

Hierarchical Poly(2-aminothiophenol)/Co-Ni Heterostructures with Nanoflake-Nanoneedle Architecture for High-Performance Supercapacitors

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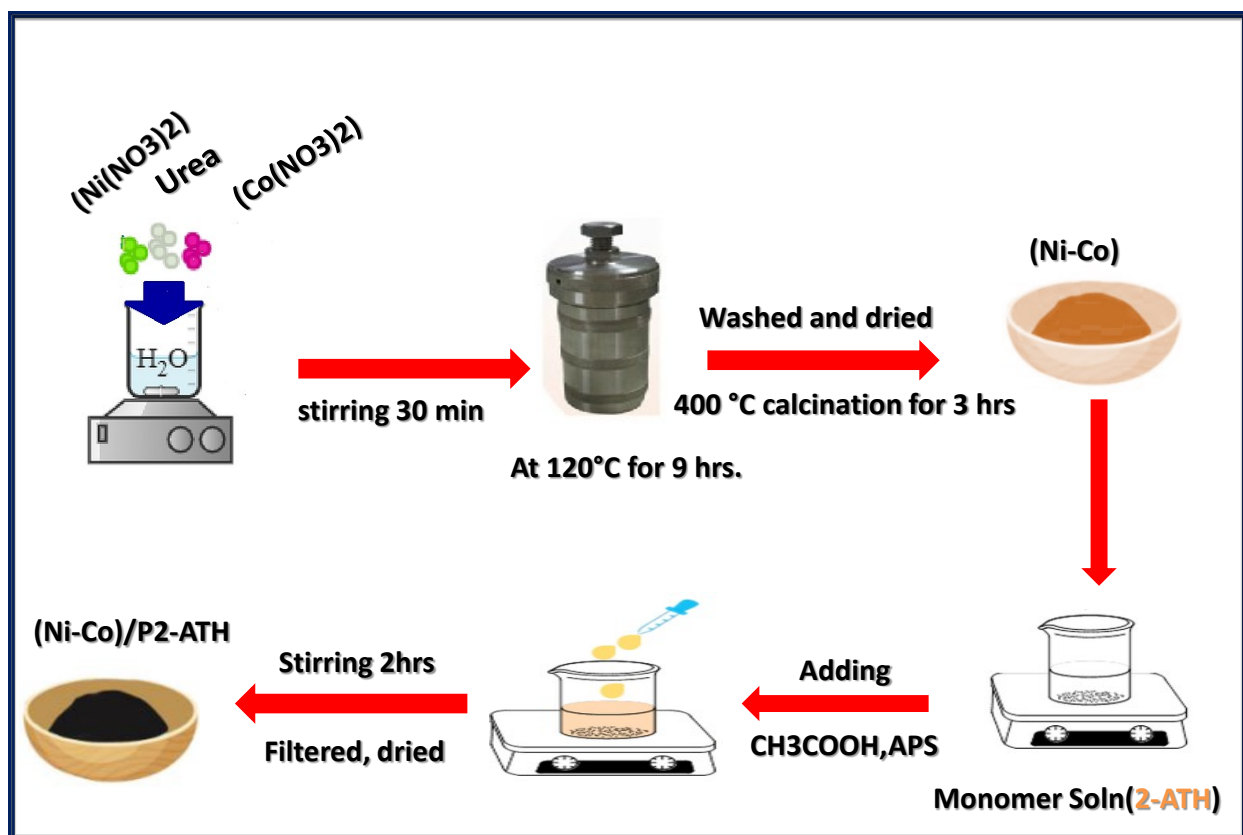


Figure S1. The schematic diagram for the preparation of P2-ATH/CNO-CCHH heterostructure

