Electronic Supplementary Material

Superior performance in visible-light-driven hydrogen evolution reaction of three-dimensionally ordered macroporous $SrTiO_3$ decorated with $Zn_xCd_{1-x}S$

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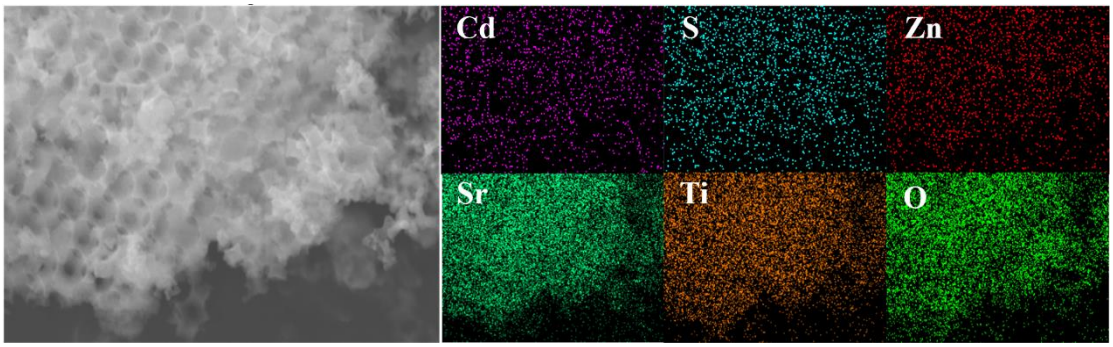

Figure S1. SEM-EDS elemental distribution mapping images of SZ33.

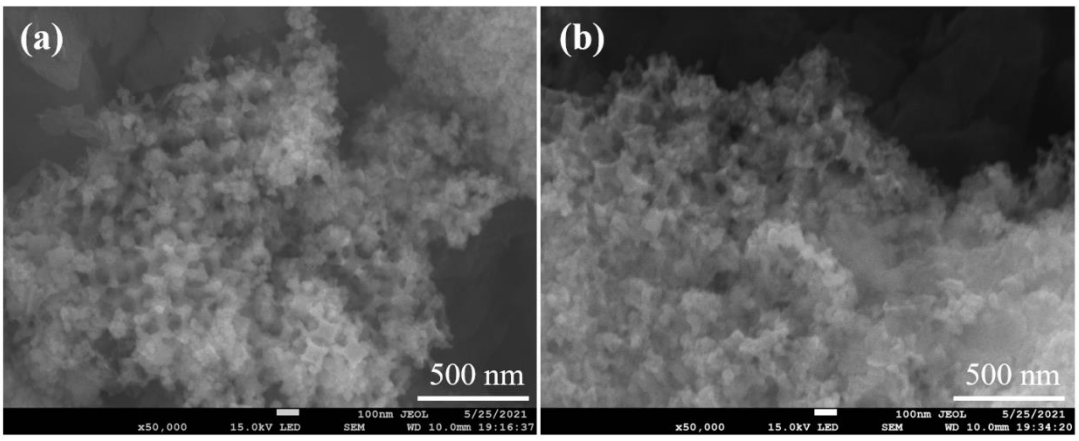

Figure S2. SEM images of Disorder-SZ33.

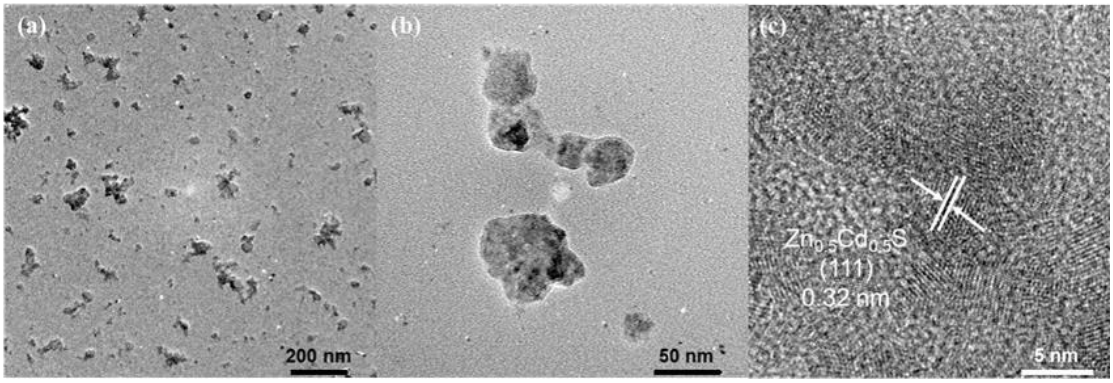

Figure S3. TEM images of ZCS.

