



# Preliminary Call for Papers

## 26<sup>th</sup> International Symposium on Design & Diagnostics of Electronic Circuits & Systems

May 3-5, 2023 | Tallinn, Estonia

<https://ddec2023.taltech.ee>

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The International Symposium on Design and Diagnostics of Electronic Circuits and Systems (DDECS) provides a forum for exchanging ideas, discussing research results, and presenting practical applications in the areas of design, test, and diagnosis of nanoelectronic digital, analog, and mixed-signal circuits and systems. The 26<sup>th</sup> edition of the DDECS Symposium will be held in Tallinn, the capital of the Estonia, which is one of the best-preserved medieval cities in Europe.

The areas of interest include (but are not limited to) the following topics:

#### Topic 1. Analog, Mixed Signal, RF and Sensors

- Wireless circuits and systems
- High-frequency circuits
- Sensor technologies
- RF design and test
- Analog neuromorphic circuits
- Analog and mixed-signal design and test

#### Topic 2. Digital Circuit and System Design

- Digital architectures for DNNs
- AI and edge computing architectures
- Neural architecture search (NAS)
- Autonomous systems
- VLSI circuits design
- SoC and NoC architectures
- FPGA, DSP, accelerators
- Approximate computing
- High-performance computing
- Low-power design
- Embedded and cyber-physical systems
- Embedded applications
- EDA tools and methodologies
- ML-based EDA tools

#### Topic 3. Test, Verification and Dependability

- Circuits and systems test
- Reliability and robustness of DNNs
- Fault-tolerance
- Self-health awareness and fault management
- Test infrastructures
- Diagnosis and debug
- Formal and simulation-based verification
- Functional safety
- Reliability
- ML-based test and dependability solutions

#### Topic 4. Secure HW and Embedded Systems

- Cryptographic implementations
- Attacks against implementations
- Side-channel analysis
- Trusted computing platforms
- IP protection and reverse engineering
- Hardware Trojans

#### Topic 5. Emerging Technologies and New Computing Paradigms

- Brain-inspired computing
- Polymorphic and ambipolar circuits
- Reversible logic
- Quantum computing
- Quantum dot cellular automata
- Stochastic computing
- In-memory computing
- Memristor technology
- Emerging memory devices
- Silicon photonics
- Microfluidics and biochips
- DNA computing

#### Publication and submission:

DDECS 2023 seeks original, unpublished contributions of the following types:

- Regular Papers presenting novel and complete research work (6 pages)
- Student Papers from students eager to discuss their on-going research (4 pages)

DDECS review process is single-blind, i.e. the author information is not hidden.

Accepted papers will be submitted for inclusion into IEEE Xplore.

#### Key dates

Submission deadline: January 15, 2023

Notification of acceptance: February 28, 2023