SUPPORTING INFORMATION

Structural diversity in substituted-pyridinium iodo- and bromoplumbates: a matter of halide and temperature

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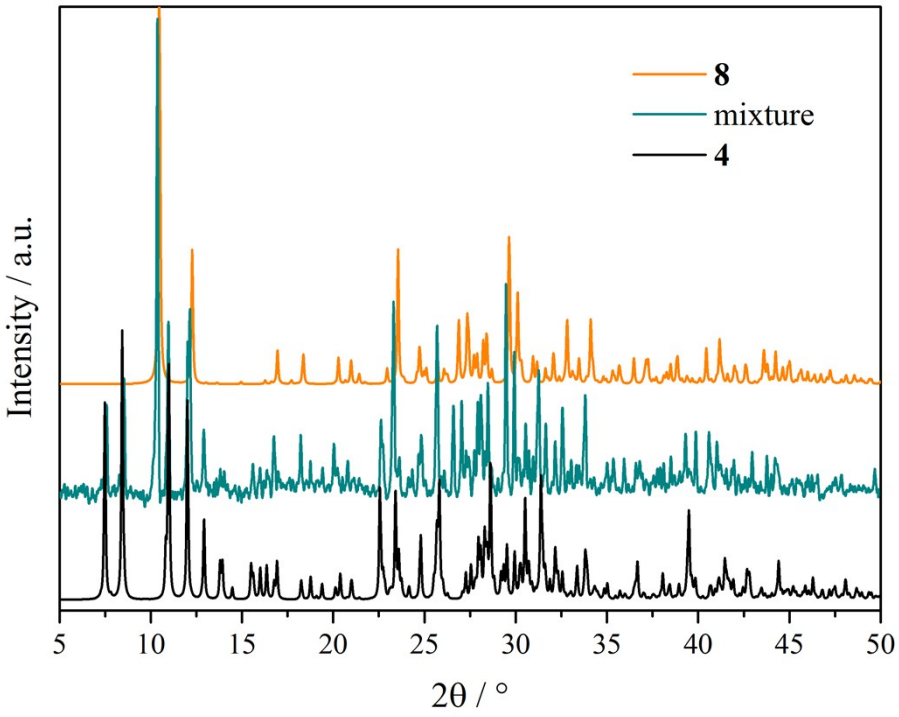

Fig. S1 PXRD patterns of compounds (4Clpy)PbI_3 (**8**) and $(4Brpy)_4Pb_3I_{10}$ (**4**) obtained from the crystal structure and mixture

