

DECEMBER 18 (Saturday)**Registration**

7:00 8:50

Opening

9:00 9:10 Opening remark (Shur & Park)

Session 1 CMOS 1 : Downscaled devices

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
9:10 9:35	1-1	<i>Invited Paper</i> : Sub 100nm CMOS Technology Challenges for Mobile Systems	Hans Stork	Texas Instrument, US	I029
9:35 10:00	1-2	<i>Invited Paper</i> : Are We at the End of CMOS Scaling?	Ghavam Shahidi	IBM, US	I008
10:00 10:25	1-3	<i>Invited Paper</i> : 3D Size Effects in Advanced SOI Devices	Sorin Cristoloveanu	ENSERG, France	I010

Break

10:25 10:45

Session 2 CMOS 2 : High carrier transport and modeling

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
10:45 11:10	2-1	<i>Invited Paper</i> : Analysis of the effects of strain on ultra-thin SOI MOS devices	Enrico Sangiorgi	University of Bologna, Italy	I014
11:10 11:35	2-2	<i>Invited Paper</i> : Experimental Study on Carrier Transport Mechanisms in Ultrathin-body SOI MOSFETs	Ken Uchida	Toshiba Corp. Japan	I004
11:35 12:00	2-3	<i>Invited Paper</i> : Device Simulation Demands of Upcoming Microelectronic Devices	Siegfried Selberherr	Institute for Microelectronics, TU Vienna, Austria	I021

Lunch

12:10 14:00

Session 3 CMOS 3 : New materials and structures

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
14:00 14:25	3-1	<i>Invited Paper</i> : Silicon On Nothing (SON) - technology & devices	Thomas Skotnicki	STMicroelectronics, France	I024
14:25 14:50	3-2	<i>Invited Paper</i> : Highly scaled CMOS Device Technologies with New Structures and New Materials	Yang Yuan Wang	Peking University, China	I025
14:50 15:15	3-3	<i>Invited Paper</i> : Performance Limitations of Devices and Interconnects and Possible Alternatives for Nanoelectronics	Krishna C. Saraswat	Stanford University, US	I020
15:15 15:40	3-4	<i>Invited Paper</i> : Devices architectures and innovations for the Nanoelectronics era	Simon Deleonibus	CEA, France	I005

Break

15:40 16:00

Session 4

CMOS 4 : Scaling & Materials

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
16:00 16:25	4-1	<i>Invited Paper</i> : Novel High-K Gate Stacks for Future Transistor Generations	Gennadi Bersuker	International SEMATECH/ATDF, US	I028
16:25 16:50	4-2	<i>Invited Paper</i> : Intrinsic Limitations on the Performance of CMOS Devices with High-k Gate Dielectrics	Gerald Lucovsky	North Carolina State University, US	I031
16:50 17:20	4-3	Y2O3-La2O3 High-K Gate Insulator Technique	Kunihiro Miyauchi	Tokyo Institute of Technology, Japan	H039
17:20 17:55	4-4	<i>Invited Paper</i> : Advanced Technologies for Electronics Cooling	Thomas Kenny Kenneth Goodson	Stanford University, US	I002

Reception & Dinner

18:30 21:00

DECEMBER 19 (Sunday)**Session 5**

Nanowire/Nanotube & Quantum Device

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
8:30 8:55	5-1	<i>Invited Paper</i> : Recent Progress in Carbon nanotube Field Emitter and Field Emission Display	Jong Min Kim	Samsung Advanced Institute of Technology, Korea	I009
8:55 9:20	5-2	<i>Invited Paper</i> : Quantum Well Silicon-on-Insulator Devices: Tunneling Transistors and Intersubband Laser	Alex Zaslavsky	Brown University, US	I017
9:20 9:45	5-3	<i>Invited Paper</i> : Carbon Nanotubes: From Synthesis To Electronics	Hongjie Dai	Stanford University, US	I003
9:45 10:10	5-4	<i>Invited Paper</i> : Ultra-Low Power III-V Quantum LSIs for Intelligent Quantum Chips	Hideki Hasegawa	Hokkaido University, Japan	I019

Break

10:10 10:30

Session 6

Physical Analysis, MEMS & Advanced Material

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
10:30 10:55	6-1	<i>Invited Paper</i> : Soft and Hard X-ray excited Photoelectron Spectroscopy Studies on Gate Insulators at Spring-8	Takeo Hattori	Mushashi Institute of technology, Japan	I006
10:55 11:20	6-2	<i>Invited Paper</i> : Application oriented MEMS by open collaboration	Masayoshi Esashi	Tohoku University, Japan	I007
11:20 11:45	6-3	<i>Invited Paper</i> : Flexible and Deformable Electronic Surfaces	J.C.Sturm	Princeton University, US	I023
11:45 12:05	6-4	Stretchable interconnects for conformable electronic surfaces	Stephanie P. Lacour	Harvard University, US	H014

Lunch

12:10 14:00

Excursion

14:00 18:00

DECEMBER 20 (Monday)

