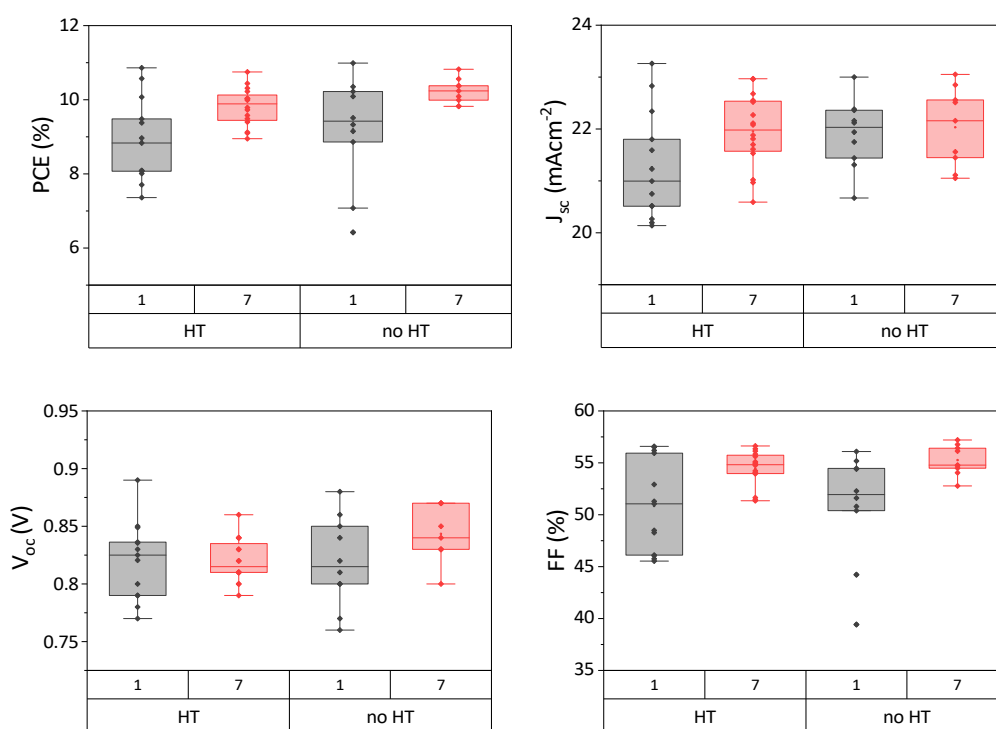
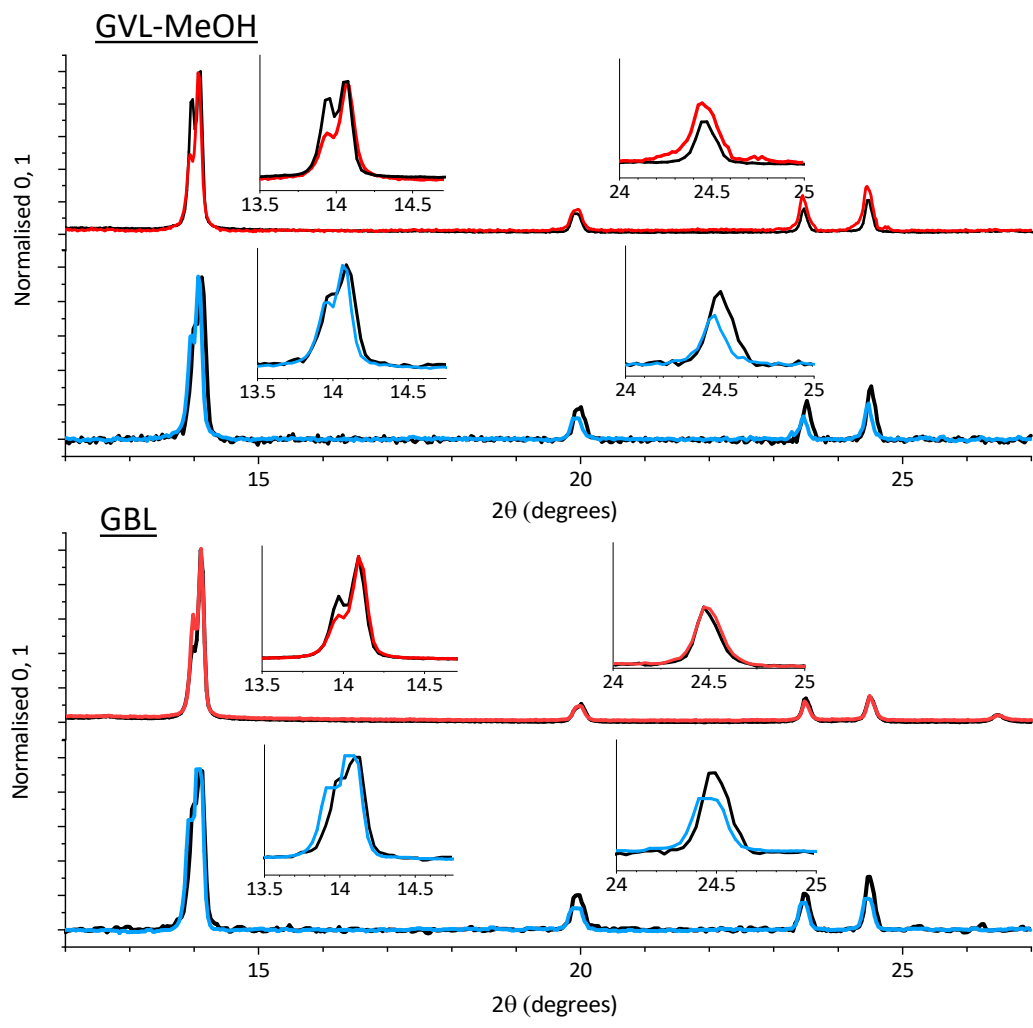


