SUPPORTING INFORMATION

High Transparency in the Structural Color Resin Films through Quasi-Amorphous Arrays of Colloidal Silica Nanospheres

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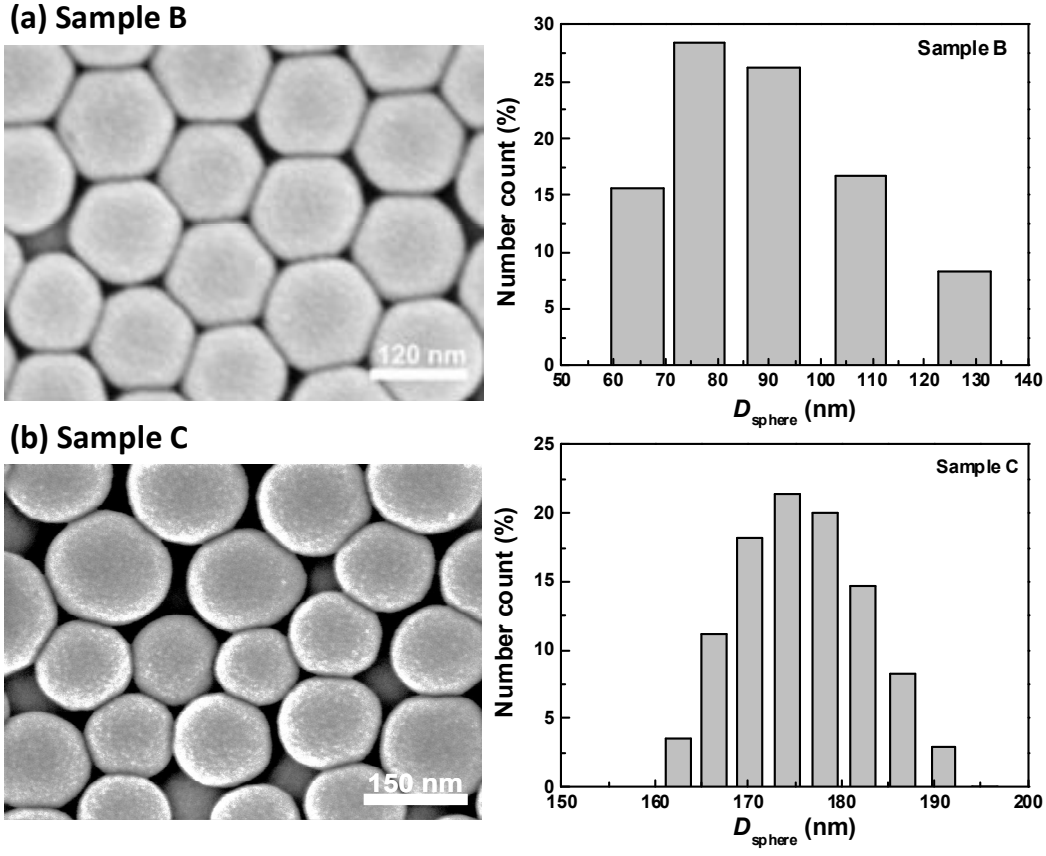
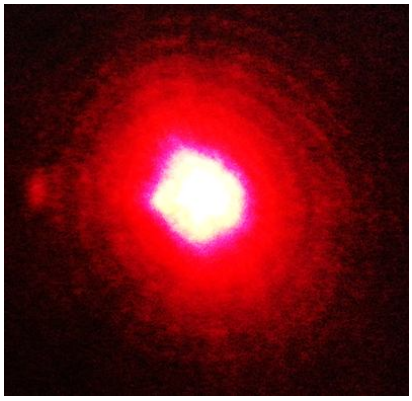
Table S1. Volume of NH_4OH required for preparing silica nanospheres with different sizes.

Sample	NH_4OH (g)	Mean diameter of silica nanospheres (D_{mean}, nm)	Polydispersity index (PI)
A	4	73.2	0.101
B	6	92.1	0.102
C	7	175.7	0.097
D	8	196.1	0.077
E	10	235.7	0.093

