

Special Issue

Innovative Applications of Semiconductor Materials and Devices

Message from the Guest Editor

The semiconductor industry is currently navigating a critical transition into the post-Moore era, where geometric scaling alone is no longer sufficient to drive performance gains. This Special Issue, "Innovative Applications of Semiconductor Materials and Devices," focuses on the intersection of emerging material science and advanced device architectures. The scope encompasses the entire value chain—from novel low-dimensional materials (such as carbon nanotubes and 2D materials) and advanced silicon-based logic devices (FinFET, GAAFET, BSPDN, and CFET) to their integration into functional circuits.

The primary purpose of this collection is to address the urgent challenges of energy efficiency, operating frequency, and manufacturing complexity facing modern electronics. By highlighting breakthroughs in Design–Technology Co-Optimization (DTCO), this issue aims to showcase how process innovations can be translated into system-level benefits for high-demand applications, including 5G/6G Radio Frequency (RF) front-ends and neuromorphic Compute-in-Memory (CIM) architectures.

Guest Editor

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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.

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