Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

Preparation of Freestanding and Ultrastable $CsPbX_3$ Perovskite Quantum Dots/SEBS Composite Film for Curved and Flexible Surfaces

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1. Calculation of $S_{1/w}$ ($CsPbBr_3$ PQDs/SEBS/cyclohexane dispersion**):** According to $S_{l/w} = \gamma_w - \gamma_l - \gamma_{l/w}$ (4), the coefficient S of $CsPbBr_3$ PQDs/SEBS/cyclohexane dispersion (0.15 g/ml, ambient temperature) can be calculated as $S = \gamma_w - \gamma_l - \gamma_{l/w}$= (72.0 − 24.7 − 31.8) mN/m = 15.5 mN/m.

2. Supplementary Figures.

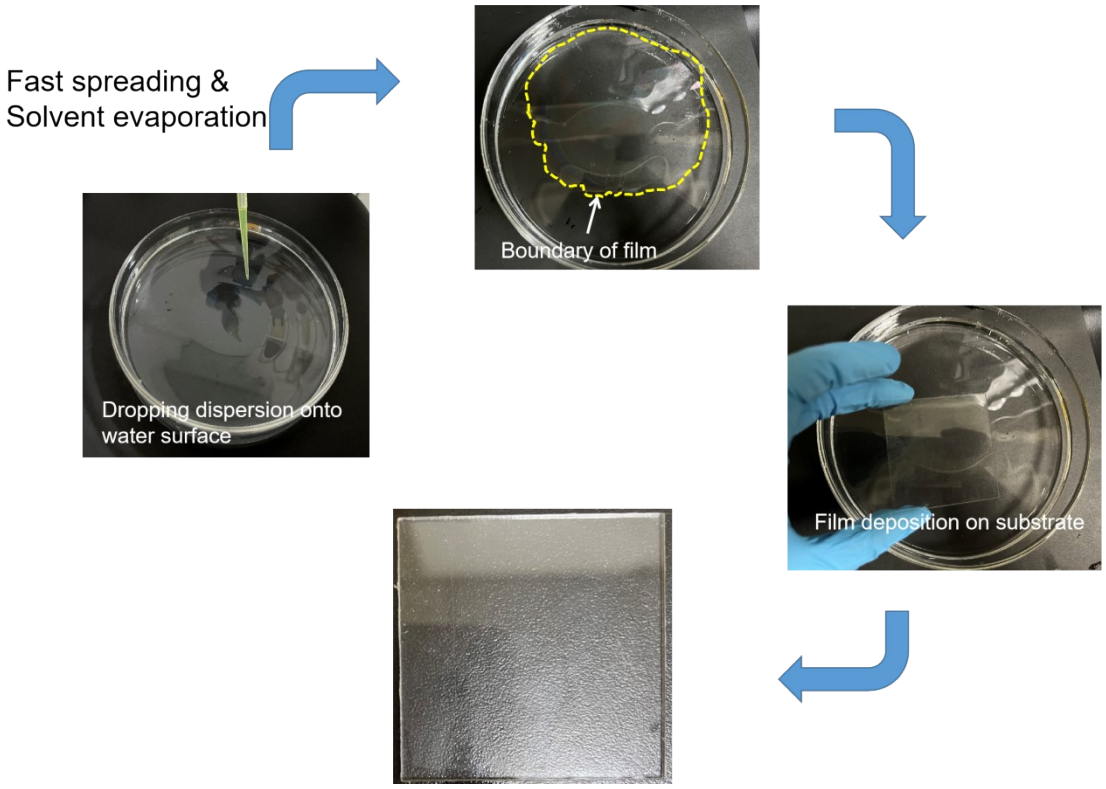

Figure S1. Photographs of the fabrication of $CsPbX_3$ perovskite quantum dots (PQDs)/polymer composite films.

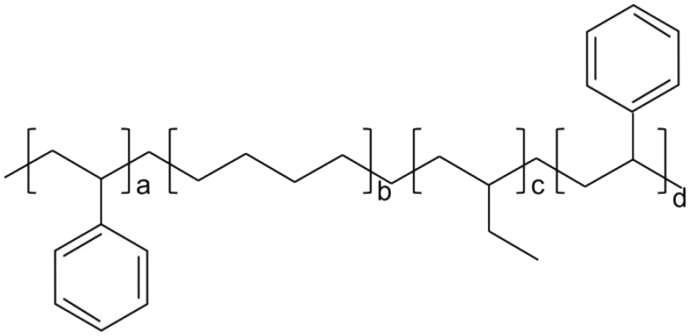

Figure S2. The structure of poly(styrene-ethylene-butylene-styrene) (SEBS) block copolymer.

