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Editorial

Microelectronics—An Open-Access Journal for Advancing Microelectronics Technologies

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1. Microelectronics: Pioneering the Future of Technology

The field of microelectronics is at the heart of modern technological progress, driving innovations that span computing, communications, healthcare, and energy. From the relentless miniaturization of semiconductor devices to breakthroughs in neuromorphic computing and quantum-integrated circuits, microelectronics continues to push the boundaries of science and engineering. Yet, as we confront the challenges of post-Moore's Law scaling [1], sustainable manufacturing [2], and the global demand for smarter, energy-efficient technologies, interdisciplinary collaboration and transformative research have become more critical than ever.

We are thrilled to announce the launch of *Microelectronics* (https://www.mdpi.com/journal/microelectronics) (accessed on 1 January 2025) (ISSN: 3042-5344), a peer-reviewed, open-access journal dedicated to advancing innovation across all facets of microelectronic science and technology. Established in September 2024, *Microelectronics* serves as a global platform for researchers, engineers, and industry leaders to address emerging challenges and unlock new opportunities in the field.

2. Announcing *Microelectronics*: A Catalyst for Cutting-Edge Research

Microelectronics bridges academia, industry, and policymakers, fostering cutting-edge research to develop sustainable, energy-efficient solutions for tomorrow's technologies. We invite scholars and innovators to contribute high-impact research on the latest advancements in microelectronics, including theoretical breakthroughs, experimental validations, and real-world applications. Our scope encompasses the following:

- **Device Design and Engineering:** Transistor technologies, MEMS/NEMS devices [3], power devices, RF/microwave components, optoelectronic and photonic devices [4], neuromorphic computing devices, flexible and bioelectronic devices, heterogeneous integration and chiplet-based systems [5].
- **Circuit Design and System Integration:** Analog/digital/mixed-signal IC design, System-on-Chip (SoC) and embedded systems, Electronic Design Automation (EDA) [6], AI-driven circuit architectures [7], High-speed interfaces.
- **Applications and Emerging Technologies:** Sustainable microelectronics manufacturing [8], biomedical and automotive electronics [9] (sensors, diagnostics, and AI-integrated control systems), quantum computing interfaces [10], energy harvesting technologies [11].

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- **Materials and Fabrication Innovations:** Wide-bandgap semiconductors and 2D materials [12,13], advanced lithography and 3D integration [14], flexible and biocompatible materials.
- **Testing, Reliability, and Standards:** Fault diagnosis and reliability modeling, nanoscale metrology (TEM, AFM, and compliance with industry standards).

3. Join Us in Shaping the Future

We invite researchers, engineers, and innovators worldwide to submit their groundbreaking work to *Microelectronics*. Whether your expertise lies in atomic-scale phenomena or system-level integration, we aim to amplify your contributions and foster collaborations that redefine the future of electronics.

Together, let us pioneer solutions that transcend traditional limits and build a smarter, more sustainable world.

Conflicts of Interest: The author declares no conflicts of interest.

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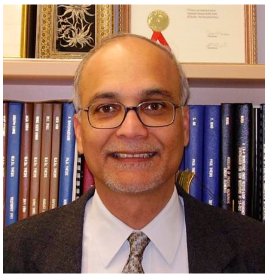
Short Biography of Author



Prof. Dr. M. Jamal Deen is a Distinguished University Professor at McMaster University. His research interests are nano-/opto-electronics, nanotechnology, data analytics, and their applications to health and environmental sciences. His research record includes more than 930 peer-reviewed articles, two textbooks, six awarded patents extensively used in industry, and 26 best paper/poster/presentation awards. As an undergraduate, he was the top-ranked mathematics and physics student and the second ranked student at the university, winning the Chancellor's gold medal and the Irving Adler prize. As a graduate student, he was a Fulbright LASPAU Scholar and an American Vacuum Society Scholar. As an educator, he won the IEEE Canada's Ham Education Medal, the McMaster President's Award for Excellence in Graduate Supervision, and MSU Macademics' Lifetime Achievement Award for his exceptional dedication to teaching. His other awards and honors include the Callinan Award and the Electronics and Photonics Award from the Electrochemical Society (ECS); a Humboldt Research Award; the Eadie Medal from the Royal Society of Canada (RSC); the McNaughton Gold Medal, Fessenden Medal, and Gotlieb Medal, all from IEEE Canada. He was awarded five honorary doctorate degrees in recognition of his exceptional research, scholarly and education accomplishments, exemplary professionalism, and valued services. He is elected by his peers to Fellow status in thirteen national academies and professional societies, including RSC, IEEE, ECS, and the American Physical Society. Recently, he was appointed to the Order of Canada. He served as President of the Academy of Science, RSC, from 2015 to 2017.