



Call for Papers



The 33rd Microelectronics Design & Test Symposium (IEEE MDTS 2024)

May 13 – 15, 2024 (Tentative)

Crowne Plaza Albany - The Desmond Hotel in Albany, New York (Tentative)

<http://mdts.ieee.org>



Key Dates

Extended Abstract and Full Paper:

02/15/2024

Notification of Acceptance:

04/01/2024

Final Paper Submission:

05/01/2024

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Theme

Advances and Challenges for Chiplets and for Hardware Security

The IEEE Microelectronics Design & Test Symposium (MDTS) provides a forum for academic and industry researchers and engineers to discuss the latest advances in microelectronics, share their visions in modern microelectronic technologies, and foster academic-industry collaboration. The 33rd MDTS explores challenges and advances on two major fronts: **chiplets and hardware security**. Chiplets break large chip designs into smaller, ideally reusable, blocks, and the Universal Chiplet Interconnect Express (UCIe) standard addresses the challenges of connecting chiplets in the package. Hardware security for chip designs covers a broad range of issues, from preventing reverse engineering to blocking takeovers and data theft or manipulation.

The Program Committee invites researchers and practitioners to submit tutorial, panel, and special session proposals related to the theme. Proposals must include title, topic abstract, speakers' short bio, and a list of contributing papers. The committee also encourages authors to submit original, unpublished papers. Submissions may be six-page full papers or two-page extended summaries. Accepted papers presented at the symposium have the option of being published in IEEE Xplore®. Full details can be found on the mdts.ieee.org website. Topics of interest include:

Micro Devices, Circuits and Microsystems: Analog/mixed-signal/radio frequency (RF) circuits; Low-power low-voltage design; Sensors and sensing systems; Smart system design for automotive, automation and robotics; Circuits and systems for approximate and evolvable computing; Memristor-based devices; Lab-on-Chip, wearable and implantable devices; Heterogeneous integration and multi-scale chiplet-based packaging architecture

Biomedical, Photonics, and Quantum Electronics: Biomedical and bio-inspired circuits and systems; Microelectromechanical systems (MEMS) sensors and bioelectronics; Nanobiophotonics for optical imaging, sensing, and diagnostics; Terahertz photonics for communications; Photodetectors, sensors, and imaging; Photonics for energy and green photonics

Electronic Design & Test Methodologies and Electronic Design Automation (EDA): Electronic design tools, processes and methodologies; EDA for 3D integrations and advanced packaging; EDA for bio-inspired and neuromorphic systems; EDA tools, methodologies and applications for Photonics devices, circuit, and system design; System-on-Chip (SoC)/intellectual property (IP) testing strategies; Hardware/software co-verification; Design for testability (DFT) & built-in self-test (BIST) for digital designs, analog/mixed-signal integrated circuits (ICs), SoCs, and memories; Design verification/validation; Machine learning datasets for microelectronics design and test

Hardware Security: Microarchitectural attacks; Side channel attacks and mitigation; (Anti-)Reverse engineering and physical attacks; Hardware obfuscation; Computer-aided design (CAD) for security; SoC security, Field-programmable gate array (FPGA) and reconfigurable fabric security; Internet-of-Things (IoT) and cyber physical system security

Emerging Technologies and Applications: Computing-in-memory architectures; Neural networks, AI, ML, and DL in design and test of microelectronics; IoT, edge nodes, or pipelines for real-time data visualizations and monitoring in design and test of microelectronics; Application of cognitive, neuromorphic and quantum computing; High-speed serializer/deserializer (SerDes); Next-generation design-technology co-optimization; Advanced interconnect; 3D manufacturing

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Contact

Uma Srinivasan, Program Chair

umasrin@us.ibm.com

Kelly Ockunzzi, General Chair

kockunzzi@marvell.com

Jake Karrfalt Best Student Paper Award

To encourage student participation in the microelectronics research community, MDTS will recognize the top student first-author paper and presentation.

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