

One-pot Route for Uniform Anchoring of TiO₂ Nanoparticles on Reduced Graphene Oxides:
Enhanced Anode Performances for Lithium-ion Batteries

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A supercritical isopropanol (scIPA) is simple method of uniform dispersion TiO₂ nanoparticles on reduced graphene oxide (RGO). Supercritical isopropanol (scIPA) can prepare TiO₂-RGO composited one-step, that TiO₂ Nanoparticles composited on the surface of reduced graphene oxide (RGO) during a graphene oxide (GO) to reduce graphene oxide (RGO). TiO₂-RGO composited used anode in lithium ion battery showed good electrochemical performance. Reversible capacity of 404-430 mAh g⁻¹ at 50 mA g⁻¹ and a high-rate performance of 130 mAh g⁻¹ at 5 A g⁻¹. Furthermore, TiO₂-RGO composited showed about 91% of 1st charge-discharge capacity was after 1000 cycles at 1 A g⁻¹. This study compared with the physical and electrochemical properties of TiO₂-RGO composited and TiO₂ Nanoparticles composited Heat-treatment graphene oxide (HGO).