Supporting Information

2D MOF-Derived Porous NiCoSe Nanosheet Arrays on Ni Foam for Overall Water Splitting

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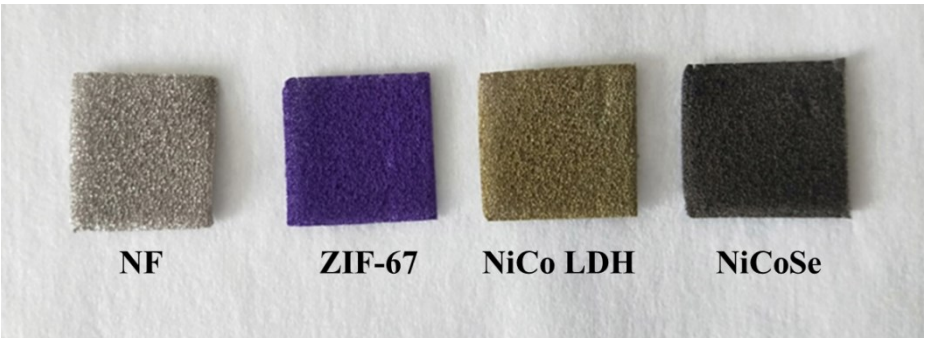

Fig. S1 The photographic images of Ni foam, ZIF-67, NiCo LDH, NiCoSe.

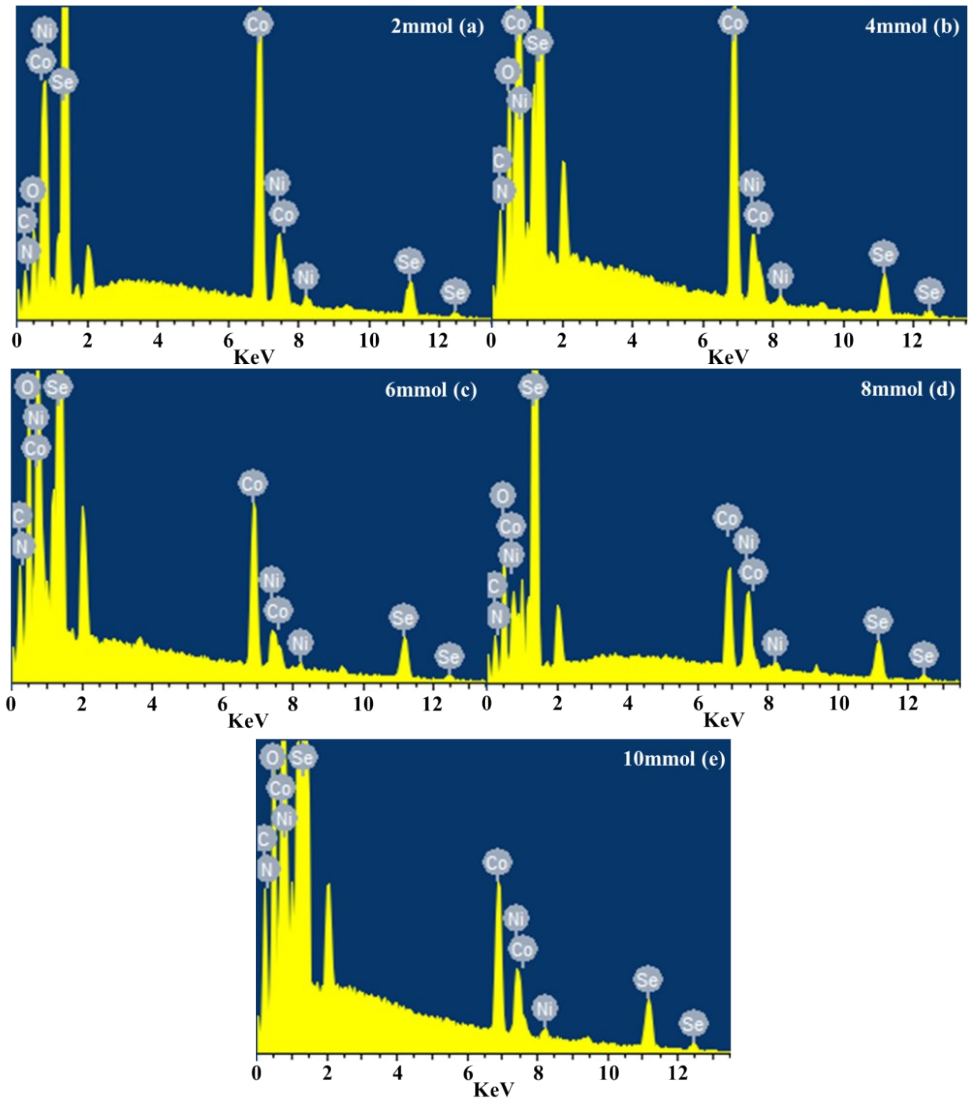

Fig.S2EDAX spectra of (a) NiCoSe (2mmol), (b) NiCoSe (4mmol), (c) NiCoSe (6mmol), (d) NiCoSe (8mmol), (e) NiCoSe (10mmol).

