Supplementary information:

Stability Enhancement and Pronounced Three-photon Absorption in SrCl$_2$-doped FAPbBr$_3$ Nano Crystals Sarvani

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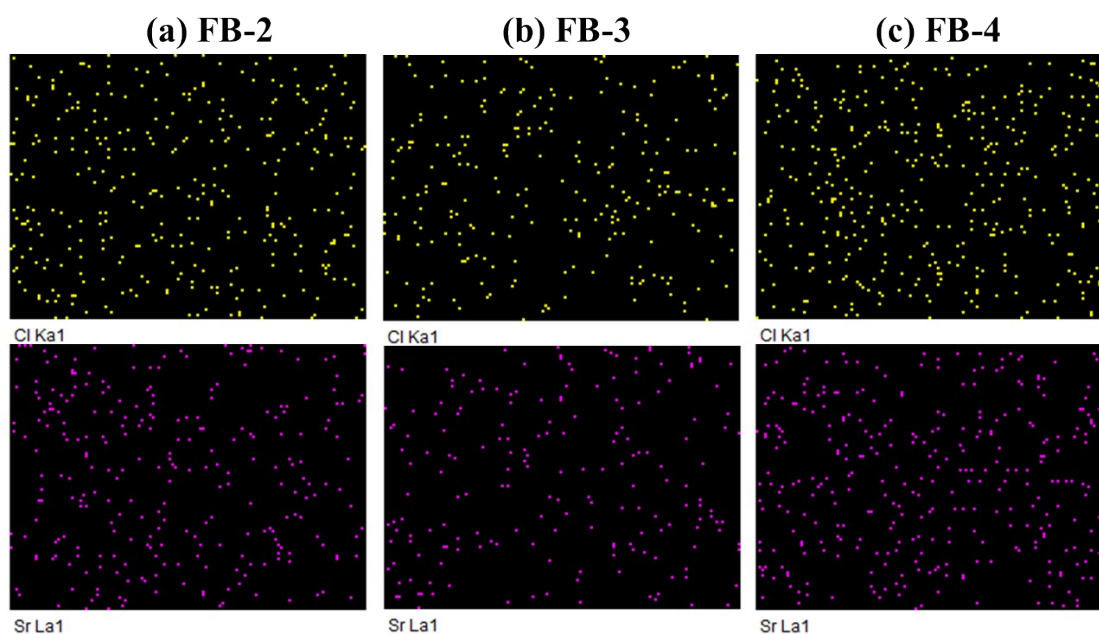
(a) FB-2   **(b) FB-3**   **(c) FB-4**

Figure S1(a-c) Elemental mapping of Cl (top panel) and Sr (bottom panel) ions for doped sample from left to right and accordingly labels at the top of each image.
