

Special Issue

Green Synthesis for Functional Materials Through Microreaction Technologies

Message from the Guest Editors

In recent decades, humanity has faced two challenges: escalating environmental pollution from traditional chemical manufacturing and the urgent demand for energy-efficient, sustainable production processes. Consequently, global research efforts are intensely focused on designing advanced processes that enable eco-friendly, high-precision material fabrication for environmental remediation and clean energy technologies. Microreaction technology has garnered significant attention due to its exceptional potential to address both ecological sustainability and process efficiency goals. It facilitates the synthesis of diverse and tailored functional materials, including nanoparticles, metal-organic frameworks, polymers, catalysts, and advanced composites. However, the industrial-scale implementation remains constrained by challenges in reactor scalability, multiphase flow management, and integration with downstream processes. Thus, the development of robust, scalable, and universally adaptable microreactor systems for functional material synthesis persists as a pivotal challenge for the scientific community.

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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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