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Advances in Materials for Electrochemical Energy Applications 2024

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Sustainable and environmentally friendly energy storage and conversion technologies are essential to satisfying the dramatically increasing global energy demand and to reducing dependence on non-renewable fossil fuels. The development of novel materials plays a key role in improving the properties and performance of devices in a wide range of electrochemical energy applications including batteries, supercapacitors, flow batteries, fuel cells, hydrogen storage, photocatalysis, and thermal energy storage.

The aim of this Special Issue is to present the recent advances in materials used in all electrochemical forms of sustainable energy harvesting, conversion, storage, and utilization, including batteries, supercapacitors, flow batteries, fuel cells, electrocatalysis and electrocatalysts for energy conversion and storage, photocatalysis and photocatalysts for water splitting, hydrogen production and storage, thermochemical, piezoelectric and thermoelectric materials and devices, and flexible, self-powered, and integrated energy devices/systems.

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