Supporting Information

Efficient $MMoO_4$ (M = Co, Ni) Carbon Cloth Electrodes for Water Oxidation

Jiangli Meng,†[a] Jiaqi Fu,†[a] Xiaoxuan Yang,[a] Meijie Wei,[a] Song Liang,[b] Hong-Ying Zang,*[a] Huaqiao Tan,[a] Yonghui Wang,*[a] and Yangguang Li*[a]

[a]*Key Lab of Polyoxometalate, Science of Ministry of Education, Key Laboratory of Nanobiosensing and Nanobioanalysis at Universities of Jilin Province, Institute of Functional Material Chemistry, Faculty of Chemistry, Northeast Normal University, Changchun, 130024, Jilin, P. R. China. E-mail: zanghy100@nenu.edu.cn; wangyh319@nenu.edu.cn; liyg658@nenu.edu.cn. Fax: +86 0431-85684009*

[b]*Key Laboratory of Bionic Engineering Ministry of Education, Jilin university, No. 5988 Renmin Street, Changchun, China*

Table of Contents

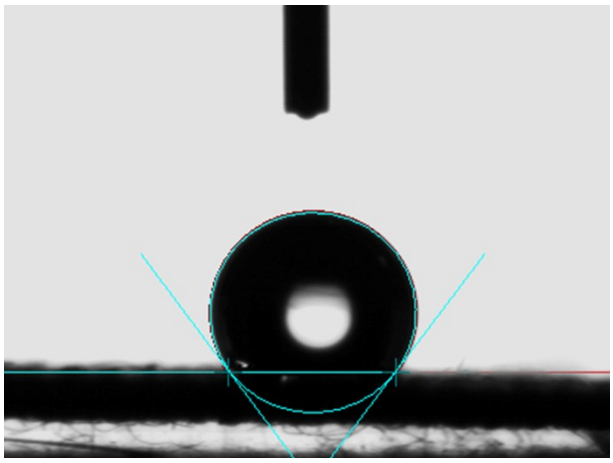

Figure S1 Contact angle measurement on the electrode of bare carbon cloth.

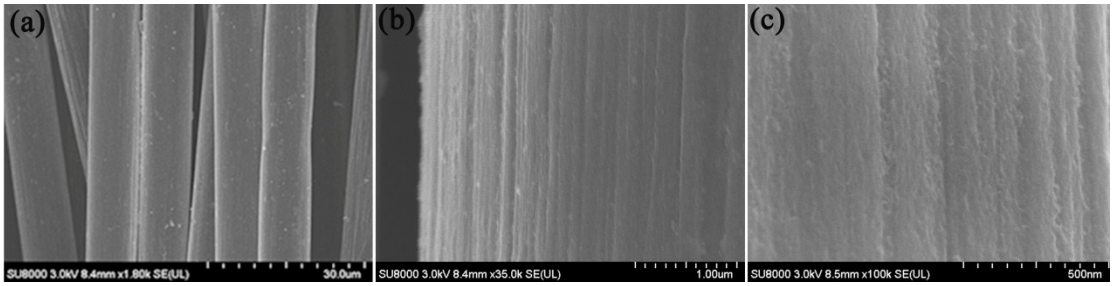

Figure S2 Low- and high-magnification SEM images of bare carbon cloth.

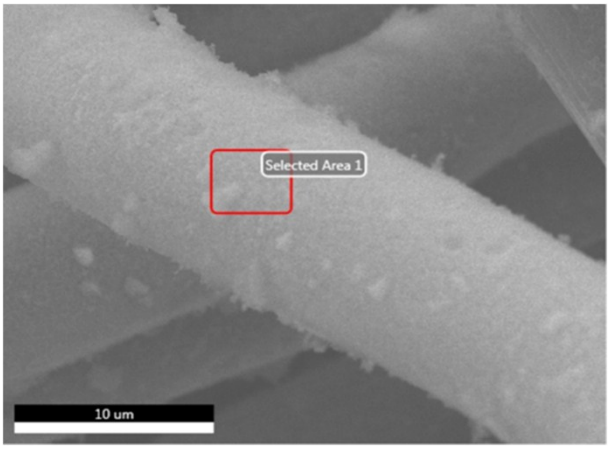

Figure S3 SEM image of $CoMoO_4$-CC.

