Supplementary Materials for

Doping with Metal-Organic Framework Materials (ZIF-8) on perovskite photoconductive detector for improving stability and photoresponsivity

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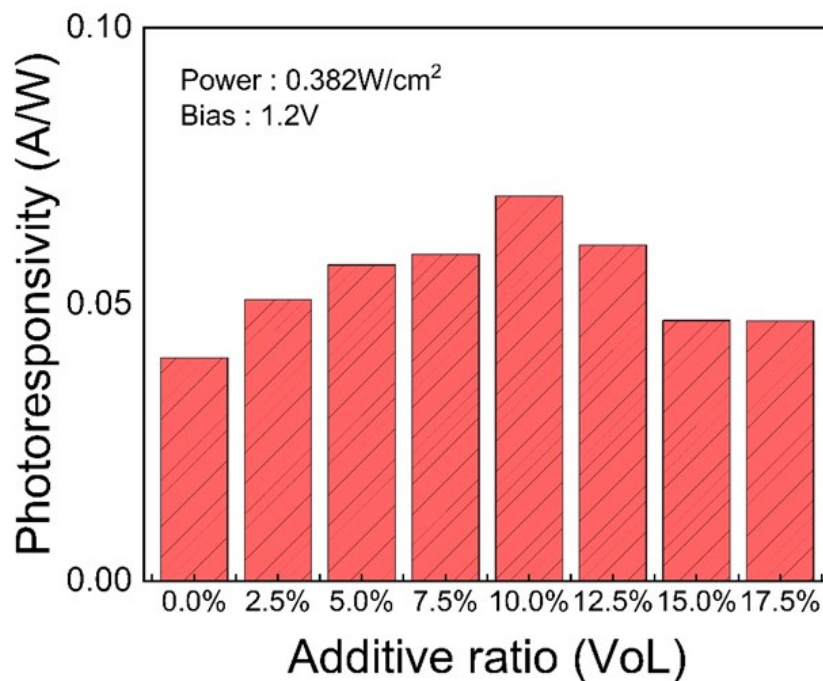
Figs. S1~S7 and Table S1

Fig. S1. Relationship between ZIF-8 (5g/mL) addition concentration and
photoresponsivity

Table S1 Summary of photoresponsivity of devices with different doping concentrations

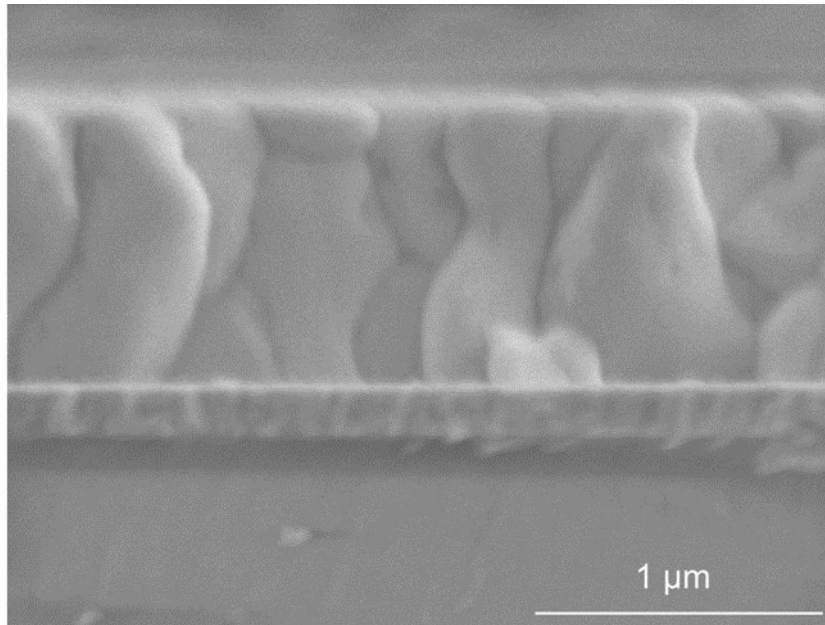| Addition ratio	Photocurrent	Photoresponsivity
	A	A/W
0%	$1.927*10^{-7}$	$4.033*10^{-2}$
2.5%	$2.431*10^{-7}$	$5.087*10^{-2}$
5%	$2.731*10^{-7}$	$5.714*10^{-7}$
7.5%	$2.824*10^{-7}$	$5.909*10^{-7}$
10%	$3.327*10^{-7}$	$6.961*10^{-7}$
12.5%	$2.901*10^{-7}$	$6.071*10^{-7}$
15%	$2.250*10^{-7}$	$4.708*10^{-7}$
17.5%	$2.245*10^{-7}$	$4.698*10^{-7}$