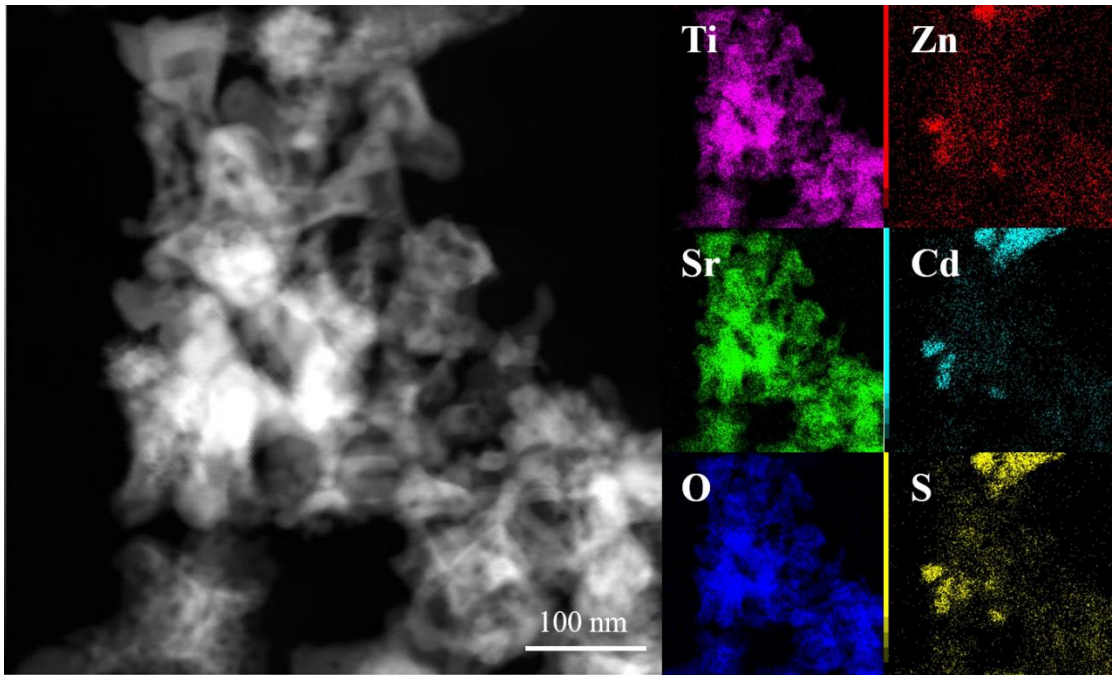

Figure S4. TEM-EDS elemental distribution mapping images of SZ33.

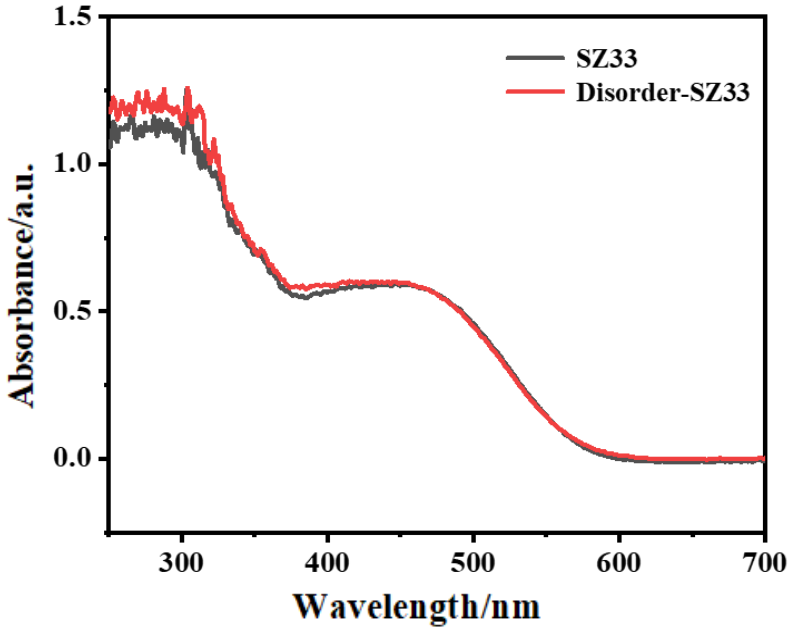

Figure S5. DR UV-Vis spectra of SZ33 and Disorder-SZ33.

