Special Issue

Innovative Electrode Chemistry for Next-Generation Electrochemical Energy Storage

Message from the Guest Editor

Since the first commercialization of lithium-ion batteries in 1991, energy storage devices (ESDs) have become indispensable in every aspect of daily life. As technological products evolve at an astonishing pace, it is necessary for next-generation ESDs to ensure a high energy density, high power density and stability, which are based on innovative electrode chemistries. In the long term, the efficient utilization of lithium resources and alternative innovative electrode chemistries beyond lithium are needed. Ideal electrode chemistry involves multiple electron transfer, fast charge/discharge kinetics and high stability but also inferior conductivity, high polarization and other undesired physical/chemical factors. ESDs such as secondary metal/non-metal ion batteries, gas batteries, flow batteries, supercapacitors, fuel cells and others should be significantly improved to meet our daily demand and address these disadvantages. Therefore, in this Special Issue, we wish to present the most recent advances in electrode chemistries with innovative designs in the abovementioned ESDs.

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Editor-in-Chief

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