CONFERENCE PROGRAM

Conference Chair: Bich Yen Nguyen
General Chair: Yuichiro Mitani
Executive Chair: Thuy B. Dao
Local Arrangement Chair: John Stone
Keynote Speaker Chair: Aaron Thean
Tutorial Chair: Kenji Okada
Publicity & Award Chair: Mariam Sadaka
Publication Chair: Vern Baumberger
Treasurer: Dina H. Triyoso
Secretary: Koji Eriguchi
Technical Program Committee Members

Jan Ackaert, ON Semiconductors
Serge Bardy, NXP
Lorenzo Cerati, ST Microelectronics
Adrian Chasin, imec
Kin P. (Charles) Cheung, NIST
Xi Chen, Qualcomm
Stefano D’Amico, University of Salento
Thuy B. Dao, NXP
Thomas Ernst, CEA/LETI
Bao Fang, Qualcomm
Koji Eriguchi, Kyoto University
Philippe Galy, ST Microelectronics
Steve Heinrich-Barn, Texas Instruments
Hideto Hidaka, Renesas
Rouwaida Kanj, American Univ. of Beirut
John Stone, NXP
Dong X. Mai, ICDREC
Kenji Okada, TowerJazz Panasonic
Semiconductor

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Paul Grudowski, NXP
Yuichiro Mitani, Toshiba
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Fabio Pellizzer, Micron
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Shivam Priyadarshi, Qualcomm
Mariam Sadaka, Soitec
Ashoka Sathanur, Philips
Andrea Scarpa, NXP
Mirko Scholz, imec
Xuan-Tu Tran, VNU-UET
Dina Triyoso, GLOBALFOUNDRIES
Xin Lin, NXP
Nuo Xu, Samsung
Liang Men, Apple
Mo L. Dang, ICDREC
Wenke Weinreich, IMEC
Akif Sultan, GLOBALFOUNDRIES
This meeting is sponsored by:
Conference Program Overview

Wednesday, May 24th, 2017

Opening remarks (Bich-Yen Nguyen) .............................................................. 09:00 AM – 09:10 AM
Keynote: Dr. Philippe Flatresse, ST Microelectronics .............................. 09:10 AM – 09:55 AM
Keynote: Dr. Ron Martino, NXP ................................................................. 09:55 AM – 10:40 AM

Coffee Break ........................................................................................................ 10:40 AM – 11:00 AM
Session A: Advanced Transistors/Materials
(Chairs: Thuy Dao and Dina Triyoso) .......................................................... 11:00 AM – 12:15 PM
Workshop A ........................................................................................................ 12:15 PM – 01:00 PM
Lunch ............................................................................................................... 01:00 PM – 02:00 PM
Session B: Advanced Memory Technologies
(Chairs: Hideto Hidaka, Olivier Webber) ................................................... 02:00 PM – 02:50 PM
Session C: RF, Analog and Mixed-Signal
(Chairs: Stefano D’Amico and Andrea Scarpa) .............................................. 02:50 PM – 03:50 PM
Coffee Break ....................................................................................................... 03:50 PM – 04:00 PM
Session D: SoC, DFM, CAD
(Chairs: Rouwaida Kanj and Stephen Heinrich-Barn) .............................. 04:00 PM – 05:00 PM
Workshop B, C & D .................................................................................. 05:00 PM – 06:00 PM

Reception at Salt Lick BBQ-Driftwood ......................................................... 06:45 PM – 08:45 PM
Conference Program Overview

Thursday, May 25th, 2017

Opening remarks (Yuuichiro Mitani) ................................................................. 09:00 AM – 09:10 AM
Keynote: Dr. Yang Du, Qualcomm ................................................................. 09:10 AM – 09:55 AM
Keynote: Dr. Mark Rodder, Samsung ............................................................. 09:55 AM – 10:40 AM

Coffee Break ..................................................................................................... 10:40 AM – 11:00 AM

Session E: Focus Session on IoT and Autonomous Car
(Chairs: Mariam Sadaka, Philippe Flatresse) ............................................. 11:00 AM – 12:00 AM
Lunch .............................................................................................................. 12:00 AM – 01:00 PM

