Electronic Supplementary Material (ESI) for RSC Advances.

Modifying morphology and defects of low-Dimensional, semi-transparent perovskite thin films *via* solvent type

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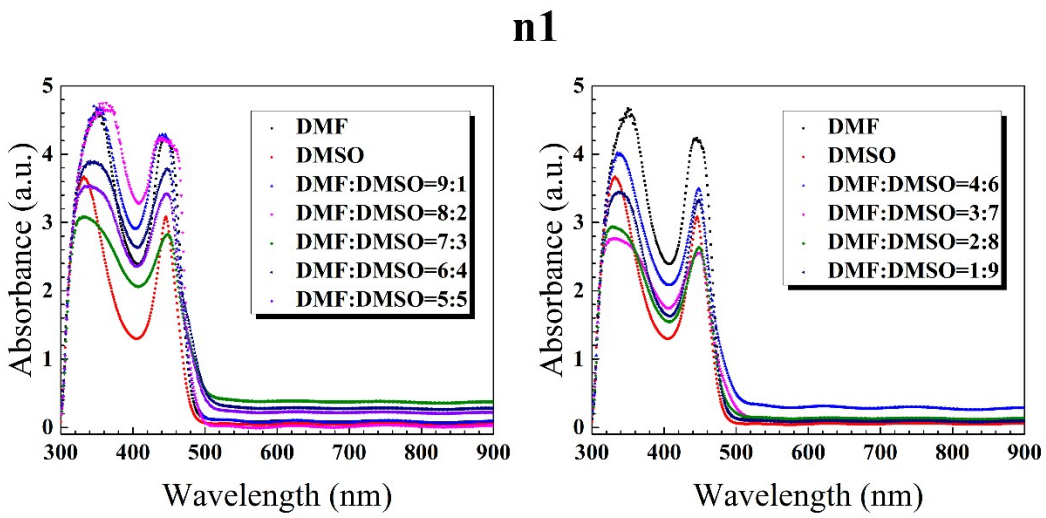

Fig. S1. UV absorption spectra of $(PEA)_2PbI_2Br_2$ films using different ratios of DMF and DMSO.

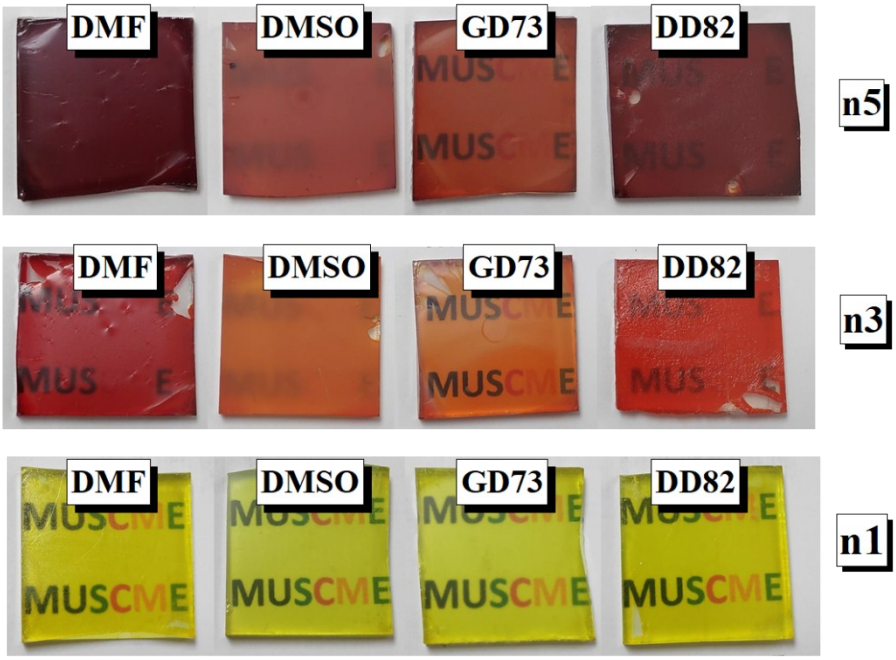

Fig. S2. The optical images of low dimensional mixed halide perovskite $(PEA)_2(MA)_{n-1}Pb_nI_{n+1}Br_{2n}$ prepared in different solvents.

