

### Blue-Light Hydrogen Production via CdS/g-C<sub>3</sub>N<sub>4</sub> Heterojunctions

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### Supplementary Information

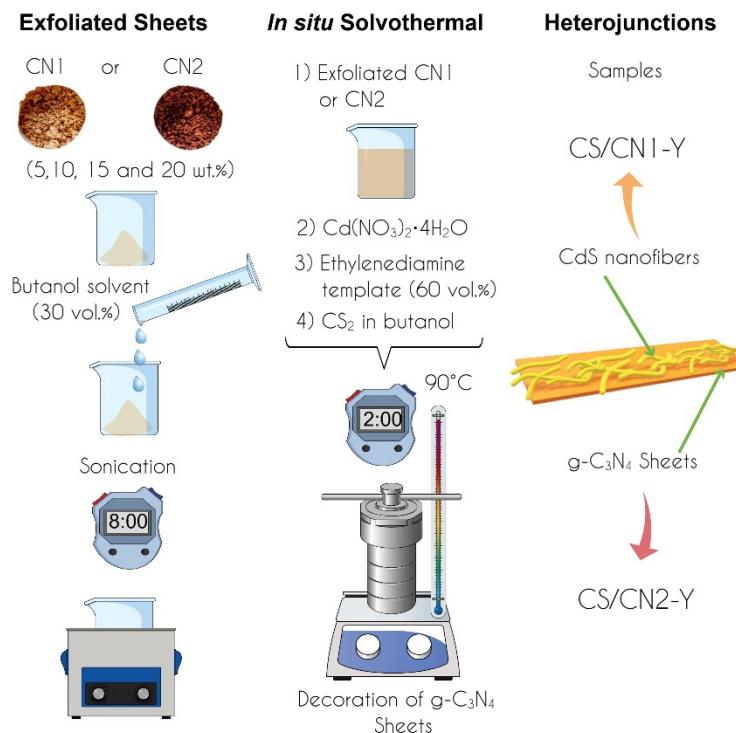


Fig. S1 Schematic representation of two sequential steps for the *in situ* synthesis of **CS/CNX-Y** heterojunctions.

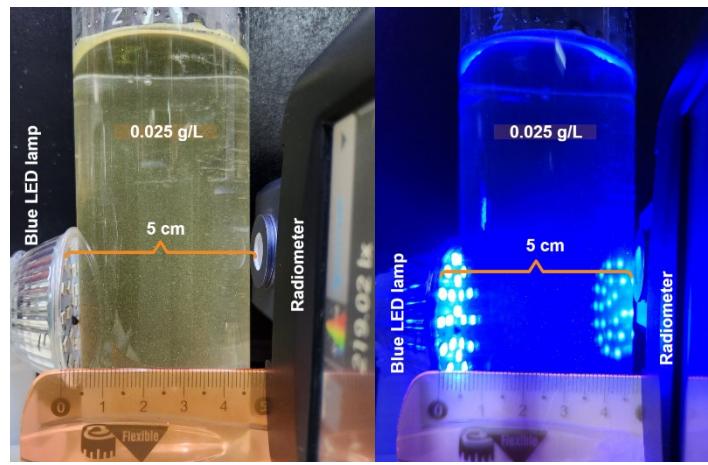


Fig. S2 Photographic of dispersed suspension and reactor illuminated with 1 Blue-LED lamp.

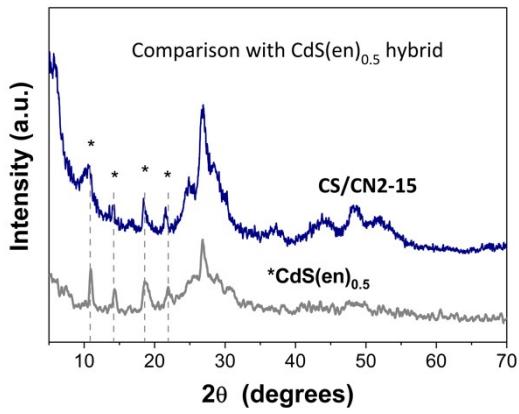


Fig. S3 Comparison of XRD patterns of CS/CN2-15 with CdS(en)<sub>0.5</sub> hybrid synthesized at 50 °C according to reference (37).