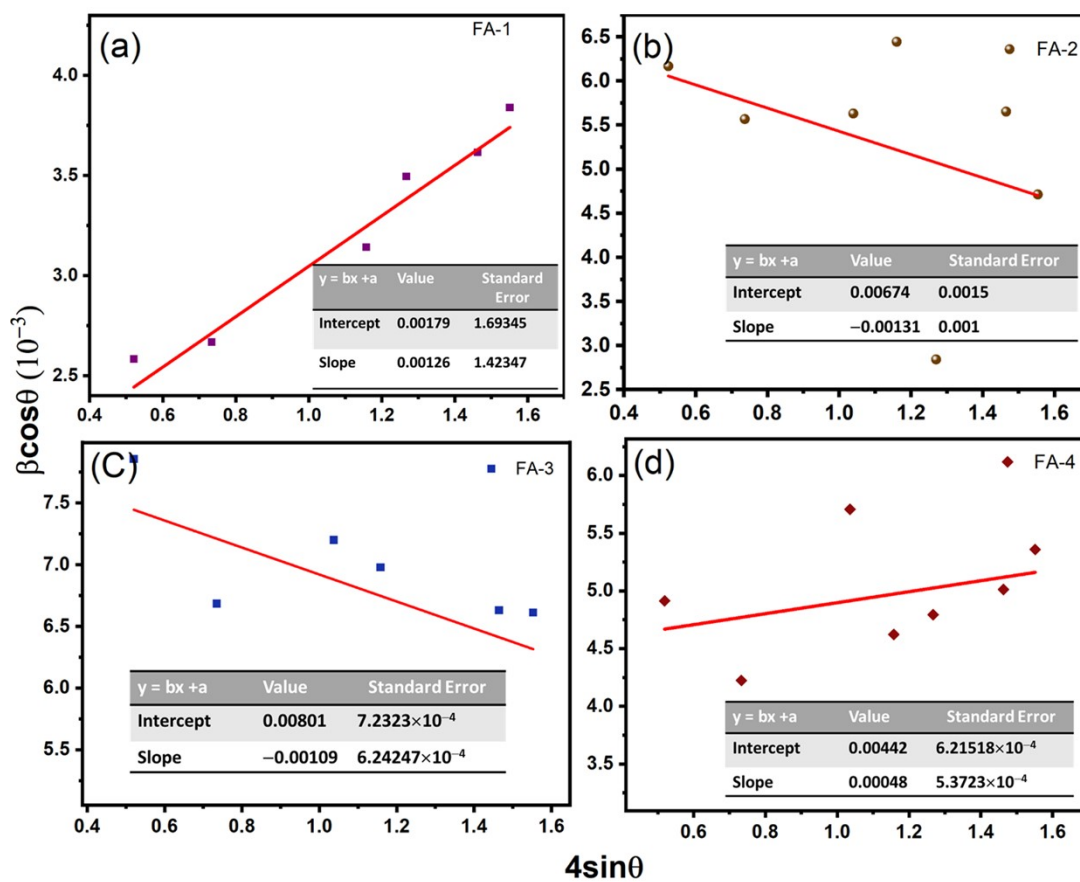
Figure S2(a-d) The calculated microstrain parameters from powder XRD data of each sample; labels are at the top of each sample image, respectively.
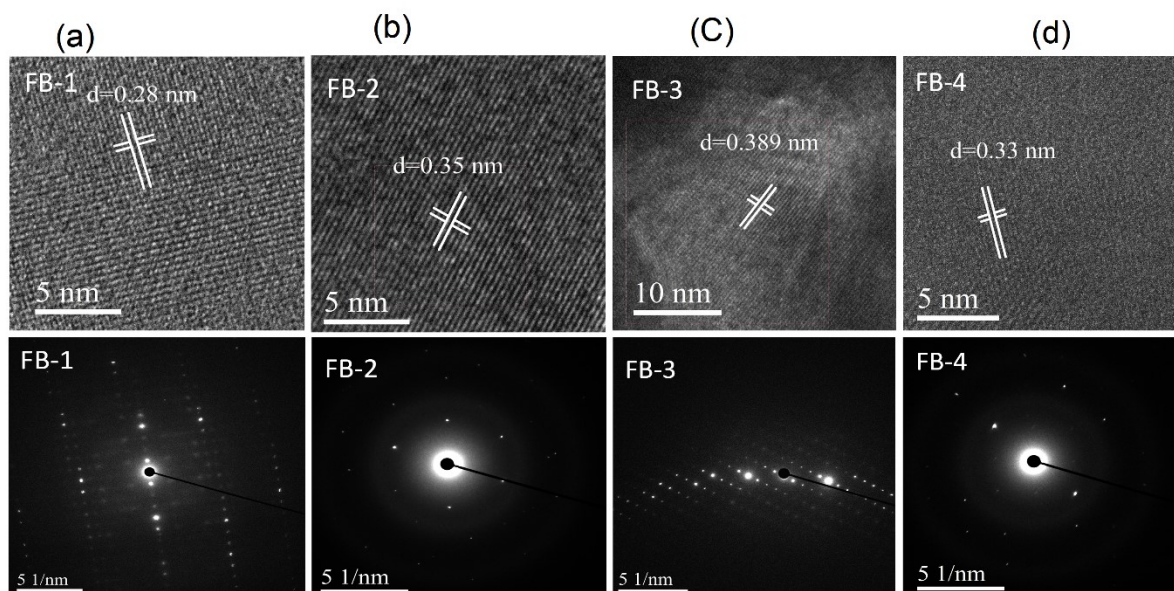

Figure S3(a-d) HR-TEM images and SAED pattern (below) patterns for each sample are illustrated from left to right, and labels are at the top of each sample image.