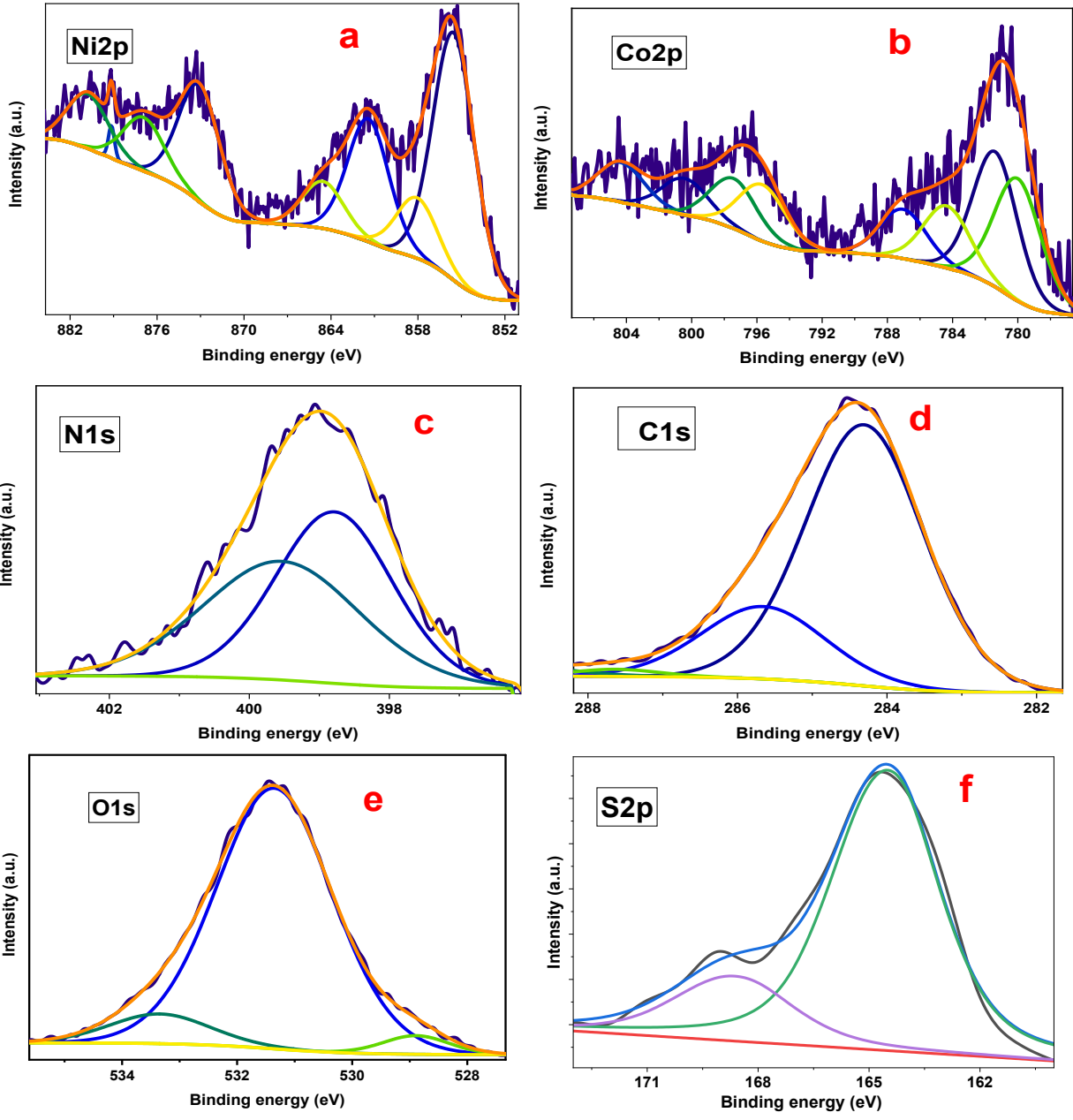


Figure S2. High-resolution XPS analysis of P2-ATH/CNO-CCHH heterostructure; (a) Ni2p, (b) Co2p, (c) N1s, (d) C1s, (e) O1s, and (f) S2p

