

Supplementary information

for

Boride-induced phase tuning of defect-introduced MoS₂ nanosheets to boost electrocatalytic hydrogen evolution reaction

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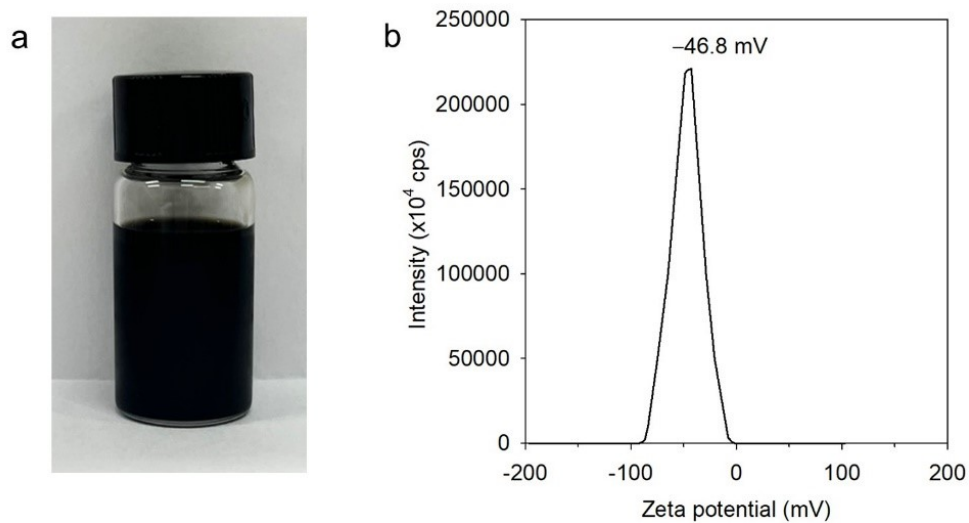


Fig. S1. (a) Photoimage of colloidal suspension and (b) zeta potential data of exfoliated MoS₂ nanosheets.

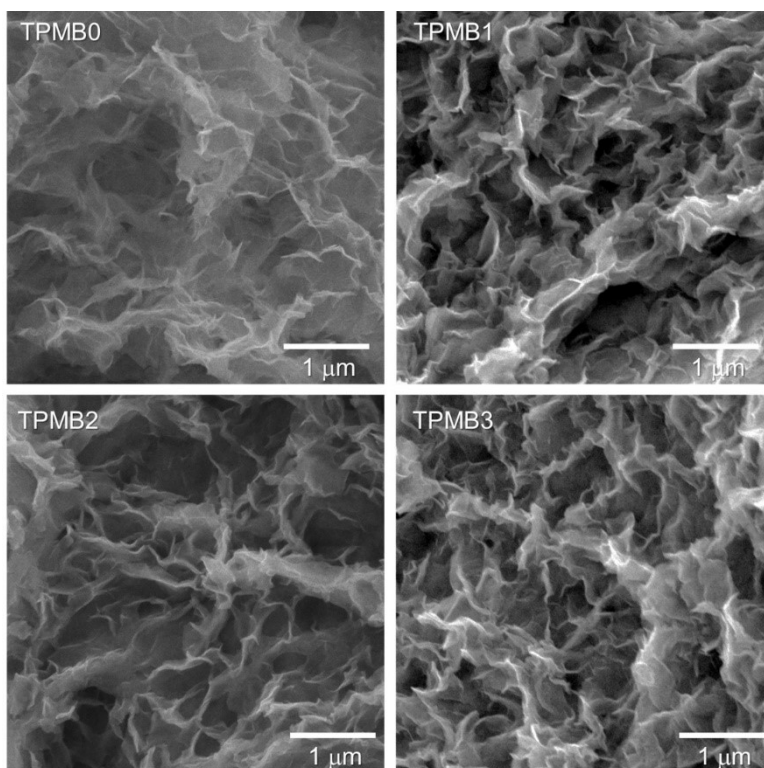


Fig. S2. Field emission-scanning electron microscopy (FE-SEM) images of TPMB materials.

