

Special Issue

Advanced Luminescent Materials and Devices: Modeling, Fabrication, Physical Mechanisms and Light-Emitting and Energy Applications

Message from the Guest Editors

This Special Issue focuses on advanced luminescent materials and devices, integrating modeling, fabrication, physical mechanisms, and dual applications in luminescence and energy domains. Focused on materials like quantum dots, nanosheets, perovskites, and organics–inorganics, this Special Issue spans devices including OLEDs, PeLEDs, QD-LEDs, and flexible luminescent devices. Modeling guides material design and fabrication optimization and deciphers mechanisms (charge transport, luminescent, and exciton dynamics) via experimental simulative synergy. In luminescence applications, high-performance displays (flexible, high-resolution), efficient solid-state lighting, and bio-imaging are emphasized. Energy applications highlight **photovoltaics**, low-energy-consumption devices, photovoltaic–luminescence integration (solar-powered, self-luminous systems), and sustainable materials (lead-free perovskites, biodegradable substrates) to reduce the energy footprint. Original papers bridging these areas and advancing both luminescent technologies and energy sustainability are welcome to be submitted to this Special Issue.

Guest Editors

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Message from the Editorial Board

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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