Special Issue

Advanced Materials and Devices for Infrared Gas Sensing in Air Quality Monitoring

Message from the Guest Editors

Air pollution poses a significant threat to human health and ecosystems worldwide, creating an urgent need for accurate and real-time gas monitoring technologies. This Special Issue focuses on the development, characterization and application of advanced materials and devices for infrared gas sensing, with an emphasis on laser photoacoustic spectroscopy (LPAS) and related techniques. Applications in urban air quality monitoring, environmental assessment and pollutant mitigation provide a high-impact context for these technologies. Manuscripts addressing quantitative detection of atmospheric pollutants, integration with computational modeling or deployment in smart environmental monitoring systems are highly relevant. This Special Issue aims to highlight advances in materials-enabled sensor technologies and demonstrate their potential for tackling real-world environmental challenges. Original research articles, short communications and comprehensive reviews on functional materials, device design and practical applications in gas sensing are all welcome.

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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