

Special Issue

Challenges and Future Trends of In-Memory Computing in Micro-Chips

Message from the Guest Editors

The explosive growth of AI, edge computing and data-intensive applications has intensified the demand for high-performance, energy-efficient computing hardware. Conventional von Neumann architectures suffer from the memory wall, where frequent data transfer between memory and processing units dominates latency and power consumption. In-memory computing (IMC) offers a promising solution by performing computation within memory arrays, reducing data movement and enabling massive parallelism. This Special Issue focuses on the critical challenges that must be addressed for IMC to transition from laboratory prototypes to mainstream micro-chip deployments. Key issues include device variability, limited precision, endurance and retention constraints, peripheral circuit overhead, interface compatibility, programmability and the lack of standardized benchmarking. The scope spans device, circuit, architecture and system integration levels, covering both analog and digital IMC approaches across emerging memory technologies such as RRAM-, PCM-, FeFET- and SRAM-based CIM.

Guest Editors

Dr. Xinxin Wang

Department of Electrical Engineering, Stanford University, Stanford, CA 94305, USA

Prof. Dr. Wei Lu

Electrical Engineering and Computer Science, the University of Michigan, Ann Arbor, MI 48109, USA

Deadline for manuscript submissions

15 June 2026



Electronics

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 6.1



mdpi.com/si/261406

Electronics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
electronics@mdpi.com

[mdpi.com/journal/
electronics](https://mdpi.com/journal/electronics)





Electronics

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 6.1



[mdpi.com/journal/
electronics](https://mdpi.com/journal/electronics)



About the Journal

Message from the Editor-in-Chief

Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

Editor-in-Chief

Prof. Dr. Flavio Canavero

Department of Electronics and Telecommunications, Politecnico di
Torino, 10129 Torino, Italy

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), CAPlus /
SciFinder, Inspec, Ei Compendex and other databases.

Journal Rank:

JCR - Q2 (Engineering, Electrical and Electronic) /
CiteScore - Q1 (Electrical and Electronic Engineering)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is
provided to authors approximately 16.8 days after
submission; acceptance to publication is undertaken in 2.4
days (median values for papers published in this journal in
the first half of 2025).