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Synthesis, Characterization, and Electrical Properties of Copolymer Derived from 2-Amino 6-nitrobenzothiazole, Dithiooxamide and Formaldehyde

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Abstract: *The BDF-II copolymer was synthesized by reacting2-amino 6-nitrobenzothiazole and dithiooxamidewith formaldehydein the presence of 2 M hydrochloric acid as a catalyst in 2:1:3 molar ratios. UV-visible, FTIR, and proton NMR spectral analysis were used to figure out the structure of the copolymer.The surface features of the copolymer were determined using scanning electron microscopy (SEM). The semiconducting nature of the copolymer was determined through electrical conductivity measurements. The electrical properties of the BDF-II copolymer were measured over a wide temperature range from 313-428K, the activation energy of electrical conduction was calculated, and the plot of log б vs 1000/T was found to be linear over a wide temperature range, classifying it as a semiconductor.*

Keywords: Semiconductor, Electrical Conductivity, Copolymer, Spectral Analysis, Synthesis

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