

Supporting Information

Large-scale synthesis of uniform PbI₂(DMSO) complex
powder by solvent extraction method for efficient metal
halide perovskite solar cells

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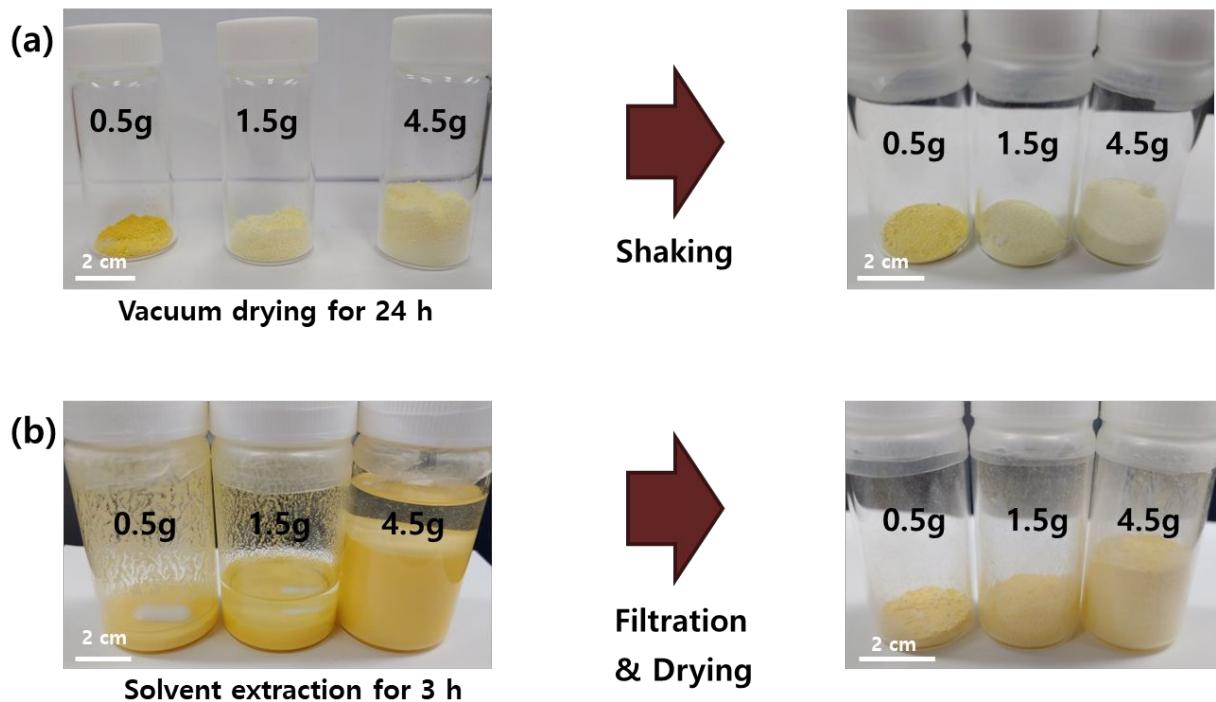


Figure S1. Photographs of (a) vacuum dried $\text{PbI}_2(\text{DMSO})_2$ powders for 24 h (left image) and shaken powders (right image) and (b) solvent extracted $\text{PbI}_2(\text{DMSO})_2$ samples for 3 h (left image) and filtered and dried powders (right image) with increasing reaction volume.

