Special Issue

Battery Management Systems Based on Electrochemical Impedance Spectroscopy

Message from the Guest Editors

Electrochemical Impedance Spectroscopy (EIS) is emerging as a vital tool for enhancing battery management systems (BMSs), offering precise insights into a battery's state of health, charge, and overall performance. This Special Issue aims to explore the integration of EIS within BMS, focusing on cutting-edge research which leverages impedance data for the real-time monitoring, predictive maintenance, and optimization of battery systems. We invite contributions addressing both theoretical and practical aspects, including novel EIS techniques, data interpretation methods, and their application to various battery chemistries, alongside studies that bridge the gap between laboratory-scale experiments and real-world applications, as well as those exploring the challenges of implementing EIS in commercial BMSs. As this Special Issue seeks to advance the understanding and application of EIS in BMSs, providing a platform for researchers to present innovative solutions which enhance battery longevity, safety, and efficiency, authors are encouraged to submit original research, review articles, and case studies that contribute to this rapidly evolving field.

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