Session F: Low Power and 3D Integration
(Chairs: Xuan-Tu Tran and Paul Grudowski) .............................................. 01:00 PM – 02:00 PM

Session G: Emerging Technology
(Chairs: Thomas Ernst, Louis Hutin) ........................................................ 02:00 PM – 02:50 PM
Coffee Break .................................................................................................. 02:50 PM – 03:10 PM

Session H: Quantum Computing and Advanced Materials
(Chairs: Philippe Galy) .................................................................................. 03:10 PM – 03:35 PM

Session I: Reliability
(Chair: Yuuichiro Mitani and Kochi Eriguchi) ............................................ 03:35 PM – 04:00 PM
Workshop F, G, H, & I .................................................................................. 04:00 PM – 05:00 PM

Awards, Closing Remarks and ICICDT 2018 Announcement ............... 05:00 PM – 05:30 PM

Post Conference Meeting for TPC ............................................................... 05:30 PM – 08:00 PM
Conference Program

Wednesday, May 24th, 2017

9:00 AM Welcome and opening remarks – Bich-Yen Nguyen

Keynote

Wednesday, May 24th, 2017

9:10 AM Keynote - Leveraging Body Bias in Automotive and IoT applications, Dr. Philippe Flatresse – (ST Microelectronics)


10:40 AM: Coffee Break

Session A – Advanced Transistors and Materials

Wednesday, May 24th, 2017

Session Chairs: Thuy Dao

11:15 AM Layout Engineering to Suppress Hysteresis of Negative Capacitance FinFET, Eunah Ko, Jaesung Jo, Changhwan Shin (1) and Bich-Yen Nguyen (2), 1: University of Seoul, Korea; 2: Soitec, USA

11:25 AM Invited - FDSOI material enabling CMOS technology disruption from 65nm to 12nm and beyond, W. Schwarzenbach, M. Sellier, B.-Y. Nguyen, C. Girard, C. Maleville, Soitec, France


11:50 AM Invited - Nonlinear Optics with fully integrated transition metal oxides, Alex Demkov, University of Texas-Austin

12:05 PM Microstructure and ferroelectricity of BaTiO3 thin films on Si for integrated photonics, Kristy J. Kormondy (1), Youri Popoff (2), Marilyne Sousa (2), Felix Eltes (2), Daniele Caimi (2), Marta D. Rossell (3), Manfred Fiebig (4), Patrik Hoffmann (5, 6), Chiara Marchiori (2), Michael Reinke (5, 6), Morgan Trassin (4), Alexander A. Demkov (1), Jean Fompeyrine (2), and Stefan Abel (2), 1: University of Texas-Austin, 2: IBM Research, 3,5: Swiss Federal Laboratories, 4: ETH Zurich, 6:EPFL

12:15 PM - 01:00 PM Workshop Sessions A

01:00 PM - 02:00 PM Lunch
Session B – Advanced Memory Technologies
Wednesday, May 24th, 2017
Session Chair: Hideto Hidaka and Olivier Webber

2:00 PM  Invited - SRAM Designs for 5nm Node and Beyond: Opportunities and Challenges, T. Huynh-Bao, J. Ryckaert, A. Spessot, D. Verkest, A. Mocuta, IMEC, Belgium

2:15 PM  An Approximate Embedded SRAM for Low-Power Multimedia Applications, Samira Ataei and James E. Stine, Oklahoma State University, Stillwater, USA

2:25 PM  Dedicated Technology Threshold voltage tuning for 6T SRAM beyond N7, Mohit Kumar Gupta (1, 2), Pieter Weckx (2), Stefan Cosemans (2), Pieter Schuddinck (2), Rogier Baert (2), Doyoung Jang (2), Yasser Sherazi (2), Praveen Raghavan (2), Alessio Spessot (2), Anda Mocuta (2), Wim Dehaene (1, 2), 1: KU Leuven, 2: IMEC, Belgium

2:35 PM  Invited - NRAM Status and Prospects, David Gilmer, Nantero, USA

Session C – RF, Analog and Mixed-Signal
Wednesday, May 24th, 2017
Session Chairs: Stefano D’Amico and Andrea Scarpa

