

## Special Issue

# Integrated Circuit Research for Nanoscale Field-Effect Transistors: 2nd Edition

### Message from the Guest Editor

As the channel size of field-effect transistors (FETs) shrinks to the nanometre scale, there is increasing demand for atomic-layer materials to minimize the effects of short channels under extreme scaling. Since the proposal of graphene, the first monolayer of graphite, many researchers have developed novel nanomaterials, such as two-dimensional chalcogenides and single-element two-dimensional materials, on FET devices. These FETs, fabricated using nanomaterials, have become a hot research topic, and researchers are committed to improving their performance and expanding their circuit applications. To draw more attention to this research field, this Special Issue will comprehensively discuss progress in FET device applications. Potential topics include, but are not limited to, nanomaterials in FET devices and the preparation, circuit design, and application of nano-FET devices. We invite authors to contribute original research and review articles covering the latest developments in aspects such as nanomaterial-based devices, sub-reliability, and material stability.

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### Guest Editor

Prof. Dr. Huiyong Hu

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### Deadline for manuscript submissions

closed (24 October 2025)



## Nanomaterials

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Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano–alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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### Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

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