

**Supplemental information:**

Fig.S1 Side view SEM image of ZnO/CuSbS<sub>2</sub> nanoarrays

Fig.S2 XPS analysis of CuSbS<sub>2</sub>: (a) Cu 2p, (b) Sb 3d, (c) S 2p, respectively

Fig.S3 IPCE plots of ZnO and ZnO/CuSbS<sub>2</sub>

Fig.S4 Electrochemical impedance spectroscopy of ZnO and ZnO/CuSbS<sub>2</sub>

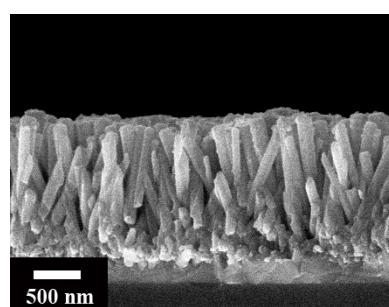


Fig.S1 Side view SEM image of ZnO/CuSbS<sub>2</sub> nanoarrays

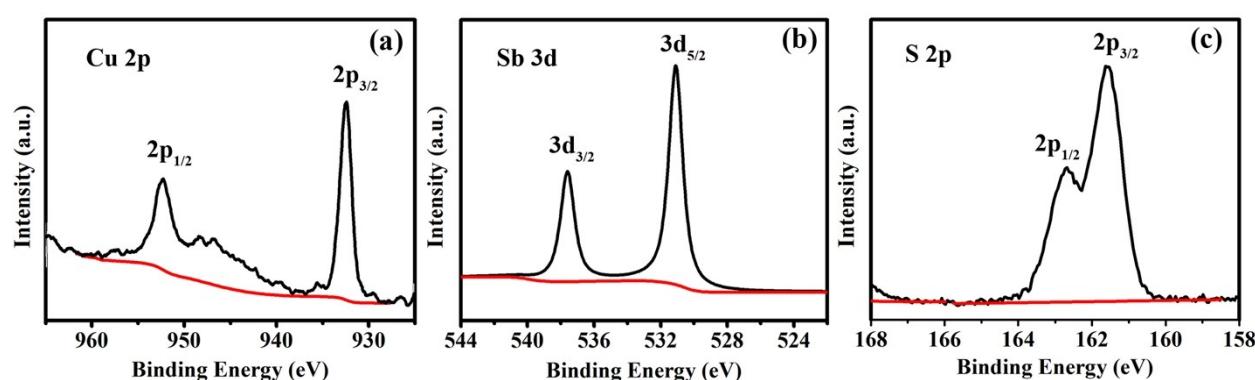


Fig.S2 XPS analysis of CuSbS<sub>2</sub>: (a) Cu 2p, (b) Sb 3d, (c) S 2p, respectively

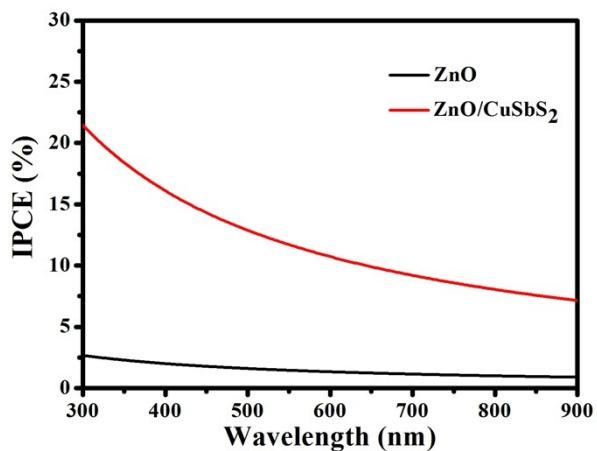


Fig.S3 IPCE plots of ZnO and ZnO/CuSbS<sub>2</sub>

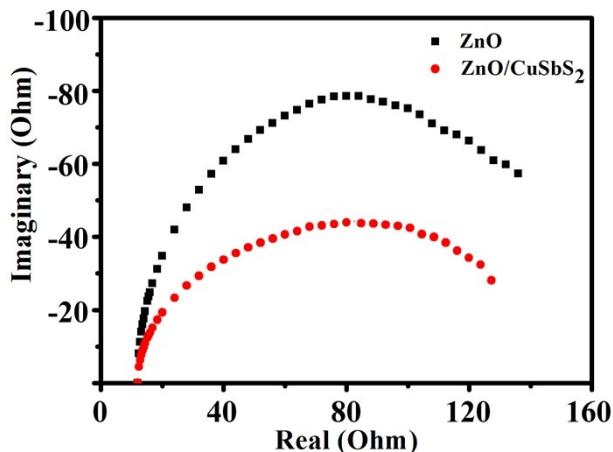


Fig.S4 Electrochemical impedance spectroscopy of ZnO and ZnO/CuSbS<sub>2</sub>