

## Rapid Formation of Colloidal Crystal Patterns in Soft-centrifugal Microfluidic Chips

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Recently, it is well known that the colloidal crystals can be used for various purposes including optical waveguides, chemical sensors, microfilters, macroporous matrix of catalysts and microdisplays originated from their ordered structure and structure induced photonic band-gap property. Many researchers have developed several clever ways to fabricate colloidal crystals based on self-assembly process. However, those process are also based on the evaporation of the solvents, and the crystallization costs very long times.

In this paper, we described a rapid crystallization process for the generation of high quality colloidal crystals inside of the microchannels by using centrifugal microfluidics platforms. Following the conventional fabrication method, we made the centrifugal microfluidic chips. Centrifugal force promoted the crystallization process by excluding solvent rapidly, and the monodisperse silica and polystyrene particles were quickly packed into face centered cubic lattice.

