Supporting information (SI)

Polyaniline-wrapped $MnMoO_4$ as an active catalyst for hydrogen production by electrochemical water splitting

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Supporting Information SI-I

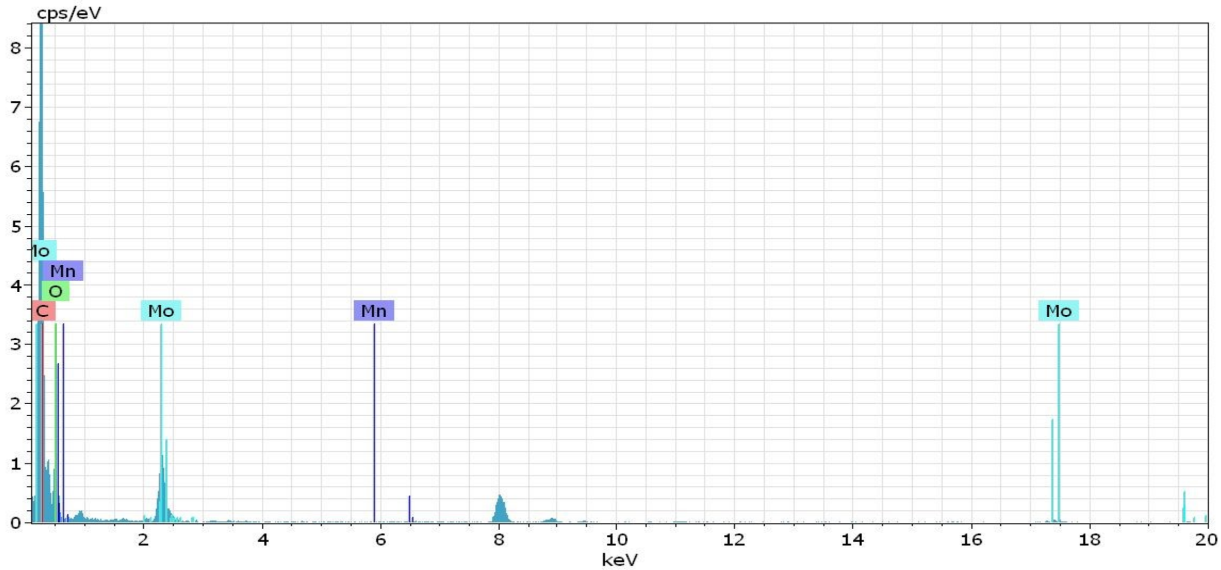

Fig. S1. EDAX of $MnMoO_4$/PANI (PM-10)

