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The application of nanostructured transition metal sulfides as anodes for lithium ion batteries

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Abstract

With wide application of electric vehicles and large-scale energy storage systems, the requirement of secondary batteries with higher power density and better safety gets urgent. Owing to the merits of high theoretical capacity, relatively low cost and suitable discharge voltage, much attention has been paid to the transition metal sulfides. Recently, a large amount of research papers have reported about the application of transition metal sulfides in lithium ion batteries. However, the practical application of transition metal sulfides is impeded by their fast capacity fading and poor rate performance. More well-focused researches should be operated towards the commercialization of transition metal sulfides in lithium ion batteries. In this review, recent development of using transition metal sulfides such as copper sulfides, molybdenum sulfides, cobalt sulfides, and iron sulfides as electrode materials for lithium ion batteries is presented. In

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