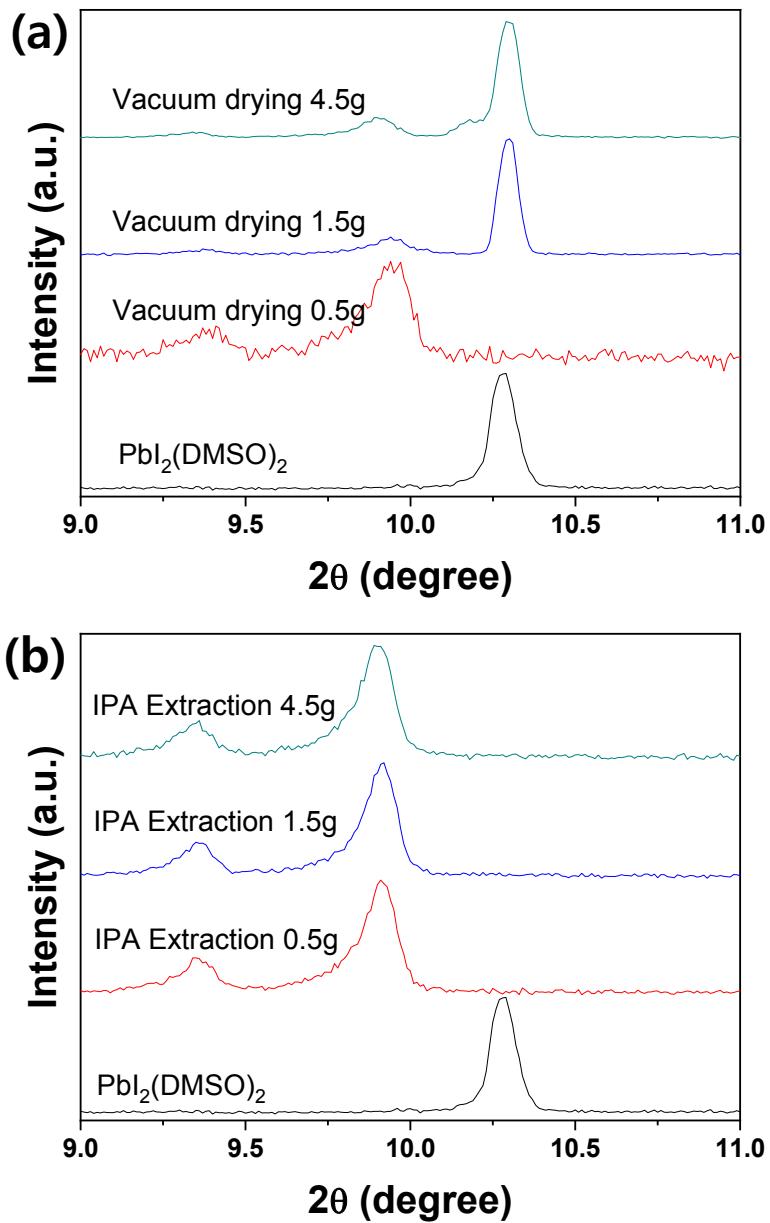


Figure S2. XRD patterns of (a) the vacuum dried PbI₂(DMSO)₂ powder and (b) the IPA solvent extracted PbI₂(DMSO)₂ powder.