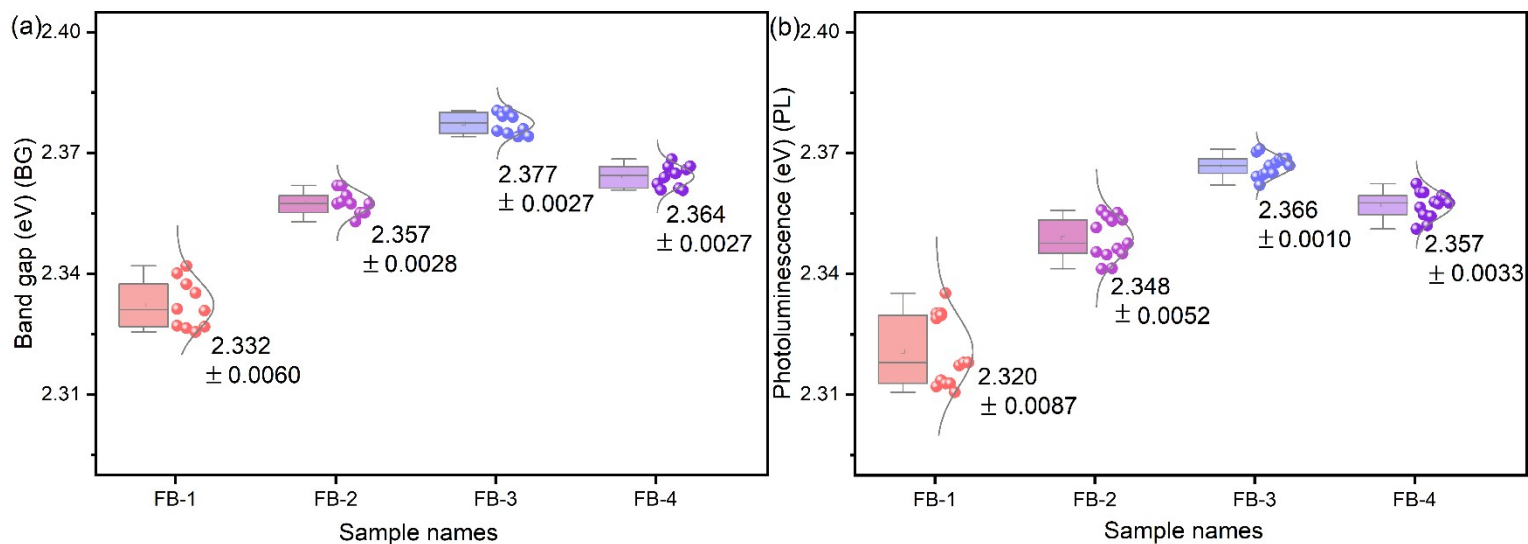
Fig. S4 Distribution box plot represents the four samples repeated experimental values of **(a)** bandgap and **(b)** PL.
