

Supplementary Information

Generation of highly integrated multiple vivid
colors using a three-dimensional broadband
perfect absorber

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This document provides supplementary information to “Generation of highly integrated multiple vivid colors using a three-dimensional broadband perfect absorber”. The supplementary information is 6 pages long, and contains 6 figures.

Part 1.

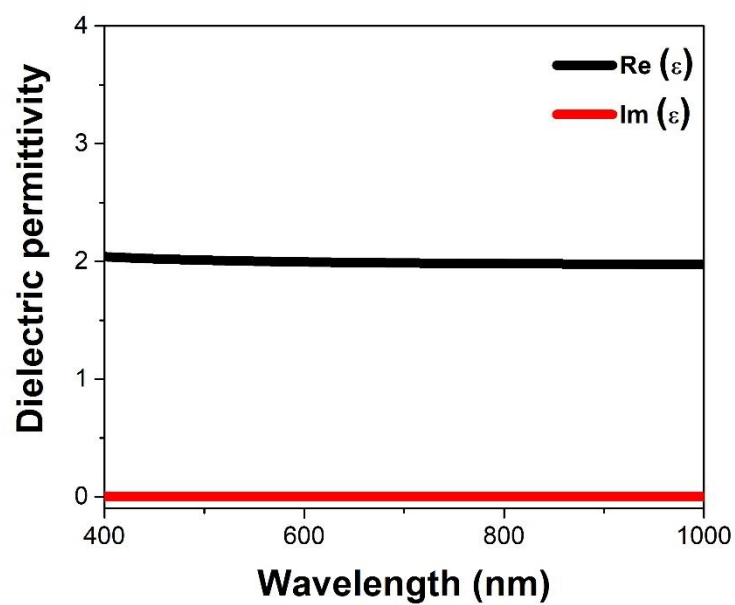


Fig. S1. Real part and imaginary part of dielectric constant ($\epsilon=\epsilon'+i\epsilon''$) of lossless HSQ dielectric layer.

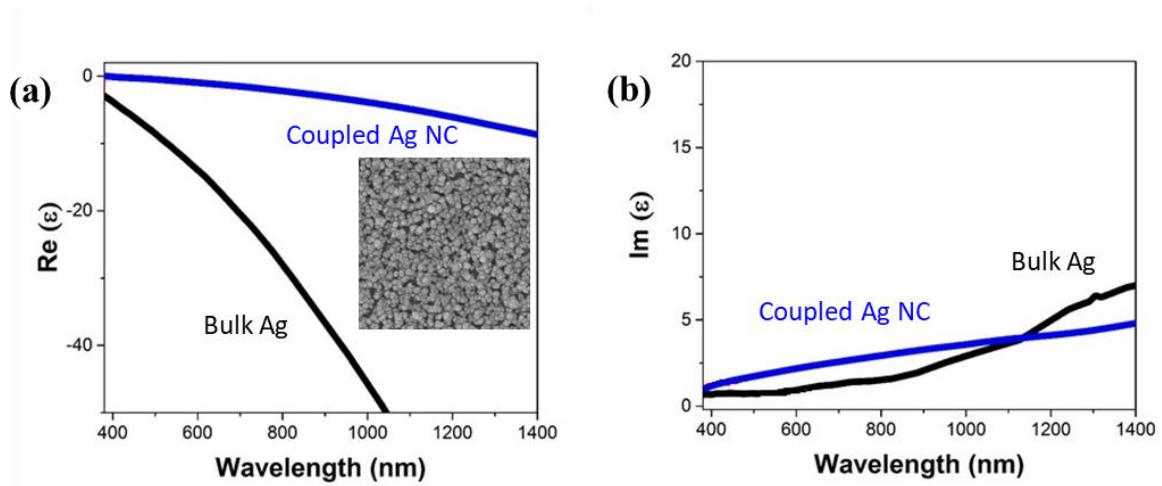


Fig. S2. (a) Real part and (b) Imaginary part of dielectric constant ($\epsilon = \epsilon' + i\epsilon''$) of the coupled Ag NC film and bulk Ag film.

