



Website: <http://icrc.ieee.org/>

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Early Registration: February 15<sup>h</sup>, 2019



### Sponsors



### General Scope

The new **International Nanodevices and Computing (INC)** conference covers the continuously evolving technology ecosystem based on nanotechnology, nanodevices and computing, supporting the global information technologies infrastructure. The INC conference includes predictions on devices for computing and communications, computer architecture, and applications. Reports from 2017 IRDS™ and early results from 2018 IRDS™ reports will be presented. In addition, state-of-the-art experimental results on these topics will be presented by an international group of invited experts, covering Nano-devices and -materials in the field of More Moore, More than Moore and Beyond-CMOS. The latest results in the field of Quantum Computing, Neuromorphic Computing, Approximate Computing, Energy efficient Computing, etc. will also be highlighted.

**IEEE International Conference on Rebooting Computing** is the premier venue for novel computing approaches, including algorithms and languages, system software, system and network architectures, new devices and circuits, and applications of new materials and physics. This is an interdisciplinary conference that has participation from a broad technical community, with emphasis on all aspects of the computing stack.



## International Nanodevices and Computing Conference

IRDS™ « International Roadmap for Devices and Systems » Conference

IEEE International Conference on Rebooting Computing

April 3-5, 2019

Minatec, Grenoble, France



### ICRC/Session “Emerging technology for probabilistic inference” 2PM - 6PM

- ◆ An optical Co-processor: Laurent Daudet - Paris Diderot (Paris VII), CTO of LightOn company
- ◆ Generating Stochastic Bits using Tunable Quantum Systems : Enrique Blair - Baylor University
- ◆ Memory at the core computation: Damien Querlioz - University of Paris-Sud/CNRS
- ◆ Asynchronous design for new device development: Laurent Fesquet – Grenoble INP
- ◆ Approximate computing: Olivier Sentieys - INRIA, University of Rennes I
- ◆ Stochastic sampling machine for Bayesian inference: Raphael Frisch - University of Grenoble Alpes

### Panel Session The next 20 years 6PM–7:30 PM

- ◆ IoT
- ◆ Architecture
- ◆ Devices
- ◆ Communication

*Welcome Reception*

### IRDS™ Conference 8AM – 1 PM

- ◆ Application Benchmarking: Tom Conte
- ◆ Outside System Connectivity: Michael Garner
- ◆ More Moore : Mustafa Badaroglu
- ◆ Cryogenic Electronics and Quantum Information Processing: Scott Holmes
- ◆ System and Architecture : Kirk Bresnicker
- ◆ Beyond CMOS and Emerging Research Materials: Shamik Das
- ◆ Packaging Integration : Dev Gupta
- ◆ Factory Integration : Supika Mashiro
- ◆ Lithography : Mark Neisser
- ◆ Metrology : George Orji
- ◆ Environment, Health, Safety and Sustainability : Leo Kenny
- ◆ Yield Enhancement : Slava Libman

### NEREID Session 2PM-2:45 PM

- ◆ More than Moore - Smart sensors, Smart Energy and Energy Harvesting: David Holden – CEA-LETI
- ◆ System design and Heterogeneous Integration: Danilo De Marchi - Politecnico Di Torino

### Session “Status and trends in Advanced Nanodevices” 2:45 PM – 7 PM

- ◆ Small Slope Switches, TFET, FeFET: Adrian Ionescu – EPFL
- ◆ Advanced Simulation of Nanodevice: Luca Selmi - IUNET– Univ. Unimore
- ◆ Ferroelectric and ionic analog memory: Alan Seabaugh – University Notre Dame, Indiana

*Cocktail Dinner*

### IEEE Conference on Rebooting Computing 8AM–5PM

#### ICRC/Session “Neuromorphic computing”

- ◆ Stefano Vassanelli - Univ. of Padova
- ◆ Joshua Yang - Univ. of Massachusetts

#### ICRC/Session “Optical computing”

- ◆ Wolfram Pernice - Univ. Münster
- ◆ Pérola Milman - Univ Paris Diderot, LMPQ, CNRS

#### ICRC/Session “Architecture”

- ◆ **Keynote speaker: Prof. Wen-mei Hwu** - Univ. of Illinois

#### ICRC/Session “Communications”

#### ICRC/Session “Quantum computing”

- ◆ Marc Sanquer - INAC

#### ICRC/Session “Energy efficient computing/Reversible computing”

- ◆ Michael Frank - Sandia National Labs
- ◆ Natesh Ganesh - UMass Amherst
- ◆ Sandip Tiwari - Cornell University

#### ICRC/Session “Spintronics/Magnonics”

- ◆ Marius Costache - ICN2
- ◆ Alice Mizrahi - CNRS Thales

