

Special Issue

Solid Oxide Fuel Cells (SOFCs)

Message from the Guest Editors

Solid oxide cells (SOCs), encompassing fuel cells (SOFCs), electrolyzers (SOECs), and reversible systems (rSOCs), are among the most promising technologies for high-efficiency electrochemical energy conversion, bridging energy generation, storage, and sustainability. This Special Issue of Batteries welcomes the submission of original research contributions—both experimental and theoretical—focused on the design, modeling, and optimization of SOCs across scales, from advanced materials to complete stacks, including proton-conducting and oxygen ion-conducting rSOCs. Particular emphasis will be placed on multidisciplinary approaches, including CFD-based multiphysics modeling, multiscale simulations, and innovative materials engineering to overcome challenges in performance, degradation, and thermal management. We welcome submissions that address advances in electrode and electrolyte materials, novel cell and stack architectures, system-level fluid and thermal control, and the integration of SOCs into hybrid or reversible energy systems.

Guest Editors

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Take the opportunity to publish your original scientific work or a review paper concerning battery materials, battery technology or battery application within this new open access journal. Along with material science, the journal also addresses engineering and multidisciplinary research topics, such as cell and system design or storage system integration. Publishing proffers visibility for the benefit of other experts and facilitates discussion of the research results within the field. You are invited to publish your work, read published papers and to participate in topical discussions.

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