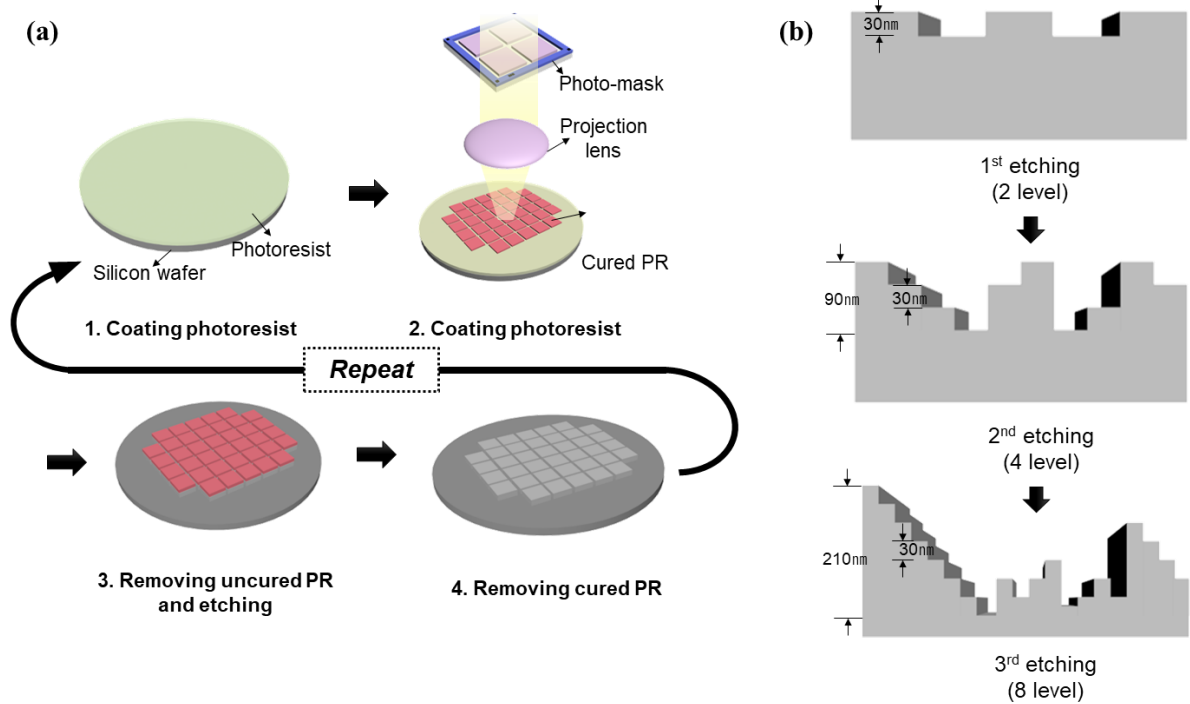


Fig. S3. (a) Schematic of multi-stepped silicon master stamp using photolithography and etching process with 3-steps. (b) Results from step-by-step photolithography and etching process.

