Supplementary Material

Quantification Photoelectrochemical Biosensor Based On 1D $ZnIn_2S_4$ Nanosheet Decorated 2D In_2O_3 Tube For Sensitive PSA Detection

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1. Experimental Section

1.1 Reagents

All reagents are of analytical reagent grade and directly used for the experiments. Ultrapure water was obtained from a Lichun water purification system (resistivity≥18.25 MΩ cm). Nitrate hydrate, N. N-dimethylformamide, chitosan, and glutaraldehyde were purchased from Sinopharm Chemical Reagent Co. Ltd. (Shanghai, China). 1,4-benzenedicarboxylic acid, zinc chloride, indium chloride, and thioacetamide were supplied by Macklin Reagent Co., Ltd. (Shanghai, China).

PSA aptamer: (5'-NH2-(CH2)6-ATTAAAGCTCGCCATCAAATAGC-3')

1.2 Apparatus

Scanning electron microscopy (SEM) and transmission electron microscope (TEM) images were obtained using the QUANTA FEG 250 thermal field emission scanning electron microscopy (FEI Co., USA) and Hitachi H600 with 200 kV acceleration voltage. Elemental mapping images were recorded using EDX spectroscope attached to TEM. X-ray diffraction (XRD) patterns were collected on a D8 advance diffractometer system equipped with Cu Ka radiation (Bruker Co., Germany). X-ray photoelectron spectroscopy (XPS) measurements were achieved with an ESCALAB 250Xi photoelectron spectrometer. And the photocurrent and electrochemical impedance spectroscopy (EIS) were measured on a CHI 660D electrochemical workstation (Shanghai Chenhua Instruments Corporation, China) with a three-electrode system.

2. Results and Discussions

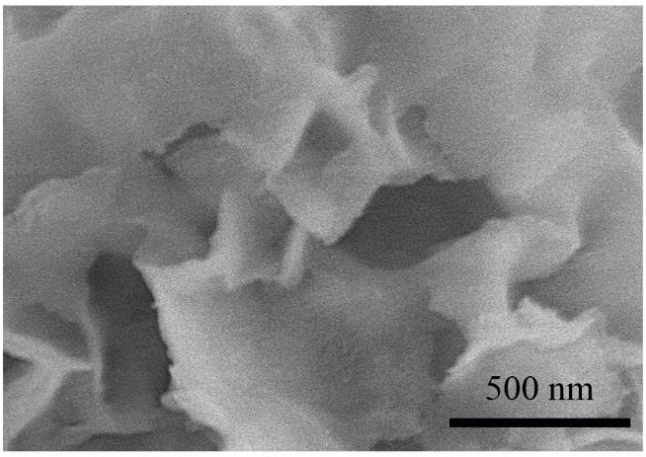

Figure S1 Enlarged SEM image of $ZnIn_2S_4$.