Electronic supplementary information

Highly uniform and vertically aligned SnO_2 nanochannel arrays for photovoltaic applications

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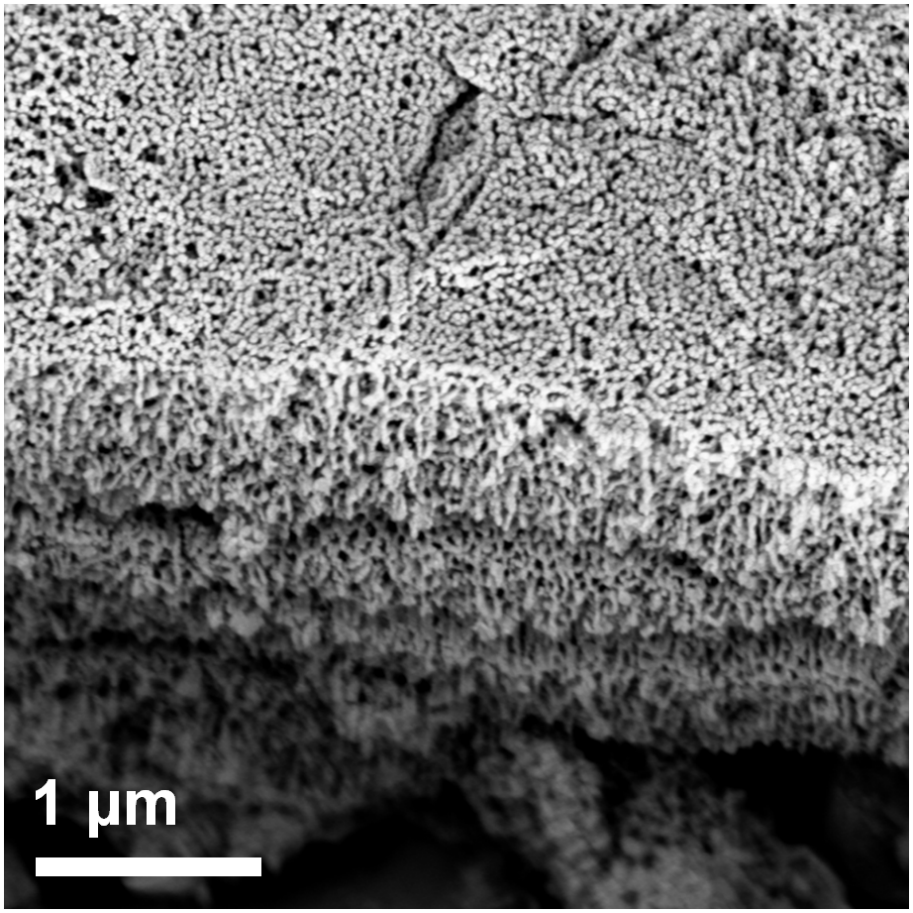

Fig. S1. FE-SEM image of annealed SnO_2 nanochannel arrays prepared by the conventional anodic oxidation process (This image was obtained after tilting the edge side of prepared sample during the FE-SEM analysis).

Table S1. Summary of *J-V* characteristics of the SnO_2 nanochannel electrodes for different anodic oxidation times.

anodic oxidation time (sec)	thickness of nanochannel (μm)	J_{sc} (mA/cm^2)	V_{oc} (mV)	*FF* (%)	η (%)
210	4.0	3.92	535	33.38	0.70
		3.49	550	34.38	0.66
		3.10	565	34.83	0.61
270	6.0	5.73	545	31.06	0.97
		5.64	555	31.31	0.98
		4.99	575	36.59	1.05
330	7.0	6.81	560	34.09	1.30
		6.85	550	33.18	1.25
		6.51	570	35.30	1.31
390	6.4	5.65	550	35.40	1.10
		5.99	560	29.22	0.98
		5.05	560	36.78	1.04

Table S2. Summary of the *J-V* characteristics of the SnO_2/TiO_2 nanochannel electrodes for different number of TiO_2 atomic layer deposition cycles.

ALD cycles	J_{sc} (mA/cm^2)	V_{oc} (mV)	*FF* (%)	η (%)
0 cycle-1	6.81	560	34.09	1.30
0 cycle-2	6.85	550	33.18	1.25
0 cycle-3	6.51	570	35.30	1.31
3 cycles-1	5.15	510	32.74	0.86
3 cycles-2	5.84	485	35.31	1.00
3 cycles-3	5.00	490	34.69	0.85
6 cycles-1	4.59	515	37.65	0.89
6 cycles-2	4.78	490	33.73	0.79
6 cycles-3	5.66	495	33.19	0.93
15 cycles-1	8.55	570	32.83	1.60
15 cycles-2	7.90	545	34.37	1.48
15 cycles-3	7.68	565	35.26	1.53
30 cycles-1	6.45	605	32.80	1.28
30 cycles-2	6.45	590	32.85	1.25
30 cycles-3	6.49	590	34.21	1.31