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Facile method for synthesis of mixed-cation halide perovskites by mild equilibrium conversion *via* iodine-mediated transport reaction in inert liquid media

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The results of the Rietveld refinement performed by JANA2006 software are represented below.

Table S1 Summary of the lattice constants and the parameters of the Rietveld refinement.

	A (Å)	Shift (0.01°)	s.u.	GoF	Rp	Rw
FA0.3	6.3154	-12.1122	0.0012	1.13	11.21	14.71
FA0.4	6.3209	-11.8563	0.0011	1.12	11	14.54
FA0.5	6.3298	-12.8117	0.0008	1.09	10.92	14.2
FA0.6	6.3344	0.094105	0.0002	1.39	9.19	12.14
FA0.75	6.3419	-11.7116	0.0011	1.09	10.83	14.05
FA0.85	6.3482	-7.49187	0.0002	1.36	8.76	11.45
FA0.9	6.3506	-6.25971	0.0001	1.28	8.08	10.71
FA0.95	6.3521	-6.48176	0.0002	1.33	9.16	11.77

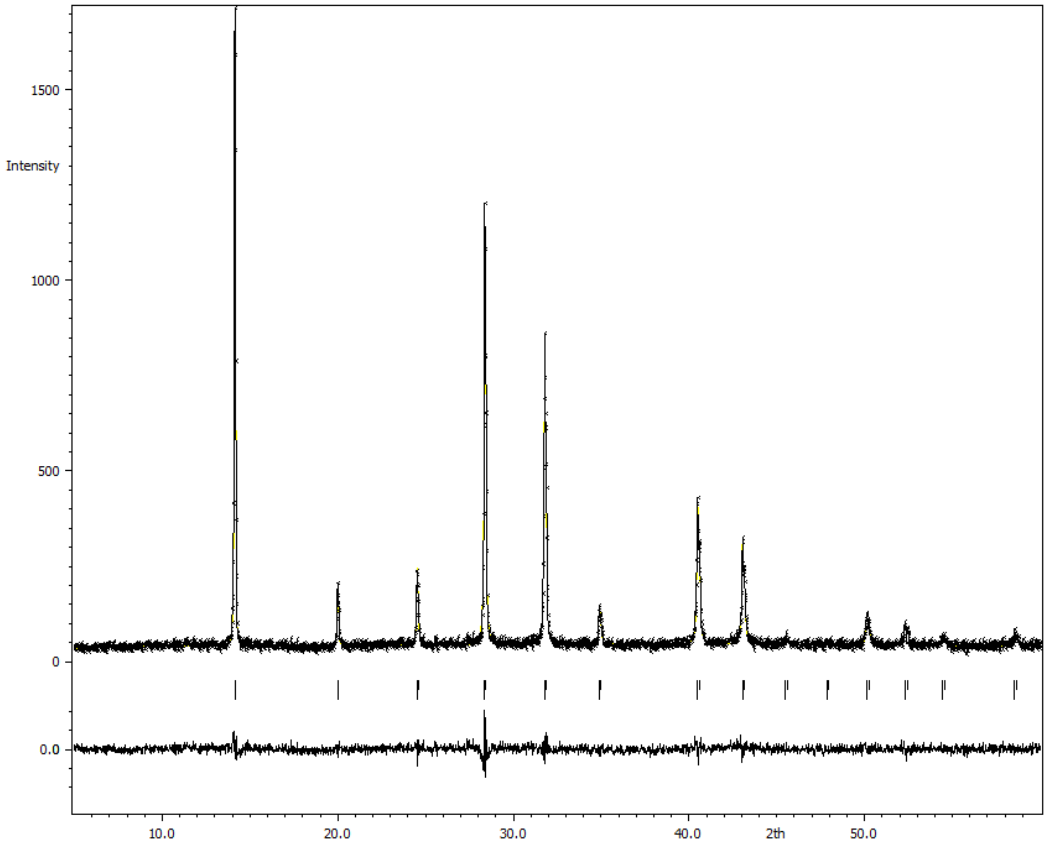

Figure S1. X-ray powder pattern fitting for $FA_{0.30}MA_{0.70}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.

