Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A. This journal is © The Royal Society of Chemistry 2024

• 0 mg • 0.5 mg 0 mg (102) (213) 0.5 mg 1 mg 1 mg 2 mg 2 mg Intensity (a.u.) Intensity (a.u.) 24.5 25.0 25.5 42.8 43.2 43.6 44.0 24.0 2θ (degree) 2θ (degree)

Supporting Information

Fig. S1 The enlarged XRD patterns of (102) and (213) planes.



Fig. S2 AFM images of the $PEA_{0.2}FA_{0.8}SnI_3$ films with (a) 0, (b) 0.5, (c) 1, and (d) 2 mg 2-aminopyrimidine.



Fig. S3 FTIR spectra of 2-aminopyrimidine and PEA_{0.2}FA_{0.8}SnI₃ with 1mg 2-aminopyrimidine.



Fig. S4 EQE spectra of $PEA_{0.2}FA_{0.8}SnI_3$ -based PDs with different additive concentrations.



Fig. S5 Response time of the PEA_{0.2}FA_{0.8}SnI₃-based PD without 2-aminopyrimidine.



Fig. S6 (a) Long-term I-t curve of the pristine $PEA_{0.2}FA_{0.8}SnI_3$ -based PD under 533 nm green laser illumination. (b) Enlarged I-t curve.