

Supporting information

Synergistically Coupling P-doped Mo₂C@N, P Dual-coped Carbon-nanoribbons as an Efficient Electrocatalyst for Hydrogen Evolution Reaction

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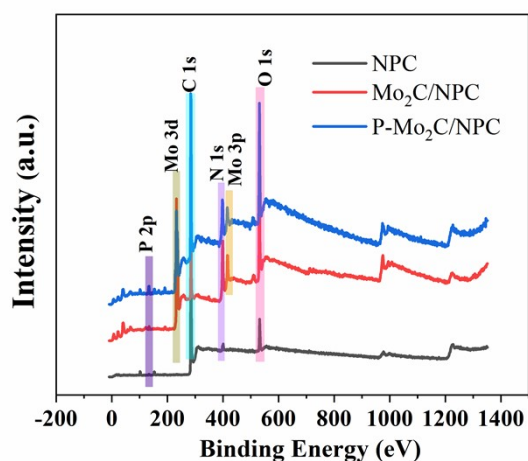


Fig. S1. XPS survey of NPC, Mo₂C/NPC and P-Mo₂C/NPC.

Table S1 Surface Elemental Composition Determined by XPS

Materials	N (at%)	P (at%)	C (at%)	O (at%)	Mo (at%)
P-Mo ₂ C@NPC	15.55	2.20	58.59	19.21	4.45
Mo ₂ C@NC	18.60	1.70	43.68	28.3	7.72
NPC	3.74	0.77	86.65	8.84	/

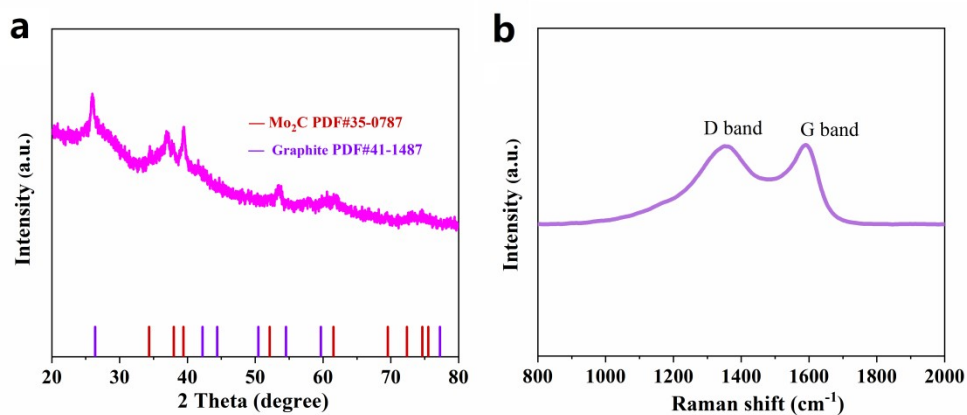


Fig. S2. (a) XRD pattern and (b) Raman spectrum of P-Mo₂C/NPCt.

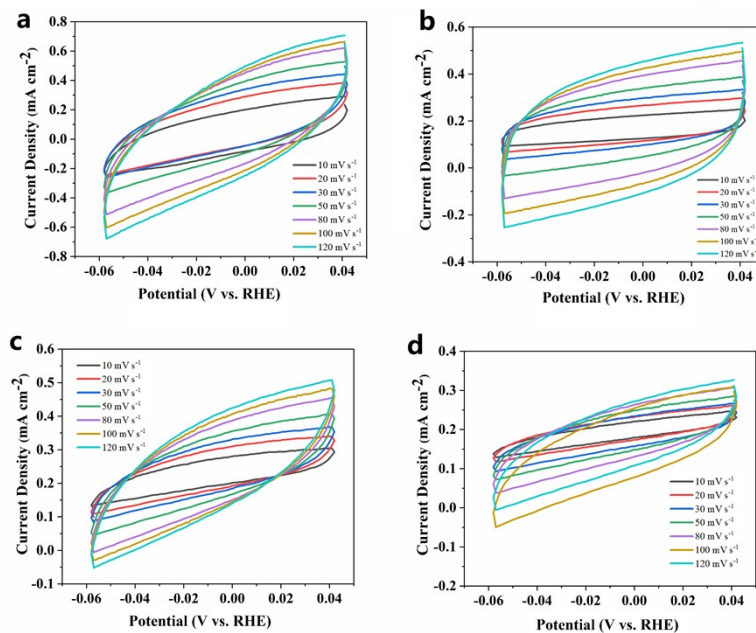


Fig. S3. CV plots of (a) P-Mo₂C/NPC, (b) P-Mo₂C/NPCt, (c) Mo₂C/NPC and (d) NPC in 0.5 M H₂SO₄ at a scan rate ranging from 10 mV s⁻¹ to 120 mV s⁻¹ within a potential of -0.04 V to 0.06 V (vs. RHE) for ECSA tests.

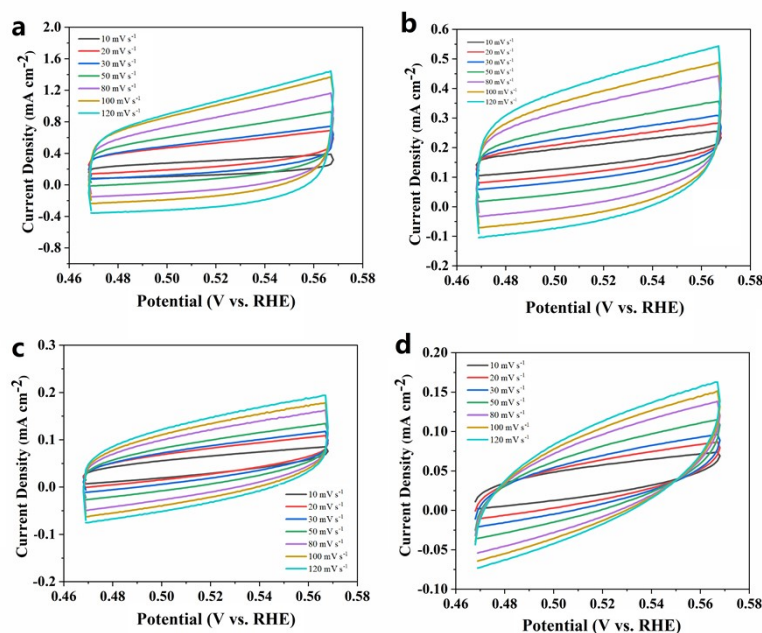


Fig. S4. CV plots of (a) P-Mo₂C/NPC, (b) P-Mo₂C/NPCt, (c) Mo₂C/NPC and (d) NPC in 1.0 M KOH at a scan rate ranging from 10 mV s⁻¹ to 120 mV s⁻¹ within a potential of 0.46 V to 0.58 V (vs. RHE) for ECSA tests.