Supplementary Information (SI) for Dalton Transactions. This journal is © The Royal Society of Chemistry 2025

## **Supporting Information**

## Constructing CrNiCoO<sub>4</sub>/MoO<sub>3</sub> Nanosheets via Multi-Step Strategy for Efficient Water Splitting

## **Supporting Figures**

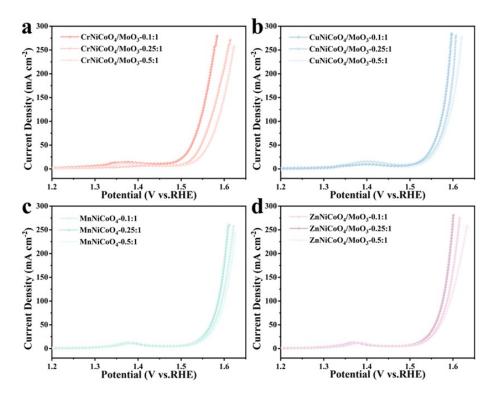
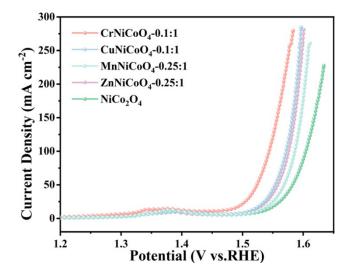


Figure S1. OER curves of spinel oxides with different (a) Cr, (b) Cu, (c) Mn and (d) Zn doping ratios



**Figure S2.** The optimal doping ratio of each element and the OER polarization curve of  $NiCo_2O_4$ 

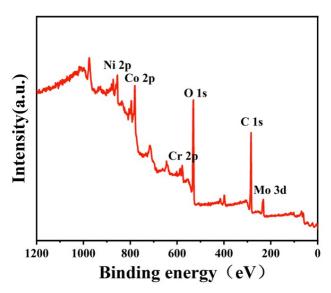


Figure S3. XPS survey spectrum of CrNiCoO<sub>4</sub>/MoO<sub>3</sub>

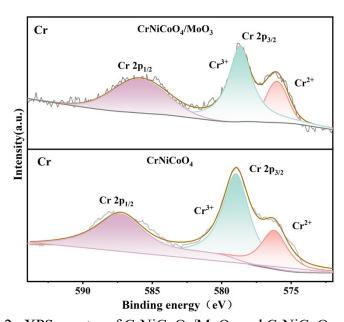


Figure S4. Cr 2p XPS spectra of CrNiCoO<sub>4</sub>/MoO<sub>3</sub> and CrNiCoO<sub>4</sub>

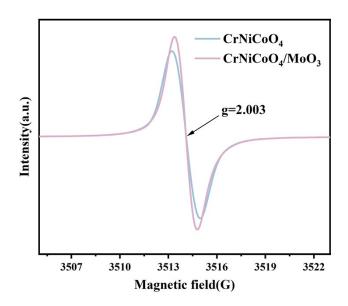
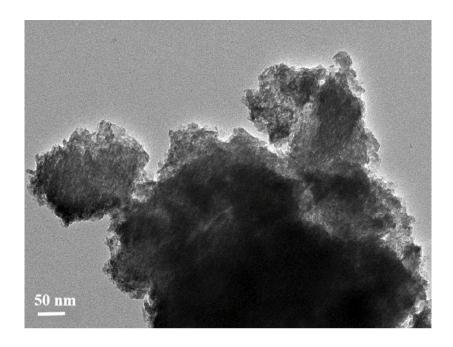
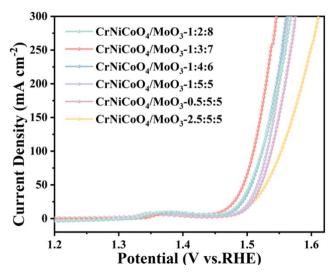


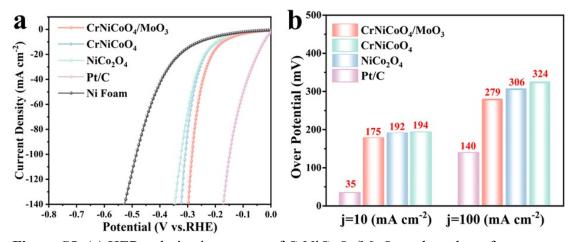
Figure S5. EPR spectra of the CrNiCoO<sub>4</sub>/MoO<sub>3</sub> and CrNiCoO<sub>4</sub>



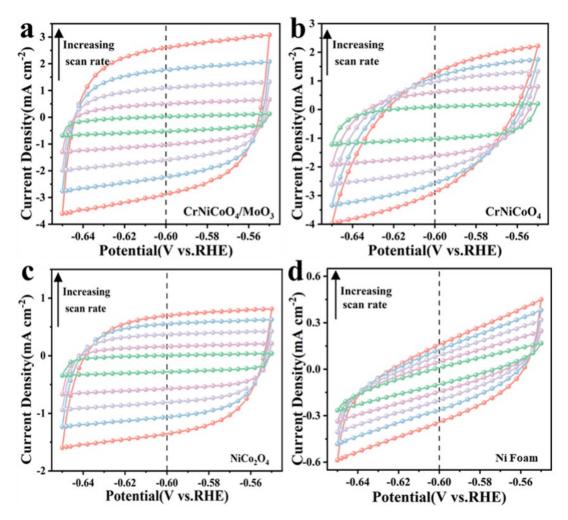
**Figure S6.** (a) TEM images of the control sample synthesized with a prolonged crystallization time of 2 hours.



**Figure S7.** OER polarization curves of CrNiCoO<sub>4</sub>/MoO<sub>3</sub> with different CrNiCo feed ratios



**Figure S8.** (a) HER polarization curves of CrNiCoO<sub>4</sub>/MoO<sub>3</sub> and catalysts for comparison; (b) The corresponding overpotentials of electrocatalyst at 50 and 100 mA·cm<sup>-2</sup>



**Figure S9.** CV curves of (a)  $CrNiCoO_4/MoO_3$ , (b)  $CrNiCoO_4$ , (c)  $NiCo_2O_4$  and (d) NF Foam at a sweep speed of 20-100 mV·s<sup>-1</sup>