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Gain dynamics in liquid crystal photorefractive hybrids

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Abstract

Photorefractive (PR) hybrid liquid crystal (LC) cells have combined the space-charge field generated in either a polymer (using e.g. PVK;C_{60}) with the large birefringence from a LC layer to generate PR grating for beam coupling applications. The efficiency of PR beam coupling in hybrid devices is dependent on the amplitude of the space-charge field, as well as the ability of the LC molecules to align with the corresponding field. In this paper the time dynamics of the formation of the PR gratings are measured in LC hybrid systems and are used to explain the large variation of gain coefficients found in the literature.

Citation

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