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Supporting Information

Improving-Performance Photodetectors Based on $MAPbBr_3$ Film Optimization and MeOP-DSF Hole-Transport Layer

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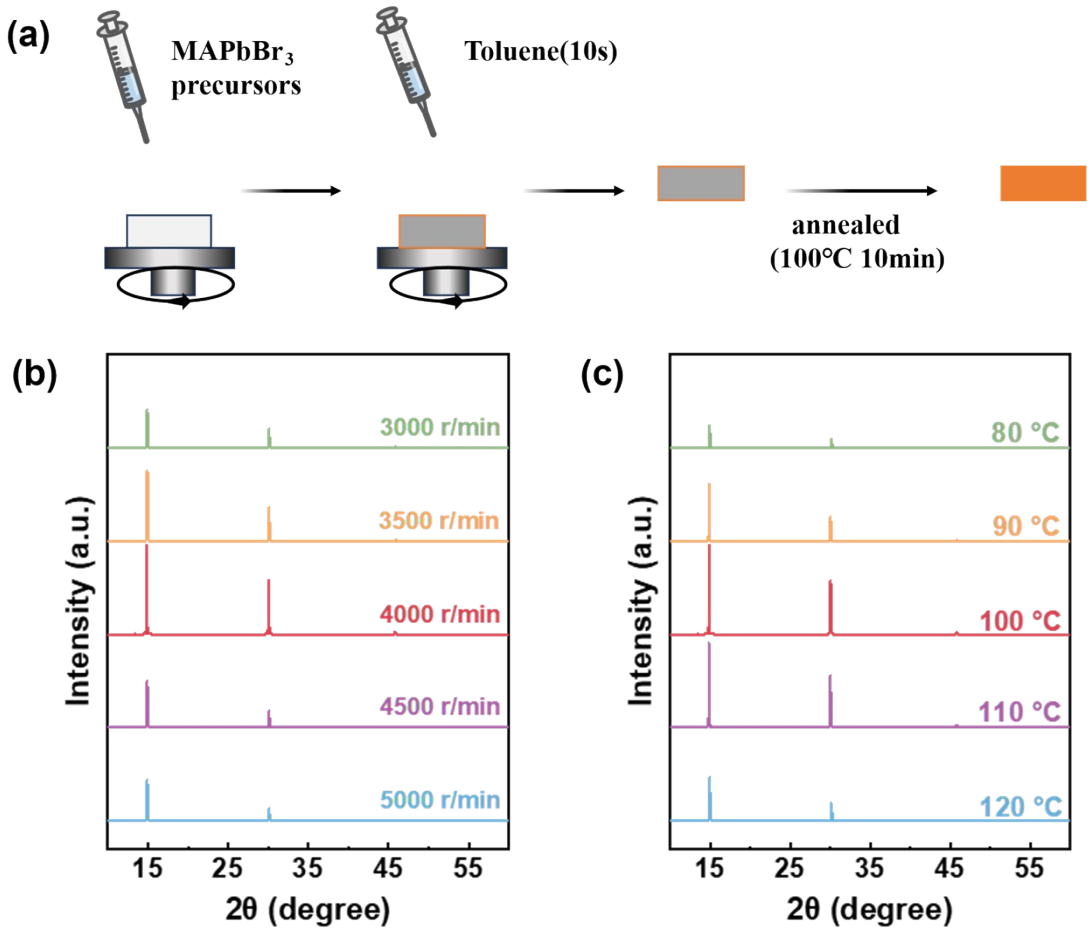

Fig. S1. (a) Preparation process of $MAPbBr_3$ film optimization; (b) XRD patterns of $MAPbBr_3$ films prepared at different spin-coating speeds and (c) different annealing temperatures.

