

NiCo₂O₄ nano-Needles as an Efficient Electro-Catalyst for Simultaneous Water Splitting and Dye Degradation

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Table S1: Comparison of current densities of different catalysts

Catalyst name	Overpotential (mV)	Electrolyte	On-set potential	Tafel slope	References
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	@ 10 mA cm ⁻²		(V)	(mV dec ⁻¹)	
NiCo ₂ O ₄ (Petals and needle-like morphologies)	170@10 mA cm ⁻²	1 M KOH	1.34	90	This paper
NiCo ₂ O ₄ (Petals and needle-like morphologies)	370@50 mA cm ⁻²	1 M KOH	1.55	90	This paper
NiO	470	1 M KOH	1.60	117	[1]
NiCo ₂ O ₄	430	1M NaOH	1.59	61	[2]
NiCo ₂ O ₄ /NiO	360	1M NaOH	1.41	139	[2]
NiCo ₂ O ₄ nanoflowers	383	1 M KOH	1.50	137	[3]
NiCo ₂ O ₄ hollow nanospheres	428	1 M KOH	1.53	141	[3]
NiCo ₂ O ₄ hollow	520	0.1 M KOH	1.57	150	[4]
NiCo ₂ S ₄ nanoflakes	360	1 M KOH	1.54	131	[5]
NiCo ₂ O ₄ nanowires	271	1 M KOH	1.52	172	[6]
Co ₃ O ₄	498	1 M KOH	1.65	268	[7]
MnCo ₂ O ₄ nanowires	289	1 M KOH	1.53	182	[6]

ZnCo ₂ O ₄ nanosheet	340	1 M KOH	1.52	183	[6]
Ni@ NiO/N-C	390	1M KOH	1.54	100	[8]
3D Gr/Ni-MOF	370	0.1 M KOH	1.57	91	[9]

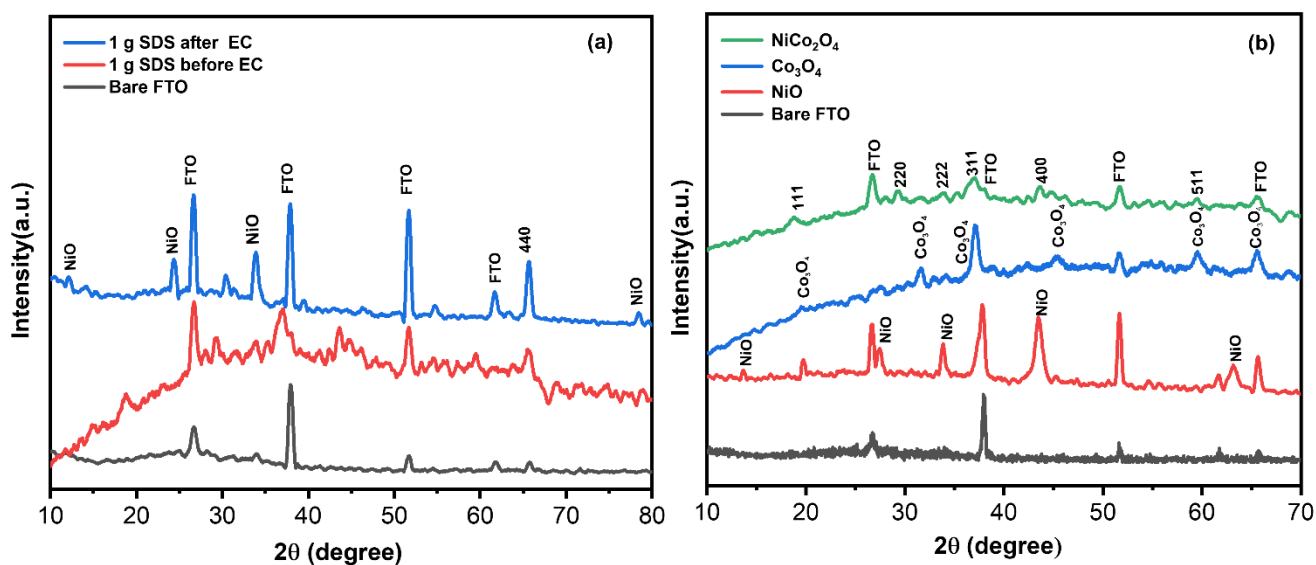


Figure S1: (a) p-XRD graph of NiCo₂O₄ with respective oxides and before and after EC (b) p-XRD of respective oxides