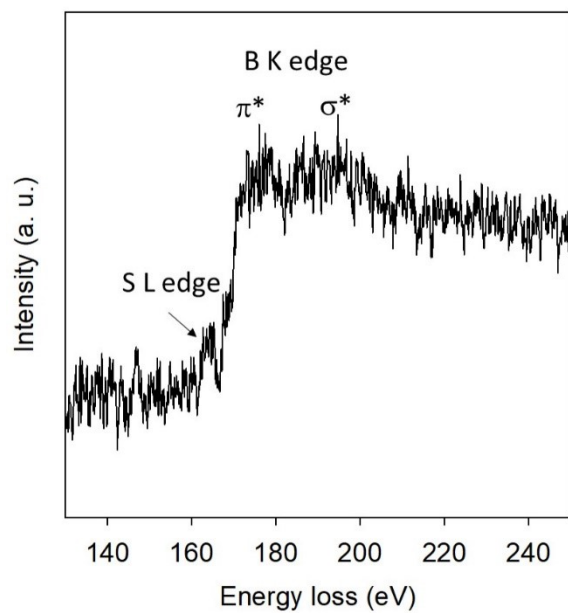


Fig. S3. Electron energy loss spectroscopy (EELS) data of TPMB3 material.

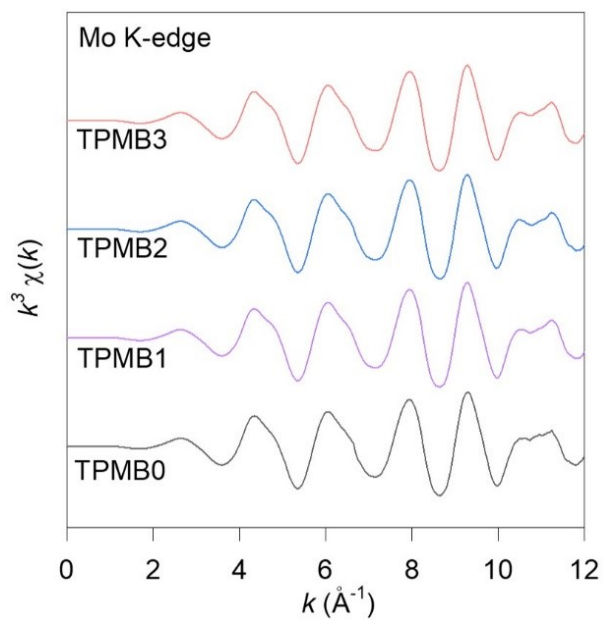


Fig. S4. k^3 -weighted Mo K-edge extended X-ray absorption fine structure (EXAFS) data of TPMB materials.

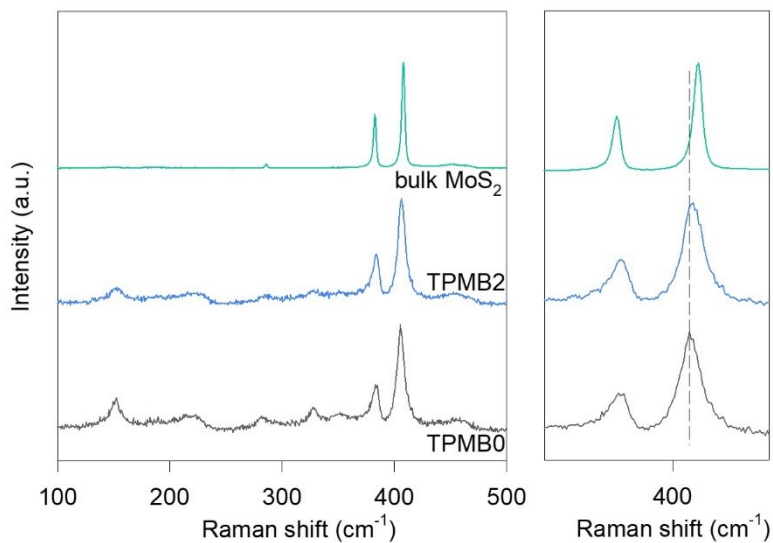


Fig. S5. Micro-Raman data of TPMB materials.

