Supporting Information

0D-3D Mixed-Dimensionality Perovskite $Cs_4Pb(BrCl)_6$-$CsPbBr_{2-x}Cl_{1+x}$ Films for Stable and Sensitive Self-Powered, High-Temperature Photodetectors

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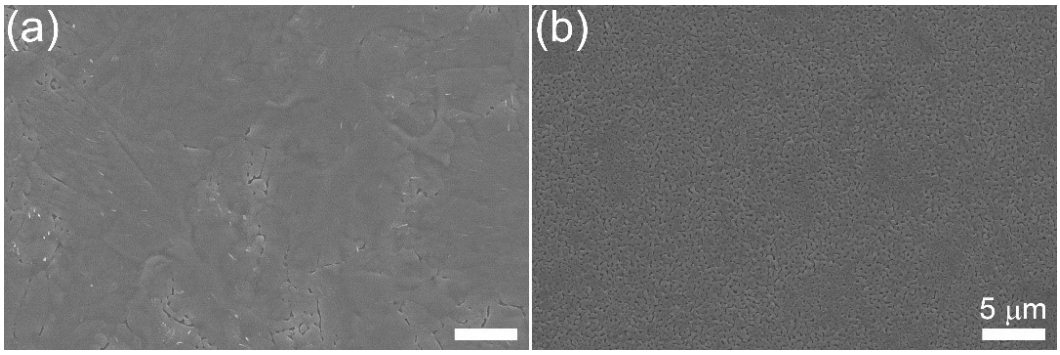

Fig. S1. SEM images of (a) $PbBr_2$ films and (b) $PbBr_2$ films prepared with 0.10 M CsCl additive.

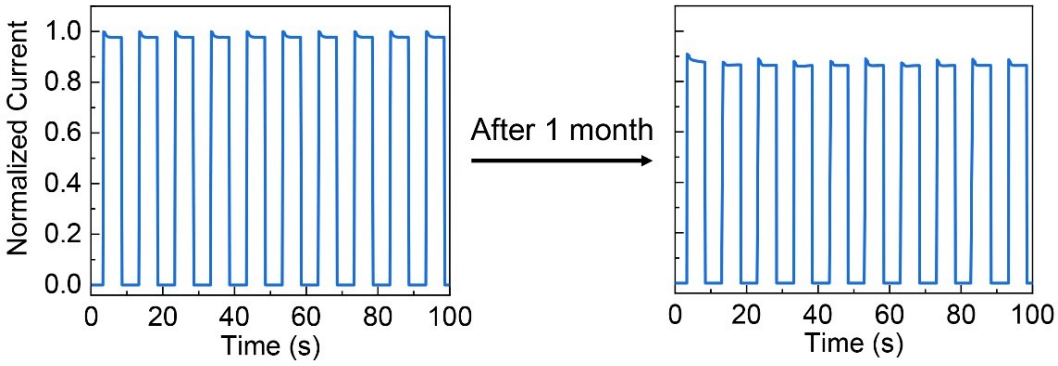

Fig. S2. Storage stability test results in ambient air for the self-powered PD based on $CsPb(BrCl)_6$-$CsPbBr_{2-x}Cl_{1+x}$ film recorded under 300 °C.

Table S1. Summary of performance parameters of the typical PDs based on $CsPbX_3$ materials.

PD configuration	Self-powered	R (A W^{-1})	D* (Jones)	Rising/falling time	Ref.
FTO/TiO_2/$Cs_4Pb(BrCl)_6$-$CsPbBr_{2-x}Cl_{1+x}$/Carbon	Yes	0.18	1.65×10^{13}	1.23 μs	This work
Au/$CsPbBr_3$/Au	No	133@5V	0.86×10^{12}@5V	20.9/24.6 ms	[1]
$CsPbBr_3$/PDVT-10/Cr/Cu	No	1.64×10^{4}@3V	3.17×10^{12}@3V	-	[2]
ITO/$CsPbBr_3$/ITO	No	6×10^{4}@3V	-	0.5/1.6 ms	[3]
Carbon/(HDA)$CsPb_2Br_7$/Carbon	No	0.21×10^{-3}@10V	1.5×10^{9}	200/300 μs	[4]
ITO/PTAA/$FAPbI_3$/C_{60}/BCP/Cu	Yes	0.45	1.18×10^{12}	0.9/1.3 μs	[5]
ITO/PTAA/PMMA/$Cs_xDMA_{1-x}PbI_3$/PCBM/Bphen/Cu	Yes	0.38	1×10^{13}	558 ns	[6]
Au/$(FAPbI_3)_{0.79}(MAPbBr_3)_{0.13}(CsPbI_3)_{0.08}$/Au	No	40@3 V	1.9×10^{13}@3 V	-	[7]
FTO/TiO_2/Al_2O_3/PCBM/$MAPbI_3$/Spiro-OMeTAD/Au/Ag	No	0.4@-1 V	6×10^{12}@-1 V	1.2/3.2μs	[8]
ITO/$MAPbI_3$/Au	No	-	1.76×10^{11}@2V	27.2/26.2 ms	[9]
Ag/ITO/Cs_2SnI_6/ITO/Ag	No	130@-5V	1×10^{13}@-5V	1/1 s	[10]
Au/$Cs_2SnCl_{6-x}Br_x$/Au	No	-	2.71×10^{10}@-20V	9.52/4.34 ms	[11]
Ag/$Cs_3Bi_2I_9$/Au	No	-	3.90×10^{11}@3V	1.5/42.2 μs	[12]

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