



Program Workshop

The Future of Computing and Storage

This one-day Workshop, supported by IEEE-EDS, is devoted to the update of the European contribution to the IRDS Roadmap in the field of **Cryogenic electronics & Quantum information processing (CEQIP)** and **More Moore advances**. The main challenges, most promising technologies, needed research efforts and possible applications will be presented by reknown EU experts.

Overview of European and International Perspectives

- 8:15 Introduction of the European and International Roadmaps** by Francis Balestra - CNRS-GINP/ SINANO Institute
- 8:20 IRDS Roadmap** by Paolo Gargini – IRDS Chairman
- 9:00 Overview of the European Chips Act** by Francisco Ibañez – European Commission

More Moore Advances Session

9:20 IRDS More Moore Roadmap and Implications for System Scaling by Dr Mustafa Badaroglu – Qualcomm & IRDS Team leader

10:20 Coffee-Break

- 10:40 Two-dimensional materials as a platform for SOT-based memories** by Dr Jose Hugo Garcia – ICN2
- 11:10 The role of Non-Volatile Memories in novel computing architectures** by Konrad Seidel – Fraunhofer IPMS
- 11:40 Ferroelectric memristors and memcapacitors as a CMOS compatible physical substrate for bio-inspired neuromorphic computing** by David Esseni – IUNET – University of Udine
- 12:10 Opportunities and challenges using 2D materials in nanodevices** by Inge Asselberghs – imec
- 12:40 Heterogeneous Integration of 2D Materials** by Max Lemme/Zhenxing Wang – AMO GmbH

13:10 Lunch

Cryogenic Electronics & Quantum Information Processing Session

- 14:30 IRDS Cryogenic Electronics and Quantum Information Processing (CEQIP) Roadmap Summary** by Dr Scott Holmes – IRDS Team leader
- 15:30 Cryogenic CMOS with FD SOI and Si Nanowires** by Dr Qing-Tai Zhao – JARA Institute / FZJ & RWTH
- 16:00 Challenges and possible solutions in the field of alternative Computing Architectures** by Dr Heike Riel – IBM

16:30 Coffee-Break

- 17:00 The potential and global outlook of Integrated Photonics for Quantum Technologies** by Dr Emanuele Pelucchi & Dr Giorgos Fagas – Tyndall
- 17:30 Challenges for semiconductor industry to enable Silicon based quantum computing challenges** by Dr Maud Vinet – CEA-LETI
- 18:00 Cryo-CMOS circuits and systems: an enabling technology for large-scale quantum computers** by Dr Fabio Sebastiano – TU Delft / QuTech
- 18:30 Quantum transport in Nanoelectronics device** by Dr Vihar Georgiev – University of Glasgow & SemiWise

19:15 Cocktail Dinner at "Casa della contadinanza" on the hill of the Udine Castle