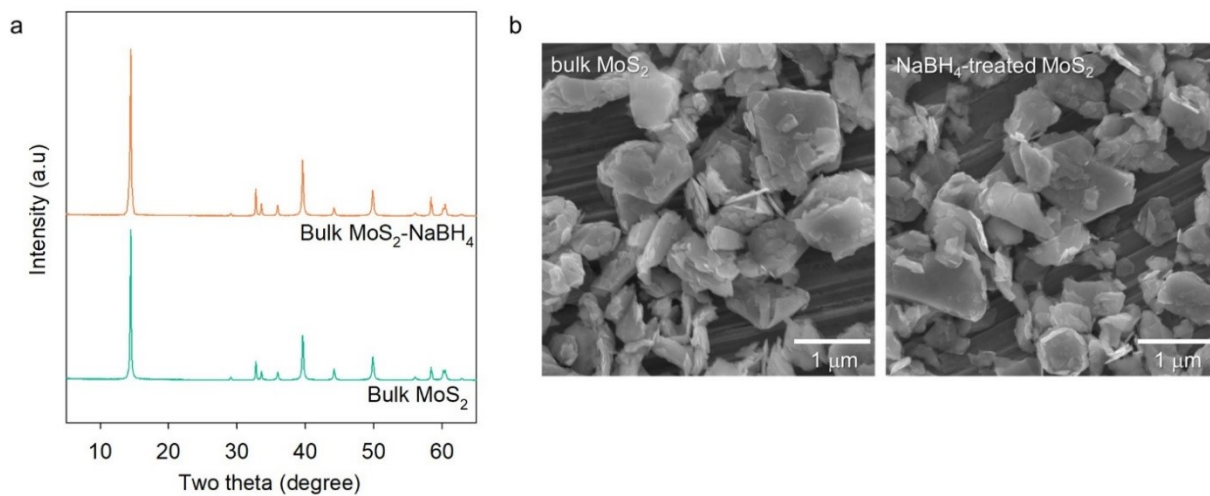


Fig. S6. (a) Powder X-ray diffraction (XRD) images and (b) FE-SEM images of NaBH_4 -treated bulk MoS_2 .

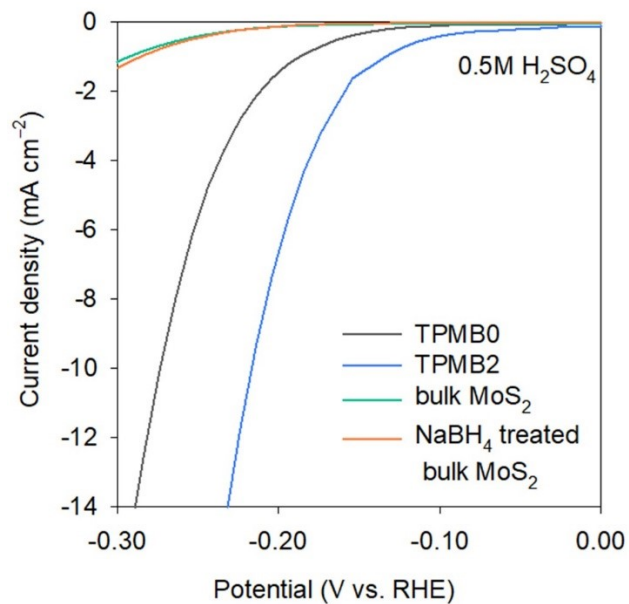


Fig. S7. Linear sweep voltammetry (LSV) curves of NaBH₄-treated bulk MoS₂.

