

Supplementary Materials

# Facile Synthesis of MoP-RuP<sub>2</sub> with Abundant Interfaces to Boost Hydrogen Evolution Reactions in Alkaline Media

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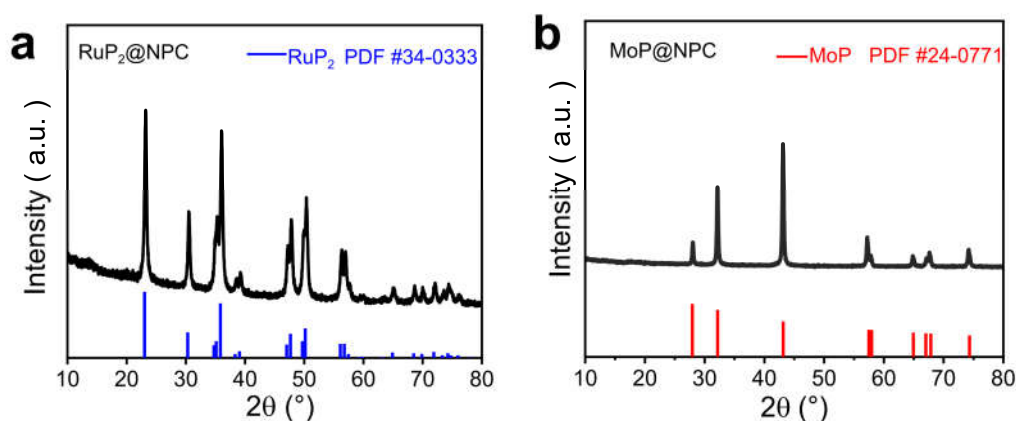


Figure S1. XRD patterns of RuP<sub>2</sub>@NPC (a) and MoP@NPC (b).

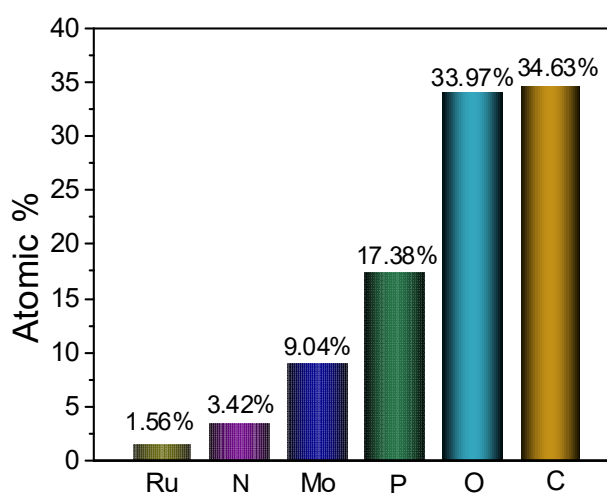
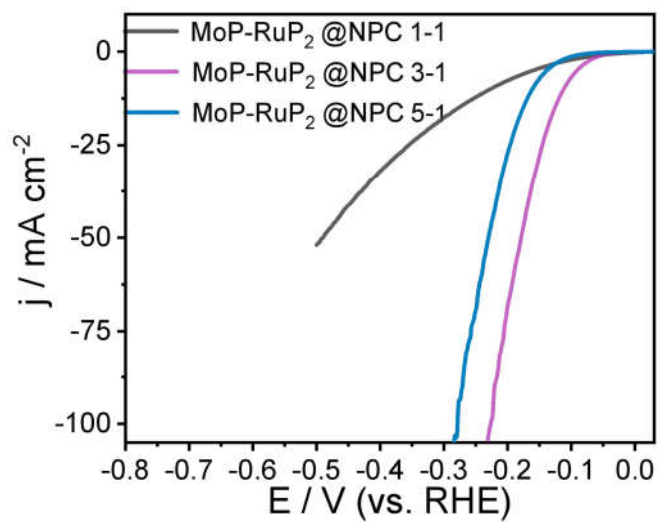
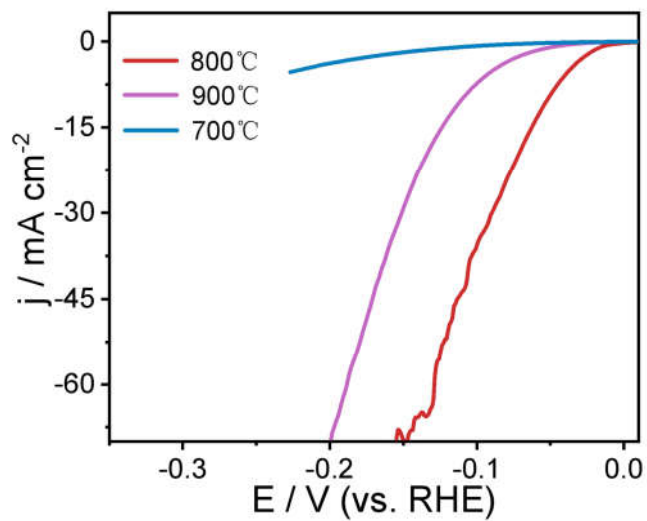