Fig. S2. The cross-sectional SEM images of MAPbI$_3$ perovskite with ZIF-8
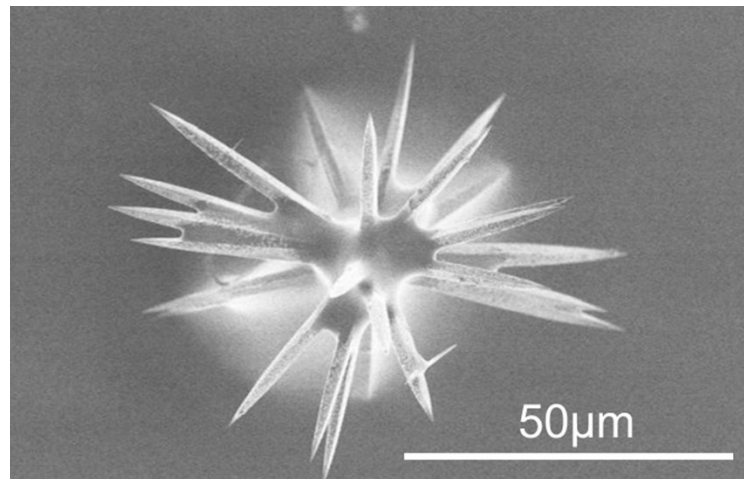

