Special Issue

Advanced Catalytic Materials for Carbon Dioxide Reduction

Message from the Guest Editors

To mitigate current environmental issues and climate changes caused by the over-emission of carbon dioxide, the traditional energy systems relying on non-reproducible fuels need to be re-envisioned. Converting carbon dioxide to value-added chemicals in an electrolyzer presents one promising avenue toward a carbon net-zero future. At the current stages, however, the CO2 reduction reactions (CO2RR) still face significant challenges, such as the unsatisfactory product selectivity, low energy efficiency, long-term stability, etc., hindering the industrialization and large-scale application of CO2RR techniques. The aim of this Special Issue of *Materials* is to present a comprehensive range of topics that advance the CO2RR-related techniques by enhancing the fundamental understanding of materials science. Research focusing on novel catalyst design, synthesis, and characterization and the integration of materials into practical CO2 conversion systems is of interest. Submissions addressing other pivotal components, such as membranes, electrolytes, anodes, etc., are also encouraged.

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About the Journal

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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