Mr. Shaokai Yuan (China)<sup>1</sup>, Prof. Yajie Qin (China)<sup>1</sup> (1. Fudan University)



Continued from Monday, 14 April

- 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)
- 1:30pm **Wireless Transceivers and RF/mm-Wave Circuits and Systems II -  
Session 8: Advancements in Low-Power Wireless Technologies**  
*Olympia*  
Chaired by: Tong Zhang (United States) and Najme Ebrahimi (United States)

1:30pm

**8-1: A 0.5V 0.55mm<sup>2</sup> Bias-Current-Free BLE Transceiver With 1-Bit Delay-Based Demodulation for Energy-Harvesting IoT Applications**  
» [Mr. Ligun Feng](#) (China)<sup>1</sup>, [Mr. Xuansheng Ji](#) (China)<sup>1</sup>, [Ms. Qianxian Liao](#) (China)<sup>1</sup>, [Mr. Longhao Kuang](#) (China)<sup>1</sup>, [Mr. Yunzhao Nie](#) (China)<sup>1</sup>, [Mr. Jiahao Zhao](#) (China)<sup>1</sup>, [Prof. Woogeun Rhee](#) (China)<sup>1</sup>, [Prof. Zhihua Wang](#) (China)<sup>2</sup> (1. Tsinghua University, 2. School of Integrated Circuits, Tsinghua University)

1:55pm **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**  
» [Mr. Qijing Xiao](#) (China)<sup>1</sup>, [Dr. Changgui Yang](#) (China)<sup>2</sup>, [Dr. Yunshan Zhang](#) (China)<sup>2</sup>, [Dr. Ziyi Chang](#) (China)<sup>1</sup>, [Mr. Cheng Chen](#) (China)<sup>2</sup>, [Mr. Xin Hu](#) (China)<sup>1</sup>, [Mr. Weixiao Wang](#) (China)<sup>1</sup>, [Mr. Guanjie Gu](#) (China)<sup>1</sup>, [Prof. Yuxuan Luo](#) (China)<sup>1</sup>, [Prof. Bo Zhao](#) (China)<sup>1</sup> (1. Zhejiang University, 2. Microaiot)

2:20pm **8-3: D-band Dicke switch based Passive Imager with 0.13K NETD in 28nm CMOS Technology**  
» [Ms. Zahra Mohseni](#) (United States)<sup>1</sup>, [Mr. Sajjad Sabbaghi](#) (United States)<sup>1</sup>, [Dr. Hai Yu](#) (United States)<sup>2</sup>, [Mr. Peixin Han](#) (United States)<sup>3</sup>, [Prof. Q. Gu](#) (United States)<sup>1</sup> (1. Georgia Institute of Technology, 2. NVIDIA Corporation, 3. University of California, Davis)

2:45pm **8-4: A 1.8Gb/s 8GHz PSK-UWB Transceiver with Extended PPM/PWM Modulation and Embedded Carrier Spreading**  
» [Ms. Luhua Lin](#) (China)<sup>1</sup>, [Dr. Bowen Wang](#) (China)<sup>1</sup>, [Mr. Longhao Kuang](#) (China)<sup>1</sup>, [Prof. Woogeun Rhee](#) (China)<sup>1</sup>, [Prof. Zhihua Wang](#) (China)<sup>2</sup> (1. Tsinghua University, 2. School of Integrated Circuits, Tsinghua University)

1:30pm **Power Management II -  
Session 9: Power Converter Techniques**  
*Michelangelo*  
Chaired by: Raveesh Magod (United States) and Edevaldo Pereira (United States)

1:30pm **9-1: A 30V Step-Up Regulator with Shunt-Current-Reuse Controller for >85% Efficiency over 200µA-100mA Loading Range**  
» [Dr. Yue Zhao](#) (China)<sup>1</sup>, [Mr. Pengda Qu](#) (China)<sup>1</sup>, [Dr. Guangshu Zhao](#) (Macao)<sup>2</sup>, [Prof. Feng Luo](#) (China)<sup>1</sup>, [Prof. Yang Jiang](#) (Macao)<sup>2</sup>, [Prof. Zhiming Xiao](#) (China)<sup>1</sup> (1. Nankai University, 2. University of Macau)

1:55pm **9-2: A Fast-transient Buck Converter with One-Cycle-Balancing Control for Single and Consecutive Load Steps**  
» [Mr. Zihao Tang](#) (Macao)<sup>1</sup>, [Prof. Rui P. Martins](#) (China)<sup>1</sup>, [Prof. Mo Huang](#) (Macao)<sup>1</sup> (1. University of Macau)



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2:20pm **9-3: A Pseudo-4-Phase Buck Converter with 94.1% Efficiency, 1mV Output Ripple and Fast Transient Response**  
 » Mr. Yu-Chen Kuo (Taiwan)<sup>1</sup>, Mr. Yu-Ting Huang (Taiwan)<sup>1</sup>, Prof. Ke-Horng Chen (Taiwan)<sup>1</sup>, Mr. Kuo-Lin Zheng (Taiwan)<sup>2</sup>, Mr. Ying-Hsi Lin (Taiwan)<sup>3</sup>, Mr. Shian-Ru Lin (Taiwan)<sup>3</sup>, Mr. Tsung-Yen Tsai (Taiwan)<sup>3</sup>, Prof. Xi Zhu (Australia)<sup>4</sup> (1. National Yang Ming Chiao Tung University, 2. Chip-GaN Semiconductor Company, 3. Realtek Semiconductor, 4. University of Technology Sydney)

2:45pm **9-4: A 300-kHz 3-Level Flyback Converter Achieving 93% Peak Efficiency and 50% Reduction in Transformer Size**  
 » Mr. Yuanzhuo Wu (Macao)<sup>1</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Mo Huang (Macao)<sup>1</sup> (1. University of Macau)

1:30pm **Emerging Technology I - Session 10: Emerging Paradigms for AI, HPC, and Edge Computation Aquitania**  
 Chaired by: Dr. Kevin Tien (United States) and Tathagata Srimani (United States)

1:30pm **10-1: (INVITED) Analog-AI Hardware Accelerators for low-latency Transformer-based Language Models (Invited)**  
 » Dr. Geoffrey W. Burr (United States)<sup>1</sup>, Dr. Hsin-yu Tsai (United States)<sup>1</sup>, Dr. Irem Boybat (Switzerland)<sup>2</sup>, Dr. William A. Simon (Switzerland)<sup>2</sup>, Mr. Julian Büchel (Switzerland)<sup>2</sup>, Mr. Athanasios Vasilopoulos (Switzerland)<sup>2</sup>, Dr. Pritish Narayanan (United States)<sup>1</sup>, Dr. Andrea Fasoli (United States)<sup>1</sup>, Mr. Kohji Hosokawa (Japan)<sup>3</sup>, Dr. Manuel Le Gallo (Switzerland)<sup>2</sup>, Mr. Masatoshi Ishii (Japan)<sup>3</sup>, Mr. Yasuteru Kohda (Japan)<sup>3</sup>, Mr. Atsuya Okazaki (Japan)<sup>3</sup>, Dr. An Chen (United States)<sup>1</sup>, Dr. Charles Mackin (United States)<sup>1</sup>, Ms. Elena Ferro (Switzerland)<sup>2</sup>, Dr. Kaoutar El Maghraoui (United States)<sup>4</sup>, Dr. Hadjer Benmezziane (Switzerland)<sup>2</sup>, Dr. Timothy Philicelli (United States)<sup>5</sup>, Dr. Corey Lammie (Switzerland)<sup>2</sup>, Mr. Alexander M. Friz (United States)<sup>1</sup>, Mr. Jose Luquin (United States)<sup>1</sup>, Dr. Shubham Jain (United States)<sup>4</sup>, Dr. Abu Sebastian (Switzerland)<sup>2</sup>, Dr. Vijay Narayanan (United States)<sup>4</sup> (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)<sup>1</sup>, Mr. Xin Hao (China)<sup>1</sup>, Mr. Qinchao Cai (China)<sup>1</sup>, Prof. Lei Liao (China)<sup>1</sup>, Prof. Zhuojun Chen (China)<sup>1</sup> (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)<sup>1</sup>, Dr. James Ayers (United States)<sup>1</sup>, Dr. Anni Lu (United States)<sup>1</sup>, Dr. You Li (United States)<sup>1</sup>, Dr. Dmitri Nikonov (United States)<sup>1</sup>, Dr. Yongping Fan (United States)<sup>1</sup>, Dr. Ian Young (United States)<sup>1</sup> (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)<sup>1</sup>, Prof. Weifeng He (China)<sup>1</sup>, Mr. Boran Jiang (China)<sup>1</sup>, Mr. Xinyu Wang (China)<sup>1</sup>, Prof. Guanghui He (China)<sup>1</sup>, Mr. Dingxuan Liu (China)<sup>2</sup>, Prof. Mingoo Seok (United States)<sup>3</sup> (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)<sup>1</sup>, Mr. Yichen Xu (United States)<sup>1</sup>, Prof. Dong-Woo Jee (Korea, Republic of)<sup>2</sup>, Prof. Mingoo Seok (United States)<sup>1</sup> (1. Columbia University, 2. Ajou University)





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2:20pm **11-3: An 209TOPS/W Reinforcement Learning Processor with Full Speculation Exploitation and Inference-Training Parallel Processing**  
 » Mr. Shih-Hao Chen (Taiwan)<sup>1</sup>, Mr. Ping-Sheng Wu (Taiwan)<sup>1</sup>, Mr. Brian Dean Soon (Taiwan)<sup>1</sup>, Mr. Chao-Hung Chen (Taiwan)<sup>2</sup>, Mr. Chih-Wei Liu (Taiwan)<sup>2</sup>, Mr. Chun-Lung Hsu (Taiwan)<sup>2</sup>, Prof. Chia-Hsiang Yang (Taiwan)<sup>1</sup> (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)<sup>1</sup>, Mr. Kartik Prabhu (United States)<sup>1</sup>, Mr. Kai Bartolone (United States)<sup>1</sup>, Mr. Jeffrey Yu (United States)<sup>1</sup>, Prof. Priyanka Raina (United States)<sup>1</sup> (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)

