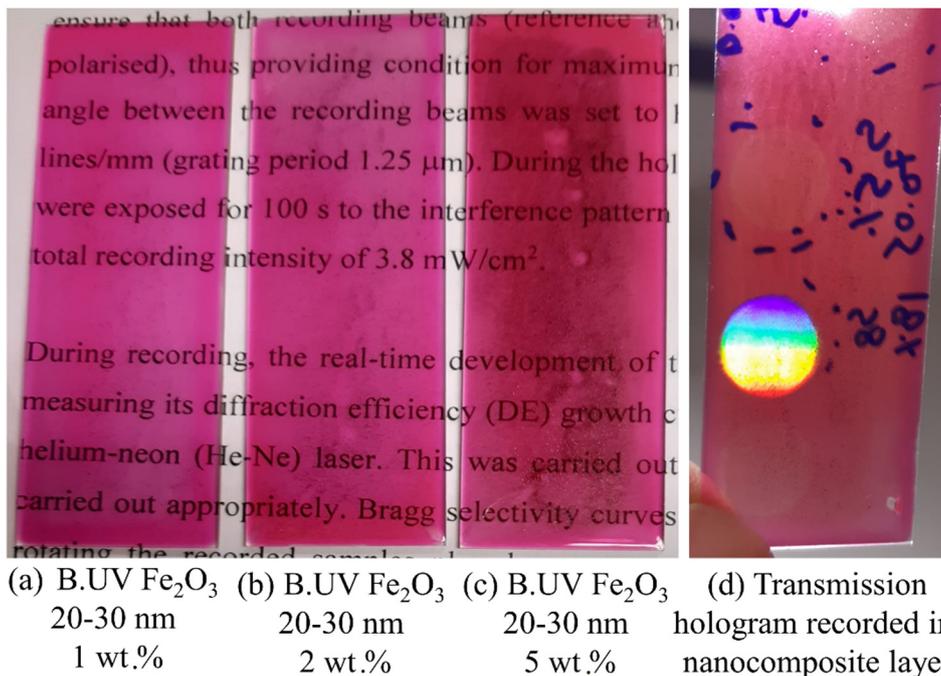
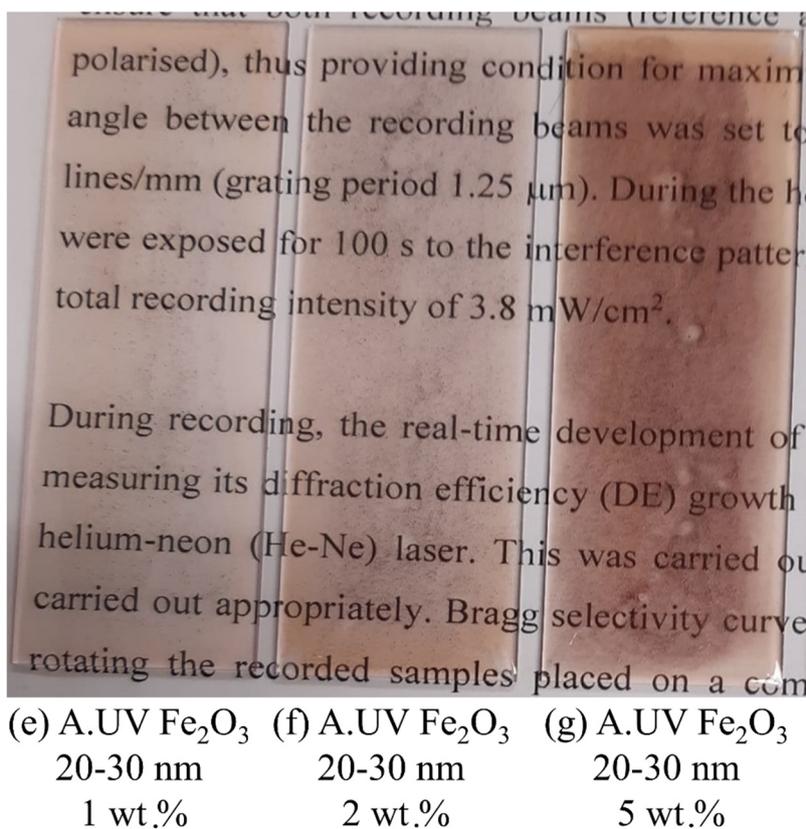


