

Special Issue

Recent Progress and Novel Opportunities in Advanced Batteries

Message from the Guest Editor

We are devoted to providing an overview of the latest developments in Batteries and fostering new ideas for enhanced batteries equipped with improved electrodes and electrolytes and energy-efficient architecture across multiple scales, ranging from atomic to mesoscopic. We further aim to provide a comprehensive understanding of the critical parameters hindering the performance or threatening the lifetime of batteries; this requires a wide spectrum of knowledge from both academia and industry. Characterization techniques have been developed rapidly, including a state-of-the-art electron microscope, synchrotron radiation for large infrastructure, neutron sources, etc., as well as an in situ apparatus enabling deep investigation of the structure–property relationship with unprecedented precision and throughput. Artificial intelligence assistant data mining methods are also developing rapidly, with a new paradigm emerging based on experimental and theoretical data sets on the peta- to zeta-byte scales.

Guest Editor

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