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

4:25pm **12-2: A 4.82- $\mu$ W 183.4dB-FoMSNDR CT Incremental Tracking-Zoom Sensor Readout Frontend with Floating-Gm-CCO Integrator**  
 » Mr. Haoyang Luo (China)<sup>1</sup>, Mr. Zongnan Wang (China)<sup>1</sup>, Mr. Jiarui Wang (China)<sup>1</sup>, Mr. Bingrui Li (China)<sup>1</sup>, Dr. Zilong Shen (China)<sup>1</sup>, Ms. Yang Liu (China)<sup>1</sup>, Prof. Xiaojie Duan (China)<sup>1</sup>, Prof. Yuan Wang (China)<sup>1</sup>, Prof. Xiyuan Tang (China)<sup>1</sup> (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)<sup>1</sup>, Mr. zhiyu wang (China)<sup>1</sup>, Mr. Haoyang Li (China)<sup>1</sup>, Mr. Jiaqing Li (China)<sup>1</sup>, Mr. Guanglong Wu (China)<sup>2</sup>, Mr. Wei Wang (China)<sup>2</sup>, Mr. Weijin Lin (China)<sup>1</sup>, Mr. Xin Hu (China)<sup>1</sup>, Mr. Weixiao Wang (China)<sup>1</sup>, Mr. Zhong Tang (China)<sup>3</sup>, Mr. Yuyan Liu (Netherlands)<sup>4</sup>, Mr. Qinwen Fan (Netherlands)<sup>4</sup>, Mr. Hua Liu (China)<sup>5</sup>, Mr. Jianqiu Chen (China)<sup>5</sup>, Prof. Yuxuan Luo (China)<sup>1</sup>, Prof. Bo Zhao (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Yunqiang Xu (China)<sup>1</sup>, Mr. Qiang Yu (China)<sup>1</sup>, Mr. Zheng Zhu (China)<sup>2</sup>, Dr. Sanfeng Zhang (China)<sup>2</sup>, Prof. Qiang Li (China)<sup>1</sup> (1. University of Electronic Science and Technology of China, 2. Voyager Technologies)

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)<sup>1</sup>, Mr. Boyang Wang (Macao)<sup>1</sup>, Mr. Hongjiang Chen (Macao)<sup>1</sup>, Prof. Sai-Weng Sin (Macao)<sup>1</sup>, Mr. Yutao Peng (China)<sup>2</sup>, Prof. Xizhu Peng (China)<sup>2</sup>, Prof. He Tang (China)<sup>2</sup>, Prof. Chao Fan (China)<sup>3</sup>, Prof. Liang Qi (China)<sup>4</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Mingqiang Guo (Macao)<sup>1</sup> (1. University of Macau, 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-Trackd Time Amplifier**  
 » Dr. Xin Zhao (China)<sup>1</sup>, Prof. Dengquan Li (China)<sup>1</sup>, Mr. Feida Wang (China)<sup>1</sup>, Mr. Depan Li (China)<sup>1</sup>, Prof. Yi Shen (China)<sup>1</sup>, Dr. Hongzhi Liang (China)<sup>1</sup>, Prof. Zhangming Zhu (China)<sup>1</sup> (1. Xidian University)



Continued from Monday, 14 April

- 4:50pm **13-4: A 32GS/s 8b 16× Time-interleaved Hybrid ADC with Self-Detection Offset Calibration, DLL-Based TL5B PVT Variation Calibration and VTC Gain Self-Tracking.**  
 » Dr. Hongzhi Liang (China)<sup>1</sup>, Dr. Jun Chang (China)<sup>1</sup>, Dr. Yixiao Luo (China)<sup>1</sup>, Dr. Zeyu Peng (China)<sup>1</sup>, Mr. Weimin Zhou (China)<sup>1</sup>, Dr. Li Dang (China)<sup>1</sup>, Dr. Yue Cao (China)<sup>1</sup>, Dr. Haolin Han (China)<sup>1</sup>, Prof. Yi Shen (China)<sup>1</sup>, Prof. Shubin Liu (China)<sup>1</sup>, Prof. Ruixue Ding (China)<sup>1</sup>, Prof. Zhangming Zhu (China)<sup>1</sup> (1. Xidian University)
- 5:15pm **13-5: A 17.4fj/conv.-step, 202μm<sup>2</sup>, 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)<sup>1</sup>, Dr. Jongho Kim (Korea, Republic of)<sup>1</sup>, Prof. Jintae Kim (Korea, Republic of)<sup>1</sup> (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)
- 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)<sup>1</sup>, Dr. Jingyi Yuan (China)<sup>1</sup>, Prof. Lin Cheng (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Wei He (China)<sup>2</sup>, Mr. Jie Zou (China)<sup>2</sup>, Prof. Xiang Gao (China)<sup>1</sup>, Prof. Lenian He (China)<sup>1</sup>, Prof. Xugang Ke (China)<sup>1</sup> (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)<sup>1</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Mo Huang (Macao)<sup>1</sup> (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)<sup>1</sup>, Mr. Tianrui Lyu (China)<sup>1</sup>, Prof. Jianping Guo (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Jinkyu Kim (Korea, Republic of)<sup>1</sup>, Mr. Jaehoon Shin (Korea, Republic of)<sup>1</sup>, Mr. Jeewoong Kim (Korea, Republic of)<sup>1</sup>, Dr. Yongwoo Lee (Korea, Republic of)<sup>1</sup>, Mr. SOOHANG CHAE (Korea, Republic of)<sup>1</sup>, Mr. Byeolhae Eom (Korea, Republic of)<sup>1</sup>, Dr. YunSuk Nam (Korea, Republic of)<sup>1</sup>, Dr. Minseung Lee (Korea, Republic of)<sup>1</sup>, Dr. Seungseok Ha (Korea, Republic of)<sup>1</sup>, Dr. EunGuk Chung (Korea, Republic of)<sup>1</sup>, Dr. Seung Hun Lee (Korea, Republic of)<sup>1</sup>, Dr. Sunjung Kim (Korea, Republic of)<sup>1</sup>, Dr. Keun Hwi Cho (Korea, Republic of)<sup>1</sup>, Dr. Kyoung Woo Lee (Korea, Republic of)<sup>1</sup>, Dr. Dong-Won Kim (Korea, Republic of)<sup>1</sup>, Dr. Hag-Ju Cho (Korea, Republic of)<sup>1</sup>, Dr. Ken Rim (Korea, Republic of)<sup>1</sup>, Dr. Jaihyuk Song (Korea, Republic of)<sup>1</sup> (1. Samsung Electronics)





Continued from **Monday, 14 April**

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)<sup>1</sup>, Mr. Haoran Du (China)<sup>1</sup>, Mr. Jiongzhe Su (China)<sup>1</sup>, Mr. Yibo Liu (China)<sup>1</sup>, Mr. Zhenghan Fang (China)<sup>1</sup>, Mr. Jiale Cui (China)<sup>1</sup>, Mr. Shuyu Wang (China)<sup>1</sup>, Ms. Chenxing Liu-sun (China)<sup>1</sup>, Mr. Xuezhao Wu (Hong Kong)<sup>2</sup>, Mr. Zhihua Xiao (Hong Kong)<sup>2</sup>, Prof. Bo Liu (China)<sup>1</sup>, Prof. Xin Si (China)<sup>1</sup>, Prof. Jun Yang (China)<sup>1</sup>, Prof. Qiming Shao (Hong Kong)<sup>2</sup>, Prof. Hao Cai (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Braden Desman (United States)<sup>1</sup>, Ms. Anjali Agrawal (United States)<sup>1</sup>, Mr. Will Farrell (United States)<sup>2</sup>, Mr. Jim Owens (United States)<sup>2</sup>, Dr. Daniel Truesdell (United States)<sup>1</sup>, Prof. Benton Calhoun (United States)<sup>1</sup> (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

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)<sup>1</sup>, Mr. Zikai Zhu (China)<sup>1</sup>, Ms. Longrun Xv (China)<sup>1</sup>, Mr. Anqin Xiao (China)<sup>1</sup>, Mr. Ziyi Yang (China)<sup>1</sup>, Prof. Lirong Zheng (China)<sup>1</sup>, Prof. Zhuo Zou (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Leran Huang (China)<sup>2</sup>, Mr. Chenhan Wei (China)<sup>1</sup>, Mr. Wenbin Jia (China)<sup>1</sup>, Mr. Hedi Wang (China)<sup>1</sup>, Mr. Wenxun Wang (China)<sup>1</sup>, Mr. Weichen Gao (China)<sup>1</sup>, Prof. Hongyang Jia (China)<sup>1</sup>, Prof. Sheng Zhang (China)<sup>2</sup>, Prof. Huazhong Yang (China)<sup>1</sup>, Prof. Yongpan Liu (China)<sup>1</sup> (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)<sup>1</sup>, [Mr. Huiwon Yun](#) (Korea, Republic of)<sup>1</sup>, Mr. Dongkwon Lee (Korea, Republic of)<sup>1</sup>, Mr. Sunwoo Lee (Korea, Republic of)<sup>1</sup>, Mr. Minyoung Kang (Korea, Republic of)<sup>1</sup>, Prof. Dongsuk Jeon (Korea, Republic of)<sup>1</sup> (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)<sup>1</sup>, Mr. Hesam Abbasi (United States)<sup>2</sup>, Mr. Sreeni Poolakkal (United States)<sup>2</sup>, Mr. Yen-Chin Wang (United States)<sup>1</sup>, Mr. Benjamin Domae (United States)<sup>1</sup>, Prof. Subhanshu Gupta (United States)<sup>2</sup>, [Dr. Danijela Cabric](#) (United States)<sup>1</sup> (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)<sup>1</sup>, Mr. Heungsik Eum (Korea, Republic of)<sup>1</sup>, Mr. Hyeonjun Pi (Korea, Republic of)<sup>1</sup>, Prof. Youngcheol Chae (Korea, Republic of)<sup>1</sup> (1. Yonsei University)



Continued from Tuesday, 15 April

8:25am **14-2: A -117.1dB THD Audio Decoder Utilizing Single Vector Quantizer for Simultaneous Mismatch and ISI Shaping**  
 » [Mr. Yuxiang Tang](#) (China)<sup>1</sup>, Mr. Yijie Li (China)<sup>1</sup>, Mr. Kaiwen Zhou (China)<sup>1</sup>, Mr. Qi Luo (China)<sup>1</sup>, Mr. Xining Zhang (China)<sup>1</sup>, Mr. Yongda Ma (China)<sup>1</sup>, Prof. Zhiliang Hong (China)<sup>1</sup>, Prof. Jiawei Xu (China)<sup>1</sup> (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)<sup>1</sup>, Prof. Haikun Jia (China)<sup>1</sup>, Prof. Wei Deng (China)<sup>1</sup>, Prof. Baoyong Chi (China)<sup>1</sup> (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)<sup>1</sup>, Dr. Vittorio Colonna (Italy)<sup>1</sup>, Dr. Gabriele Gandolfi (Italy)<sup>1</sup>, Dr. Samuele Fusetto (Italy)<sup>1</sup>, Dr. Michele Chiabrera (Italy)<sup>1</sup>, Dr. Alessandro Savo (Italy)<sup>1</sup>, Dr. Maurizio Costagliola (Italy)<sup>1</sup>, Dr. Ruggero Stella (Italy)<sup>1</sup>, Dr. Matteo Bulzi (Italy)<sup>1</sup>, Dr. Sebastian Radosav (Italy)<sup>1</sup>, Dr. Domenico Granozio (Italy)<sup>1</sup>, Dr. Giuseppe Alfieri (Italy)<sup>1</sup>, Dr. Alessandro Gemelli (Italy)<sup>2</sup>, Prof. Piero Malcovati (Italy)<sup>2</sup>, Prof. Edoardo Bonizzoni (Italy)<sup>2</sup> (1. Inventm Semiconductor SRL, 2. University of Pavia)

