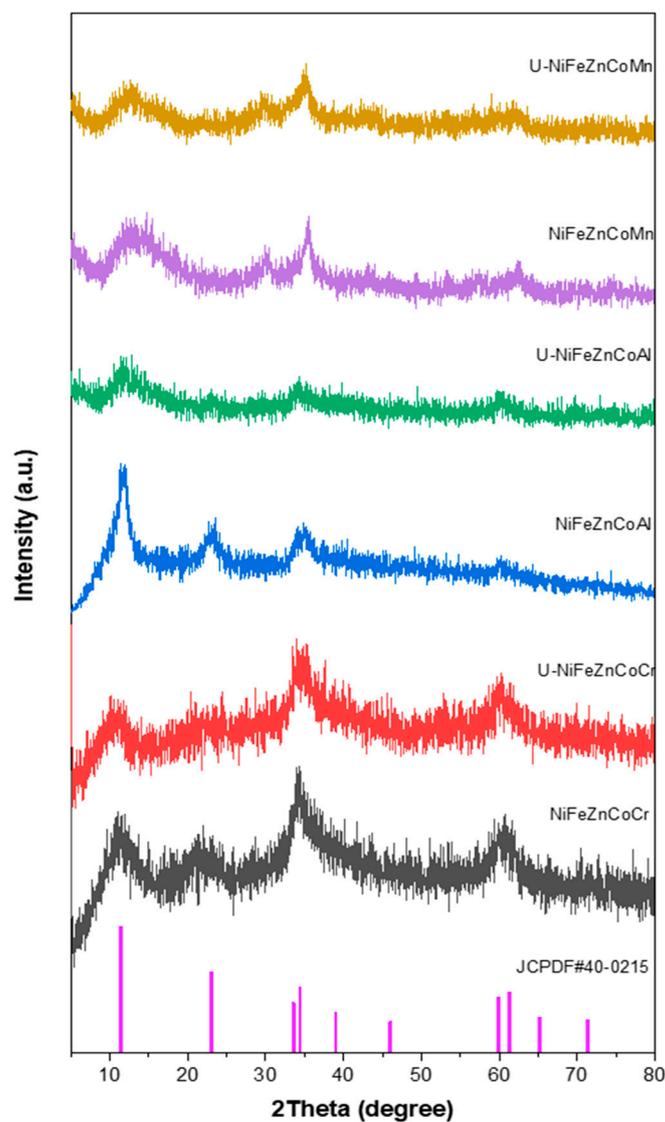
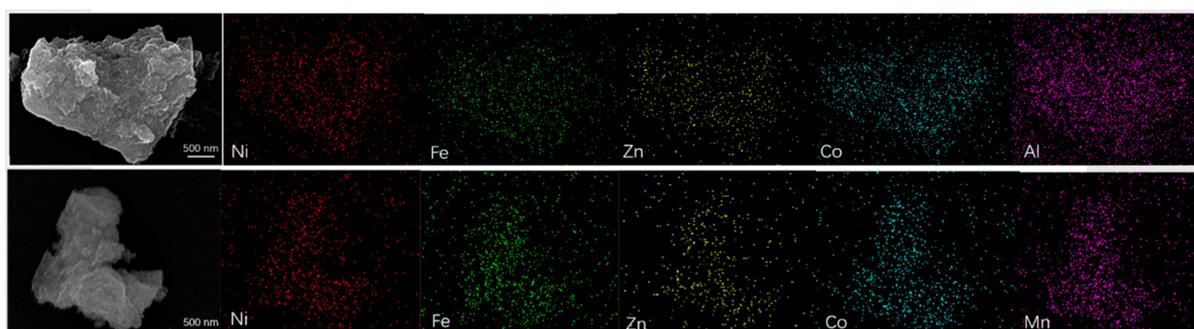


## Supporting Information



**Figure S1.** XRD patterns of NiFeZnCoCr-LDH, NiFeZnCoMn-LDH, NiFeZnCoAl-LDH, U-NiFeZnCoCr-LDH, U-NiFeZnCoMn-LDH, and U-NiFeZnCoAl-LDH.



