Special Issue

Research Frontier of Emerging Materials for Carbon Capture

Message from the Guest Editor

Carbon capture is a key solution to address the ongoing issue of climate change, which has resulted from enhanced emissions of CO2 in the atmosphere. Materials-based carbon capture holds good promise for the capture of CO2 in different conditions of temperature and pressure and has been explored on a large scale. An intense amount of research has revealed the suitability of materials including MOFs, zeolites, carbons, silica, and polymers for adsorption-based capture of CO2. However, only zeolite-type materials have been able to reach the commercial stage due to their low cost and high efficiency. Materials-based CO2 capture still suffers from limitations, such as the reduced capability for CO2 capture in the presence of water, realizing ideal binding of the adsorbent and adsorbate to enhance the process attributes, less CO2 adsorption at low pressure, and so on. This Special Issue is aimed at propagating new advancements in research on materials vs. CO2 capture by covering the synthesis of novel materials in different categories.

Guest Editor

Dr. Gurwinder Singh

Global Innovative Centre for Advanced Nanomaterials, The University of Newcastle, Callaghan, NSW 2308, Australia

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Energies
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
energies@mdpi.com

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

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