

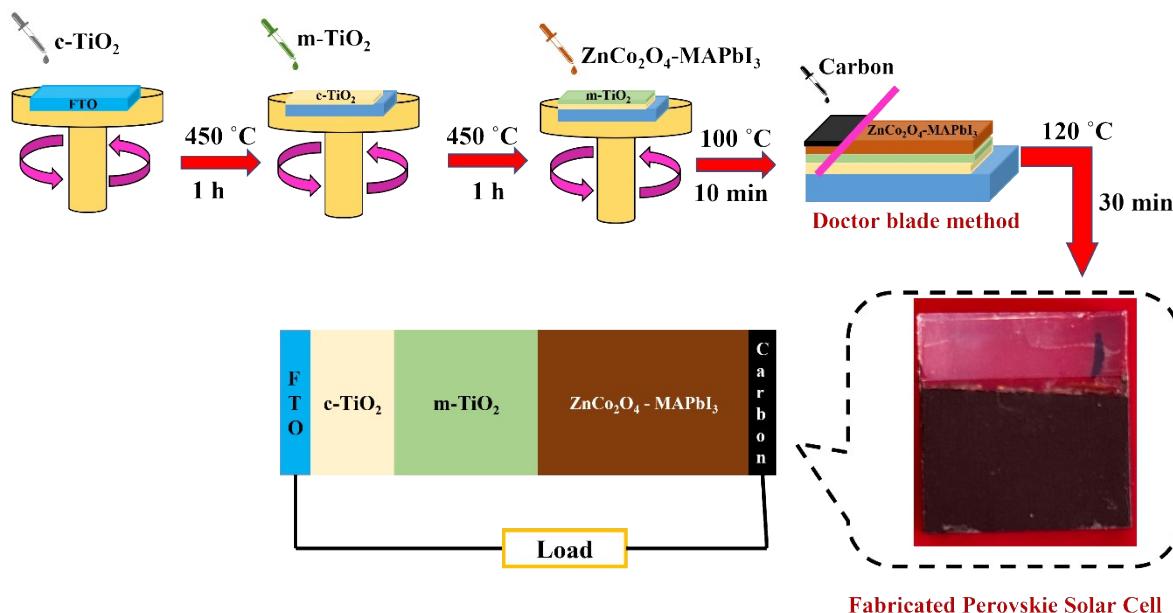
## Multi-Functional Zinc Cobaltite Materials for Perovskite Solar Cells and Hydrogen

### Evolution Reactions

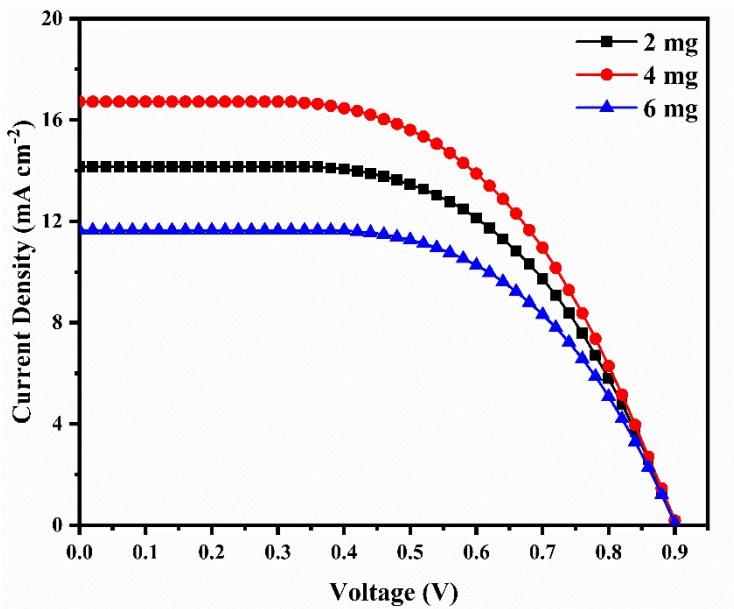
K.P. Muthukumaran<sup>1</sup>, V. Arjun<sup>1</sup>, A. Nithya<sup>1</sup>, Jingbo Zhang<sup>2</sup> and S. Karuppuchamy<sup>1\*</sup>

<sup>1</sup>Department of Energy Science, Alagappa University, Karaikudi-630 003, Tamil Nadu, India

