

3D nano and micro structuration of polymer nanocomposites for optical sensing and image processing (Proceedings Paper)

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Paper Abstract

3D holographic gratings with variable periodicity represent a central part of an optical sensing system. Periodic spatial modulation of the refractive index in all three dimensions is holographically induced by multiple beam interference. The periodicity of the resulting volume diffractive optical structure is controlled by the recording beam geometry. The recording medium is a photosensitive polymer. An experimental setup for creating and analyzing such 3D gratings is presented as well as first results achieved in a 300 μm thick photopolymer sample.

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