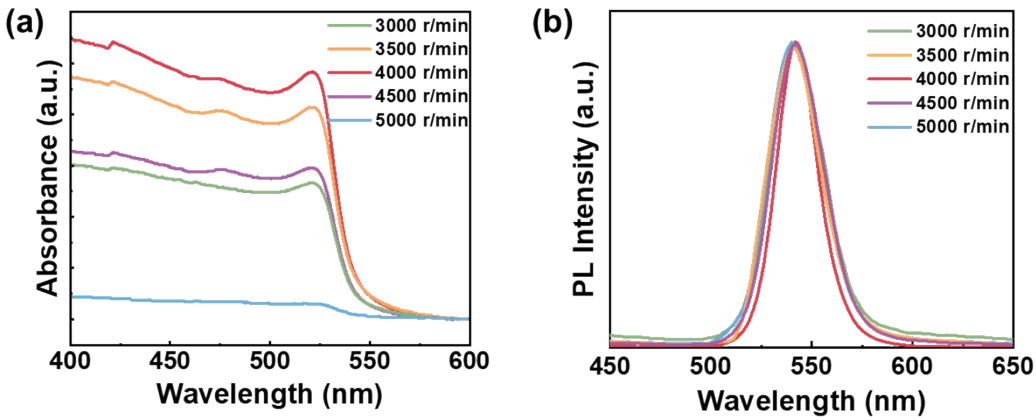

Fig. S2. (a) Absorption and (b) photoluminescence spectra of $MAPbBr_3$ films prepared at different spin-coating speeds.

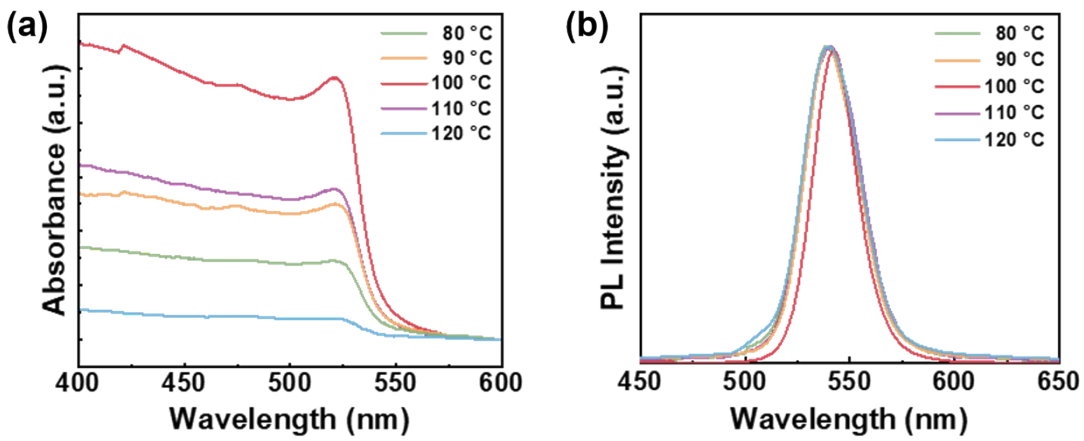

Fig. S3. (a) Absorption and (b) photoluminescence spectra of $MAPbBr_3$ films prepared at annealing different temperatures.

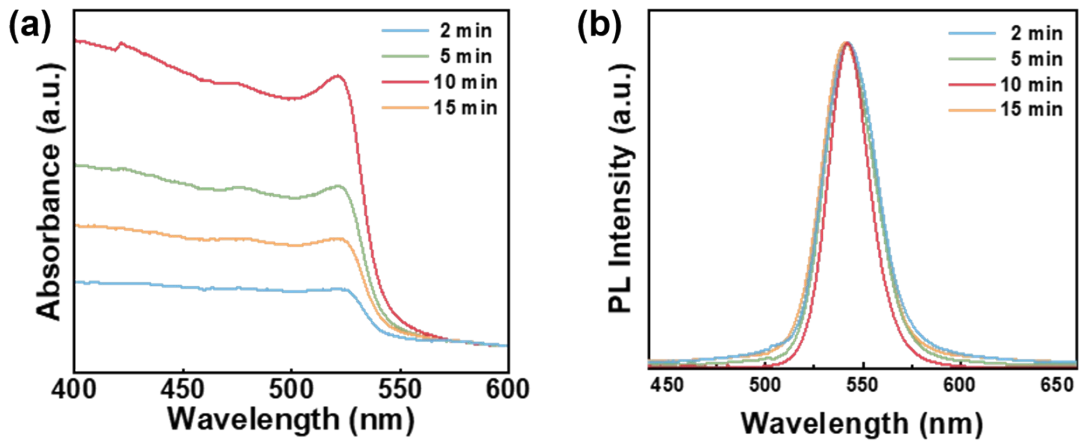

Fig. S4. (a) Absorption and (b) photoluminescence spectra of $MAPbBr_3$ films prepared with different annealing times.

