



Modeling and Simulation of Solid Oxide Cells

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Message from the Guest Editors

The world is witnessing and experiencing major issues arising from climate change. Electrochemical converters play crucial roles in mitigating these issues. Among them, solid oxide cells (SOCs) are able to operate in fuel cells (SOFCs), electrolysis cells (SOECs) or even reversible solid oxide cells (RSOC) with different gas components, which represent a very promising technology for carbon-neutral attainment and decarbonization. SOCs exhibit relatively high efficiency but face challenges from electrode/cell material science, stack assembling, thermal management, system integrity and control, etc. To overcome these challenges, various computational and modeling techniques have been proposed and developed which allow for the systematic simulation, design and optimization of SOCs at different levels, aiming to provide valuable insights into the phenomena occurring within the cells, stacks and systems that reduce the development cycles.

This Special Issue aims to present and disseminate the most recent advances related to modern modeling and simulation technologies, as well as applications ranging from material design to system control in the field of SOCs.





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Message from the Editor-in-Chief

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