

Vanadium Phosphate/Reduced Graphene Oxide Composite for Sodium Ion Battery Cathodes

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Vanadium phosphate (VOPO₄)/reduced graphene oxide (rGO) composite was synthesized by solution mixing process combined with ice-templating method. The physical properties and morphologies were investigated by several spectroscopic and electron microscopic techniques. The results suggested that VOPO₄ sheets resided on rGO nanosheets while crystal structure and chemical composition were maintained. The electrochemical performance of VOPO₄/rGO composite was evaluated in sodium ion battery system. In addition, rGO can play a crucial role on electrical conductivity, surface area, ion diffusion and volume expansion protection. Our work may open up new method and material design for the improvement of sodium ion battery cathodes.