

Supplementary Information

**TEOA-induced in situ formation of wurtzite and zinc-blende CdS heterstructures as
a high-active and long-lasting photocatalyst for converting CO₂ into solar fuel**

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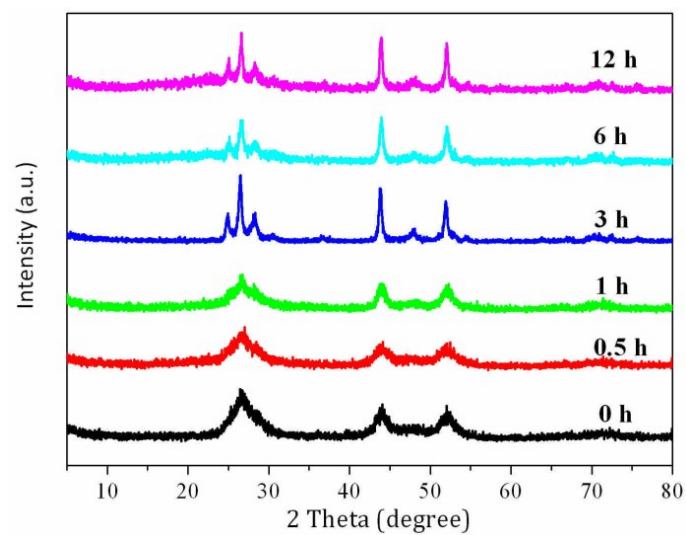


Figure S1. The XRD patterns of the products prepared at different hydrothermal treatment time.

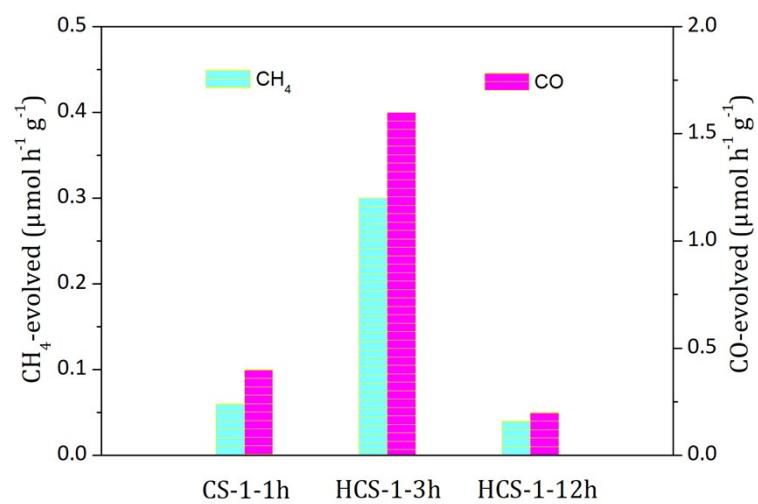


Figure S2. The photocatalytic CO-/CH₄-producing rate of heterostructured samples with different hydrothermal reaction time under visible-light irradiation ($\lambda \geq 420$ nm).

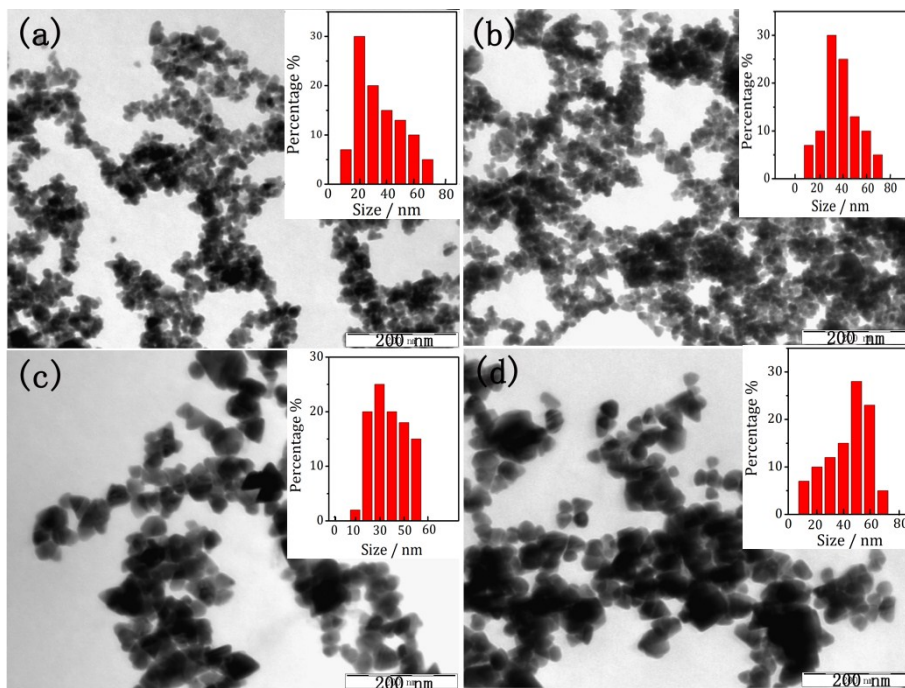


Figure S3. The TEM images of the CdS products prepared at different TEOA amounts of 0.5 g (a), 1.0 g (b), 3.0 g (c), and 5.0 g (d).



Figure S4. The photo of the setup for CO₂ reduction.