Supplementary Information

A direct Z-scheme S-Co_3O_4/Bi_2WO_6 heterostructure for enhanced photoelectrocatalytic degradation of tetracycline under visible light

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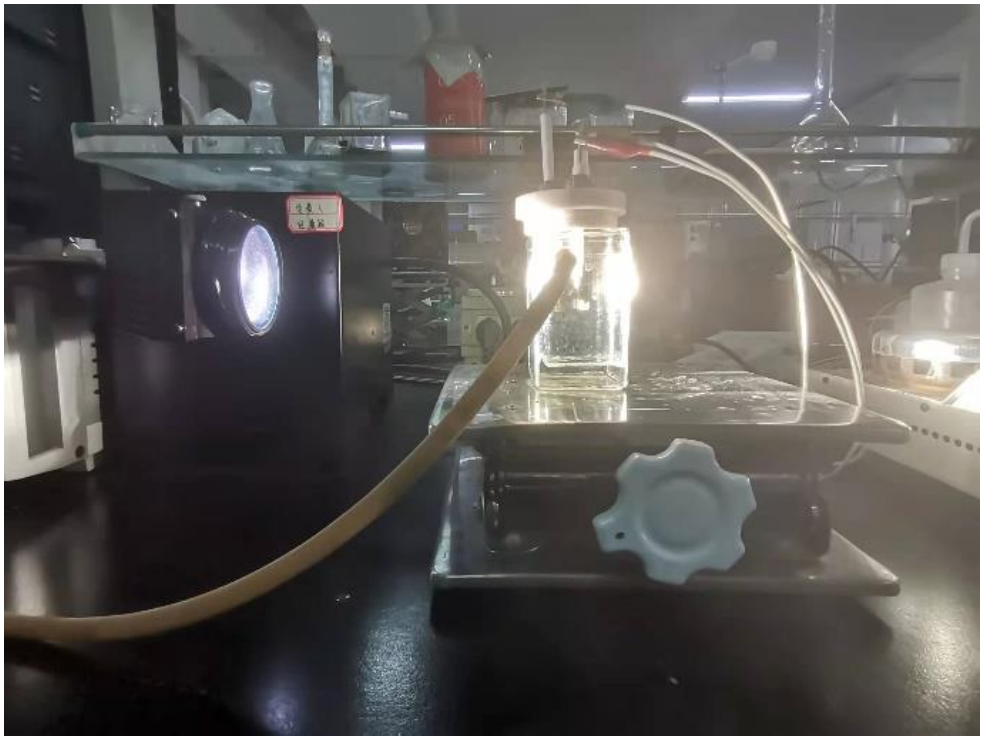

Fig. S1 PEC degradation system

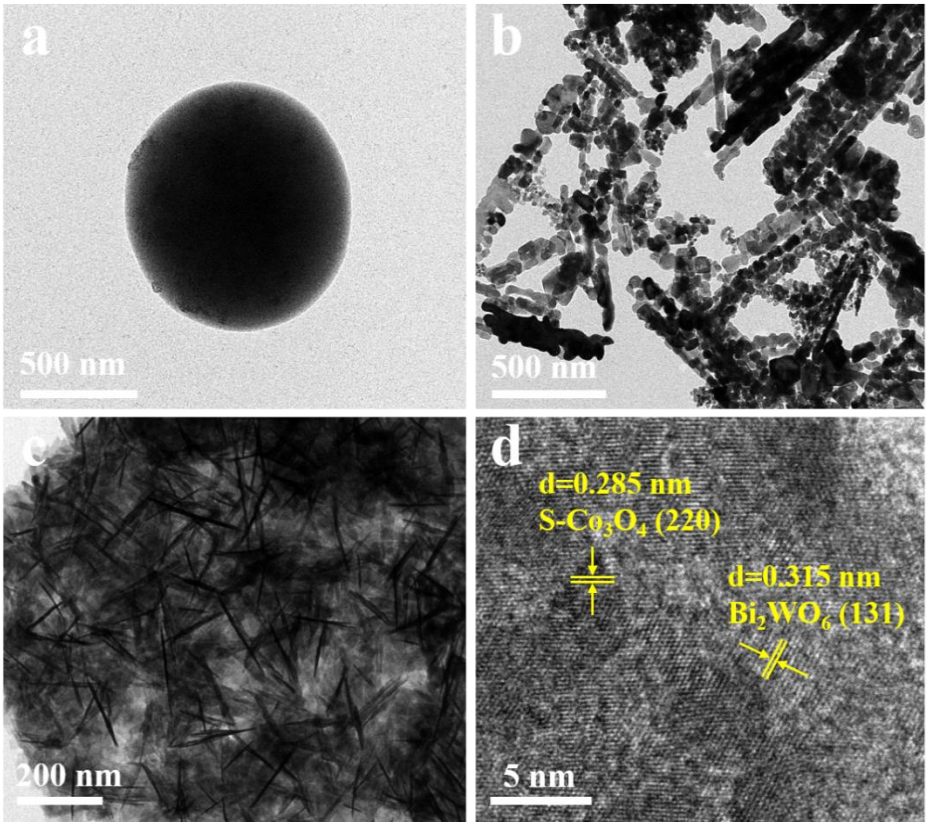

Fig. S2 TEM images of the as-prepared samples: (a) pure Co_3O_4; (b) S-Co_3O_4; and (c) pure Bi_2WO_6. (d) HRTEM image of the SCB1 composite.