Supporting Information SI-II

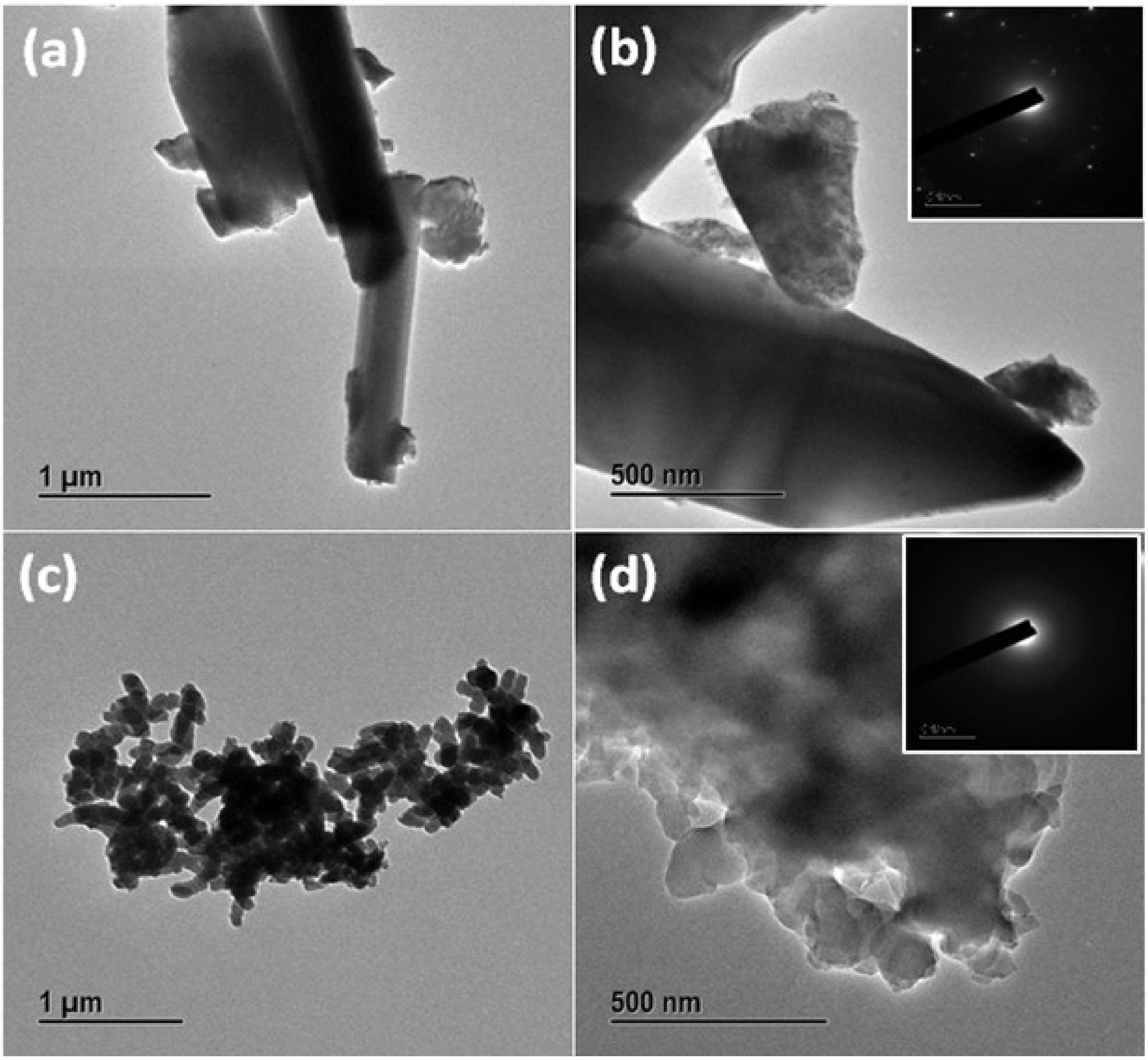

Fig. S2. TEM of pure $MnMoO_4$ (a,b) with SAED pattern (inset of Fig. b) and PANI (c,d) with SAED pattern (inset of Fig. d)

Supporting Information SI-III

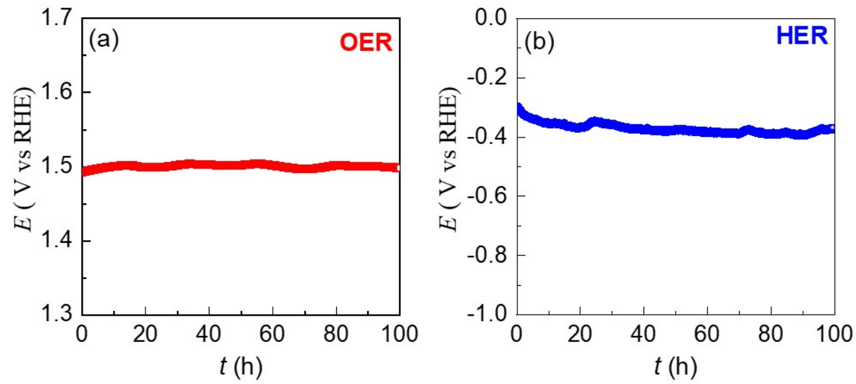

Fig. S3. Long term durability test: (a), (b) chronopotentiometry curves of PM-10 for OER and HER test at a constant current density of 30 $mAcm^{-2}$ and -10 $mAcm^{-2,}$ respectively.

