Electronic Supplementary Information for

Carbon-ensemble-manipulated ZnS heterostructures for enhanced photocatalytic H_2 evolution

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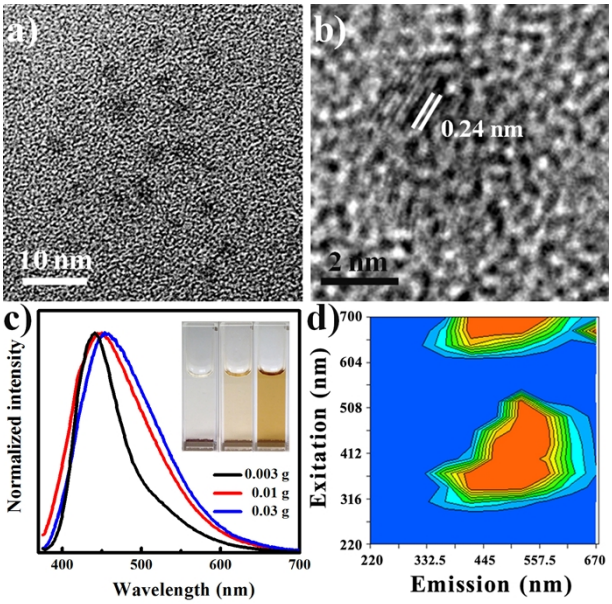

Fig. S1 TEM images of typical glucose-derived CDs (glucose amount: 0.01 g) at (a) low and (b) high magnifications. (c) PL spectra of glucose-derived CDs obtained at different glucose amounts of 0.003, 0.01 and 0.03 g. (d) Typical PL distribution map of the CDs.

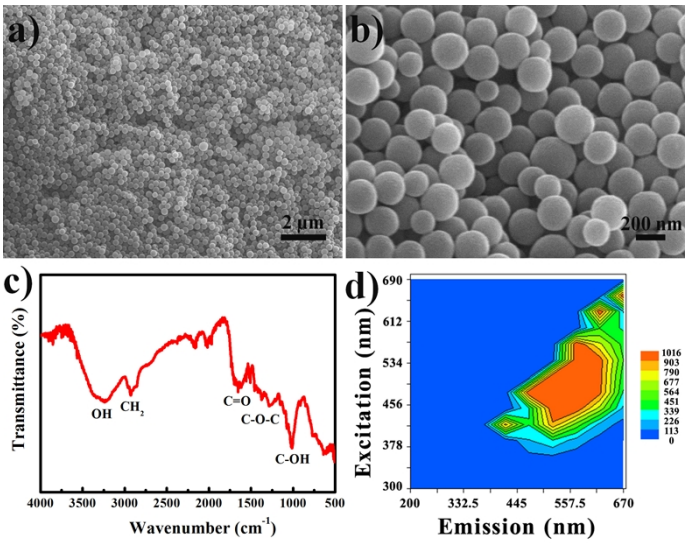

Fig. S2 SEM images of the glucose-derived carbon nanospheres (glucose amount: 2 g) at (a) low and (b) high magnification. (c) FT-IR spectrum of the carbon nanospheres. (d) PL

distribution map of the carbon nanospheres.

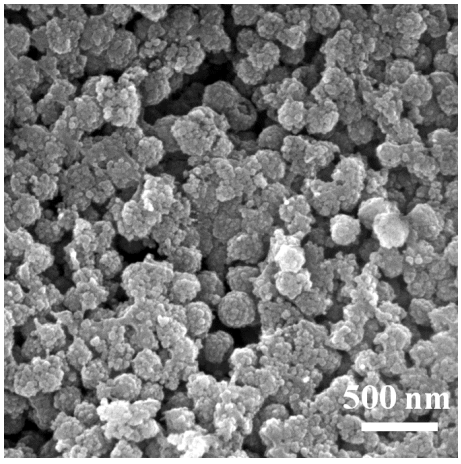

Fig. S3 SEM image of the ZnS/carbon core-shell structure.

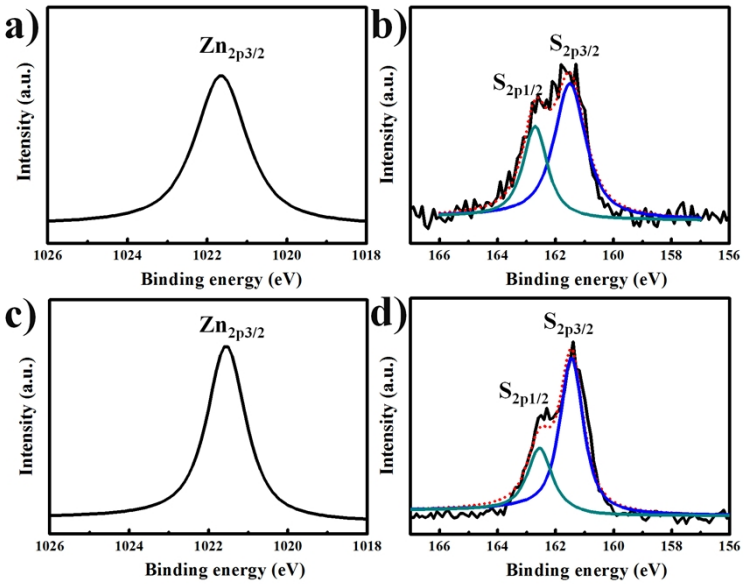

Fig. S4 Zn 2p and S 2p XPS spectra of (a,b) ZnS/CDs nanocomposites and (c,d) the ZnS/carbon core-shell nanostructure.