

Electronic Supplementary Information (ESI)

Fabrication and Surface Stochastic Analysis of Enhanced Photoelectrochemical Activity of Tunable MoS₂-CdS Thin Film Heterojunction

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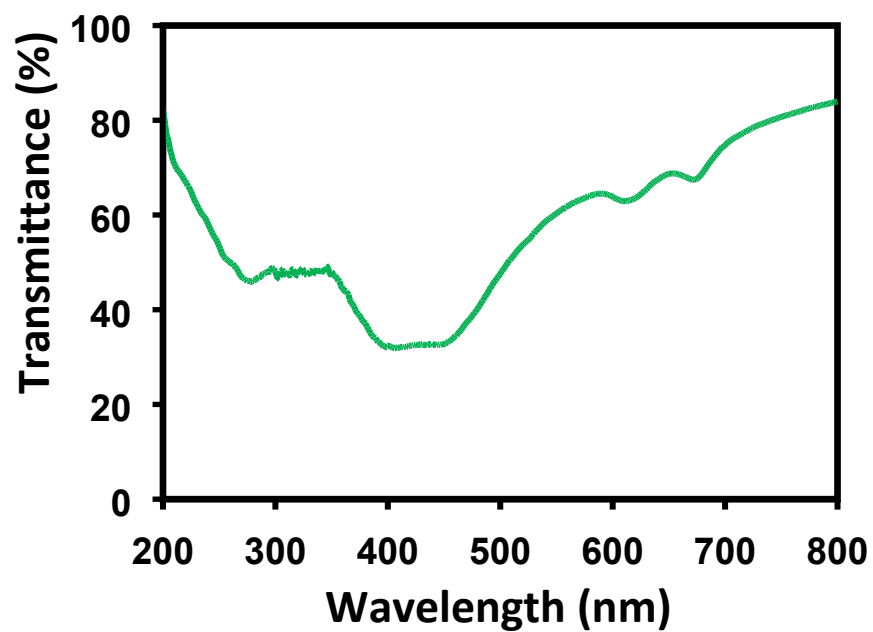


Figure S1: UV-visible transmittance of MoS₂ solution (containing MoS₂ nanosheets).

