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The Effect of Aluminum Oxide Nanoparticles on the Optical Properties of (PVP-PEG) Blend

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Abstract : Polymer nano composites of polyvinylpyrrolidone and poly-ethylene glycol with different concentrations of aluminum oxide (Al2O3) nano particles have been prepared by solution cast method. The optical characterizations have been done by analyzing the absorption (A) spectra in the 300–800 nm spectral region. It was found that the optical energy gap decreases with the increasing of Al2O3 nano particles content. The optical constants (refractive index, extinction coefficient, real and imaginary parts of the dielectric constant) are changing with increasing aluminum oxide nano particle concentrations.

Keywords : nanocomposites, polyvinylpyrrolidone, optical constants, polymers, blend
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