

In situ observations of self-assembling process of colloidal crystalline arrays

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Supplementary Information

In order to check whether the crystal growth along $\langle 112 \rangle$ was due to reduction of the growth rate or due to reduction of the concentration of spheres, we have conducted the crystal growth at the concentration of 0.05%. However, the crystal growth came to rest at around 1 mm in length, because the inlet of the cell was stopped up by the sediments of spheres, which were introduced by the slow growth rate and gravitational sedimentation. Scanning electron microscope (SEM) observation revealed that the growth along $\langle 112 \rangle$ direction was dominant and the crystal had the thickness of approximately 10 μm which corresponded to the cell thickness. SEM images of the crystals grown at the concentrations of 1, 0.2 and 0.05 vol% are shown in figure S1.

Supplementary Video 1

This movie shows the growth process of a colloidal crystalline array from a 1 vol% suspension. The time lapse covers a period of about 2 min (Quick Time Movie; 3589 kB).

Supplementary Video 2

This movie shows the growth process of a colloidal crystalline array from a 0.2 vol% suspension. The time lapse covers a period of about 25 min (Quick Time Movie; 3883 kB).

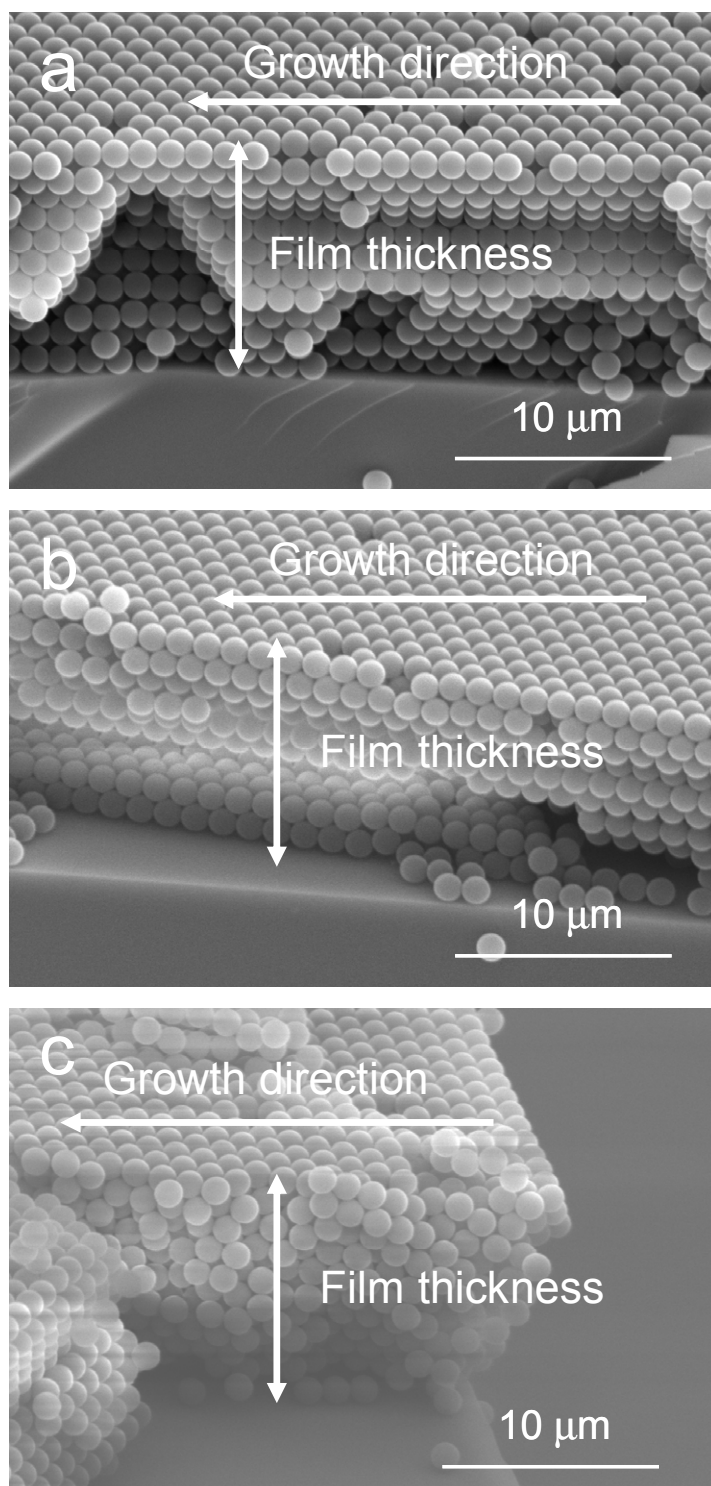


Figure S1. SEM images of colloidal crystalline arrays grown at the concentrations (a) 1.0 vol%, (b) 0.2 vol% and (c) 0.05 vol%. The images were observed at a tilt of 60°.