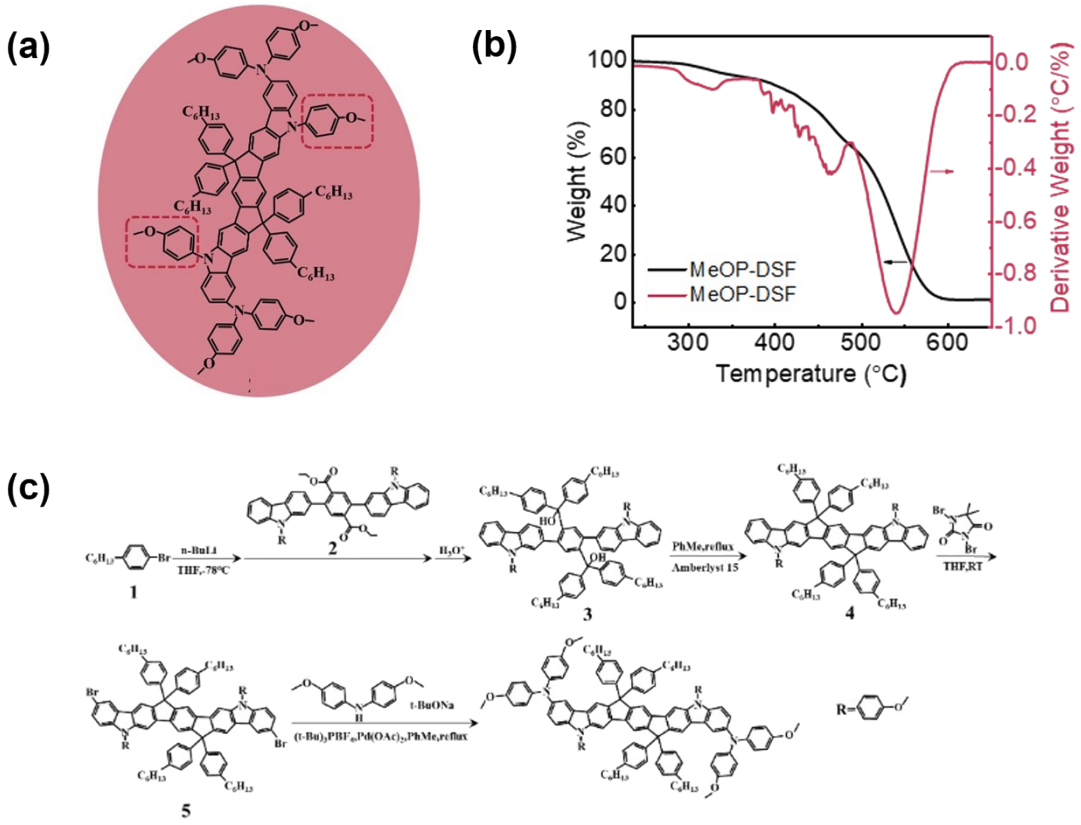

Fig. S5. (a) Schematic diagram of the structure of MeOP-DSF; (b) Thermogravimetric analysis (TGA) curve and (c) Schematic diagram of the synthesis process of the MeOP-DSF.