8am **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?**  
*Olympia*  
 Chaired by: Dr. Mark Oude Alink (Netherlands) and Prof. Taiyun Chi (United States)

8am **Power Management III - Session 16: Application-Specific Power Management**  
*Michelangelo*  
 Chaired by: Sriharsh Pakala (United States) and Mauro Leoncini (Italy)

8am **16-1: A Multi-Level Power Management Architecture for Battery-Powered SPAD Drivers with Supply Intrinsic Quenching and 10-ns Dead Time**  
 » [Mr. Wenshuo Zhu](#) (United States)<sup>1</sup>, Ms. Xuan Sun (United States)<sup>1</sup>, Dr. Xin Zhang (United States)<sup>2</sup>, Dr. Cheng Huang (United States)<sup>1</sup> (1. Iowa State University, 2. IBM T. J. Watson Research Center)

8:25am **16-2: A Parallel-Input Energy-Recycling Power Management Unit with Continuous MPPT for Magnetoelectrically Powered mm-Scale Bio-Implants**  
 » [Mr. Yiwei Zou](#) (United States)<sup>1</sup>, Mr. Huan-Cheng Liao (Taiwan)<sup>1</sup>, Mr. Wei Wang (United States)<sup>1</sup>, Mr. Wonjune Kim (United States)<sup>1</sup>, Mr. Yumin Su (United States)<sup>1</sup>, Dr. Jacob Robinson (United States)<sup>1</sup>, Prof. Kaiyuan Yang (United States)<sup>1</sup> (1. Rice University)

8:50am **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**  
 » [Mr. Hangxiao Ma](#) (Macao)<sup>1</sup>, Mr. Qiaobo Ma (Macao)<sup>1</sup>, Mr. Xuchu Mu (Macao)<sup>1</sup>, Prof. Yang Jiang (Macao)<sup>1</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Pui-In Mak (Macao)<sup>1</sup> (1. University of Macau)

9:15am **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**  
 » [Mr. Tianqi Lu](#) (Netherlands)<sup>1</sup>, Prof. Sijun Du (Netherlands)<sup>1</sup> (1. Delft University of Technology)

8am **Systems and Security I - Session 17: Next-Generation Systems: From Datacenters to the Edge**  
*Aquitania*  
 Chaired by: Monodeep Kar (United States) and Dr. Baibhab Chatterjee (United States)

8am **17-1: TD-dAJC: A 2pJ/pixel Time-Domain Weight and Integrating-MAC based direct-Analog-to-MJPEG Compression for Video Sensor Nodes**  
 » Mr. Gourab Barik (United States)<sup>1</sup>, [Mr. Harshit Naman](#) (United States)<sup>1</sup>, Mr. Yudhajit Ray (United States)<sup>1</sup>, Dr. Shreyas Sen (United States)<sup>1</sup> (1. Purdue University)



Continued from Tuesday, 15 April

8:25am  
**17-2: A 28-nm Real-Time Reinforcement Learning Processor for Mapless Autonomous Navigation with Unified Actor-Critic Network and Inference-on-Request Scheduling**  
 » [Mr. Juyoung Oh](#) (Korea, Republic of)<sup>1</sup>, Ms. Jie-Xin Liu (Taiwan)<sup>2</sup>, Mr. Yi-Chen Teng (Taiwan)<sup>2</sup>, Prof. Hsueh-Cheng Wang (Taiwan)<sup>2</sup>, Prof. Dongsuk Jeon (Korea, Republic of)<sup>1</sup> (1. Seoul National University, 2. National Yang Ming Chiao Tung University)

8:50am  
**17-3: Forward Error Correction Requirements for Data Center Connectivity**  
 » [Mr. Han-Mo Ou](#) (United States)<sup>1</sup>, Mr. Gene Lee (United States)<sup>1</sup>, Prof. Naresh Shanbhag (United States)<sup>1</sup> (1. University of Illinois at Urbana-Champaign)

9:15am  
**17-4: A 0.14μJ per-Acquisition Frequency-Domain GPS Correlator Using Adaptive Compressive Sampling**  
 » [Mr. Jung-lin Park](#) (United States)<sup>1</sup>, Mr. Julian Arenas (United States)<sup>1</sup>, Mr. Kevin Patino-Sosa (United States)<sup>1</sup>, Prof. Visvesh Sathe (United States)<sup>1</sup> (1. Georgia Institute of Technology)

8am  
**Digital Circuits and SoCs III - Session 18: Digital Compute-in-Memory**  
*Brittannic*  
 Chaired by: Ashwin Lele (United States) and Ningyuan Cao (United States)

8am  
**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)<sup>1</sup>, Dr. HanGyeol Mun (United States)<sup>1</sup>, Mr. Jian Meng (United States)<sup>1</sup>, Mr. Yuan Liao (United States)<sup>1</sup>, Mr. Amitesh Sridharan (United States)<sup>2</sup>, Dr. Jae-sun Seo (United States)<sup>1</sup> (1. Cornell Tech, 2. Arizona State University)

8:25am  
**18-2: A 28nm Value-Wise Hybrid-Domain Compute-In-Memory Macro with Heterogeneous Memory Fabric and Asynchronous Sparsity Manager**  
 » [Mr. Yuanzhe Zhao](#) (Macao)<sup>1</sup>, Dr. Yang Wang (China)<sup>2</sup>, Mr. Yuheng Wang (Macao)<sup>1</sup>, Mr. Heng Xie (Macao)<sup>1</sup>, Prof. Yan Zhu (Macao)<sup>1</sup>, Prof. Rui P. Martins (Macao)<sup>1</sup>, Prof. Chi-Hang Chan (Macao)<sup>1</sup>, Prof. Shouyi Yin (China)<sup>2</sup>, Prof. Minglei Zhang (Macao)<sup>1</sup> (1. University of Macau, 2. Tsinghua University)

8:50am  
**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)<sup>1</sup>, Mr. Yifan He (China)<sup>1</sup>, Mr. Xiang Li (China)<sup>2</sup>, Mr. Yixuan Xie (China)<sup>1</sup>, Ms. Zongle Huang (China)<sup>1</sup>, Mr. Wenxun Wang (China)<sup>1</sup>, Mr. Boju Chen (China)<sup>1</sup>, Mr. Yaolei Li (China)<sup>1</sup>, Prof. Jinshan Yue (China)<sup>3</sup>, Prof. Xueqing Li (China)<sup>1</sup>, Prof. Huazhong Yang (China)<sup>1</sup>, Prof. Hongyang Jia (China)<sup>1</sup>, Prof. Yongpan Liu (China)<sup>1</sup> (1. Tsinghua University, 2. Tsinghua Shenzhen International Graduate School, 3. Institute of Microelectronics of the Chinese Academy of Sciences)

9:15am  
**18-4: A 52.03TOPS/W DCIM-Based Accelerator with FlashAttention and Sparsity-Aware Alignment for LLMs**  
 » Prof. Bo Liu (China)<sup>1</sup>, [Mr. Xingyu Xu](#) (China)<sup>1</sup>, Mr. Yang Zhang (China)<sup>1</sup>, Mr. Xilong Kang (China)<sup>1</sup>, Mr. Qingwen Wei (China)<sup>1</sup>, Mr. Zihan Zou (China)<sup>1</sup>, Prof. Jun Yang (China)<sup>1</sup>, Prof. Hao Cai (China)<sup>1</sup>, Prof. Xin Si (China)<sup>1</sup> (1. southeast university)

9:40am  
**Break**  
*Grand Ballroom Foyer*

10:05am  
**Analog Circuits and Techniques V - Session 19: Forum: Potential of Open Source Design for Analog/Mixed Signal IC Education**  
*Grand Ballroom*  
 Chaired by: Jorge Marin (Chile) and Nazanin Neshatvar (United Kingdom)



Continued from Tuesday, 15 April

10:05am	<p><b>Emerging Technology II -</b>  <b>Session 20: Panel: Wireline and Lightwave Interconnects - The Shifting Boundary in the AI Era</b>  <i>Olympia</i>                      Chaired by: Win-san (Vince) Khwa (Taiwan) and Henry Park</p>
10:05am	<p><b>Power Management III cont'd -</b>  <b>Session 16: Application-Specific Power Management</b>  <i>Michelangelo</i>                      Chaired by: Sriharsh Pakala (United States) and Mauro Leoncini (Italy)</p>
10:05am	<p><b>16-5: A 93.9% Peak Efficiency 3V-to-40V-Input GaN-based DC-DC Converter with Unified Reliability and Efficiency Adaptive Control</b>                      » <a href="#">Mr. Zhaoqing Wang</a> (United States)<sup>1</sup>, <a href="#">Mr. Yichen Xu</a> (United States)<sup>1</sup>, <a href="#">Dr. Suhwan Kim</a> (United States)<sup>2</sup>, <a href="#">Dr. Nachiket Desai</a> (United States)<sup>2</sup>, <a href="#">Dr. Minxiang Gong</a> (United States)<sup>2</sup>, <a href="#">Dr. Ram Krishnamurthy</a> (United States)<sup>2</sup>, <a href="#">Dr. Xin Zhang</a> (United States)<sup>3</sup>, <a href="#">Prof. Mingoo Seok</a> (United States)<sup>1</sup> (1. Columbia University, 2. Intel, 3. IBM T. J. Watson Research Center)</p>
10:30am	<p><b>16-6: A Fully Integrated Adaptive-MPP-Shifting Rectifier for Piezoelectric Energy Harvesting Outputting 580µW at 10V-VOC</b>                      » <a href="#">Ms. Xinling Yue</a> (Netherlands)<sup>1</sup>, <a href="#">Mr. Wenyu Peng</a> (Netherlands)<sup>1</sup>, <a href="#">Prof. Sijun Du</a> (Netherlands)<sup>1</sup> (1. Delft University of Technology)</p>
10:55am	<p><b>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</b>                      » <a href="#">Mr. Tianqi Lu</a> (Netherlands)<sup>1</sup>, <a href="#">Mr. Xianglong Li</a> (Netherlands)<sup>1</sup>, <a href="#">Mr. Wenyu Peng</a> (Netherlands)<sup>1</sup>, <a href="#">Prof. Sijun Du</a> (Netherlands)<sup>1</sup> (1. Delft University of Technology)</p>

