

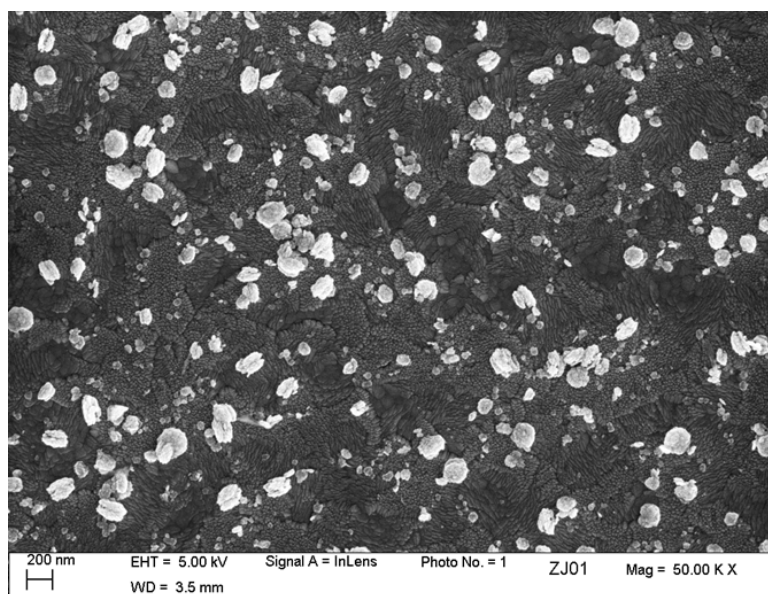
**Supplementary information**

**Fast and Low Temperature Grown Electron Transport Layers for Efficient Perovskite Solar Cells.**

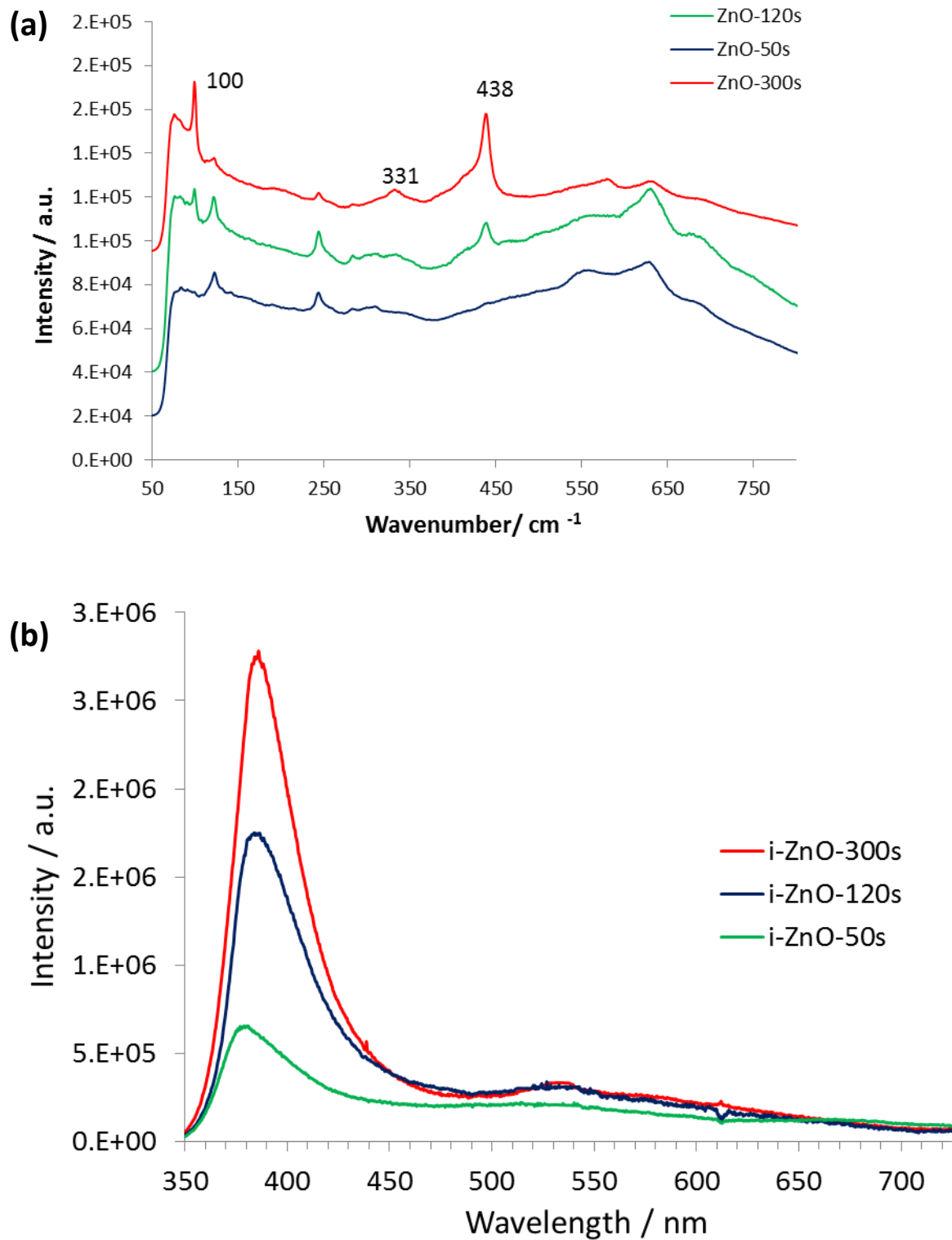