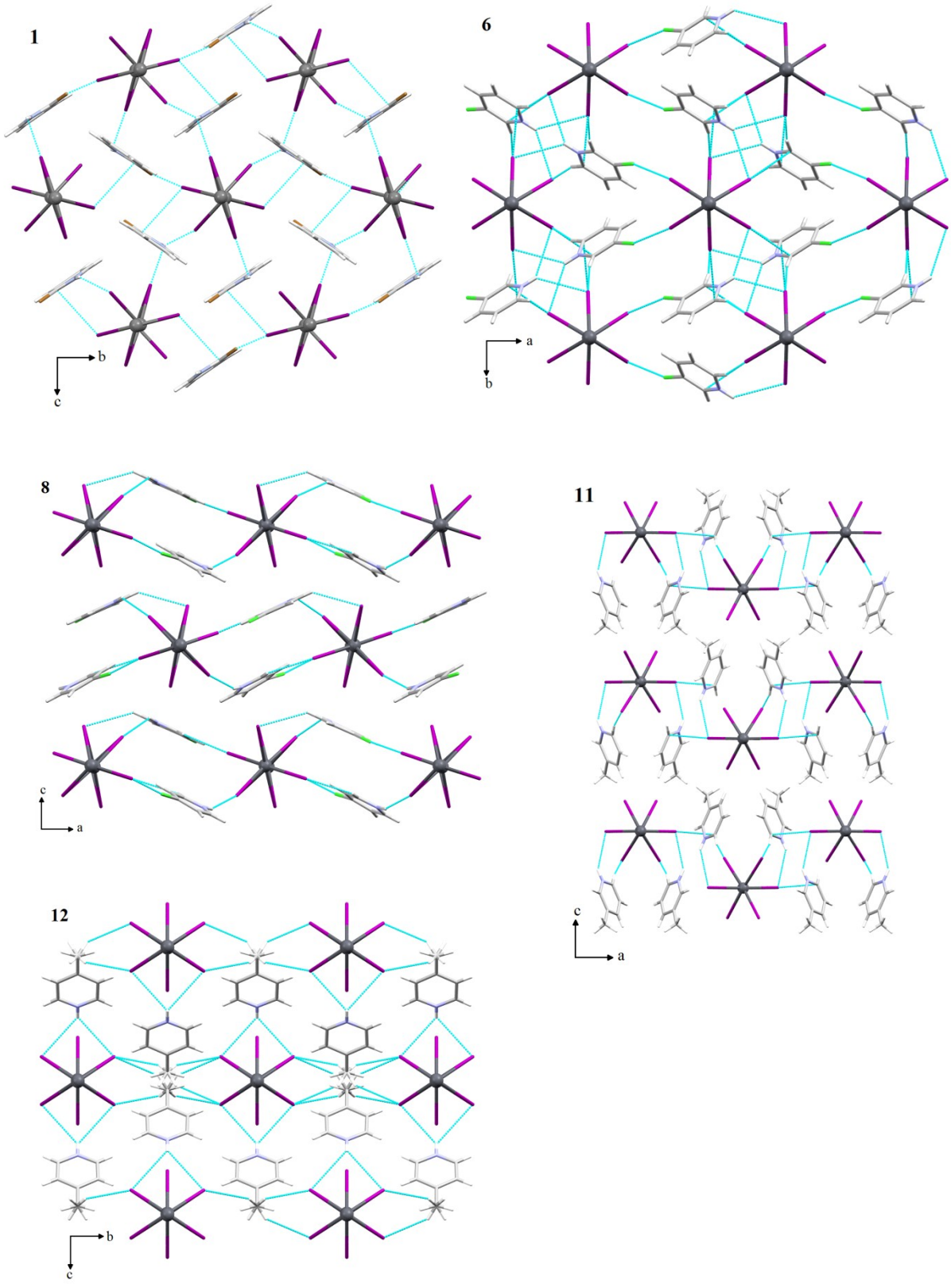

Fig. S2 Interactions between PbI_3^- chains and pyridinium cations for 1D compounds **1**, **6**, **8**, **11** and **12**