2:50 PM  PAPER WITHDRAWN

3:00 PM  PAPER WITHDRAWN

3:10 PM  PAPER WITHDRAWN

3:20 PM  Wideband Inductorless CMOS RF Front End For LTE Receivers, Badr, Eman (1), Shawkey, Heba (4); Ismail, Yehea (2, 3); Zekry, Abdelhalim (1); 1: Faculty of Engineering Ain Shams University, Cairo, 2: American University in Cairo, 3:
International Conference on IC Design and Technology (ICICDT)

May 23rd – 25th, 2017
Austin, Texas, USA
www.icicdt.org

Zewail City for Science and Technology, Giza, 4: Electronics Research Institute (ERI), Giza, Egypt

3:30 PM   PAPER WITHDRAWN

3:40 PM   Fluids energy harvesting system with low cut-in velocity piezoelectric MEMS, Biccario G.E. (1, 2); De Vittorio M. (1, 2); D’Amico S. (2); 1: CBN – Center for Biomolecular Nanotechnologies, IIT – Istituto Italiano di Tecnologia, Lecce, Italy, 2: Dipartimento di Ingegneria dell’Innovazione – Università del Salento, Lecce, Italy

3:50 PM - 4:00 PM   Coffee Break

Session D: SoC, DFM. CAD

Wednesday, May 24th, 2017
Session Chairs: Rouwaida Kanj and Steve Heinrich-Barna

4:00 PM   Invited - Statistical Circuit Performance Dependency Analysis via Sparse Relevance Kernel Machine, Honghuang Lin (1), Peng Li (2), Asad Khan (3), 1: Texas Instruments, 2: Texas A&M University, USA

4:15 PM   Invited - Process Variation Aware STT-RAM simulation Tool: NVSim-VXs, Enes Eken (1), Linghao Song (1), Ismail Bayram (1), Cong Xu (2), Wujie Wen (3), Y. Xie (4), Y. Chen (1), 1: University of Pittsburgh, USA, 2: Hewlett Packard Labs, USA, 3: Florida International University, USA; 4: University of California at Santa Barbara, USA

4:30 PM   Toward GDBIMOS for thin silicon ESD protection in advanced FDSOI CMOS technologies, De Conti, Louise (1, 2, 3); Bedecarrats, Thomas (1, 2, 3); Vinet, Maud (3); Cristoloveanu, Sorin (2); Galy, Philippe (1); 1: IMEP, 3 Parvis Louis Néel, 3: CEA LETI, France
4:40 PM  **A resistance model of integrated octagonal-shaped Hall sensor using JFET compact model**, Skalsky, Milos (1); Banas, Stanislav (2); Panko, Vaclav (2); 1: ON Semiconductor, USA, 2: ON Semiconductor, Czech Republic

4:50 PM  **Yield and Energy Tradeoffs of an NVLatch Design using Radial Sampling**, Issa, Adam (1); Kanj, Rouwaida (1); Chehab, Ali (1); Joshi, Rajiv (2); 1: American university of Beirut, Lebanon, 2: IBM TJ Watson Labs. USA

5:00 PM – 6:00 PM: Workshop Sessions B, C & D

6:45 PM –  Reception at Salt Lick BBQ in Driftwood
Thursday, May 25th, 2017

9:00 AM Opening remarks – Yuichiro Mitani

Keynote

9:10 AM Keynote - IoT: fueling the next wave of industrial IC innovations, Dr. Yang Du (Senior Director, Qualcomm)

9:55 AM Keynote - Technology Scaling Challenges to System-Level Opportunities - Dr. Mark Rodder (SVP, Samsung)

10:40 AM Coffee Break

Session E – Focus Session- IoT and Autonomous Car

Thursday, May 25th, 2017

Session Chairs: Mariam Sadaka, Philippe Flatresse

11:00 AM Invited - SOTB (Silicon on Thin Buried Oxide): More than Moore technology for IoT and Automotive, Takumi Hasegawa, Yoshiki Yamamoto, Hideki Makiyama, Hiroki Shinkawata, and Shiro Kamohara, Renesas Electronics, Japan

