Supporting Infromation

A unique semiconductor−carbon−metal hybrid structures design as counter electrode in dye-sensitized solar cells

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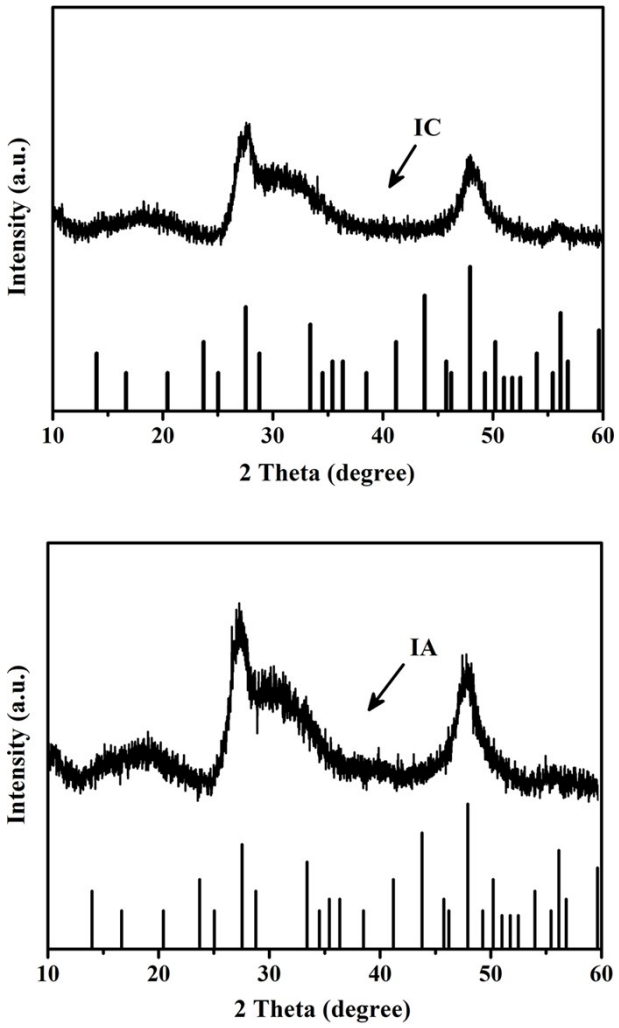

Figure S1. XRD patterns of IC and IA.

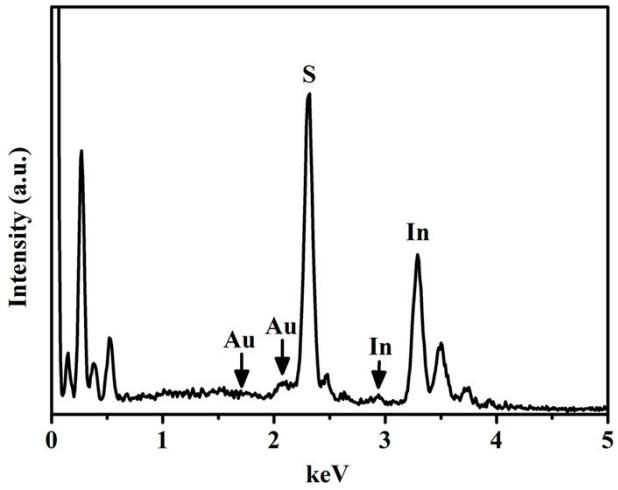

Figure S2. EDS spectrum of ICA, the ICA hybrid structures with a [In]/ [C]/ [Au] molar ratio of 12.4/ 65.6/ 0.2.