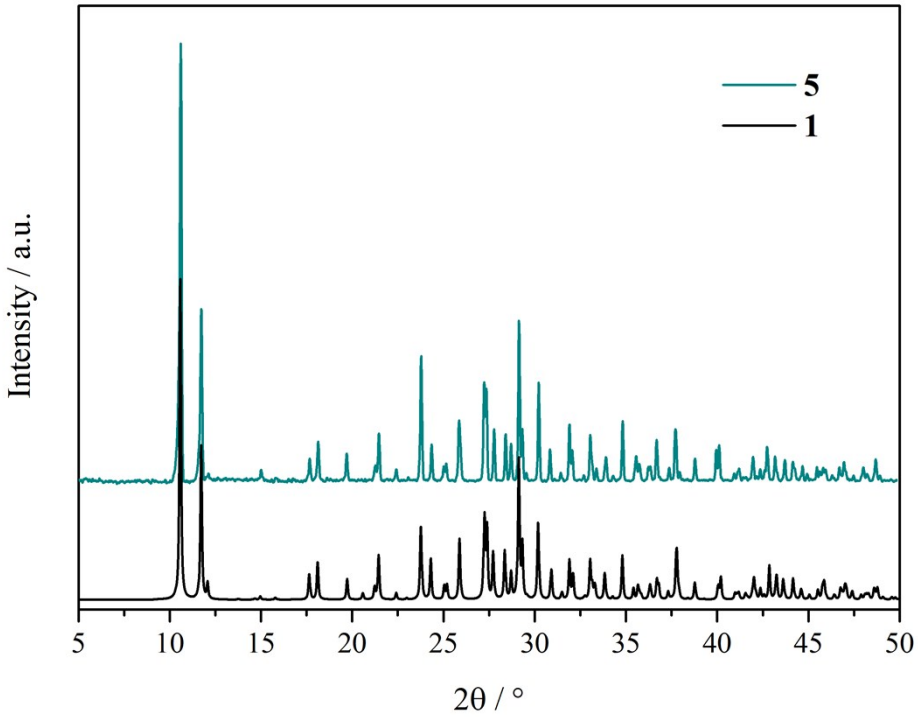

Fig. S3 PXRD patterns of compounds (2Brpy)PbI_3 (**1**) obtained from the crystal structure and (2Clpy)PbI_3 (**5**)

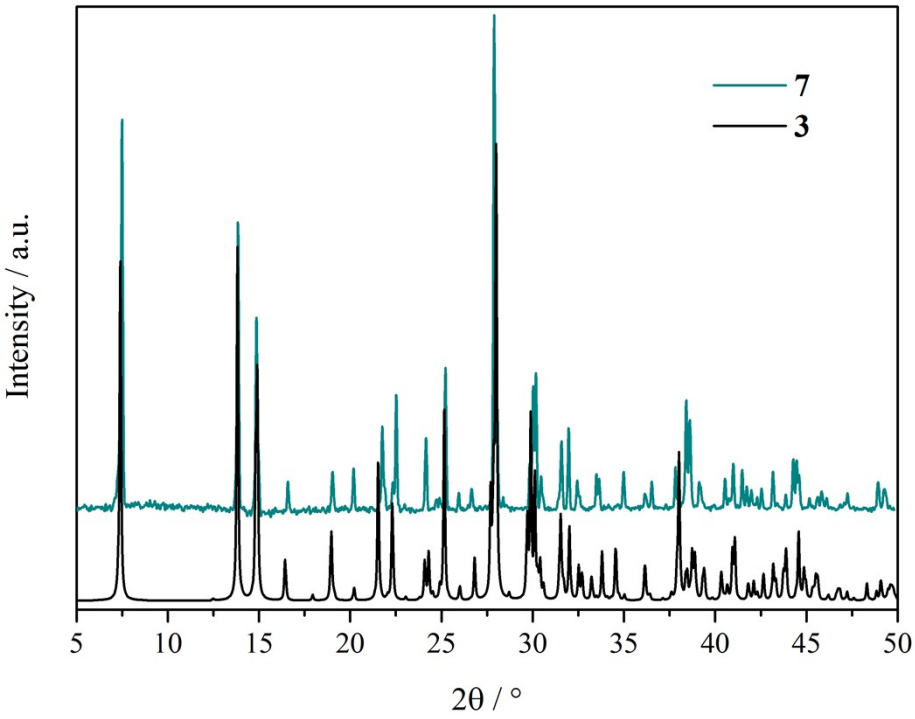

Fig. S4 PXRD patterns of compounds $(3Brpy)_2PbI_4$ (**3**) obtained from the crystal structure $(3Clpy)_2PbI_4$ (**7**)