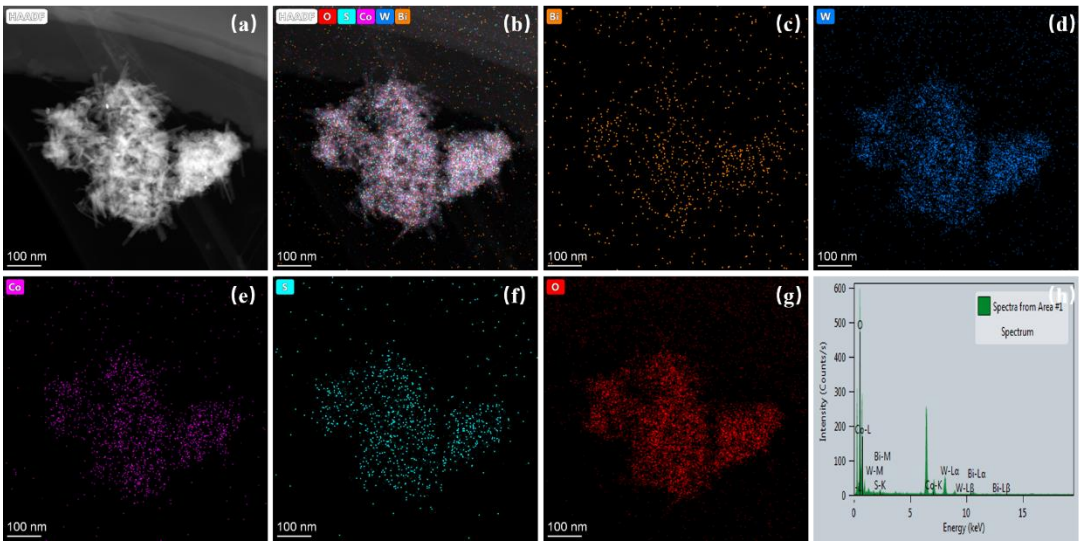

Fig. S3 (a–h) EDS mapping images of S-Co_3O_4/Bi_2WO_6.

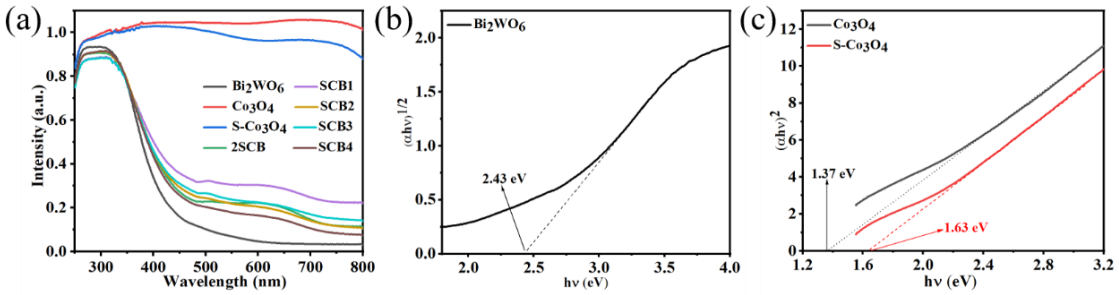

Fig. S4 (a) UV-Vis DRS absorption spectra; (b) plots of $(\alpha hv)^{1/2}$ versus hv for pure Bi_2WO_6; and (c) plots of $(\alpha hv)^2$ versus hv for pure Co_3O_4 and S-Co_3O_4.

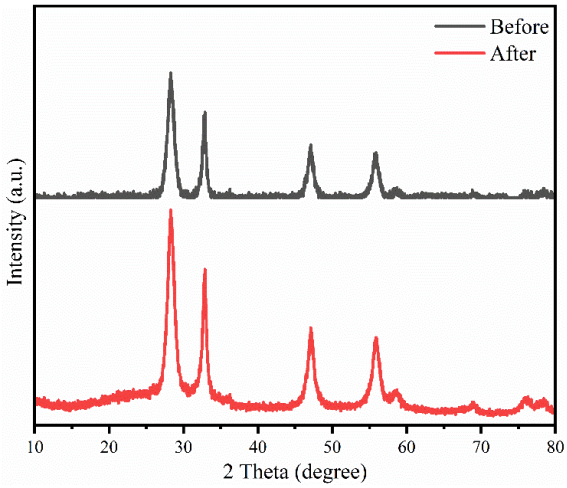

Fig. S5 XRD patterns of SCB1 material before and after the recycle experiment.

