

## LARGE AREA 3D SELF ASSEMBLED PHOTONIC CRYSTALS OF PMMA NANOSPHERES

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### ABSTRACT

We have synthesized Poly-methylmethacrylate (PMMA) 3D Photonic crystals (PhC's) by tuning the size of PMMA nanospheres via self-assembly (SA) method. SA of colloidal particles to fabricate the PhC's is a simple method to prepare 3D PhC's compared to nanolithography and other conventional methods. 3D PhC's made of closely packed PMMA nanospheres are fabricated here by self-assembly and characterized using DLS, SEM, HR-TEM and UV-Vis spectroscopy measurements. The experimental results of spheres from DLS fall in the size range 229.2 to 306.8 nm.

**KEY WORDS:** Poly-Methamethacrylate (PMMA), Nanoparticles (NP), Photonic Crystal (PhC), self-assembly (SA).

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