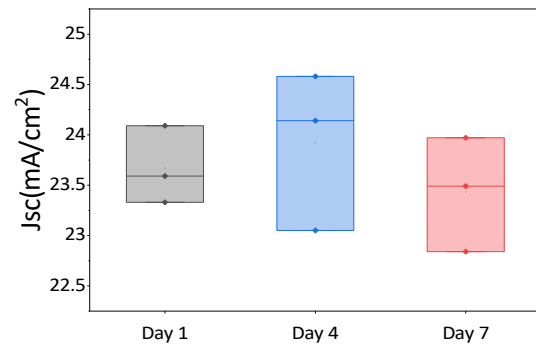
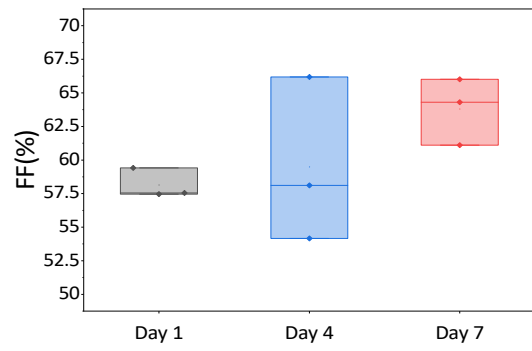
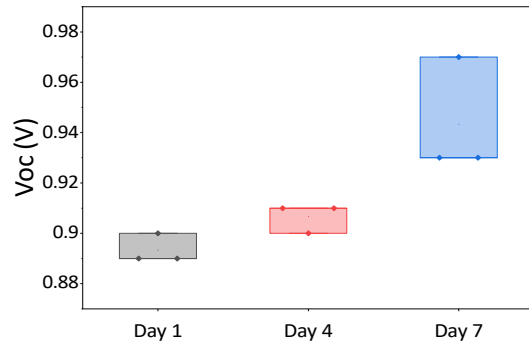
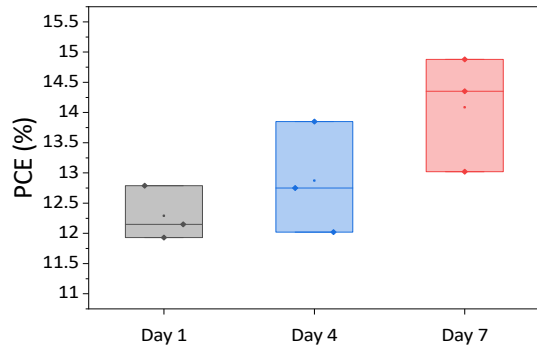
### Supplementary Information



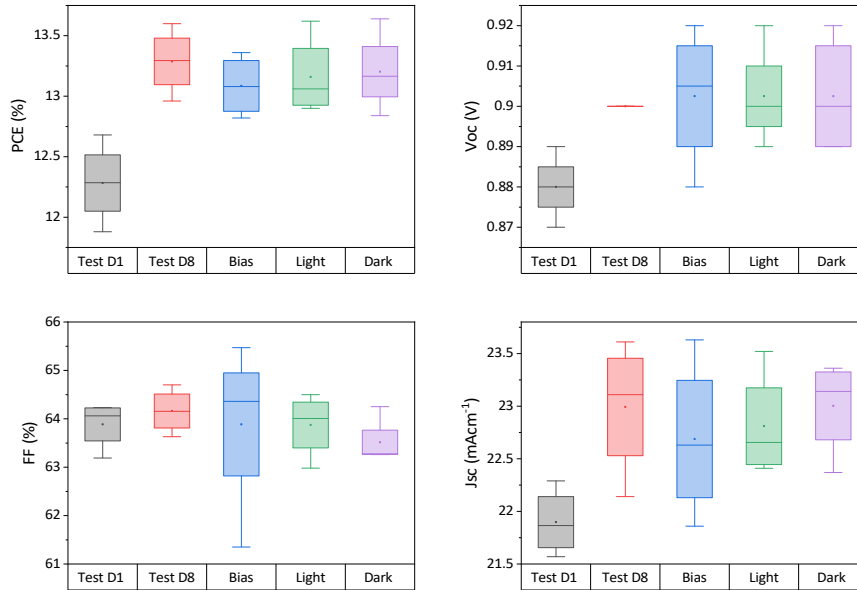
**S 1: PV Data of AVA<sub>0.03</sub>MAPbI<sub>3</sub> devices fabricated from GVL-MeOH precursors before and after humidity treatments (HT) or ambient dry storage. Samples were measured 1 day after fabrication and 7 days after fabrication, with HT on days 2-3. 14-18 samples in each set.**