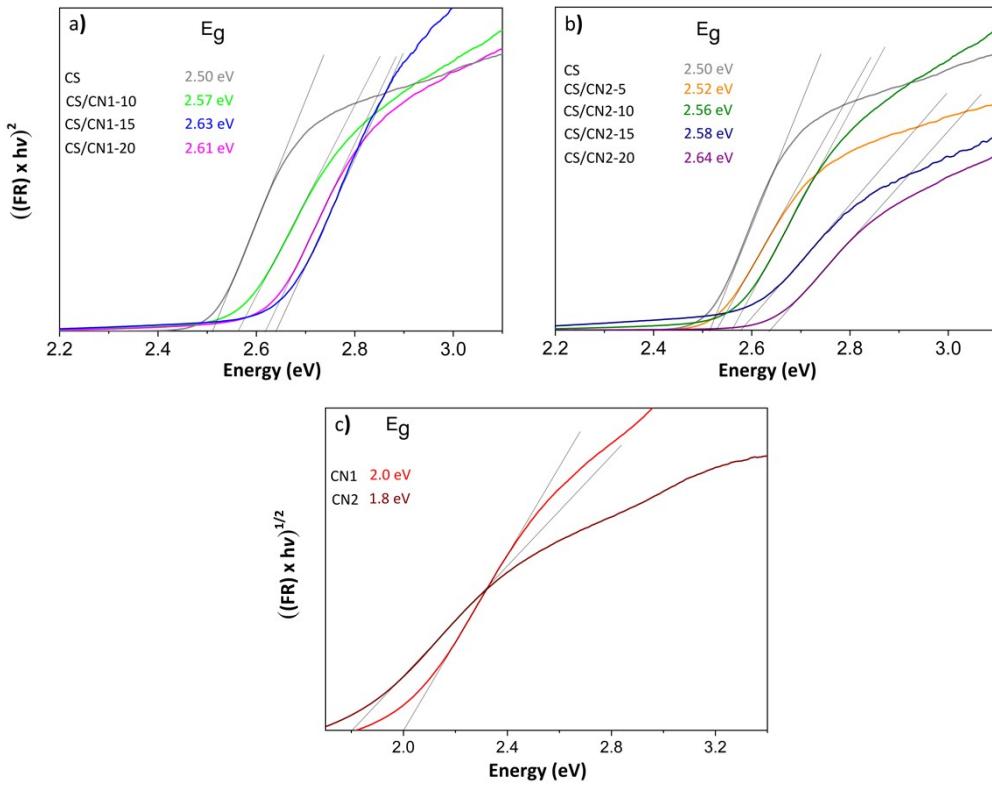


Fig. S4 Kubelka-Munk approximation for the band gap ( $E_g$ ) estimation of synthesized samples.

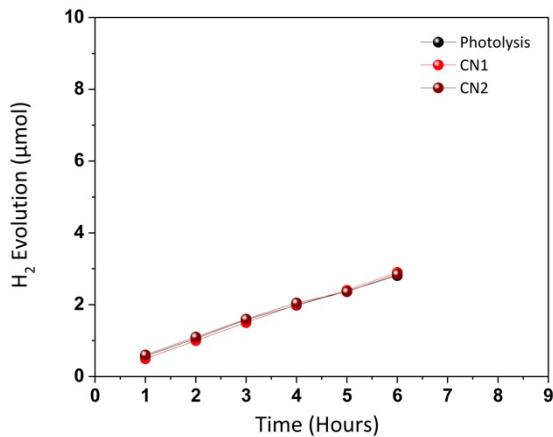


Fig. S5  $H_2$  production profiles for the **photolysis**, unmodified low-stacked **CN1** micro-sheets and high-stacked **CN2** micro-flakes under blue light irradiation.

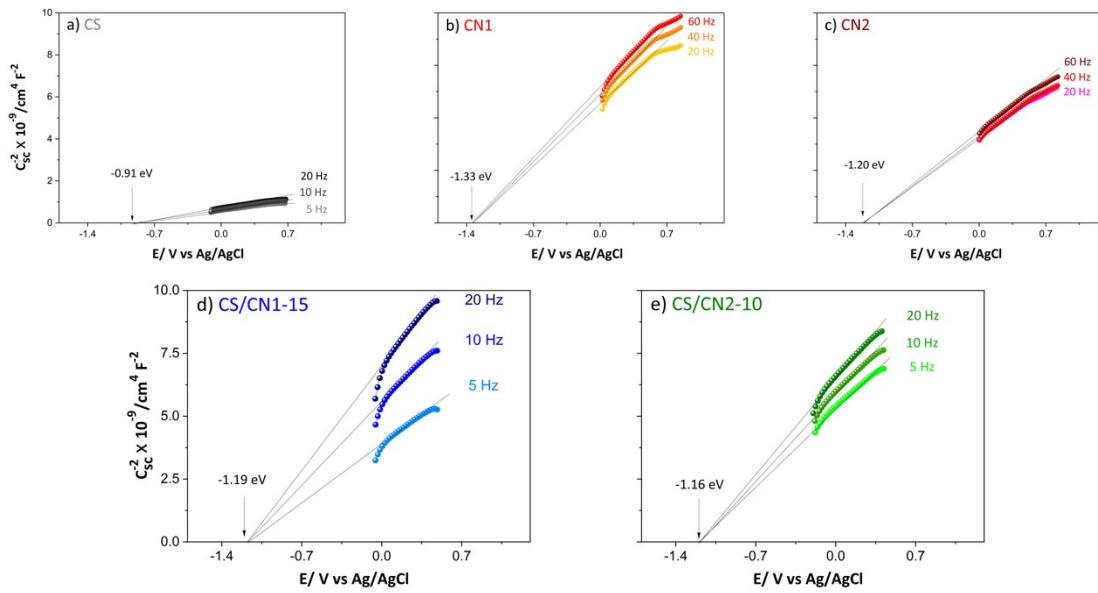


Fig. S6 MS plots at a frequency of 20, 40 and 60 Hz for the **CS**, **CN1**, **CN2**, **CS/CN1-15** and **CS/CN2-10** at different Hz, using the methanol:water solution with 0.03M  $\text{KClO}_4$ .