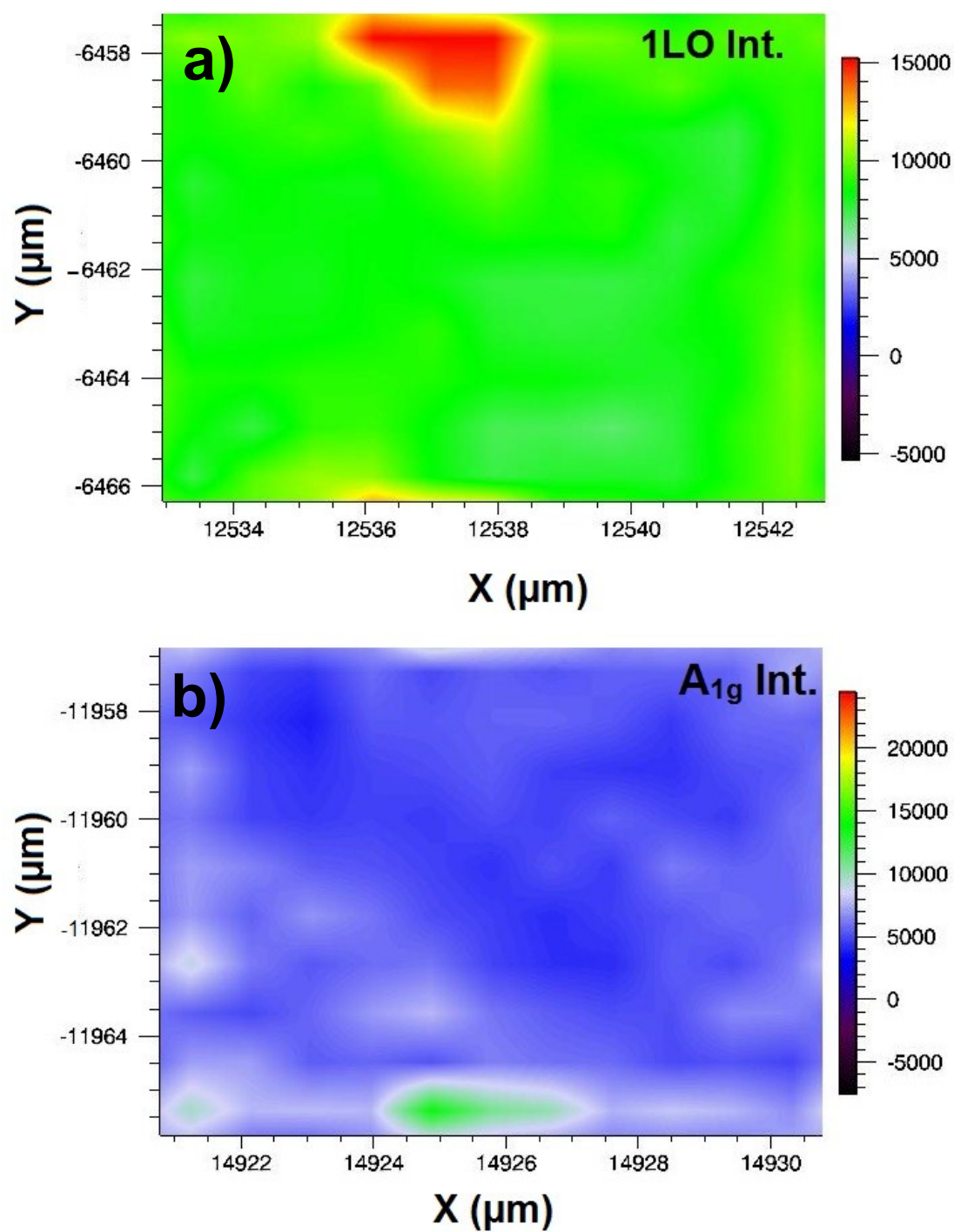
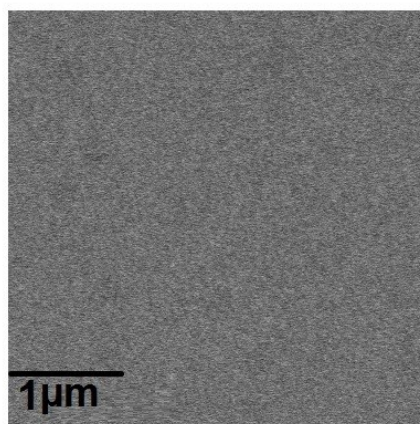
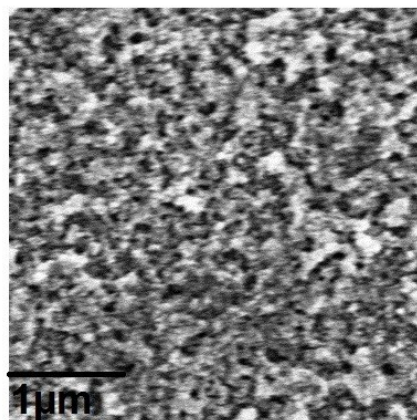


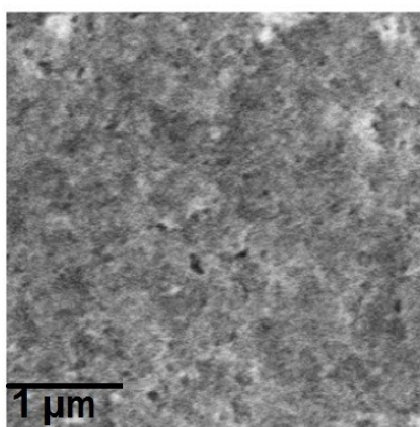
Figure S 2: Raman intensity mapping of (a) CdS 1LO Raman peak and (b) MoS₂ A_{1g} Raman signal.



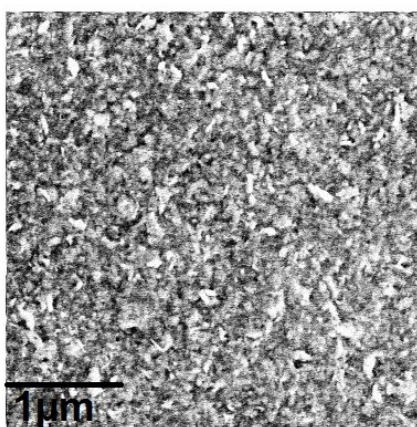
bare ITO



MoS₂(60s)/ITO



CdS/ITO



CdS/MoS₂(60s)/ITO

Figure S 3: SEM images of various electrodes. Comparing all the samples with bare ITO surface, confirm complete and nearly uniform deposition of materials on the substrate surface.