Session 7

GaN, High-speed & Power Devices

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
8:30 8:55	7-1	<i>Invited Paper</i> : Ballistic Electron Acceleration Negative-differential-conductivity Device	Lester F. Eastman	Cornell University, US	I001
8:55 9:20	7-2	<i>Invited Paper</i> : High-power switching using III-Nitride Metal-Oxide-Semiconductor Heterostructures	Grigory S. Simin	University of South Carolina, US	I011
9:20 9:45	7-3	<i>Invited Paper</i> : Recent Progress on GaN-based Electron Devices	Daisuke Ueda	Matsushita Electric Industrial Co.Ltd., Japa	I012

Break

9:45 10:05

Session 8

Spintronics and silicon based devices

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
10:05 10:25	8-1	Spin Injection and Spin Current Through Schottky Barriers for Spintronic Devices	Ming-C.Cheng	Clarkson University, US	H023
10:25 10:45	8-2	Silicon-Based Integrated MOSFETs and MESFETs : A New Paradigm for Low Power, Mixed Signal, Monolithic Systems using Commercially Available SOI	Trevor J Thornton	Arizona State University, US	H008
10:45 11:05	8-3	Design, Modeling, Testing, and SPICE Parameter Extraction of DIMOS Transistor in 4H-Silicon Carbide	Md Hasanuzzaman	The University of Tennessee, US	H005
11:05 11:25	8-4	Realization of Symmetrical CMOS Using Dual-Channel Hetero-FETs	Pallab Dutta	IIT Kharagpur, India	H021
11:25 11:45	8-5	Hybrid Semiconductor/Molecular Integrated Circuits: Prospects and Problems	Konstantin K. Likharev	Stony Brook University, US	H012
11:45 12:05	8-6	Improved Double Gate MOSFET's with Beneficial Drain Engineering and Novel Double Gate Junction FET's with "Square" Body for 10nm Era	Ru Huang	Institute of Microelectronics, Peking University, China	H019

Lunch

12:10 14:00

Session 9

Nanoelectronics & Optoelectronics 1

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
14:00 14:25	9-1	<i>Invited Paper</i> : Optical Frequency Modulation: Sources and Detectors	Serge Luryi	SUNY-Stony Brook, US	I018
14:25 14:45	9-2	Recent development of Sb-based phototransistors in the 0.9- to 2.2- μm wavelength range for applications to laser remote sensing	M. Nurul Abedin	NASA Langley Research Center, US	H025
14:45 15:05	9-3	Lithium Niobate/ Tantate Epitaxial Integration with wide bandgap Semiconductors: Could This Be The Next "Great" Platform For Advanced Optoelectronic-Electronic Devices?	W. Alan Doolittle	Georgia Institute of Technology, US	H026
15:05 15:20	9-4	GaAs-Based Vertical External Cavity Surface Emitting Lasers Emitting at 1300 nm with Resonant Periodic Gain from Multiple Sheets of InAs/InGaAs Quantum Dots	J. A. Lott	Air Force Institute of Technology, US	H028

Break

15:20 15:40

Session 10 Nanoelectronics & Optoelectronics 2

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
15:40 16:00	10-1	Resonant Periodic Gain from Multiple Sheets of InAs/InGaAs	Vahé Nerguizian	École de Technologie Supérieure, Canada	H007
16:00 16:20	10-2	Backward THz parametric oscillator without cavity	Yujie J. Ding	Lehigh University, US	H029
16:20 16:40	10-3	Terahertz loss and gain in a Bloch oscillating INA/AlSb super-superlattices	S.James Allen	University of California, Santa Barbara, US	H017
16:40 17:00	10-4	High power 2.3- μ m lasers array with 10 W CW at room temperature	Gregory L. Belenky	State University of New York, US	H011
17:00 17:20	10-5	Super Radiant Dissipative Tunneling in a Quantum Dot Micro Cavity	Eliade Stefanescu	Romanian Academy, Rumania	H015

Break

17:20 20:00

Session 11 Evening Panel

Organizer : Michael Chur (Under negotiation)

20:00 22:00 What devices will dominate in 2035 after CMOS scaling reaches its limit?

DECEMBER 21 (Tuesday)

Session 12 Nanoelectronics Bio and Organic Technology

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
8:30 8:55	12-1	<i>Invited Paper</i> : Opportunities for Organic Electronics	Peter Peumans	Stanford University, US	I027
8:55 9:20	12-2	Modeling of the Electrostatic (Plasmon) Resonances In Metallic and Semiconductor Nanoparticles	Isaak D. Mayergoyz	University of Maryland, US	H024
9:20 9:45	12-3	Silicon Fibre Technology Development for Wearable and Ambient Electronics Applications	Thomas Healy	NMRC, University College, Ireland	H022
9:45 10:05	12-4	Mixed-Valence Transition-Metal Complex Based integral Architecture for Molecular Comput	Peiji Zhao	North Carolina State University, US	H034

