

Special Issue

Optical and Structural Characterization Techniques for Nanostructured Materials

Message from the Guest Editor

Nanostructured materials exhibit unique physicochemical properties, which originate from their reduced size, high surface-to-volume ratio, and the related quantum confinement effect. Understanding and designing these properties requires comprehensive and complementary characterization techniques to probe both optical responses and structural features. For this purpose, this Special Issue focuses on recent breakthroughs in advanced optical and structural characterization techniques, with a particular emphasis on novel, combined, and hybrid methodologies that enable precise investigation of nanostructured systems, ranging from few-atomic nanoclusters to classical nanoparticles. A central theme of this Special Issue, entitled “Optical and Structural Characterisation Techniques for Nanostructured Materials”, is correlative and multi-dimensional characterization, where the synergistic integration of optical and structural data is vital to mapping structure–property relationships. Such insights are essential for the rational design of next-generation nanomaterials tailored for applications in sensing, biomedicine, catalysis, and energy conversion.

Guest Editor

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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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