

Supplementary information for:

Fabrication and enhanced photoelectric properties of novel Bi₉O_{7.5}S₆/CdS composite film

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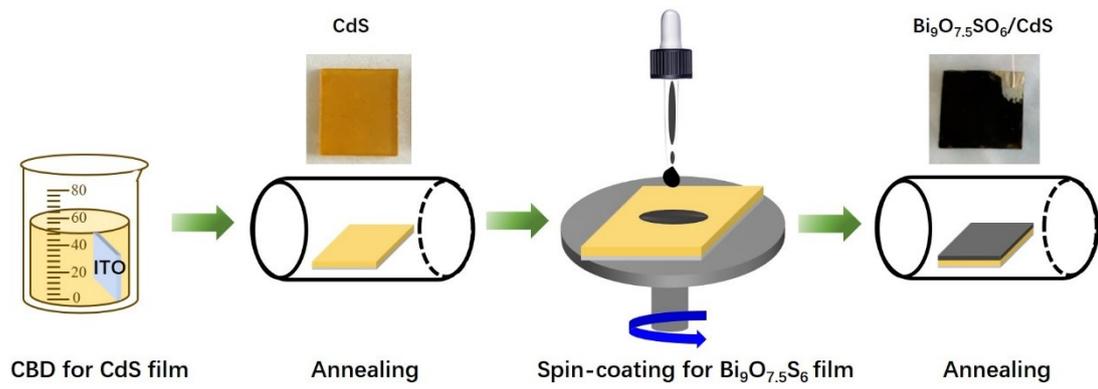


Fig. S1 Schematic illustration of the preparation of Bi₉O_{7.5}S₆/CdS/ITO composite film.

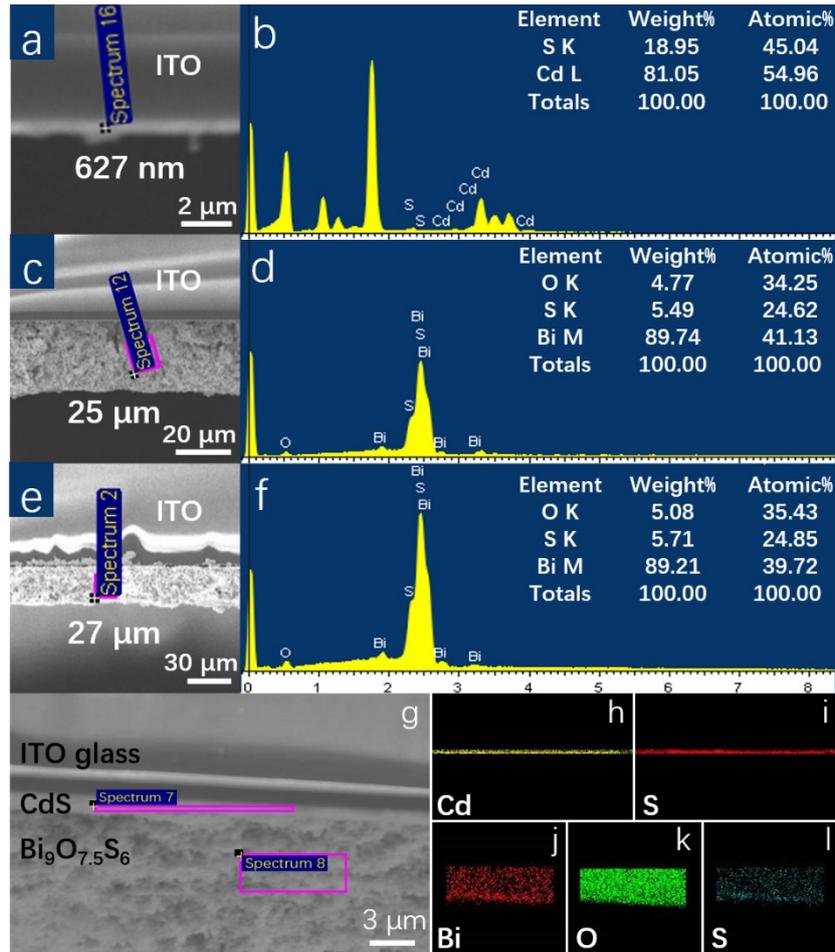


Fig. S2 Cross-sectional SEM images and EDS results of CdS/ITO (a, b), Bi₉O_{7.5}S₆/ITO (c, d) and Bi₉O_{7.5}S₆/CdS/ITO (e, f) films. SEM (g) and EDS mapping (h-l) images of Bi₉O_{7.5}S₆/CdS heterostructure at the cross-section.

