

Facile synthesis of Zn_{0.5}Cd_{0.5}S nanosheets with tunable S vacancies for highly efficient photocatalytic hydrogen evolution

Linfen Yang ^{a, b}, Yuhua Wang ^{c*} and Yong Peng ^{a, b*}

^a Department of Materials Science, School of Physical Science and Technology, Lanzhou University, Lanzhou, 730000, China

^b School of Materials and Energy, or Electron Microscopy Centre of Lanzhou University, Lanzhou, 730000, China

^c School of Materials and Energy, Lanzhou University, Lanzhou, 730000, China

*Corresponding author: Prof. Yuhua Wang or Prof. Yong Peng.

Tel: +86-931-8912772; Fax: +86-931-8913554

E-mail address: wyh@lzu.edu.cn, or pengy@lzu.edu.cn.

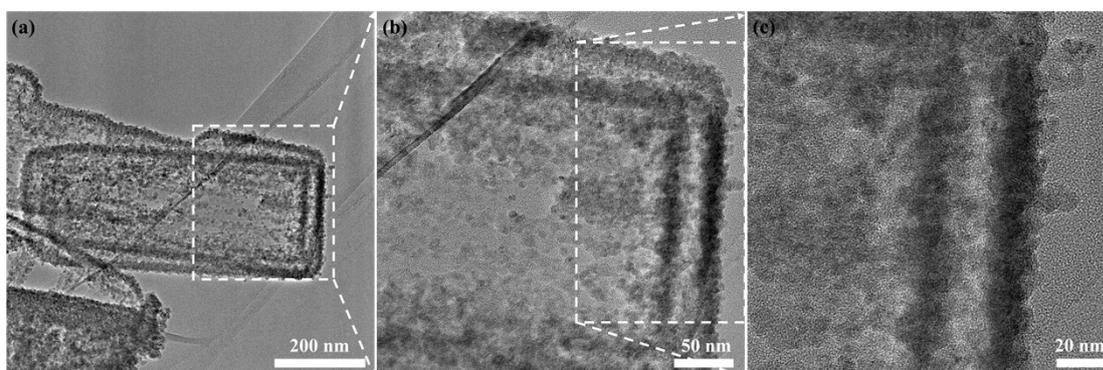


Fig. S1. The TEM images of ZCS4 sample.

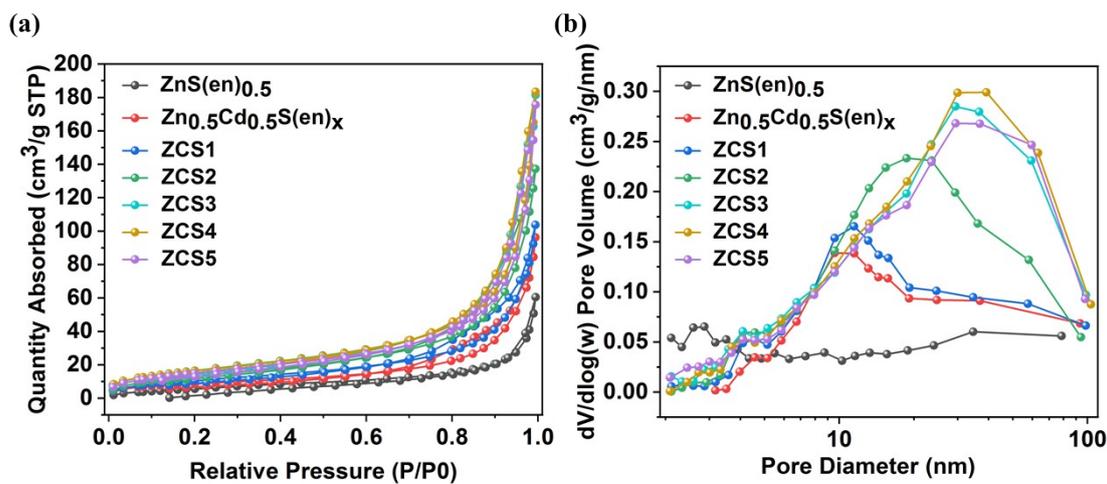


Fig. S2 (a) N_2 adsorption-desorption isotherms and (b) pore-size distributions.