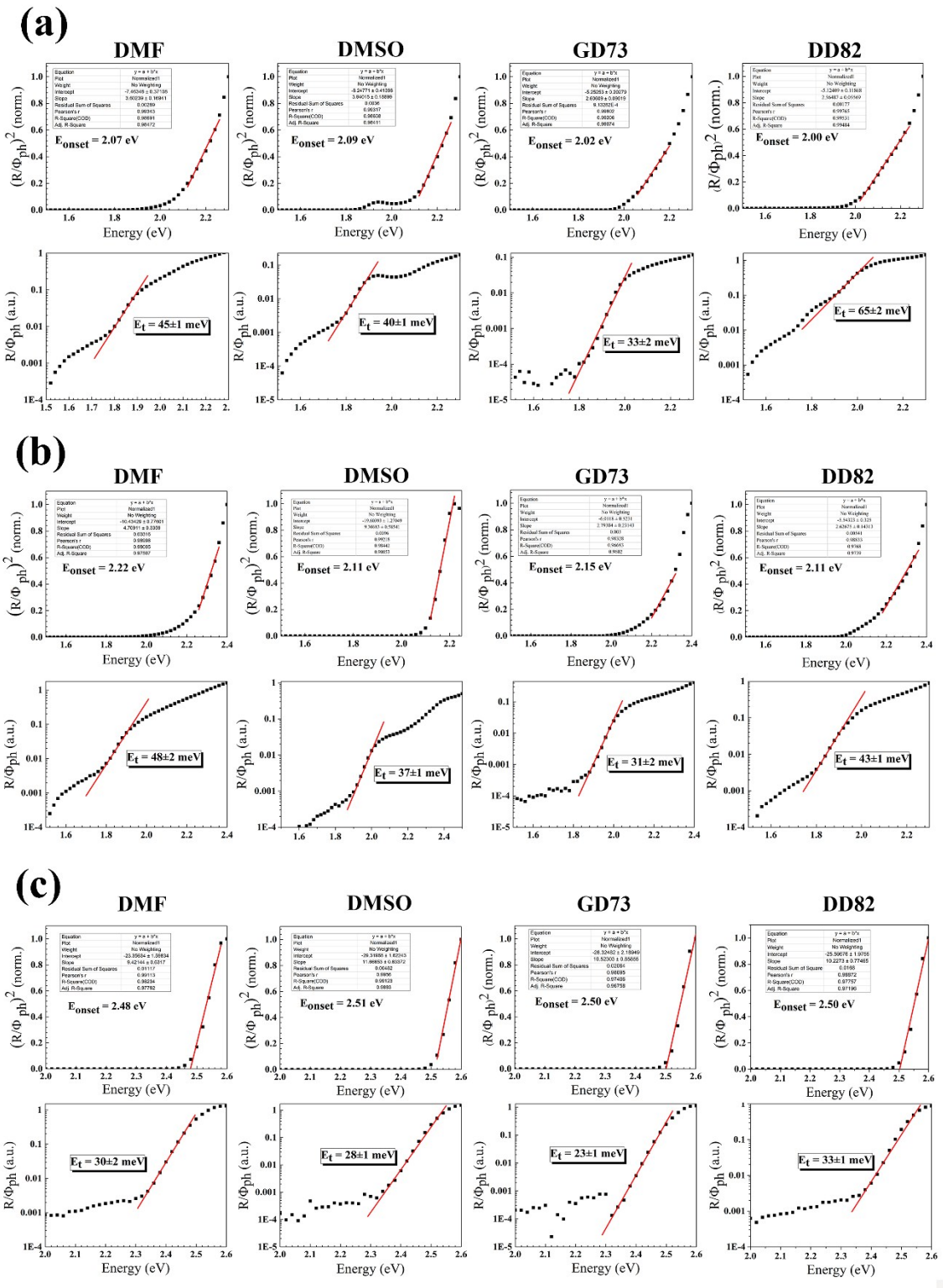

Fig. S3. Calculation of E_t and E_{onset} for $(PEA)_2(MA)_{n-1}Pb_nI_{n+1}$ Br_{2n} perovskite thin films; (a) n5 (b) n3 (c) n1 from different types of solvent; DMF, DMSO, GBL:DMSO = 7:3, and DMF:DMSO = 8:2 from SPV spectra.