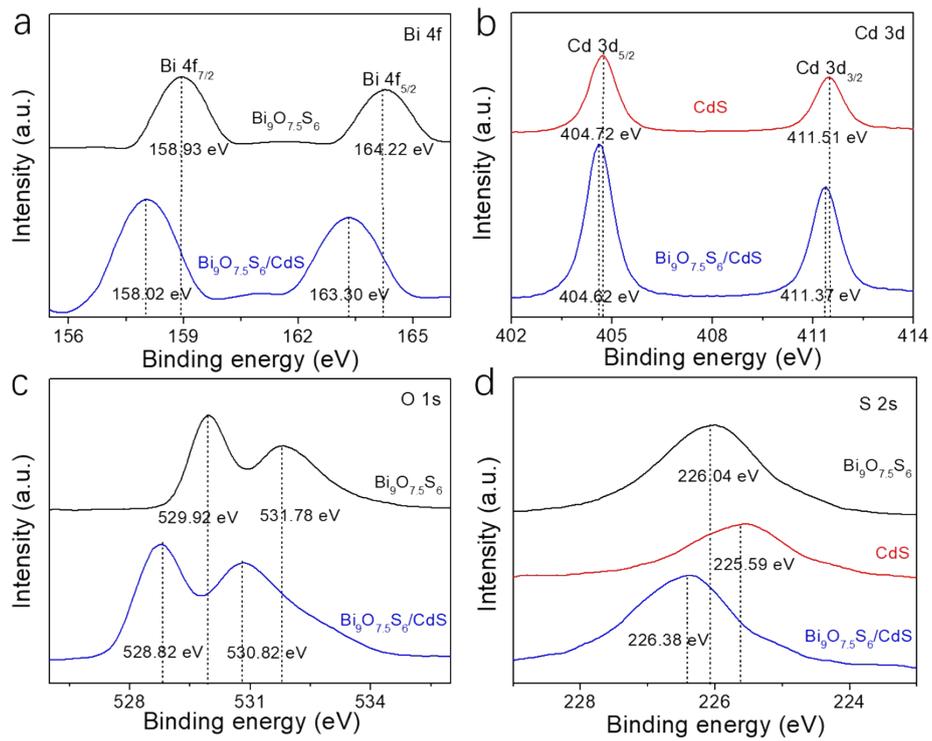


Fig. S3 XPS spectra of Bi₉O_{7.5}S₆, CdS and Bi₉O_{7.5}S₆/CdS: (a) Bi 4f, (b) Cd 3d, (c) O 1s and (d) S 2s spectra.

