Electronic Supplementary Material (ESI) for RSC Advances.

Coaxial Ultrathin $Co_{1-y}Fe_yO_x$ Nanosheets Coating on Carbon Nanotubes for Water Oxidation with Excellent Activity

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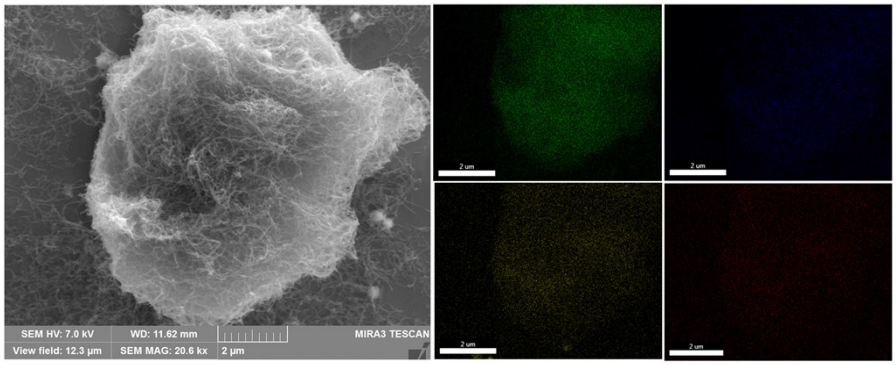

Fig. S1. SEM image of $Co_{0.8}Fe_{0.2}O_x/CNTs_{25\ wt\%}$ and the corresponding EDS mapping.

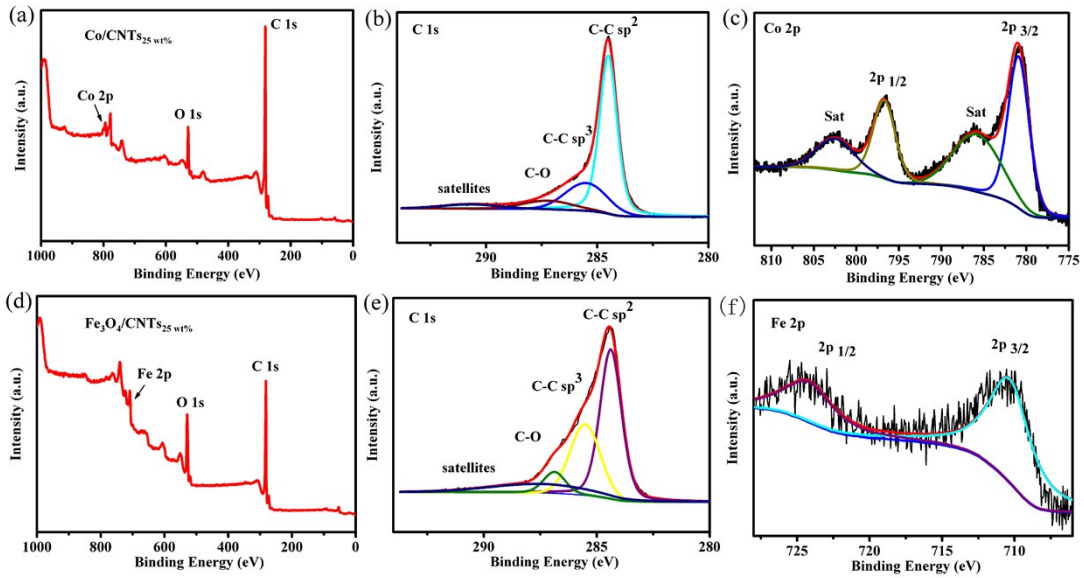

Fig. S2. (a) XPS wide-scan spectrum of Co/CNTs$_{25\ wt\%}$, (b) deconvoluted C 1s spectrum of Co/CNTs$_{25\ wt\%}$, (c) deconvoluted Co 2p spectrum of Co/CNTs$_{25\ wt\%}$, (d) XPS wide-scan spectrum of Fe_3O_4/CNTs$_{25\ wt\%}$, (e) deconvoluted C 1s spectrum of Fe_3O_4/CNTs$_{25\ wt\%}$ and (f) deconvoluted Fe 2p spectrum of Fe_3O_4/CNTs$_{25\ wt\%}$.

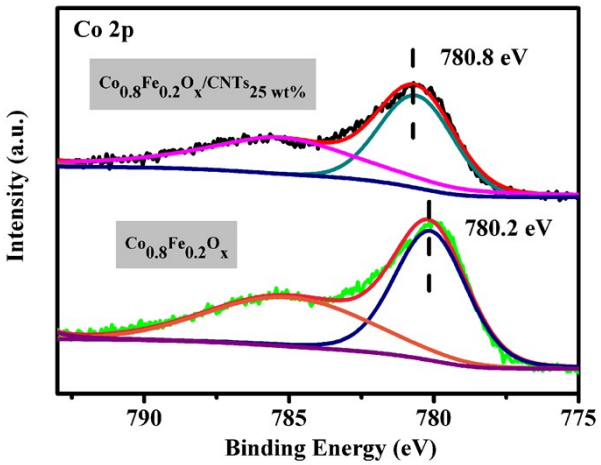

Fig. S3. XPS spectra of Co (2p $_{3/2}$) in $Co_{0.8}Fe_{0.2}O_x$/CNTs$_{25\ wt\%}$ and $Co_{0.8}Fe_{0.2}O_x$.

Table S1 Comparison of the OER activity for several recently reported high performance OER catalysts.

Catalyst	Onset potential (V)	η@10.0 mA cm^{-2} (V)	Tafel slope (mV dec^{-1})	Electrolyte	Reference
$Co_{0.8}Fe_{0.2}O_x$/$CNTs_{25\ wt\%}$	1.45	0.28	49	1.0 M KOH	This work
Ni–Co ADHs nanocages	1.50	0.35	65	1.0 M KOH	[1]
Co-P/NC	~ 1.50	0.35	52	1.0 M KOH	[2]
N-doped graphene-CoO	~ 1.52	0.34	71	1.0 M KOH	[3]
NiCo-LDH	~ 1.52	0.37	40	1.0 M KOH	[4]
CQDs/SnO_2–Co_3O_4	1.51	~0.33	60	1.0 M KOH	[5]
$CuCo_2O_4$/NrGO	~1.50	0.36	64	1.0 M KOH	[6]
$Co_{0.5}Fe_{0.5}S$@N-MC	1.6	0.64	159	1.0 M KOH	[7]
CNTs-Au@Co_3O_4	1.52	0.35	68	1.0 M KOH	[8]
IrO_2	/	0.44	49	1.0 M KOH	[9]
Au@Co_3O_4/C	1.52	0.38	60	0.1 M KOH	[10]
$Zn_xCo_{3-x}O_4$ nanowire array	~ 1.50	0.32	51	1.0 M KOH	[11]
$Ni_xCo_{3-x}O_4$ nanowire	~ 1.58	~ 0.37	64	1.0 M KOH	[12]
Mn_3O_4/$CoSe_2$	/	0.45	49	0.1 M KOH	[13]

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