Special Issue

Nanostructured Materials for Advanced Air Filtration: Design, Performance, and Applications

Message from the Guest Editors

The increasing concern over air quality and its impact on health and climate has driven the urgent development of advanced filtration technologies. This Special Issue aims to highlight recent progress in the design, synthesis, and application of nanostructured materials specifically engineered for air filtration systems. Emphasis will be placed on materials with high surface area, porosity, reactivity, and selectivity such as carbon nanomaterials, metal–organic frameworks (MOFs), and advanced composites that offer superior capture efficiency of pollutants, including particulate matter, volatile organic compounds (VOCs), and pathogens. Contributions addressing sustainability, regeneration, cost effectiveness, and integration with smart sensing technologies are welcome. This Special Issue seeks to bridge fundamental materials science with applied engineering to promote cleaner air and a healthier environment.

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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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