

## Supplementary information

# Edge-Oriented MoS<sub>2</sub> Supported on Nickel/Carbon Core-Shell Nanospheres for Enhanced Hydrogen Evolution Reaction Performance

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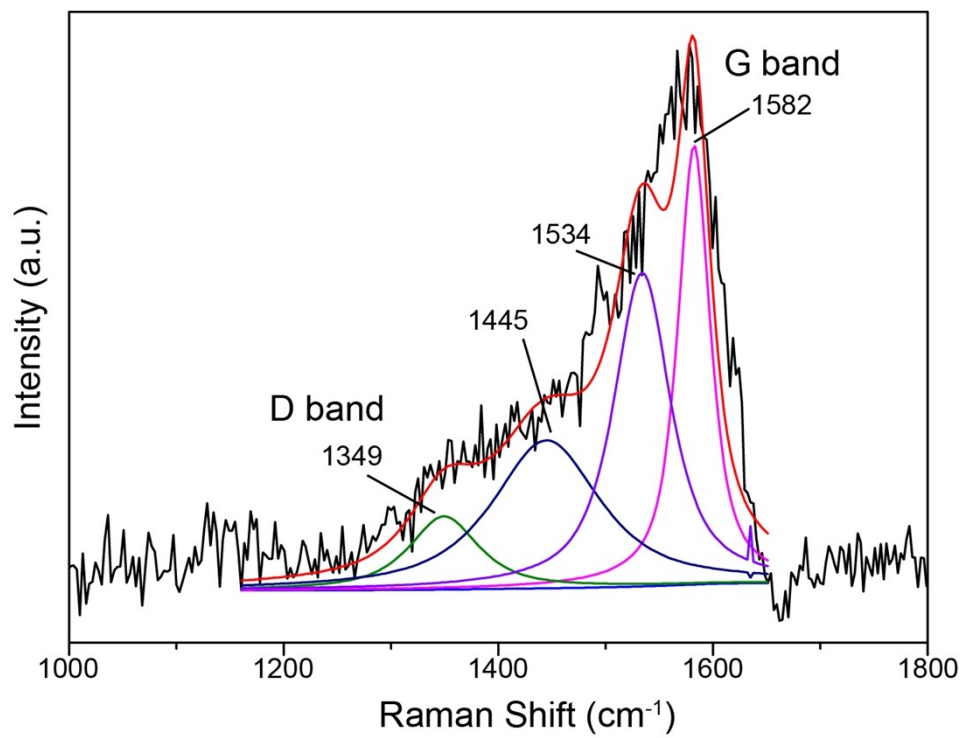
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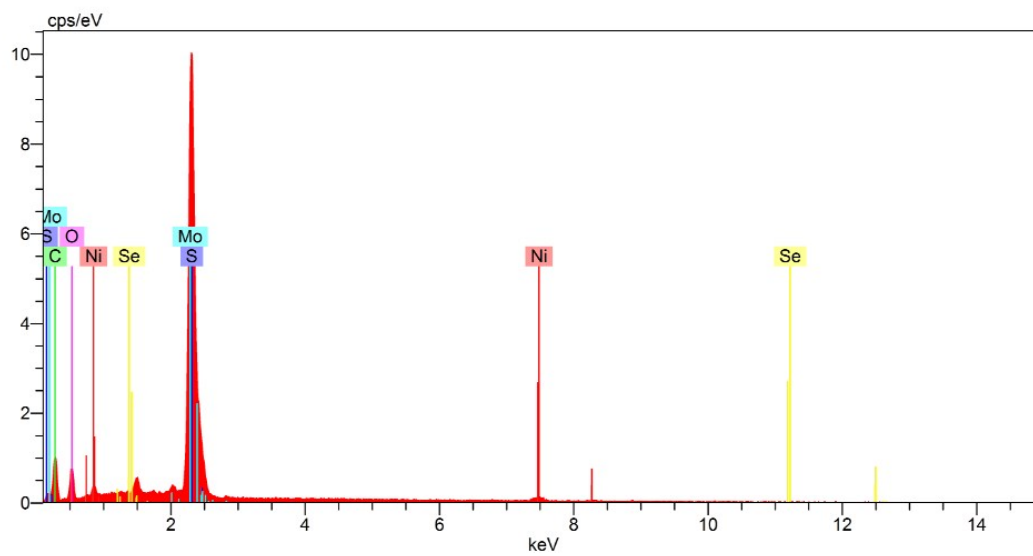
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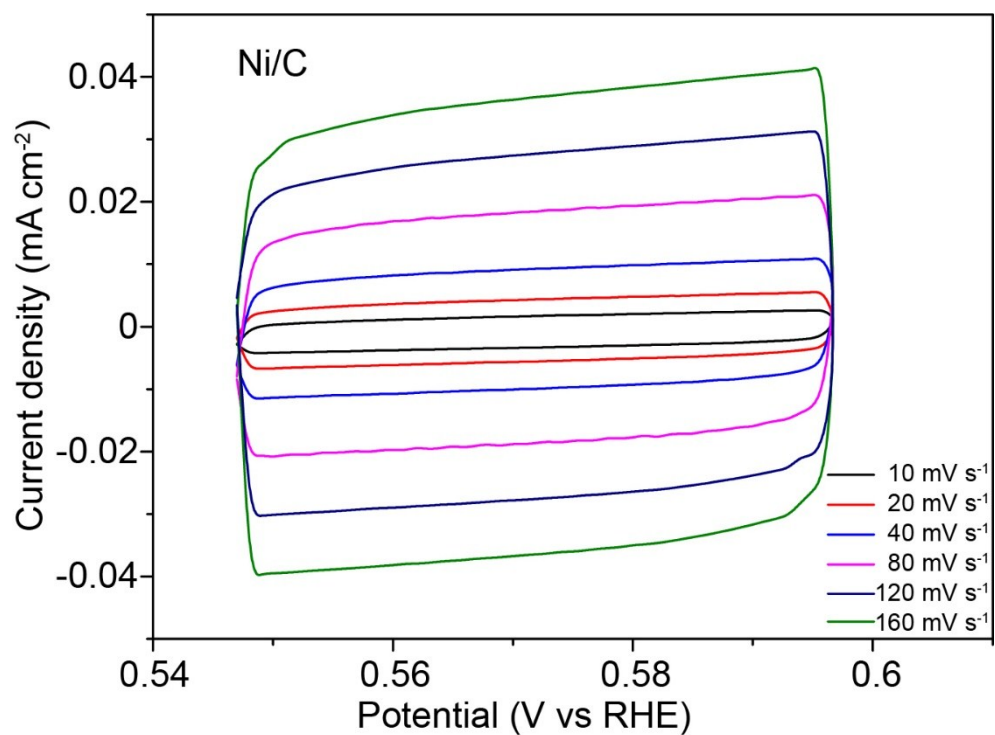
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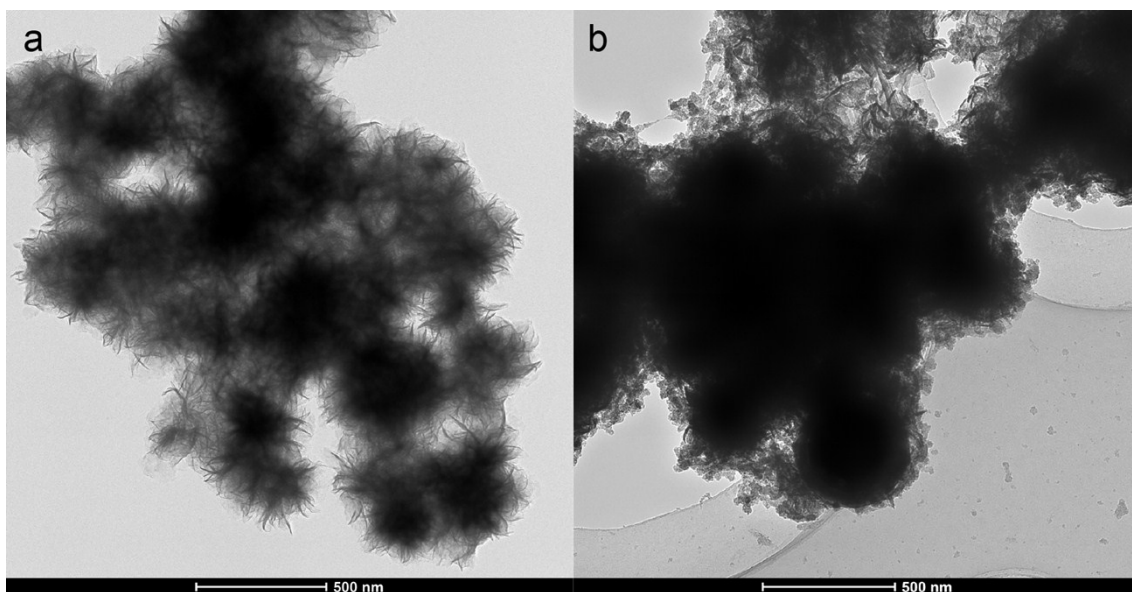
**Fig. S1.** Deconvolution Curve of Carbon region in raman spectrum of Ni/C/MoS<sub>2</sub>.



**Fig. S2.** EDS spectrum for C/MoS<sub>2</sub> etched by HCl to measure nickel residual.



**Fig. S3.** Cyclic voltammetry of Ni/C at a potential range without faradic current to measure capacitive current with different scan rates.



**Fig. S4.** TEM images of Ni/C/MoS<sub>2</sub>. a) Morphology of Ni/C/MoS<sub>2</sub> before 9000 s *i-t* amperometric testing; b) Morphology of Ni/C/MoS<sub>2</sub> after 9000 s *i-t* amperometric testing.

El	AN	Series	unn. C [wt.%]	norm. C [wt.%]	Atom. C [at.%]	Error [%]
C	6	K-series	33.39	34.69	60.44	4.6
Mo	42	L-series	26.88	27.92	6.09	1.0
S	16	K-series	18.33	19.04	12.43	0.7
O	8	K-series	14.67	15.24	19.94	2.1
Ni	28	K-series	2.89	3.00	1.07	0.1
Se	34	L-series	0.10	0.10	0.03	0.0
Total:			96.25	100.00	100.00	

**Table S1.** EDS elements table for C/MoS<sub>2</sub> etched by HCl to measure nickel residual