

## Supplementary Material

### Acid- and Alkaline-induced Phase and Structure Reconstruction of Nickel Sulfide toward Enhanced Electrochemical Performance

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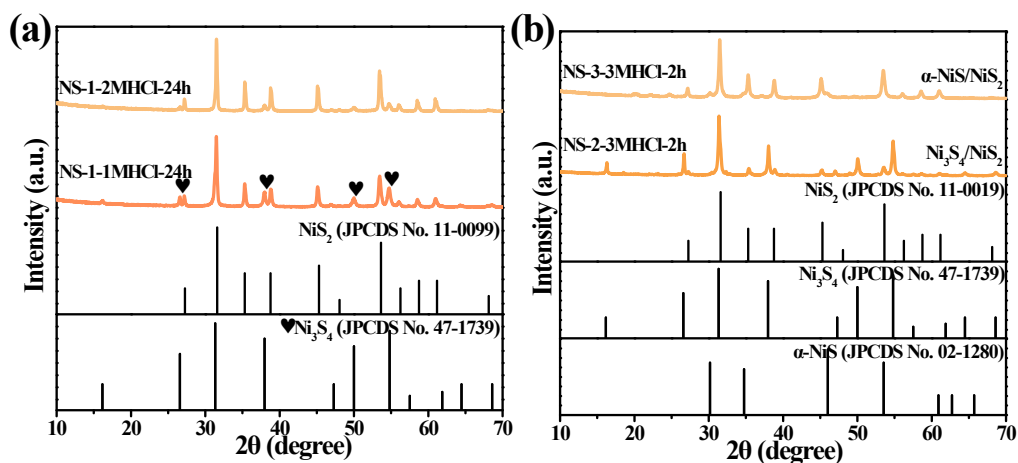


Fig. S1 (a) XRD patterns of NS-1-1MHCl-24h and NS-1-2MHCl-24h, and (b) NS-2-3MHCl-2h

and NS-3-3MHCl-2h

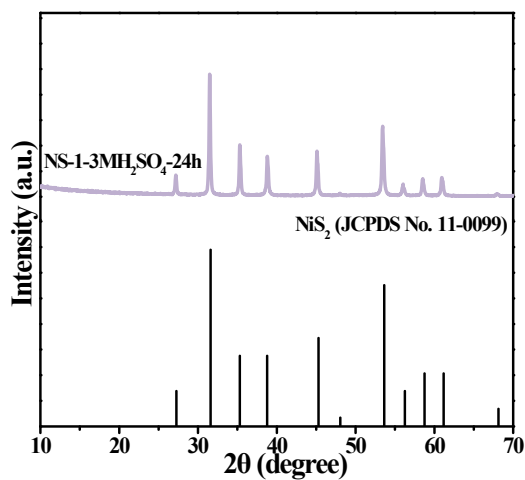


Fig. S2 XRD pattern of NS-1-3MH<sub>2</sub>SO<sub>4</sub>-24h

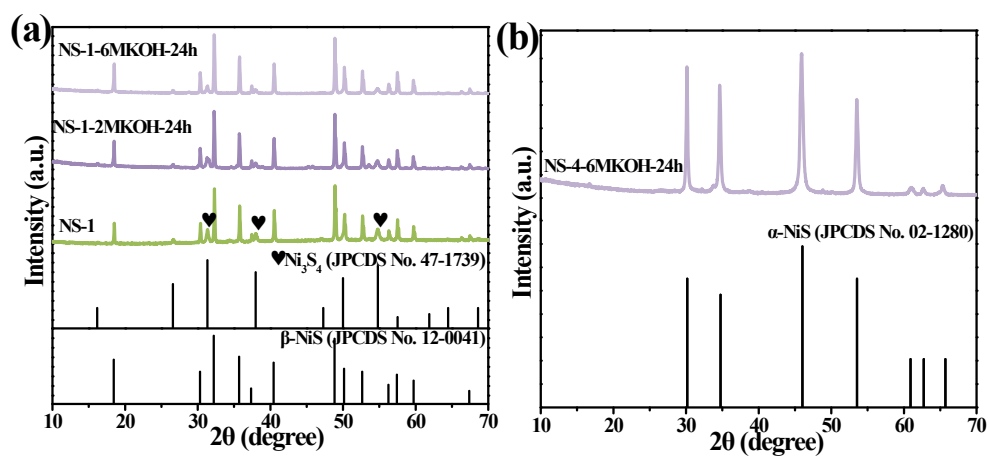


Fig. S3 (a) XRD patterns of NS-1, NS-1-2MKOH-24h, and NS-1-6MKOH-24h; (b) XRD pattern of NS-4-6MKOH-24h