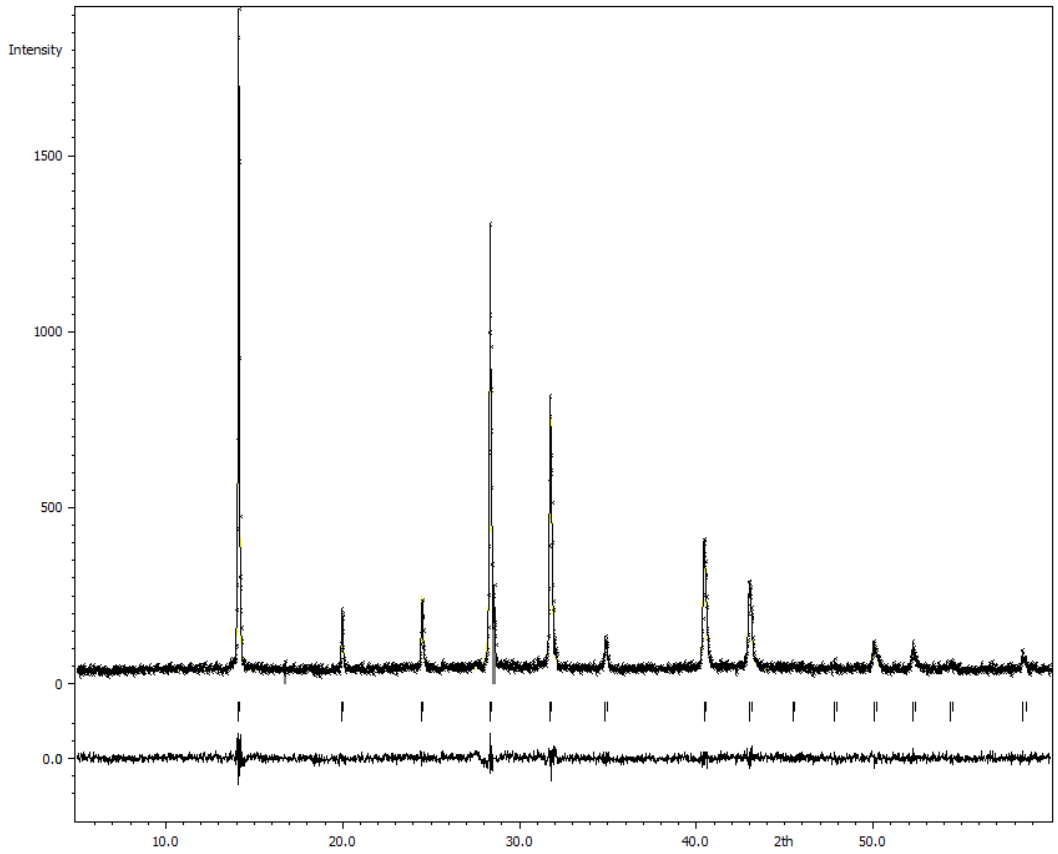

Figure S2. X-ray powder pattern fitting for $FA_{0.40}MA_{0.60}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.

