

## Supplementary information

### Visible-light-active type-II heterojunction CdS@Cu<sub>0.5</sub>Mg<sub>2.5</sub>SnS<sub>4</sub> composites for the efficient removal of brilliant green dye

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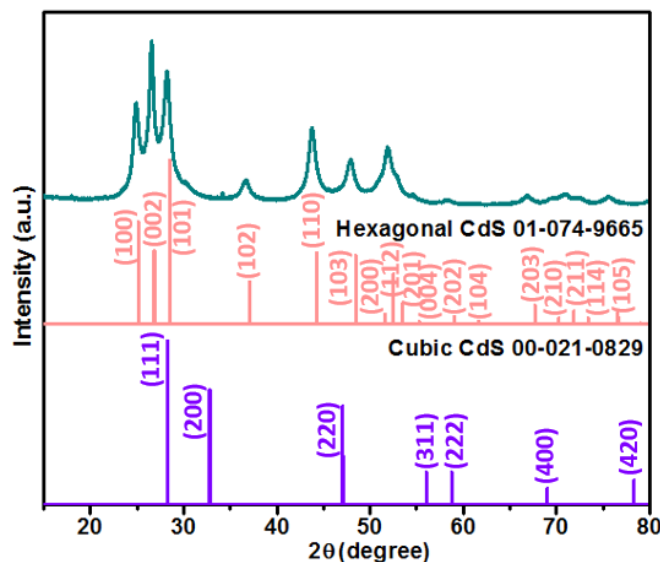
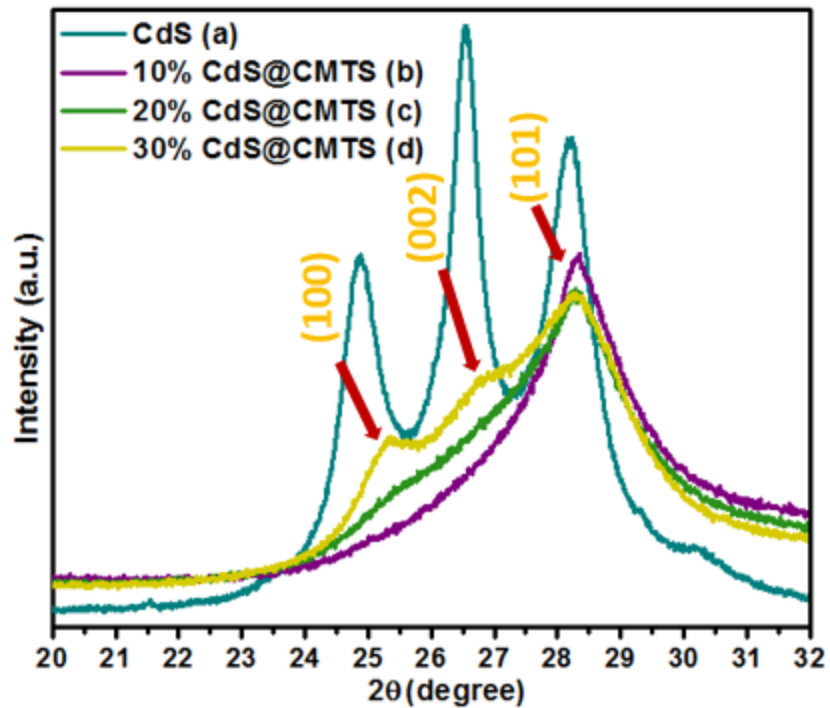
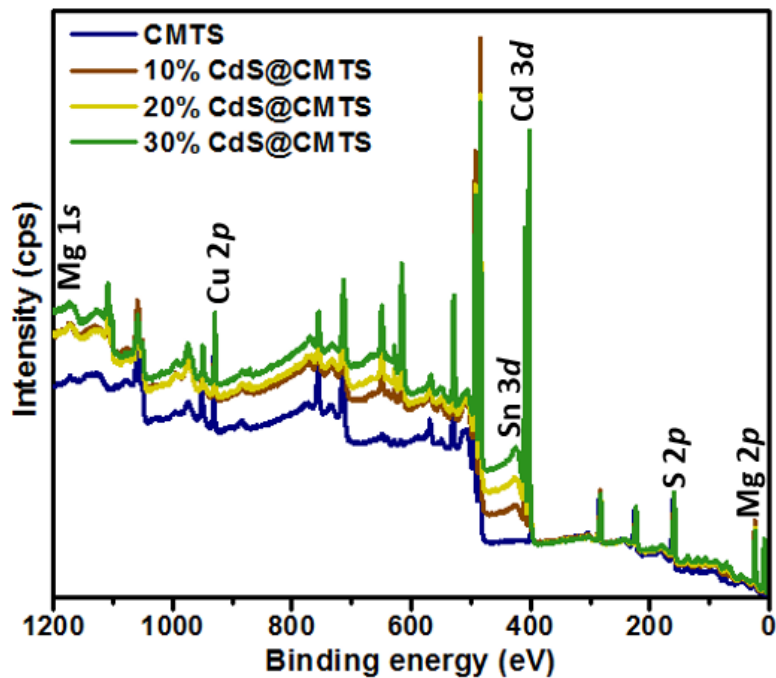


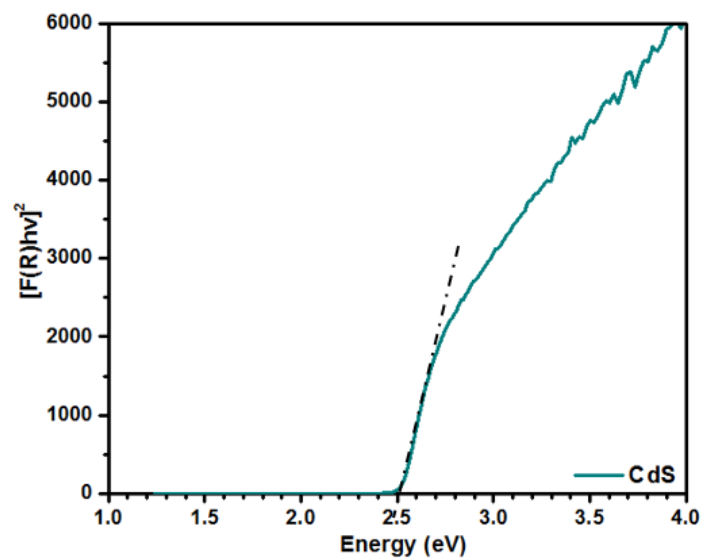
Figure S1. XRD patterns of CdS with different standards.



**Figure S2.** Overlaid XRD patterns of (a) CdS with (b) 10% CdS@CMTS, (c) 20% CdS@CMTS, and (d) 30% CdS@CMTS.



**Figure S3.** XPS survey spectra of CMTS, 10% CdS@CMTS, 20% CdS@CMTS, and 30% CdS@CMTS.



**Figure S4.** Tauc plot constructed from the Kubelka–Munk transformed diffuse reflectance spectrum of CdS.