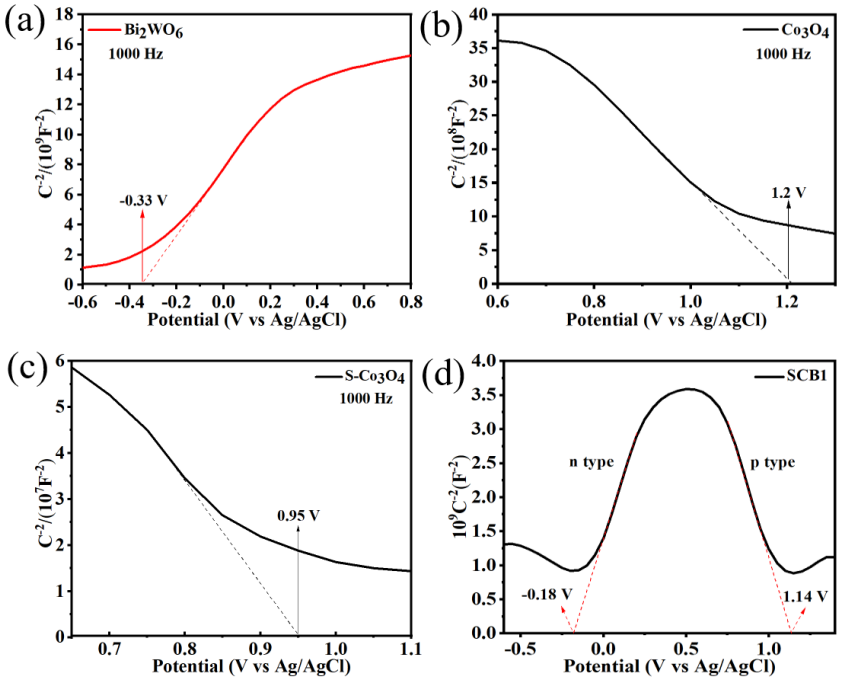

Fig. S6 M–S curves for (a) Bi_2WO_6; (b) Co_3O_4; (c) S-Co_3O_4; and (d) SCB1.

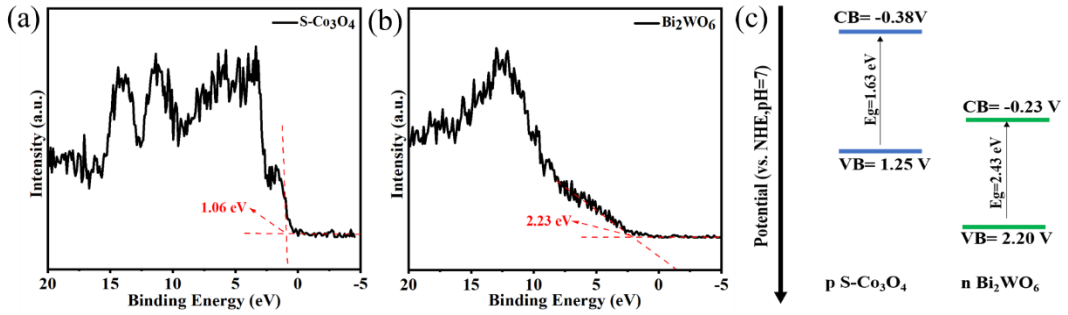

Fig. S7 The maximum energy edge of the VB for (a) S-Co_3O_4 and (b) Bi_2WO_6; and (c) a schematic illustration of the band structures of S-Co_3O_4 and Bi_2WO_6.

Table S1 Comparison of various catalysts for the PEC degradation of TC.

photoelectrocatalyst	Conc. (mg/L)	Light Soure (λ > 420 nm)	Degradation rate (%)	Reaction Time (min)	Refs
S-Co_3O_4/Bi_2WO_6	30	300W Xe lamp	87.4	60	This work
Bi/Bi_2WO_6	10	350W Xe lamp	90	80	[1]
BiOI/Bi_2WO_6	20	300W Xe lamp	84.8	120	[2]
CeO_2/Bi_2WO_6	10	300W Xe lamp	91.72	120	[3]
$ZnIn_2S_4$/CF/PVDF	4	300W Xe lamp	87	180	[4]
Fe_2O_3/Bi_2WO_6	20	150W Xe lamp	95	90	[5]
WO_3/$BiVO_4$	10	300W Xe lamp	90.6	180	[6]
ZnO/$BiVO_4$	20	300W Xe lamp	66.1	120	[7]
CuO-CSA	25	400Wmetal halide lamp	96	100	[8]
I, P -TiO2	10	400W Xe lamp	99.7	180	[9]
$NiFe_2O_4$/SnO_2 QDs	4	300 W Xe lamp	98	70	[10]
g-C_3N_4/ TiO_2	10	300 W Xe lamp	95	60	[11]
rGO/AgCl QDs	20	300 W Xe lamp	85.2	120	[12]

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