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Optical Properties of CTA Natural Dye Coated Film exposed to Low Temperature Plasma

R. LavanyaDhevi[1]*, K.A.Vijayalakshmi[2], S.Ranjitha[3]

[1]Research and Development Centre, Bharathiar University, Coimbatore-641046, Tamilnadu, India
[2]Department of Physics, Sri Vasavi College, Erode-638316 Tamilnadu, India
[3]Velalar College of Engineering and Technology, Erode-638012 Tamilnadu, India

Abstract : Cellulose Tri Acetate (CTA) film incorporating palash flower dye has been prepared by dip coating method and the optical properties has been investigated. In the Photoluminescence (PL) spectra of the CTA coated dye films, a peak at 603 nm and the visible emission peak at about 660 nm were observed, which were caused by palash flower dye. The CTA film coated dye was exposed to plasma for two different times for the comparison. The PL peak initially appearing about 550 nm broadened and moves to higher wavelength with increase in treatment time of plasma. On contrary, in the PL spectrum of the untreated and plasma treated film, the intensity of the emission band increases with increase in treatment time of plasma which can be caused by the incorporation of dye in to the film and surface treatment of plasma.

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