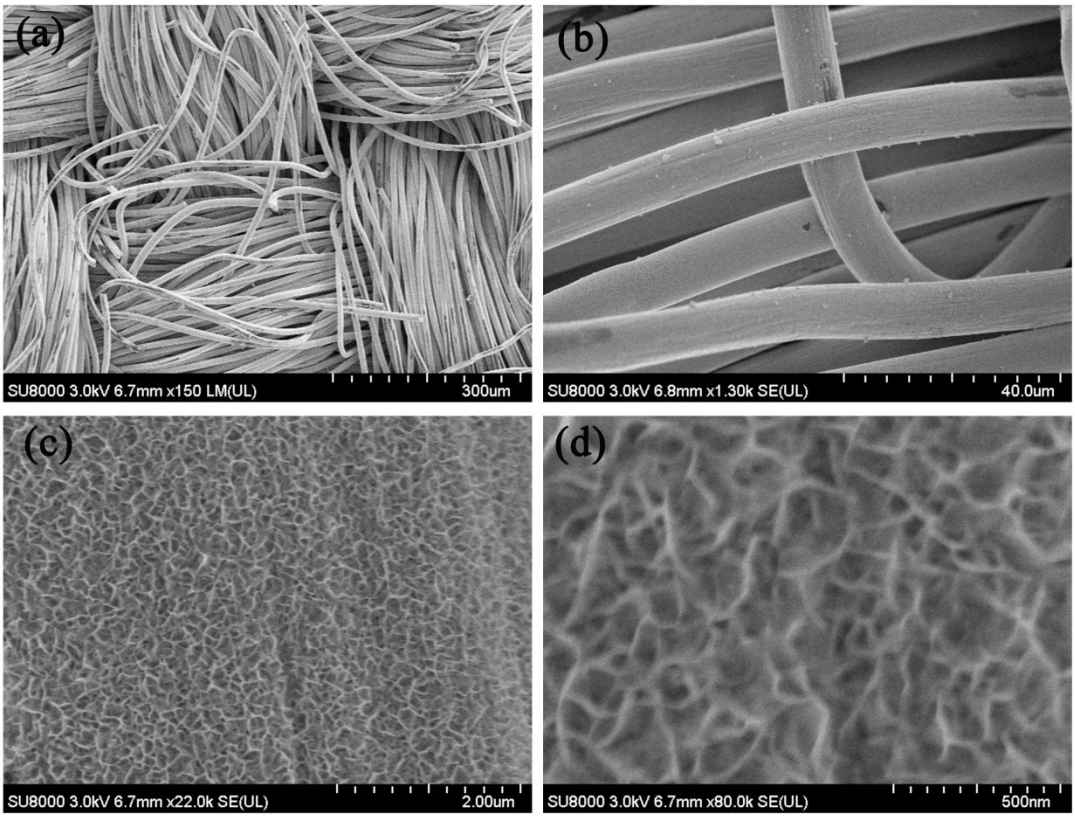

Figure S4 Low- and high-magnification SEM images of $NiMoO_4$-CC.