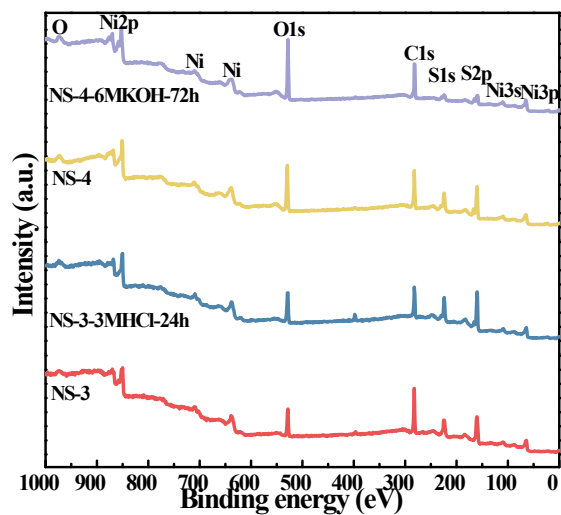


Fig. S4 XPS survey of NS-3, NS-3-3MHCl-24h, NS-4, and NS-4-6MKOH-72h

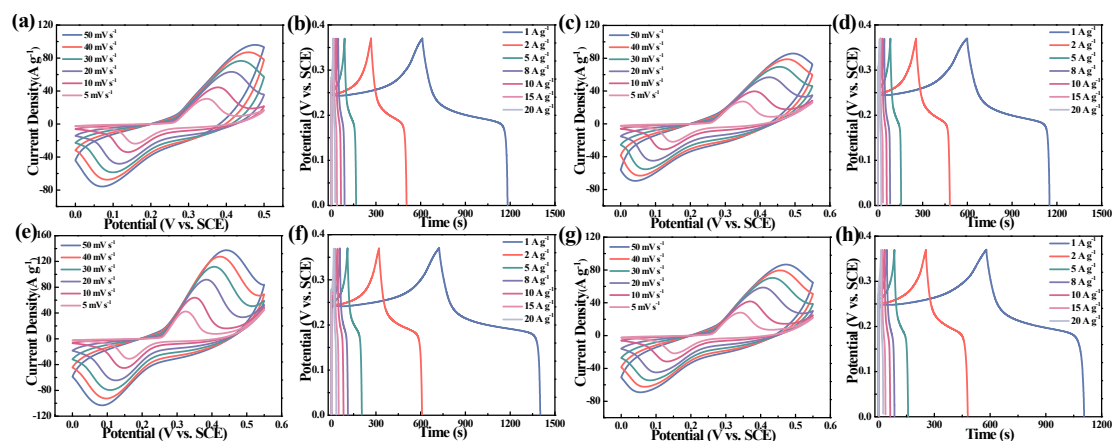


Fig. S5 (a) CV curves and (b) GCD curves of NS-1, (c) CV curves and (d) GCD curves of NS-2,

(e) CV curves and (f) GCD curves of NS-3, (g) CV curves and (h) GCD curves of NS-4

