

Electronic Supplementary Information

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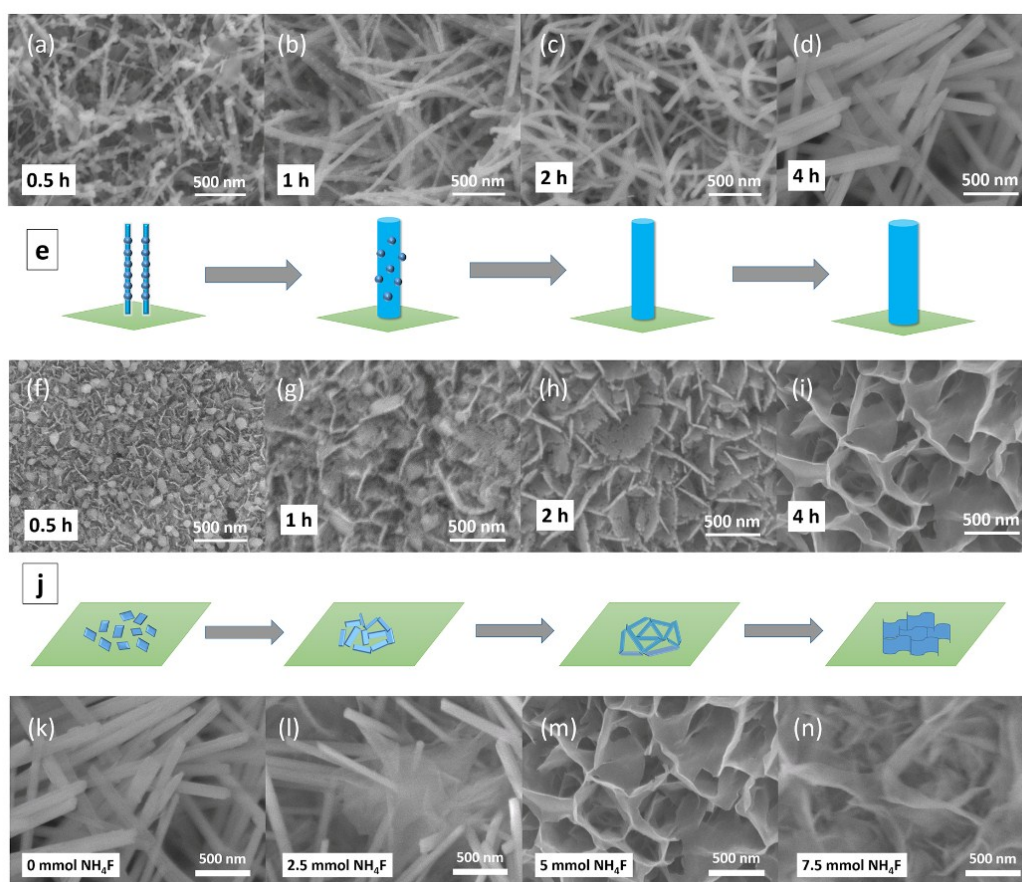


Fig. S1 SEM images of the H-NW obtained without adding NH₄F at different reaction time to (a) 0.5 h, (b) 1 h, (c) 2 h, (d) 4 h; (e) scheme of the H-NW at various reaction stages; SEM images of the H-NF obtained with the assistance of 5 mmol NH₄F at various reaction stages by setting the reaction time to (f) 0.5 h, (g) 1 h, (h) 2 h, (i) 4 h; (j) proposed scheme of the H-NF at various reaction section; SEM images of the products obtained at different concentration of NH₄F (k-n).