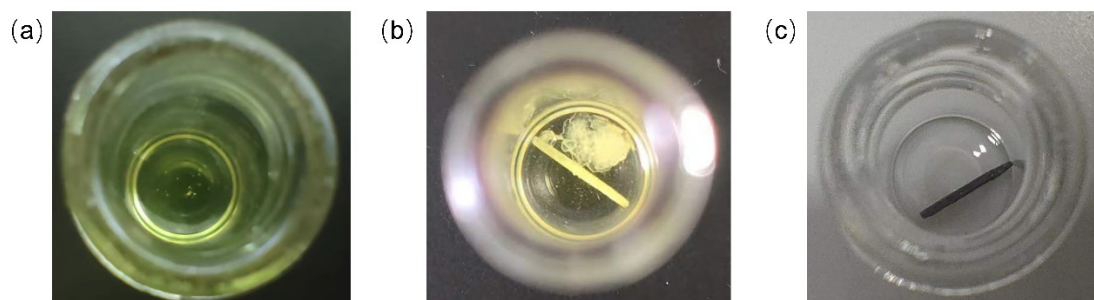Fig. S3. The SEM images of mixed crystal

Fig. S4. (a) The perovskite ink without ZIF-8. (b) The perovskite ink with ZIF-8 and needle-shaped crystal. (c) The needle-shaped crystals removed from perovskite ink for 2min without any treatment.
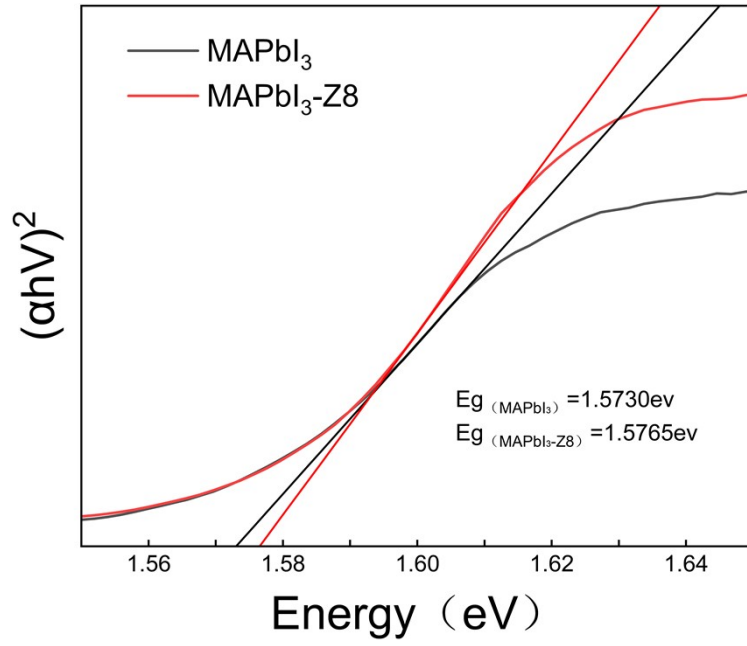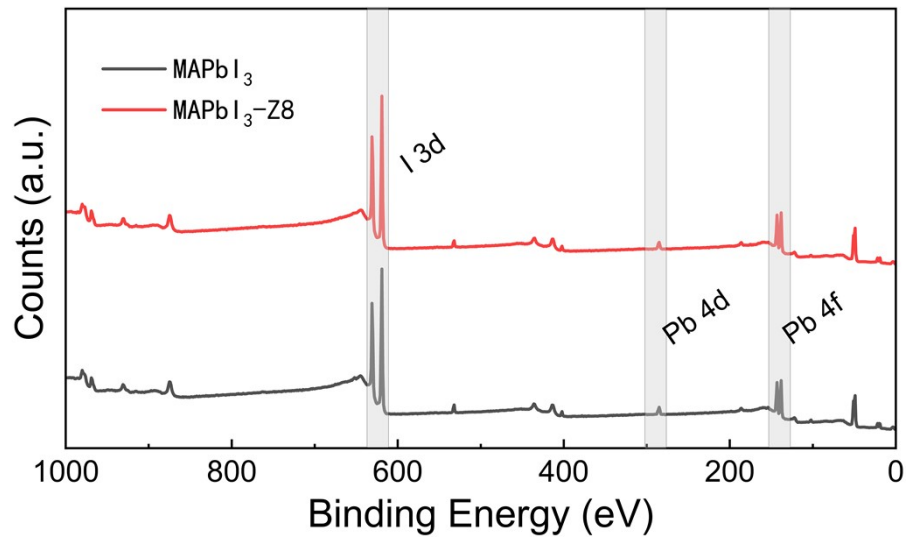
Fig. S5. Optical bandgap estimated for MAPbI$_3$ and MAPbI$_3$-Z8.
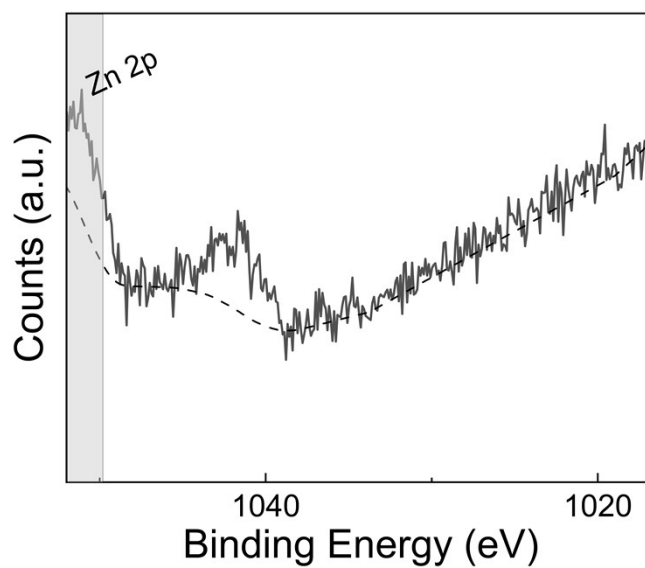

Fig. S6. XPS spectra of MAPbI$_3$ and MAPbI$_3$-Z8 films.
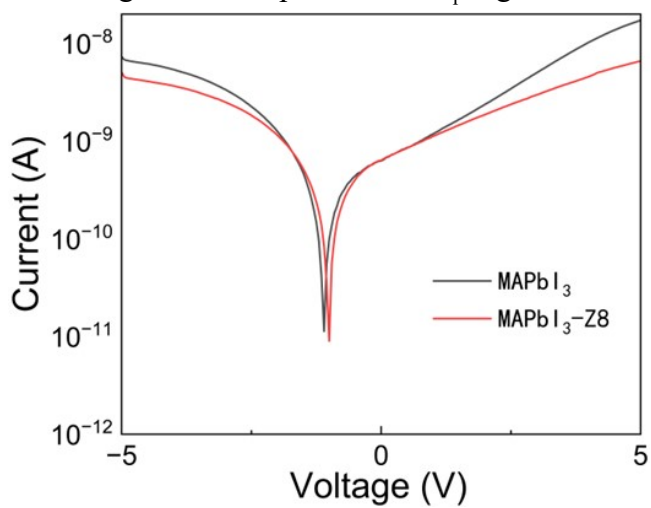
Fig. S7. XPS spectra in Zn $_{2p}$ regions

Fig. S8. Logarithm I–V characteristics of photodetectors with MAPbI$_3$ and MAPbI$_3$-Z8 layer in the dark state condition