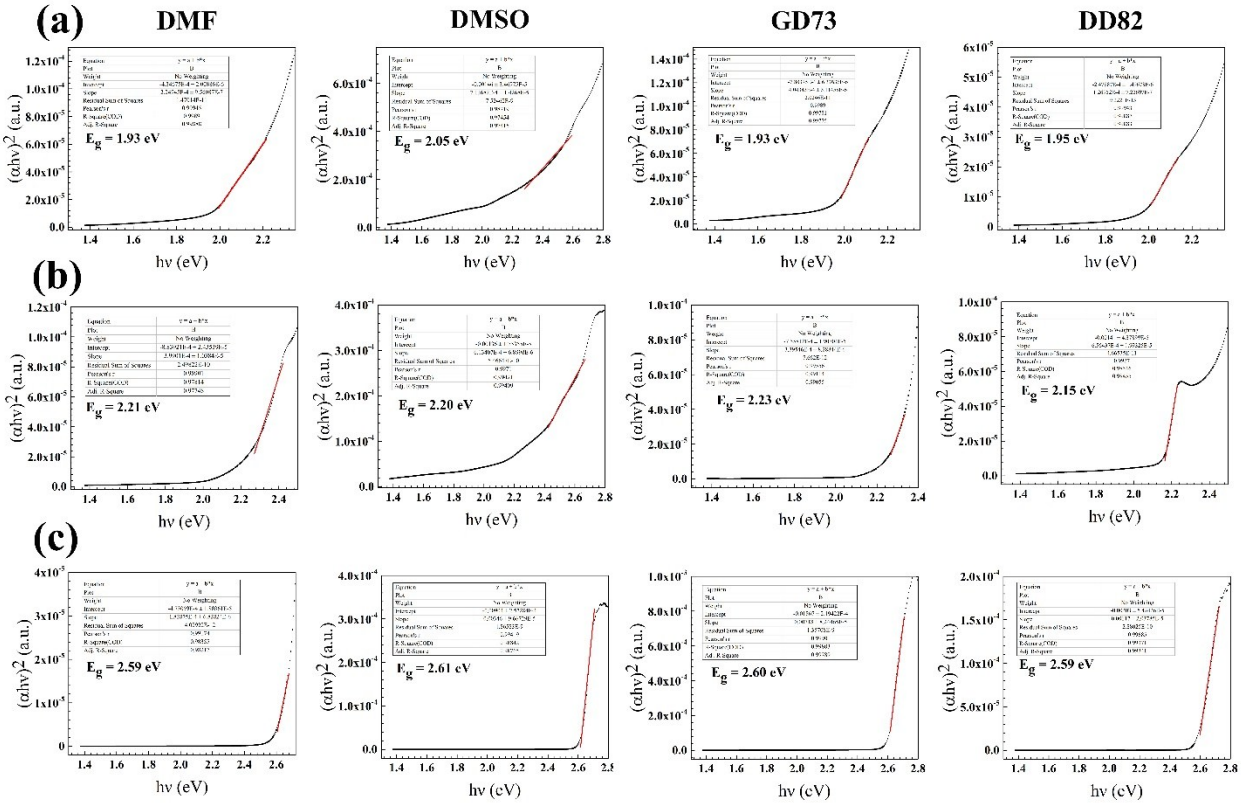

Fig. S4. Calculation of E_g for $(PEA)_2(MA)_{n-1}Pb_nI_{n+1}$ Br_{2n} perovskite thin films; (a) n5 (b) n3 (c) n1 from different types of solvent; DMF, DMSO, GBL:DMSO = 7:3, and DMF:DMSO = 8:2 from UV absorption spectra.

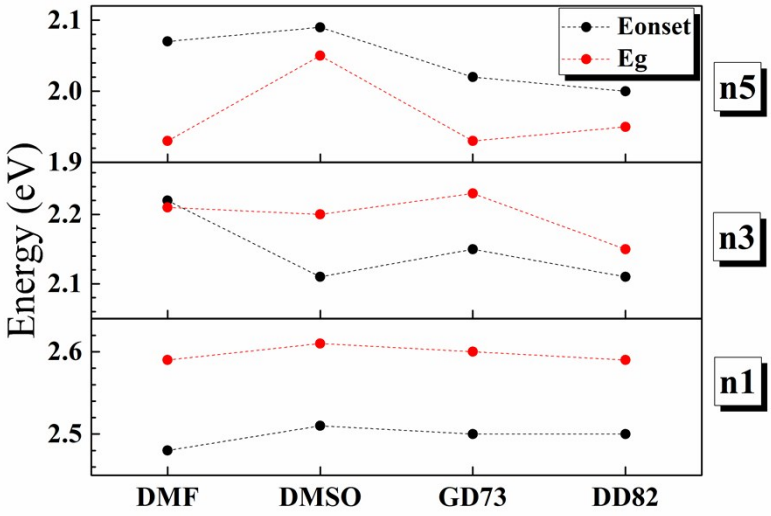

Fig. S5. Correlation between the optical band gap energy and onset energy for $(PEA)_2(MA)_{n-1}Pb_nI_{n+1}$ Br_{2n} perovskite thin films from different types of solvent; DMF, DMSO, GBL:DMSO = 7:3, and DMF:DMSO = 8:2.

	n5 thickness (nm)	n3 thickness (nm)	n1 thickness (nm)
DMF	1695 ± 52	1825 ± 77	3604 ± 23
DMSO	629 ± 66	1050 ± 70	1400 ± 71
GBL:DMSO = 7:3	358 ± 22	503 ± 24	790 ± 34
DMF:DMSO = 8:2	1562 ± 45	1572 ± 75	2042 ± 73

Table S1. Thicknesses of $(PEA)_2(MA)_{n-1}Pb_nI_{n+1}$ Br_{2n} perovskite films prepared in different solvents.