

**ESSDERC 2023 - IEEE 53rd
European Solid-State Device
Research Conference
(ESSDERC 2023)**

**Lisbon, Portugal
11-14 September 2023**



**IEEE Catalog Number: CFP23543-POD
ISBN: 979-8-3503-0424-4**

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IEEE Catalog Number:	CFP23543-POD
ISBN (Print-On-Demand):	979-8-3503-0424-4
ISBN (Online):	979-8-3503-0423-7
ISSN:	1930-8876

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Universidade de Lisboa, Portugal

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Date: Tuesday, September 12, 2023

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Muriel Médard

Massachusetts Institute of Technology, United States

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META Reality Labs Research, United States

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Pedro Barquinha

i3N/CENIMAT, CEMOP/UNINOVA, FCT, Universidade Nova de Lisboa, Portugal

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SRAM Digital Computing in Memory

Date: Thursday, September 14, 2023

Room: Audit. IV

Chair(s): Antoine Frappé, *University of Lille, CNRS*

FP-IMC: A 28nm All-Digital Configurable Floating-Point In-Memory Computing Macro

Jyotishman Saikia, Amitesh Sridharan, Injune Yeo, Shreyas Venkataramanaiah,
Deliang Fan, Jae-Sun Seo

Arizona State University, United States

A 16nm 128Kb High-Density Fully Digital in Memory Compute Macro with Reverse SRAM Precharge Achieving 0.36TOPs/mm², 256kB/Mm² and 23.8TOPs/W

Weijie Jiang, Pouya Houshmand, Marian Verhelst, Wim Dehaene

MICAS, Katholieke Universiteit Leuven, Belgium

D6CIM: 60.4-TOPS/W, 1.46-TOPS/mm², 1005-Kb/Mm² Digital 6T-SRAM-Based Compute-in-Memory Macro Supporting 1-to-8b Fixed-Point Arithmetic in 28-nm CMOS

Jonghyun Oh, Chuan-Tung Lin, Mingoo Seok

Columbia University, United States

A 2Mbit Digital In-Memory Computing Matrix-Vector Multiplier for DNN Inference Supporting Flexible Bit Precision and Matrix Size Achieving 612 Binary TOPS/W

Mohit Gupta¹, Stefan Cosemans¹, Peter Debacker², Wim Dehaene³

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microASR: 32-μW Real-Time Automatic Speech Recognition Chip Featuring a Bio-Inspired Neuron Model and Digital SRAM-Based Compute-in-Memory Hardware

Dewei Wang¹, Jonghyun Oh¹, Gregory K. Chen², Phil Knag²,

Ram K. Krishnamurthy², Mingoo Seok¹

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ESSDERC Keynote 3: Kenneth O

Date: Thursday, September 14, 2023

Room: Audit. I

Chair(s): Arantxa Ori, *Universidad de Zaragoza*

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University of Texas at Dallas, United States

Optoelectronic Device Modeling

Date: Thursday, September 14, 2023

Room: Audit. II

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Fabian Bufler, *IMEC, Belgium*

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Université Catholique de Louvain, Belgium

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Tom Klauner¹, Iman Sabri Alirezaei², Nicolas Roisin¹, Nicolas André¹, Denis Flandre¹

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¹*École Polytechnique Fédérale de Lausanne, Switzerland*; ²*Korea Institute of Science and Technology, Korea*; ³*National Research Council Canada, Canada*

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ADC & RF Interface

Date: Thursday, September 14, 2023

Room: Audit. IV

Chair(s): Georgi Radulov, *TU Eindhoven*
Antoine Dupret, *CEA*

An RF MEMS Sensor Driver/Readout SoC with Resonant Frequency Shift and Closed-Loop Envelope Regulation for Microplastic Detection

Seung-Beom Ku¹, Kwonhong Lee^{1,2}, Han-Sol Lee¹, Kyeongho Eom¹, Minju Park¹,
Jinhyoung Kim², Cheolung Cha², Hyung-Min Lee¹

¹*Korea University, Korea*; ²*Korea Electronics Technology Institute, Korea*

A 22dBA Digital Optical MEMS Microphone

Niccolò de Milleri¹, Andreas Wiesbauer¹, Andrea Baschiroto²

¹*Infineon Technologies Austria AG, Austria*; ²*Università degli Studi di Milano-Bicocca, Italy*

A Monolithically Integrated Electronic-Photonic Front-End Utilizing Micro-Ring Modulators for Large-Scale MM-Wave Sensing

Ruocheng Wang¹, Manuj Singh², Deniz Onural², Sidney Buchbinder¹, Hayk Gevorgyan²,
Miloš A. Popović², Vladimir Stojanović¹

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A Linearity Improvement Method for CIS Column-Parallel SAR ADC Using Two-Step Conversion

Jaekyum Lee¹, Albert Theuwissen^{1,2}

¹*Delft University of Technology, Netherlands*; ²*Harvest Imaging, Belgium*

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Date: Thursday, September 14, 2023

Room: Room 5.B

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