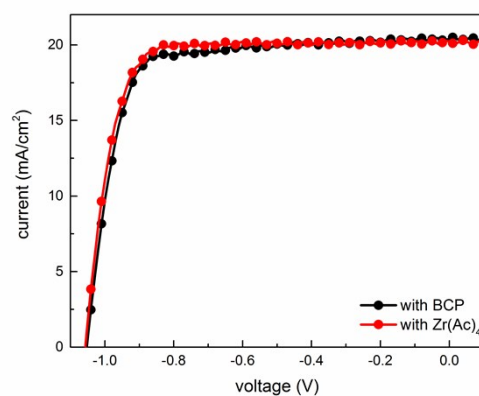
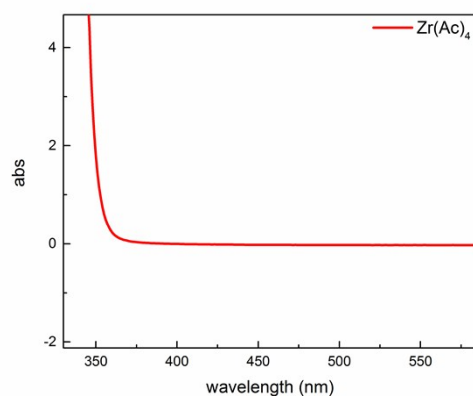


### Supplementary Information



**Fig S1.** The J-V characteristics of the optimized devices with Zr(Ac)<sub>4</sub> and BCP, respectively, as the buffer layer.



**Fig S2.** UV-vis absorption edge of Zr(Ac)<sub>4</sub> film.

Table S1. The photovoltaic parameters (from Fig. S1) of the PSCs with different buffer layer.

	V <sub>oc</sub> (V)	J <sub>sc</sub> (mA/cm <sup>2</sup> )	FF (%)	PCE (%)
with BCP	1.05	20.42	77.4	16.6
with Zr(Ac) <sub>4</sub>	1.06	20.23	79.6	17.1