

Electronic supplementary information

In-situ Preparation of Binder-Free Nano-Cotton-Like CuO-Cu Integrative Anode on Current Collector by Laser Ablation Oxidation for Long Cycle Life Li-ion Batteries

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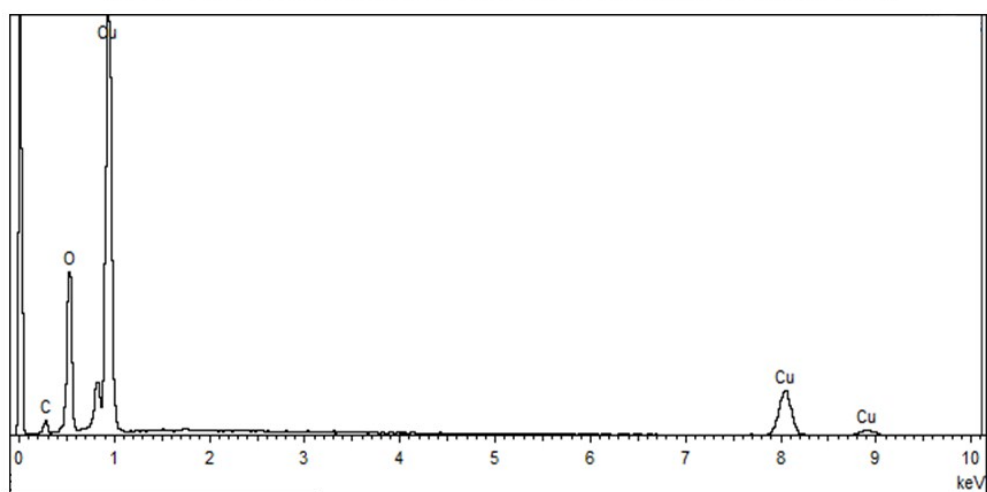
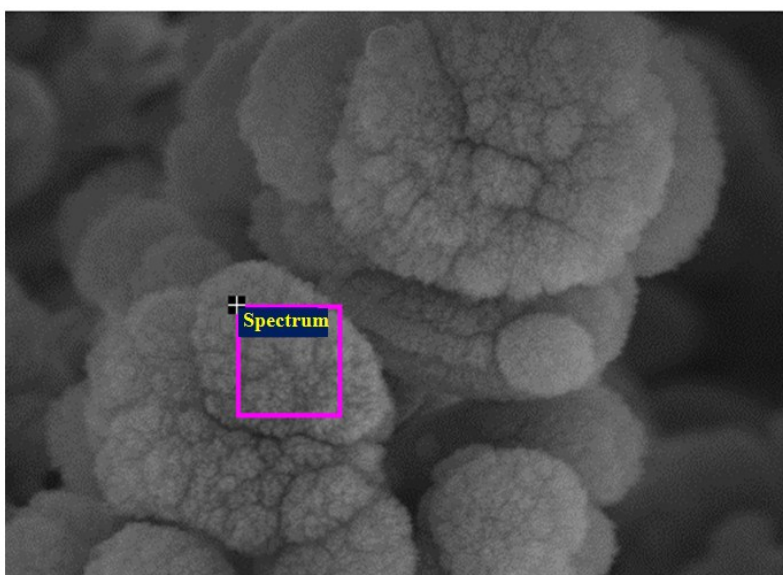