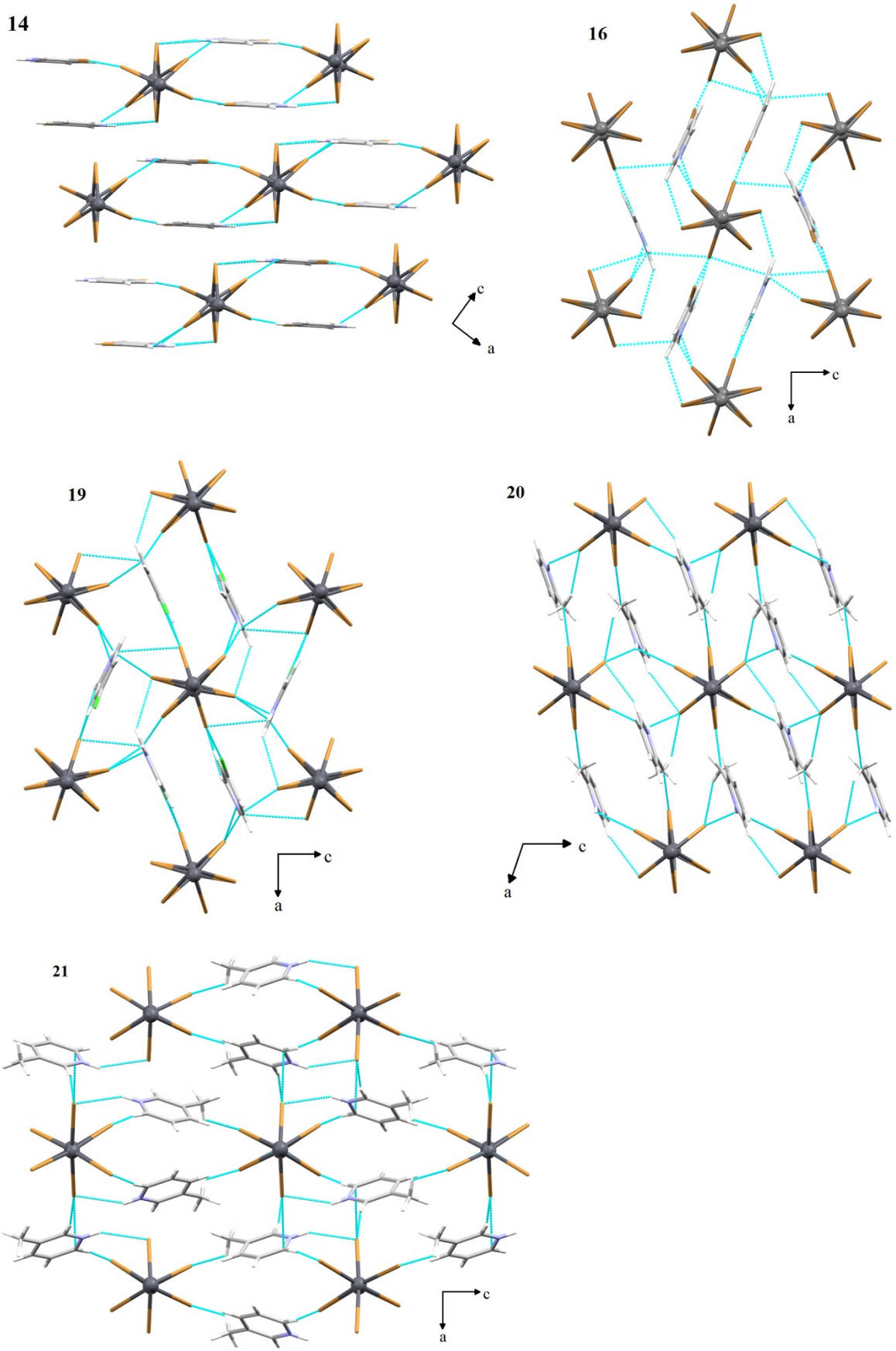

Fig. S5 Interactions between $PbBr_3^-$ chains and pyridinium cations for 1D compounds **14**, **16**, **19**, **20** and **21**

