

EU – South Korea Joint Researchers Forum on Semiconductors

The Future of Semiconductors

Neuromorphic Computing, Advanced Functionalities, Heterogeneous Integration & Packaging

PRELIMINARY PROGRAMME

1st DAY

Morning

Coffee and Pastries 8h30

9h00

OPENING AND POLICY SESSION

9h00

- **Introduction** *Werner Steinhögl, Head of Sector CONNECT.A3/Francis Balestra, ICOS coordinator*

9h05

- **Welcome note** – Republic of Korea *Mr Jong-Ho Lee, Minister of MSIT*

9h15

- **Welcome note** – European Commission *Mrs Lucilla Sioli, Director CONNECT.A*

9h25

- **International Cooperation in the Chips Joint Undertaking** *Mr Jari Kinaaret, Director Chips JU*

9h35

- **International Collaboration Programs of Korea in Semiconductor R&D** *Dr. Sang-Wan Ryu, Director of NRF (National Research Foundation of Korea)*

9h50

- **Presentation of EU-ROK Joint Call** *Yves Gigase, Head of programmes Chips JU*

Coffee break 10h05

10h35

SESSION 1 – Advanced Functionalities / Heterogeneous Integration & Packaging

10h35

- **Electrochemical Calculations and Microstructural Analysis in Copper Electroplating to Fill Patterns at Various Feature Scales** *Hyojong Lee, Professor of Dong-A University*

11h00

- **Specialized microelectronics for in-memory computing, RF communication and quantum** *Jyrki Kiihamäki, VTT*

11h25

- **Integrated Photonics: Enabling the Progression of Digital Society** *Abdul Rahim, Photon Delta*

11h50

- **Digital technologies for Agri 4.0 applications** *Alan O’Riordan, Tyndall*

12h15

- **Silicon Carbide Electronics for Advanced Power, Sensing and System Integration** *Michael Jank, Fraunhofer IISB*

Lunch Break & Posters 12h40

Afternoon

SESSION 2 – Advanced logic and memories / Neuromorphic computing

13h45

- **Innovative materials and devices for future logic and memory technologies** *Sujin Ahn, Vice President of Samsung Electronics*

14h10

- **Research on FD-SOI and non-volatile memory** *Olivier Faynot, CEA-LETI*

14h35

- **PIM use case - Cost effective LLM accelerator using AiM (SK hynix’s PIM)** *Euicheol Lim, Vice President of SK Hynix*

15h00

- **Enabling new research paths with embedded PCM** *Andrea Redaelli, STMicroelectronics*

15h35

- **AI Semiconductor (On-Device AI) Present and Future** *Hojun Yoo, Professor of KAIST (Korea Advanced Institute of Science and Technology)*

15h50

- **Emerging ferroelectric materials and devices for semiconductor applications** *Minhyuk Park, Professor of Seoul National University*

Coffee break & Posters 16h15

16h55

- **Advanced compute scaling: a new era of exciting innovations with nanosheet-based devices and increased interdisciplinary synergies** *Anabela Veloso, imec*

17h20

- **Large-Scale Synthesis of 2-Dimensional Transition Metal Dichalcogenide (TMDCs) by Low-Temperature Plasma and their Applications** *Taesung Kim, Professor of Sungkyunkwan University*

17h45

- **Electronic synapses enabled by epitaxial Hafnia-based ferroelectric field** *Athanasios Dimoulas, National Center for Scientific Research DEMOKRITOS*

18h10

- **Mott memristor-based future computing** *Kyungmin Kim, Professor of KAIST*

18h35

- **Spintronics with complex spin texture** *Chanyong Hwang, Researcher of KRISS (Korea Research Institute of Standards and Science)*

19h00

- **Closing remarks** *Werner Steinhoegl, European Commission - Head of Sector CONNECT.A3*

