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Rechargeable Batteries Studied Using Advanced Spectroscopic and Computational Techniques

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Deadline for manuscript submissions:
closed (16 May 2021)

Message from the Guest Editors

Dear Colleagues,

A complete understanding of the principles and mechanisms underlying the functioning of rechargeable batteries has not been reached, in spite of several decades of research. The present Special Issue topic, on modern spectroscopy techniques and first principles computations applied to rechearchable batteries, will help unravel 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 towards alleviating battery aging, as well as a deeper understanding of underlying physical principles. These important issues can be studied with spectroscopy, and computational modeling and simulations.

Sincerely yours,

Prof. Bernardo Barbiellini
Dr. Jan Kuriplach
Dr. Rolando Saniz
Guest Editors

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Editor-in-Chief

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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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Rapid Publication: manuscripts are peer-reviewed and a first decision is provided to authors approximately 20.1 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).

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