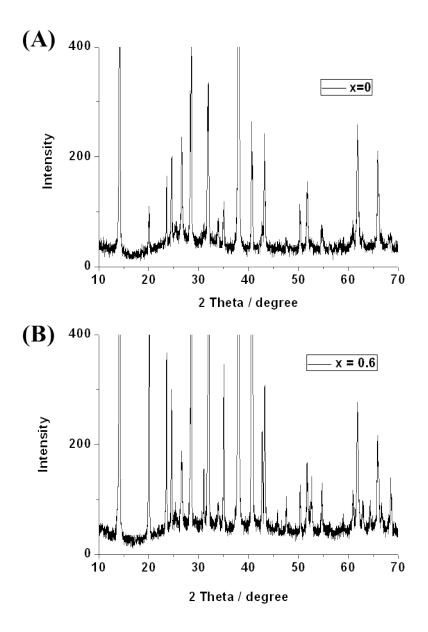
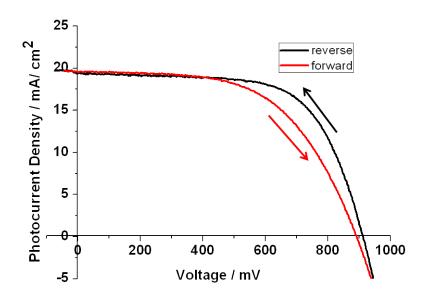
## **Supporting Information**

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**Figure S1:** XRD diffraction paterns of the perovskite-coated  $TiO_2$  films prepared at x=0 (A) and 0.6 (B) from the precursor solution (the molar ratio of  $PbI_2$ , MAI, and MACl is 1-x:1:x)



**Figure S2:** Typical *J-V* curves recorded by the reverse scans with reverse and forward directions at a rate of 200 mV/s for the printing perovskite solar cell (device 6).

**Table S1** Photovoltaic performance of the devices prepared at different table temperature.

Device	Temperature / °C	J <sub>sc</sub> / mA cm <sup>-2</sup>	V <sub>oc</sub> / mV	FF	η /%
device 1	25	$12.56\pm0.67$	$790 \pm 0.30$	$0.61 \pm 0.03$	$6.6 \pm 0.4$
device 2	40	$13.46\pm0.63$	$824 \pm 0.30$	$0.63 \pm 0.02$	$7.2 \pm 0.4$
device 3	50	$14.25\pm0.71$	$826 \pm 0.50$	$0.65 \pm 0.04$	$7.9 \pm 0.5$
device 4	60	$13.83 \pm 0.74$	$822 \pm 0.40$	$0.62 \pm 0.04$	$7.3 \pm 0.5$

Note: All the values were averaged for four parallel samples.