11:20am	<p><b>16-8: An 81.0% Peak Efficiency, 1.0W/cm<sup>3</sup> Miniaturized 5V/1A AC-DC Converter using a Highly-Integrated Primary-Side Active Clamp Flyback Controller with Adaptive Frequency and Zero-Voltage Switching</b>                      » <a href="#">Mr. Akiyoshi Tanaka</a> (United States)<sup>1</sup>, <a href="#">Ms. Shan He</a> (United States)<sup>1</sup>, <a href="#">Mr. Reza Mounesi</a> (United States)<sup>2</sup>, <a href="#">Dr. Xinjian Liu</a> (United States)<sup>1</sup>, <a href="#">Mr. Omar Faruqe</a> (United States)<sup>1</sup>, <a href="#">Ms. Nugaira Gahan Mim</a> (United States)<sup>1</sup>, <a href="#">Dr. Daniel Truesdell</a> (United States)<sup>1</sup>, <a href="#">Prof. Adel Nasiri</a> (United States)<sup>2</sup>, <a href="#">Prof. Benton Calhoun</a> (United States)<sup>1</sup> (1. University of Virginia, 2. University of South Carolina)</p>
10:05am	<p><b>Digital Circuits and SoCs III cont'd -</b>  <b>Session 18: Digital Compute-in-Memory</b>  <i>Brittannic</i>                      Chaired by: Ashwin Lele (United States) and Ningyuan Cao (United States)</p>
10:05am	<p><b>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</b>                      » <a href="#">Ms. Jin Wang</a> (China)<sup>1</sup>, <a href="#">Mr. Moxiao Lou</a> (China)<sup>1</sup>, <a href="#">Mr. Zhengke Yang</a> (China)<sup>1</sup>, <a href="#">Mr. Ruijie Peng</a> (China)<sup>1</sup>, <a href="#">Mr. Humiao Li</a> (China)<sup>1</sup>, <a href="#">Mr. Weirong Dong</a> (China)<sup>1</sup>, <a href="#">Mr. Haoran Lyu</a> (China)<sup>1</sup>, <a href="#">Mr. Yida Li</a> (China)<sup>1</sup>, <a href="#">Prof. Jiamin Li</a> (China)<sup>1</sup>, <a href="#">Prof. Hao Yu</a> (China)<sup>1</sup>, <a href="#">Prof. Jerald Yoo</a> (Korea, Republic of)<sup>2</sup>, <a href="#">Prof. Longyang Lin</a> (China)<sup>1</sup> (1. Southern University of Science and Technology, 2. Seoul National University)</p>
10:30am	<p><b>18-6: A One-Shot Floating-Point Compute-in-Memory Macro Featuring PVT Robustness and Mismatch Tolerance for Edge LLMs</b>                      » <a href="#">Mr. Yuanzhe Zhao</a> (Macao)<sup>1</sup>, <a href="#">Mr. Heng Xie</a> (Macao)<sup>1</sup>, <a href="#">Mr. Zijian Wang</a> (Macao)<sup>1</sup>, <a href="#">Mr. Chunlin Tian</a> (Macao)<sup>1</sup>, <a href="#">Prof. Li Li</a> (Macao)<sup>1</sup>, <a href="#">Prof. Yan Zhu</a> (Macao)<sup>1</sup>, <a href="#">Prof. Rui P. Martins</a> (China)<sup>1</sup>, <a href="#">Prof. Chi-Hang Chan</a> (Macao)<sup>1</sup>, <a href="#">Prof. Minglei Zhang</a> (Macao)<sup>1</sup> (1. University of Macau)</p>
10:55am	<p><b>18-7: (INVITED) Tracking Fmax Degradation of a RISC-V CPU with Synthesizable Odometer Aging Sensors</b>                      » <a href="#">Ms. Tahmida Islam</a> (United States)<sup>1</sup>, <a href="#">Mr. Junkyu Kim</a> (United States)<sup>1</sup>, <a href="#">Mr. Hanzhao Yu</a> (United States)<sup>1</sup>, <a href="#">Prof. Chris Kim</a> (United States)<sup>1</sup> (1. University of Minnesota)</p>
12pm	<p><b>Session 21: Keynote Luncheon</b>  <i>Skyline Ballroom</i></p>



Continued from Tuesday, 15 April

12pm  
**Circuit Labs at the Lunch Table with MOSbius**  
 » Prof. Peter Kinget (United States)<sup>1</sup> (1. Bernard J. Lechner Professor of Electrical Engineering, Columbia University)

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**  
 » Prof. Weiping Wu (China)<sup>1</sup>, Ms. Xun Bao (China)<sup>1</sup>, Mr. Shi Chen (China)<sup>1</sup>, Mr. Jingze Wang (China)<sup>1</sup>, Ms. Shulan Chen (China)<sup>1</sup>, Prof. Yan Wang (China)<sup>1</sup>, Prof. Lei Zhang (China)<sup>1</sup> (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)<sup>1</sup>, Prof. Wei Deng (China)<sup>1</sup>, Mr. Shulin Yao (China)<sup>1</sup>, Prof. Haikun Jia (China)<sup>1</sup>, Ms. Xinyu Jiang (China)<sup>1</sup>, Mr. Xiangyu Nie (China)<sup>1</sup>, Ms. Dongfang Li (China)<sup>1</sup>, Mr. Hongliang Wu (China)<sup>1</sup>, Dr. Chuanming Zhu (China)<sup>1</sup>, Dr. Xiangrong Huang (China)<sup>1</sup>, Prof. Baoyong Chi (China)<sup>1</sup> (1. Tsinghua University)

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)<sup>1</sup>, Mr. Jialei Wu (China)<sup>1</sup>, Prof. Keping Wang (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Xuhao Jiang (China)<sup>1</sup>, Mr. Xuanxuan Yang (China)<sup>2</sup>, Mr. Yuchen Liang (China)<sup>2</sup>, Mr. Ziang Zhang (China)<sup>2</sup>, Mr. Junbo Liu (China)<sup>2</sup>, Mr. Yifei Hu (China)<sup>2</sup>, Dr. Depeng Cheng (China)<sup>3</sup>, Dr. Long He (China)<sup>3</sup>, Prof. Xu Wu (China)<sup>1</sup>, Prof. Lianming Li (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Alexander Geers (United States)<sup>1</sup>, Mr. Anish Mondal (United States)<sup>1</sup>, Dr. Kaisarbek Omirzakhov (United States)<sup>1</sup>, Dr. Farshid Ashtiani (United States)<sup>1</sup>, Prof. Firooz Aflatouni (United States)<sup>1</sup> (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)<sup>1</sup>, Prof. Kentaro Yoshioka (Japan)<sup>2</sup>, Mr. Christian Ziegler (Germany)<sup>1</sup>, Prof. Vadim Issakov (Germany)<sup>1</sup>, Prof. Hiroki Ishikuro (Japan)<sup>2</sup> (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)<sup>1</sup>, Mr. Yingzhe Sha (China)<sup>1</sup>, Prof. Xufeng Kou (China)<sup>2</sup>, Prof. Xiaoyong Xue (China)<sup>1</sup>, Prof. Peng Wang (China)<sup>3</sup>, Prof. Zhangcheng Huang (China)<sup>1</sup>, Prof. Qi Liu (China)<sup>1</sup>, Prof. Ming Liu (China)<sup>1</sup> (1. Fudan University, 2. ShanghaiTech University, Shanghai, China, 3. Shanghai Institute of Technical Physics, Chinese Academy of Sciences)





Continued from Tuesday, 15 April

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**  
» Dr. Zhiguo Tong (Macao)<sup>1</sup>, Mr. Wenjie Yang (Macao)<sup>2</sup>, Dr. Shousheng Han (China)<sup>1</sup>, Dr. Junwei Huang (Macao)<sup>2</sup>, Dr. Xiangyu Mao (Macao)<sup>2</sup>, Prof. Yan Lu (China)<sup>3</sup> (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)<sup>1</sup>, Prof. Lin Cheng (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Zhiren Luo (China)<sup>1</sup>, Mr. Xiangnan You (China)<sup>2</sup>, Mr. Dongjie Ye (China)<sup>1</sup>, Mr. Weiyi Tang (China)<sup>1</sup>, Mr. Qinyang Wang (China)<sup>1</sup>, Dr. Qidong Wang (China)<sup>2</sup>, Dr. Jianliang Shen (China)<sup>3</sup>, Prof. Lin Cheng (China)<sup>1</sup> (1. University of Science and Technology of China, 2. Institute of Microelectronics of the Chinese Academy of Sciences, 3. Information Engineering University)

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)<sup>1</sup>, Dr. Muhammad Nummer (Canada)<sup>1</sup>, Dr. Noman Hai (Canada)<sup>1</sup>, Dr. Jingjing Xia (Canada)<sup>1</sup>, Mr. Kai Ge Yang (Canada)<sup>1</sup>, Mr. Mohammad-Mahdi Mohsenpour (Canada)<sup>1</sup>, Mr. Choon-Haw CH Leong (Canada)<sup>1</sup>, Dr. Marc-Andre LaCroix (Canada)<sup>1</sup>, Mr. Babak Zamanlooy (Canada)<sup>1</sup>, Mr. Tom Eeckelaert (Canada)<sup>1</sup>, Mr. Dmitry Petrov (Canada)<sup>1</sup>, Mr. Mostafa Haroun (Canada)<sup>1</sup>, Mr. Carson Dick (Canada)<sup>1</sup>, Mr. Alif Zaman (Canada)<sup>1</sup>, Mr. Haitao Mei (Canada)<sup>1</sup>, Dr. Tahseen Shakir (Canada)<sup>1</sup>, Mr. Carlos Carvalho (Canada)<sup>1</sup>, Mr. Howard Huang (Canada)<sup>1</sup>, Mr. Ralph Mason (Canada)<sup>1</sup>, Mrs. Fahmida Brishty (Canada)<sup>1</sup>, Mrs. Ifrah Jaffri (Canada)<sup>1</sup>, Mr. David Yokoyama-Martin (Canada)<sup>1</sup> (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)<sup>1</sup>, Dr. Burak Catli (United States)<sup>1</sup>, Dr. Yong Liu (United States)<sup>1</sup>, Mr. Anand Vasani (United States)<sup>1</sup>, Dr. Guansheng Li (United States)<sup>1</sup>, Mr. Kun Chuai (United States)<sup>1</sup>, Dr. Lakshmi Rao (United States)<sup>1</sup>, Mr. Yang Liu (United States)<sup>1</sup>, Dr. Xin Meng (United States)<sup>1</sup>, Mr. Jiawen Zhang (United States)<sup>1</sup>, Mr. Tim He (United States)<sup>1</sup>, Dr. Batu Dayanik (United States)<sup>1</sup>, Dr. Vadim Millirud (United States)<sup>1</sup>, Dr. Meisam Honarvar Nazari (United States)<sup>1</sup>, Dr. Hyo Gyuem Rhew (United States)<sup>2</sup>, Dr. Derui Kong (United States)<sup>1</sup>, Mr. Arvindh Iyer (United States)<sup>1</sup>, Mr. Nan Wang (United States)<sup>1</sup>, Dr. Alireza Nilchi (United States)<sup>1</sup>, Dr. Aminghasem Safarian (United States)<sup>1</sup>, Dr. Ray Wang (United States)<sup>1</sup>, Dr. Hyung-Joon Jeon (United States)<sup>1</sup>, Dr. Xiaochen Yang (United States)<sup>1</sup>, Dr. Boyu Hu (United States)<sup>1</sup>, Dr. Jerry Han (United States)<sup>1</sup>, Mr. Adesh Garg (United States)<sup>1</sup>, Mr. Kumar Thasari (United States)<sup>1</sup>, Dr. Heng Zhang (United States)<sup>1</sup>, Dr. Namik Kocaman (United States)<sup>1</sup>, Mr. Ali Nazemi (United States)<sup>1</sup>, Dr. Delong Cui (United States)<sup>1</sup>, Dr. Afshin Momtaz (United States)<sup>1</sup>, Dr. Jun Cao (United States)<sup>1</sup> (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)<sup>1</sup>, Dr. Xiaoteng Zhao (China)<sup>1</sup>, Mr. Qi Zhang (China)<sup>1</sup>, Dr. Yuan Liu (China)<sup>1</sup>, Mr. Yuhao Zhang (China)<sup>1</sup>, Dr. Hongzhi Liang (China)<sup>1</sup>, Dr. Yukui Yu (China)<sup>1</sup>, Prof. Shubin Liu (China)<sup>1</sup>, Prof. Zhangming Zhu (China)<sup>1</sup> (1. Xidian University)





