Special Issue

Porous Silicon-Based Sensors and Biosensors

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

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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.

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