



## Porous Silicon-Based Sensors and Biosensors

Guest Editor:

**Dr. Salvador Ponce Alcántara**

Nanophotonics Technology  
Center, Universitat Politècnica de  
València, Camino de Vera, s/n  
Edificio 8F | Planta 2ª, 46022  
Valencia, Spain

Deadline for manuscript  
submissions:

**closed (20 February 2022)**

### Message from the Guest Editor

Porous materials have acquired a high relevance in the research and development of optical sensors due to their large surface to volume ratios, which allows the immobilization of even three orders of magnitude more bioreceptors than for a typical solid core optical structure.

Among different porous structures, porous silicon (PSi) has been widely studied due to its quick and inexpensive fabrication, which offers the possibility to realize different optical structures such as interferometers, optical microcavities, waveguides, ring resonators, photonic crystals, and rugate filters. Sensitivities around 1000 nm/refractive index unit (RIU), limits of detection in the  $10^{-7}$  RIU range, and sensors with quality factors close to 9000 have been achieved with the previous structures. In parallel, new research trends are opening, like the ones based on PSi membranes or the combination of PSi layers with plasmonic metal nanoparticles and fluorescent quantum dots.

For more information, please click the following link:

[https://www.mdpi.com/journal/materials/special\\_issues/porous\\_silicon\\_sensor](https://www.mdpi.com/journal/materials/special_issues/porous_silicon_sensor)

Dr. Salvador Ponce Alcántara  
*Guest Editor*





an Open Access Journal by MDPI

## 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

## 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.

## 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 & Metallurgical Engineering*) / CiteScore - Q2 (*Condensed Matter Physics*)

## Contact Us

Materials Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

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

[mdpi.com/journal/materials](http://mdpi.com/journal/materials)  
[materials@mdpi.com](mailto:materials@mdpi.com)  
[X@Materials\\_Mdpi](https://twitter.com/Materials_Mdpi)