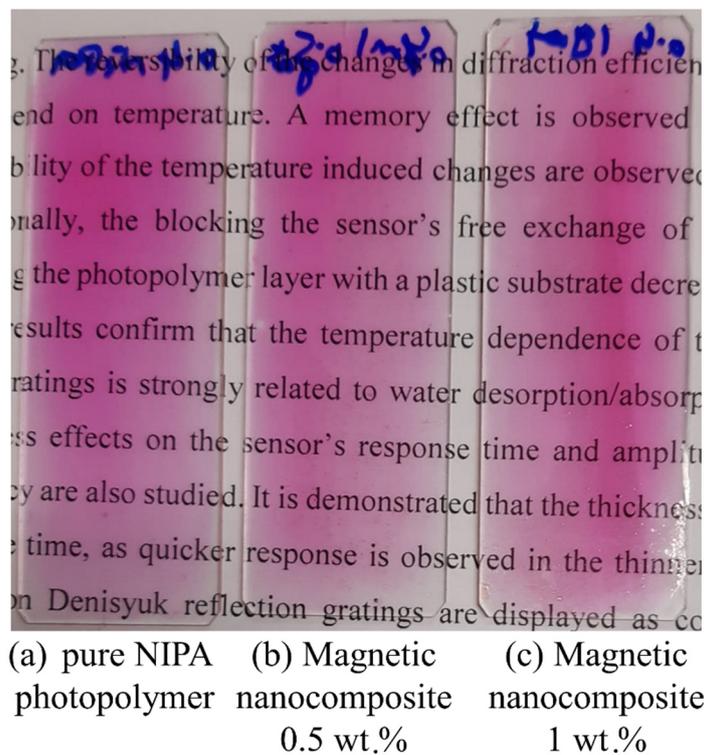
# A Magnetic Nanoparticle-Doped Photopolymer for Holographic Recording

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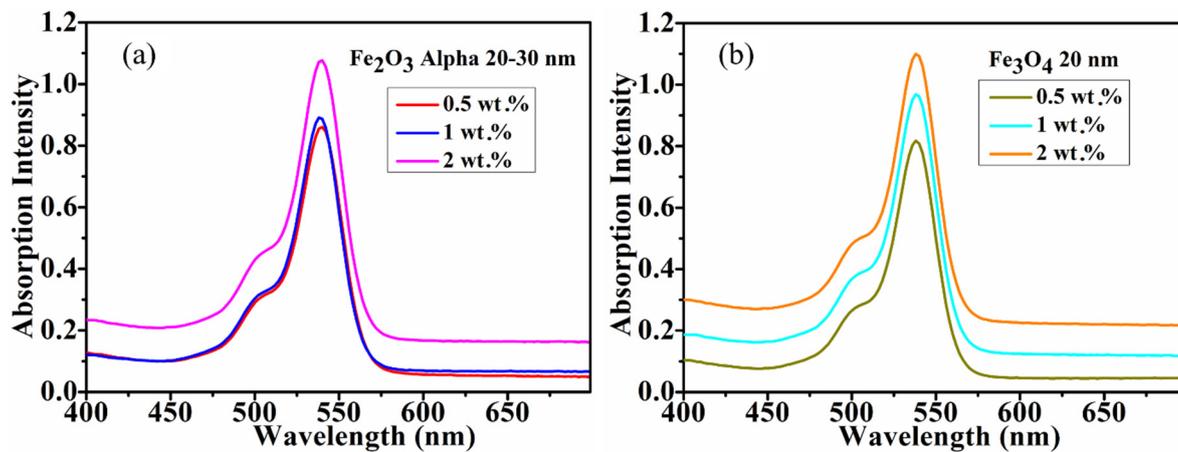