**Figure S2.** EDS-Mapping of U-NiFeZnCoCr-LDH and U-NiFeZnCoMn-LDH.

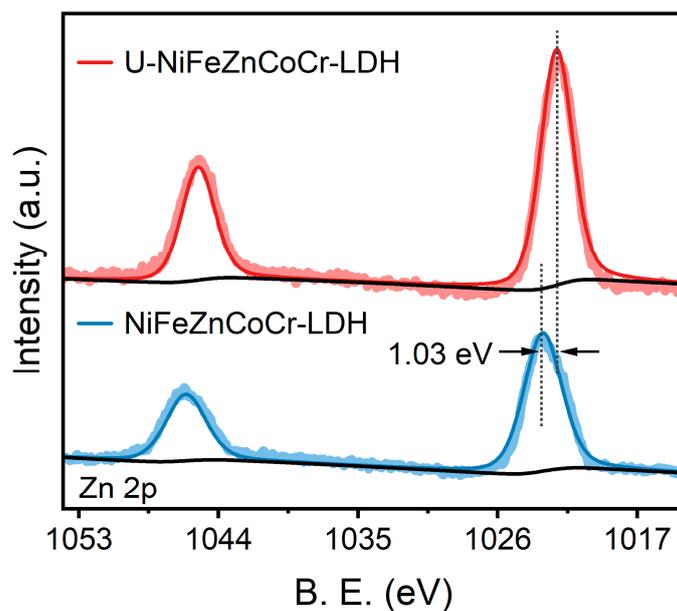


Figure S3. High-resolution Zn 2p XPS.

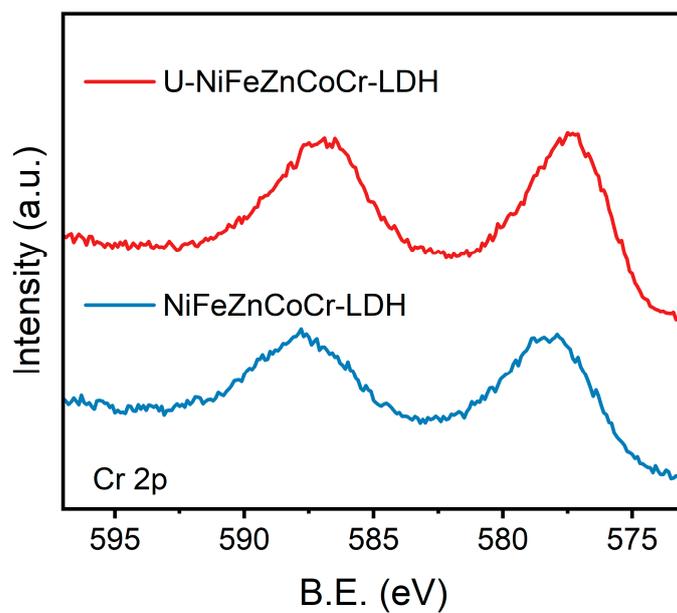
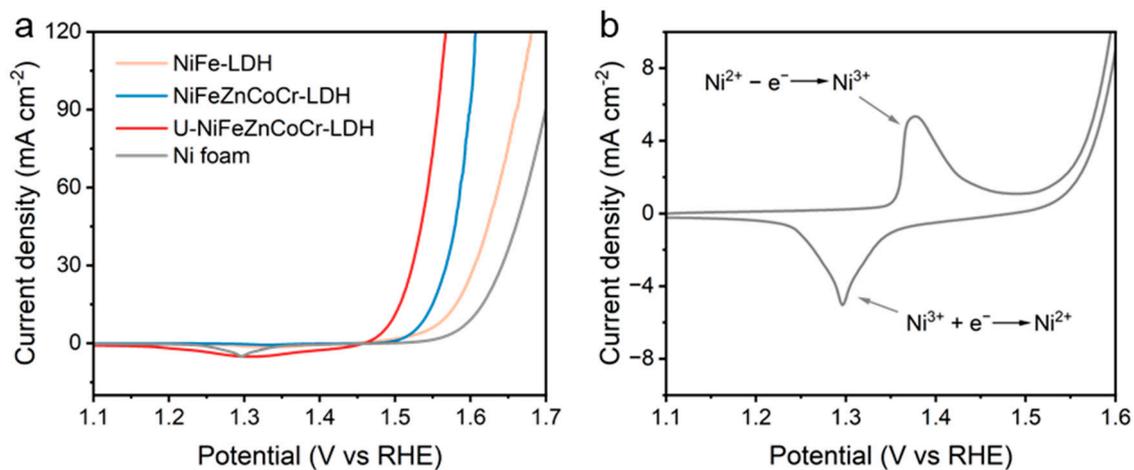
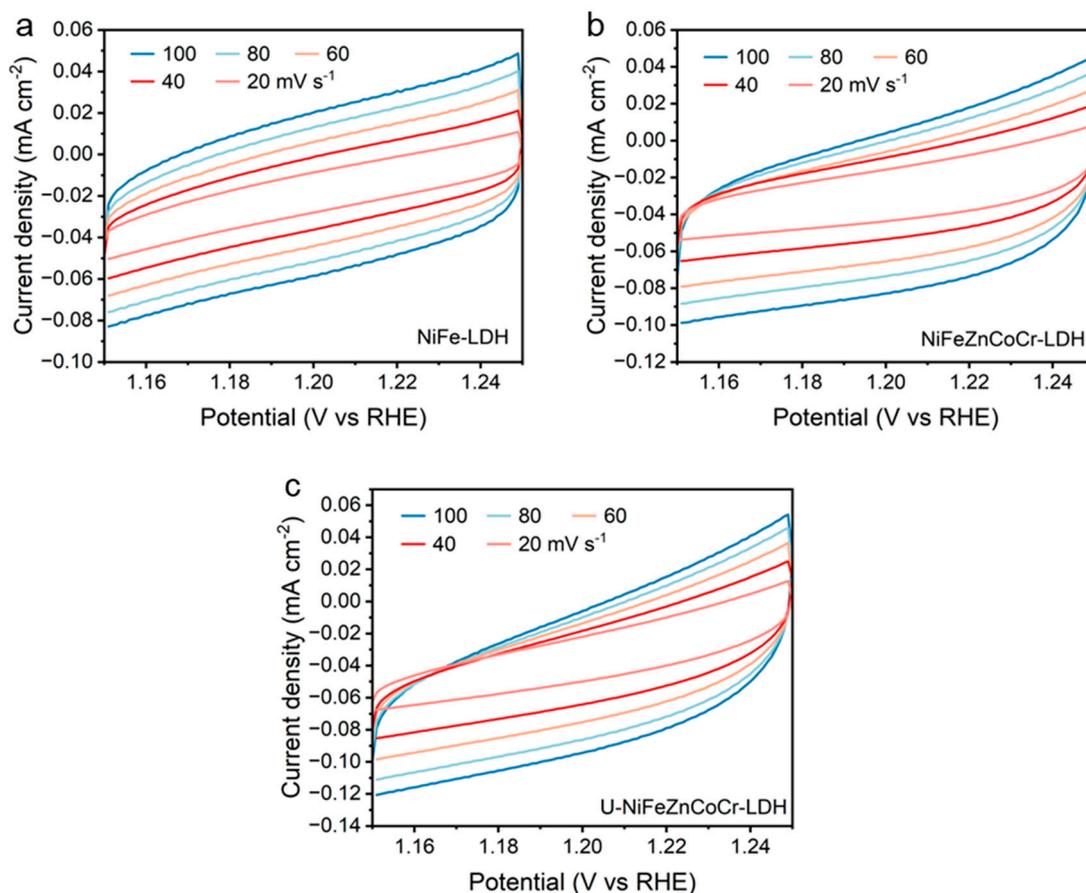


