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Potassium vanadate $K_2V_3O_8$ as a superior anode material for potassium-ion batteries

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Abstract

Layered $K_2V_3O_8$ (KVO) is successfully fabricated via simple hydrothermal reaction and employed as novel anode materials in potassium-ion batteries (KIBs). Benefitting from its specific layered structure and various oxidation states of V (V^{2+} to V^{5+}), KVO delivers high reversible capacity of 300 mAh g^{-1} . This work has significant implications in exploiting for potential anode materials, consequently speeding up the development of high-performance KIBs.

Keywords: Vanadate, Layered structure, Anode material, Potassium ion batteries.

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