Special Issue

Advanced Synthesis and Applications of Functional Nanomaterials: From Controlled Fabrication to Enhanced Performance

Message from the Guest Editor

Recent advances in functional nanomaterials have revolutionized numerous technological fields, from energy conversion to environmental remediation and sensing applications. This Special Issue aims to showcase cutting-edge research in the synthesis, characterization, and applications of functional nanomaterials. We welcome contributions focusing on innovative fabrication methods, including but not limited to laser-assisted synthesis, chemical routes, and physical vapor deposition, as well as advanced characterization techniques that provide deeper insights into material properties and structures. Of particular interest are studies investigating optical and nonlinear optical properties of nanomaterials and nanocomposites, along with their applications in photocatalysis, plasmonics, sensors, energy conversion and storage, and environmental technologies. Papers addressing the fundamental aspects of nanomaterial design, structure–property relationships, light–matter interactions, and performance enhancement strategies are highly encouraged.

Guest Editor

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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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