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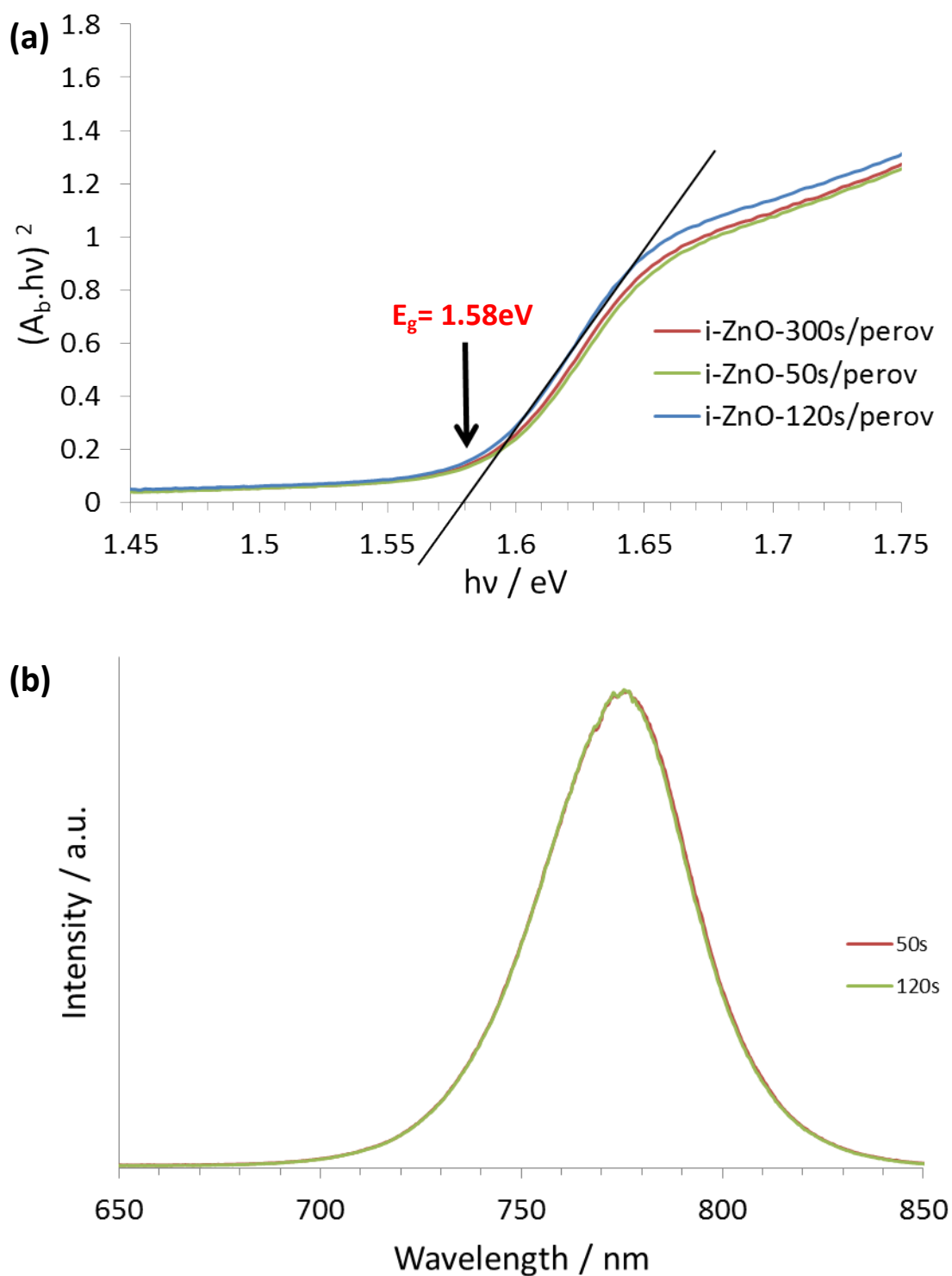
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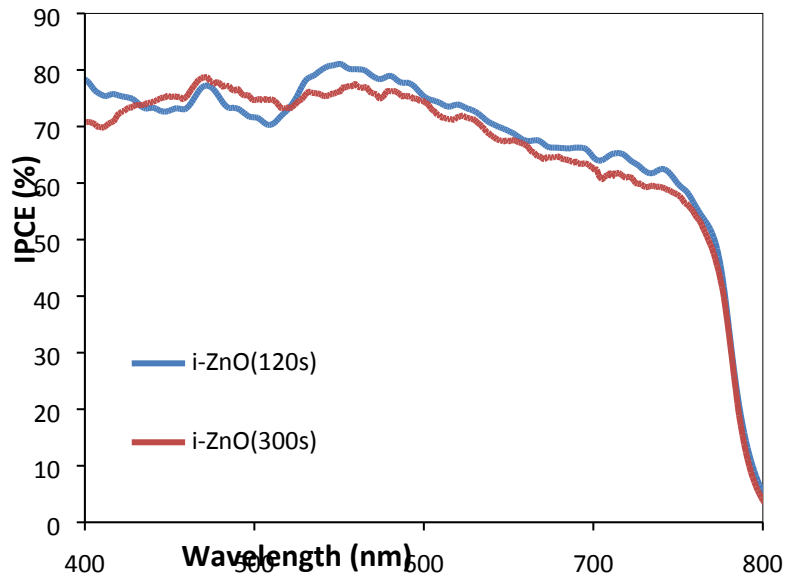
**Figure S1** : FE-SEM top view of a i-ZnO deposit after 20s.



