Special Issue

Advances in Semiconductor Nanostructures for Nanoelectronics and Nanophotonics

Message from the Guest Editor

Nanophotonics and Nanoelectronics refer to nanometer feature size structures commensurate with the wavelength of light or electrons and offer unique advantages when they are being used to manage light and electrons movement and localisation. The materials that are used to realise such structures tend to be metals and dielectrics (including semiconductors and insulators). Electronic nanostructures include 2D materials, nanowires, quantum-confined heterostructures and reveal fascinating properties from traditional quantum transport to correlated effects, including spintronics, and Majorana Fermions. The design of nanostructures for quantum information is a burgeoning field that looks to control over electrons degrees of freedom by local and global interactions. In many of the cases of both photonic and electronic artificial nanostructures, surfaces and interfaces and their control play an important role in determining behaviour. Keywords

- spintronic
- surface plasmon
- photonic nanowires
- photonic cavities
- quantum confined nanostructures
- majorana Fermions
- transport in semiconductor nanowires
- 2D materials

Guest Editor

Prof. Dr. Harry E. Ruda

Center for Advanced Nanotechnology, Department of Materials Science and Engineering, University of Toronto, Toronto, ON M5S 3E4, Canada

Deadline for manuscript submissions

closed (20 May 2022)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/59582

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

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

MDPI

About the Journal

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)