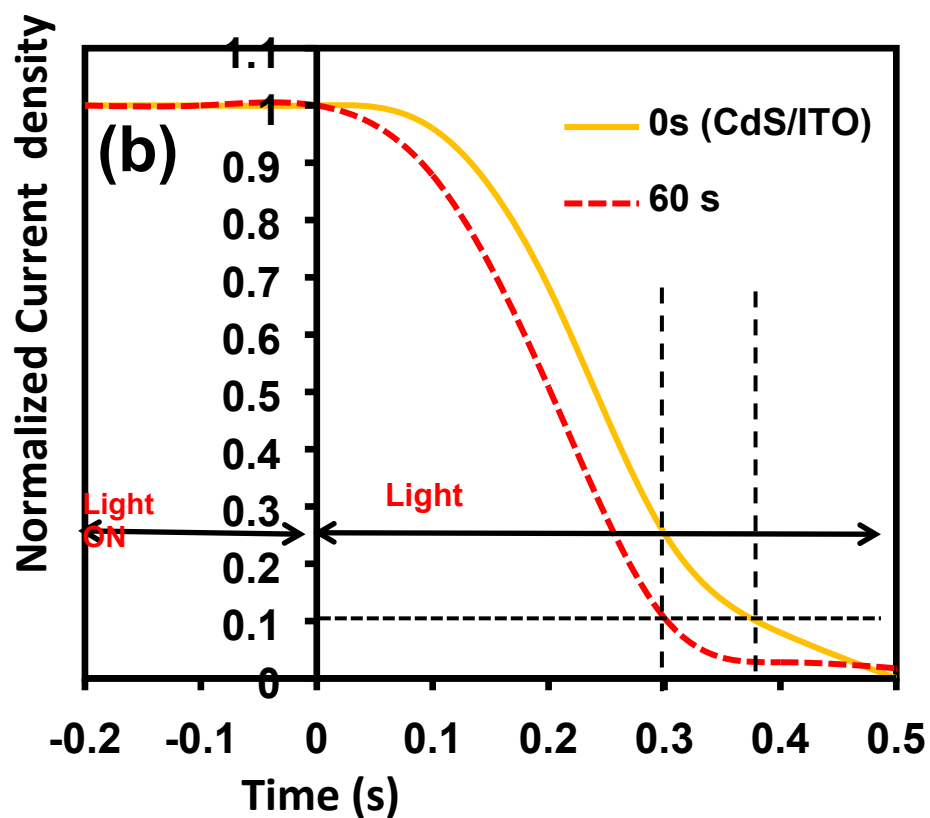
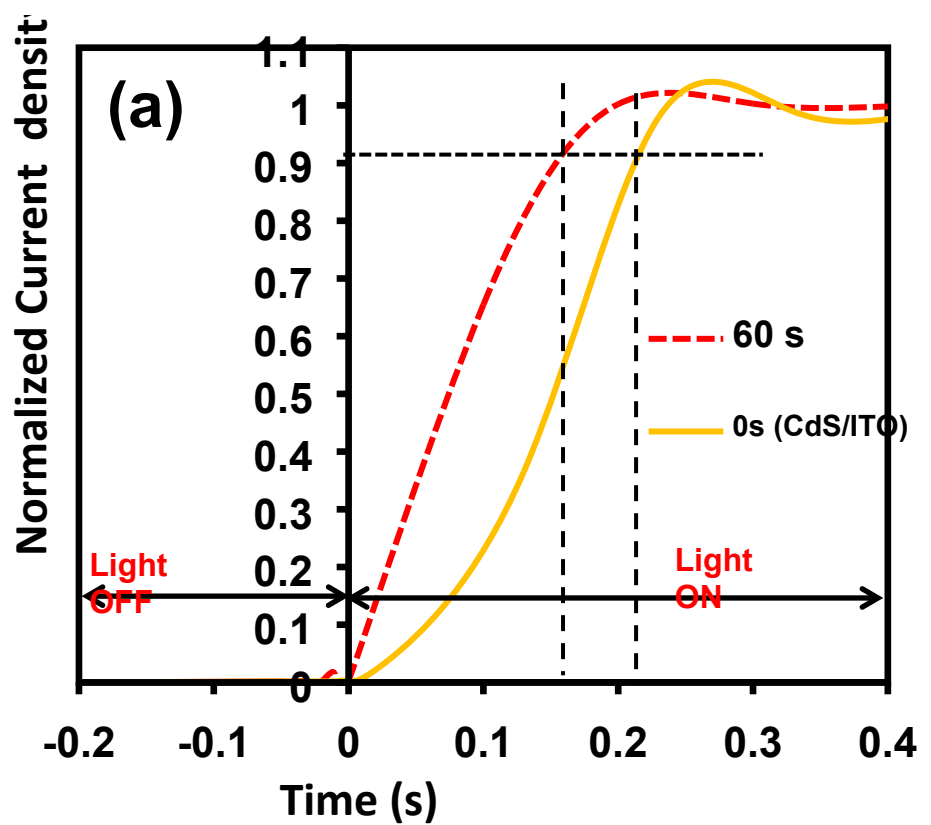