Continued from Tuesday, 15 April	
1:30pm	<p><b>Biomedical Technologies and Applications I - Session 26: Advanced Biopotential Interfaces</b> <i>Brittannic</i></p> <p>Chaired by: Sahil Shah (United States) and Prof. Youngcheol Chae (Korea, Republic of) and Shih-Chii Liu (Switzerland)</p>
1:30pm	<p><b>26-1: (INVITED) In-Ear EEG Auditory Neurofeedback Towards Unobtrusive Sleep Enhancement</b></p> <p>» <a href="#">Mr. Min Suk Lee</a> (United States)<sup>1</sup>, <a href="#">Mr. Zhaoyi Liu</a> (United States)<sup>1</sup>, <a href="#">Mr. Abhinav Uppal</a> (United States)<sup>1</sup>, <a href="#">Dr. Jiahao Song</a> (United States)<sup>2</sup>, <a href="#">Dr. Akshay Paul</a> (United States)<sup>2</sup>, <a href="#">Dr. Florian Chapotot</a> (United States)<sup>3</sup>, <a href="#">Dr. Esra Tasali</a> (United States)<sup>3</sup>, <a href="#">Dr. Yuchen Xu</a> (United States)<sup>2</sup>, <a href="#">Prof. Gert Cauwenberghs</a> (United States)<sup>1</sup> (1. University of California San Diego, 2. Institute for Neural Computation, 3. University of Chicago)</p>
2:20pm	<p><b>26-2: A 32-channel 85.4dB SNDR Time-multiplexed Neural Recording Front-end Achieving within-conversion Artifact Recovery</b></p> <p>» <a href="#">Mr. Arindam Mandal</a> (United States)<sup>1</sup>, <a href="#">Dr. Chi-Hsiang Huang</a> (United States)<sup>1</sup>, <a href="#">Mr. Julian Arenas</a> (United States)<sup>1</sup>, <a href="#">Mr. Wei-En Lee</a> (United States)<sup>1</sup>, <a href="#">Mr. Philip Anschutz</a> (United States)<sup>1</sup>, <a href="#">Dr. Amanda Jacob</a> (United States)<sup>2</sup>, <a href="#">Dr. Keshav Ramachandra</a> (United States)<sup>2</sup>, <a href="#">Prof. Samuel Sober</a> (United States)<sup>2</sup>, <a href="#">Prof. Muhannad Bakir</a> (United States)<sup>1</sup>, <a href="#">Prof. Shaolan Li</a> (United States)<sup>1</sup>, <a href="#">Prof. Visvesh Sathe</a> (United States)<sup>1</sup> (1. Georgia Institute of Technology, 2. Emory University)</p>
2:45pm	<p><b>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</b></p> <p>» <a href="#">Mr. Hong Liao</a> (China)<sup>1</sup>, <a href="#">Mr. Wentao Ma</a> (China)<sup>1</sup>, <a href="#">Ms. Xiaoxu Yang</a> (China)<sup>1</sup>, <a href="#">Ms. Jianfang Nie</a> (China)<sup>1</sup>, <a href="#">Ms. Bingfang Wang</a> (China)<sup>1</sup>, <a href="#">Mr. Zhiqiang Chang</a> (China)<sup>1</sup>, <a href="#">Prof. Yin Fang</a> (China)<sup>1</sup>, <a href="#">Prof. Jiangfeng Wu</a> (China)<sup>1</sup>, <a href="#">Prof. Miao Meng</a> (China)<sup>1</sup> (1. Tongji University)</p>
3:10pm	<p><b>Break</b> <i>Grand Ballroom Foyer</i></p>

3:35pm	<p><b>Wireless Transceivers and RF/mm-Wave Circuits and Systems IV cont'd - Session 22: High Performance Transceivers</b> <i>Grand Ballroom</i></p> <p>Chaired by: Prof. Vadim Issakov (Germany) and Mustafijur Rahman (India)</p>
3:35pm	<p><b>22-5: A 0.9mm<sup>2</sup> SDR Receiver in 40-nm CMOS Covering 10-72GHz Using Inductor-Less Edge-combining based LO Quintupler</b></p> <p>» <a href="#">Mr. Haoyu Bai</a> (China)<sup>1</sup>, <a href="#">Ms. Ling Hao</a> (China)<sup>1</sup>, <a href="#">Dr. Dong Wang</a> (China)<sup>1</sup>, <a href="#">Ms. Keer Gao</a> (China)<sup>1</sup>, <a href="#">Mr. Han Huang</a> (China)<sup>1</sup>, <a href="#">Mr. Jiazheng Zhou</a> (China)<sup>1</sup>, <a href="#">Mr. Jiaqi He</a> (China)<sup>1</sup>, <a href="#">Prof. Junhua Liu</a> (China)<sup>1</sup>, <a href="#">Prof. Huailin Liao</a> (China)<sup>1</sup> (1. Peking University)</p>
4pm	<p><b>22-6: A Packaged D-band Transmitter with a Multifeed Lens Antenna Achieving 25.3dBm Single-element EIRP for 2-D Scalable Arrays</b></p> <p>» <a href="#">Mr. Hang Wang</a> (United States)<sup>1</sup>, <a href="#">Dr. Hao Guo</a> (United States)<sup>1</sup>, <a href="#">Dr. Xiaohan Zhang</a> (United States)<sup>1</sup>, <a href="#">Dr. Taiyun Chi</a> (United States)<sup>1</sup> (1. Rice University)</p>
4:25pm	<p><b>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</b></p> <p>» <a href="#">Mr. Xuwei Li</a> (China)<sup>1</sup>, <a href="#">Dr. Depeng Cheng</a> (China)<sup>2</sup>, <a href="#">Mr. Jing Feng</a> (China)<sup>1</sup>, <a href="#">Mr. Xin Chen</a> (China)<sup>1</sup>, <a href="#">Mr. Rui Cao</a> (China)<sup>1</sup>, <a href="#">Mr. Lei Luo</a> (China)<sup>1</sup>, <a href="#">Mr. Haipeng Duan</a> (China)<sup>1</sup>, <a href="#">Prof. Dongming Wang</a> (China)<sup>3</sup>, <a href="#">Prof. Lianming Li</a> (China)<sup>3</sup> (1. southeast university, 2. Purple Mountain Laboratories, 3. Southeast University, Purple Mountain Laboratories)</p>
4:50pm	<p><b>22-8: A 27-39GHz 48Gbit/s 8-Channel Phased Array Transceiver Frontend with Broadband TX/RX Co-Design Optimization</b></p> <p>» <a href="#">Mr. Niccolò Villaggi</a> (Switzerland)<sup>1</sup>, <a href="#">Mr. Yuqi Liu</a> (Switzerland)<sup>1</sup>, <a href="#">Dr. Tzu-Yuan Huang</a> (Switzerland)<sup>1</sup>, <a href="#">Prof. Sensen Li</a> (United States)<sup>2</sup>, <a href="#">Prof. Taiyun Chi</a> (United States)<sup>3</sup>, <a href="#">Prof. Hua Wang</a> (Switzerland)<sup>1</sup> (1. ETH Zurich, 2. The University of Texas at Austin, 3. Rice University)</p>



Continued from **Tuesday, 15 April**

3:35pm **Emerging Technology IV -  
Session 27: Forum: Probabilistic Computing**  
*Olympia*  
Chaired by: Tathagata Srimani (United States) and Win-san (Vince) Khwa (Taiwan)

3:35pm **Power Management IV cont'd -  
Session 24: Hybrid DC-DC Converters**  
*Michelangelo*  
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/mm<sup>2</sup> 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**  
» [Mr. Jae-Hyun Kim](#) (Korea, Republic of)<sup>1</sup>, Mr. Jun-Gi Lee (Korea, Republic of)<sup>1</sup>, Dr. Hyunki Han (Korea, Republic of)<sup>1</sup>, Prof. Hyun-Sik Kim (Korea, Republic of)<sup>1</sup> (1. KAIST)

4pm **24-5: An Inductor-First Hybrid Buck-Boost Converter Featuring Seamless Single-Mode Operation, 97.2% Peak Efficiency, and 565mA/mm<sup>3</sup> Current Density with Ultra-Compact 1mm<sup>3</sup>-Volume Inductor**  
» [Mr. Hyunjun Park](#) (Korea, Republic of)<sup>1</sup>, Mr. Yunho Lee (Korea, Republic of)<sup>1</sup>, Mr. Minsu Kim (Korea, Republic of)<sup>1</sup>, Dr. Woojoong Jung (Korea, Republic of)<sup>1</sup>, Mr. Hongseok Kim (Korea, Republic of)<sup>1</sup>, Prof. Hyung-Min Lee (Korea, Republic of)<sup>1</sup> (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/mm<sup>2</sup>-Current-Density and 6.5µs Recovery**  
» [Mr. Xiongjie Zhang](#) (Macao)<sup>1</sup>, Ms. Xinman Li (Macao)<sup>1</sup>, Prof. Yang Jiang (Macao)<sup>1</sup>, Prof. Zhangming Zhu (China)<sup>2</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Pui-In Mak (Macao)<sup>1</sup> (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**  
» [Ms. Yiling Xie](#) (China)<sup>1</sup>, Prof. Jianping Guo (China)<sup>1</sup> (1. Sun Yat-sen University)

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)<sup>1</sup>, Ms. Tong Zhang (China)<sup>1</sup>, Mr. Weihao Jie (China)<sup>1</sup>, Ms. Yanling Zheng (China)<sup>1</sup>, Mr. Deyong Li (China)<sup>1</sup>, Ms. Yiwen Zhang (China)<sup>1</sup>, Mr. Yang Zhao (China)<sup>1</sup>, Prof. Yongfu Li (China)<sup>1</sup>, Prof. Honglan Jiang (China)<sup>1</sup>, Prof. Patrick Mercier (United States)<sup>2</sup>, Prof. Hui Wang (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Xuxu Cheng (China)<sup>1</sup>, Mr. Liping Zhong (China)<sup>1</sup>, Mr. Yangyi Zhang (China)<sup>1</sup>, Mr. Weitao Wu (China)<sup>1</sup>, Mr. Xiongshi Luo (China)<sup>1</sup>, Prof. Alex Pan (China)<sup>1</sup> (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)<sup>1</sup>, Dr. Philipp Scholz (Germany)<sup>1</sup>, Mr. Patrick Kurth (Germany)<sup>1</sup>, Mr. Frowin Buballa (Germany)<sup>1</sup>, Ms. Helia Ordouei (Germany)<sup>1</sup>, Prof. Friedel Gerfers (Germany)<sup>1</sup> (1. Technische Universität Berlin)



