

Supporting information

Fabrication of Colloidal Photonic Crystal Supraparticles by Atomization Drying towards Efficient Passive Cooling

Jiang Zhai¹, Nian-Xiang Zhang¹, Fucheng Li, Chang Liu, Guo-Xing Li, Xiao-Qing
Yu*, Qing Li*, Su Chen

State Key Laboratory of Materials-Oriented Chemical Engineering, College of
Chemical Engineering, Nanjing Tech University, Nanjing 210009, P. R. China.

*Corresponding author. Email address: 13625541559@163.com;
liqing1128@njtech.edu.cn;

This Supporting Information includes:
Figure S1 to S8
Legends for Video S1

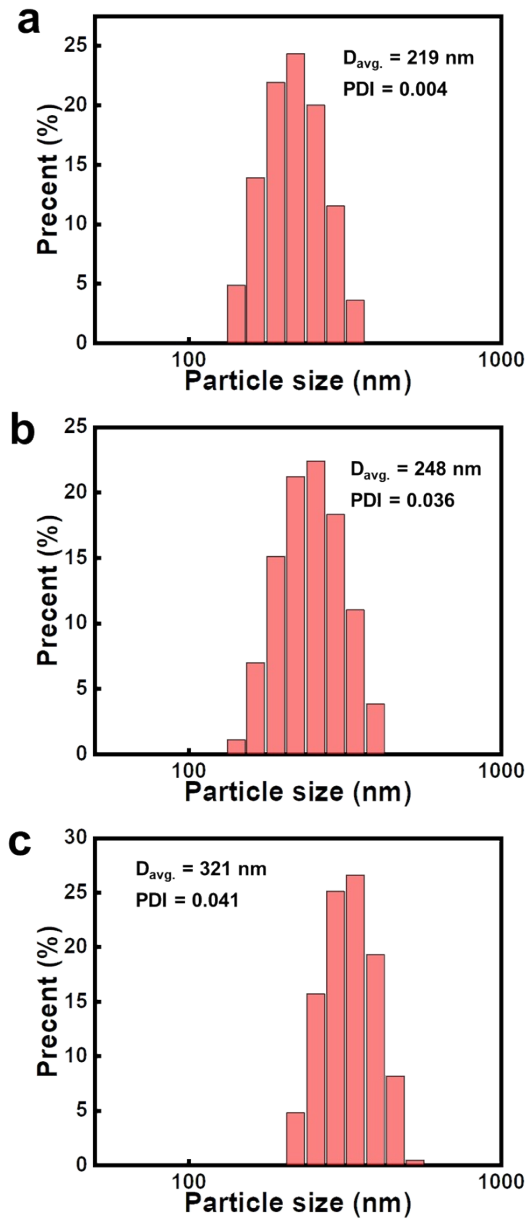


Figure S1 Particle size distribution of P(MMA-BA-MAA) monodispersed colloidal latex for construction of colloidal photonic crystal (CPC) supraparticles.

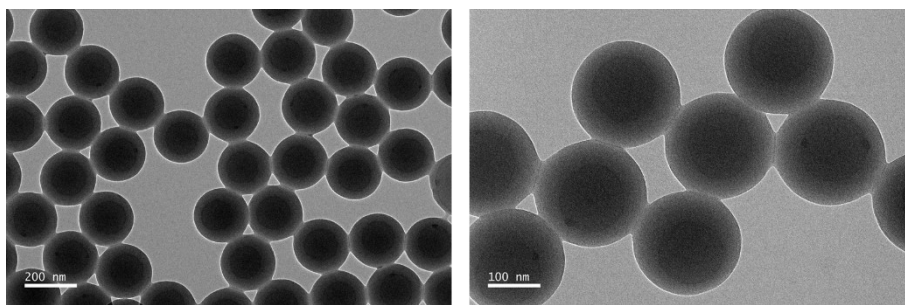


Figure S2 Transmission electron microscopy (TEM) images of P(MMA-BA-MAA) monodispersed colloidal particles.