Figure S 4: a) rise time and b) fall time of the CdS/MoS₂(60s)/ITO in comparison with the bare CdS/ITO thin film.

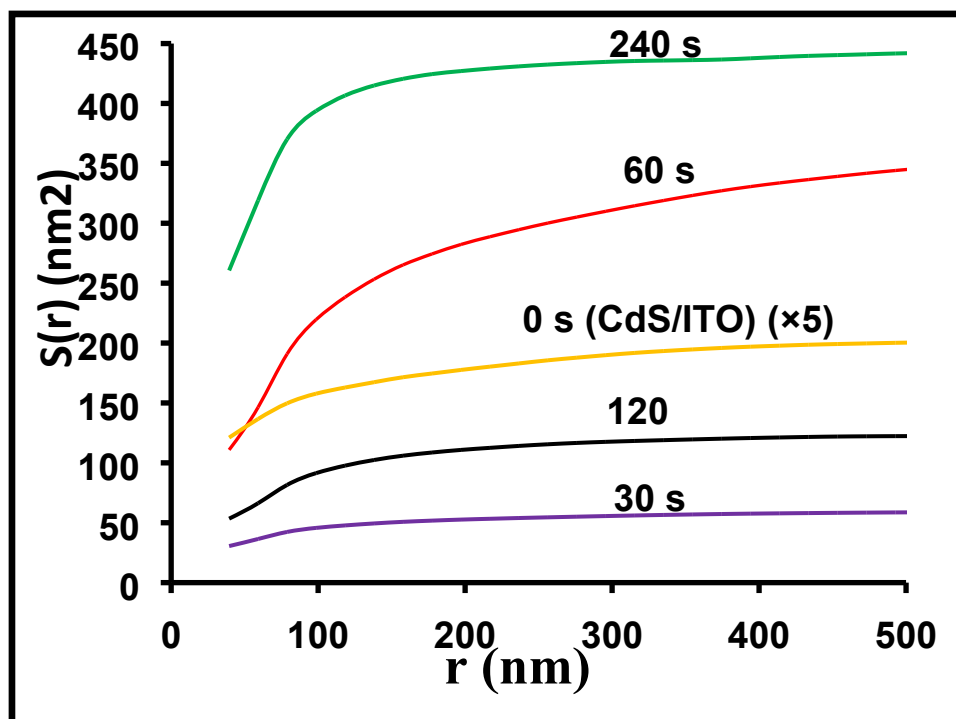


Figure S 5: Variation of surface structure function, $S(r)$, versus r for different CdS/MoS₂(t)/ITO thin films prepared with various EPD times.