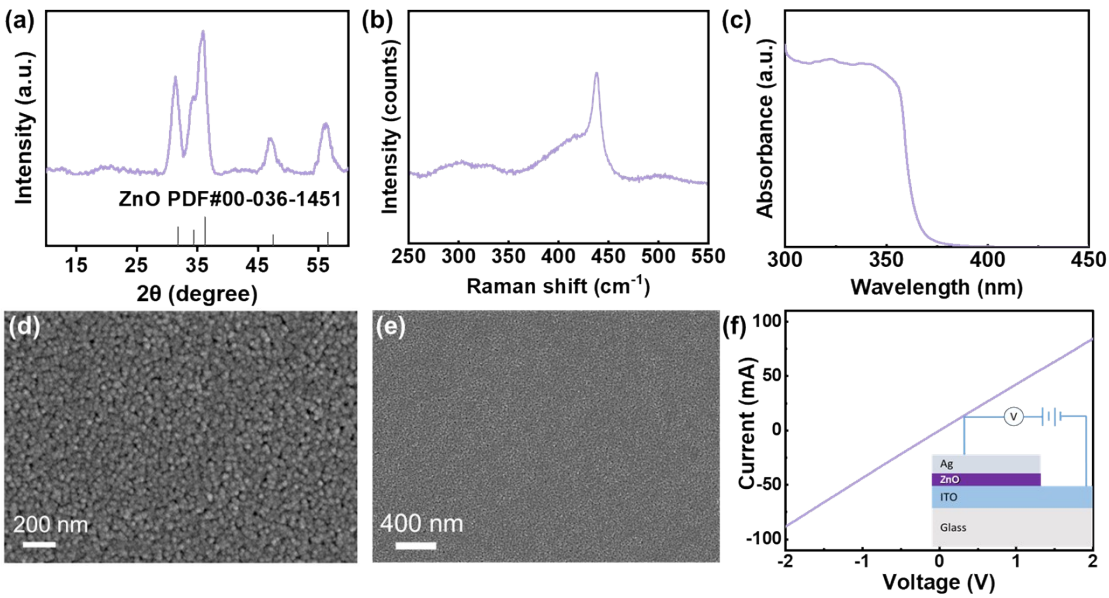

Fig. S6. (a) XRD pattern; (b) Raman spectrum; (c) Absorption spectrum; (d) SEM image; (e) High-magnification SEM image and (f) Current-voltage (I-V) curve of the as-assembled ZnO film.

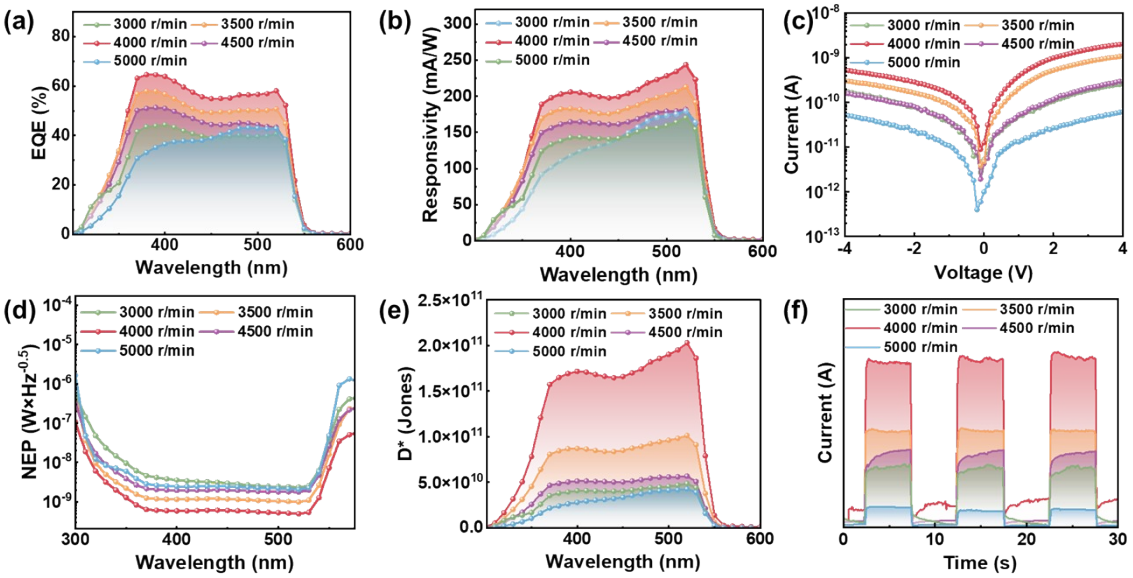

Fig. S7. (a) EQE; (b) Responsivity; (c) I-V curves under dark conditions; (d) Noise equivalent power (NEP); (e) Specific detectivity (D^*); (f) I-t curves of $MAPbBr_3$ devices fabricated at different spin-coating speeds.