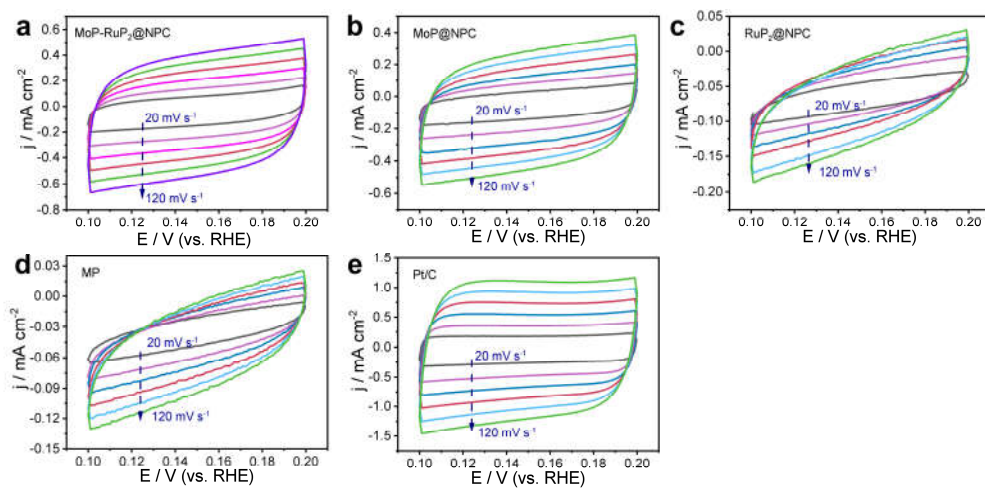
Figure S2. Atomic concentrations of MoP-RuP<sub>2</sub>@NPC in XPS (at%).



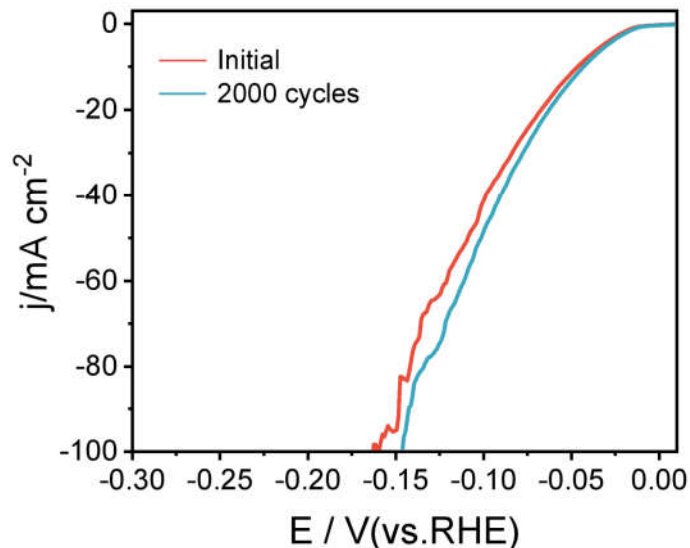
**Figure S3.** LSVs of MoP-RuP<sub>2</sub>@NPC with various different content for HER in 1 M KOH.



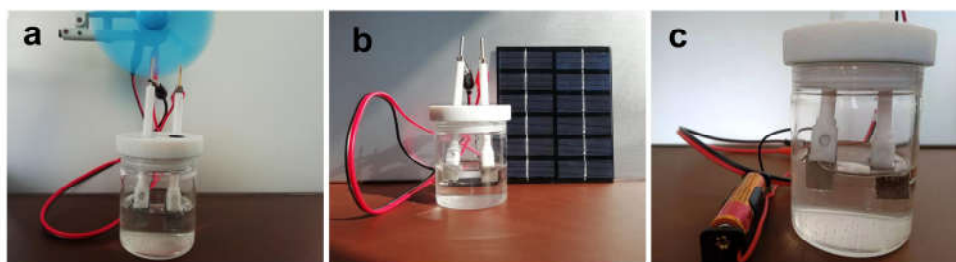
**Figure S4.** LSVs of MoP-RuP<sub>2</sub>@NPC with different temperatures for HER in 1 M KOH.



**Figure S5.** CV curves of MoP-RuP<sub>2</sub>@NPC (a), MoP@NPC (b), RuP<sub>2</sub>@NPC (c), MP (d) and Pt/C (e) at different scan rate in 1M KOH.



**Figure S6.** Stability test for MoP-RuP<sub>2</sub>@NPC via CV scanning for 2000 cycles in 1 M KOH for HER.



**Figure S7.** The diagram of the electrocatalytic overall water-splitting with the electric energy generated by wind (a), solar (b), battery (c).

**Table S1.** Comparison of the electrocatalytic performance toward HER in 1 M KOH.

Catalysts	Electrolyte	Overpotential@10 mAcm <sup>-1</sup> (mV)	Tafel Slope (mV dec <sup>-1</sup> )	Reference
MoP-RuP <sub>2</sub> /NPC	1M KOH	50	27.97	This work
Mo <sub>2</sub> C/W <sub>2</sub> C	1M KOH	132	76	1
Ni-S	1M KOH	58	81.6	2
Ni-Se-Cu	1M KOH	136	117.5	3
WS <sub>2</sub> /CoS <sub>2</sub> /CC	1M KOH	122	93	4
HEI	1M KOH	88.2	40.1	5
CoP nanoparticles	1M KOH	87	105	6
Ni-Fe-Sn	1M KOH	253	61.5	7
Ni-Co-P / NF	1M KOH	85	46	8
NF @ Ni <sub>3</sub> S <sub>2</sub> @ NCNTs	1M KOH	93.89	54	9
MoS <sub>2</sub>	1M KOH	117	38	10

## References

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