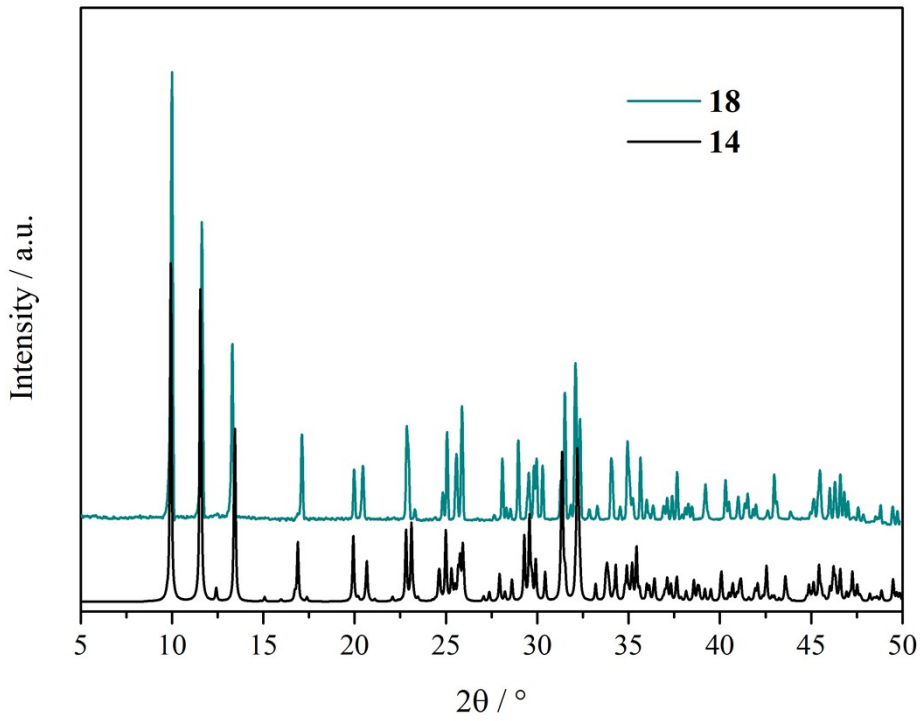

Fig. S6 PXRD patterns of compounds (3Brpy)$PbBr_3$ (**14**) obtained from the crystal structure (3Clpy)$PbBr_3$ (**18**)