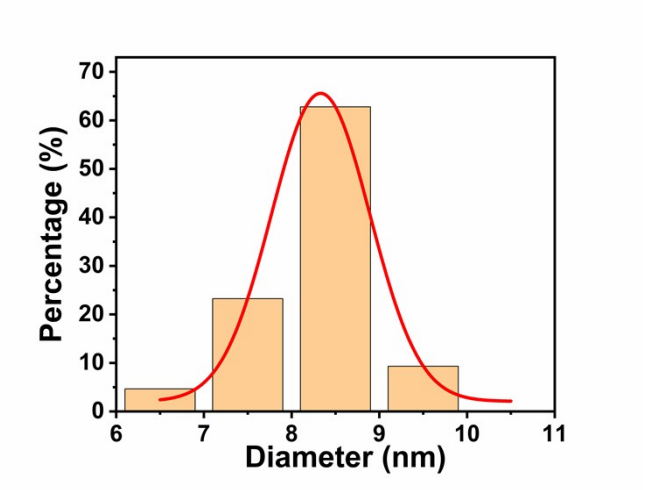

Figure S3. Histogram of particle-size distribution of $CsPbBr_3$ PQDs.

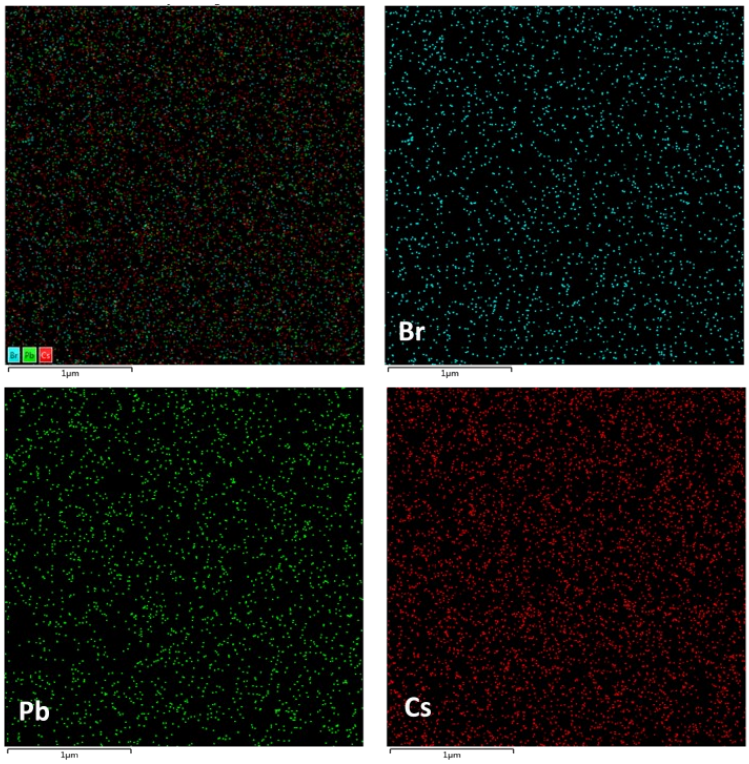

Figure S4. Electronic image and elemental mapping of $CsPbBr_3$ PQDs/polymer composite films.

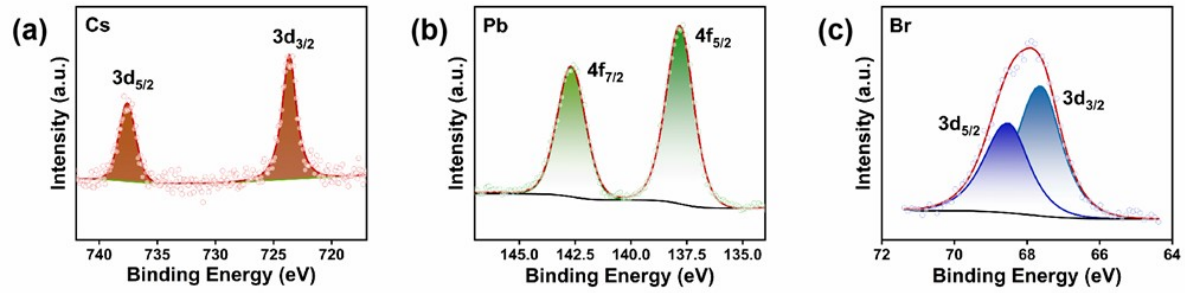

Figure S5. XPS spectra of (a) Cs 3d, (b) Pb 4f, and (c) Br 3d

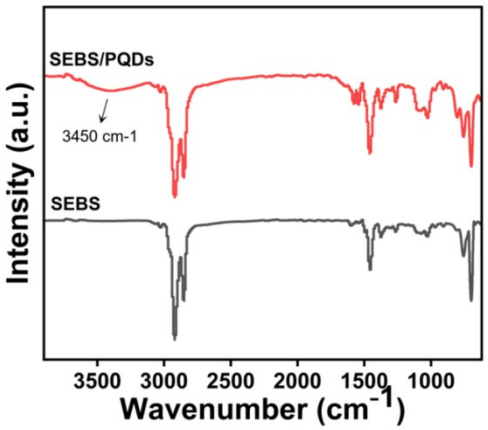

Figure S6. FTIR spectra of the $CsPbBr_3$ PQD/polymer composite film and the raw material of SEBS.