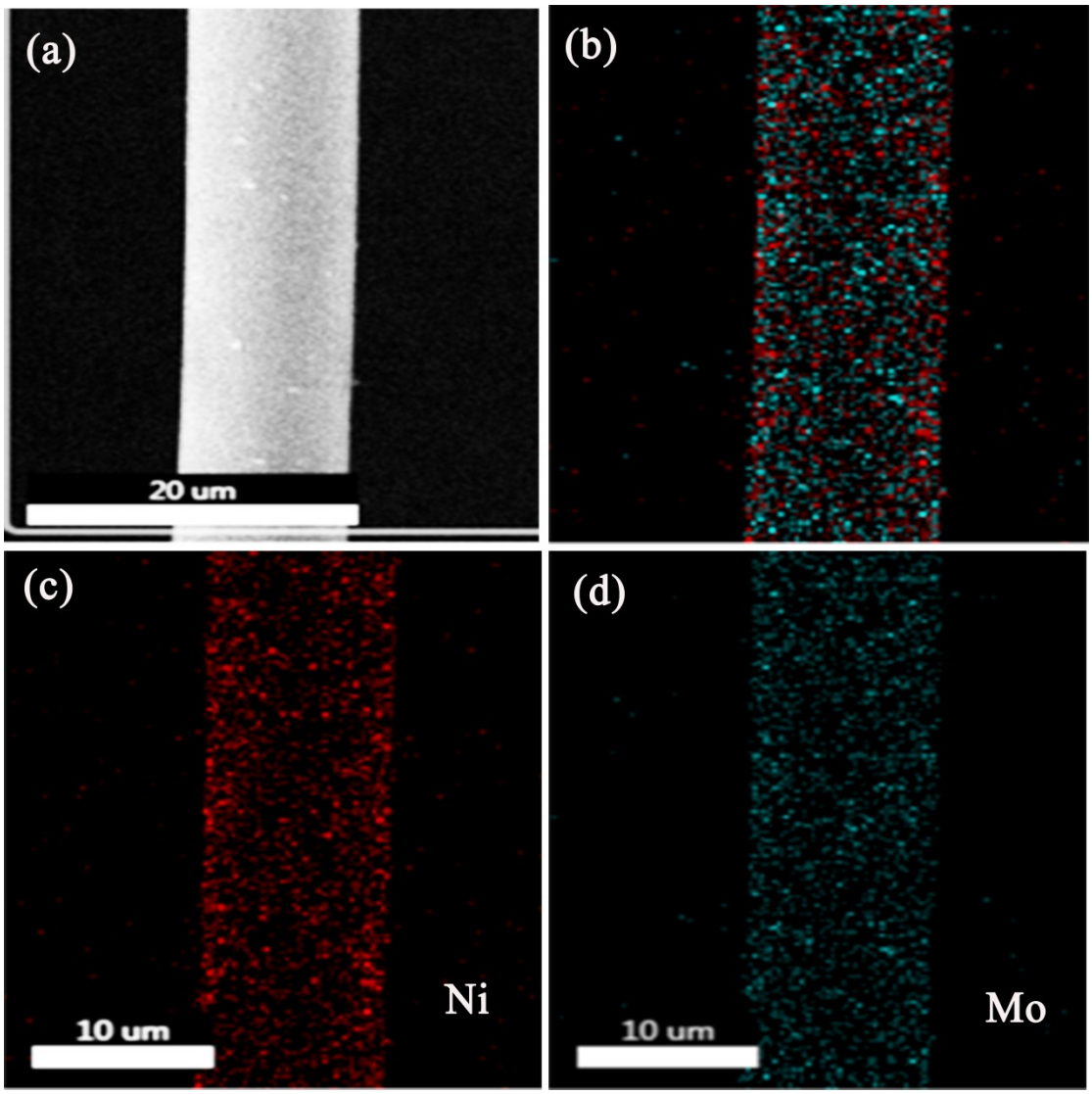

Figure S5 SEM-EDX elemental maps of Mo and Ni for $NiMoO_4$-CC.

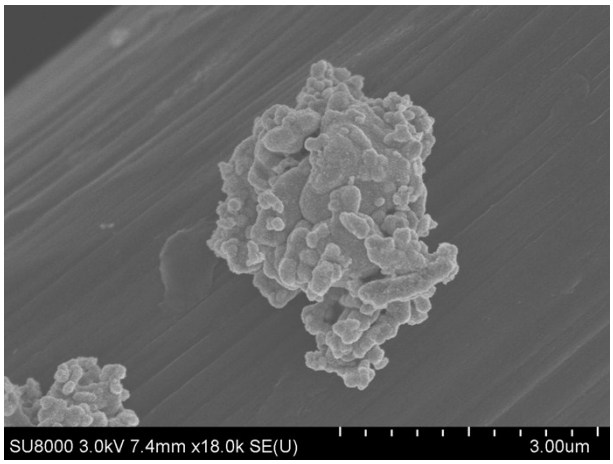

Figure S6 SEM image IrO_2-CC[a].