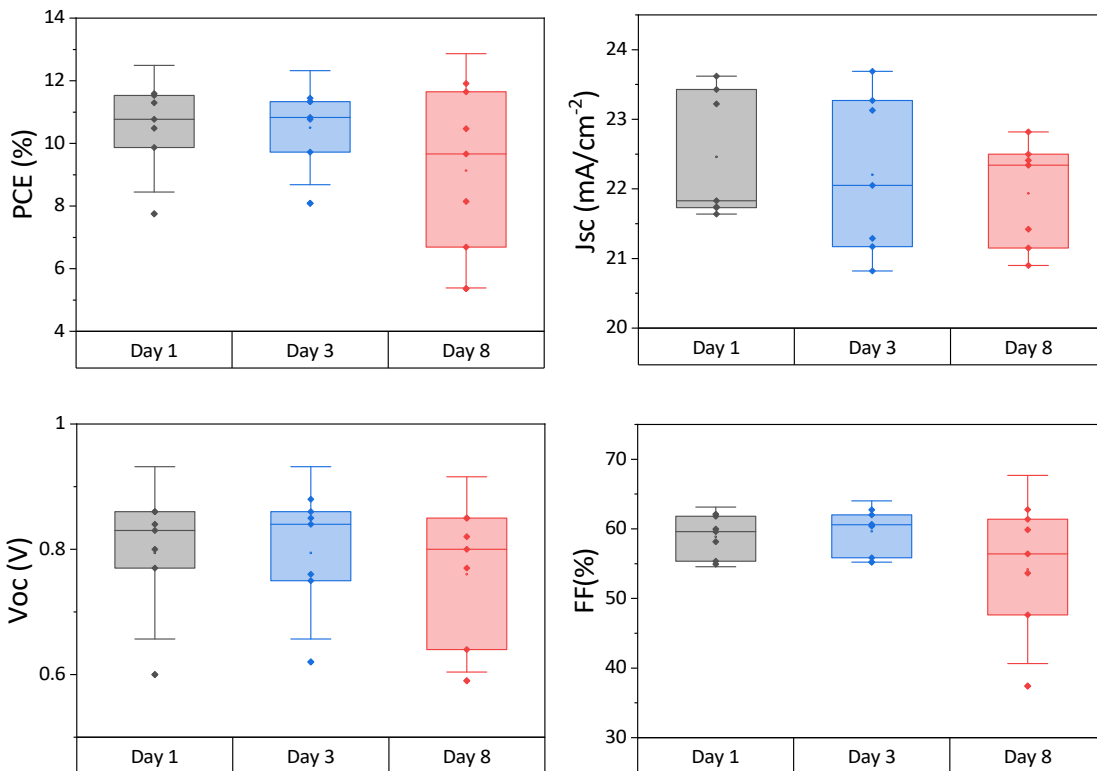
**S 2: XRD of CPSCs fabricated with GBL and GVL-MeOH perovskite after HT (blue) or dry ambient storage (red).**