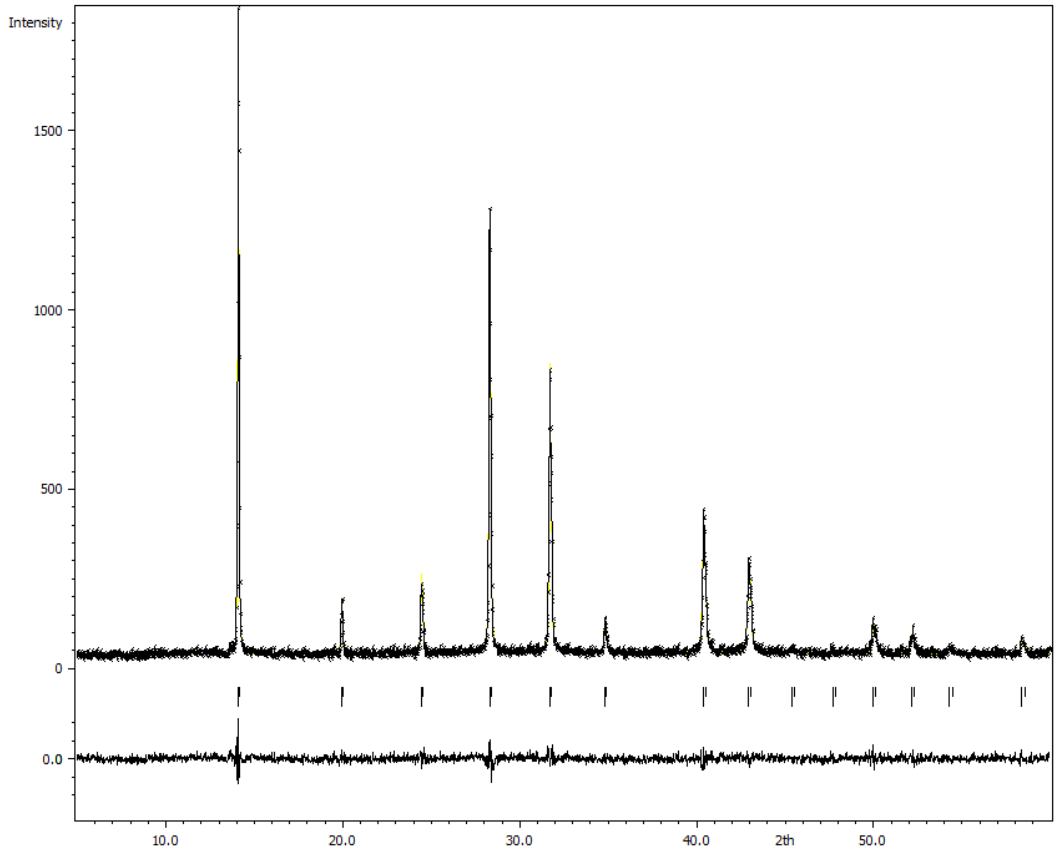

Figure S3. X-ray powder pattern fitting for $FA_{0.50}MA_{0.50}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.

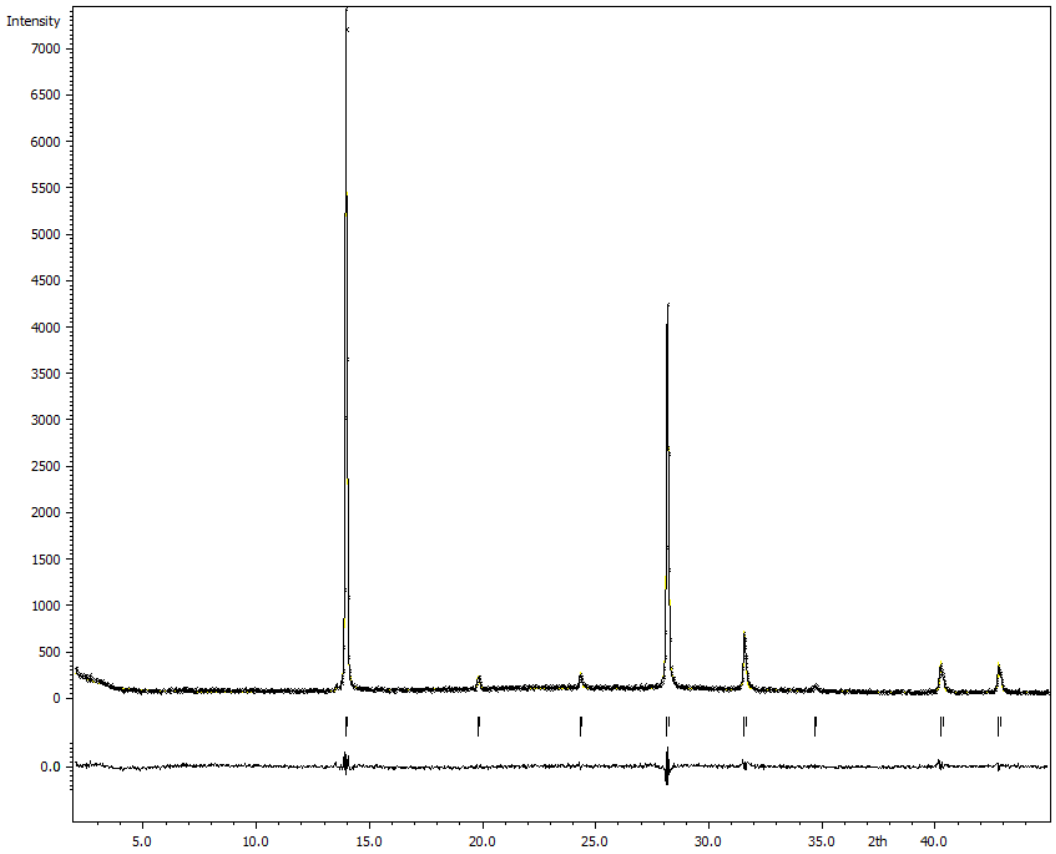

Figure S4. X-ray powder pattern fitting for $FA_{0.60}MA_{0.40}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.

