Electronic Supplementary Material (ESI) for RSC Advances.

One-step of Sub-wavelength Patterning of Plasmonic Gratings in Metal-Polymer Composites

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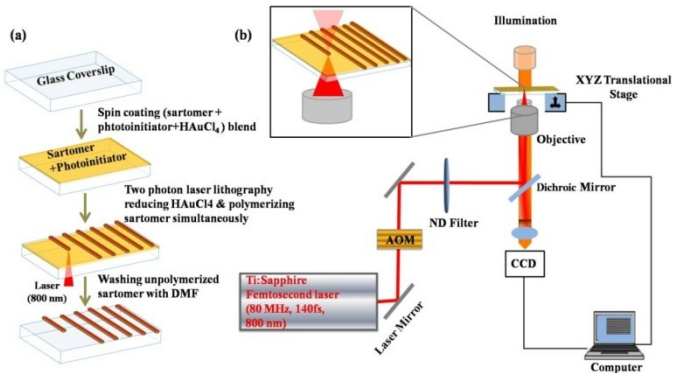

Fig.S1. Schematic of the fabrication process used for TPL of metallic structures inside polymer matrix

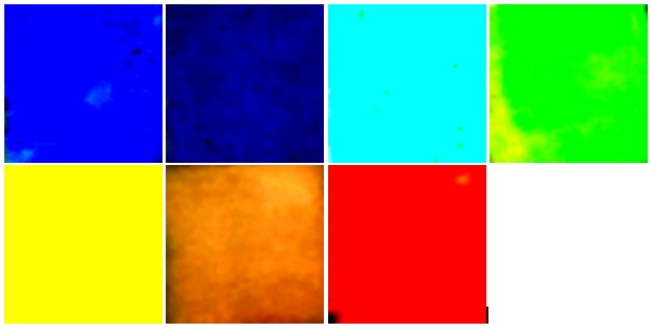

Fig S2. Optical images of the 5wt% gold loaded grating (840µm X 840µm) captured in reflection mode at different angles

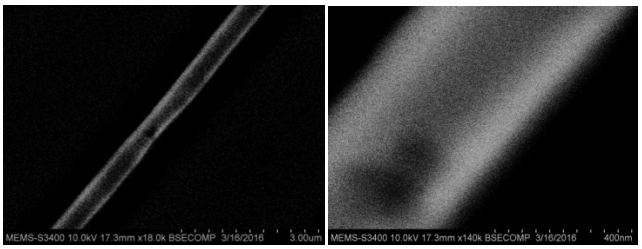

Fig. S3. Backscattered electron image of 5wt% gold loaded polymeric line confirming the presence of small gold nanoparticles

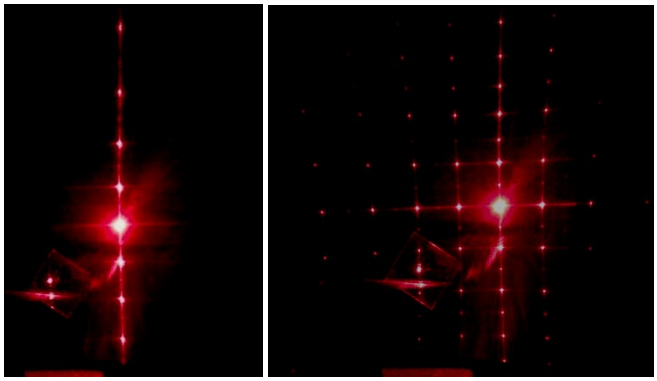

Fig. S4. Diffraction patterns obtained from 1D grating and 2D mesh structure respectively

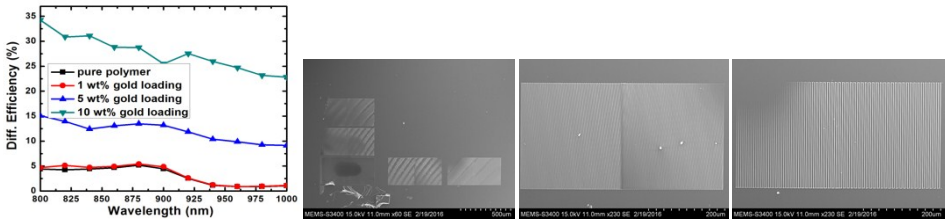

Fig. S5. Diffraction efficiency of first diffraction order (+1) and SEM images of 560X280μm^2 gratings written in pure sartomer at different spacings