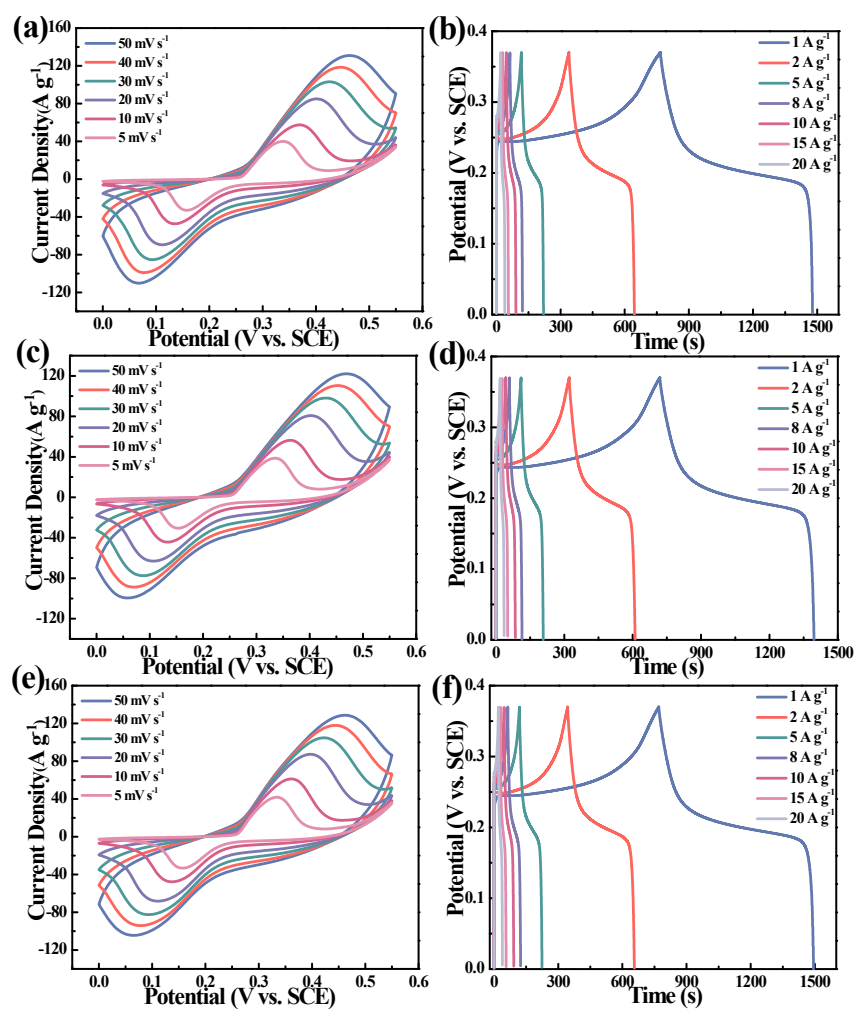
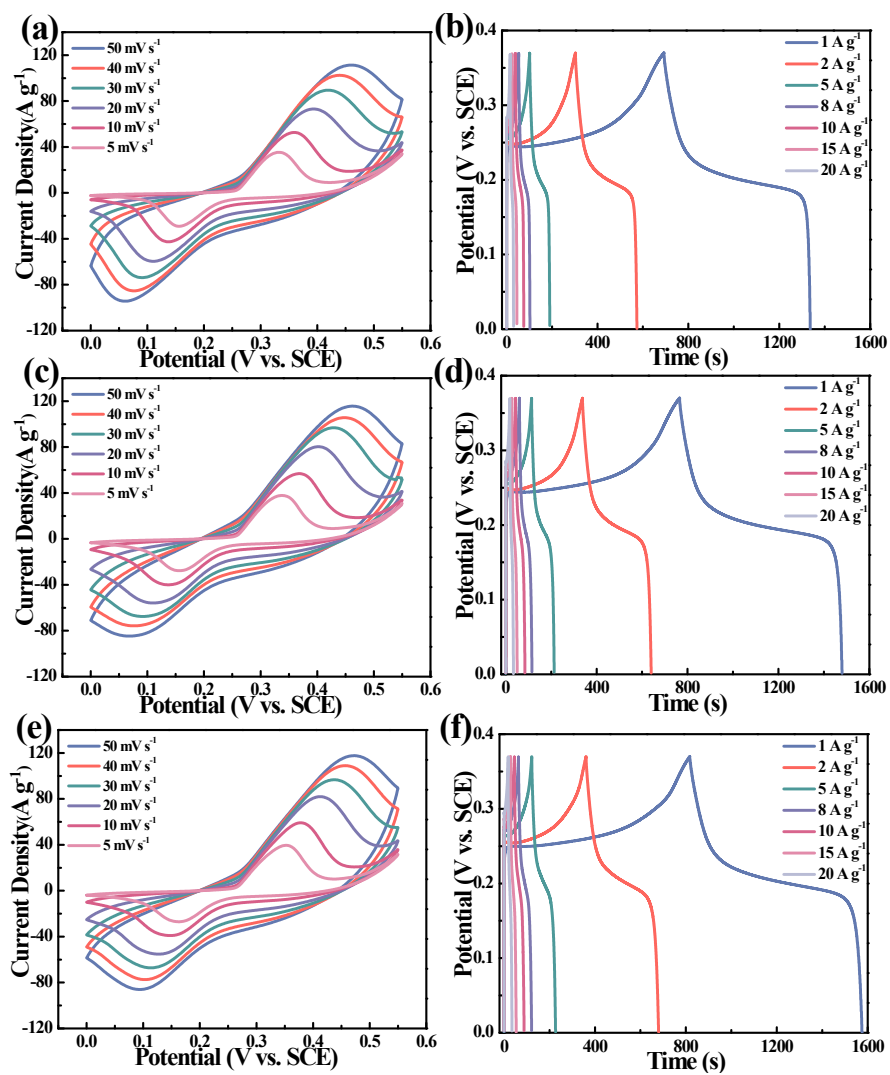
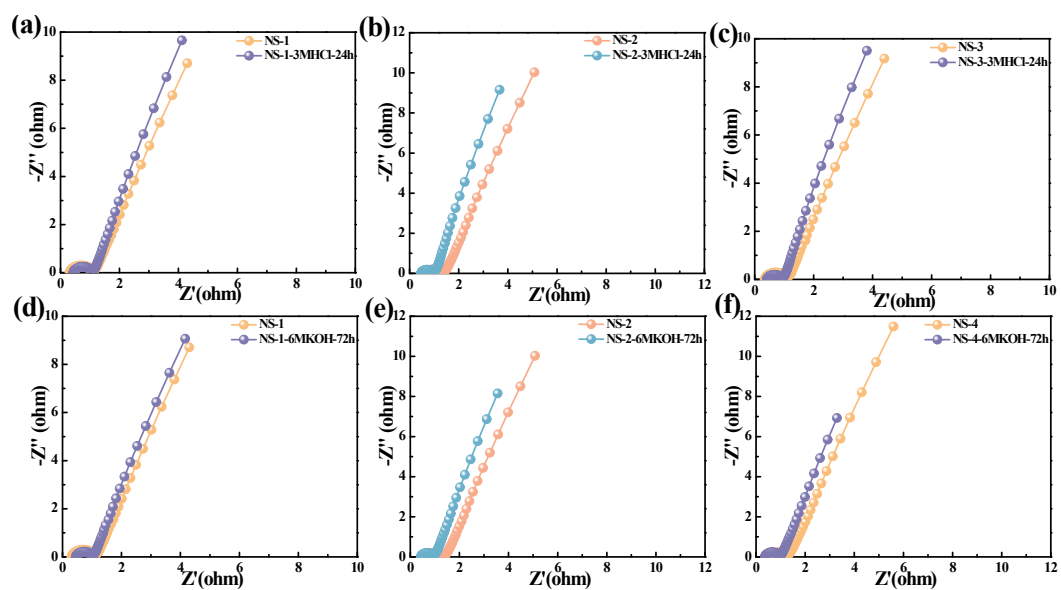


Fig. S6 (a) CV curves and (b) GCD curves of NS-1-3MHCl-24h, (c) CV curves and (d) GCD curves

of NS-2-3MHCl-24h, (e) CV curves and (f) GCD curves of NS-3-3MHCl-24h



**Fig. S7** (a) CV curves and (b) GCD curves of NS-1-6MKOH-72h, (c) CV curves and (d) GCD curves of NS-2-6MKOH-72h, (e) CV curves and (f) GCD curves of NS-4-6MKOH-72h



**Fig. S8** EIS plots of (a) NS-1 and NS-1-3MHCl-24h, (b) NS-2 and NS-2-3MHCl-24h, (c) NS-3 and NS-3-3MHCl-24h, (d) NS-1 and NS-1-6MKOH-72h, (e) NS-2 and NS-2-6MKOH-72h, and (f) NS-4 and NS-4-6MKOH-72h