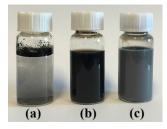
## Supplementary Materials: Hydrophilic Modification of Multi-Walled Carbon Nanotube for Building Photonic Crystals with Enhanced Color Visibility and Mechanical Strength

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**Figure S1.** Photographs of dispersion behavior of MWCNTs: (**a**) crude MWCNTs; (**b**) modified MWCNTs; (**c**) homogeneous mixtures of PS emulsion doped with modified MWCNTs.

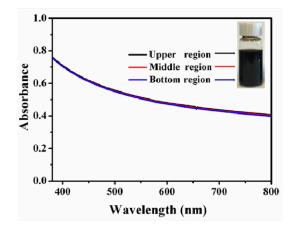
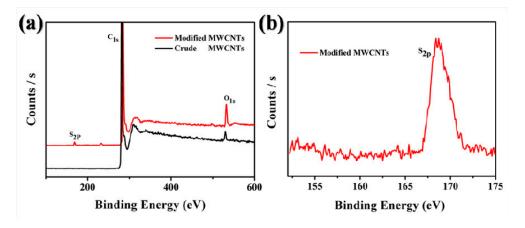


Figure S2. UV–Vis spectra of the upper, middle, and bottom of the MWCNTs dispersion.



**Figure S3.** (a) XPS spectra of crude and modified MWCNTs; (b) High-resolution XPS spectrum of S<sub>2p</sub>core in modified MWCNTs.

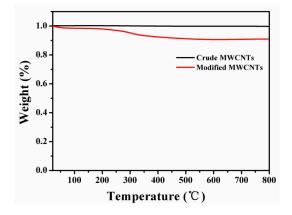


Figure S4. TGA weight loss curves of crude and modified MWCNTs.

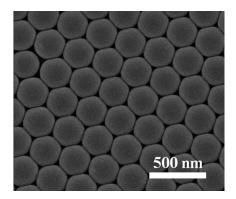


Figure S5. SEM image of pure PS film with hydrodynamic particle size of 317 nm.