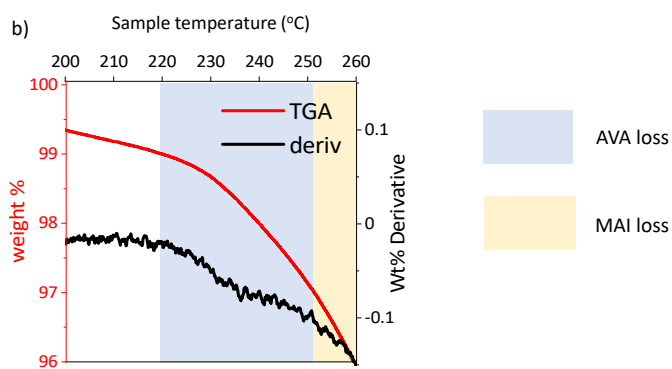
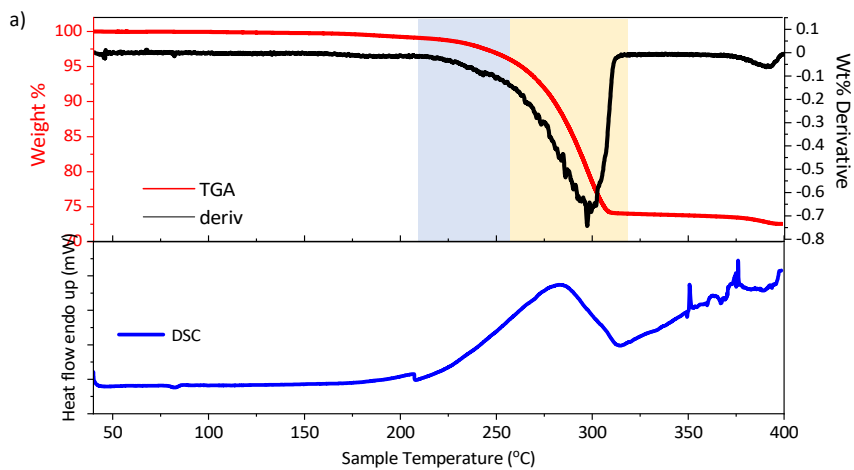
**S 3 Device data from a set measured on days 1, 4, and 7 after fabrication.**



**S 4: PV parameters of GVL-MeOH AVA<sub>0.03</sub>MAPbI<sub>3</sub> devices exposed to testing (test d8), 1 sun illumination (light), bias sweeps (Bias), and dark storage (Dark). Initial performance of control devices (test d1) is provided for comparison.**



**S 5: PV parameters of GVL-MeOH AVA<sub>0.03</sub>MAPbI<sub>3</sub> devices after fabrication (Day 1), after encapsulation (day 3) and after 8 days (5 days encapsulated). Devices were encapsulated immediately after initial tests but required 24 hours for full epoxy setting before tests. 6 devices in each set.**



S6: a) TGA, TGA derivative and DSC of  $\text{AVA}_{0.03}\text{MAPbI}_3$  annealed on glass, between 40°C and 400°C. b) Closer look at the smaller AVAI mass loss.

**Table S 1: Performance evolution in encapsulated devices, with IV data from day 1, day 3 (post encapsulation) and day 8.**

Day	Device	PCE	Voc	FF(%)	Jsc
1	b2(1)	11.53	0.86	61.82	21.73
1	c4	10.48	0.83	58.17	21.83
1	b1	11.59	0.86	62.1	21.74
1	c3	10.77	0.84	59.59	21.64
1	c2	11.3	0.8	59.96	23.62
1	b2(2)	7.75	0.6	55.36	23.43
1	b4	9.87	0.77	54.92	23.22
3	b2(1)	11.33	0.88	62.02	20.82
3	c4	10.83	0.84	60.62	21.29
3	b1	11.44	0.86	62.72	21.17
3	c3	11.33	0.85	60.39	22.05
3	c2	10.77	0.76	60.59	23.27
3	b2(2)	8.09	0.62	55.21	23.69
3	b4	9.72	0.75	55.86	23.13
8	b2(1)	11.65	0.85	61.37	22.34
8	c4	8.15	0.8	47.64	21.42
8	b1	11.91	0.85	62.76	22.41
8	c3	9.66	0.82	56.42	20.9
8	c2	10.47	0.77	59.88	22.82
8	b2(2)	6.69	0.59	53.64	21.15
8	b4	5.36	0.64	37.43	22.5

**Table S 2: Performance evolution in unencapsulated controls, with IV data from fresh and aged cells.**

Scan	Day 1				Day 8			
	PCE (%)	Voc (V)	FF (%)	Jsc (mAcm <sup>-2</sup> )	PCE (%)	Voc (V)	FF (%)	Jsc (mAcm <sup>-2</sup> )
f	10.92	0.85	59.11	21.65	13.18	0.91	63.45	22.88
f	10.45	0.85	53.07	23.2	11.22	0.88	55.15	23.04
f	12.78	0.87	63.92	22.86	13.5	0.9	63.8	23.46
f	12.18	0.86	61.63	22.85	12.85	0.9	63.1	22.75

**Table S3: Identified FTIR absorption peaks and the corresponding functional groups.**

	<b>Absorption (cm<sup>-1</sup>)</b>	<b>Features</b>	<b>Group</b>
i)	3012-2840	Decreasing triplet	C-H stretch
ii)	1762	Large sharp singlet	C=O lactone stretch
iii)	1466-1305	Many small sharp peaks	C-H bends
iv)	1173	Sharp narrow peak	C-O lactone stretch