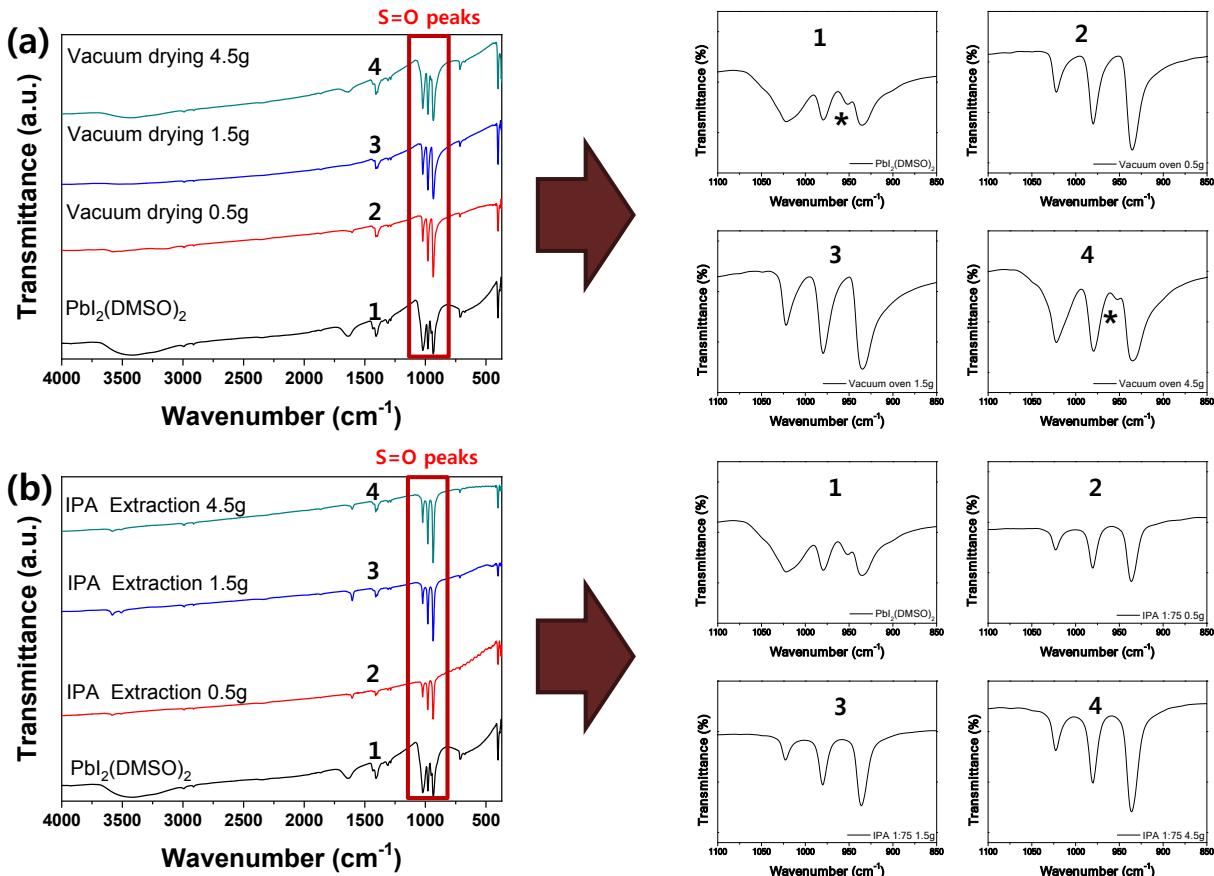


Figure S3. FT-IR spectra of (a) the vacuum dried PbI₂(DMSO)₂ powder and (b) the IPA solvent extracted PbI₂(DMSO)₂ powder.

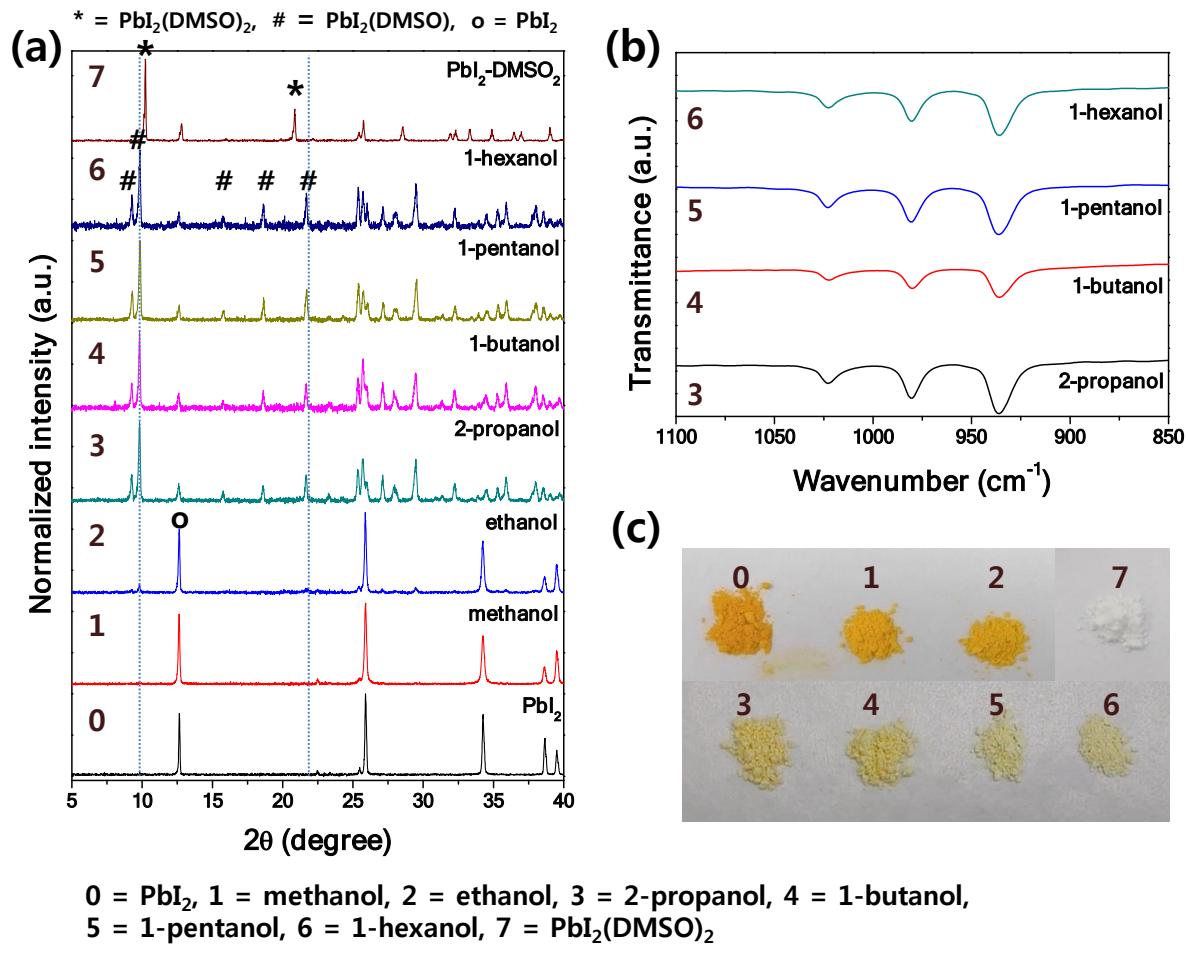


Figure S4. (a) XRD patterns, (b) FT-IR spectra, and (c) photographs of solvent extracted $\text{PbI}_2(\text{DMSO})_2$ complex powders in various alcohols.

