

Reduced graphene oxide by supercritical solvothermal method

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A reduced graphene oxide (RG-Os) is the promising material that has special properties in electronics and optics. Reduced graphene oxide by using supercritical solvothermal method is one of the considerable methods. Furthermore, RG-Os was prepared in short reaction time (2 hour) and using common solvent (methanol) which are environmental friendly and scalable for mass production. Decreasing level of O-H bond and C=O bond were analyzed by Fourier Transform Infra Red (FTIR) Spectroscopy. High deoxygenating level was showed by the high value of carbon/oxygen ratio, analyzed by XPS and CHNOS (Carbon-Hydrogen-Nitrogen-Oxygen-Sulfur) Analyzer. Powder X-ray diffraction (XRD) analysis of RG-Os shows a single broad peak at 25.1 (2θ angle), verifying the exfoliation of graphitic sheets.