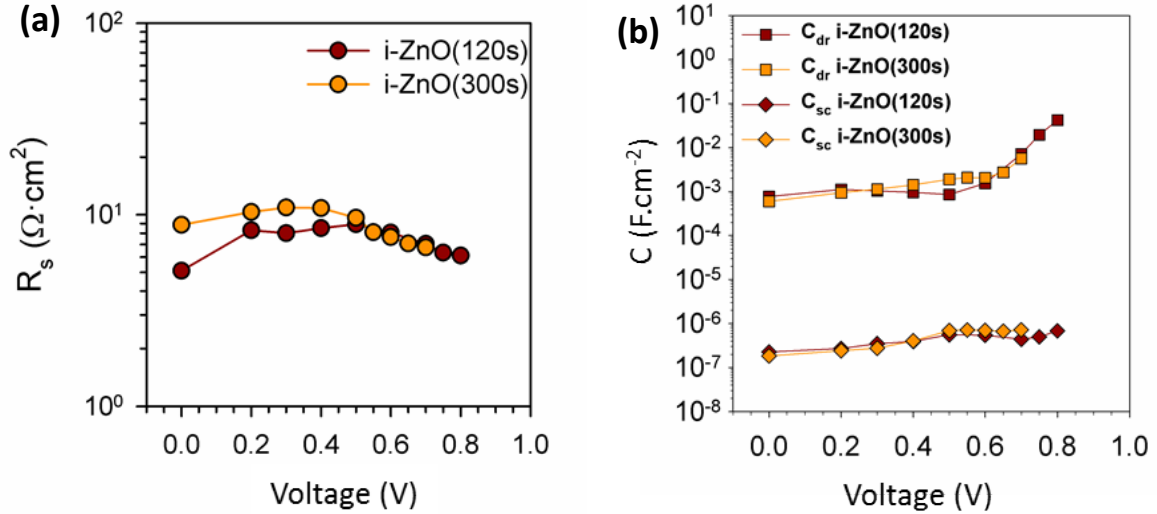
**Figure S2** : (a) Raman spectra of the i-ZnO layers for various deposition times. (b) Room temperature photoluminescence spectra ( $\lambda_{\text{exc}}=266$  nm) of the i-ZnO layers for various deposition times.



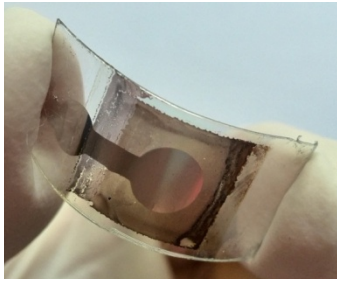
**Figure S3** : (a) Determination of the  $CH_3NH_3PbI_3$  direct optical bandgap. (b) Room temperature photoluminescence of the  $CH_3NH_3PbI_3$  layer spin-coated on i-ZnO ( $\lambda_{exc}=600nm$ ).



**Figure S4** : Incident photon to electron conversion efficiency (IPCE) spectra.



**Figure S5** : (a) Series resistance,  $R_s$ , and (b) dielectric relaxation capacitance,  $C_{dr}$ , and selective contact capacitance,  $C_{sc}$ , of the samples analyzed by IS.

	$t_d$ / s	Scan direction	$V_{oc}$ / V	$J_{sc}$ / $mV \cdot c m^{-2}$	FF / %	PCE / %
	120s	SC-FB	0.86	4.46	31.91	1.22
		FB-SC	0.89	4.24	43.33	1.63

**Figure S6 :** Picture and J-V curve characteristics of a flexible cell (1 sun).