11:30 AM Invited – Fully Depleted Device Design for Ultra Low Power & IoT applications, Olivier Webber, CEA-Leti, France

12:00 AM - 01:00 PM Lunch
Session F – Low Power and 3D Technologies
Thursday, May 25th, 2017
Session Chairs: Xuan-Tu Tran, Paul Grudowski

1:00 PM  Invited - A 910nW Delta Sigma Modulator using 65nm SOTB Technology for Mixed Signal IC of IoT Applications, Ishibashi, Koichiro (1); Kikuchi, Junya (1); Sugii, Nobuyuki (2); The University of Electro-Communications, Japan, 2: Low-power Electronics Association & Project

1:15 PM  Power Consumption Estimation using VNOC2.0 Simulator for a Fuzzy-Logic based Low Power Network-on-Chip, Phan, Hai-Phong (1); Tran, Xuan-Tu (1); Yoneda, Tomohiro (2); 1: VNU - University of Engineering and Technology, Vietnam, 2: National Institute of Informatic

1:25 PM  Low Power Fast Wakeup Flash Memory System for Embedded SOCs, Ramanan, Karthik; Williams, Jacob, NXP Semiconductor, USA

1:35 PM  Low Power Adiabatic Logic Based on 2PC2AL, Han, Mei; Takahashi, Yasuhiro; Sekine, Toshikazu, Gifu University, Japan

1:45 PM  Invited - Innovative and 3D Stacking Micro Electro Mechanical Systems (I-MEMS) for Power Saving, Kiyoshi Mori (1), Ziep Tran (1), Giang Dao (1), Michael Ramon (1), Jason Woo (2), Peng Lu (2), 1: INOSO, Austin, Texas, 2: University of California, Los Angeles, California, USA.
Session G – Emerging Technology
Thursday, May 25th, 2017
Session Chair: Thomas Ernst

2:00 PM  Invited - Electronic, Thermal, and Unconventional Applications of 2D Materials, Eric Pop, Stanford University, USA

2:15 PM  Invited - Integrated electrical sensing for high-throughput bioanalytics, Carlotta Guiducci, EPFL, Swiss

2:30 PM: Dadda Multiplier Designs Using Memristors, Guckert, Lauren Elise; Swartzlander. Jr., Earl E.; University of Texas at Austin, USA

2:40 PM: Design considerations for optimization of pull-instability margin in electrostatic N/MEM relays, Giulia Usai (1), Louis Hutin (1), Jose Luis Muñoz-Gamarra (1), Thomas Ernst (1), Maud Vinet (1), Philip X.-L. Feng (2), 1: CEA Leti, France, 2: Case School of Engineering Case Western Reserve University, USA

2:50 PM – 3:10 PM  Coffee Break

Session H – Quantum Computing and Advance Materials/Applications
Thursday, May 25th, 2017
Session Chair: Philippe Galy

3:10 PM  Invited - SOI CMOS Technology for Quantum Information Processing: a path towards quantum bits and control electronics co-integration?, Louis Hutin, CEA- LETI, France

3:25 PM  Advances of the development of a ferroelectric field-effect transistor on Ge(001), Patrick Ponath a, Agham Posadas a, Michael Schmidt b, Paul Hurley b, Ray Duffy b, Jian Wang c, Chadwin Young c, Alexander A. Demkov a, The University of
Session I: Reliability
Thursday, May 25th, 2017
Session Chair: Yuichiro Mitani, Koji Eriguchi

3:35 PM Invited - Interfacial Transition Layer in Thermally grown SiO2 Film on 4H-SiC, Ryu Hasunuma and Kikuo Yamabe, University of Tsukuba, Japan

3:50 AM Circuit-level Simulation Methodology for Random Telegraph Noise by Using Verilog-AMS, Takuya Komawaki (1), Michitarou Yabuuchi (1), Ryo Kishida (1), Jun Furutay (1), Takashi Matsumoto (2), Kazutoshi Kobayashi (1), 1: Kyoto Institute of Technology, 2: University of Tokyo, Japan

4:00 PM Workshop Sessions F, G, H & I

5:00 PM Best student paper award, Closing Remarks & Presentations of ICICDT 2018.

5:30 PM Post Conference Meeting for TPC