Fig S1. EDS of CuO-Cu integrative anode

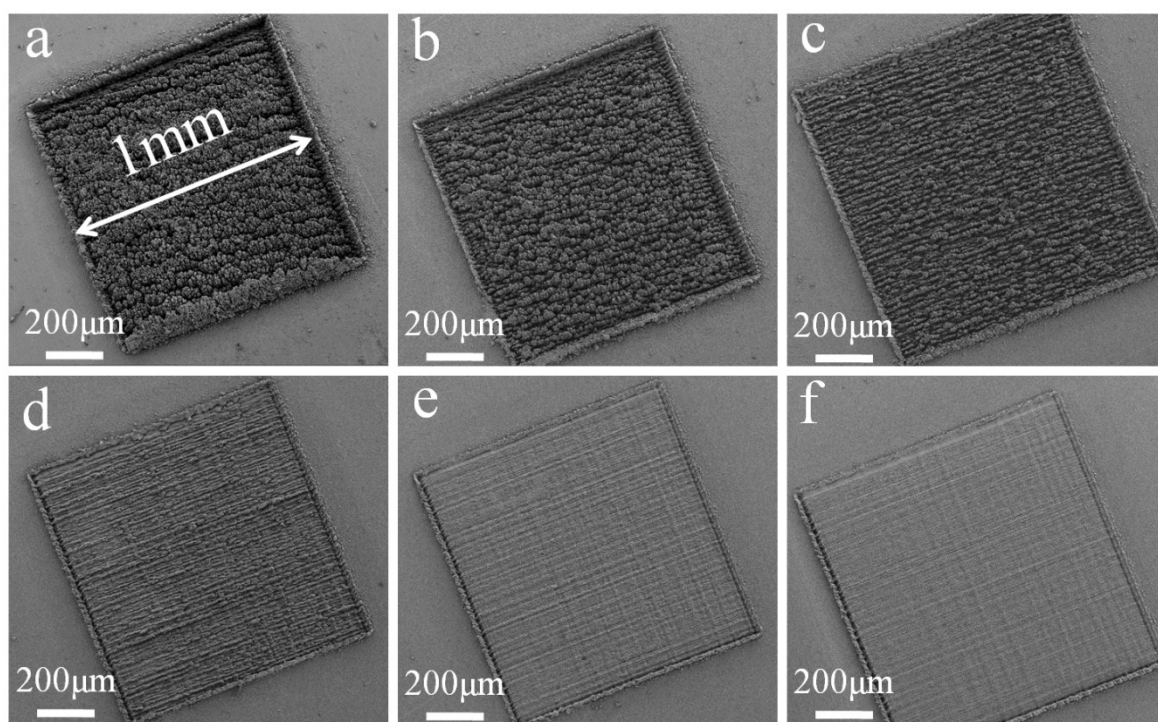


Fig S2. SEM image of a 1 mm by 1 mm laser ablated copper foil with the laser scanning speed of 10 mm s^{-1} (a), 15 mm s^{-1} (b), 30 mm s^{-1} (c), 50 mm s^{-1} (d), 100 mm s^{-1} (e), 200 mm s^{-1} (f).

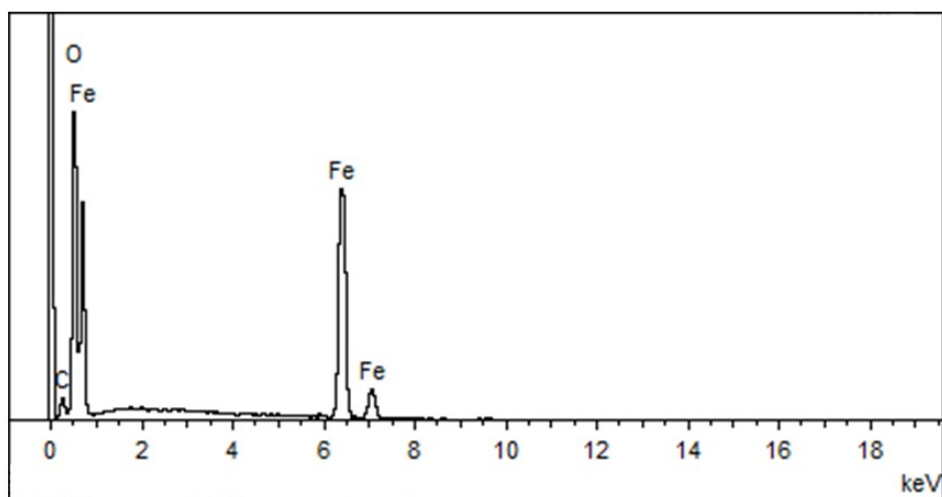
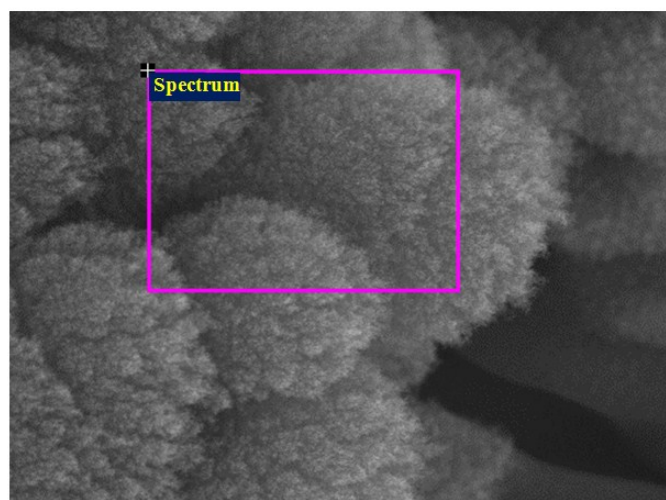


