One-pot Hydrothermal Synthesis of ZnO Microspheres/Graphene Hybrid and its Electrochemical Performance

Ye Lin¹, Hongdong Liu^{1,*}, Zhongli Hu¹, Rong Hu¹, Haibo Ruan¹, Lei Zhang^{2,*}

¹ Research institute for new materials technology, Chongqing university of arts and sciences, Chongqing 402160, PR China

² College of life science, Chongqing normal university, Chongqing 401331, PR China

*E-mail: lhd0415@126.com, leizhang0215@126.com

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In this paper, the ZnO microspheres/graphene hybrids were successfully prepared from zinc acetate and GO aqueous solution by a facile one-pot hydrothermal method without any surfactant. The as-synthesized samples were characterized by X-ray diffraction (XRD), field emission scanning electron microscope (FESEM), thermogravimetric (TGA) analysis, nitrogen adsorption/desorption isotherms and pore size distribution. When evaluated as anode material for lithium ion batteries, it delivered a high initial discharge capacity of 1150 mAh g⁻¹ and exhibited excellent rate performance at different current densities.

Keywords: ZnO microspheres/graphene hybrid, anode materials, lithium ion batteries, one-pot hydrothermal.

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