**Structural and Optical Properties of Nickel doped PVA Nanocomposites**

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**ABSTRACT**

The present study deals with the synthesis and characterization of Pure PVA polymer film and Ni nanoparticles doped PVA Nanocomposite film using X-ray diffraction technique and FTIR. The pure PVA and Ni nanoparticles incorporated PVA Nanocomposite were prepared by solution casting method. The crystalline properties such as crystallite size, interplanar distance and crystallinity index has been calculated. The study reveals that, as we increase the concentration of Ni Nanoparticles in to the PVA film, the crystalline properties are enhancing. The crystalline size for 2%, 4% and 6% Ni doped PVA are found to be 4.32 nm, 4.485 nm and 4.5 nm respectively. From FTIR presence of O-H functional group is confirmed hence the doped PVA contains O-H functional group.

Keywords: Nickel Nanoparticles, PVA , X-Ray Diffraction (XRD), FTIR

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