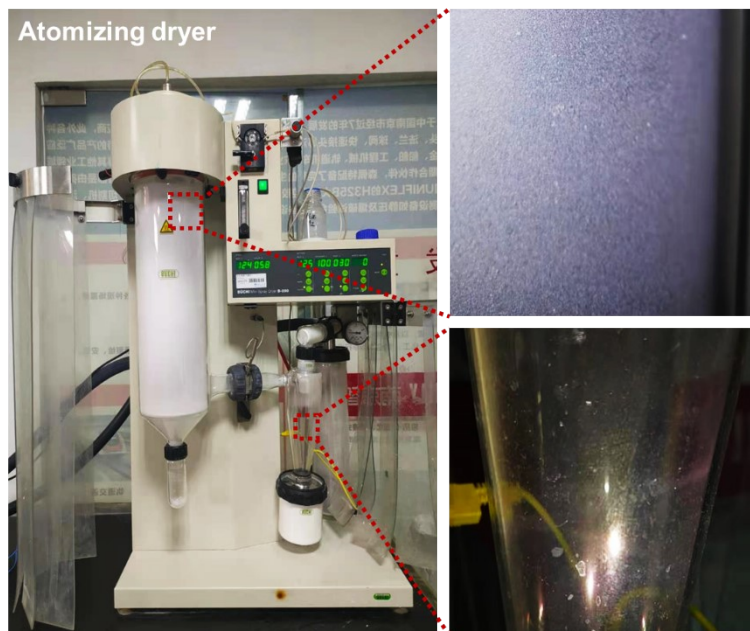


Figure S3 Setup of microfluidic atomizing dryer, which can consecutively and efficiently assemble CPC supraparticles from monodispersed colloidal latex.

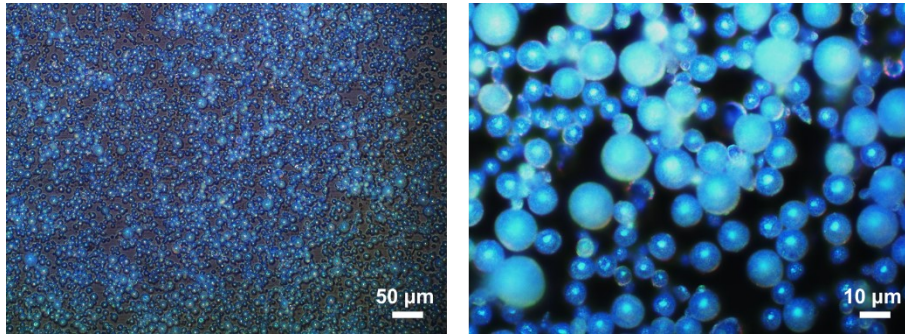


Figure S4 Optical microphotographs of CPC supraparticles.

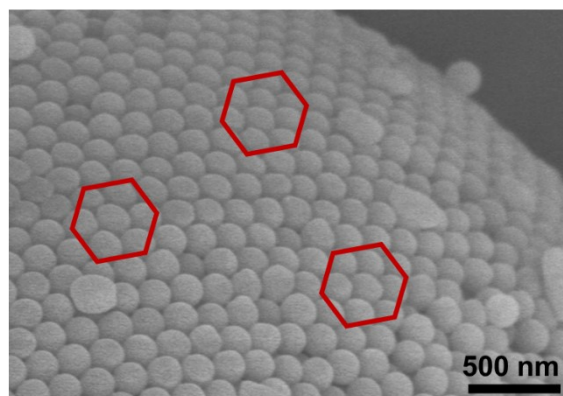
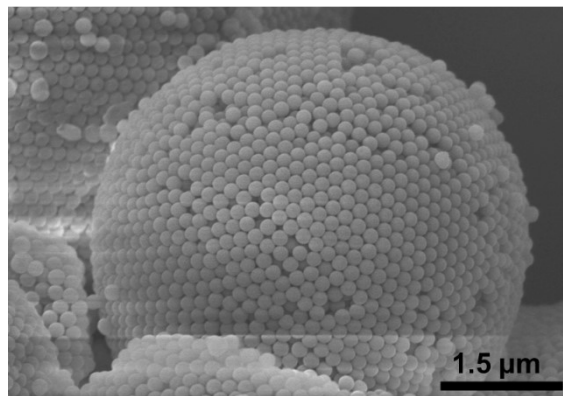
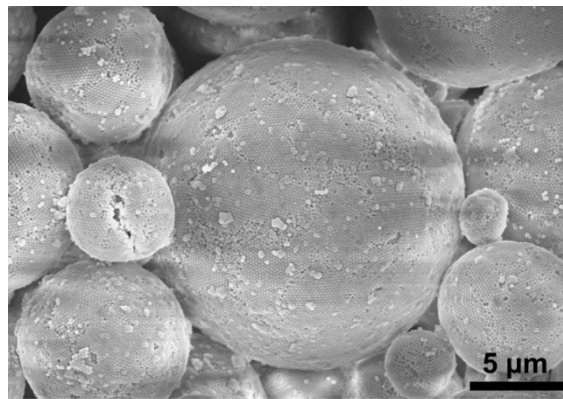


Figure S5 Representative scanning electron microscope (SEM) images of the obtained CPC supraparticles under different magnifications.