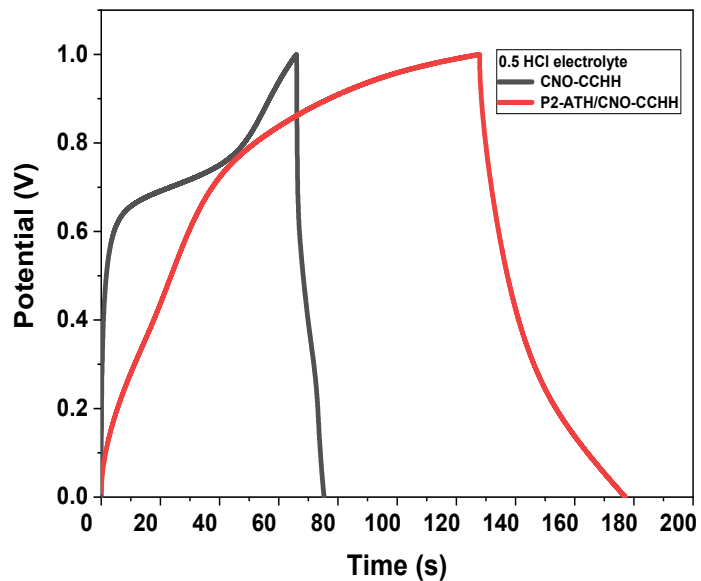


Figure S3. GCD profiles of CNO-CCHH and P2-ATH/CNO-CCHH electrodes in 0.5 HCl

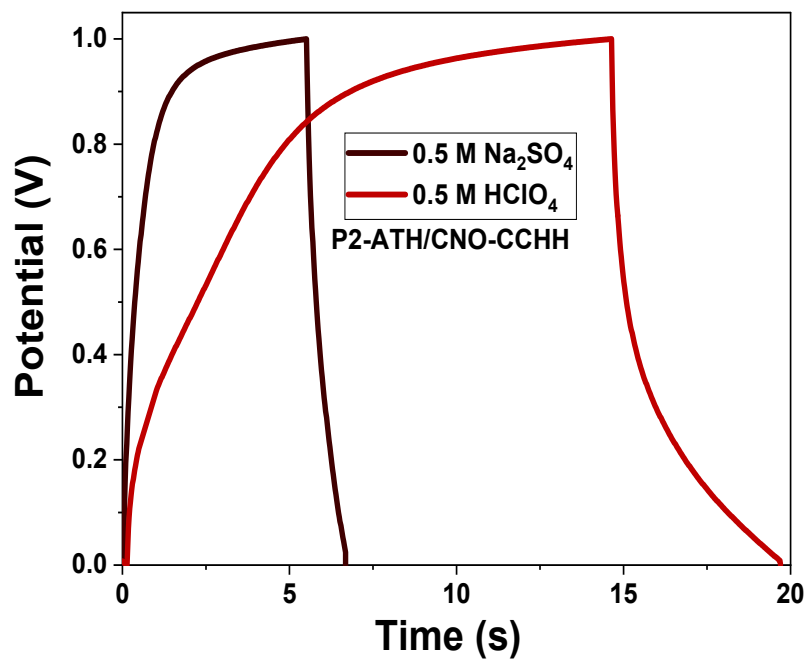


Figure S4. GCD profiles of P2-ATH/CNO-CCHH electrodes in 0.5 M Na₂SO₄ and 0.5 M HClO₄

