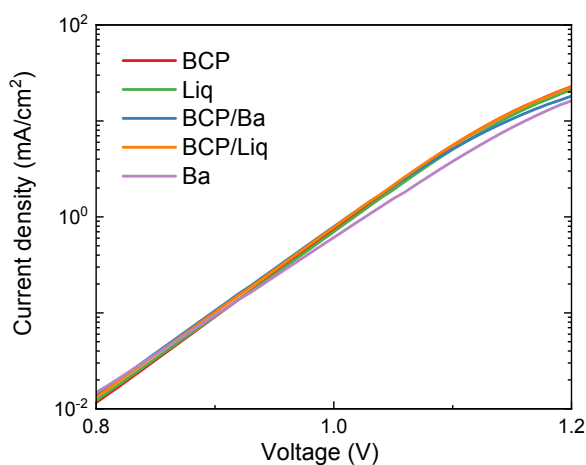


## SUPPLEMENTARY INFORMATION

### High voltage vacuum-processed perovskite solar cells with organic semiconducting interlayers

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**Figure S1.** IV curves in the dark for solar cells with different top contacts. The region highlights the transition between the diffusion and drift regimes. No substantial differences in built-in potential can be found.

Top contact	FF (%)	V <sub>oc</sub> (V)	J <sub>sc</sub> (mA cm <sup>-2</sup> )	PCE (%)
BCP	79.7	1.135	21.8	18.9
Liq	79.2	1.136	21.8	19.1
BCP/Ba	75.3	1.116	21.3	17.8
BCP/Liq	80.1	1.130	21.7	18.8
Ba	79.7	1.155	21.8	18.9

**Table S1** Maximum photovoltaic parameters extracted from J-V curves for different top contacts.