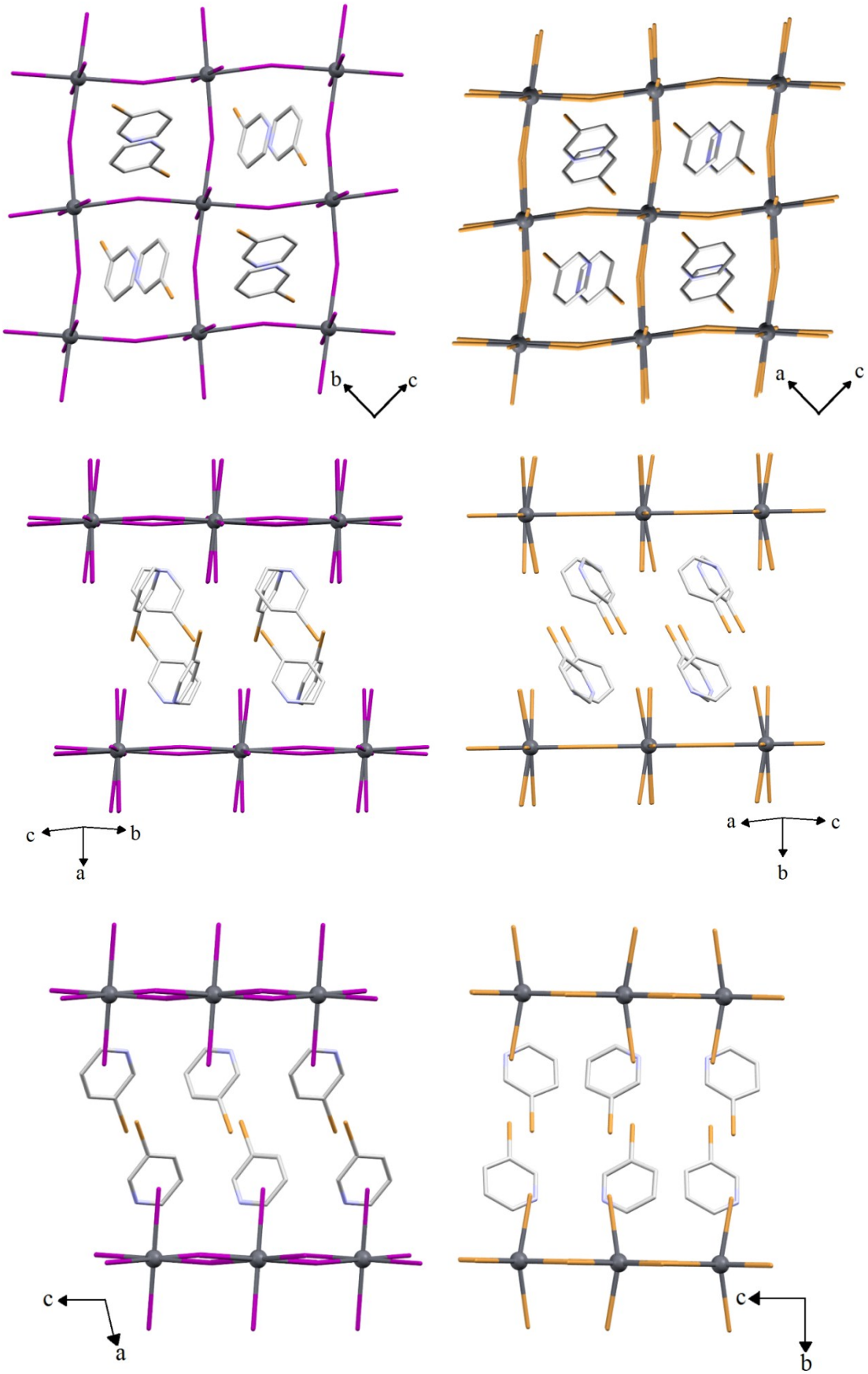

Fig. S7 Different views of crystal packing for 2D compounds **3** (left) and **15** (right) (H atoms have been omitted for clarity)

