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Structural, Optical and Electrical Thin-Film Characterization Using Graphite-Bioepoxy Composite Materials

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Abstract : The fabrication and characterization of composite films of graphite- bioepoxy is described. Free-standing thin films of ~0.1 mm thick are prepared using a simple solution mixing with mass proportion of 7/3 (bioepoxy/graphite) and drop casting at room temperature. Fourier transform infra-red spectroscopy (FTIR) and Ultraviolet-visible (UV-vis) spectrophotometer are performed to evaluate the changes in chemical structure and adsorption spectra arising with the increasing of graphite weight loading (wt.%) into the biopolymer matrix. The morphologic study shows a homogeneously dispersed and strong particle bonding between the graphite and the bioepoxy, with conductivity of the film 103 S/m, confirming the efficiency of the processes.

Keywords : absorbance peak, biopolymer, graphite- bioepoxy composites, particle bonding
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