Switchable two-dimensional gratings based on field-induced layer undulations in cholesteric liquid crystals

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We propose switchable two-dimensional (2D) diffractive gratings with periodic refractive-index modulation arising from layer undulations in cholesteric liquid crystals. The cholesteric cell can be switched between two states: (1) flat layers of a planar cholesteric texture and (2) a square lattice of periodic director modulation associated with layer undulations that produces 2D diffraction patterns. The intensities of the diffraction

droplet structures

[2,3] in which the diffraction pattern is switched by changing the director field in the