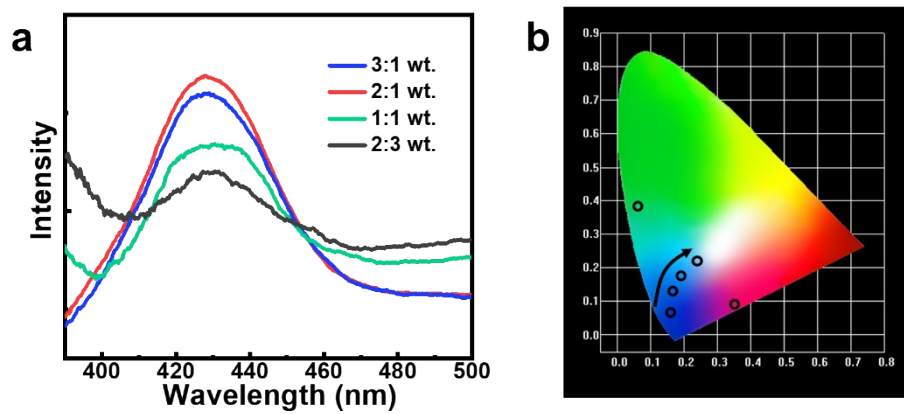


Figure S6 (a) Reflectance spectra of organogel composite CPC films with PDMS gel/supraparticle mass ratios varying from 3:1 to 2:3. (b) Coherent infrared energy (CIE) chromaticity coordinates for the structural colors of organogel composite CPC films.

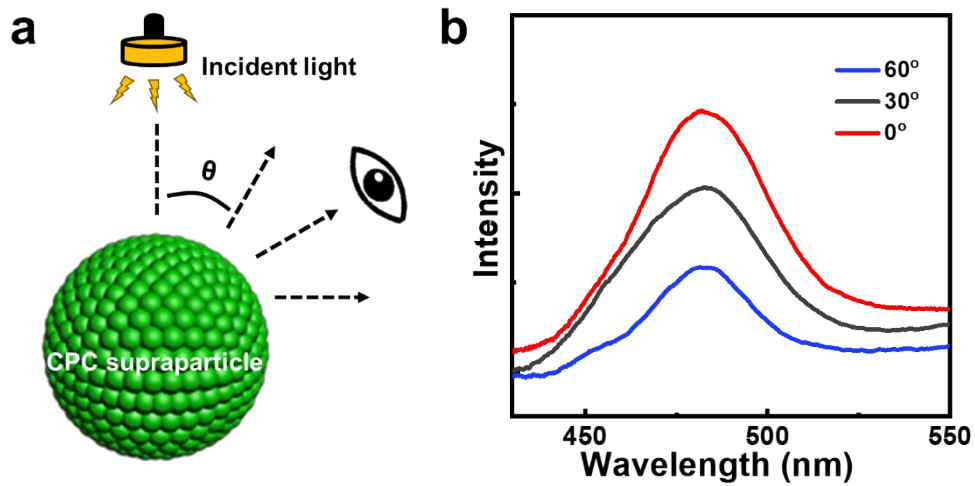


Figure S7 (a) Schematic diagram of the CPC supraparticle with spherically symmetric structure, indicating the angle-independent optical property. (b) Reflectance spectra of the organogel composite CPC film (blue structural color) at different detection angle to the incident light.

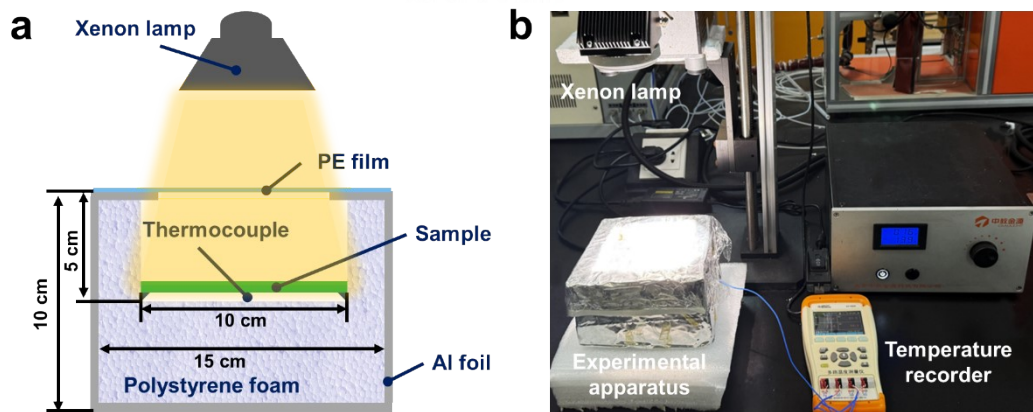


Figure S8 (a) Schematic and (b) digital photographs of the indoor experimental apparatus used to characterize the cooling performance.

Video S1 Washing resistance test of the organogel composite CPC film.