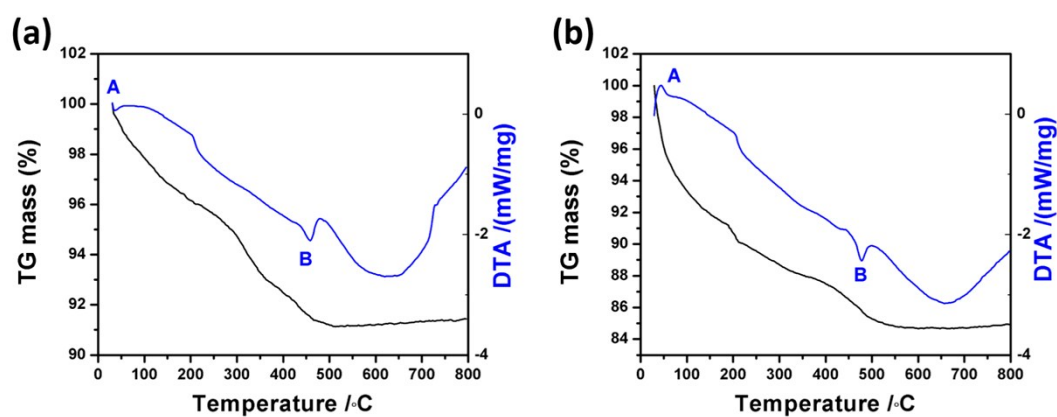


Fig. S2 TGA curves of the H-NW(a) and H-NF(b).

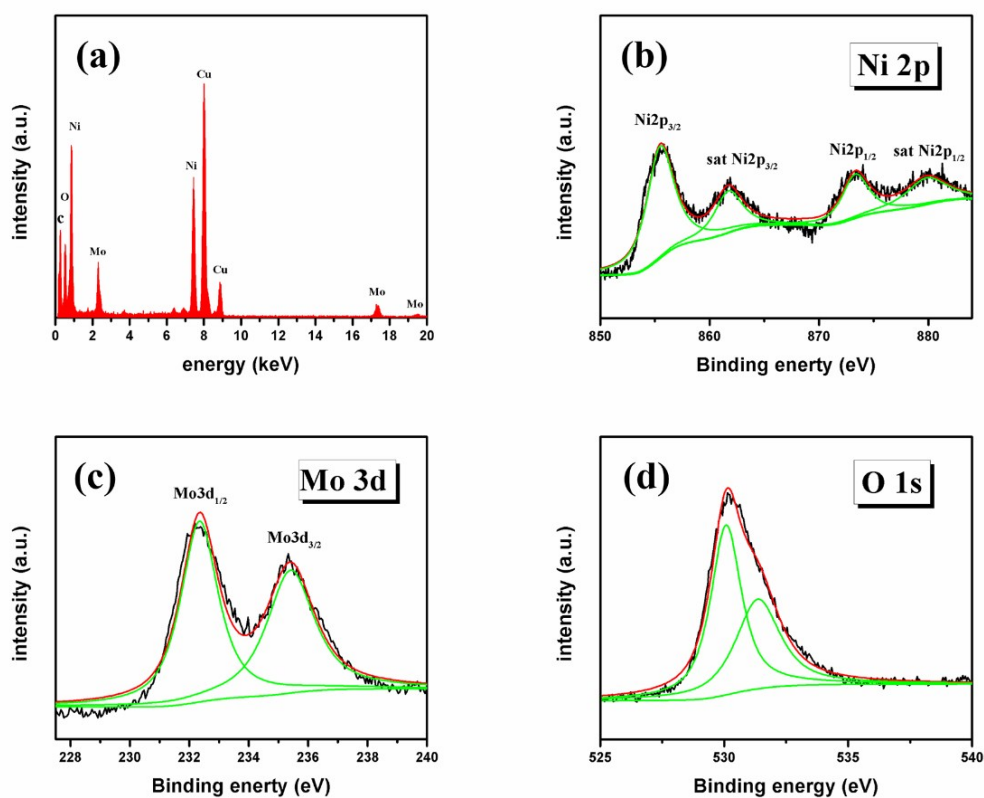


Fig. S3 a) the EDS of H-NW and H-NF; XPS spectra of H-NF scratched from Ni foam: (b) Ni 2p spectrum, (c) Mo 3d spectrum, and (d) O 1s spectrum.

