Supporting information

Morphologically Controlled Synthesis of Ionic Cesium Iodide Colloidal Nanocrystals and Electron Beam-Induced Transformations

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**Fig. S1** TEM image of irregular CsI NCs react at 210°C.

**Fig. S2** TEM images of irregular CsI crystals rinsed by 20 μL ethanol.
Fig. S3 FFT patterns derived from HRTEM images (Figure 1-3) and corresponding unit cell models of CsI NCs with different morphologies including nanospheres (a), hexagonal nanoplates (b), and nanocubes (c).
Table. S1 Experiment parameters for the synthesis of CsI NCs with different precursors.

| Precursor   | OA    | OAm   | Temperature | Cs₂CO₃ | ODE | Time |
|-------------|-------|-------|-------------|--------|-----|------|
| NaI (0.02 g) | 1 mL  | 1 mL  | 180 °C      | 0.015 g | 5 mL | 5 min |
| KI (0.02 g)  | 3 mL  | 3 mL  | 180 °C      | 0.015 g | 5 mL | 5 min |
| CaI₂ (0.02 g) | 3 mL  | 3 mL  | 180 °C      | 0.015 g | 5 mL | 5 min |
Fig. S4 TEM images of CsI NCs synthesized with different I⁻ precursors, including NaI (a), KI (b) and CaI₂ (c).