Fabrication and Characterization of Cu/ZnO Nanocomposite Film for Advanced Electroanalytical application

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Cu/ZnO nanocomposite film was synthesized by cathodic electrodeposition at a potential of -1.4V, and was characterized using XRD, SEM and AFM. The band gap of Cu/ZnO nanocomposite film was studied which was compared with that of pure ZnO nanoparticles film and it was found that the presence of Cu decreased the band gap of ZnO. Hence it proved to be a good material for supercapacitor. Cu/ZnO nanocomposite film based supercapacitor exhibited significantly high energy densities as compared to the ZnO nanoparticles based supercapacitor. Thus the synergistic effect of Cu and ZnO represents a new approach to high performance energy storage.

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