One-pot Synthesis of Cuprous Oxide-Reduced Graphene Oxide Nanocomposite as an Anode Material for Lithium Ion Battery

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With the simultaneous reduction of Cu^{2+} ions and GO by ethylene glycol, this work explores the convenient and one-pot preparation of porous cuprous oxide nanoparticles on reduced graphene oxide (Cu_2O -RGO). A series of measurements were applied for the characterization of the surface morphology, crystal structure and basic chemical elements of synthesized nanocomposite. An increase of initial discharge capacity to 2038 mAh/g was observed for the battery due to the synergetic effect of wrinkled graphene & copper oxide. This study conducts the impedance spectroscopy for obtaining charge transfer resistance of the electrode, with the results analysed herein.

Keywords: One-pot; Graphene; Cuprous oxide; Lithium ions; Battery

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