

One-pot solvothermal synthesis of hybrid zinc oxide/reduced graphene oxide (ZnO/rGO) nanocomposite for improvement of UV sensing properties

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Hybrid zinc oxide/reduced graphene oxide (ZnO/rGO) nanocomposite was synthesized by solvothermal technique at 150 °C of synthetic temperature with the varying amount of graphene oxide content (0%, 10%, 20%, 30%). The thermal stability of hybrid ZnO/rGO nanocomposite has been examined by Thermogravimetric analysis (TGA). The morphology and surface characteristic of hybrid ZnO/rGO nanocomposite was characterized by X-ray diffraction (XRD), Fourier transforms infrared spectroscopy (FTIR), Raman spectroscopy (RS) and Field emission scanning electron microscopy (FESEM). I-V curves of UV detectors were measured both in the dark and UV illumination. The detector based on hybrid ZnO/rGO nanocomposite shows enhanced photo responsivity performance. The photoconductive UV detectors based on hybrid ZnO/RGO composite may have a great application of UV detection.