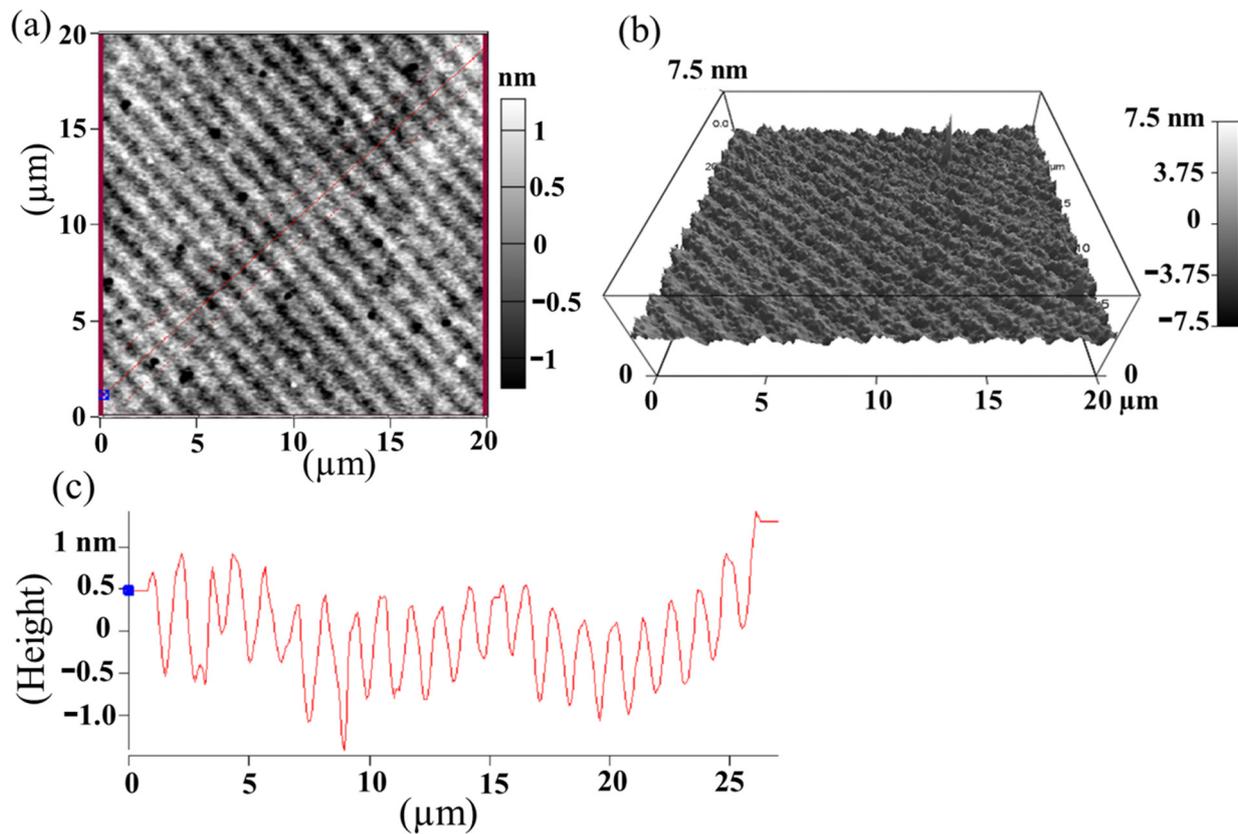
**Figure S1.** Physical pictures of the photosensitive magnetic nanocomposite layers having MNPs Fe<sub>2</sub>O<sub>3</sub>-Alpha 20–30 nm before UV exposure (a) 1 wt.%, (b) 2 wt.%, (c) 5 wt.%, (d) transmission hologram recorded in the magnetic nanocomposite layer and (e) 1 wt.%, (f) 2 wt.%, (g) 5 wt.% are after UV exposure. Layers were exposed for 100 s in Dymax UV-curing system (model ECE-200) and UV intensity of 60 mW/cm<sup>2</sup>.



**Figure S2.** Physical pictures of the layers used in recording Denisyuk reflection holograms. (a) Pure NIPA photopolymer, magnetic nanocomposites having (b) 0.5 wt.%, (c) 1 wt.% of Fe<sub>2</sub>O<sub>3</sub> Alpha 20–30 nm.



**Figure S3.** UV-Vis extinction (scattering plus absorption) spectrum of solid layers of photopolymer samples doped with a) Fe<sub>2</sub>O<sub>3</sub> and b) Fe<sub>3</sub>O<sub>4</sub> nanoparticles.



**Figure S4.** Morphology of the transmission holographic gratings studied by atomic force microscopy (AFM); the gratings were recorded in magnetic nanocomposite layer having MNPs Fe<sub>2</sub>O<sub>3</sub>-Alpha 20–30 nm. The grating period obtained is about 1.25 μm, matching the grating period value for the recording spatial frequency of approximately 800 lines/mm used in transmission holographic recording.