Supplementary Information for

Delayed Photoluminescence and Modified Blinking Statistics in Alumina-Encapsulated Zero-Dimensional Inorganic Perovskite Nanocrystals

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Figure S1. (a) Confocal PL image of the individual, alumina encapsulated 0D Cs₄PbBr₆ PNCs. (b) Linear absorption (black) and PL emission (red) spectra of a solution of 0D Cs₄PbBr₆ PNCs.



Figure S2. (a-f) TEM analysis of 0D perovskite nanocrystals' thin film encapsulated by AIO_x . (a-c) Cross-sectional STEM-HAADF image, (d-i) EDX map of the region shown in (c) showing successful encapsulation of the nanocrystals film by alumina. Pt layer was deposited to protect the surface of the film.



Figure S3. Panel A - Blinking statistics of an individual 3D CsPbBr₃ PNC, cast from PMMA solution. PL lifetime is extracted from the top intensity region (intensity counts 150-200 cts/bin) area in blinking trace and the antibunching trace indicates single photon emission from this PNC.

Panel B –Same for 0D Cs₄PbBr₆ PNC cast from PMMA solution.

Bin size – 20 ms in both panels.



Figure S4. XRD spectra of 0D perovskite nanocrystals' thin film before and after AlO_x deposition. The alumina layer being amorphous is not detectable in XRD.