

Special Issue on  
**MOFs and Their Derivatives for Environment and Energy  
Related Applications**

# CALL FOR PAPERS

With the rapid industrialization of modern society, environmental pollution and energy crisis become more and more serious. Thus, the development of efficient methods and portable devices to detect the polluted substance with high sensitivity, high selectivity, and excellent long-term stability is of great significance and urgency. The pursuit of renewable energy sources and sustainable storage technologies has been a worldwide research target to fulfill the ever-growing energy need and resolve the depletion of traditional fossil fuels.

Metal-organic frameworks (MOFs), constructed from metal cations or clusters and multitopic organic ligands, are attractive due to their remarkable structural tunability and for their high promise in a wide range of applications. The exciting luminescence of MOFs will show great potential in response to various polluted substances, such as nitrocompounds, explosives, and solvent molecules. Owing to the coexistence of metals and organic species, MOFs can convert to metal oxides, carbon materials, and their composited materials depending on the calcination conditions. The corresponding porous materials have been used in the energy-related fields, as electrode materials in lithium ion batteries and supercapacitors and catalysts in fuel cells and metal air batteries. Additionally, the semiconductive transition metal oxides based chemiresistive gas sensors can also be used to monitor volatile organic compounds.

The working principles of sensors, energy storage, and catalysis involve the fundamental theory in Physical Chemistry. Up to now, the challenges facing this field include the following points: i) how to induce higher sensitivity and selectivity of the MOFs based sensor, ii) the controllable synthesis of nanomaterials derived from the MOFs nanoparticles as precursors, iii) how to enhance the performance of the corresponding materials through the design of the MOFs nanoparticles in terms of the components and the microstructures, and iv) how to disclose the mechanism of the structure-related performance.

In this special issue, we are glad to accept the well-understood reviews to describe the current state of the art and original results to provide innovative ideas. This special issue will promote the investigation about MOFs themselves and their derived nanomaterials and boost the performance in environment and energy related field.

Potential topics include but are not limited to the following:

- ▶ MOFs and their application as sensors
- ▶ Derivatives from nano-MOFs in catalysis, supercapacitors, batteries, and so on
- ▶ Metal oxides semiconductor derived from nano-MOFs for sensing acetone, CO<sub>2</sub>, volatile organic compounds, and so on

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Papers are published upon acceptance, regardless of the Special Issue publication date.

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