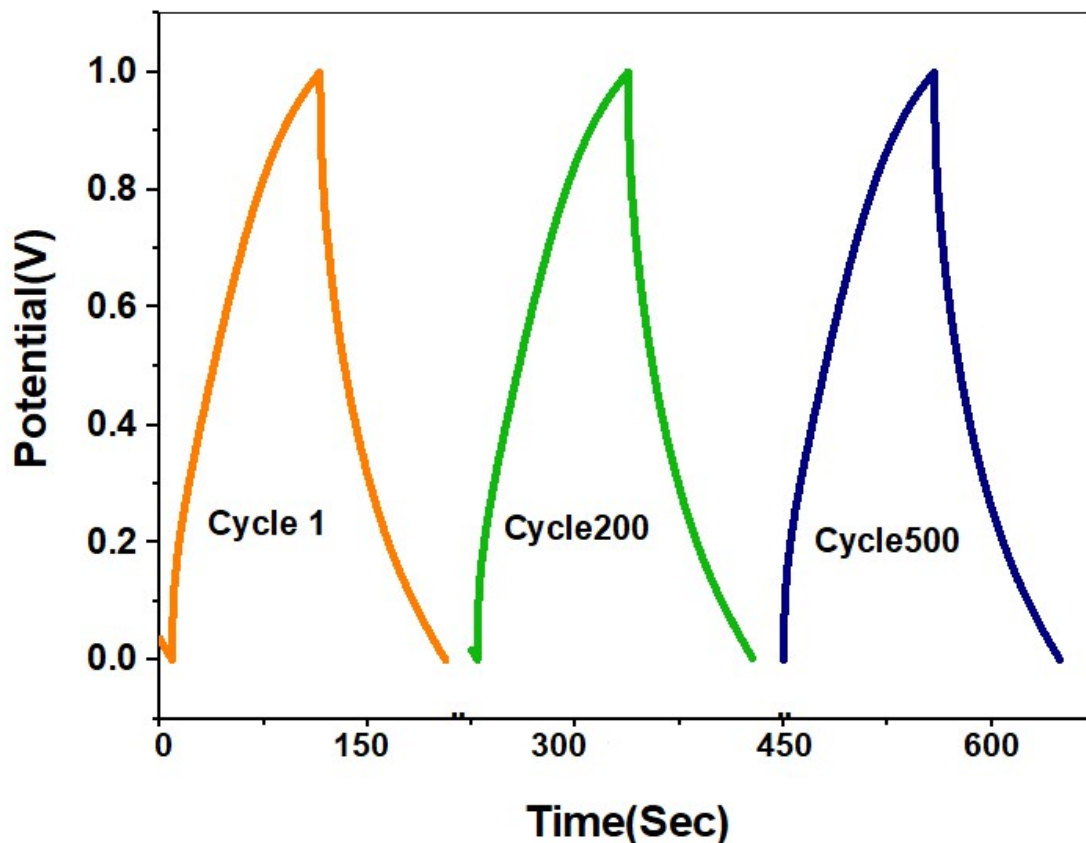


Figure S5. The stability performance of P2-ATH/CNO-CCHH heterostructure in 0.5 M HCl for 1000 cycles

Table S1. The FTIR analysis of the P2-ATH/CNO-CCHH heterostructure

Band Position (cm ⁻¹)	Assignment	Ref
3756.5 - 3692.6	Broadband for stretching vibration of hydroxyl groups (OH) linking with Co and Ni atoms.	[S1]
3354 - 3438.1	N-H, S-H stretching of the primary amine confirms the amino group	[S2, S3]
3054.4	C-H stretching vibration of the various alkane groups	[S4]
1470.1	C=C vibration in the benzenoid ring	[S5]

1376.5	C-N stretching vibrations	[S6]
1124.8	Ni-O stretching vibrations	[S7]
1040.2	C-H in-plane bending vibration	[S8]
962.2	C-S group band	[S9]
825.2	Out-of-plane C-H deformation showing ortho disubstitution in benzene ring	[S2]
752.2	Indicating specific chemical interactions within the polymer structure	[S10]
634.4	Carbonate group (CO_3^{2-})	[S11, S12]
539.2	Bonds of Ni-O and Co-O with vibrations overlapping	[S13]
451.5	Co-OH stretching	[S12]

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