

Abstract Submitted
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Reverse-Mode Transmission Gratings Holographically Recorded Utilizing Liquid Crystalline Photopolymers¹ ROBERT RAMSEY, SURESH SHARMA², University of Texas at Arlington — Reverse-mode transmission gratings are holographically recorded in a polymer dispersed liquid crystal materials set utilizing the 540nm lasing wavelength. The samples are synthesized utilizing mixtures of a reactive mesogen, RM257, nematic liquid crystals E44 and E3100-100, acrylate monomers and a photo-oxidant dye. We investigate the formation parameters, electro-optical and frequency characteristics of these gratings. It is found that for an applied field strength of around 14 V/ μm a relative increase in the diffraction efficiency of almost 1200% is obtained with switching times of 12ms.

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