**Electronic Supporting Information**

**Nitrogen-doped porous carbon nanosheets strongly coupled with Mo2C nanoparticles for efficient electrocatalytic hydrogen evolution**

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**Fig. S1.** SEM images of (a) c-MoS2, (b) MoS2@PDA, (c) MoS2@NC and (d) Mo2C/NPC.



**Fig. S2.** TGA curve of the as-prepared Mo2C/NPC nanosheets from 100 to 700 ℃ under air gas flow with a temperature ramp of 10 ℃ min-1.

For the TGA curve, the initial weight gain below 350 ℃ is due to the gradual oxidation of Mo2C to MoO3, followed by a significant weight loss caused by the combustion of carbon.

The remaining weight of the sample after heating to 600 ℃ is about 62 wt.%. Therefore, the Mo2C content could be calculated from the following equation:

m (Mo2C) = 62 wt.%\*M(Mo2C)/2M(MoO3) = 62 wt.%\*204/288 ≈ 44 wt.%

**Fig. S3.** The calculation of ECSA for Mo2C/NPC.

Loading amount of the catalyst is 0.305 mg cm-2, we assume a standard value of 60 μF/cm2, Cdl of the catalyst is 102.4 mF cm-2.

C=Cdl/m=335 F/g

ECSA=C/(60 μF cm-2)=558 m2/g



**Fig. S4.** Chronoamperometric response at the potential of -0.166 V vs. the RHE.

**Tab. S1.** Comparison of the exchange current density (j0) in acidic media for Mo2C/NPC with other non-noble metal electrocatalysts.

|  |  |  |
| --- | --- | --- |
| Catalysts | j0 (μA cm-2) | Ref. |
| Mo2C/NPC | 37.4 | This work |
| nw-W4MoC | 29 | [[1](#_ENREF_1)] |
| Mo2C Nanotubes | 17 | [[2](#_ENREF_2)] |
| Mo2C/CNT | 14 | [[3](#_ENREF_3)] |
| Mo2C/GCSs | 12.5 | [[4](#_ENREF_4)] |
| β-Mo2C-20 | 33 | [[5](#_ENREF_5)] |
| Mo–Mo2C-0.077 | 19 | [[6](#_ENREF_6)] |
| MoCx | 23 | [[7](#_ENREF_7)] |

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