



## Transport and Noise Behavior of Nanoelectronic Devices

Guest Editor:

### Prof. Dr. Paolo Marconcini

Dipartimento di Ingegneria  
dell'Informazione, Università di  
Pisa, Via G. Caruso 16, 56122 Pisa,  
Italy

Deadline for manuscript  
submissions:

**closed (30 April 2023)**

### Message from the Guest Editor

Dear Colleagues,

With the drive to fabricate smaller and more powerful circuits, the size of electronic devices has been progressively scaled down, following Moore's law. Modern nanoelectronic devices have a size in the order of tens of nanometers and present very peculiar characteristics: transport has become close to ballistic and quantum mechanical effects play a significant role.

From a different perspective, radically new materials and principles of operation have also been proposed (More than Moore approach), in order to overcome the limitations in further scaling. Alternative ways to store, elaborate and transmit information, such as spintronics and valleytronics, and new principles of operation, such as adiabatic computing and quantum computing, are being actively explored.

This Special Issue aims to collect significant research articles reporting on theoretical and/or experimental advancements in the transport and/or noise behavior of nanoelectronic devices and in the related material, technological, synthesis and characterization issues. See more information in

<https://www.mdpi.com/si/71167>

Prof. Dr. Paolo Marconcini

*Guest Editor*





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Shirley Chiang

Department of Physics, University  
of California Davis, One Shields  
Avenue, Davis, CA 95616-5270,  
USA

## Message from the Editor-in-Chief

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.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPlus / SciFinder, Inspec, and other databases.

**Journal Rank:** JCR - Q2 (*Chemistry, Multidisciplinary*) / CiteScore - Q1 (General Chemical Engineering)

## Contact Us

---

*Nanomaterials* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/nanomaterials](http://mdpi.com/journal/nanomaterials)  
[nanomaterials@mdpi.com](mailto:nanomaterials@mdpi.com)  
[X@nano\\_mdpi](https://twitter.com/nano_mdpi)