

### Fabrication of spherical colloidal crystals using w/o emulsions

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Spherical assemblies of colloidal particles with unusual optical properties have taken a growing interest recently. Especially, spherical colloidal crystals, supraballs with monodisperse polymer or silica microsphere have received much attention because of their potential applications for photonic ink, biochemical sensor and light diffuser. Here, we propose the fabrication method of supraballs from water-in-oil emulsion as the confined geometries. Fabricated supraballs through our approach were micrometer-sized 3D colloidal assemblies with narrow size distribution and an hexagonally ordered structure. Micropipette was used to generate monodisperse emulsion droplets by a droplet break-off technique developed by Umbanhowar et al., where the emulsions contain monodisperse particles. During evaporation of water, colloidal particles were assembled to spherical colloidal crystals and finally, formed to FCC structure.