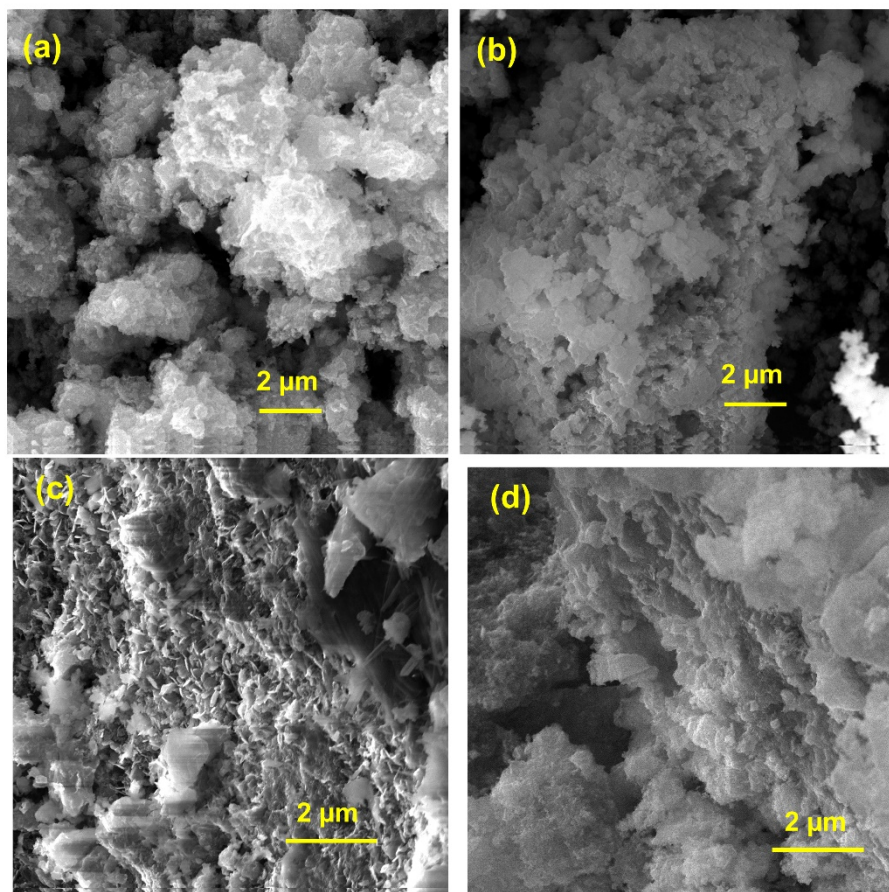


Figure S2: SEM images of NiCo₂O₄ synthesized at different temperatures (a) 50°C, (b) 100°C and SDS amount (c) 0.5 g (d) 1.5 g

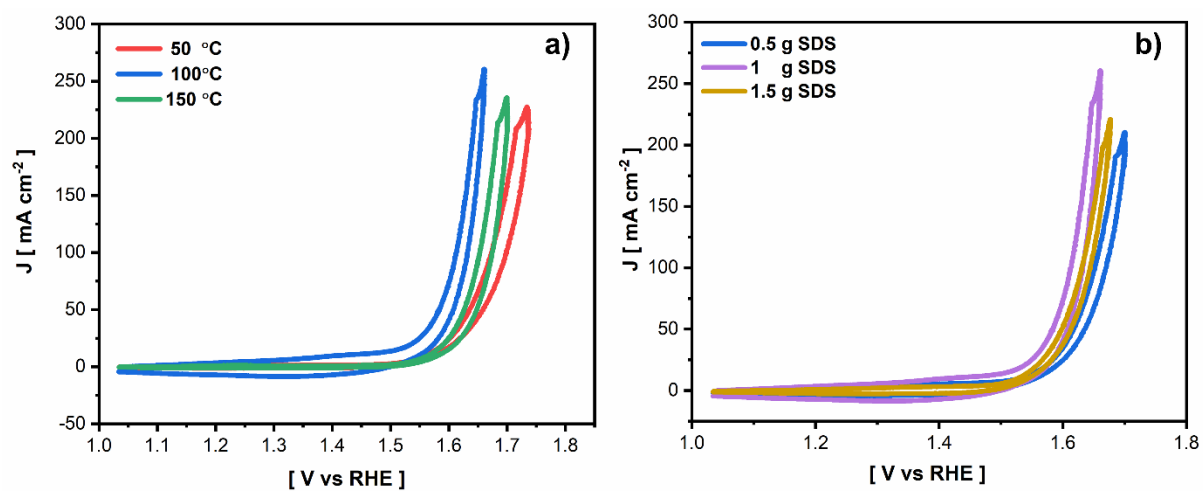


Figure S3: CV of NiCo₂O₄ synthesized at different (a) temperatures (b) SDS amount.

