

AC FIELD ENHANCEMENT
OF DIFFRACTION FROM PERMANENT
GRATINGS IN DYE-DOPED LIQUID CRYSTALS

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S u m m a r y

Permanent gratings can be written in doped liquid crystals with high dye concentration without any externally applied electric field, using low-intensity visible light. The gratings are adaptive as their diffraction efficiency can be easily controlled by an AC field. The diffracted intensity could also be modulated by a low-frequency electric field with the magnitude of modulation decreasing for higher frequencies. The permanent gratings are durable, remaining in the cells for over a year, even after applying high temperatures.