

Effect of CoCl_2 Doping on the Optical and Electrical Properties of PEO Polymer Films for Optoelectronic Applications

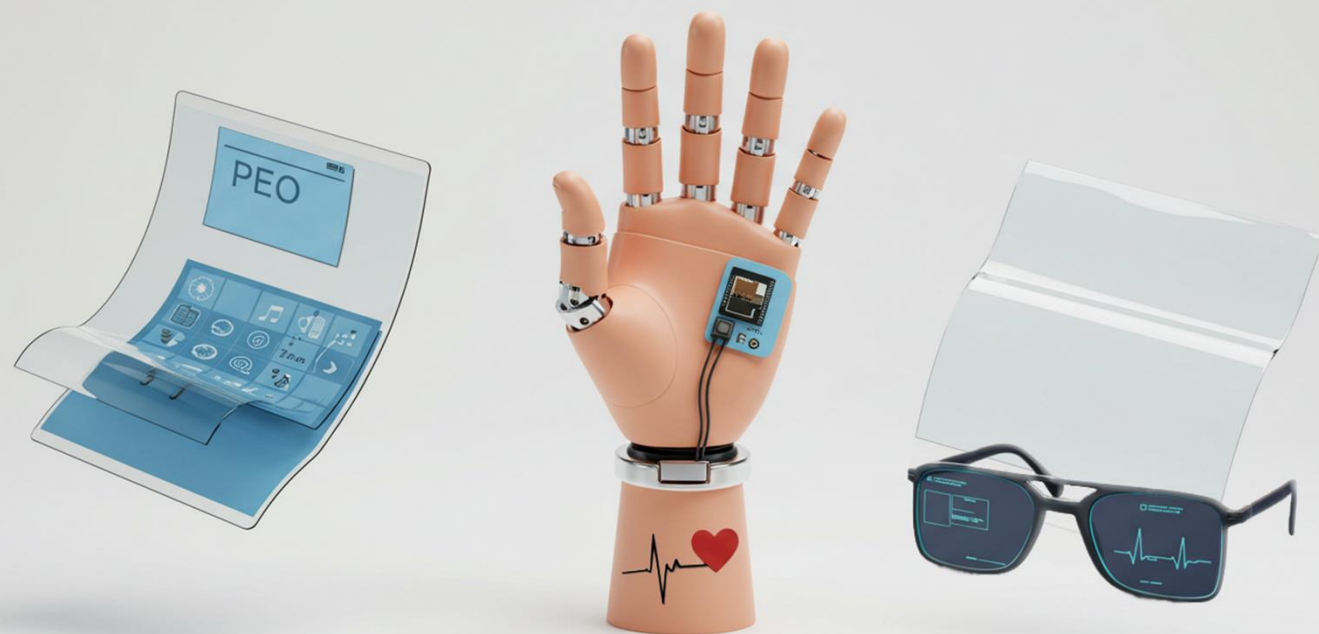
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Editor's note: Polyethylene oxide (PEO) films are characterized by their semi-crystalline structure, which imparts several important properties, including hydrophilicity, chemical stability, solubility in alcohols, and flexibility. However, the absence of charge carriers limits their application in various fields. Enhancing the conductivity of these films could lead to advancements in next-generation photonic devices, solar cells, optoelectronics, and sensors. Roopa K. V. and Subramanya K. investigated the doping of PEO films with cobaltous chloride (CoCl_2) at various concentrations. Their findings indicated that the interaction between Co^{2+} ions and the ether groups of PEO results in the formation of metal-ligand coordination bonds within the doped PEO films. This interaction significantly enhances the electrical conductivity and ion mobility of the CoCl_2 -doped PEO films and results in a redshift in the absorption edge of these films.

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