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लोकमान्य टिळक भवन,
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दूरध्वनी : २६५२ ६२५०, २६५३ ३०५१,
२६५४ ३३५८
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Ph. D. Seminar
Of

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Embedding of Metallomesogen Nanoparticles in Polymer Dispersed Liquid Crystal

Liquid crystals embedded with metallic nanoparticles have attracted much attention in recent years owing to their prospective applications in various fields. Polymer Dispersed Liquid Crystals (PDLCs) is a new class of materials for optical device applications. Their valuable advantages such as low operating voltage, high contrast ratio, quick electro optical response, simple fabrication low cost production and ease of processing make them more popular over other display technologies. Threshold voltage and sharpness response are important parameters to characterize the quality of LCDs.

PDLCs and LCPS^{*} were prepared by Solvent Induced Phase Separation and Thermal Induced Phase Separation method. Analytical techniques utilized to characterize the PDLCs and LCPS such as Fabry Perot Scattering Studies (FPSS), Optical Polarized Microscope Studies (OPM), Refractive Index using DSR-Lamda, Scanning Electron Microscope (SEM), X-Ray Diffraction (XRD), Thermogravimetric Analysis (TGA), Differential Thermal Analysis (DTA), Differential Scanning calorimetry (DSC), Fourier Transform Infrared Spectroscopy (FTIR), Ultraviolet-Visible Spectroscopy (UV-Vis), LCR Meter used for characterization of the samples.

Results obtained from various studies on PDLC and LCPS embedded with Zn, ZnO, CdO and CuO nanoparticles. The influence of PDLC and LCPS is enhanced for display purpose by embedding with ZnO nanoparticles. A low concentration of nanoparticles in PDLC and LCPS can increase the transition temperature as well as clearing temperature. The phase transition temperatures for ZnO nanoparticles were found to increase compare to pure PDLC and LCPS.

Day: Saturday 19th August 2017

Venue: Seminar Hall (PDSR), Department of Physics

Time: 11.00 am

Vaishali Bambole

Dr Vaishali Bambole

Professor & Head

Professor & Head

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