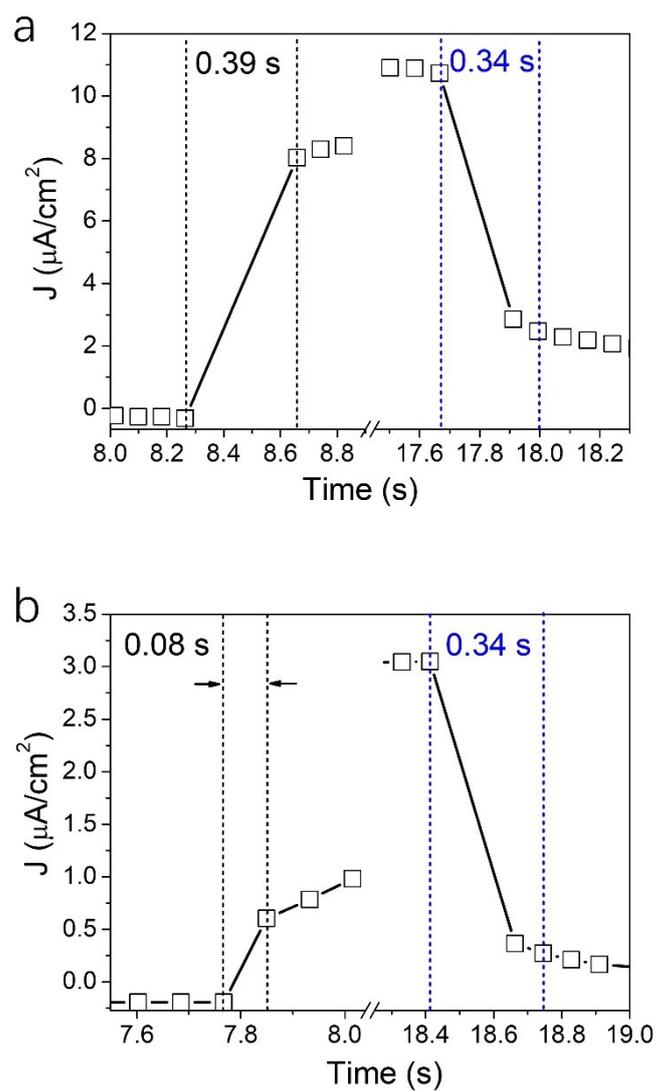


Fig. S4 Response times of CdS/ITO (a) and $\text{Bi}_9\text{O}_{7.5}\text{S}_6/\text{ITO}$ (b) films at 1 V bias voltage.

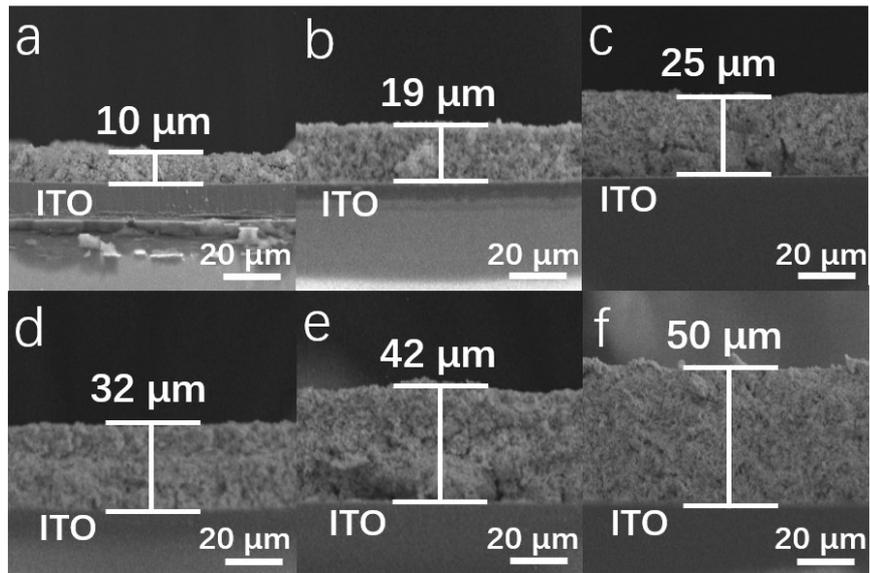


Fig. S5 Cross-sectional SEM images of Bi₉O_{7.5}S₆/ITO films with different thicknesses.

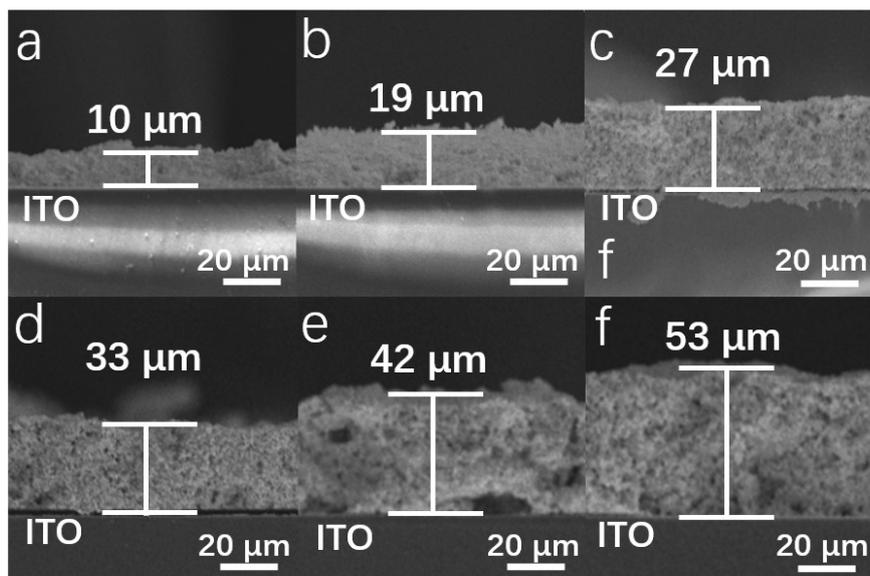


Fig. S6 Cross-sectional SEM images of Bi₉O_{7.5}S₆/CdS/ITO films with different thicknesses.