Continued from **Tuesday, 15 April**

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)<sup>1</sup>, Mr. Zhixing Zhang (China)<sup>1</sup>, Mr. Shuaizhe Ma (China)<sup>2</sup>, Mr. Yuanhao Yao (China)<sup>1</sup>, Mr. Ruixuan Yang (China)<sup>2</sup>, Ms. Yuye Yang (China)<sup>2</sup>, Mr. Jianyu Yang (China)<sup>2</sup>, Prof. Li Geng (China)<sup>2</sup>, Prof. Dan Li (China)<sup>2</sup> (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)<sup>1</sup>, Mr. Sein Oh (Korea, Republic of)<sup>1</sup>, Dr. Yoontae Jung (Belgium)<sup>2</sup>, Mr. Vincent Lukito (Korea, Republic of)<sup>1</sup>, Prof. Sohmyung Ha (United Arab Emirates)<sup>3</sup>, Prof. Minkyu Je (Korea, Republic of)<sup>1</sup> (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)<sup>1</sup>, Ms. Simeng Yin (China)<sup>1</sup>, Mr. Yixin Zhou (China)<sup>2</sup>, Mr. Jianye Li (China)<sup>1</sup>, Mr. Kai Li (China)<sup>1</sup>, Prof. Xiaoyan Shen (China)<sup>3</sup>, Ms. Tinghui Sun (China)<sup>3</sup>, Mr. Xinlong Zhang (China)<sup>3</sup>, Prof. Keping Wang (China)<sup>1</sup> (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)<sup>1</sup>, Dr. Linran Zhao (United States)<sup>1</sup>, Mr. Tzuping Huang (United States)<sup>1</sup>, Dr. Alper Bozkurt (United States)<sup>2</sup>, Dr. Yaoyao Jia (United States)<sup>1</sup> (1. The University of Texas at Austin, 2. North Carolina State University)

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)<sup>1</sup>, Mr. Zhiheng Luo (United States)<sup>1</sup>, Mr. Spencer Chang (United States)<sup>1</sup>, Mr. Kristopher Ngo (United States)<sup>1</sup>, Mr. Ritwik Vatsyayan (United States)<sup>1</sup>, Mr. Jihwan Lee (United States)<sup>1</sup>, Ms. Tara S. Porter (United States)<sup>1</sup>, Prof. Drew A. Hall (United States)<sup>1</sup>, Prof. Shadi Dayeh (United States)<sup>1</sup>, Prof. Ian Galton (United States)<sup>1</sup>, Prof. Hanh-Phuc Le (United States)<sup>1</sup> (1. University of California San Diego)

5:30pm

**IEEE SSCS Young Professionals and Women in Circuits Mentoring Event**

*Michelangelo*

6pm

**CICC Conference Reception & Industry Information Session**

*Skyline Ballroom*

**Wednesday, 16 April**

8:30am

**Welcome**

*Grand Ballroom*

8:50am

**Keynote Session**

*Grand Ballroom*

9:40am

**Break**

*Grand Ballroom Foyer*



Continued from **Wednesday, 16 April**

**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)<sup>1</sup>, Dr. Kevin Tien (United States)<sup>1</sup>, Dr. Sudipto Chakraborty (United States)<sup>1</sup>, Dr. David Frank (United States)<sup>1</sup>, Dr. Pat Rosno (United States)<sup>2</sup>, Dr. Daniel Moertl (United States)<sup>2</sup>, Dr. Mark Yeck (United States)<sup>1</sup>, Dr. John Bulzacchelli (United States)<sup>1</sup>, Dr. Daniil Frolov (United States)<sup>1</sup>, Dr. Devin Underwood (United States)<sup>1</sup>, Dr. Ken Inoue (United States)<sup>2</sup>, Dr. Christian Baks (United States)<sup>1</sup>, Dr. Daniel Ramirez (United States)<sup>2</sup>, Dr. Jeremy Ekman (United States)<sup>2</sup>, Dr. Ryan Black (United States)<sup>2</sup>, Dr. Tim Schmerbeck (United States)<sup>2</sup>, Dr. Ray Richetta (United States)<sup>2</sup>, Dr. Dereje Yilma (United States)<sup>2</sup>, Dr. Andrew Davies (United States)<sup>2</sup>, Dr. Joseph Glick (United States)<sup>1</sup>, Dr. Dorothy Wisnieff (United States)<sup>1</sup>, Dr. Bryce Snell (United States)<sup>2</sup>, Dr. John Timmerwilke (United States)<sup>1</sup>, Dr. Raphael Robertazzi (United States)<sup>1</sup>, Dr. George Zettles (United States)<sup>2</sup>, Dr. Scott Lekuch (United States)<sup>1</sup>, Dr. Scott Willenborg (United States)<sup>2</sup>, Dr. Brian Gaucher (United States)<sup>1</sup>, Dr. Daniel Friedman (United States)<sup>1</sup> (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)<sup>1</sup>, Dr. Sebastiano Strangio (Italy)<sup>1</sup>, Dr. Maksym Paliy (Italy)<sup>1</sup>, Mr. Christian Sbrana (Italy)<sup>2</sup>, Mr. Michele Bertozzi (Italy)<sup>2</sup>, Prof. Giuseppe Iannaccone (Italy)<sup>1</sup> (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 Intel 4 CMOS**

» [Dr. Sachin Taneja](#) (United States)<sup>1</sup>, Dr. Vikram Suresh (United States)<sup>1</sup>, Dr. Raghavan Kumar (United States)<sup>1</sup>, Dr. Vivek De (United States)<sup>1</sup>, Dr. Sanu Mathew (United States)<sup>1</sup> (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)<sup>1</sup>, Dr. Archisman Ghosh (United States)<sup>1</sup>, Mr. Sarthak Antal (United States)<sup>1</sup>, Dr. Shreyas Sen (United States)<sup>1</sup> (1. Purdue University)

**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**

» Dr. Kent Edrian Lozada (Korea, Republic of)<sup>1</sup>, Dr. Ye-Dam Kim (Korea, Republic of)<sup>2</sup>, Dr. Il-Hoon Jang (Korea, Republic of)<sup>2</sup>, [Prof. Seung-Tak Ryu](#) (Korea, Republic of)<sup>1</sup> (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)<sup>1</sup>, Mr. Yuxuan He (China)<sup>1</sup>, Mr. Yunsong Tao (China)<sup>1</sup>, Mr. Zhishuai Zhang (China)<sup>1</sup>, Prof. Yong Chen (China)<sup>1</sup>, Prof. Yi Zhong (China)<sup>1</sup>, Prof. Lu Jie (China)<sup>1</sup>, Prof. Nan Sun (China)<sup>1</sup> (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)<sup>1</sup>, Dr. John Kauffman (Germany)<sup>1</sup>, Dr. Joachim Becker (Germany)<sup>1</sup>, Mr. Matteo Dalla Longa (Austria)<sup>2</sup>, Dr. Francesco Conzatti (Austria)<sup>2</sup>, Prof. Maurits Ortmanns (Germany)<sup>1</sup> (1. University of Ulm, 2. Infineon Technologies)



Continued from **Wednesday, 16 April**

11:45am **30-4: A Power-Efficient Jitter-Insensitive 3.2GHz 1-bit CT  $\Delta\Sigma$  ADC with Direct Charge Dump Feedback**  
 » [Dr. Yanguan Luo](#) (China)<sup>1</sup>, Prof. Lu Jie (China)<sup>1</sup>, Prof. Nan Sun (China)<sup>1</sup> (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)<sup>1</sup>, Prof. Tejasvi Anand (United States)<sup>1</sup> (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)<sup>1</sup>, Mr. Sunki Cho (Korea, Republic of)<sup>1</sup>, Dr. Sanghee Lee (Korea, Republic of)<sup>2</sup>, Ms. Hyeri Roh (Korea, Republic of)<sup>1</sup>, Ms. Jeong-Eun Song (Korea, Republic of)<sup>1</sup>, Mr. Honggyoo Ahn (Korea, Republic of)<sup>2</sup>, Ms. Jihee Kim (Korea, Republic of)<sup>1</sup>, Mr. Minchang Kim (Korea, Republic of)<sup>2</sup>, Dr. Hankyu Chi (Korea, Republic of)<sup>2</sup>, Prof. Deog-Kyoon Jeong (Korea, Republic of)<sup>1</sup>, Prof. Woo-Seok Choi (Korea, Republic of)<sup>1</sup> (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)<sup>1</sup>, Mr. Younghwan Chang (Korea, Republic of)<sup>2</sup>, Prof. Yong-un Jeong (Korea, Republic of)<sup>3</sup>, Dr. Jaekwang Yun (Korea, Republic of)<sup>4</sup>, Mr. Jusung Lee (Korea, Republic of)<sup>5</sup>, Mr. Shin-Hyun Jeong (Korea, Republic of)<sup>1</sup>, Mr. Sanghyuk Seo (Korea, Republic of)<sup>1</sup>, Prof. Suhwan Kim (Korea, Republic of)<sup>1</sup> (1. Seoul National University, Seoul, Korea, 2. S.LSI Business Division, Samsung Electronics, Korea, 3. Sejong University, 4. SK Hynix, 5. Samsung Electronics)

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)<sup>1</sup>, Dr. Cosimo Aprile (Switzerland)<sup>1</sup>, Dr. Milad Ataei (Switzerland)<sup>1</sup>, Mr. Rolf Beerwerthe (Germany)<sup>1</sup>, Mr. Dario Carneli (Switzerland)<sup>1</sup>, Mr. Maik Fuhs (Germany)<sup>1</sup>, Dr. Kiarash Gharibdoust (Switzerland)<sup>1</sup>, Dr. Ali Hormati (Switzerland)<sup>1</sup>, Mr. James Hudner (Switzerland)<sup>1</sup>, Mr. Victor Perrin (Switzerland)<sup>1</sup>, Prof. Amin Shokrollahi (Switzerland)<sup>1</sup>, Mr. Richard Simpson (Switzerland)<sup>1</sup>, Mr. Andrew Stewart (United Kingdom)<sup>1</sup>, Mr. David Stauffer (United States)<sup>1</sup>, Mr. Giuseppe Surace (United Kingdom)<sup>1</sup>, Mr. Roger Ulrich (Switzerland)<sup>1</sup>, Mr. Mark Venneborger (Germany)<sup>1</sup>, Mr. Patrick Urban (Germany)<sup>1</sup>, Mr. Anant Singh (United Kingdom)<sup>1</sup> (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) UCle-Compliant Chiplet Interconnect Design Leveraging Cutting-Edge Packaging Technologies**

