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Advanced Materials for Solid Oxide Electrochemical Cells

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Message from the Guest Editors

Solid oxide electrochemical cells are involved in a variety of important processes, such as H₂ production and CO₂ conversion. They are attractive because of unrivalled conversion efficiencies—a result of favorable thermodynamics and kinetics at higher operating temperatures. To obtain the high performance, it is important to design and synthesize materials with desirable structures and compositions based on a thorough understanding of the system. This Special Issue aims to address the materials development for solid oxide electrochemical cells, to explore recent progress in this exciting field, and to overcome the remaining hurdles towards commercialization.

We sincerely invite researchers to contribute to the Special Issue on Advanced Materials for Solid Oxide Electrochemical Cells. The potential topics include, but are not limited to:

- Solid oxide electrochemical cells
- Advance materials development
- Surface modification technologies
- Composition optimization technologies
- Configuration design
- Theoretical calculations for electrode/electrolyte materials
- Robust materials for extreme operations
- Material degradation and evolution during operation



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Special Issue



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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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