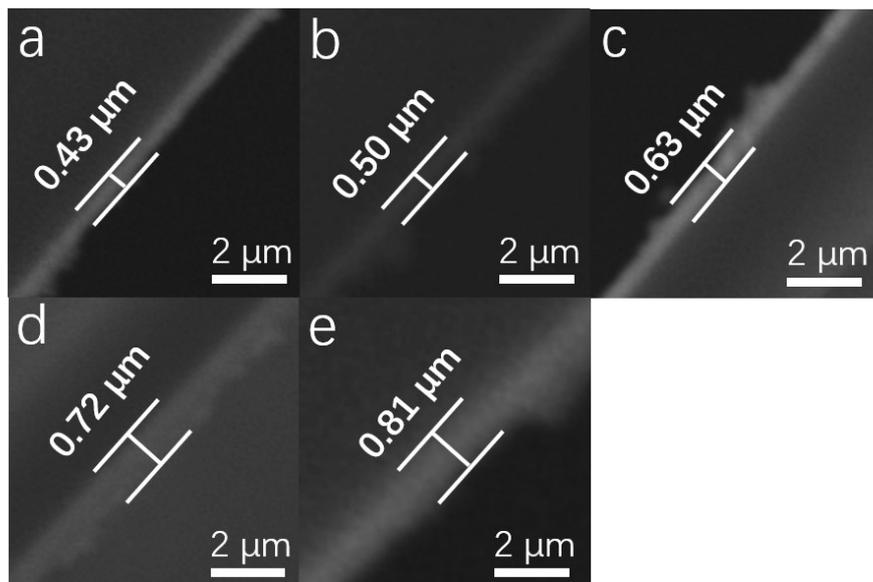


Fig. S7 Cross-sectional SEM images of CdS/ITO films with different thicknesses.

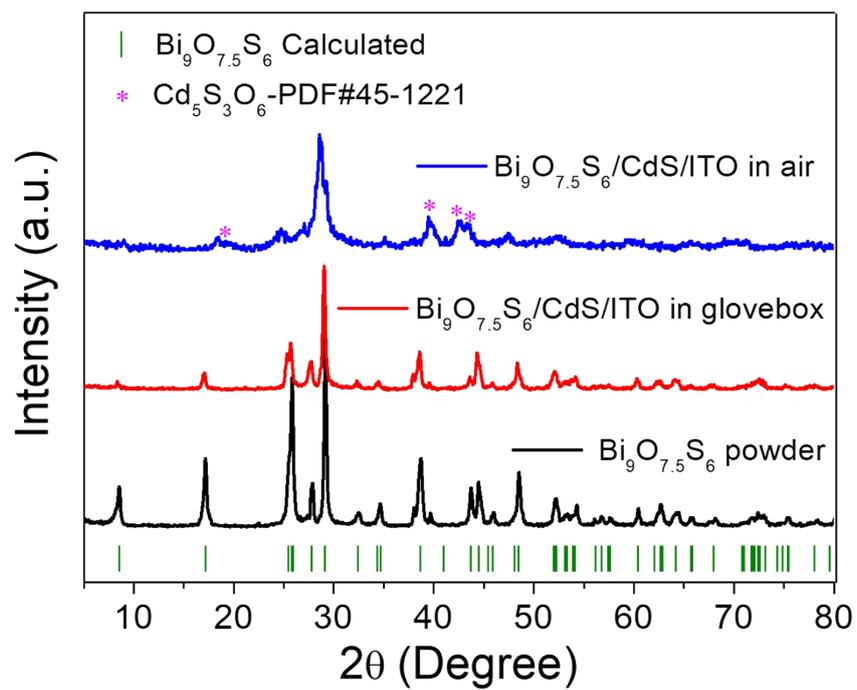


Fig. S8 The XRD pattern of Bi₉O_{7.5}S₆/CdS/ITO composite film after keeping in air and glove box respectively for 2 weeks.