



SISC 2014

45th IEEE Semiconductor Interface Specialists Conference



Bahia Resort Hotel, San Diego, CA

December 10–13, 2014 (Tutorial: December 10)

www.ieeesisc.org



Call for Papers

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The SISC is a workshop-style conference that provides a forum for device engineers, solid state physicists, and materials scientists to discuss topics of common interest, formally through invited and contributed presentations, and informally during various events including a poster presentation session. The SISC is sponsored by the IEEE Electron Devices Society, and will be held immediately prior to the IEEE IEDM.

The program includes talks (*theory and experiment*) from all areas of MOS science and technology, including but not limited to:

- **SiO₂ and high-k gate dielectrics** on Si and their interfaces.
- **Insulators on high-mobility and alternative substrates** (SiGe, Ge, III-V and III-N, SiC, etc.)
- MOS gate stacks with **metal gate electrodes**
- Stacked dielectric layers for **non-volatile memory**
- **Oxide and interface structure**, chemistry, defects, and passivation: Theory and experiment
- **Electrical characterization, performance and reliability** of MOS-based devices
- **Surface cleaning technology** and impact on dielectrics and interfaces
- Dielectrics on **nanowires/-tubes and graphene**
- **Oxide electronics and multiferroics**
- **Interfaces in photovoltaics**, e.g. Si passivation
- **2D materials and devices** and their interfaces



Invited speakers

- **Prof. Kevin Chen**, Hong Kong University of Science and Technology, Hong Kong
Dielectric/III-N Interfaces with Nitridation Interlayer for GaN Power Electronics
- **Dr. Luigi Colombo**, Texas Instruments, USA
2D Materials Growth and Prospects
- **Dr. Jacopo Franco**, imec, Belgium
Reliability challenges of high mobility channel technologies: SiGe, Ge and InGaAs
- **Prof. Roy Gordon**, Harvard University, USA
Single-crystal oxide insulators grown epitaxially on GaAs, Ge and GaN by ALD
- **Dr. Jan Van Houdt**, imec, Belgium
Memory technologies for the terabit era: a paradigm shift
- **Prof. Ali Javey**, UC Berkeley, USA
Contact engineering, chemical doping and heterostructures of layered chalcogenides
- **Dr. Sergei V. Kalinin**, Oak Ridge National Lab, USA
In-situ probing surfaces of oxide electronic materials with atomic resolution: physical functionalities and memristive mechanisms
- **Prof. Kousuke Nagashio**, Univ. of Tokyo, Japan
Carrier response in electric-field-induced bandgap of bilayer graphene
- **Dr. Tun-Wen Pi**, National Synchrotron Radiation Research Center, Taiwan
High k oxides on (In)GaAs surfaces studied by synchrotron radiation photoemission
- **Prof. Thomas Schroeder**, IHP (Frankfurt/Oder), Germany
From global and local Ge integration approaches on Si(001): Novel insights by advanced synchrotron XRD techniques
- **Prof. Max Di Ventra**, UCSD, USA
Memcomputing: computing with and in memory
- **Prof. Ken Uchida**, Keio University, Japan
Evaluation of thermal properties of nanoscale MOSFETs and thermal aware device design of nano devices

Wednesday evening Tutorial – free to all registered SISC attendees

- **Dr. Perrine Batude**, CEA-LETI, France
3D monolithic integration: an alternative path towards CMOS scalability

A **Best Student Presentation Award** will be given in memory of E.H. Nicollian.

Deadline for Receipt of Extended Abstracts: August 11, 2014

Abstract submission, previous technical programs, contact information, etc.: <http://www.ieeesisc.org>

