Supporting Information

Self-limited Conversion of MoO_2 into ultramicro MoS_2 nanosheets on graphene/CNTs matrix for hydrogen evolution with excellent stability

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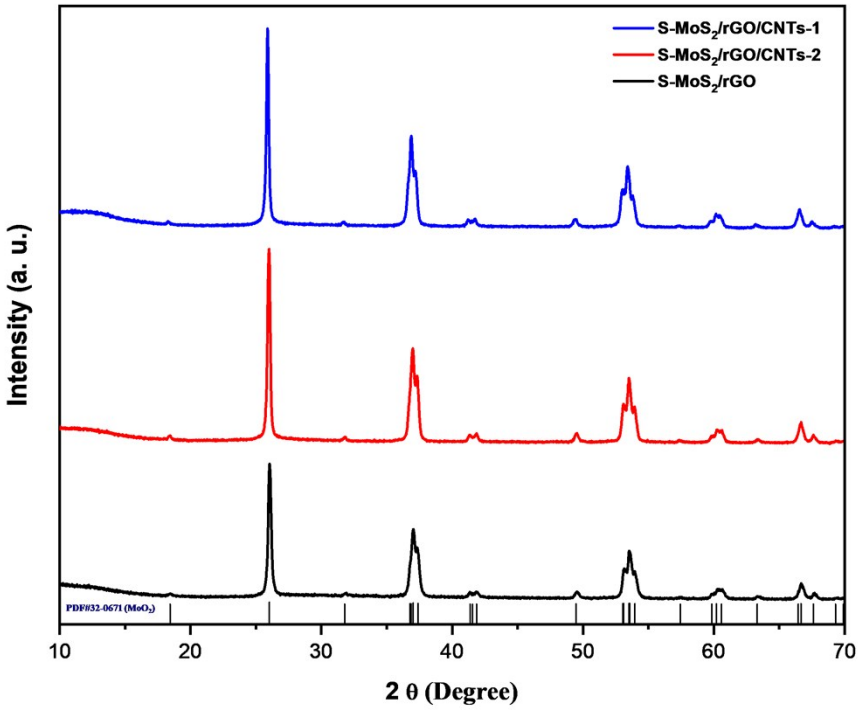

Figure S1. XRD patterns of the S-MoO_2/rGO/CNTs-1, -2 and S-MoO_2/rGO.

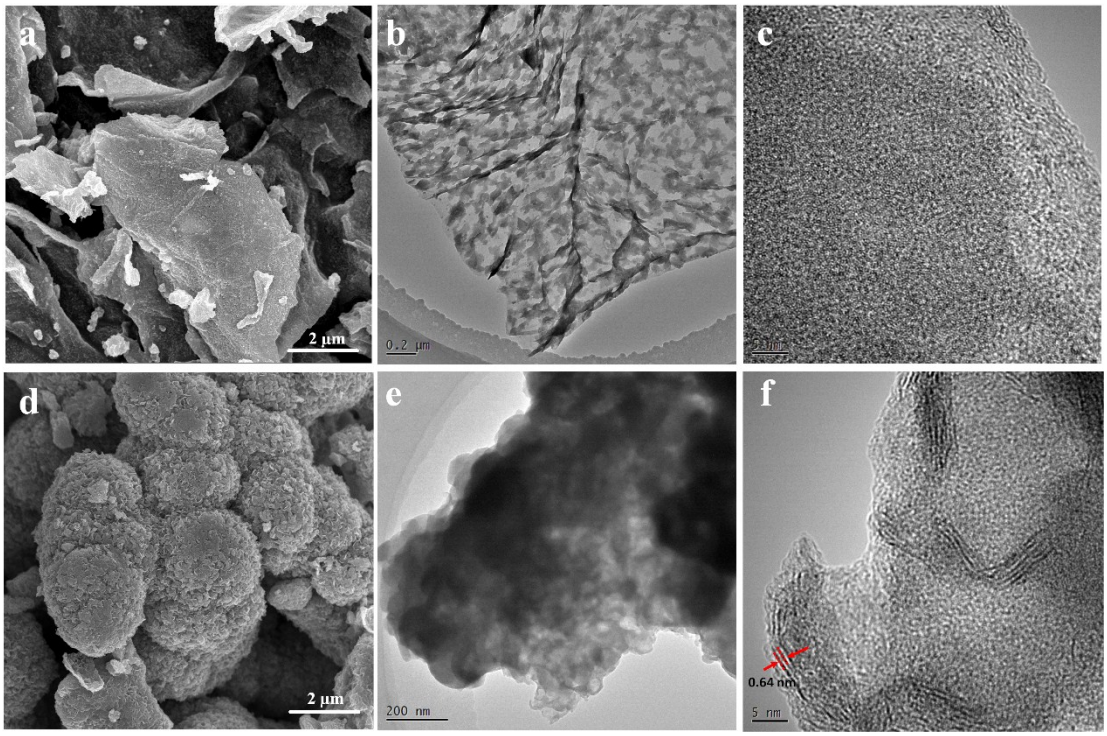

Figure S2. Morphological characterizations of the catalysts. (a) SEM and (b, c) TEM images of S-MoS_2/rGO. (d) SEM and (e, f) TEM images of bulk MoS_2.

Table S1. Textural properties of MoS_2-based materials.

