Special Issue

Design and Energy Conversion of Functional Electrode Materials for Multivalent Ion Batteries

Message from the Guest Editor

Supercapacitors and ion batteries have attracted much attention because of their low-cost, simple preparation process, fast charging ability (within seconds), ultra-high-power density, and pollution-free properties. Nevertheless, low energy density is an important factor restricting the application of supercapacitors. It is a feasible method to optimize the surface electronic structure of electrode materials and increase electron transport through the reasonable design of electrode materials. At the same time, among any energy conversion strategies, the electrochemical catalytic decomposition of water is also gaining popularity due to its low energy consumption and lack of pollution. However, due to the slow kinetics of OER and the low electrode life, a larger overpotential is required to drive the reaction. Therefore, it is necessary for electrode materials to achieve energy storage and energy conversion at the same time.

Guest Editor

Dr. Shunyu Yao

Department of Chemistry, Northeast Agricultural University, Harbin 150030, China

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Crystals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
crystals@mdpi.com

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Editor-in-Chief

Prof. Dr. Alessandra Toncelli
Department of Physics, University of Pisa, 56126 Pisa, PI, Italy

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