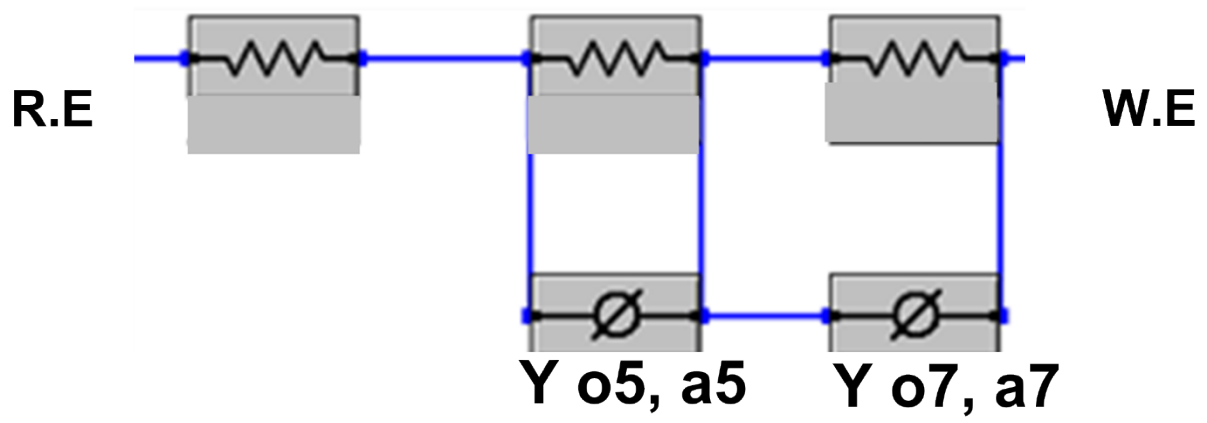


Figure S4: Circuit for fitting of EIS plots

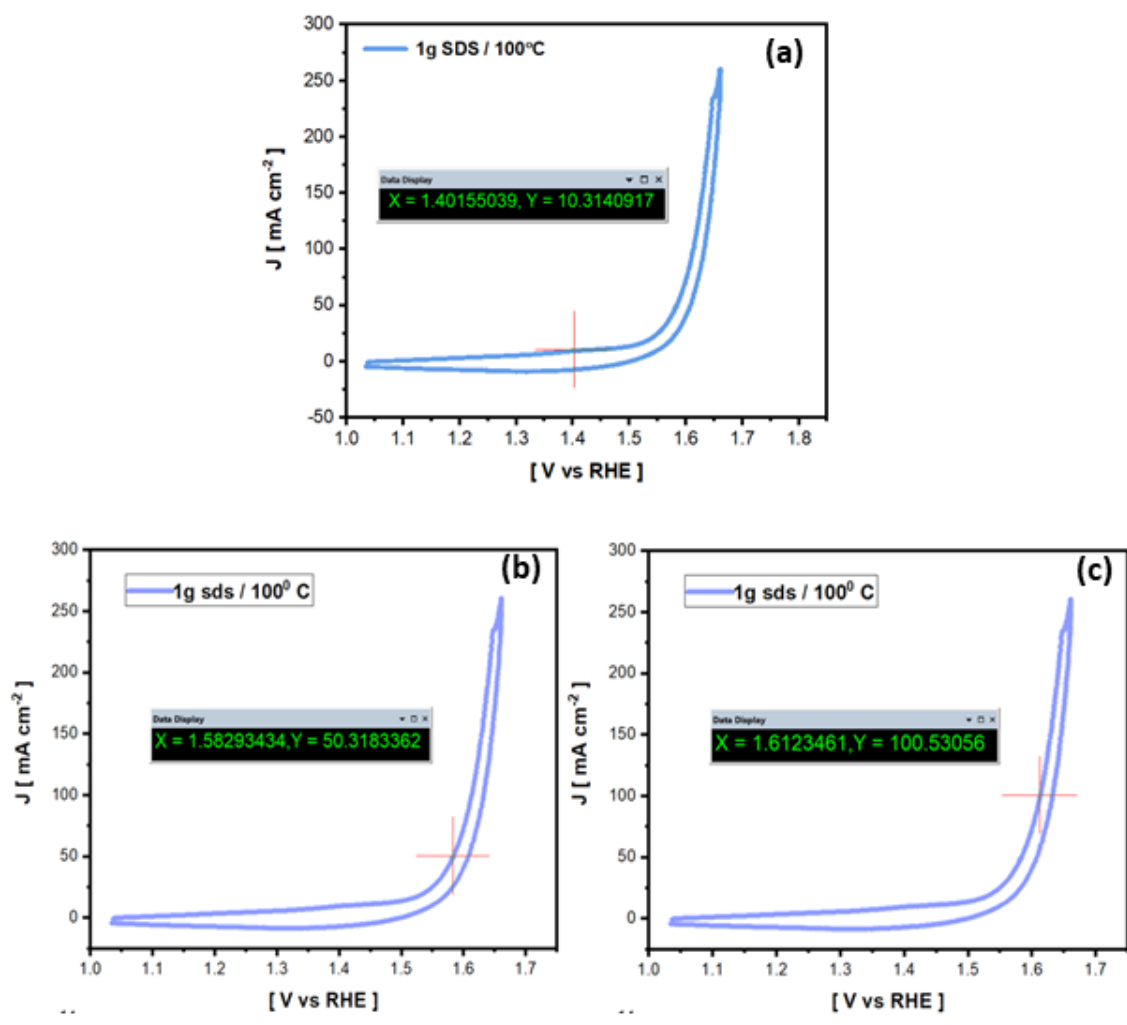


Figure S5: (a-c) Overpotential of NiCo₂O₄ at 10, 50 and 100 mA, synthesized by using 1g SDS and 100°C temperature.

