

ABSTRACT

A brief pattern of synthesis and characterization of Copper oxide (CuO) nanocomposites by different methods and their use as novel construction of sensor is presented in this thesis. These nanocomposites have unique chemical and physical characteristics. Large number of application in different and emerging fields is there in their way on daily basis. This thesis consists of four basic chapters. Brief and basic knowledge of nanotechnology with synthesis methods of nanoparticles is briefly explained in chapter first. In second chapter, description of the methodologies of nanoparticles, synthetic schemes and comparison of similar method in different articles. In chapter three, which is most important chapter, description of about the application and properties observed by different techniques such as Fourier transform infrared spectroscopy (FTIR) photochemistry technique i.e. Photoluminescence (PL), X-ray diffraction (XRD), with these techniques also ultraviolet visible spectroscopy (UV-Visible) was being used in both characterization and sensing application. These nanocomposites can act as good sensing agents as sensor for detection of hydrogen peroxide (H_2O_2) and also used as electrode for electrochemical capacitor. In this thesis we will be in better understanding regarding the synthesis and characterization of graphitic carbon nitride ($g-C_3N_4$) based nanocomposites of copper oxide (CuO) and its usage as sensing material in different concentrations for sensing H_2O_2 .