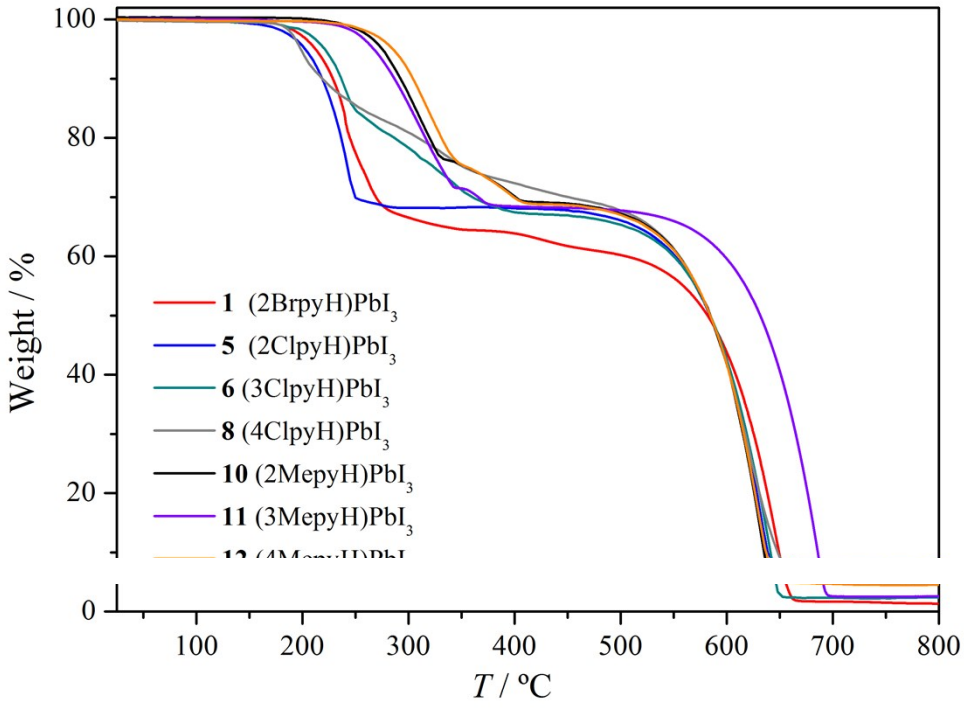

Fig. S8 TGA plots for 1D lead iodide compounds

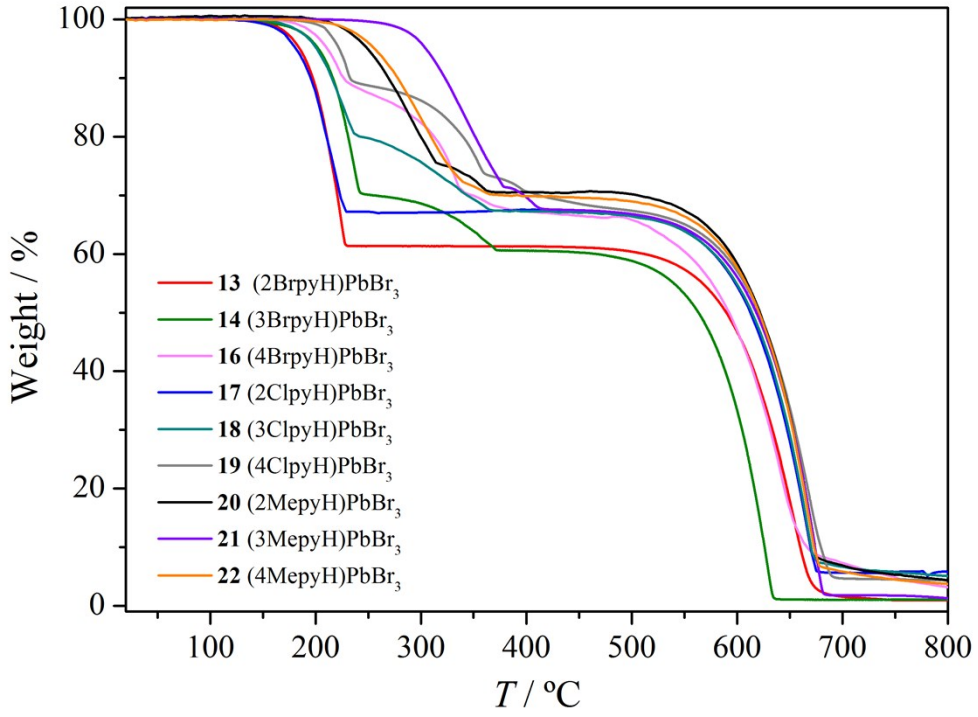

Fig. S9 TGA plots for 1D lead bromide compounds

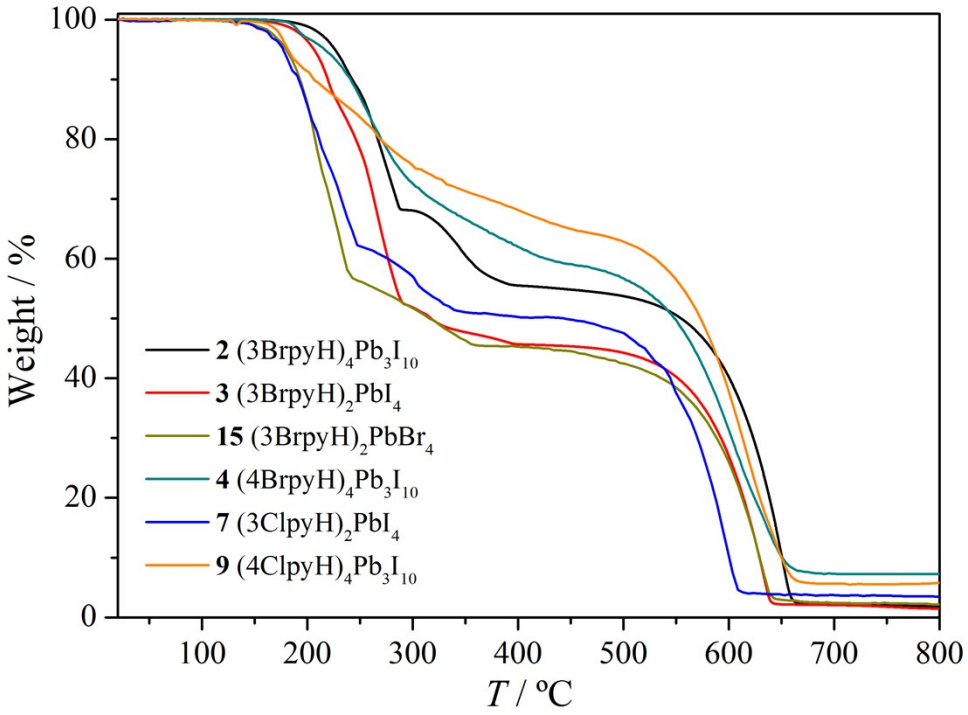