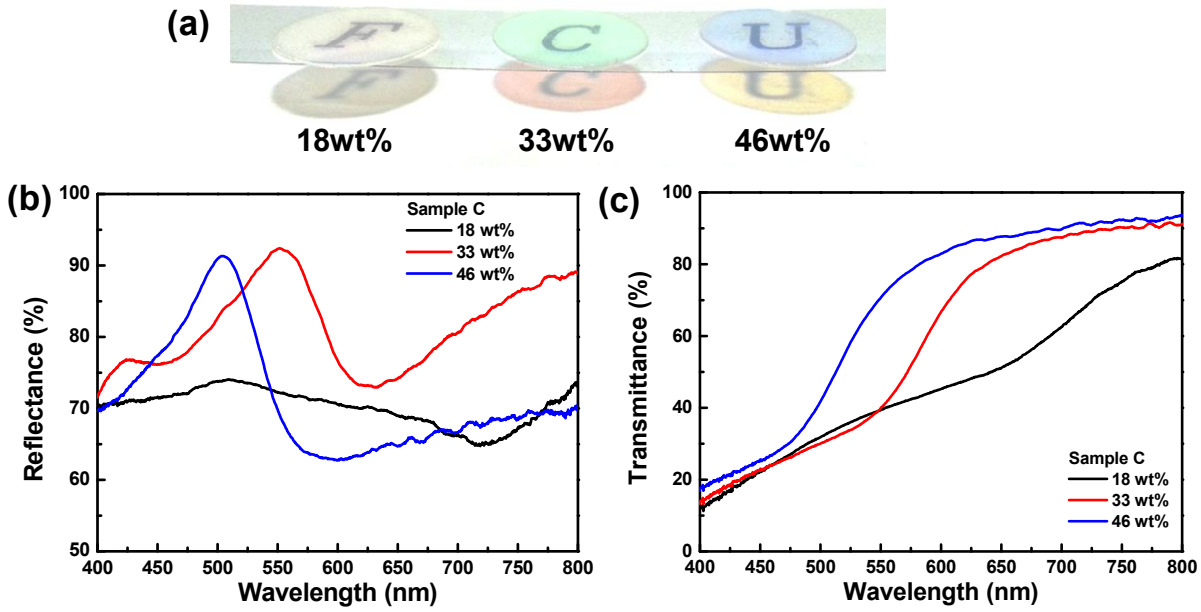
S1. SEM image and size distribution of silica nanospheres prepared using (a) sample B and (b) sample C.



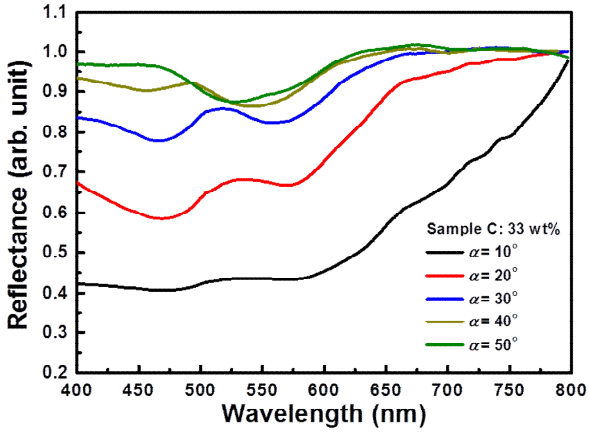
S2. The diffraction pattern of the sample C (33 wt%) was captured using a 632 nm He–Ne laser.



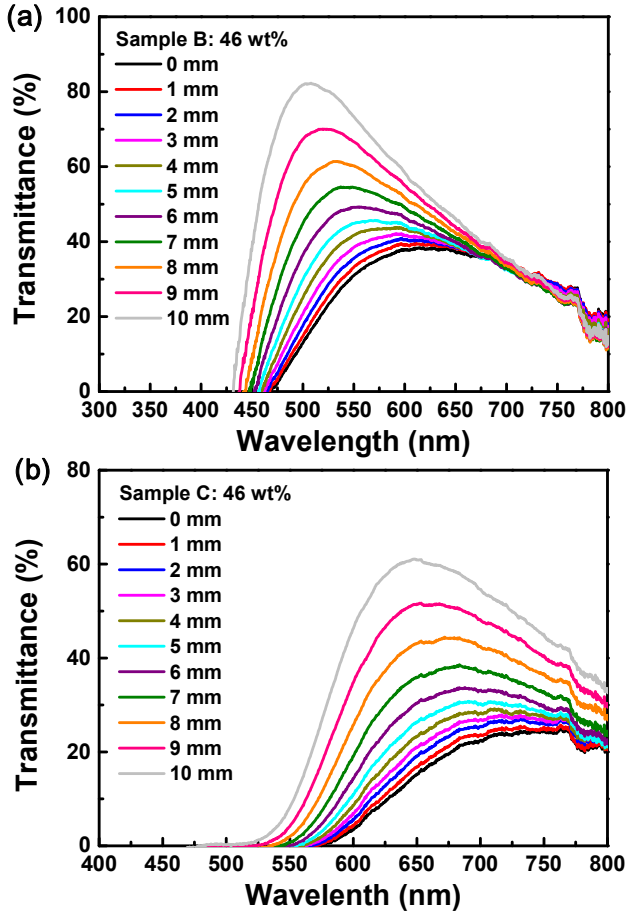
S3. (a) The optical images, (b) the reflectance spectra, and (c) the transmittance spectra of colloidal silica–ETPTA resin films composed of 176 nm (average) silica nanospheres embedded in the ETPTA resin at concentrations of 18, 33, and 46 wt%. The top image depicts the reflection and transmission colors of samples with the same silica nanosphere sizes but different concentrations.



S4. Specular reflection spectra of sample C (33 wt%) with an incident angle, α, ranging from 10° to 50°, which were extracted at selected detection angles from the angle-resolved specular reflection map in Fig. 5(a).



S5. The transmittance versus edge emission wavelength measured depending on the distance of the light source in (a) sample B and (b) sample C (46 wt%), in which the reference for the transmittance measurement was the incident light of the Xe light source.



S6. Luminescence spectra of the four types of the WLED bulbs.