Special Issue

Novel Sorbent Materials for Efficient Gas Capture and Separation

Message from the Guest Editors

The process of gas capture and separation by using sorbent materials has been investigated and developed for decades; it has been widely applied in many fields including oil and gas engineering as well as the energy, chemical, and pharmaceutical industries, among others. For instance, CO2 capture and storage based on sorbent cycling has been recognized as one of the most promising negative emissions technologies to mitigate global warming. The sorption technique is also one major solution for the purification of various hazardous gases. Nowadays, the fabrication of novel sorbent materials with superior performance and the in-depth investigation of their sorption mechanisms have become the focus of study. This Special Issue welcomes original research and reviews focusing on:

- Liquid and solid absorbent materials for gas capture and separation
- Membranes for gas separation
- The design of reactor configurations for gas ad/absorption and separation
- Kinetic modelling, thermodynamic analysis, dynamic simulation, or quantum chemical calculation for gas sorption reactions
- Other applications involving gas capture or separation processes

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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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