Comparative study of Structural, Optical and Dielectric properties of [(PVP: PVA) – Cr³⁺] and [(PVP: PVA) –La³⁺] Composite films

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**Abstract**. Polyvinylpyrrolidone (PVP) and polyvinyl alcohol (PVA) polymer blend composite films doped with lanthanum (La) and chromium (Cr) ion were prepared via solution casting method. The structural properties were studied using x-ray diffraction (XRD) technique. UV-Visible photospectroscope was employed to measure optical properties and dielectric properties was measured using LCR meter. XRD results showed the semicrystalline behaviour of prepared films. Cr ion doped polymer blend composite film had an optical band gap of 4.17 eV, whereas La ion doped films had a band gap of 4.769 eV. From the comparative study of the (PVP:PVA)–Cr³⁺ and (PVP:PVA)–La³⁺ composite polymer films it was observed that La3+ doped film had lower dielectric constant. The ac conductivity of the (PVP:PVA)-Cr3+ doped film is found to be higher than that of the (PVP:PVA)-La3+ doped film.

References:

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