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Rechargeable Batteries Studied Using Advanced Spectroscopic and Computational Techniques II

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Deadline for manuscript submissions:
closed (15 December 2023)

Message from the Guest Editors

Dear Colleagues,

The present Special Issue, which will focus on modern spectroscopy techniques and first-principles computations applied to rechargeable batteries, will help to unravel the relationships between key battery characteristics and the nature of the electronic orbitals involved in intercalation reactions. The issue aims at providing fundamental insight into how batteries work, as well as validating standard diagnostics and characterization techniques, which mostly probe the average behavior of the battery as a whole. We expect that the findings presented in this Special Issue will facilitate better battery designs and better power management concepts toward alleviating battery aging, as well as a deeper understanding of the underlying physical principles. For example, one of the main challenges in the development of large-scale batteries is to monitor inhomogeneous positive ion distribution in electrodes. Improved uniformity lowers the damaging mechanical stress on the electrodes and improves battery cyclability. These and other important issues can be studied with spectroscopy, computational modeling, and simulations to invent the batteries of the future.

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Message from the Editor-in-Chief

Welcome to *Condensed Matter* (ISSN 2410-3896)! It gives me great pleasure to invite you to publish in the journal. We are looking to build a collection of high quality research articles, supported by a community from across the field of condensed matter physics. In this task, I will be assisted by a highly qualified editorial board. We accept papers on basic research as well as applications, and experimental or theoretical work. Currently the journal is indexed by ESCI (Web of Science) and hope you can consider *Condensed Matter* as an exceptional home for your manuscript.

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