

Expansion of the response range of photoelectrochemical UV detector using an ITO/Ag-nanowire/quartz UV-visible transparent conductive electrode

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Supplementary Information

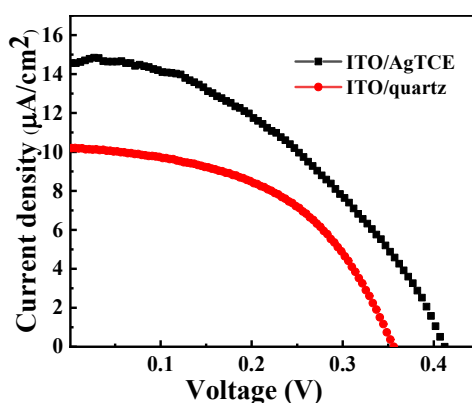


Fig. S1 Comparison of the photovoltaic performance of ITO/Ag-nanowire and ITO/quartz under UV light at 365 nm.

Table S1. The thickness of ITO film corresponding to different sputtering time

Sputtering time (s)	30	60	90	120	150	180
Thickness (nm)	14.5	29	43.5	58	72.5	87

Table S2. Comparison of the square resistance of six samples before and after sputtering ITO

TCE	1	2	3	4	5	6
AgTCEs (Ω/sq)	2.64	3.07	2.43	2.68	3.54	2.58
AgTCE-Is (Ω/sq)	2.71	3.54	2.93	2.73	3.86	2.61

Table S3. Performance comparison under 365 nm UV light irradiation

Device	J_{sc} ($\mu\text{A}/\text{cm}^2$)	V_{oc} (V)	FF	η (%)
AgTCE-I1	3.26	0.336	0.42	0.04
AgTCE-I2	8.14	0.371	0.363	0.09
AgTCE-I3	14.6	0.412	0.419	0.21
AgTCE-I4	13.8	0.4	0.405	0.19
AgTCE-I5	7.50	0.31	0.450	0.08
AgTCE-I6	6.82	0.273	0.384	0.06

Table S4. Performance comparison under 254 nm UV light irradiation

Device	J_{sc} ($\mu\text{A}/\text{cm}^2$)	V_{oc} (V)	FF	η (%)
AgTCE-I1	3.74	0.347	0.444	0.05
AgTCE-I2	5.50	0.274	0.383	0.048
AgTCE-I3	9.80	0.338	0.449	0.12
AgTCE-I4	5.80	0.242	0.378	0.044
AgTCE-I5	3.78	0.219	0.362	0.025
AgTCE-I6	2.92	0.192	0.361	0.017

Table S5. Performance comparison under 365 nm UV light irradiation

Device	J_{sc} ($\mu\text{A}/\text{cm}^2$)	V_{oc} (V)	FF	η (%)
AgTCE-L1	11.2	0.431	0.514	0.2
AgTCE-L2	15.6	0.406	0.443	0.24
AgTCE-L3	11.6	0.444	0.528	0.22
AgTCE-L4	10.7	0.321	0.481	0.14
AgTCE-L5	8.64	0.321	0.403	0.1

Table S6. Performance comparison under 254 nm UV light irradiation

Device	J_{sc} ($\mu\text{A}/\text{cm}^2$)	V_{oc} (V)	FF	η (%)
AgTCE-L1	8.1	0.304	0.413	0.084
AgTCE-L2	13.2	0.278	0.366	0.112
AgTCE-L3	7.14	0.306	0.44	0.08
AgTCE-L4	7.76	0.263	0.437	0.074
AgTCE-L5	7.48	0.287	0.397	0.07