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Metal Oxide-Based Supercapacitors: Progress and Prospectives

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Deadline for manuscript submissions:
closed (20 September 2022)

Message from the Guest Editors

Dear Colleagues,

Transitional metal oxides (MO) have been considered promising substitution materials for traditional electrode materials (e.g., carbon- and silicon-based) in electrochemical energy storage devices with the advantages of an easy synthesis method, high specific capacity, structural stability during repeated electrochemical operation, environmental geniality, low cost, etc. In particular, MO electrodes exhibit high energy density and power density when they are adopted in pseudo-supercapacitors, which bridges the gap between batteries and capacitors. During recent decades, a large amount of published work has focused on how to enhance their electrical conductivity, stabilize their nanostructure, control their volume expansion, and improve their ion diffusion in the bulk phase. It is important to review the progress that has been made and summarize the basic principles in electrochemical mechanisms. This Special Issue will focus on the progress of MO-based capacitors and reveal their future development prospects.

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Message from the Editor-in-Chief

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