Short Communication

Characterization of MnCo_2O_4 as anode material for a Sodium-Air Electric Vehicle Battery

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Among multiple next-generation rechargeable energy storage systems (e.g., electric vehicle battery), one substitution for lithium-ion batteries (LIBs) is the sodium-ion battery (SIBs). However, the thermodynamic and kinetic properties of SIBs remain uncertain, considering the distinct (de)sodiation processes and larger ionic radius of the sodium cation. The present work demonstrates the fabrication of inorganic MnCo_2O_4 nanoparticle-based SIBs. Under dry air experimental conditions, the $\text{MnCo}_2\text{O}_4/\text{C}$ -air electrode showed a high initial discharge capacity (7502 mA/h/g) and a stable working voltage (~ 2.1 V against Na^+/Na).

Keywords: Sodium-air batteries; MnCo_2O_4 ; Electric vehicle battery; Charge-discharge

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