Electronic Supplementary Information (ESI)

Towards Free-standing MoS_2 Nanosheet Electrocatalyst Supported and Enhanced by N-doped CNT-graphene Foam for Hydrogen Evolution Reaction

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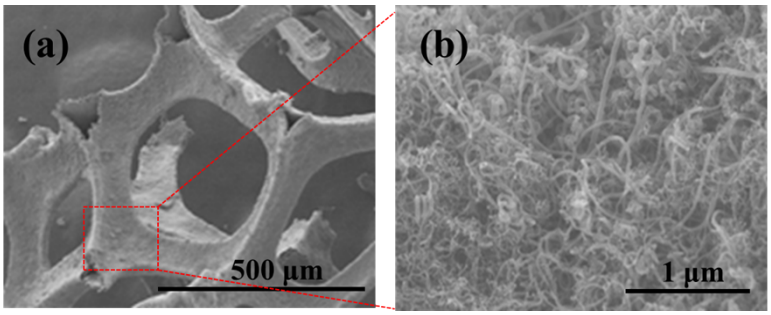

Fig. S1. The SEM images of N-CNT-G foam at low magnification (a) and at high magnification (b).

The N-CNT-G foam owns the same structures with the SEM image of MoS_2/N-CNT-G hybrid at low magnification (Fig. S1a). The morphology is similar to the SEM image of N-CNT-G/Ni foam at high magnification (Fig. S1b).

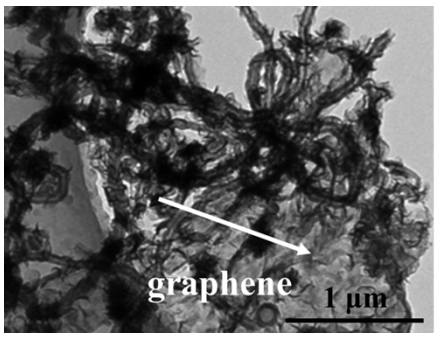

Fig. S2. The TEM image of the MoS_2/N-CNT-G.

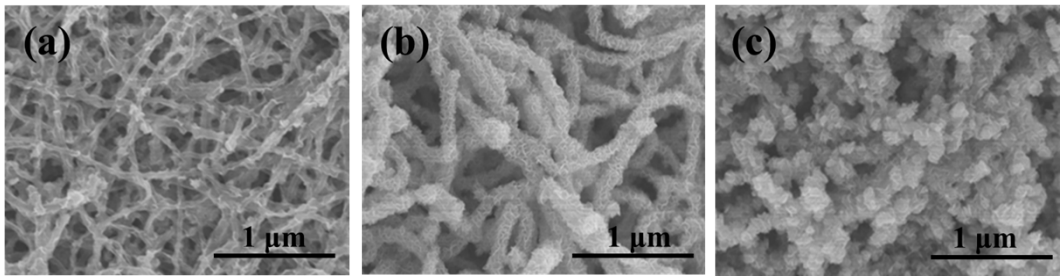

Fig. S3. The SEM images of MoS_2/N-CNT-G catalysts prepared from different mass ratios of N-CNT-G: $(NH_4)_2MoS_4$ (5:1, 1:6 and 1:10).

Table S1. XPS data of MoS_2/N-CNT-G synthesized from different initial N-CNT-G: (NH4)2MoS_4 mass ratios of 5:1, 1:3, 1:6 and 1:10.

Sample	C	O	Mo	S
5:1	94.73%	2.77%	0.71%	1.79%
1:3	83.77%	6.83%	2.69%	7.11%
1:10	76.74%	5.17%	5.20%	12.89%

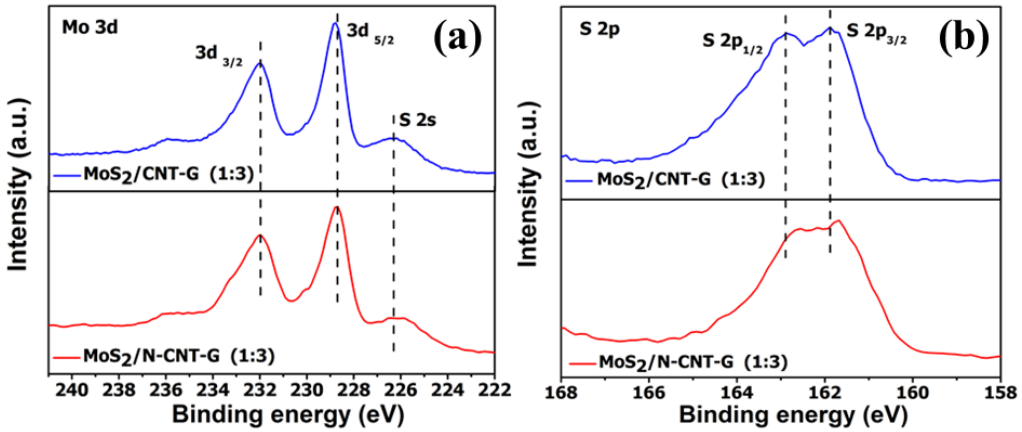

Fig. S4. XPS spectra of Mo 3d and S 2p in MoS_2/CNT-G (top) and MoS_2/N-CNT-G (bottom) hybrids.

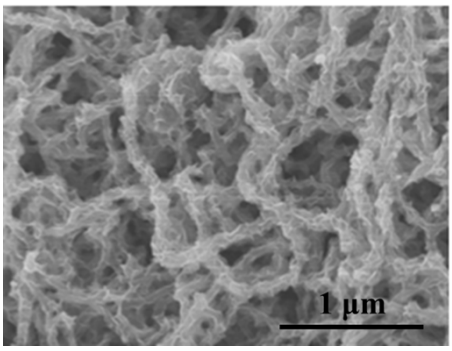

Fig. S5.The SEM image of the MoS_2/N-CNT-G after the electrochemical performance.