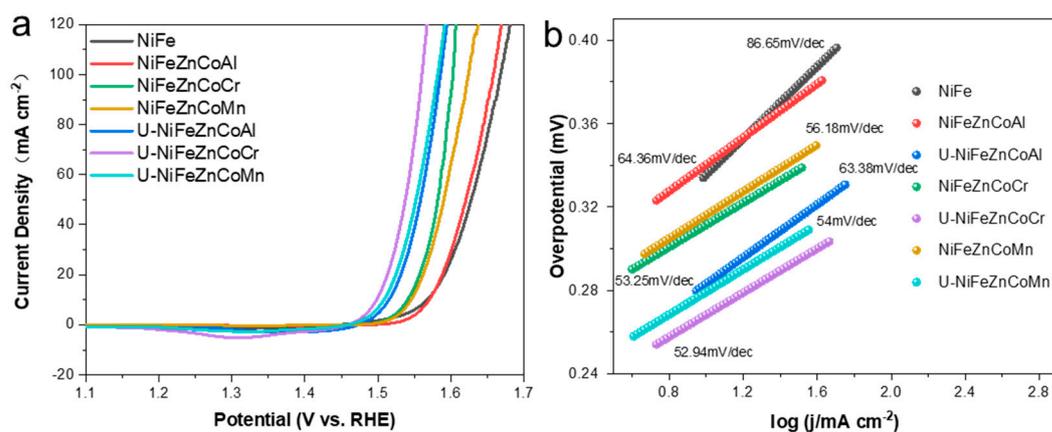
Figure S4. High-resolution Cr 2p XPS.



**Figure S5.** (a) Polarization curves of NiFe-LDH, NiFeZnCoCr-LDH, U- NiFeZnCoCr-LDH and Ni foam. (b) The redox peaks of Ni foam.



**Figure S6.** The polarization curves of NiFe-LDH, NiFeZnCoCr-LDH and U-NiFeZnCoCr-LDH for estimate the  $C_{dl}$  and ECSA.



**Figure S7.** (a) Polarization curves, (b) Tafel slope of NiFe-LDH, NiFeZnCoCr-LDH, NiFeZnCoMn-LDH, NiFeZnCoAl-LDH, U-NiFeZnCoCr-LDH, U-NiFeZnCoMn-LDH, and U-NiFeZnCoAl-LDH.