

# Preliminary Call for Papers

**DDECS** 2022  
DESIGN & DIAGNOSTICS OF ELECTRONIC CIRCUITS & SYSTEMS  
April 6 – 8, Prague | Czech Republic

## 25<sup>th</sup> International Symposium on Design and Diagnostics of Electronic Circuits and Systems

<https://ddecs2022.fit.cvut.cz>

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#### General Vice Chair

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#### Program Chair

M. Jenihhin, *TalTech, EE*

#### Program Vice Chair

T. Garbolino, *Silesian UT, PL*

#### Organizing Chair

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V. Stopjaková, *STU Bratislava, SK*

#### Further information

##### General Chair

Hana Kubátová, *CTU in Prague, CZ*  
[kubatova@fit.cvut.cz](mailto:kubatova@fit.cvut.cz)

##### Program Chair

Maksim Jenihhin, *TalTech, EE*  
[maksim.jenihhin@taltech.ee](mailto:maksim.jenihhin@taltech.ee)

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 microelectronic digital, analog, and mixed-signal circuits and systems.

The 25<sup>th</sup> anniversary edition of the DDECS symposium will be located in Prague, the capital of the Czech Republic, which is one of the most charming 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 circuits 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 2022 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 subject to meeting IEEE Xplore's scope and quality requirements.

#### Key dates

Submission deadline: **December 31, 2021**

Notification of acceptance: February 17, 2022

Camera-ready due: March 10, 2022