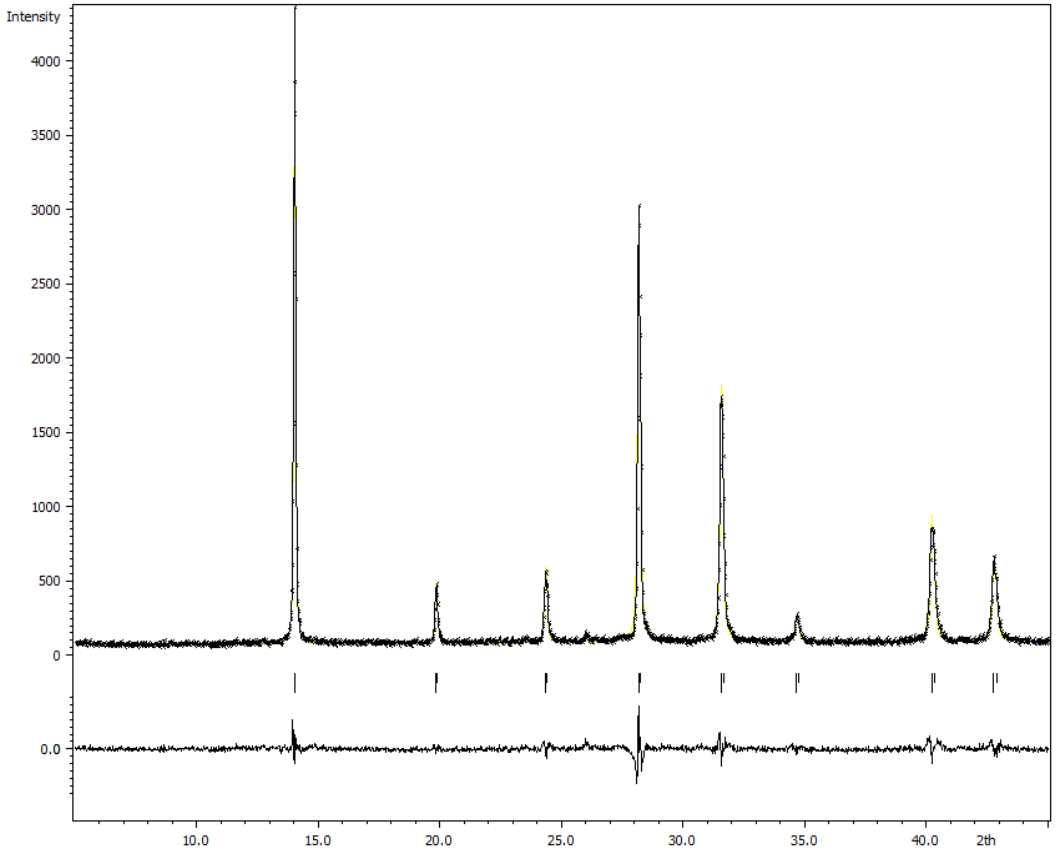

Figure S5. X-ray powder pattern fitting for $FA_{0.85}MA_{0.15}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.