Fig S3. EDS of Fe_xO_y -Fe integrative anode

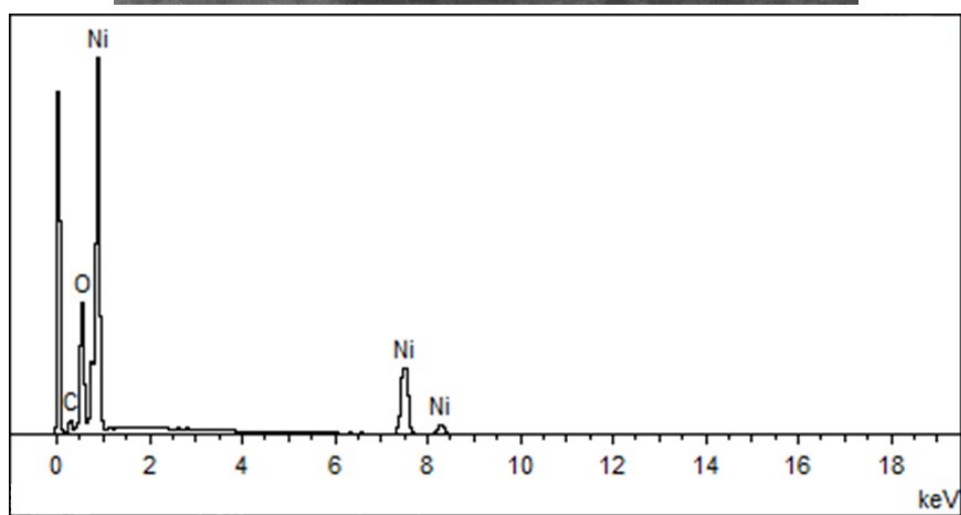
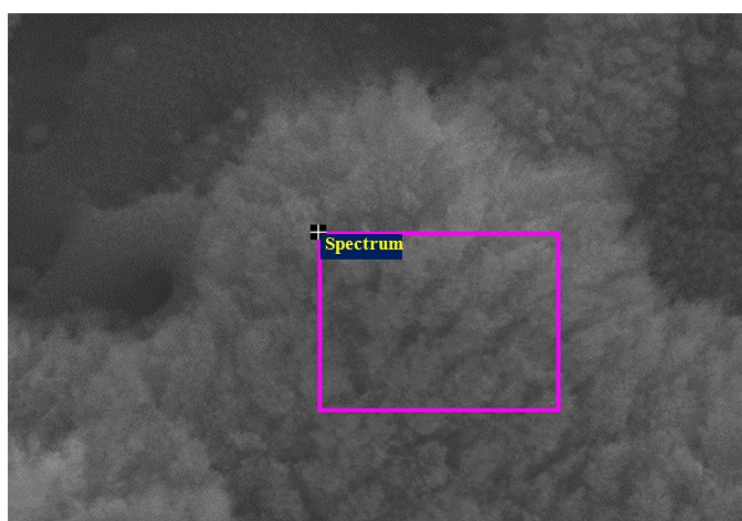


Fig S4. EDS of $\text{Ni}_x\text{O}_y\text{-Ni}$ integrative anode

Table S1

Comparisons of the cycling performance among other CuO anodes.

Methods	Current density (A g ⁻¹)	Cyclability	Reveraible capacity (mAh g ⁻¹)	Ref.
Laser ablation	0.8	500	528.9	Our work
	1.5	800	393.4	
Dehydration and re-crystallization of precursor	0.5C	50	374	[1]
Annealing and microwave-assisted process	0.5	250	500	[2]
Liquid method	0.1C	55	421	[3]
Electrochemical oxidation	1.0	100	376.1	[4]
Calcination and Liquid method	0.1C	50	429	[5]
Heated oxidation	0.1	50	193.9	[6]
Aerosol spray pyrolysis method	50C	300	400	[7]
Rapid hydrothermal method	0.1C	100	575	[8]
Glutamine (GLN)-assisted green strategy	0.1	50	683.7	[9]
Hydrothermal method	1.0C	70	279.3	[10]

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