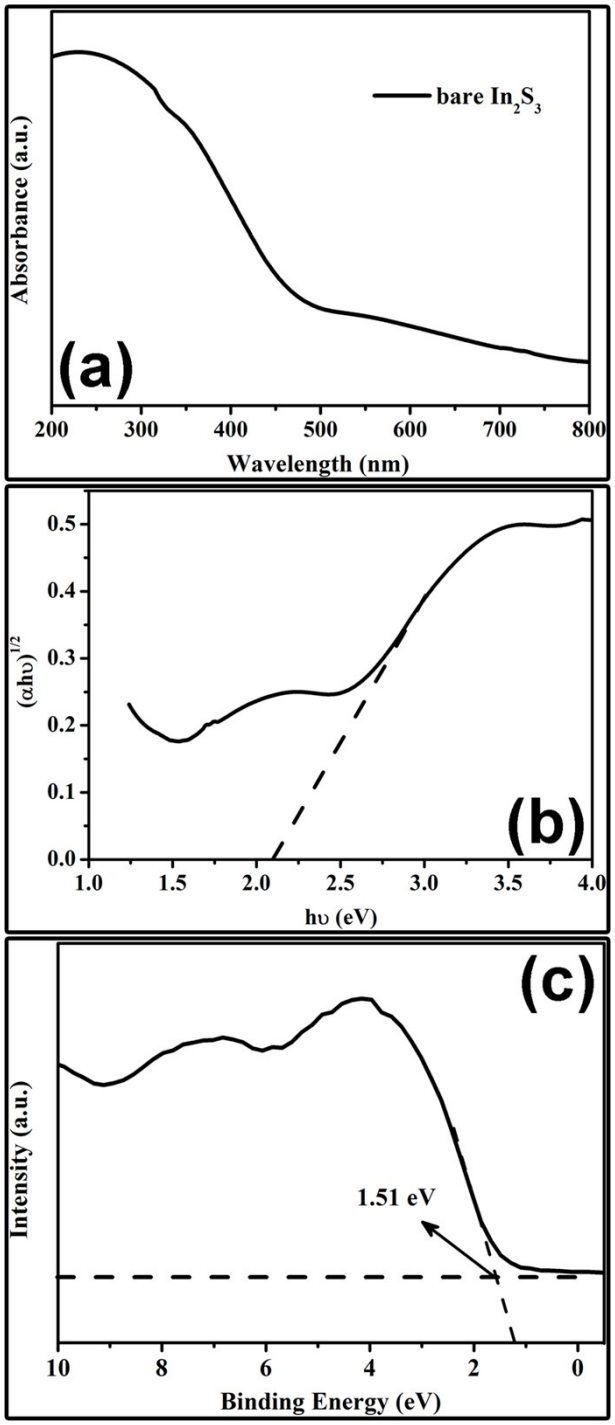

Figure S3. UV-vis diffuse reflectance of as-prepared In_2S_3 and (b) The absorption$^{1/2}$ *versus* energy curve, exhibits that the band gap of the as-prepared In_2S_3 is ~2.1 eV. (c) Valence-band XPS spectra of as-prepared In_2S_3 (1.51 eV).

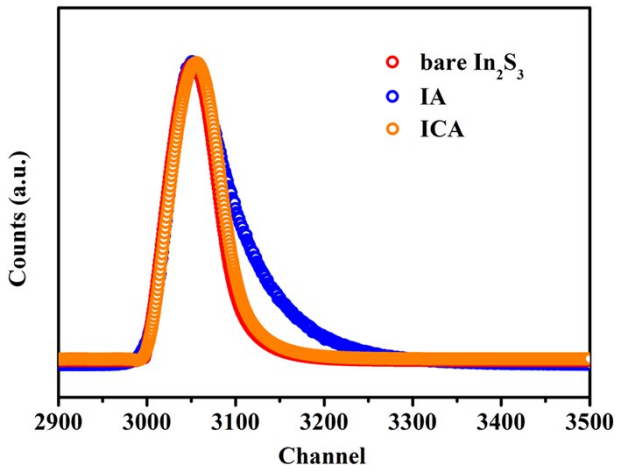

Figure S4. Positron annihilation spectra of bare In_2S_3, IA and ICA, showing longer positron lifetime for IA.

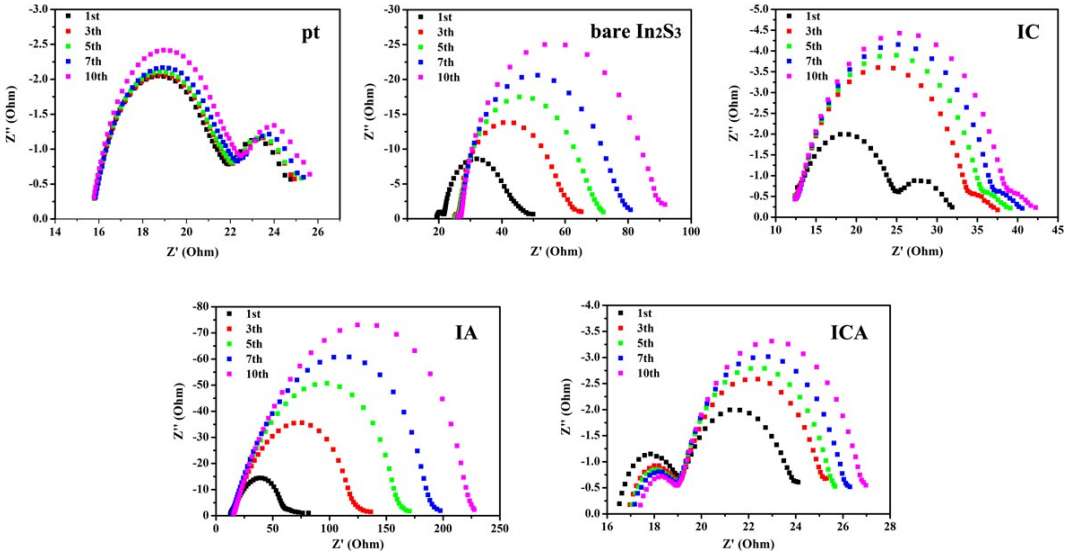

Figure S5. Nyquist plots of EIS data for the symmetrical cells with Pt and four as-prepared electrodes, the EIS measurement was performed at 0 V from 0.1-10^6 Hz. This sequential electrochemical test was repeated 10 times.