Sample	S_{BET}[a] ($m^2\ g^{-1}$)	V_{totle}[b] ($cm^3\ g^{-1}$)	Pore diameter[d] (nm)
S-MoS_2/rGO/CNTs-1	44.1	0.489	3.82
S-MoS_2/rGO	25.1	0.237	3.82
MoS_2	6.1	0.085	17.44

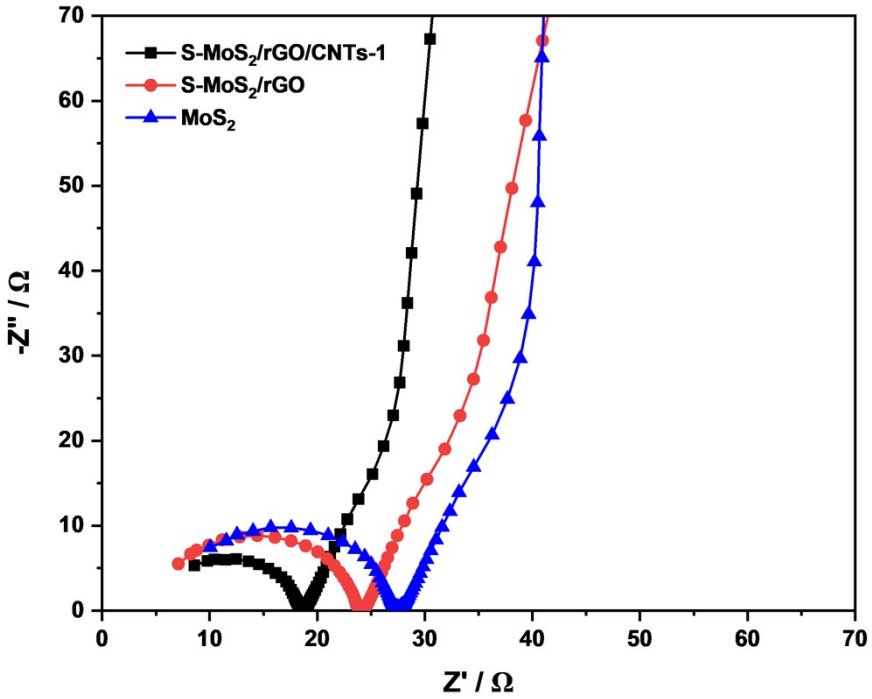

Figure S3. Nyquist plots of the catalysts at overpotential of 160 mV vs. RHE.

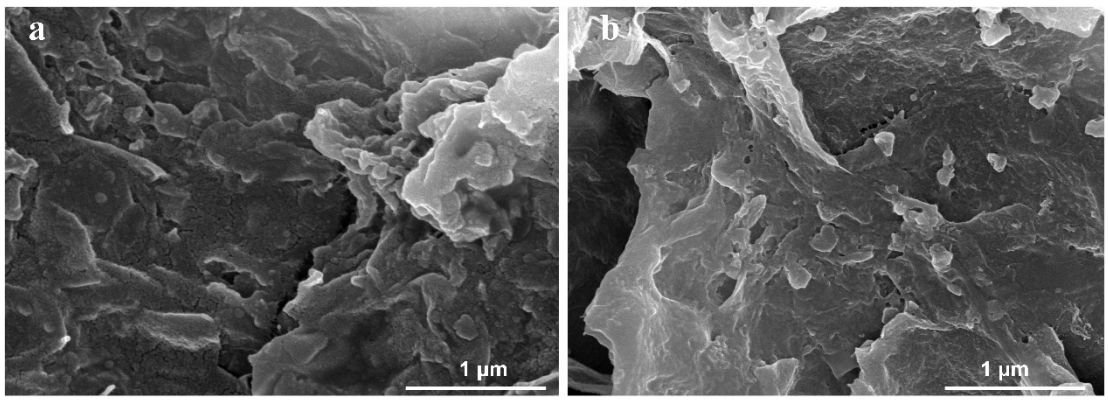

Figure S4. SEM images of S-MoS_2/rGO/CNTs-1 (a) before and (b) after stability test.

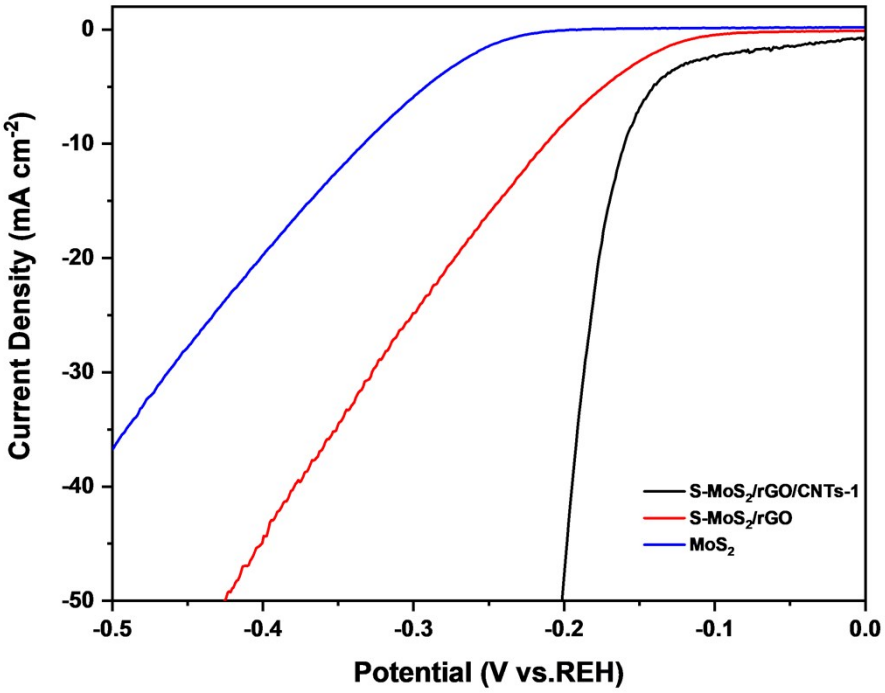

Figure S5. The LSV curves of the catalysts after long-term stability test.