Special Issue

Advanced Flame-Retardant and Thermal Insulation Materials

Message from the Guest Editors

Recent advances in materials science, polymer chemistry, and nanotechnology have created new opportunities to develop next-generation flame-retardant and thermal insulation materials with improved efficiency and multifunctionality. Strategies such as bio-based materials, nano-engineered composites, reactive flame retardants, and multifunctional coatings are enabling significant improvements in fire resistance, durability, and thermal performance. However, challenges remain in balancing fire protection, thermal insulation, environmental safety, and scalable manufacturing. Continued research is therefore needed to translate laboratory innovations into practical and sustainable material solutions. This Special Issue aims to present and disseminate the latest advances in advanced flame-retardant and thermal insulation materials. We welcome contributions addressing the design, synthesis, characterization, and application of innovative materials and systems that enhance both fire safety and thermal management performance.

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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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