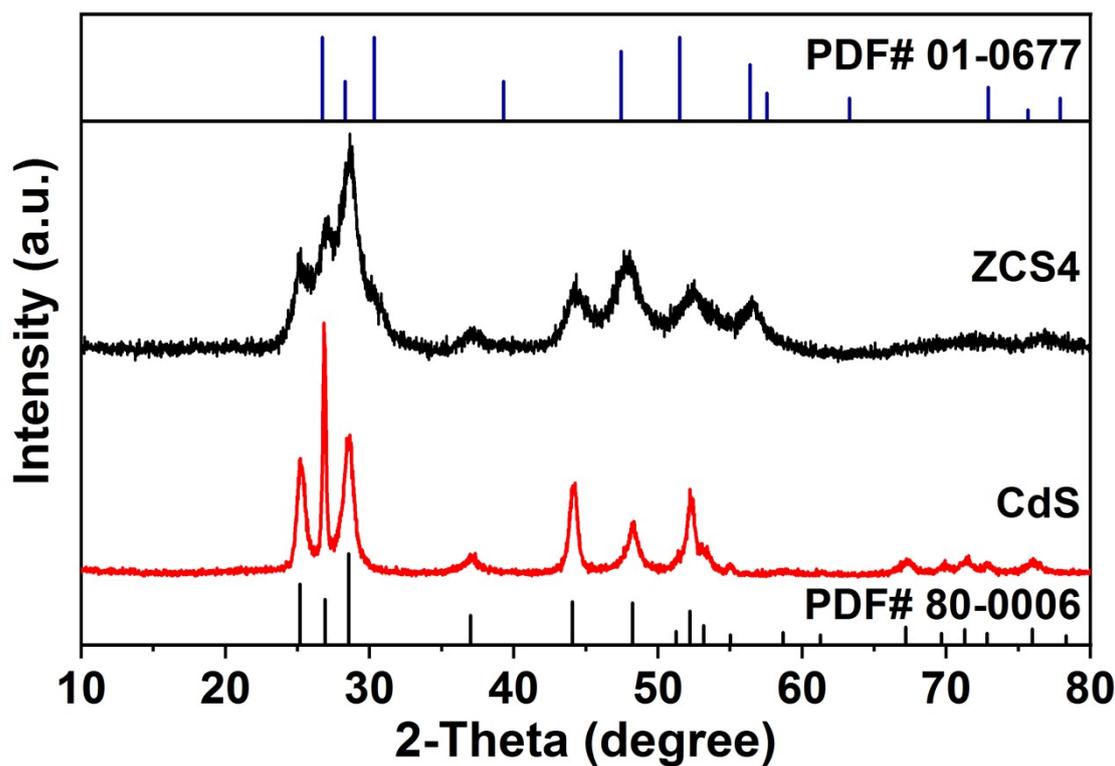


Fig. S3 XRD patterns of ZCS4 and pure CdS.

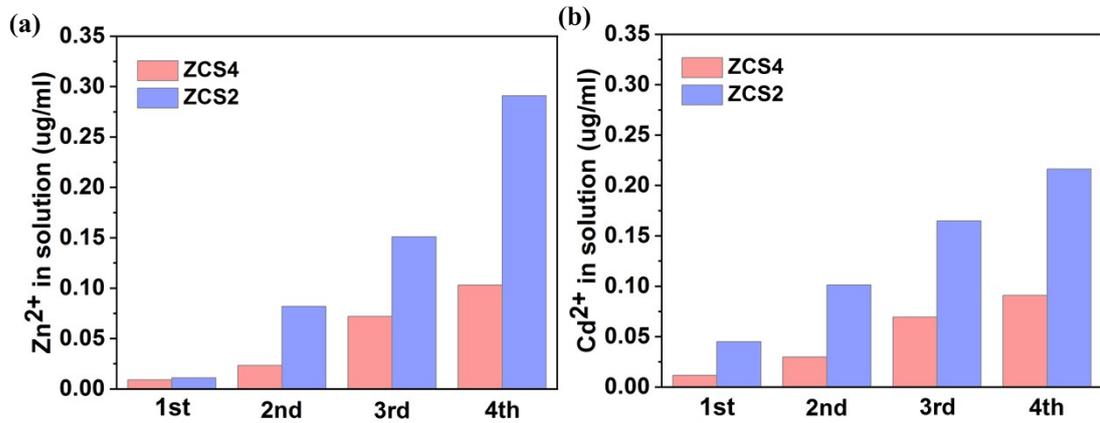


Fig. S4 The concentration of Zn ion and Cd ion in aqueous solution after each cycle test of ZCS2 (a) and ZCS4 (b) samples.

Table S1 BET surface areas, average pore sizes, and pore volumes of the as-prepared samples

Sample	BET surface area (cm ³ /g)	Average pore size (nm)	Pore volume (cm ³ /g)
ZnS(en) _{0.5}	22.41	10.8434	0.112728
Zn _{0.5} Cd _{0.5} S(en) _x	32.11	16.5592	0.160451
ZCS1	39.88	14.7021	0.172961
ZCS2	50.28	15.0421	0.227717
ZCS3	61.11	18.1254	0.297113
ZCS4	62.22	17.6030	0.299233
ZCS5	56.59	17.3052	0.288918