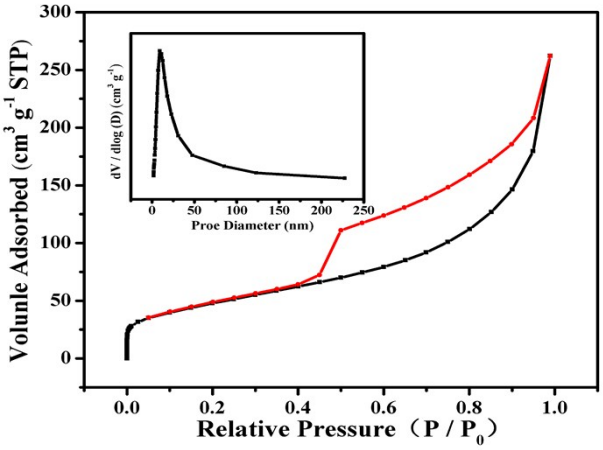

Figure S7 Nitrogen adsorption–desorption isotherms of as-synthesized $NiMoO_4$ nanosheets scratched from the carbon fiber.

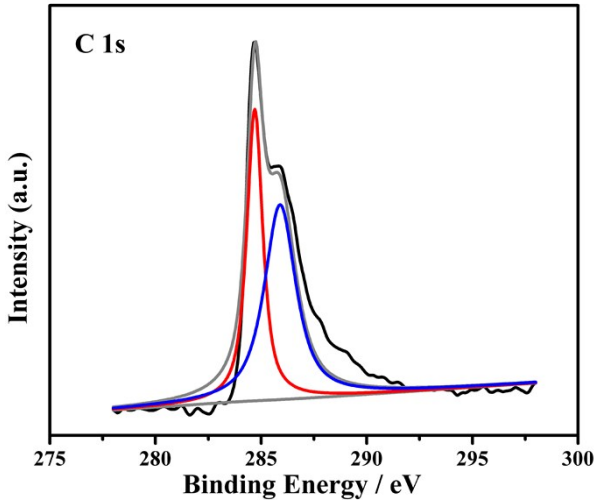

Figure S8 C_{1s} core-level XPS of $CoMoO_4$-CC.

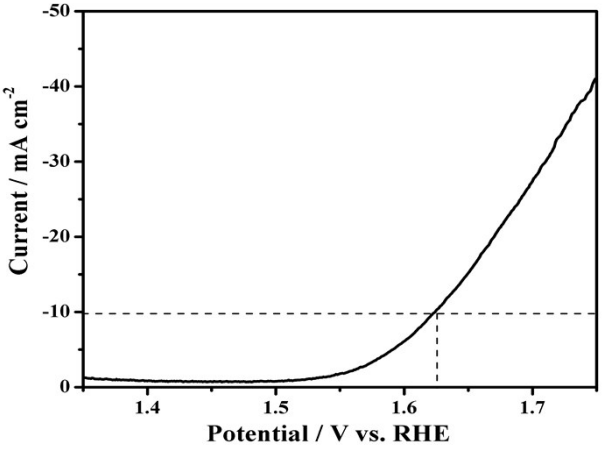

Figure S9 Polarization curve of $CoMoO_4$ powder sample on a 3 mm glassy carbon electrode.

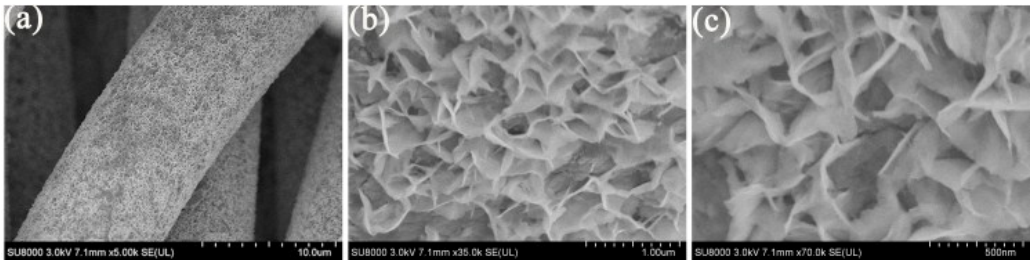

Figure S10 Low- and high-magnification SEM images of $CoMoO_4$-CC after stability tests.