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





Continued from Wednesday, 16 April

- 2:20pm **33-2: (INVITED) A high-performance Passive Base System for distributed AI/Media acceleration**  
 » [Dr. Ragh Kuttappa](#) (United States)<sup>1</sup>, Mr. Jainaveen Sundaram Priya (United States)<sup>1</sup>, Dr. Srivatsa rangachar Srinivasa (United States)<sup>1</sup>, Mr. Paolo Aseron (United States)<sup>2</sup>, Dr. Gauthaman Murali (United States)<sup>1</sup>, Dr. Vinayak Honkote (United States)<sup>1</sup>, Dr. Prerna Budhkar (United States)<sup>1</sup>, Mr. Dileep Kurian (United States)<sup>1</sup>, Mr. Ronald Kalim (United States)<sup>1</sup>, Mr. Thomas P Thomas (United States)<sup>1</sup>, Ms. Anuradha Srinivasan (United States)<sup>1</sup>, Dr. Tanay Karnik (United States)<sup>1</sup> (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)<sup>1</sup>, Mr. Jue Huang (China)<sup>1</sup>, Mr. Chenkang Ning (China)<sup>1</sup>, Mr. Yumeng Yuan (China)<sup>1</sup>, Prof. Hao Xu (China)<sup>2</sup>, Prof. Na Yan (China)<sup>2</sup>, Prof. Xufeng Kou (China)<sup>3</sup> (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)<sup>1</sup>, Mr. Kaihang Wang (China)<sup>1</sup>, Mr. Yang Li (China)<sup>1</sup>, Ms. Yuchen Liu (China)<sup>1</sup>, Dr. Xiaohua Yu (China)<sup>1</sup>, Dr. Ronghua Ni (China)<sup>1</sup> (1. Fudan University)
- 2:20pm **34-3: A 0.18- $\mu$ 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)<sup>1</sup>, Prof. Wei Deng (China)<sup>1</sup>, Prof. Haikun Jia (China)<sup>1</sup>, Prof. Baoyong Chi (China)<sup>1</sup> (1. Tsinghua University)

- 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)<sup>1</sup>, Dr. Dingxin Xu (Japan)<sup>1</sup>, Dr. Hongye Huang (Japan)<sup>1</sup>, Mr. Waleed Madany (Japan)<sup>1</sup>, Mr. Zezheng Liu (Japan)<sup>1</sup>, Mr. Wenqian Wang (Japan)<sup>1</sup>, Mr. Yuang Xiong (Japan)<sup>1</sup>, Mr. Ashbir Aviat Fadila (Japan)<sup>1</sup>, Mr. Duo Li (Japan)<sup>1</sup>, Prof. Yuncheng Zhang (Japan)<sup>1</sup>, Prof. Atsushi Shirane (Japan)<sup>1</sup>, Prof. Kenichi Okada (Japan)<sup>1</sup> (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)<sup>1</sup>, Prof. Yan Zhu (Macao)<sup>1</sup>, Prof. Rui P. Martins (Macao)<sup>1</sup>, Prof. Chi-Hang Chan (Macao)<sup>1</sup> (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)<sup>1</sup>, Mr. Lingxin Meng (China)<sup>1</sup>, Prof. Menglian Zhao (China)<sup>1</sup>, Ms. Mengyu Li (China)<sup>1</sup>, Prof. Shuang Song (China)<sup>1</sup>, Prof. zhichao tan (China)<sup>1</sup> (1. Zhejiang University)
- 2:20pm **35-3: A 95.9-dB SNDR 10-kHz BW 3rd-order VCO-based CT  $\Delta\Sigma$  Modulator Using a Phase-Time Two-Step Quantizer**  
 » [Mr. Ken Li](#) (United States)<sup>1</sup>, Mr. Wei-En Lee (United States)<sup>1</sup>, Mr. Xitite Zhang (United States)<sup>1</sup>, Mr. Tian Xie (United States)<sup>1</sup>, Mr. Tzu-Han Wang (United States)<sup>1</sup>, Prof. Visvesh Sathe (United States)<sup>1</sup>, Prof. Shaolan Li (United States)<sup>1</sup> (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)<sup>1</sup>, Mr. Gabriele Bè (Italy)<sup>1</sup>, Mr. Michele Rocco (Italy)<sup>1</sup>, Mr. Luca Ricci (Italy)<sup>1</sup>, Ms. Alessia Ceroni (Italy)<sup>1</sup>, Prof. Salvatore Levantino (Italy)<sup>1</sup>, Prof. Andrea Leonardo Lacaita (Italy)<sup>1</sup>, Prof. Luca Bertulessi (Italy)<sup>1</sup>, Prof. Andrea Bonfanti (Italy)<sup>1</sup>, Prof. Carlo Samori (Italy)<sup>1</sup> (1. Politecnico di Milano)





Continued from **Wednesday, 16 April**

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)<sup>1</sup>, Mr. Deniz Umut Yildirim (United States)<sup>1</sup>, Dr. Saransh Sharma (United States)<sup>1</sup>, Prof. Donghyeon Han (Korea, Republic of)<sup>2</sup>, Dr. Rishabh Mittal (United States)<sup>3</sup>, Mrs. Husna Ellis (United States)<sup>1</sup>, Mr. Jaehong Jung (United States)<sup>1</sup>, Mr. Eunseok Lee (United States)<sup>1</sup>, Mr. Yubin Cai (United States)<sup>1</sup>, Prof. Giovanni Traverso (United States)<sup>1</sup>, Prof. Anantha P. Chandrakasan (United States)<sup>1</sup> (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. Ji Xiong (China)<sup>1</sup>, [Mr. Yongling Zhang](#) (China)<sup>1</sup>, Mr. Junzai Chen (China)<sup>1</sup>, Mr. Xiaoyu Li (China)<sup>1</sup>, Mr. Jinrui Zuo (China)<sup>2</sup>, Prof. Yan Wang (China)<sup>2</sup>, Prof. Xiaoyi Wang (China)<sup>1</sup>, Prof. Jiangfeng Wu (China)<sup>1</sup>, Prof. Miao Meng (China)<sup>1</sup> (1. Tongji University, 2. Fudan University)

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)<sup>1</sup>, Mr. Ruizhi Liu (China)<sup>1</sup>, Mr. Yiqing Lan (China)<sup>1</sup>, Dr. Yilong Dong (China)<sup>1</sup>, Mr. Zhenyu Guo (China)<sup>1</sup>, Ms. Ruohan Wu (China)<sup>1</sup>, Ms. Yuxin Chen (China)<sup>1</sup>, Prof. Longyang Lin (China)<sup>1</sup>, Prof. Jerald Yoo (Korea, Republic of)<sup>2</sup>, Prof. Jiamin Li (China)<sup>1</sup> (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)<sup>1</sup>, Mr. Yuheng Wang (Macao)<sup>1</sup>, Mr. Zijian Wang (Macao)<sup>1</sup>, Prof. Yan Zhu (Macao)<sup>1</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Chi-Hang Chan (Macao)<sup>1</sup>, Prof. Minglei Zhang (Macao)<sup>1</sup> (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 Iavidnia](#) (United States)<sup>1</sup>, Ms. Bitva Darvish Rouhani (United States)<sup>2</sup>, Prof. Farinaz Koushanfar (United States)<sup>1</sup> (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)<sup>1</sup>, Mr. Hyungmin Gi (Korea, Republic of)<sup>2</sup>, Mr. Minsik Cho (Korea, Republic of)<sup>1</sup>, Mr. Mingyu Kim (Korea, Republic of)<sup>1</sup>, Mr. Donggyu Kim (Korea, Republic of)<sup>1</sup>, Mr. Sungyong Park (Korea, Republic of)<sup>2</sup>, Mr. Woonjae Lee (Korea, Republic of)<sup>2</sup>, Mr. Seonho Kim (Korea, Republic of)<sup>2</sup>, Mr. Yeohoon Yoon (Korea, Republic of)<sup>3</sup>, Mr. Shin Han (Korea, Republic of)<sup>1</sup>, Mr. Donguk Seo (Korea, Republic of)<sup>1</sup>, Prof. Jongmin Lee (Korea, Republic of)<sup>4</sup>, Prof. Yoonmyung Lee (Korea, Republic of)<sup>1</sup> (1. Dept. of Electrical and Computer Engineering, Sungkyunkwan University, 2. Samsung Electronics, 3. Hyundai Motors Company, 4. Ajou University)



Continued from Wednesday, 16 April

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)<sup>1</sup>, Mr. Xiben Jiao (China)<sup>1</sup>, Mr. Zhiyi Chen (China)<sup>1</sup>, Mr. Junyu Yang (China)<sup>1</sup>, Mr. Rui Hong (China)<sup>1</sup>, Mr. Longke Yan (China)<sup>1</sup>, Mr. Yu Long (China)<sup>1</sup>, Mr. Xiao Chen (China)<sup>2</sup>, Mr. Xiaoyu Miao (China)<sup>2</sup>, Prof. Zheng Wang (China)<sup>1</sup>, Prof. Zhengning Wang (China)<sup>1</sup>, Prof. Liang Zhou (China)<sup>1</sup>, Prof. Liang Chang (China)<sup>1</sup>, Prof. Shanshan Liu (China)<sup>1</sup>, Prof. Tae Hyoung Kim (Singapore)<sup>3</sup>, Prof. Jun Zhou (China)<sup>1</sup> (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)

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)<sup>1</sup>, Dr. Prerna Budhkar (United States)<sup>1</sup>, Dr. Gauthaman Murali (United States)<sup>1</sup>, Dr. Vui Cheng Chua (United States)<sup>2</sup>, Mr. Paolo Aseron (United States)<sup>2</sup>, Dr. Vinayak Honkote (United States)<sup>1</sup>, Dr. Ravishankar Iyer (United States)<sup>2</sup>, Mr. Nilesh Jain (United States)<sup>2</sup>, Mr. Dileep Kurian (United States)<sup>1</sup>, Ms. Anuradha Srinivasan (United States)<sup>1</sup>, Dr. Tanay Karnik (United States)<sup>1</sup> (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)<sup>1</sup>, Mr. Xichen Sun (China)<sup>1</sup>, Mr. Haozhe Zhang (China)<sup>1</sup>, Prof. Yan Wang (China)<sup>2</sup> (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)<sup>1</sup>, Dr. Luigi Fassio (Singapore)<sup>1</sup>, Prof. Massimo Alioto (Singapore)<sup>1</sup> (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 FoMJ, and -69.1dBc Reference Spur in 65nm CMOS**

» [Mr. Hanzhang Cao](#) (China)<sup>1</sup>, Ms. Chuqiao Wang (China)<sup>1</sup>, Mr. Yanwei Liu (China)<sup>1</sup>, Prof. Wen Wu (China)<sup>2</sup>, Prof. Tongde Huang (China)<sup>2</sup>, Prof. Xiaolong Liu (China)<sup>1</sup> (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)<sup>1</sup>, Prof. Zunsong Yang (China)<sup>2</sup>, [Dr. Hongyu Ren](#) (China)<sup>2</sup>, Prof. Rui P. Martins (China)<sup>1</sup>, Prof. Yan Lu (China)<sup>3</sup>, Prof. Nan Sun (China)<sup>3</sup>, Prof. Nan Qi (China)<sup>4</sup>, Prof. Yong Chen (China)<sup>3</sup> (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)<sup>1</sup>, Dr. Hongzhi Liang (China)<sup>1</sup>, Dr. Yixiao Luo (China)<sup>1</sup>, Dr. Zeyu Peng (China)<sup>1</sup>, Dr. Zhe Li (China)<sup>1</sup>, Prof. Yi Shen (China)<sup>1</sup>, Prof. Shubin Liu (China)<sup>1</sup>, Prof. Zhangming Zhu (China)<sup>1</sup> (1. Xidian University)



