Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Information

Efficient planar Sb_2S_3 solar cells using a low-temperature solution-processed tin oxide electron conductor

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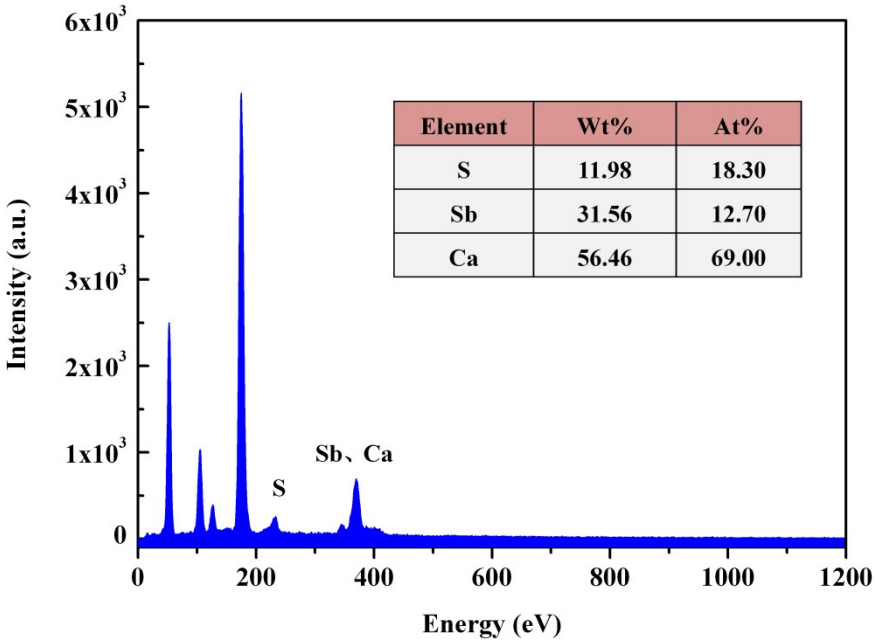

Figure S1 Typical EDS spectrum of Sb_2S_3 fabricated on quartz glass.

In Figure S1, we can see the results of EDS analysis, which proves that the weight ratio and atomic ratio of elemental antimony and sulphur is approximately 8:3 and 2:3, respectively. The other elements are attributed to the quartz glass substrate.

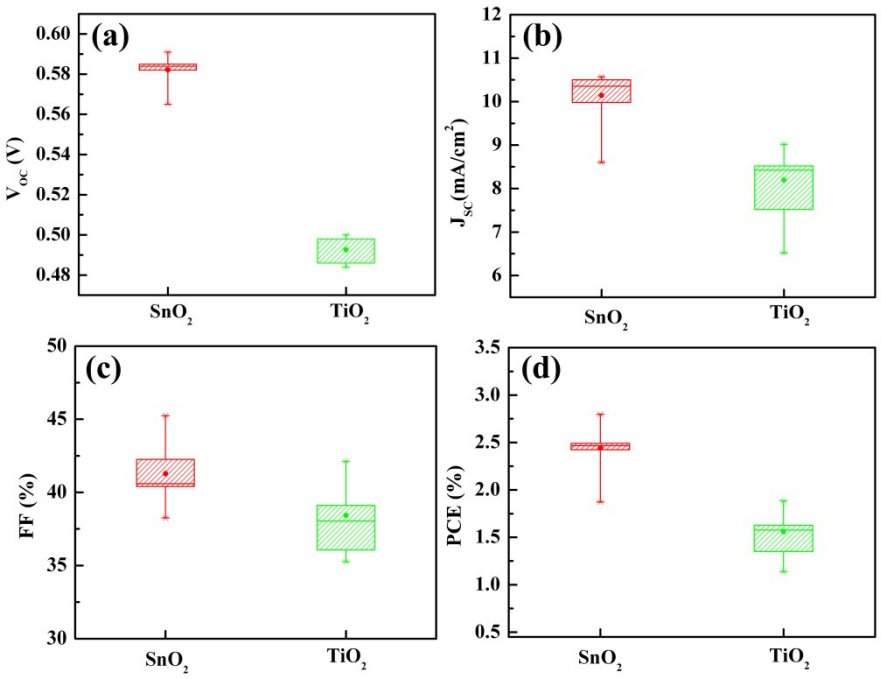

Figure S2 The statistics of photovoltaic-parameters for (a) open-circuit voltages (V_{OC}), (b) short-circuit current density (J_{SC}), (c) fill factor (FF) and (d) power conversion efficiency (PCE) obtained from 30 solar cells measured under AM 1.5G illumination through a shadow mask (0.09 cm^2).

Figure S2 summarize the statistics of photovoltaic-parameters of planar Sb_2S_3 sensitized solar cells based on different electron conductors.

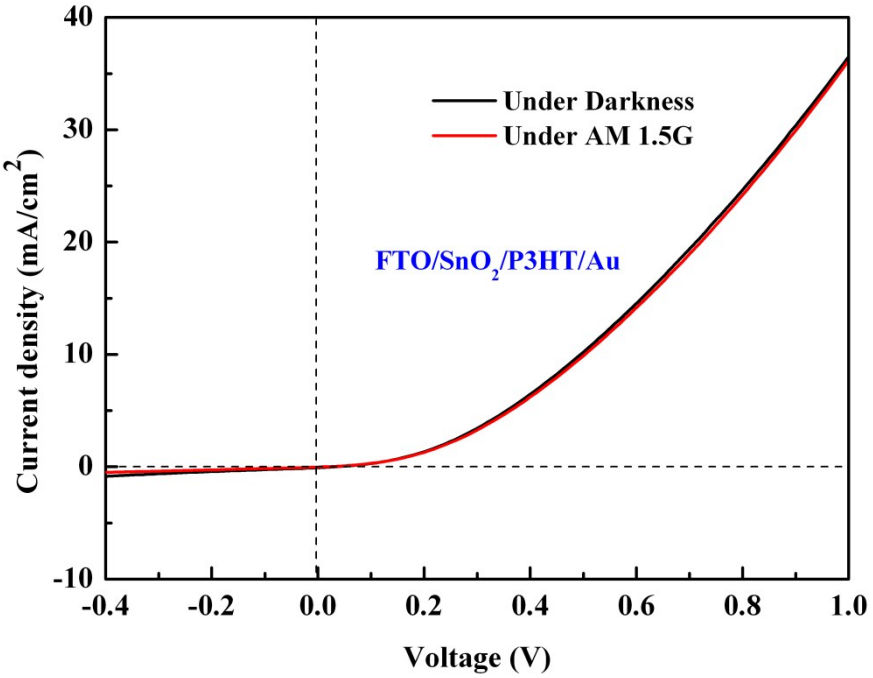

Figure S3 Typical *J-V* plots of planar solar cells with an architecture of FTO/SnO_2/P3HT/Au.

Device with an architecture of FTO/SnO_2/P3HT/Au showed no photovoltaic performance under AM 1.5 illumination, which proved that P3HT HC made no contribution to the photocurrent to the planar Sb_2S_3 sensitized solar cells.