

Highly efficient preparation of ZnO nanorods decorated reduced graphene oxide nanocomposites.

ABSTRACT

A one-step method for the synthesis of zinc oxide/reduced graphene oxide (ZnO/rGO) nanocomposites by a hydrothermal technique is reported. This simple method involves a hydrothermal treatment of a solution comprising graphene oxide (GO), Zn(CH₃COO)₂·2H₂O, NaOH and NH₃·H₂O. The concentration of GO as a starting material plays an important role in the density distribution of ZnO nanorods on the rGO sheets and on the percentage of the formation of ZnO/rGO nanocomposites. The resulting rod-like ZnO nanoparticles formed on the rGO sheets, in high density, has a potential in the gas sensing application.

Keyword: Graphene; Zinc oxide; Nanoparticles; Nanocomposite.