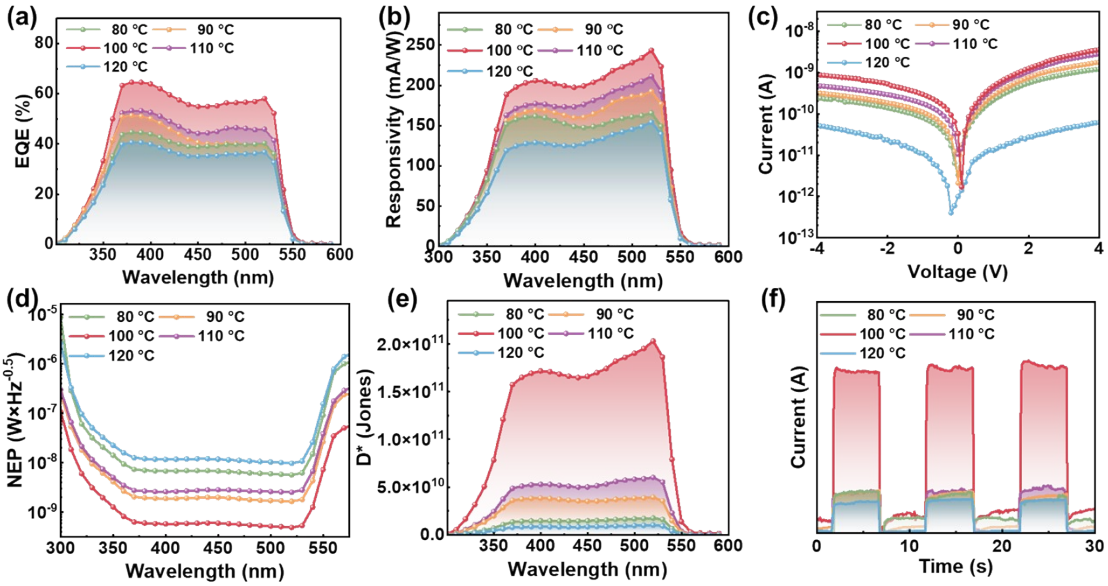

Fig. S8. (a) EQE; (b) Responsivity; (c) I-V curves under dark conditions; (d) Noise equivalent power (NEP); (e) Specific detectivity (D^*); (f) I-t curves of $MAPbBr_3$ devices fabricated at different annealing temperatures.

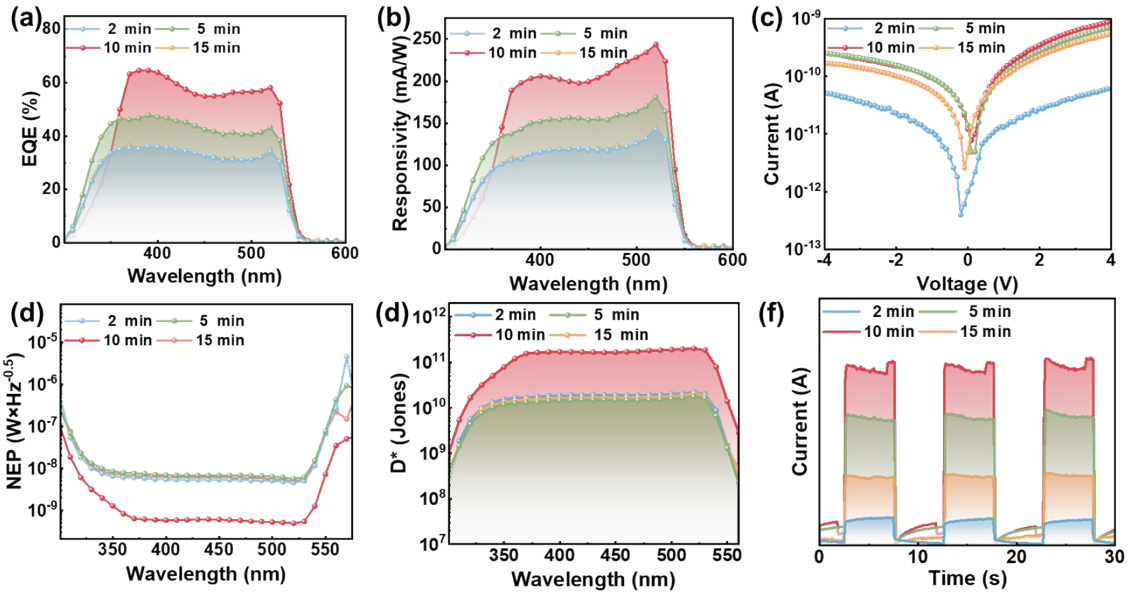

Fig. S9. (a) EQE; (b) Responsivity; (c) I-V curves under dark conditions; (d) Noise equivalent power (NEP); (e) Specific detectivity (D^*); (f) I-t curves of $MAPbBr_3$ devices fabricated at different annealing times.