Electronic Supplementary Information

**Influence of Mixed Organic Cations on the Structural and Optical Properties of Lead Tri-Iodide Perovskites**

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**Fig. S1** (a) – (e) Peak position and FWHM of (110), (111), (200), (210) and (211) planes.
**Fig. S2** (a) ~ (c) Steady-state absorption and photoluminescence of MA$_{x}$FA$_{1-x}$PbI$_{3}$ ($x = 0.2$, 0.4 and 0.8), respectively.

**Fig. S3** (a) ~ (d) Temperature dependent PL spectra of MA$_{x}$FA$_{1-x}$PbI$_{3}$ ($x = 0.2$, 0.4, 0.6 and 1). Phase transition ranges are marked by white dashed horizontal lines. For $x = 1$, only the end temperature is found. This is because the phase transition process starts at the temperature lower than 30 K, actually.