

Electronic Supplementary Information (ESI)

Measurement and modelling of dark current decay transients in perovskite solar cells with mobile ions

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Table 1 contains statistics for the three cells, each measured at three pixels. Figure 1 shows the dark and light JV curves for cell B, pixel 1, which was the chosen pixel for the transient measurement in the main article. All the data used to produce the tables and figures here and in the main text are available at DOI: 10.15125/BATH-00251.

Table 1 Short circuit current, open circuit voltage, fill factor and power conversion efficiency for the batch of 3 cells (cells denoted A, B and C) each measured at 3 pixels (pixels denoted 1, 2, and 3) for scan directions from forward bias (FB) to short circuit (SC) and vice versa, and the stabilised power conversion efficiency measured after holding the cell at maximum power point. The transient measurements in the main article were performed on pixel 1 of cell B (labelled in bold).

	Sweep direction	J _{SC} (mA cm ⁻²)	V _{OC} (V)	FF (%)	PCE (%)	Stabilised PCE (%)
A1	FB-SC	16.6	1.01	73.0	12.3	11.2
	SC-FB	16.6	0.98	64.9	10.6	
A2	FB-SC	17.5	1.01	72.2	12.8	11.7
	SC-FB	17.7	0.98	65.1	11.3	
A3	FB-SC	16.2	1.01	74.7	12.3	11.7
	SC-FB	16.2	0.98	67.3	10.8	
B1	FB-SC	20.6	1.01	72.1	15.1	13.4
	SC-FB	20.7	0.95	64.2	12.7	
B2	FB-SC	21.0	1.04	72.4	15.8	12.0
	SC-FB	21.1	0.92	58.6	11.4	
B3	FB-SC	19.8	1.04	74.1	15.3	12.6
	SC-FB	19.9	0.95	61.4	11.6	
C1	FB-SC	20.1	1.01	72.0	14.6	11.2
	SC-FB	20.2	0.95	62.3	12.0	
C2	FB-SC	19.5	1.01	71.7	14.2	10.8
	SC-FB	19.4	0.95	60.9	11.3	
C3	FB-SC	18.8	1.01	73.0	13.9	12.4
	SC-FB	18.8	0.98	66.6	12.3	
Mean	FB-SC	18.9	1.02	72.8	14.0	11.9
	SC-FB	19.0	0.96	63.5	11.6	
Standard deviation	FB-SC	1.75	0.0132	1.01	1.31	0.81
	SC-FB	1.84	0.0212	2.87	0.68	

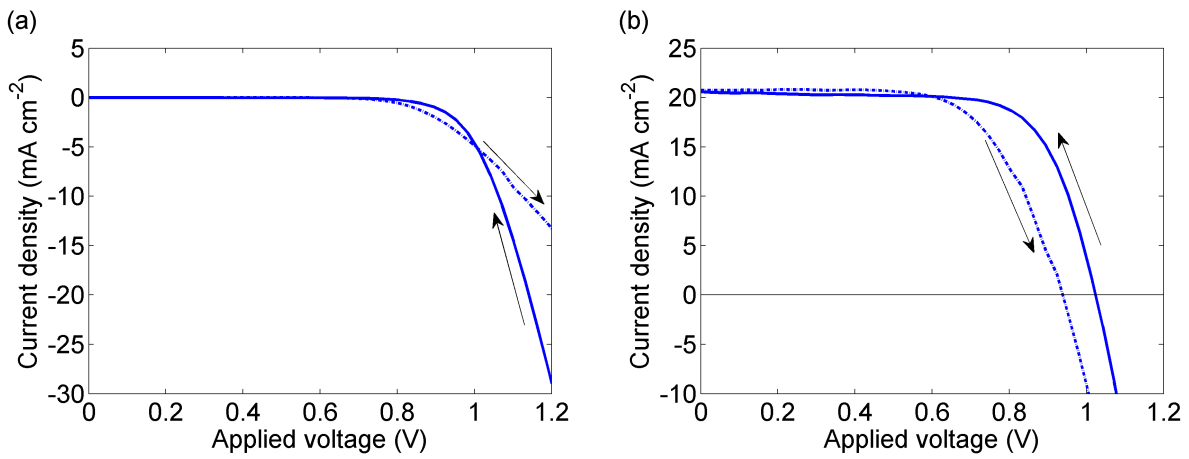


Figure 1 Measured current-voltage curves for pixel 1 of cell B (on which the transient measurements were performed) in a) the dark and b) AM1.5 illumination. Arrows and line style show the scan direction: FB-SC (solid line) and SC-FB (dotted line).