Electronic Supplementary Information

Bi-metallic boride electrocatalysts with enhanced activity for oxygen evolution reaction

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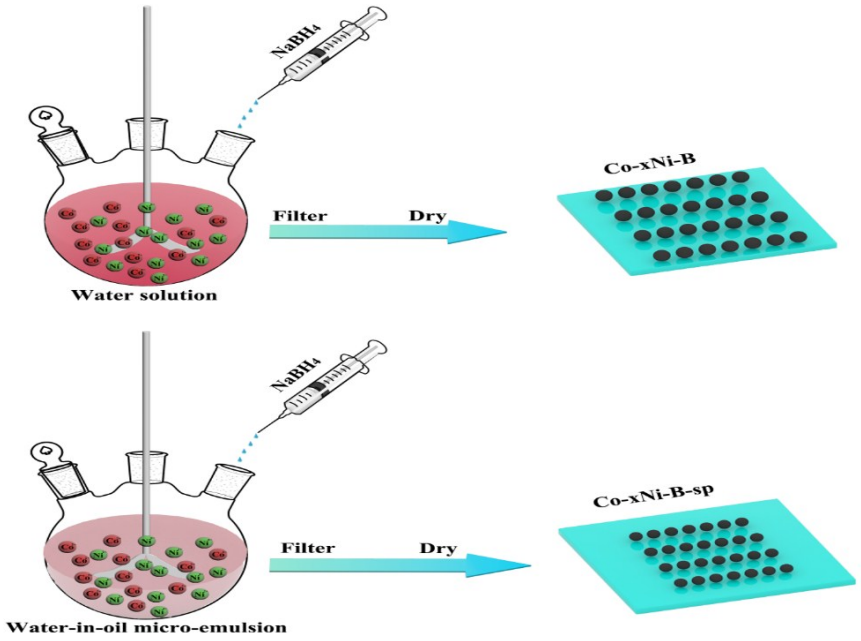

Scheme S1. Schematic illustration for the preparation process of Ni-Co boride.

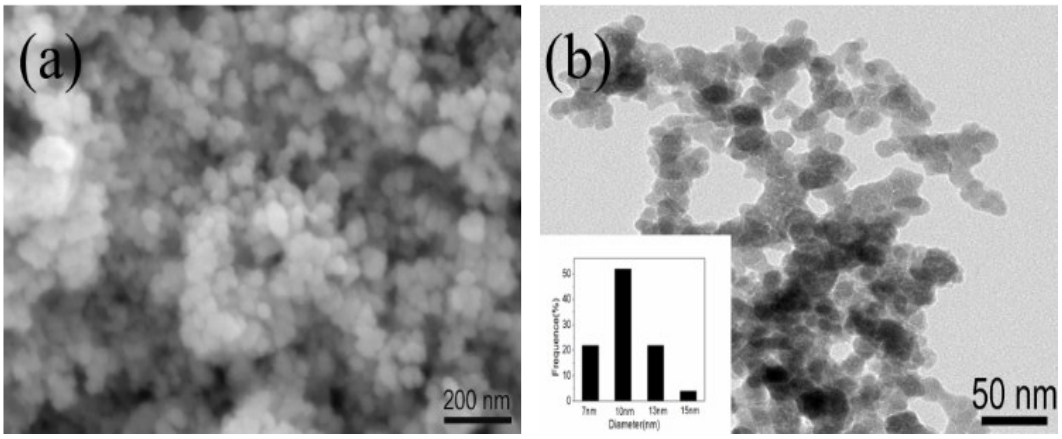

Figure S1. (a) SEM image of Co-10Ni-B-sp. (b) TEM image of Co-10Ni-B-sp.