Cocktail Dinner & Posters 19h10

End of day 1 20h30

2nd DAY

Morning

Coffee and Pastries 8h15

8h45

OPENING OF YOUNG RESEARCHERS SEGMENT

8h45

- **Introduction to Day 2:** *Werner Steinhoegl, Head of Sector CONNECT.A3/Francis Balestra, ICOS coordinator*

8h50

YOUNG RESEARCHERS' SESSION

8h50

- **Emerging Semiconductors Meet Novel Capabilities: Multi-valued Logic, Security, and Hazard Monitoring** *Hocheon Yoo, Professor at Gachon University*

9h05

- **GaN Technology for Power Electronics Application** *Urmimala Chatterjee, imec*

9h20

- **Artificial Neuron Devices Fully Compatible with CMOS Technology for Neural Processing and Sensing in Neuromorphic Hardware** *Joon-Kyu Han, Professor of Sogang University*

9h35

- **Design ASIC architectures for generic, self-learning and reliable neuromorphic AI accelerators** *Martin Andraud, UCLouvain*

9h50

- **Tailoring memristors through metallization on amorphous materials** *Hanwool Yeon, Professor of GIST (Gwangju Institute of Science and Technology)*

Coffee break & Posters 10h05

10h45

- **Area-selective deposition and atomic layer etching as enabling technologies for the fabrication of 3-dimensional nanodevices,** *Adrie Mackus, Eindhoven University of Technology*

11h00

- **Topotactic engineering for oxide quantum materials** *Woojin Kim, Professor at Pusan National University*

11h15

- **Two-dimensional materials for next generation non-volatile memories** *Jose Hugo Garcia, Institut Català de Nanociència i Nanotecnologia*

11h30

- **Electronic Eyes based on Flexible and Neuromorphic Optoelectronics** *Changsoon Choi, Researcher of KIST (Korea Institute of Science and Technology)*

11h45

- **2D Materials for Neuromorphic Computing** *Jimin Lee, RWTH Aachen University*

Lunch & posters 12h

End of Researchers Forum 14h

POSTERS SESSION

- **Powering the Future: High-Energy Efficiency Nanoelectronics for Advanced Neuromorphic Computing** *Qing-Tai Zhao, Forschungszentrum Jülich*
- **MoS2 growth and device technology; towards integration with multiplexed graphene sensors arrays** *Laura Remacha Gelabertó, Institut Català de Nanociència i Nanotecnologia*
- **Neuromorphic Computing: Latest activities at ELD and AMO** *Jan van den Hurk RWTH, Aachen University*
- **Smart Sensors and Systems as Enabling Technologies for Climate-Smart Agriculture** *Danilo Demarchi, Politecnico di Torino*
- **Patterned Multi-Wall Nanosheet FETs for Aggressive Scaling Beyond Forksheet FETs: Zero Gate Extension with Minimal Gate Cut Width** *Sanguk Lee, POSTECH*
- **Heterogenous integration of TMD-based memristors and memtransistors with Si CMOS for neuromorphic computing** *Francisco Gamiz, University of Granada*
- **Encapsulation and protection strategies for graphene-based solution-gated field-effect transistors towards high performing neural recording** *Anna Graf, ICN2*
- **Metal oxide-based structures for novel computing paradigm concepts** *Robert Mroczyński, Warsaw University of Technology*
- **Advancements in Neuromorphic Computing Using Silicon Nitride Memristors for IoT and Security** *Panagiotis Dimitrakis, NCSR Demokritos*
- **High Performance Chiplet-based PIM AI Semiconductor** *Jaehoon Chung / Jaewoong Choi, ETRI*
- **Smart systems integration for biomedical and environmental applications** *Bogdan Firtat, IMT Bucharest*
- **Advanced computing and functionalities in CROMA lab** *Alessandro Cresti, CNRS*
- **Full-Stack Neuromorphic Computing in Delft** *Moritz Fieback, TUDelft*
- **Neuromorphic sensing and computing at INL** *Bruno Romeira, INL*