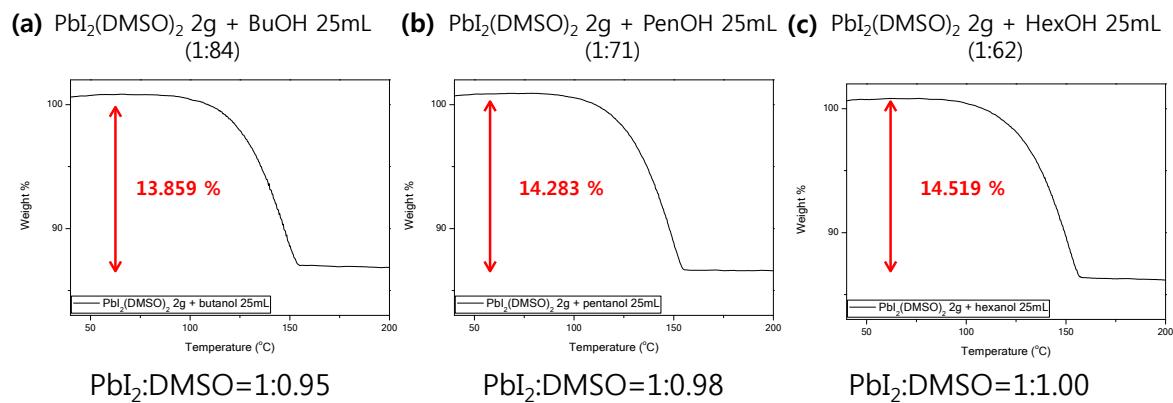


Figure S5. TGA spectra of solvent extracted $\text{PbI}_2(\text{DMSO})_2$ complex powders by (a) 1-butanol, (b) 1-pentanol, and (c) 1-hexanol.