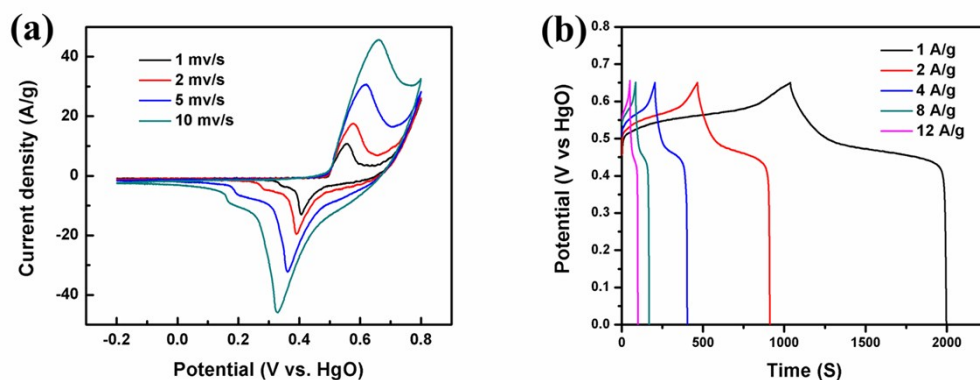


Fig. S4 a) CV curves of H-NF at different scan rates from 1 to 10 mV s⁻¹. b) galvanostatic charge/discharge voltage profiles of H-NF at various current densities in the voltage range

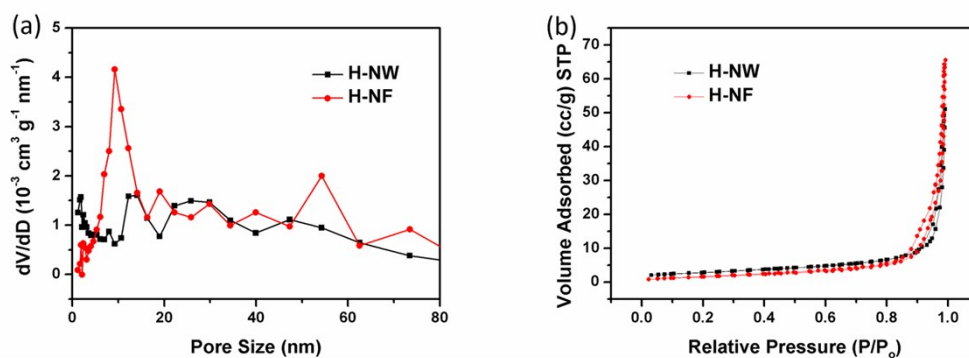


Fig. S5 N₂ pore size distributions (a) and adsorption-desorption isotherms (b) of H-NW and H-NF.

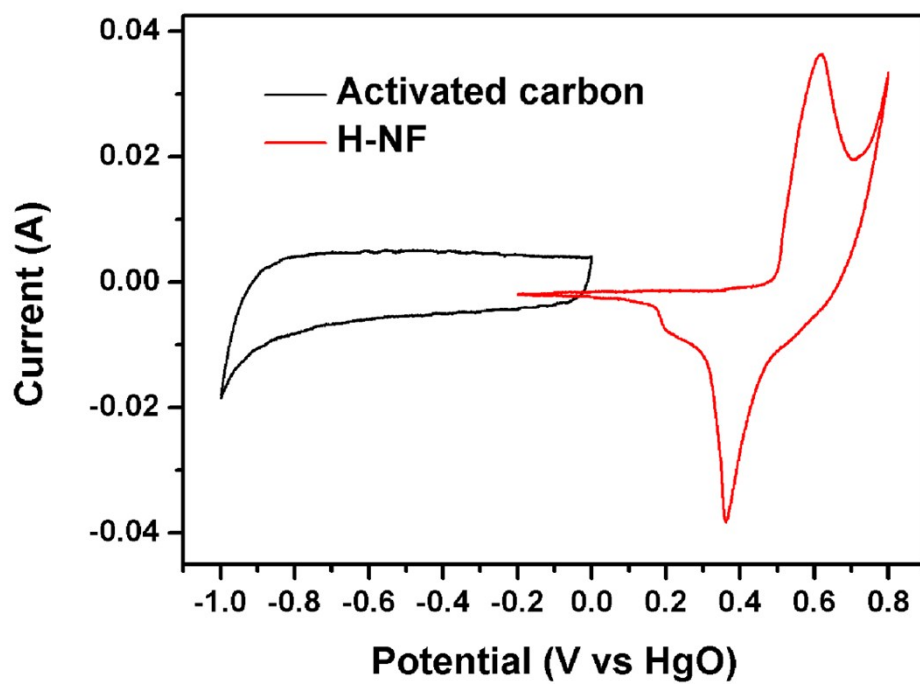


Fig. S6 Comparative CV curves of activated carbon and H-NF electrodes performed in three-electrode system in 2 M KOH electrolyte at a scan rate of 5 mV s⁻¹.