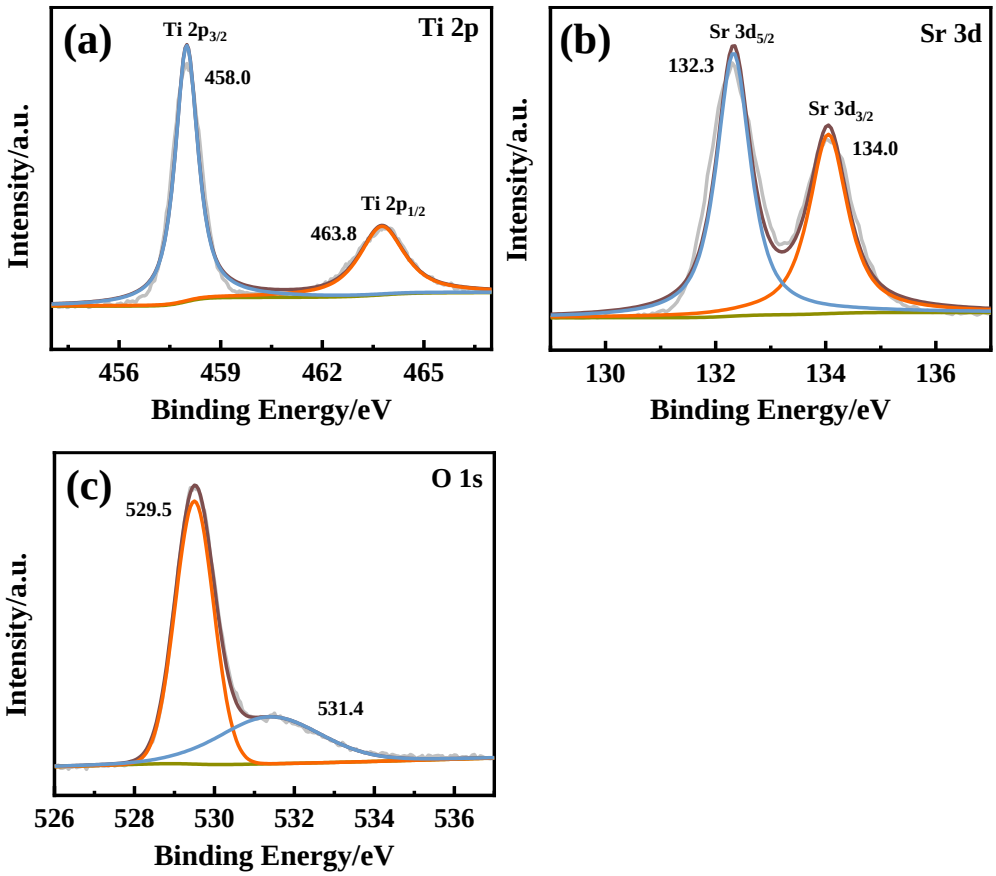

Figure S6. High-resolution XPS spectra of 3D-STO in the region of (a) Ti 2p, (b) Sr 3d, and (c) O 1s.

