

Investigation of interfacial and photoelectrochemical characteristics of thermally treated PbS/TiO₂ photoanodes

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Supplementary Materials

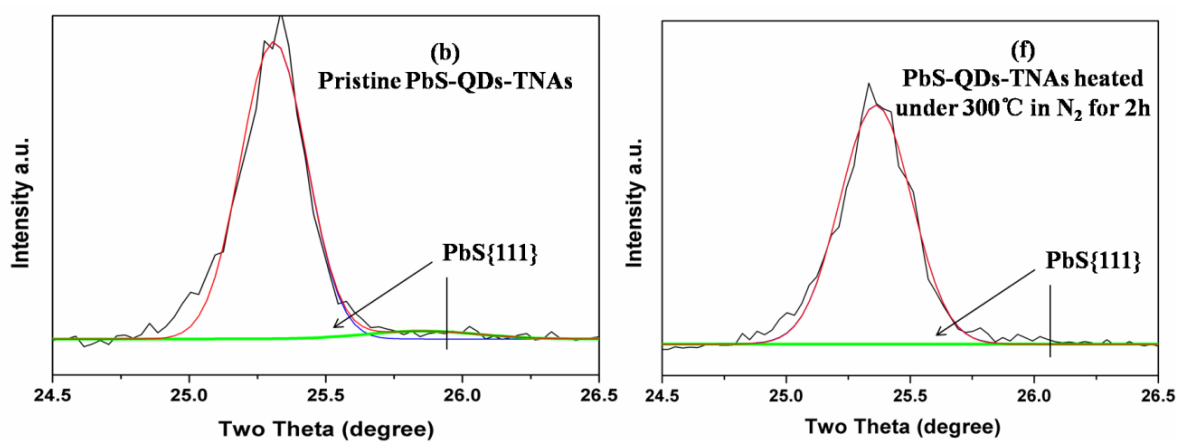


Fig.S1. XRD peak charts of (b) U-PbS/TNAs and (e) N-PbS/TNAs.

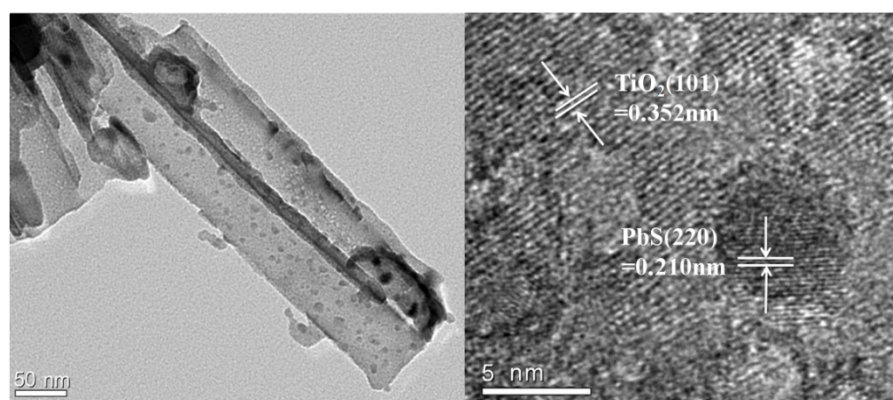


Fig.S2. TEM and HRTEM images of the A-PbS/TNAs after dipping into electrolytes containing 0.1M Na₂S and 0.1M Na₂SO₃

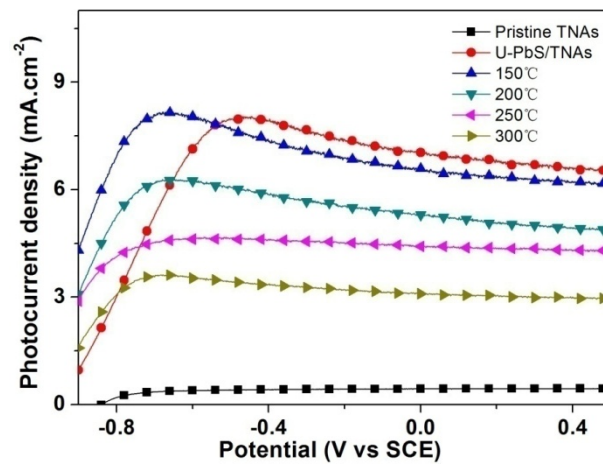


Fig.S3. J-V curves for the pristine TNAs, U-PbS/TNAs and the PbS/TNAs annealed in air at different temperatures for 2 h.