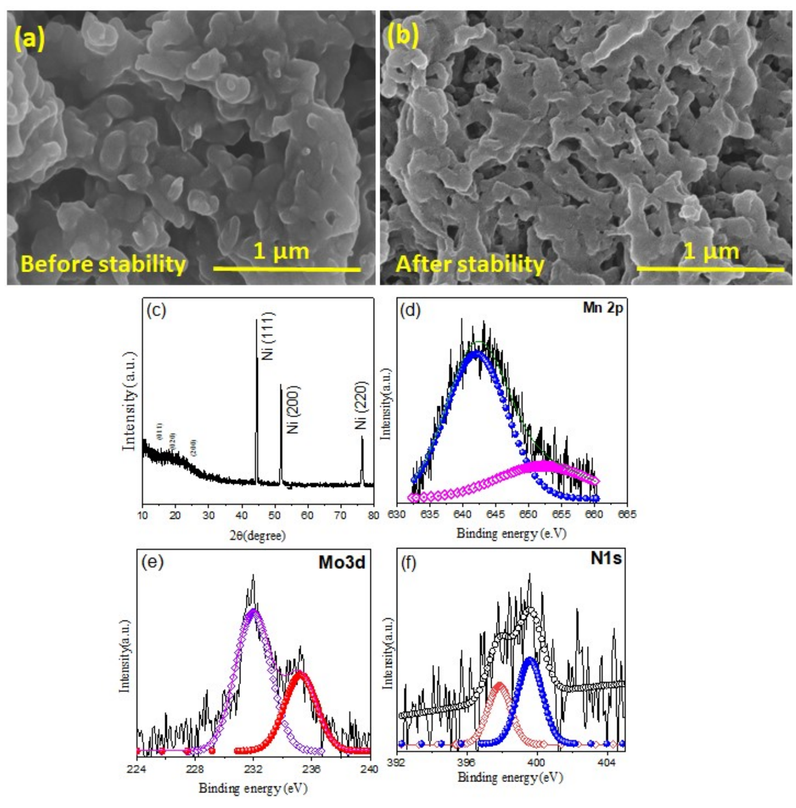

Fig. S4. SEM image's view of the PM-10 electrode (a) before and (b) after stability testing for 100 h in a 1M KOH solution. (c) XRD patterns, (d), (e) and (f) XPS spectra after stability.

Supporting Information SI-IV

Table S1 Comparison of OER, HER and overall water splitting (OWS) performances with reported catalysts.

Catalyst	OER	HER η_{10} (mV)	OWS Cell potential @10 mA/cm^2 (V)	References
$MnMoO_4$/PANI	410@30	155	1.65 V *vs* RHE	This work
Cu-$Co_3(PO_4)_2$	411@10		1.72	1
Co-Fe oxide	258@10	284	1.71	2
Fe (Ni/Co)	220@10	145	1.65	3
$Mn_{1.5}Co_{1.5}(PO_4)$2.3H2	254@10	121	1.54	4
MoS_2-NiS_2/NGF	370@10	172	1.64	5
Ni-Fe-P	271@10	182	1.68	6
FeP/$Co_3(PO_4)_2$	237@10	85	1.61	7
$RuTe_2$	275@10	34	1.57	8
1D-CoS	280@10	159	1.75	9
NC-PB@CNT	270@50	152	1.66 @50	10
Co $(OH)_2$@NCNTs	270@10	170	1.72	11

1. Electronic modulation of cobalt phosphide nanosheet arrays via copper doping for highly efficient neutral-pH overall water splitting

2. Initiating an efficient electrocatalyst for water splitting via valence configuration of cobalt-iron oxide

3.Facile electrosynthesis of Fe (Ni/Co) hydroxyphosphate as a bifunctional electrocatalyst for efficient water splitting

4. Mn-Co bimetallic phosphate on electrodeposited PANI nanowires with composition modulated structural morphology for efficient electrocatalytic water splitting

5.0D/3D MoS2-NiS2/N-doped graphene foam composite for efficient overall water splitting

6.Porous structured Ni–Fe–P nanocubes derived from a prussian blue analogue as an electrocatalyst for efficient overall water splitting

7 Porous Mn-Doped FeP/Co3$(PO_4)_2$ nanosheets as efficient electrocatalysts for overall water splitting in a wide pH range

8. Crystallized $RuTe_2$ as unexpected bifunctional catalyst for overall water splitting

9. Bimetallic Ni-Co@hexacyano nano-frameworks anchored on carbon nanotubes for highly efficient overall water splitting and urea decontamination

10. Bimetallic Ni-Co@hexacyano nano-frameworks anchored on carbon nanotubes for highly efficient overall water splitting and urea decontamination

11. P. Guo, J. Wu, X.B. Li, J. Luo, W.M. Lau, H. Liu, X.L. Sun, L.M. Liu, A highly stable bifunctional catalyst based on 3D $Co(OH)_2$@NCNTs@NF towards overall water-splitting, Nano Energy. 47 (2018) 96–104.