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Contribution of diffusion and photovoltaic effect to self-pumped reflection gratings in photorefractive lithium niobate

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Abstract

The transfer matrix method is used to analyze induced reflection gratings in photorefractive iron doped lithium niobate in a self-pumped configuration. The optical field distribution and the induced refractive index distributions inside the material are computed, and the overall transmission and reflection are determined for different orientations of the c-axis. Numerical simulations are compared with experimental results.

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