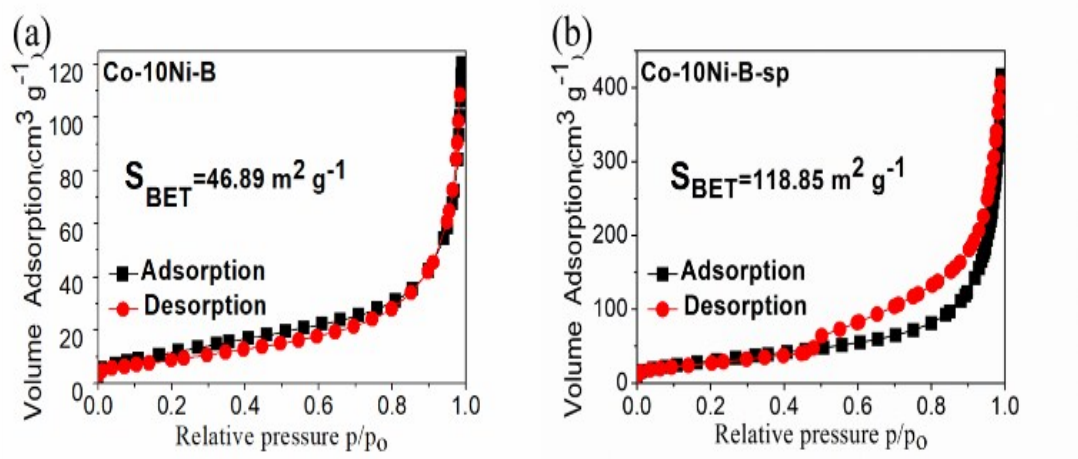

Figure S2. (a) N_2 adsorption–desorption isotherms of Co-10Ni-B. (b). N_2 adsorption–desorption isotherms of Co-10Ni-B-sp.

Table S1. Elemental composition of B and Co in Co-B, Co-5Ni-B, Co-10Ni-B, Co-15Ni-B, Co-20Ni-B, Ni-B

Sample	Coposition(wt%)			Molar content of Ni
	Co	Ni	B	Ni/(Ni + Co) atm%
Co-B	75.04%	--	5.67%	0%
Co-5Ni-B	79.79%	3.58%	6.81%	4.31%
Co-10Ni-B	73.07%	7.04%	6.99%	8.82%
Co-15Ni-B	70.31%	11.12%	7.42%	13.71%
Co-20Ni-B	58.94%	13.82%	6.62%	19.06%
Ni-B	--	90.61%	3.22%	100%

Table S2. Comparison of the OER activities of catalysts from literature.

Catalyst	Substrate	Overpotential (mV vs. RHE)	Tafel slope (mV dec^{-1})	Electrolyte	reference
Co-10Ni-B	GC	330 mV 10 mA cm^{-2}	73.3 mV dec^{-1}	1 M KOH	This work
Co-10Ni-B-sp	GC	310 mV 10 mA cm^{-2}	66 mV dec^{-1}	1 M KOH	This work
Co-B-500℃	FTO	380 mV 10 mA cm^{-2}	45.0 mV dec^{-1}	0.1 M KOH	S 1
Ni-B-300℃	GC	380 mV 10 mA cm^{-2}	89 mV dec^{-1}	1 M KOH	S 2
CoBi/GNS	GC	290 mV 10 mA cm^{-2}	53 mV dec^{-1}	1 M KOH	S 3
Co-B/ZIF 67	GC	320 mV 10 mA cm^{-2}	75 mV dec^{-1}	1 M KOH	S 4
Co-Mo-B	GC	320 mV 10 mA cm^{-2}	155 mV dec^{-1}	1 M KOH	S 5
FeCo2.3Ni–B	GC	274 mV 10 mA cm^{-2}	38 mV dec^{-1}	1 M KOH	S 6
NiCo2(SOH)x	Ni foam	290 mV 10 mA cm^{-2}	47 mV dec^{-1}	1 M NaOH	S 7
NiCoO2/C PMRAs	GC	366 mV 20 mA cm^{-2}	83.97 mV dec^{-1}	1 M KOH	S 8
NiCoP	Ni foam	320 mV 10 mA cm^{-2}	37 mV dec^{-1}	1 M KOH	S 9
$Ni_{1.85}Fe_{0.15}P$	Ni foam	270 mV 20 mA cm^{-2}	96 mV dec^{-1}	1 M KOH	S 10

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