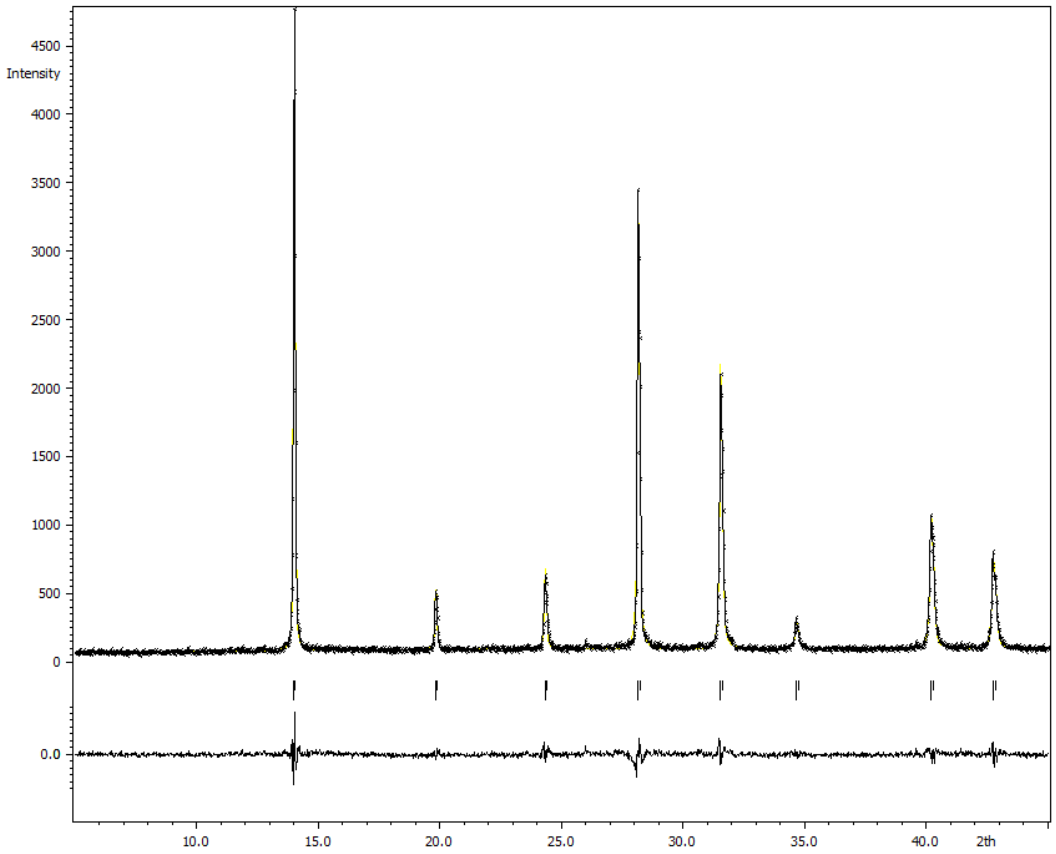

Figure S6. X-ray powder pattern fitting for $FA_{0.90}MA_{0.10}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.

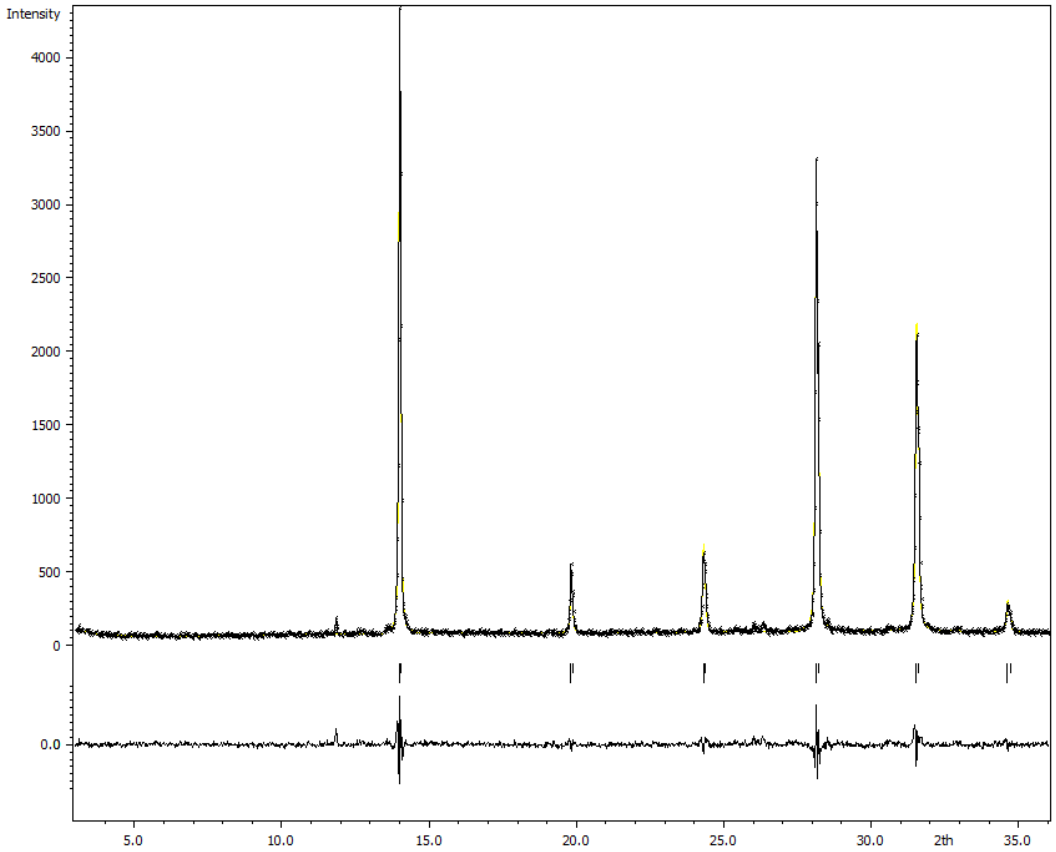

Figure S7. X-ray powder pattern fitting for $FA_{0.95}MA_{0.05}PbI_3$. The calculated and observed patterns are shown on the top by solid line and the dots. The vertical marks show positions calculated for Bragg reflections. The trace on the bottom is a plot of the difference between calculated and observed intensities.