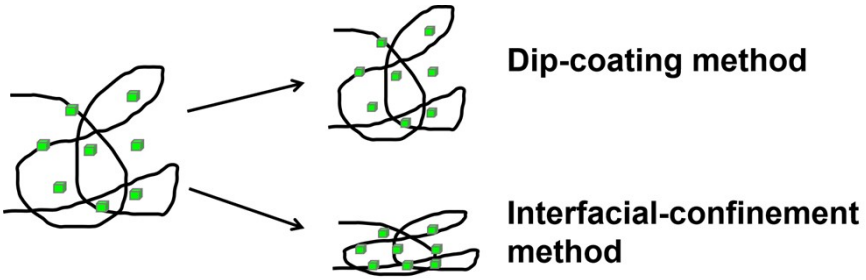

Figure S7. Conformation model of films by dip-coating and interfacial-confinement methods.

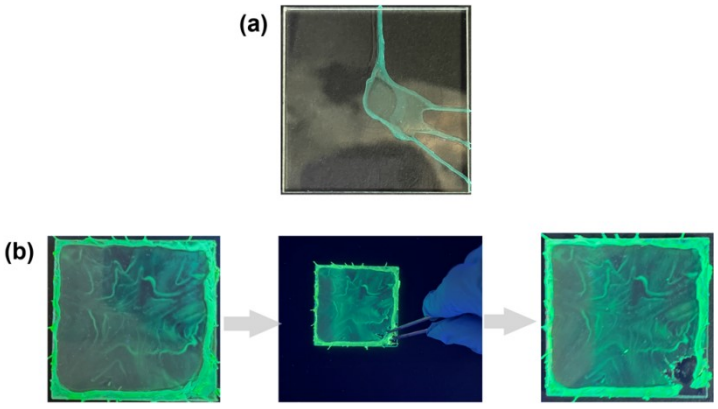

Figure S8. (a) Photographs of film fabricated by spin-coating, adding 40 µL of precursor solution (0.15 g/mL). (b) Tearing process of a film fabricated by spin-coating.

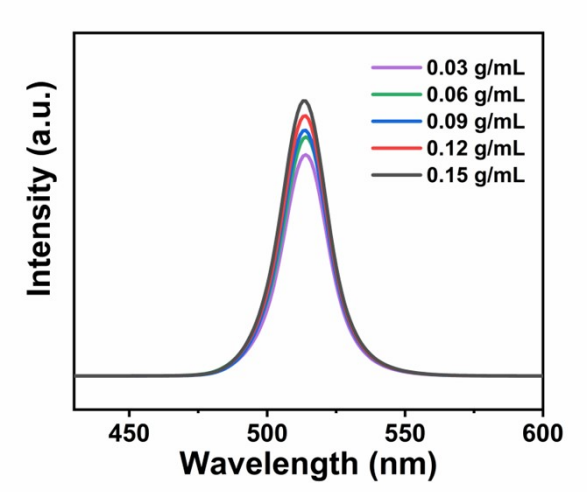

Figure S9. PL spectra of films with different concentrations of SEBS solution.

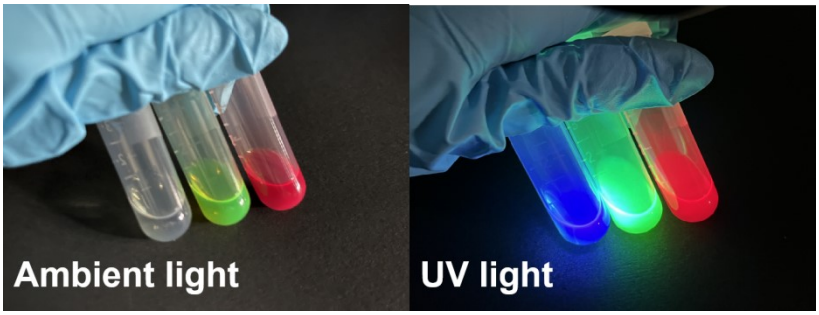

Figure S10. Photographs of $CsPbX_3$ PQDs from blue to red under ambient light and UV light.

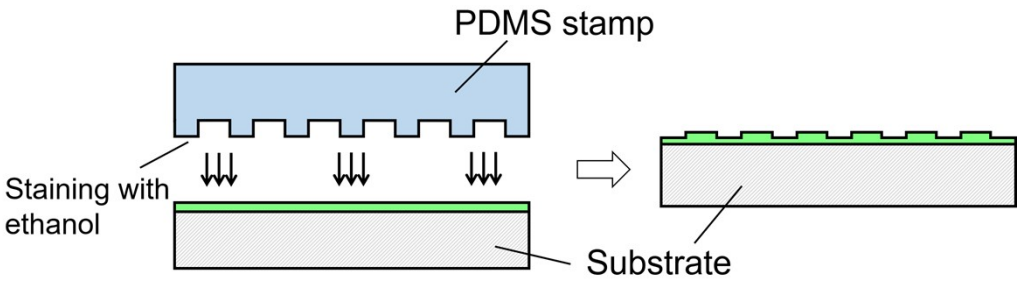

Figure S11. Illustration of patterning on the film using poly(dimethylsiloxane) (PDMS) stamp.