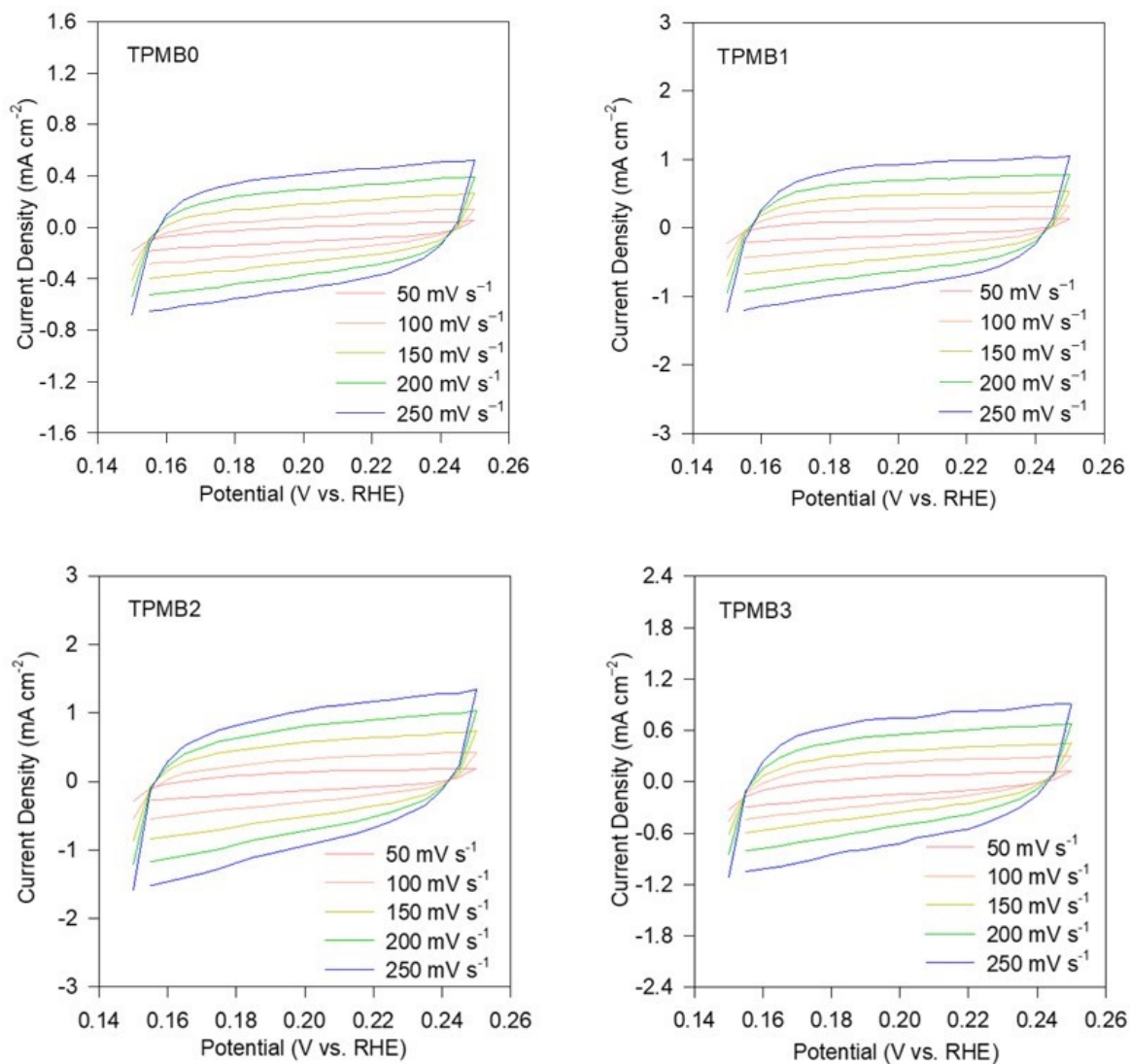


Fig. S8. Cyclic voltammetry (CV) curves measured at various scan rates of TPMB materials.

Table S1. Results of non-linear least-squares Mo K-edge EXAFS fitting analysis.

Material	Bonding pair	Coordination number	Bond distance (Å)	ΔE (eV)	σ^2 ($10^{-3} \times \text{Å}^2$)
TPMB0	Mo–S	6	2.406	–0.73	3.80
	Mo–Mo	2	2.867	1.09	9.74
	Mo–Mo	2	3.208	1.00	7.87
TPMB1	Mo–S	6	2.406	–0.47	3.67
	Mo–Mo	2	2.893	3.87	10.13
	Mo–Mo	2	3.183	1.22	7.74
TPMB2	Mo–S	6	2.406	–0.48	4.04
	Mo–Mo	2	2.891	2.14	6.24
	Mo–Mo	2	3.186	1.28	3.00
TPMB3	Mo–S	6	2.406	–0.40	3.53
	Mo–Mo	2	2.893	3.07	9.90
	Mo–Mo	2	3.186	1.99	6.83