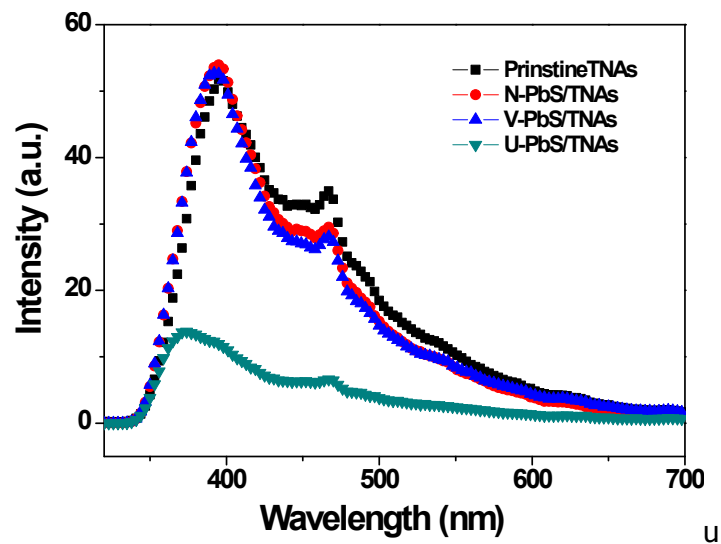


Fig.S4. PL emission spectra of the samples

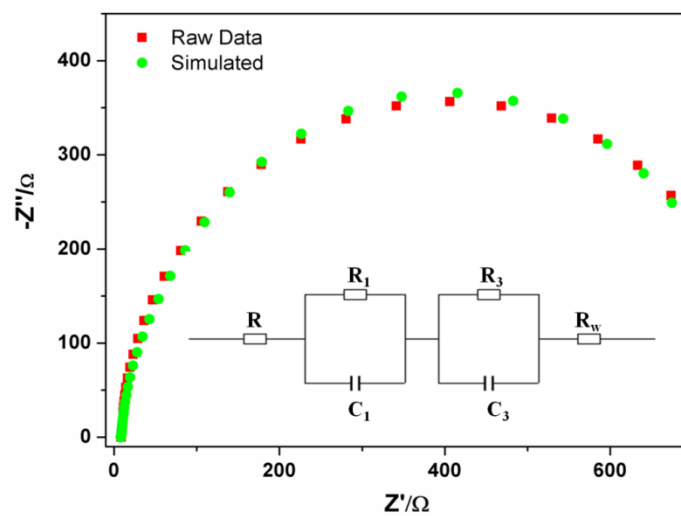


Fig.S5. Equivalent circuit simulation diagram of the pristine TNAs

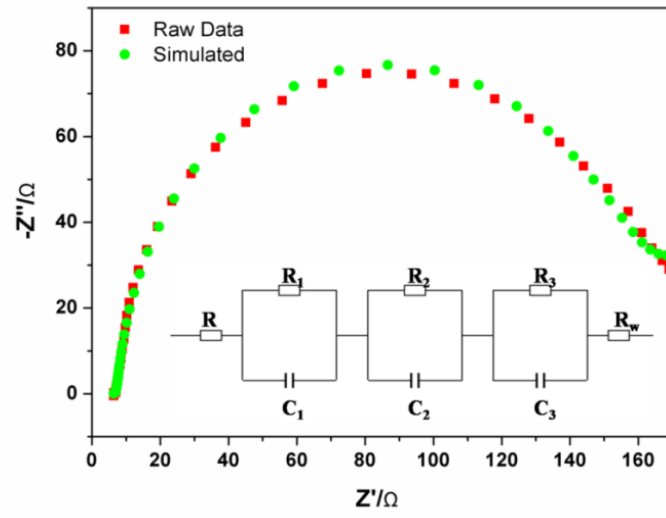


Fig.S₆. Equivalent circuit simulation diagram of the N-PbS/TNAs

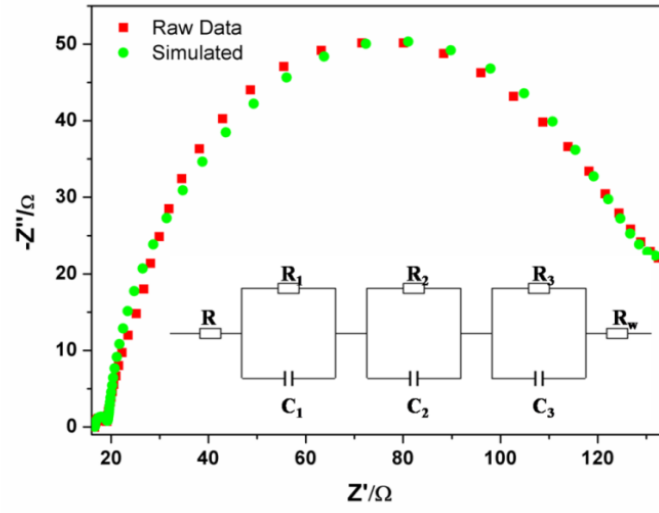


Fig.S₇. Equivalent circuit simulation diagram of the U-PbS/TNAs

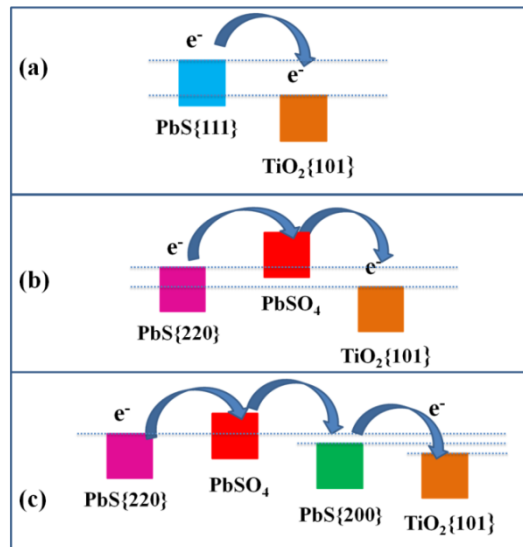


Fig.S₈. The schematics of carriers transmission between different interfaces

Tab.S1. Atom percentages of Pb and S of (a) A-PbS/TNAs, (b) V-PbS/TNAs and (c) N- PbS/TNAs.

Sample	a	b	c
Pb	63.82	61.65	60.84
S	36.18	38.35	39.16

Tab.S2. Flat band potentials of (a) Pristine TNAs, (b) U-PbS/TNAs, (c) A-PbS/TNAs, (d) V-PbS/TNAs and (e) N-PbS/TNAs. (vs SCE)

Sample	a	b	c	d	e
E _{fb} (V)	-0.575	-0.124	-0.404	-0.449	-0.521