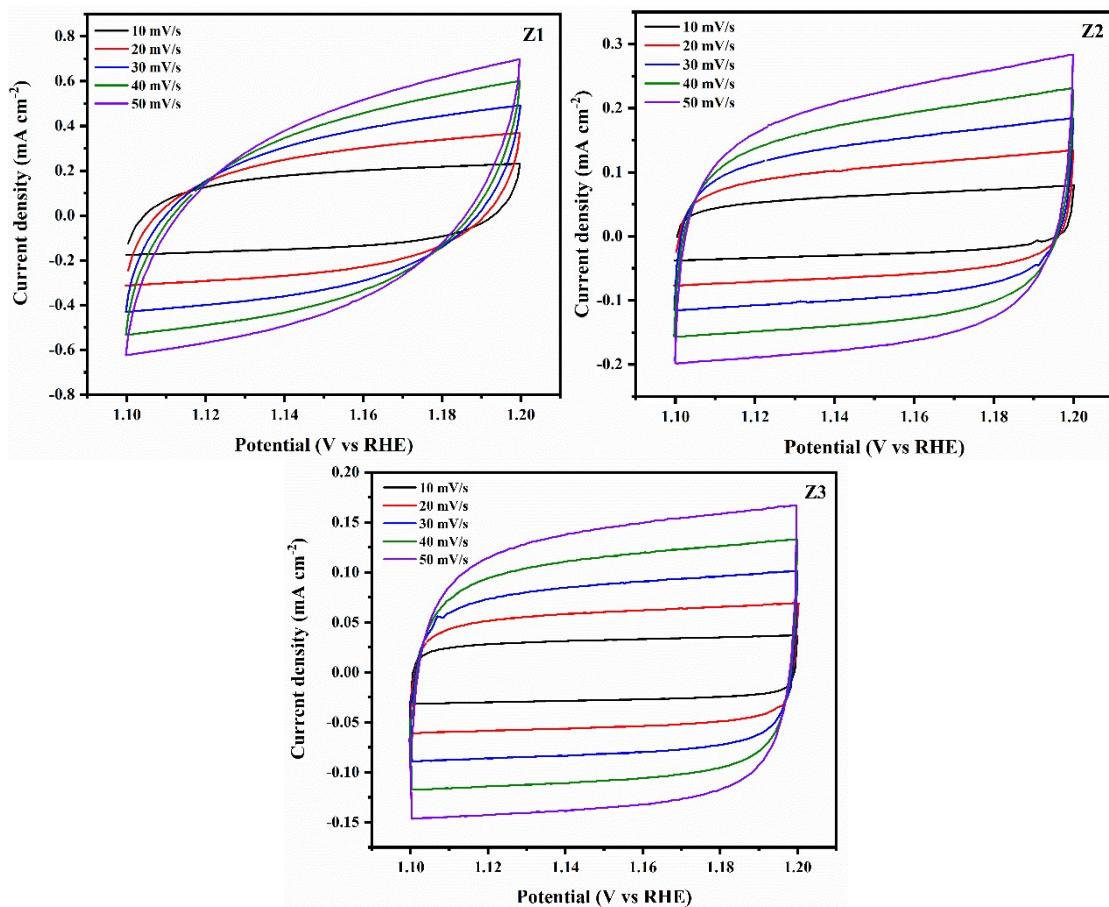
<sup>2</sup>Academy of Interdisciplinary Studies on Intelligent Molecules, Tianjin Key Laboratory of Structure and Performance for Functional Molecules, College of Chemistry, Tianjin Normal University, Tianjin, 300387, China



**Fig S1.** Schematic diagram of fabricated Perovskite Solar Cells



**Fig. S2.** J-V characteristic of Z1-MAPbI<sub>3</sub> based PSC (2 mg, 4 mg and 6 mg)



**Fig. S3.** CV curves of Z1, Z2 and Z3 at different scan rates.

**Table S1:** Photovoltaic parameters for Z1-MAPbI<sub>3</sub> based PSC.

Z1-MAPbI <sub>3</sub>	V <sub>oc</sub> (V)	J <sub>sc</sub> (mA/cm <sup>2</sup> )	FF	PCE (%)
2 mg	0.90	14.14	0.53	6.74
4 mg	0.90	16.62	0.53	7.92
6 mg	0.90	11.68	0.53	5.57