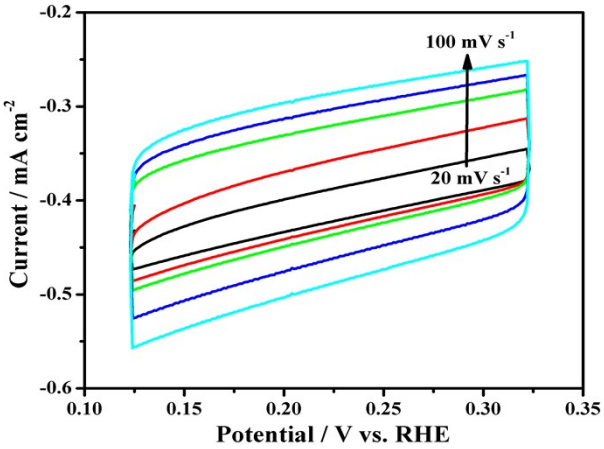

Figure S11 Electrochemical cyclic voltammetry curves of $NiMoO_4$-CC at different potential scanning rates. The selected potential range is 0.12 - 0.32 V *vs*. RHE where no faradic current was observed.

Table S1 Comparisons of OER performance for $CoMoO_4$-CC with other non-noble metal OER electrocatalysts in alkaline media.

Catalyst	Electrolyte	Tafel slop ($mV\ dec^{-1}$)	η_{10} (mV)	Reference
$CoMoO_4$-CC	**1.0 M KOH**	**94**	**290**	**This work**
$NiMoO_4$-CC	1.0 M KOH	116	353	This work
IrO_2-CC[a]	1.0 M KOH	72	354	This work
Co_3O_4-carbon nanocomposites	1.0 M KOH	47	346	***Nano Energy***, 2017, 33, 445-452
Mn-Co oxyphosphide	1.0 M KOH	52	370	***Angew. Chem. Int. Ed.***, 2017, 129, 2426-2429
rGO@$CoNiO_x$	1.0 M KOH	42	280	***Adv. Funct. Mater.***, 2017, 27, 1606325-1606334
$CoNi(OH)_x$ nanotubes	1.0 M KOH	77	280	***Adv. Energy Mater.***, 2016, *6*, 1501661-1501667
NiCo LDH	1.0 M KOH	40	367	***Nano Lett.***, 2015, 15, 1421-1427
Co_3ZnC/Co@CN	1.0 M KOH	81	366	***J. Mater. Chem. A***, 2016, 4, 9204-9212
CoP hollow polyhedron	1.0 M KOH	57	400	***ACS Appl. Mater.Inter.***, 2016, 8, 2158-2165
Ni/Mo_2C-PC	1.0 M KOH	-	368	***Chem. Sci.***, 2017, 8, 968-973
Co-P film	1.0 M KOH	47	345	***Angew. Chem. Int. Ed.***, 2015, 54, 6251-6254
$NiCo_2O_4$ core-shell nanowire	1.0 M NaOH	63.1	320	***Nano Energy***, 2015, 11, 333-340
$CoMoO_4$	1.0 M KOH	56	312	***Chem. Commun.***, 2015, 51, 14361-14364
NiD-PCC	1.0 M KOH	98	360	***Energy Environ. Sci.***, 2016, 9, 3411-3416
exfoliated NiFe LDH	1.0 M KOH	40	300	***Nat. Commun.***, 2014, 5, 4477-4485
CoMn LDH	1.0 M KOH	43	324	***J. Am. Chem. Soc.***, 2014, 136, 16481-16484
$Co_{2.25}Cr_{0.75}O_4$	1.0 M NaOH	60 ± 3	350	***ACS Catal.***, 2017, 7, 443-451
Co-C_3N_4/CNT	1.0 M KOH	68.4	380	***J. Am. Chem. Soc.***, 2017, 139, 3336-3339
FeO_x/CFC	1.0 M KOH	93	414	***J. Mater. Chem. A***, 2016, 4, 6048-6055

Movie S1 This movie shows oxygen evolution on $CoMoO_4$-CC electrodes in 1.0 M KOH.