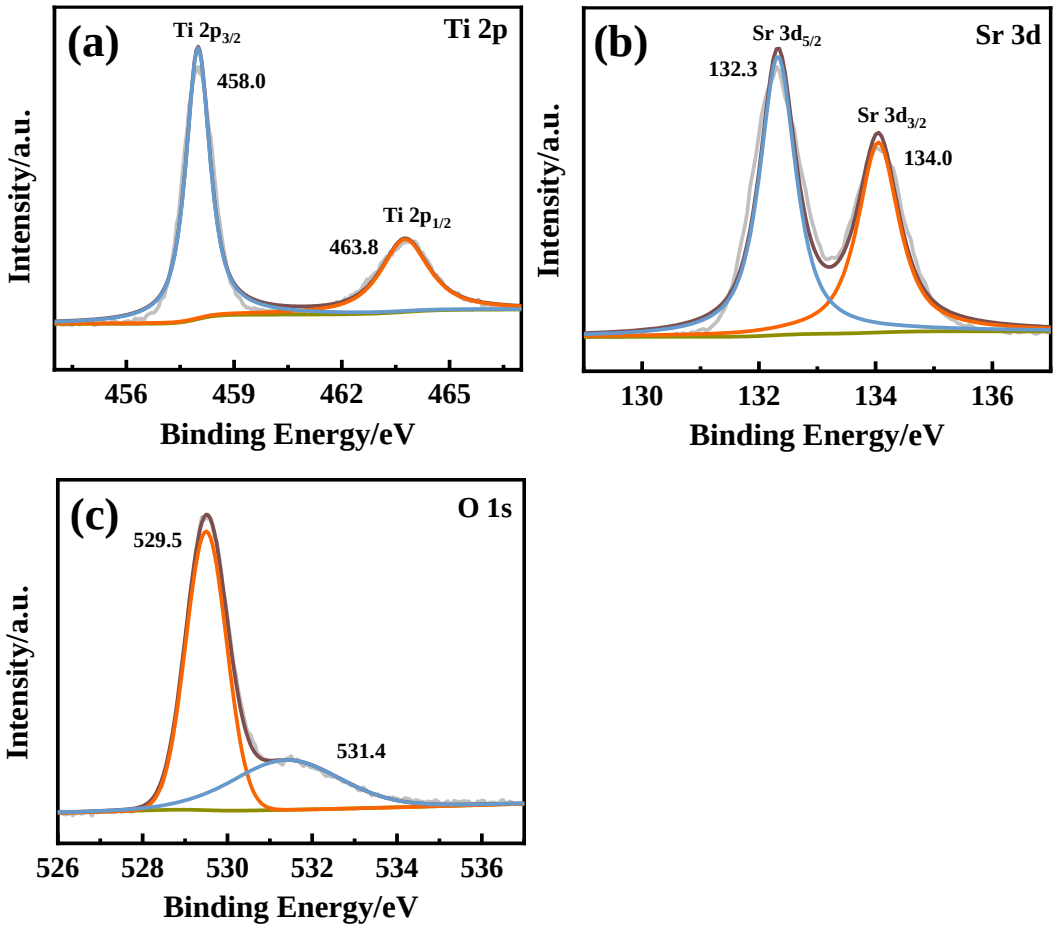

Figure S7. High-resolution XPS spectra of ZCS in the region of (a) Cd 3d, (b) Zn 2p, and (c) S 2p.

Table S1. Comparison of photocatalytic H_2 evolution rate between SZ33 and ever reported S-based photocatalysts

Photocatalyst	Light source	Loading amount of Pt co-catalyst /wt%	Sacrificial agent	H_2 evolution rate /mmol g^{-1} h^{-1}	Ref.
$Cd_{0.5}Zn_{0.5}S$-$BiVO_4$	300W Xe lamp (λ > 420 nm)	3	Na_2S and Na_2SO_3	2.35	[1]
p-Cu_2S/ n-$Zn_{0.71}Cd_{0.29}S$/StG	AM 1.5, 100 mW/cm^2	none	Na_2S and Na_2SO_3	1.20	[2]
CdS/Au/3DOM-SrTiO3(300)	300W Xe lamp (λ > 420 nm)	none	Na_2S and Na_2SO_3	2.74	[3]
$CoPt_3$–ZnCdS	300W Xe lamp (λ > 420 nm)	none	Na_2S and Na_2SO_3	2.34	[4]
RGO-$Zn_{0.8}Cd_{0.2}S$	300W Xe lamp (λ > 420 nm)	none	Na_2S and Na_2SO_3	1.82	[5]
$Ni(OH)_2$-$Zn_xCd_{1-x}S$	300W Xe lamp (λ > 420 nm)	none	Na_2S and Na_2SO_3	3.77	[6]
SiC@$Zn_{0.5}Cd_{0.5}S$	586 mW/cm^2, λ > 420 nm	none	Na_2S and Na_2SO_3	0.89	[7]
MoS_2/$Zn_{0.5}Cd_{0.5}S$/ g-C_3N_4	300W Xe lamp (λ > 420 nm)	none	Na_2S and Na_2SO_3	4.91	[8]
a-Fe_2O_3/$Zn_{0.4}Cd_{0.6}S$	300W Xe lamp	none	Na_2S and	5.37	[9]

	(λ > 420 nm)		Na_2SO_3		
	300W Xe lamp		Na_2S and		This
SZ33		1.5		19.67	
	(λ > 420 nm)		Na_2SO_3		work
	300W Xe lamp		Na_2S and		This
SZ33		none		3.23	
	(λ > 420 nm)		Na_2SO_3		work

References

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