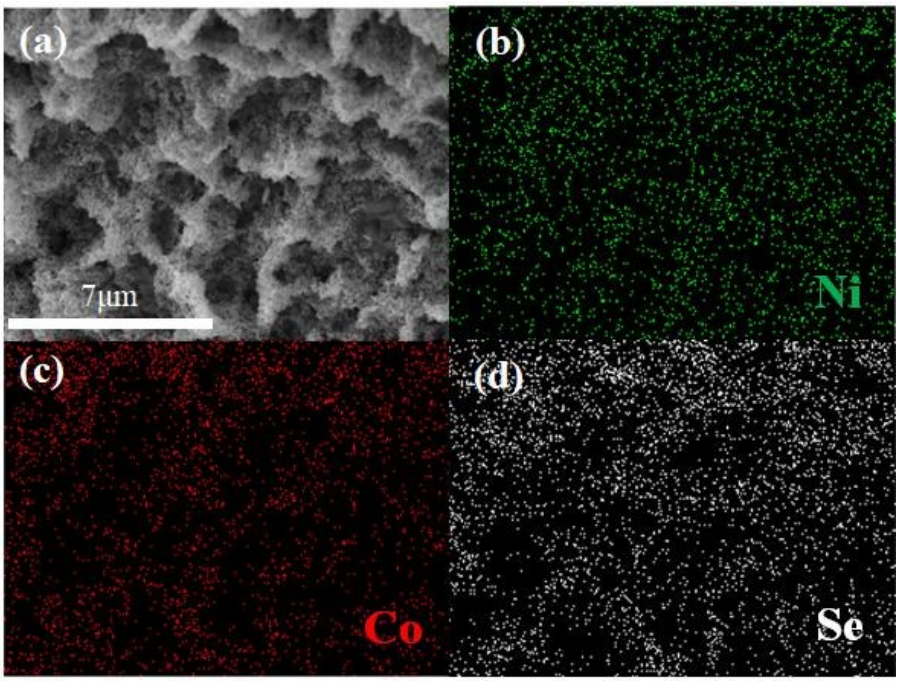

Fig. S3 (a) FESEM image of NiCoSe (8 mmol) and the corresponding elemental mappings of (b) Ni, (c) Co, (d) Se elements for NiCoSe (8 mmol).

Catalyst	Loading (mg cm^{-2})	η (mV)	J (mA cm^{-2})	Reference
Ni_3Se_2 nanoforest/NF	8.87	203	10	[1]
$CoNi_2Se_4$ nanoflake film	4.7	220	10	[2]
Porous $NiSe_2$ nanosheets	~0.46	184	10	[3]
$NiSe_2$ nanocrystals	1	540	10	[4]
Cactuslike Ni_3Se_4	2.45	206	10	[5]
$Co_{0.85}Se$/NiFe-LDH/graphene	4.0	260	10	[6]
MoSe-NiSe	0.285	210	10	[7]
$Co_2B/CoSe_2$	0.4	300	10	[8]
MoSe2	0.212	174	10	[9]
CC/CNTs@$CoS_{0.74}Se_{0.52}$	1.0	225	10	[10]
NC-$Co_{0.85}Se$		210	30	[11]
NiCoSe@NF	4.7	170	10	This work

Table S1 Comparison of the HER activities of the NiCoSe and other recently reported high-performance HER catalysts in 1.0 M KOH electrolyte.

Catalyst	Loading (mg cm^{-2})	η (mV)	J (mA cm^{-2})	Reference
coral-like CoSe	~0.28	295	10	[12]
$Co_{0.13}Ni_{0.87}Se_2$/Ti	1.67	320	100	[13]
Ni_3Se_2/CF	3.0	340	50	[14]
$Co_{0.85}Se$@NC	0.4	320	10	[15]
$(Ni,Co)_{0.85}Se$	~1.5	287	20	[16]
CC/CNTs@$CoS_{0.74}Se_{0.52}$	1.0	285	10	[10]
Ni_3Se_2 films		310	10	[17]
Mo-Ni-Se@NF		397	100	[18]
NiCoSe@NF	4.7	278	10	This work

Table S2 Comparison of the OER activities of the NiCoSe and other recently reported high-performance OER catalysts in 1.0 M KOH electrolyte.

Catalyst	Voltage (V)	J (mA cm^{-2})	Reference
NiSe	1.63	10	[19]
Ni_3Se_2 nanoforest/NF	1.61	10	[1]
Ni_3Se_2/CF	1.65	10	[14]
Co-doped $NiSe_2/Ni_3Se_4$/C	1.60	10	[20]
$Co_{0.13}Ni_{0.87}Se_2$/Ti	1.62	10	[13]
A-$NiSe_2$|P	1.62	10	[21]
$NiSe/Ni_3Se_2$/NF-12	1.6	10	[22]
CC/CNTs@$CoS_{0.74}Se_{0.52}$	1.74	10	[10]
$(Ni,Co)_{0.85}Se$	1.65	10	[16]
Ni-Fe-Se/NF	1.52	10	[23]
NiCoSe@NF	1.51	10	This work

Table S3 Comparison of the over water splitting performance of the NiCoSe and other recently reported high-performance catalysts in 1.0 M KOH electrolyte.

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