Break

10:05 10:25

Session 13 High-Speed/Optoelectronics Devices

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
10:25 10:45	13-1	Plasma Wave Deep Water Instability in Two Dimensional Electron Layers	M. Dyakonov	laboratoire de Physique Mathématique, Frar	H004
10:45 11:05	13-2	Terahertz Quantum-cascade Lasers	Qing Hu	Massachusetts Institute of Technology, US	H006
11:05 11:25	13-3	Terahertz Emission Using Quantum Dots and Microcavities	G.S.Solomon	Stanford University, US	H036
11:25 11:45	13-4	The Growth and Characterization of Room Temperature Ferromagnetic Wideband-gap Materials fro Spintronic Applications	Ian T. Ferguson	Georgia Institute of Technology, US	H038
11:45 12:05	13-5	Enhancing Power Electronic Devices with Wide Bandgap Semiconductors	Madhu Chinthavali	Oak Ridge National Laboratory, US	H010

Lunch

12:10 14:00

DECEMBER 22 (Wednesday)

Session 14						
THz-Frequency Devices and Novel Concepts						
<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>	
8:30	8:55	14-1	Bio-Molecular Electronic Architectures for Enhanced Sensing of THz-Frequency Bio-Signatures	Dwight L. Woolard	U.S.Army Research Laboratory, US	H033
8:55	9:15	14-2	Resonant Terahertz Photomixers Using Plasma Oscillations: Operation, Device Models, and Characteristics	Maxim Ryzhii	University of Aizu, Japan	H003
9:15	9:35	14-3	Wigner Function Studies of Spin Transport In Dilute Magnetic Semiconductor RTDs	H.L.Grubin	University of Hartford, US	H031
9:35	9:55	14-4	Biologically-inspired Chemically-directed Self-assembly of Semiconductor Quantum-dot-based Systems: Potential Applications in Terascale Electronic Integration with Biomolecular Links, Terahertz Nanomechanical Structures, and Terahertz Sensors	Michael A. Stroscio	University of Illinois, US	H018
9:55	10:15	14-5	Terahertz Molecular Electronics	Jorge M. Seminario	Texas A&M University, US	H037
10:15	10:35	14-6	Terahertz Circular Dichroism Spectroscopy of Biomaterial	Jing Xu	University of California, Santa Barbara, US	H016
10:35	10:55	14-7	Simulating Nanoscale Semiconductor Devices	Matthew Lasater	North Carolina State University, US	H035
Break						
10:55	11:15					

Session 15						
Lithography						
<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>	
11:15	11:40	15-1	<i>Invited Paper</i> : Current issues and future prospects of lithography	Shinji Okazaki	ASET, Japan	I013
11:40	12:05	15-2	<i>Invited Paper</i> : Nanoimprint Lithography (NIL) and Lithographically-Induced Self-Assembly (LISA) and Nanondevices Applications	Stephen Y. Chou	Princeton University, US	I016

Lunch
12:10 14:00

Session 16						
Si-Based Semiconductor Technology						
<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>	
14:00	14:20	16-1	Theoretical Study of Point Defects in ZrO ₂ -Silicon Interfaces	Koichi Yamashita	University of Tokyo, Japan	H027
14:20	14:40	16-2	Analysis of 4H-SiC based Power MOSFET with potential use in the design of a DC-DC Converter	Prasanta K. Ghosh	Syracuse University, US	H009
14:40	15:00	16-3	Neuro-Fuzzy Modeling of SiGe:C-HBTs: A Comparison with VBIC	Anindya Mukherjee	IIT Kharagpur, India	H020
15:00	15:20	16-4	A New Approach to Characterize and Predict Lifetime of Deep-Submicron nMOS Devices	J.J.Liou	University of Central Florida, US	H013
15:20	15:40	16-5	Engineering-Economic Analysis of Energy Efficiency Improvement for TV-Set	T.M. Indra Mahlia	University of Malaya, Malaysia	H001

Break

15:40 16:00

Session 17

Future Concept

<i>Time Slot</i>	<i>No.</i>	<i>Title</i>	<i>Speaker</i>	<i>Affiliation</i>	<i>Ref. No</i>
16:00 16:25	17-1	<i>Invited Paper</i> : Nanoelectronics: Opportunities and Challenges	H.-S. Philip Wong	Stanford University, US	I015
16:25 16:50	17-2	<i>Invited Paper</i> : Quantum Injection MOSFETs	Woo Jason C.S	UCLA, US	I030
16:50 17:10	17-3	(To be determined)	Yoshio Nishi	Stanford University, US	H040
17:10 17:30	17-4	(To be determined)	Hiroshi Iwai	Tokyo Institute of Technology, Japan	H041
17:30 17:50	17-5	Physics of Polarization Effects in Nitride Semiconductor Devices	Michael.S.Shur	Rensselaer Polytechnic Institute, US	H032
17:50 18:20	17-6	<i>Invited Paper</i> : Frontiers of Nano-Bio System	Chun-Yen Chang	National Chiao Tung University, Taiwan	I022

Farewell Dinner
Student Paper Award Presentation

18:30 21:00