

REVIEW

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Potential transition and post-transition metal sulfides as efficient electrodes for energy storage applications: review

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Electrochemical energy storage has attracted much attention due to the common recognition of sustainable energy development. Transition metal sulfides and post-transition metal sulfides have been intensively focused on due to their potential as electrode materials for energy storage applications in different types of capacitors such as supercapacitors and pseudocapacitors, which have high power density and long cycle life. Herein, the physicochemical properties of transition and post-transition metal sulfides, their typical synthesis, structural characterization, and electrochemical energy storage applications are reviewed. Various perspectives on the design and fabrication of transition and post-transition metal sulfides-based electrode materials having capacitive applications are discussed. This review further discusses various strategies to develop transition and/or post-transition metal sulfide heterostructured electrode-based self-powered photocapacitors with high energy storage efficiencies.

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