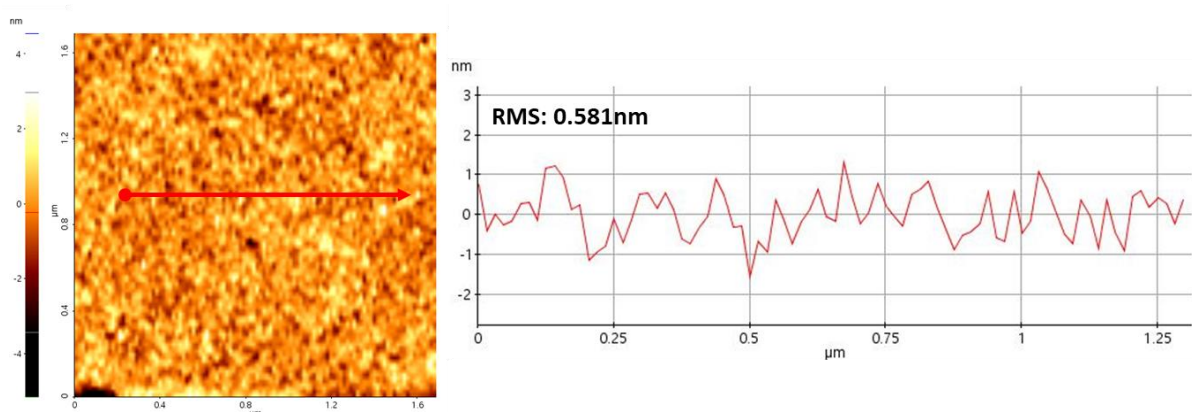


Fig. S4. The roughness information of the pixelated HSQ surface

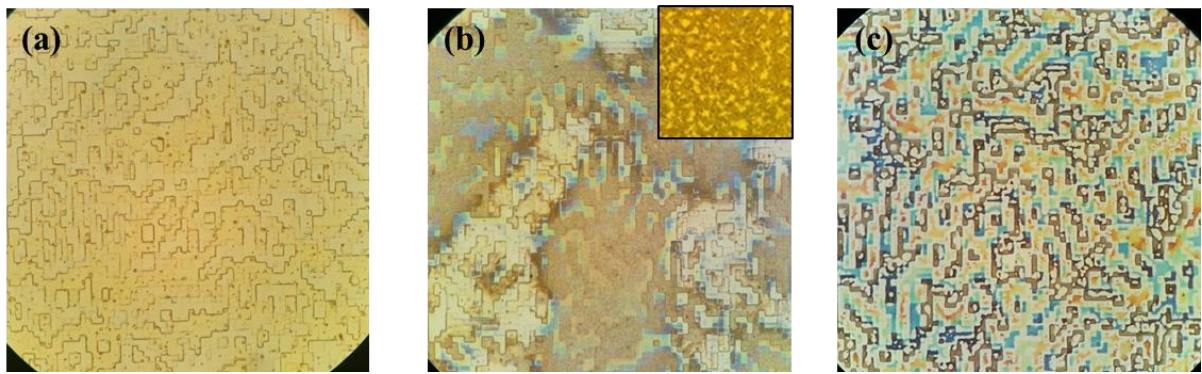


Fig. S5. Results of multi-absorber fabrication with various nanocrystal coating methods: (a) Dip coating, (b) Spray coating, and (c) Spin coating

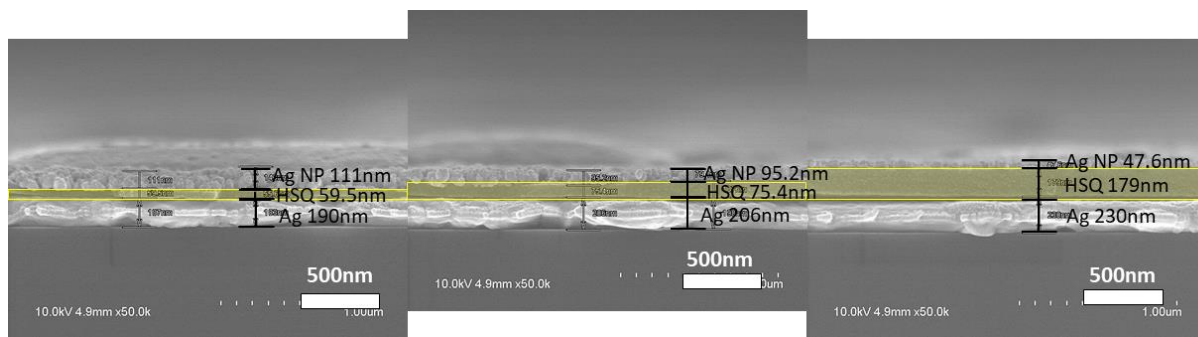


Fig. S6. Using spin-coating method: SEM cross section of the absorber with different Ag NC thickness due to the difference of the HSQ thickness.