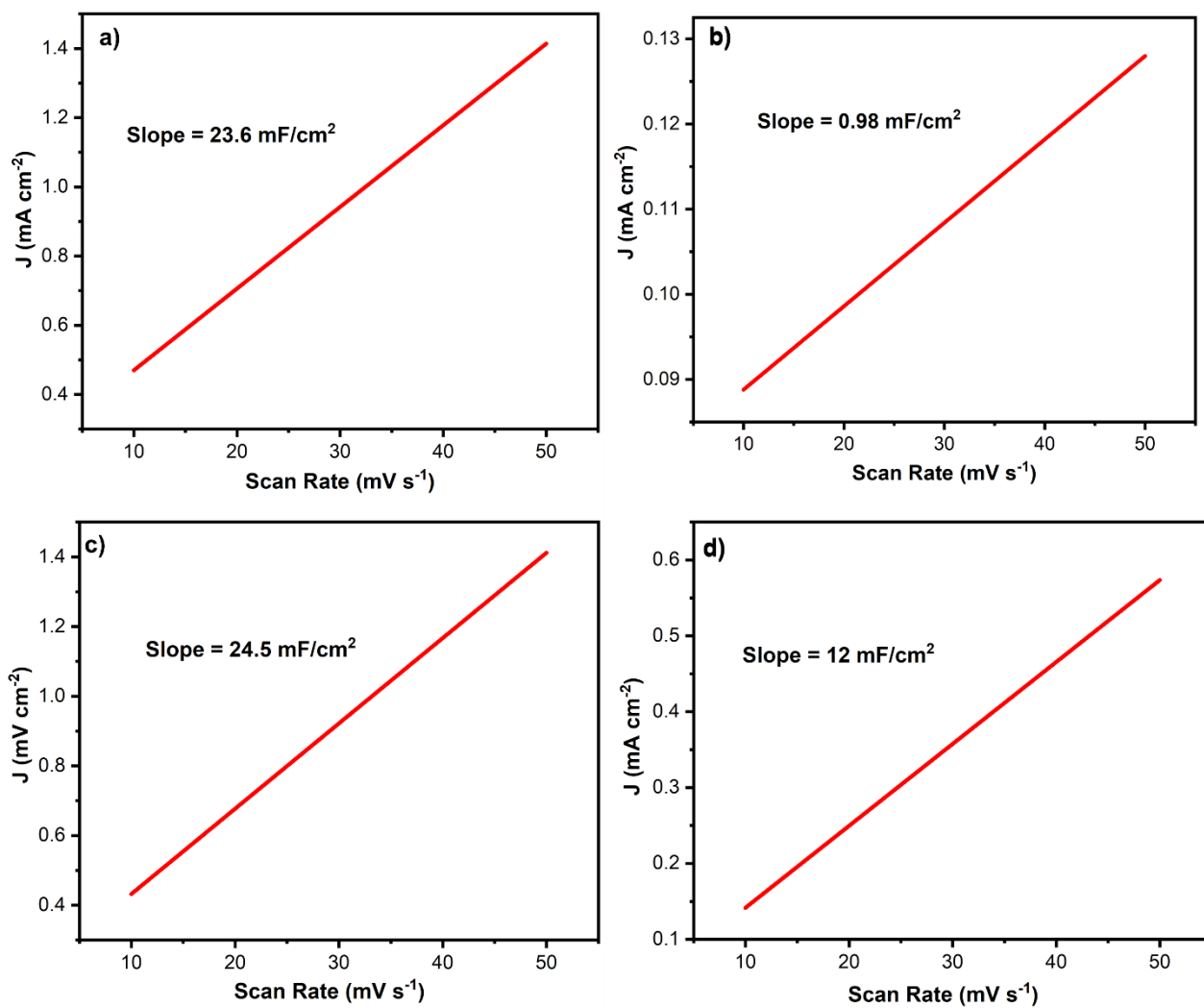


Figure S6: Double layer capacitance (cdl) of NiCo_2O_4 synthesized at different SDS amount (a) 1.5 g, (b) 0.5 g and temperatures (c) 150°C (d) 50°C

Referemces

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