

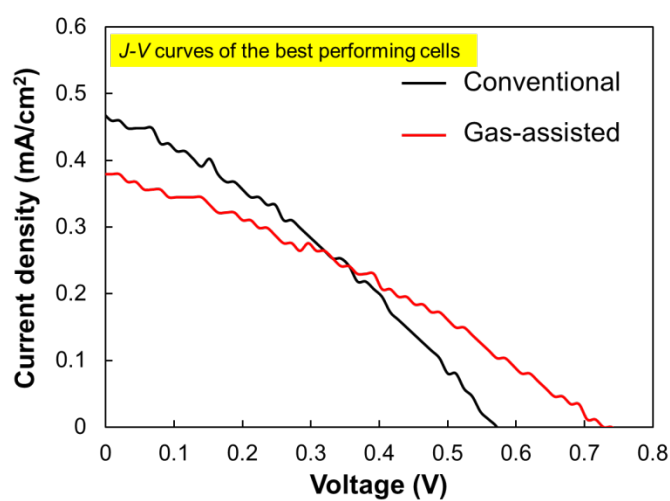
## Gas-assisted coating of Bi-based $(\text{CH}_3\text{NH}_3)_3\text{Bi}_2\text{I}_9$ active layer in perovskite solar cells

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### Supplement



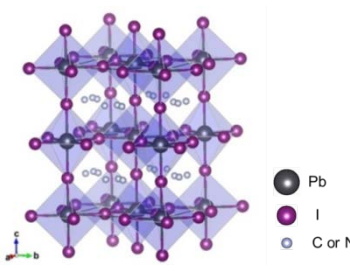
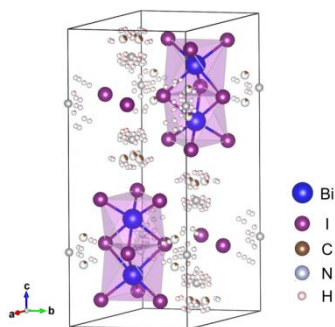
**Fig. S1** *J-V* curves of the best performing cells.

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**Table S1** Comparison between  $\text{CH}_3\text{NH}_3\text{PbI}_3$  and  $(\text{CH}_3\text{NH}_3)_3\text{Bi}_2\text{I}_9$ .

	$\text{CH}_3\text{NH}_3\text{PbI}_3$	$(\text{CH}_3\text{NH}_3)_3\text{Bi}_2\text{I}_9$
Crystal structure	Tetragonal ( $I4/mcm$ ) [1]	Hexagonal ( $P6_3/mmc$ ) [2]
		
$a$ (Å)	8.8117(8) [1]	8.4668(6) [2]
$c$ (Å)	12.674(2) [1]	21.614(2) [2]
Band gap (eV)	~1.5 [3]	~2.1 [2,4]
Reported best PCE (%)	22.1 [5]	0.42 [6]
Exciton binding energy	13 meV [7]	70 meV [4]
Stability in a humid environment (Hr=55%±5%)	unstable [6]	stable [6]
Toxicity	Toxic	Less toxic

### References for the supplement

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