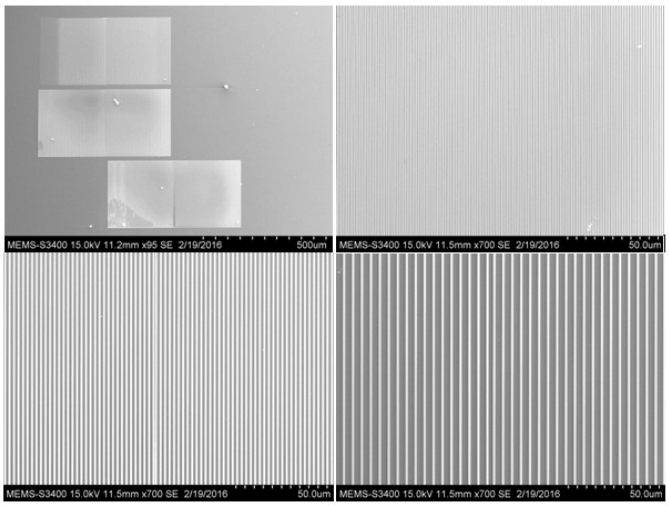

Fig. S6. SEM images of 560X280μm^2 gratings written in 1wt% gold loaded sartomer at different spacings

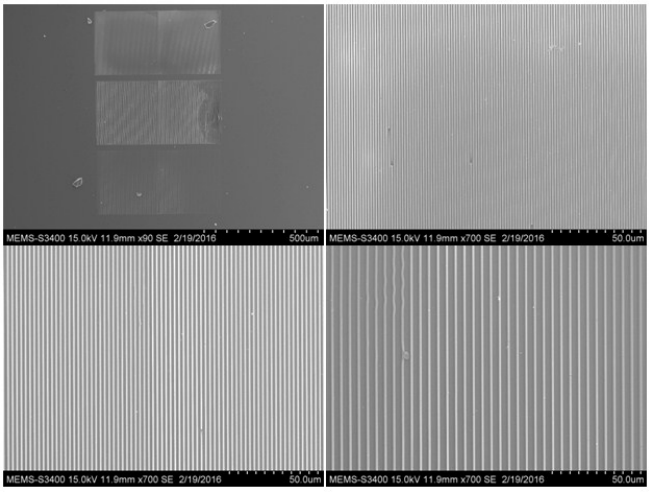

Fig S7. SEM images of 560X280μm^2 gratings written in 5wt% gold loaded sartomer at different spacings

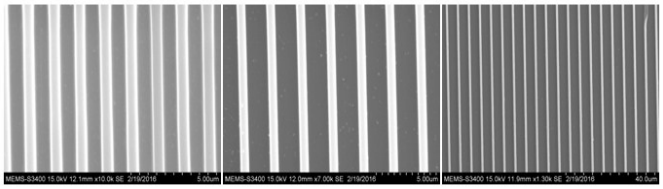

Fig. S8. Zoomed in SEM images of 560X280μm^2 gratings written in 10wt% gold loaded sartomer at different spacings

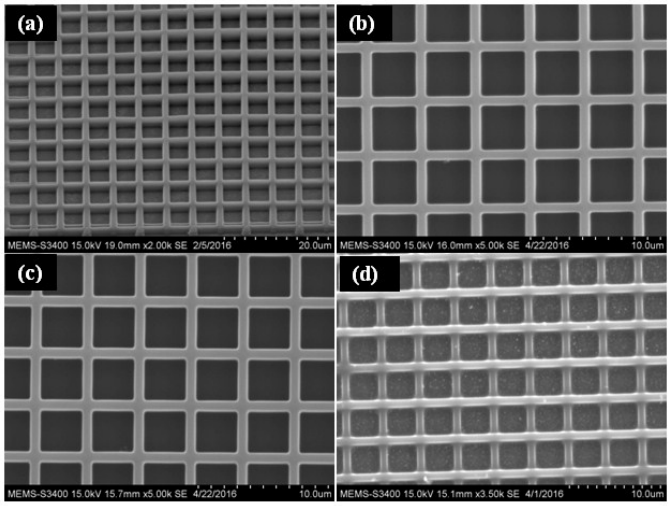

Fig. S9. Zoomed in SEM images of 560X 560 μm^2 mesh structures written in 0wt%, 1wt%, 5wt% and 10wt% gold loaded sartomer respectively

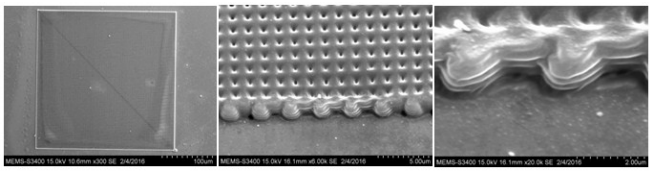

Fig. S10. SEM images of multilayered mesh structure at different magnifications