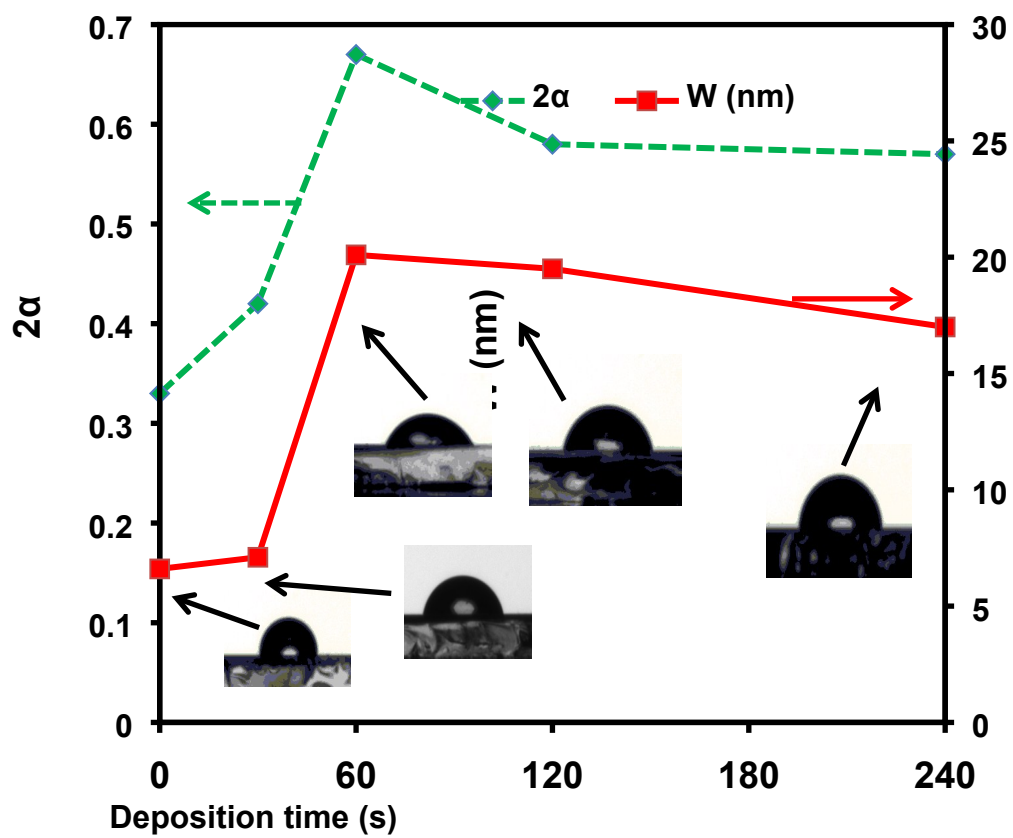


Figure S 6: Surface roughness (W), Hurst exponent (α) and corresponding CA pictures of the various CdS/MoS₂(t)/ITO thin film electrodes versus preparation time.

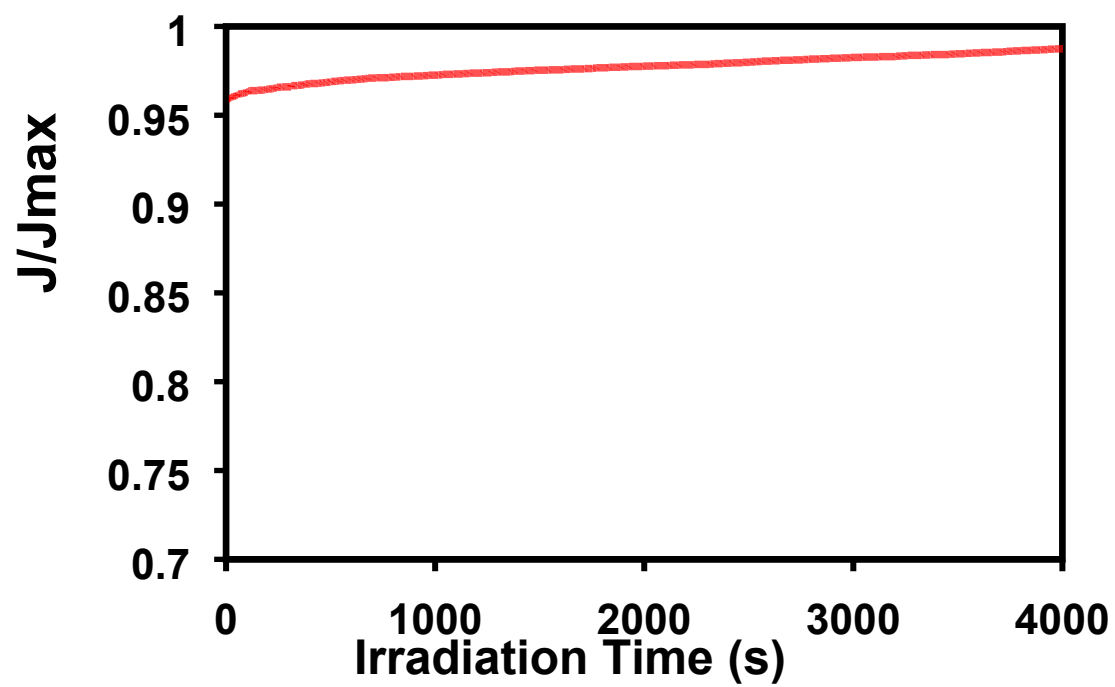


Figure S 7: Normalized photo-current density of the CdS/MoS₂(60s)/ITO samples under long time continuous photo-irradiation.