Fig. S10 TGA plots for 2D lead iodide and bromide compounds

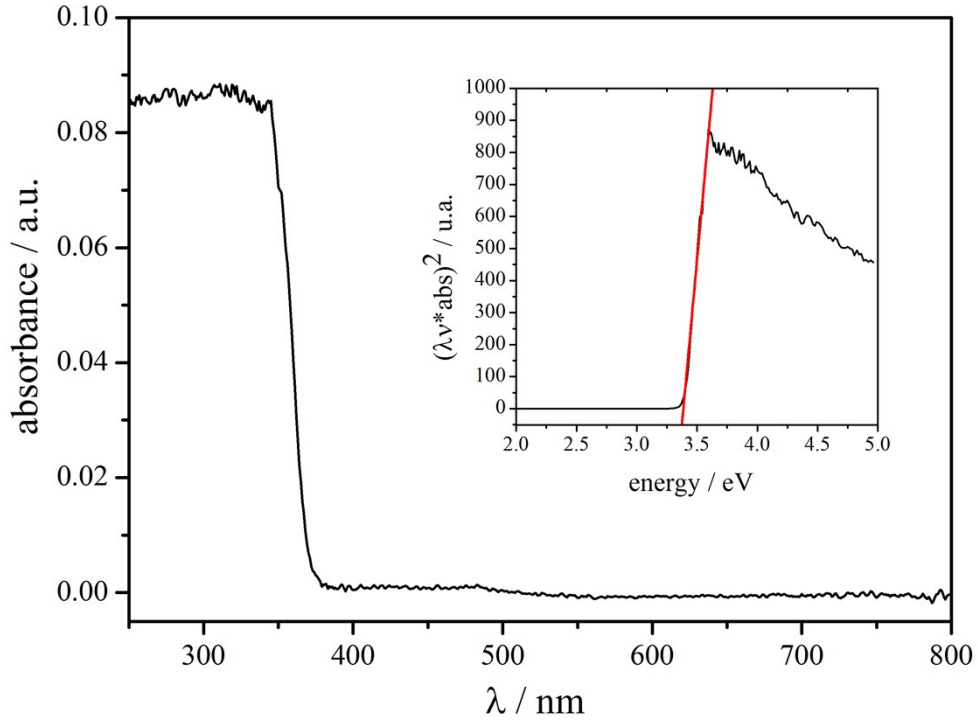

Fig. S11 Absorbance spectra for compound **13**. Inset: Tauc plot of the absorbance data for a direct allowed transition. Fits to the linear region gives a direct bandgap of 3.39 eV