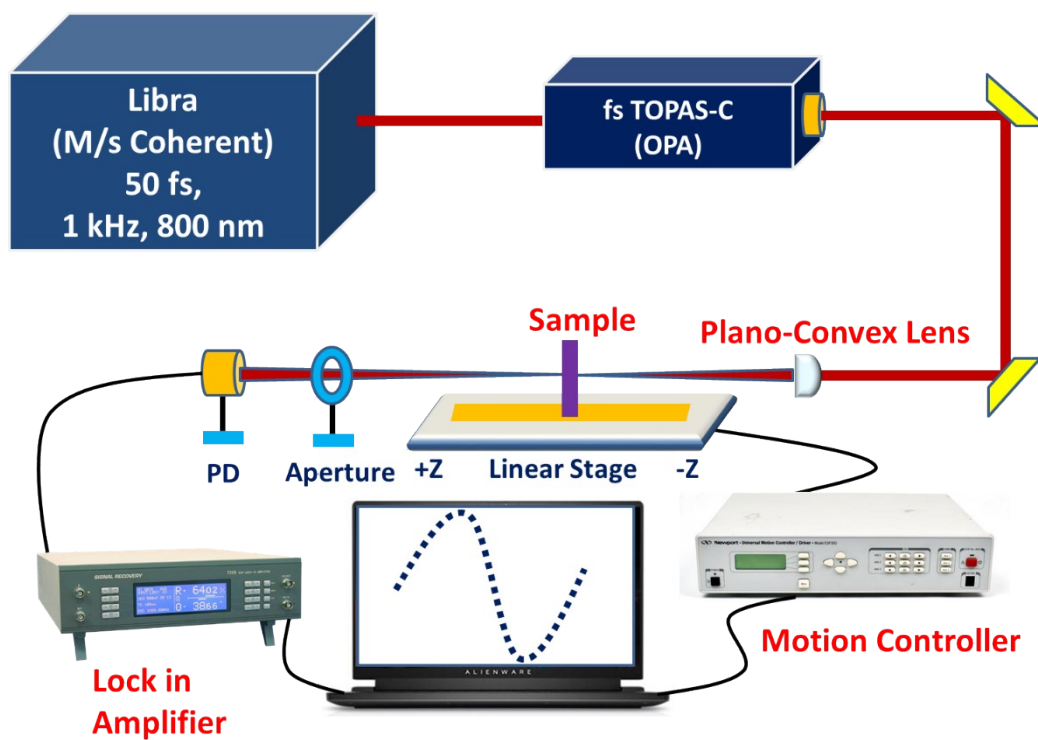

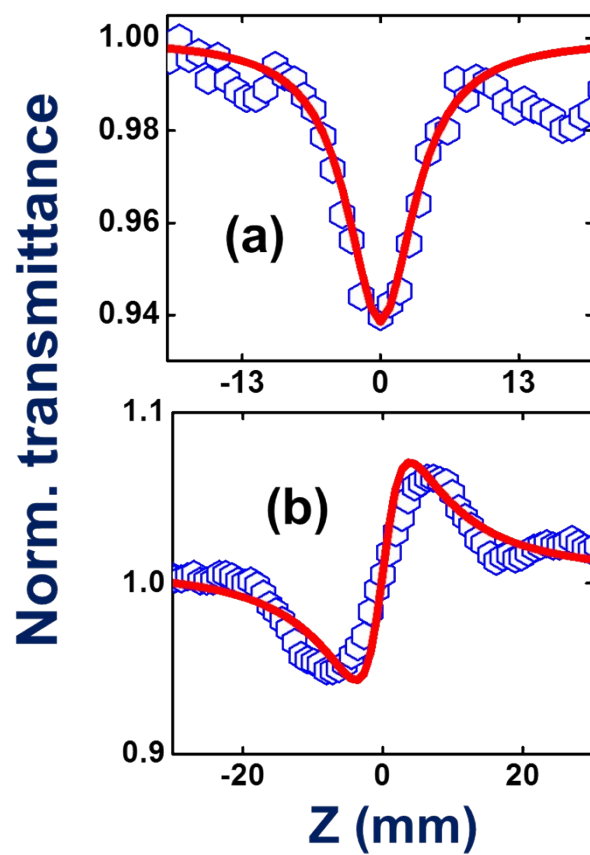**Fig. S4** Femtosecond Z-scan experimental schematic.

Fig. S5 (a) OA data for toluene (solvent) (b) CA data for toluene. Red lines in both OA and CA data represent the fitted curves, while the open hexagons represent the experimental data.