Continued from Wednesday, 16 April	
3:35pm	<p><b>Data Converters IV cont'd - Session 35: High-Resolution and Noise-Shaping ADCs</b>  <i>Michelangelo</i>                      Chaired by: Prof. Shaolan Li (United States) and Prof. Lu Jie (China)</p>
3:35pm	<p><b>35-5: A 110<math>\mu</math>W 99.5dB-SNDR 20kHz-BW Intrinsically Linear CTDSM with Hybrid Gm-Boosting OTA and Tri-Level FIR DACs</b>                      » <a href="#">Ms. Xinhang Xu</a> (China)<sup>1</sup>, Mr. Yaohui Luan (China)<sup>1</sup>, Mr. Jie Li (China)<sup>1</sup>, Mr. Jihang Gao (China)<sup>1</sup>, Mr. Kwok-Cheong Li (China)<sup>1</sup>, Mr. Jijia Cui (China)<sup>1</sup>, Prof. Ru Huang (China)<sup>1</sup>, Prof. Linxiao Shen (China)<sup>1</sup> (1. Peking University)</p>
4pm	<p><b>35-6: An 18-bit 183.9dB-FoMS,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</b>                      » <a href="#">Dr. Yuke Shen</a> (China)<sup>1</sup>, Prof. Shubin Liu (China)<sup>1</sup>, Mr. Deao Wu (China)<sup>1</sup>, Dr. Kui Wen (China)<sup>1</sup>, Dr. Yanbo Zhang (China)<sup>1</sup>, Prof. Yi Shen (China)<sup>1</sup>, Prof. Zhangming Zhu (China)<sup>1</sup> (1. Xidian University)</p>
4:25pm	<p><b>35-7: A 90.1dB SNDR, 180.2dB FoMSNDR, 10kHz BW Gm-C-based <math>\Delta\Sigma</math> ADC with Capacitive Input Feedforward and Duty-Cycled Gm Technique</b>                      » <a href="#">Dr. Linran Zhao</a> (United States)<sup>1</sup>, Mr. Yiming Han (United States)<sup>1</sup>, Dr. Yaoyao Jia (United States)<sup>1</sup> (1. The University of Texas at Austin)</p>
4:50pm	<p><b>35-8: A 0.0022\,mm\$^2\$, 2\,GS/s Resettable VCO-Based ADC Without Quantization Noise Shaping</b>                      » <a href="#">Mr. Tao Lu</a> (China)<sup>1</sup>, Mr. Zixiang Liu (China)<sup>1</sup>, Mr. Hao Yang (China)<sup>1</sup>, Prof. Sai-Weng Sin (Macao)<sup>2</sup>, Prof. Robert Bogdan Staszewski (Ireland)<sup>3</sup>, Prof. Fujiang Lin (China)<sup>1</sup>, Prof. Liheng Lou (China)<sup>1</sup>, Prof. Yizhe Hu (China)<sup>1</sup> (1. University of Science and Technology of China, 2. University of Macau, 3. University college dublin)</p>

3:35pm	<p><b>Biomedical Technologies and Applications II cont'd - Session 36: Communication Computing and Sensing Techniques in Biomedical Systems</b>  <i>Aquitania</i>                      Chaired by: Soner Sonmezoglu (United States) and Prof. Kaiyuan Yang (United States)</p>
3:35pm	<p><b>36-5: An Energy-Efficient Healthcare Chest Patch Interface with Multi-Domain On-Sensor Computing and Inter-Sensor Windowing</b>                      » <a href="#">Mr. Sanghyeon Cho</a> (Korea, Republic of)<sup>1</sup>, Mr. Jeonghoon Cho (Korea, Republic of)<sup>1</sup>, Mr. Hyunjoong Kim (Korea, Republic of)<sup>1</sup>, Mr. You Jang Pyeon (Korea, Republic of)<sup>1</sup>, Mr. Dong Kwan Kang (Korea, Republic of)<sup>1</sup>, Mr. Yonggi Kim (Korea, Republic of)<sup>1</sup>, Mr. Eui Sung Jung (Korea, Republic of)<sup>1</sup>, Prof. Hoon Eui Jeong (Korea, Republic of)<sup>1</sup>, Prof. Jae Joon Kim (Korea, Republic of)<sup>1</sup> (1. Ulsan National Institute of Science and Technology)</p>
4pm	<p><b>36-6: RPG-HBC: Reconfigurable Passive Galvanic Human Body Communication for Bioelectronic Implants under Varying Channel Conditions</b>                      » <a href="#">Mr. Yonghee Chang</a> (United States)<sup>1</sup>, Mr. Wei Wang (United States)<sup>1</sup>, Mr. Yiwei Zou (United States)<sup>1</sup>, Prof. Kaiyuan Yang (United States)<sup>1</sup> (1. Rice University)</p>
4:25pm	<p><b>36-7: A 0.7pArms Electrochemical Readout IC for Continuous Monitoring of Antibody Biologics in Upstream Biomanufacturing</b>                      » <a href="#">Mr. Hung-Yu Hou</a> (United States)<sup>1</sup>, Ms. Ya-Chen Tsai (United States)<sup>1</sup>, <a href="#">Mr. Wei Foo</a> (United States)<sup>1</sup>, Ms. Yan-Ting Hsiao (United States)<sup>1</sup>, Prof. Jun-Chau Chien (United States)<sup>1</sup> (1. University of California, Berkeley)</p>
3:35pm	<p><b>Digital Circuits and SoCs V cont'd - Session 37: Machine Learning and Energy Efficient SoCs</b>  <i>Brittannic</i>                      Chaired by: Gregory Chen (United States) and Prof. Visvesh Sathe (United States)</p>



Continued from **Wednesday, 16 April**

- 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)<sup>1</sup>, Ms. Zongle Huang (China)<sup>1</sup>, Mr. Wenxun Wang (China)<sup>1</sup>, Mr. Yifan He (China)<sup>1</sup>, Mr. Shupef Fan (China)<sup>1</sup>, Dr. Xiaoyu Feng (China)<sup>1</sup>, Dr. Wenyu Sun (China)<sup>1</sup>, Prof. Yongpan Liu (China)<sup>1</sup> (1. Tsinghua University)
- 4pm **37-5: A 22nm Resource-Frugal Hyper-Heterogeneous Multi-Modal System-on-Chip Towards In-Orbit Computing**  
 » [Dr. guan cheng](#) (Japan)<sup>1</sup>, Mr. qiufeng li (China)<sup>2</sup>, Mr. Weirong Dong (China)<sup>2</sup>, Mr. mingtao zhang (Japan)<sup>1</sup>, Prof. Ruilin Zhang (Japan)<sup>1</sup>, Prof. mingqiang huang (China)<sup>2</sup>, Prof. Hao Yu (China)<sup>2</sup>, Prof. yiyu shi (United States)<sup>3</sup>, Prof. hiromitsu awano (Japan)<sup>1</sup>, Prof. takashi sato (Japan)<sup>1</sup>, Prof. Longyang Lin (China)<sup>2</sup>, Prof. masanori hashimoto (Japan)<sup>1</sup> (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 1.8µs Configuration Time in 22nm FinFET**  
 » [Dr. Prashanth Mohan](#) (United States)<sup>1</sup>, Mr. Siddharth Das (United States)<sup>1</sup>, Dr. Ken Mai (United States)<sup>1</sup> (1. Carnegie Mellon University)
- 4:50pm **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**  
 » [Mr. Fengshi Tian](#) (Hong Kong)<sup>1</sup>, Mr. Jinbo Chen (China)<sup>2</sup>, Mr. Kunming Shao (Hong Kong)<sup>1</sup>, Ms. Zilu Liu (Hong Kong)<sup>1</sup>, Mr. Jiakun Zheng (Hong Kong)<sup>1</sup>, Mr. Hui Wu (China)<sup>2</sup>, Mr. Chaoming Fang (China)<sup>2</sup>, Ms. Xiaomeng Wang (Hong Kong)<sup>1</sup>, Mr. Ziyang Shen (China)<sup>2</sup>, Mr. Pingcheng Dong (Hong Kong)<sup>1</sup>, Dr. Yuan Yao (Hong Kong)<sup>1</sup>, Dr. Xuliang Wang (China)<sup>3</sup>, Dr. Jie Yang (China)<sup>2</sup>, Prof. Mohamad Sawan (China)<sup>2</sup>, Prof. Chi-Ying Tsui (Hong Kong)<sup>1</sup>, Prof. Kwang-Ting Cheng (Hong Kong)<sup>1</sup> (1. Hong Kong University of Science and Technology, 2. Westlake University, 3. Tsinghua University)

- 5:15pm **37-8: Opal: A 16nm Coarse-Grained Reconfigurable Array for Full Sparse ML Applications**  
 » [Mr. Po-Han Chen](#) (United States)<sup>1</sup>, Mr. Bo Wun Cheng (United States)<sup>1</sup>, Mr. Michael Oduoza (United States)<sup>1</sup>, Mr. Zhouhua Xie (United States)<sup>1</sup>, Mr. Kalhan Koul (United States)<sup>1</sup>, Mr. Sai Gautham Ravipati (United States)<sup>1</sup>, Mr. Yuchen Mei (United States)<sup>1</sup>, Mr. Rupert Lu (United States)<sup>1</sup>, Mr. Alex Carsello (United States)<sup>1</sup>, Prof. Mark Horowitz (United States)<sup>1</sup>, Prof. Priyanka Raina (United States)<sup>1</sup> (1. Stanford University)

- 5:30pm **CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Keynote 1: Chip to Chip Communication for Next Generation AI Datacenters**  
*Olympia*

- 6:15pm **CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Networking Reception**  
*Skyline Ballroom*

**Thursday, 17 April**

- 7am **CHISIC WORKSHOP REGISTRANTS ONLY - Breakfast (provided)**  
*Skyline Ballroom*

- 8am **CHISIC WORKSHOP REGISTRANTS ONLY - CHISIC Workshop**  
*Brittannic*

- 10:05am **Break**  
*Grand Ballroom Foyer*



Continued from **Thursday, 17 April**

10:20am **CHISIC WORKSHOP REGISTRANTS ONLY -  
CHISIC Workshop**  
*Brittannic*

12:20pm **Group Pictures**  
*Skyline Ballroom*

12:25pm **.CHISIC WORKSHOP REGISTRANTS ONLY -  
Lunch Break (provided)**  
*Skyline Ballroom*

1:25pm **CHISIC WORKSHOP REGISTRANTS ONLY -  
CHISIC Workshop**  
*Brittannic*

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*