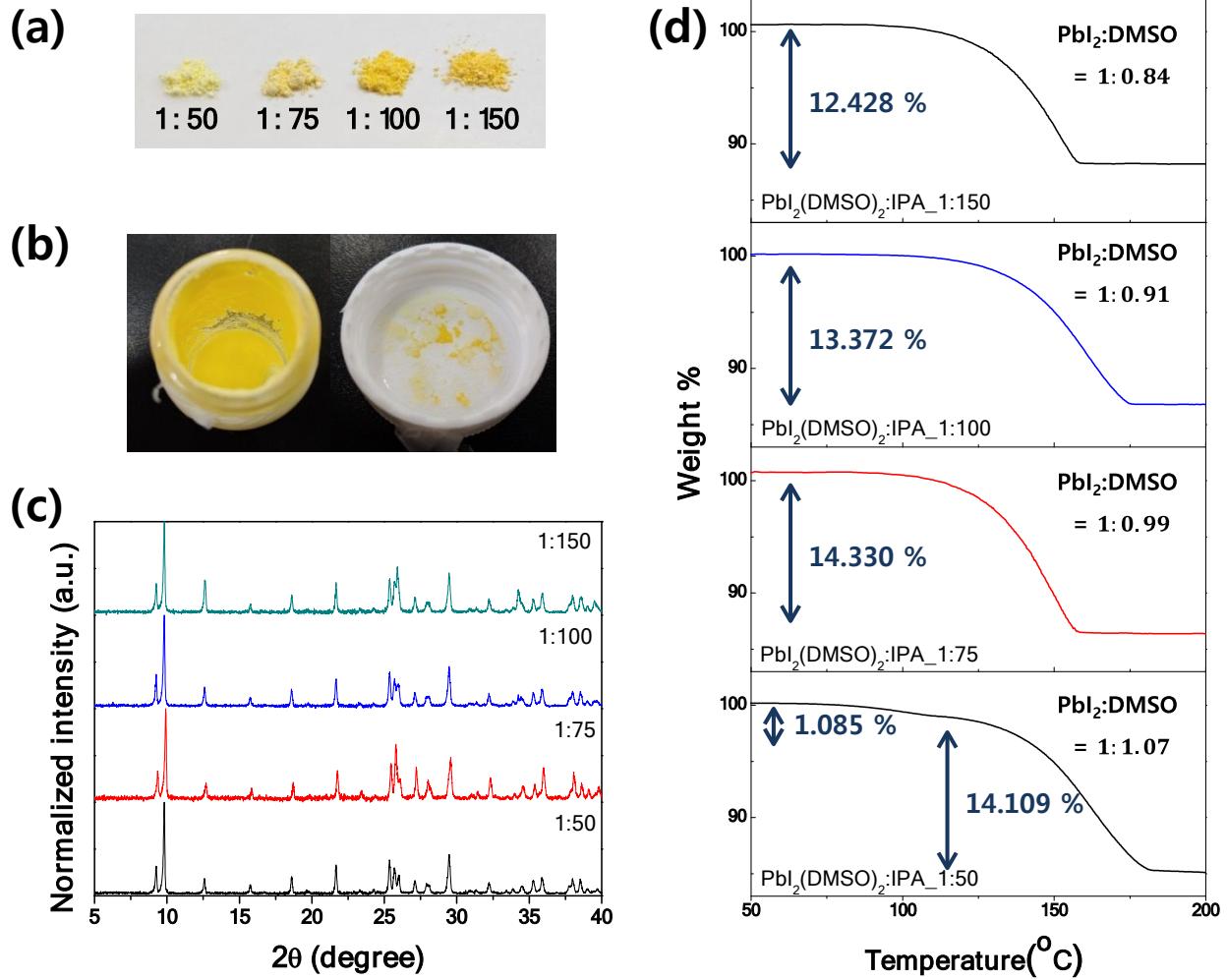


Figure S6. Solvent extracted $\text{PbI}_2(\text{DMSO})_2$ powders with respect to the ratio of $\text{PbI}_2(\text{DMSO})_2:\text{IPA}$ of 1:50, 1:75, 1:100, and 1:150: (a) photographs of produced powders in each condition, (b) photograph of 1:50 sample, (c) XRD patterns of produced powders in each reaction condition, and (d) TGA spectra of produced powders in each condition.

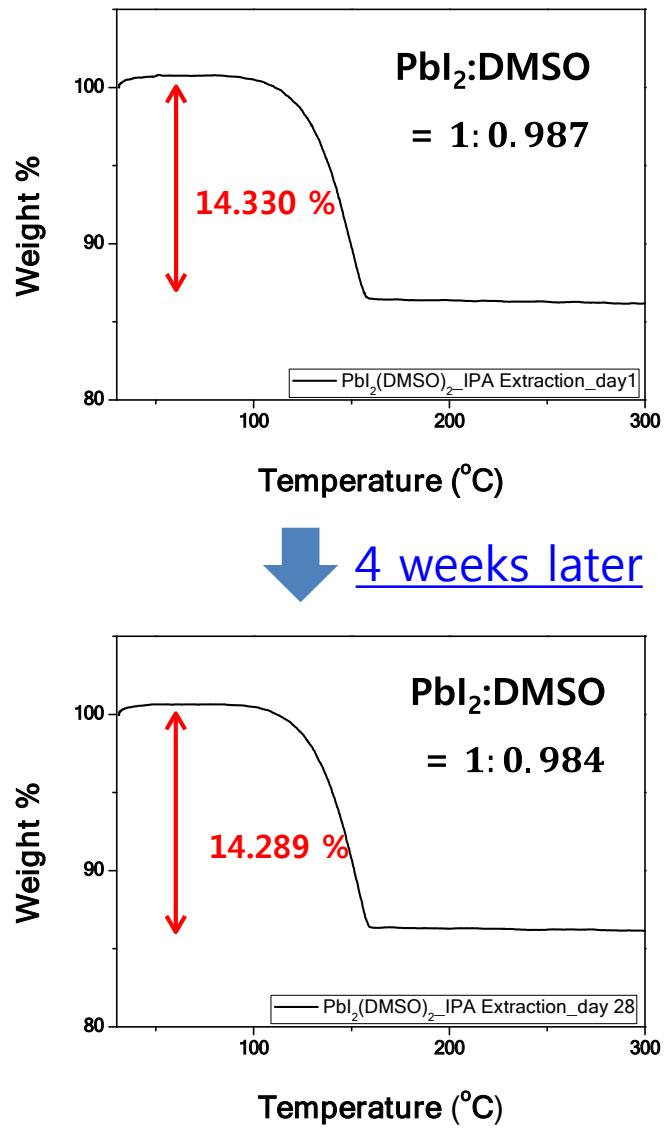


Figure S7. TGA spectra of as-scaled-up PbI_2 (DMSO) complex powder and the complex powder after 4 weeks' storage in a capped vial at ambient condition.