

Supporting Information

Rapidly Reconstructed $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}$ Nanocatalysts for Efficient and Stable Overall Water Splitting in Alkaline and Seawater Electrolysis

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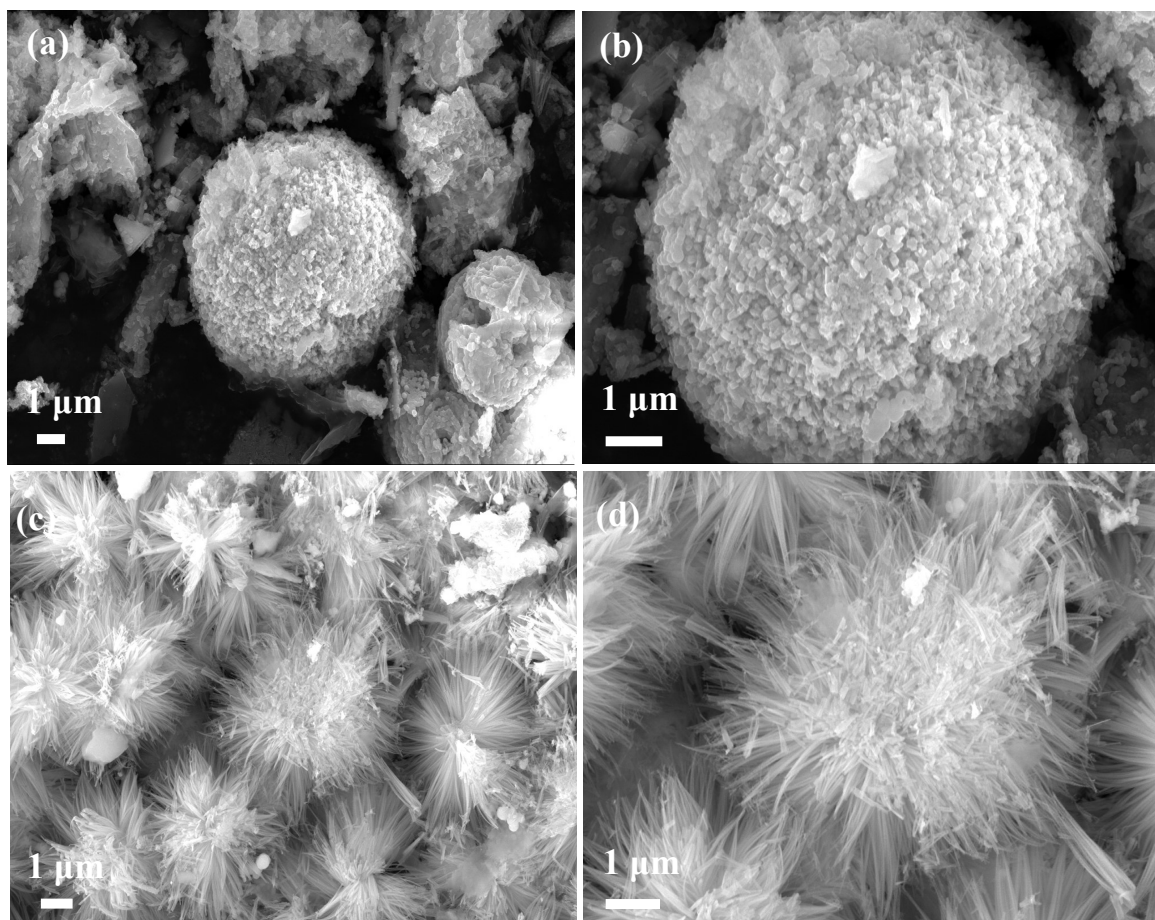


Figure S1 (a,b)SEM images of CuCo_2S_4 ; (c,d) $\text{CuCo}_2\text{S}_4@\text{CoF}_2$.

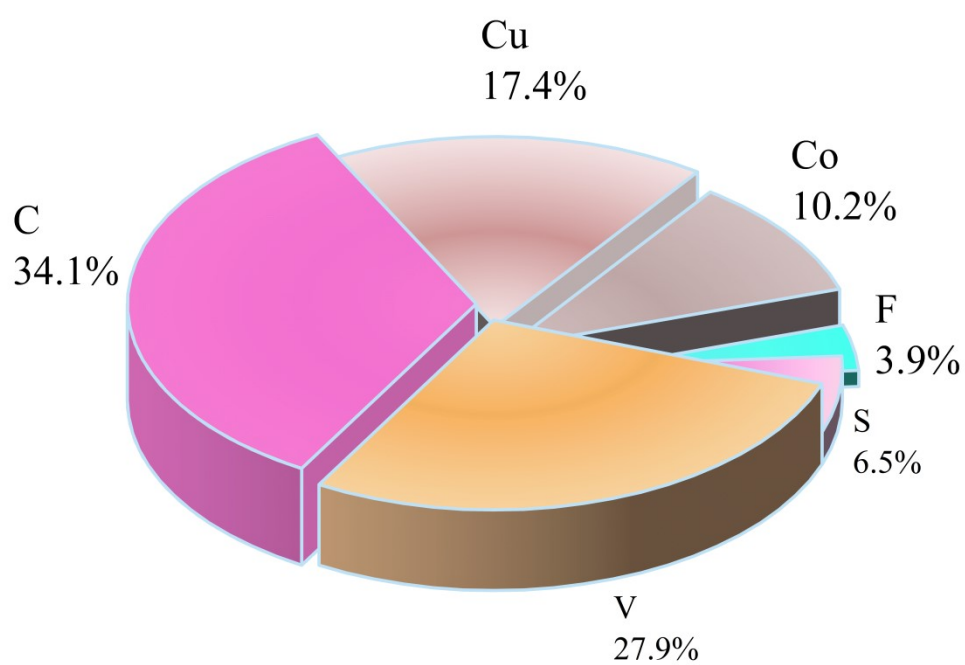


Figure S2 Percentage content chart of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F.1}$ sample..

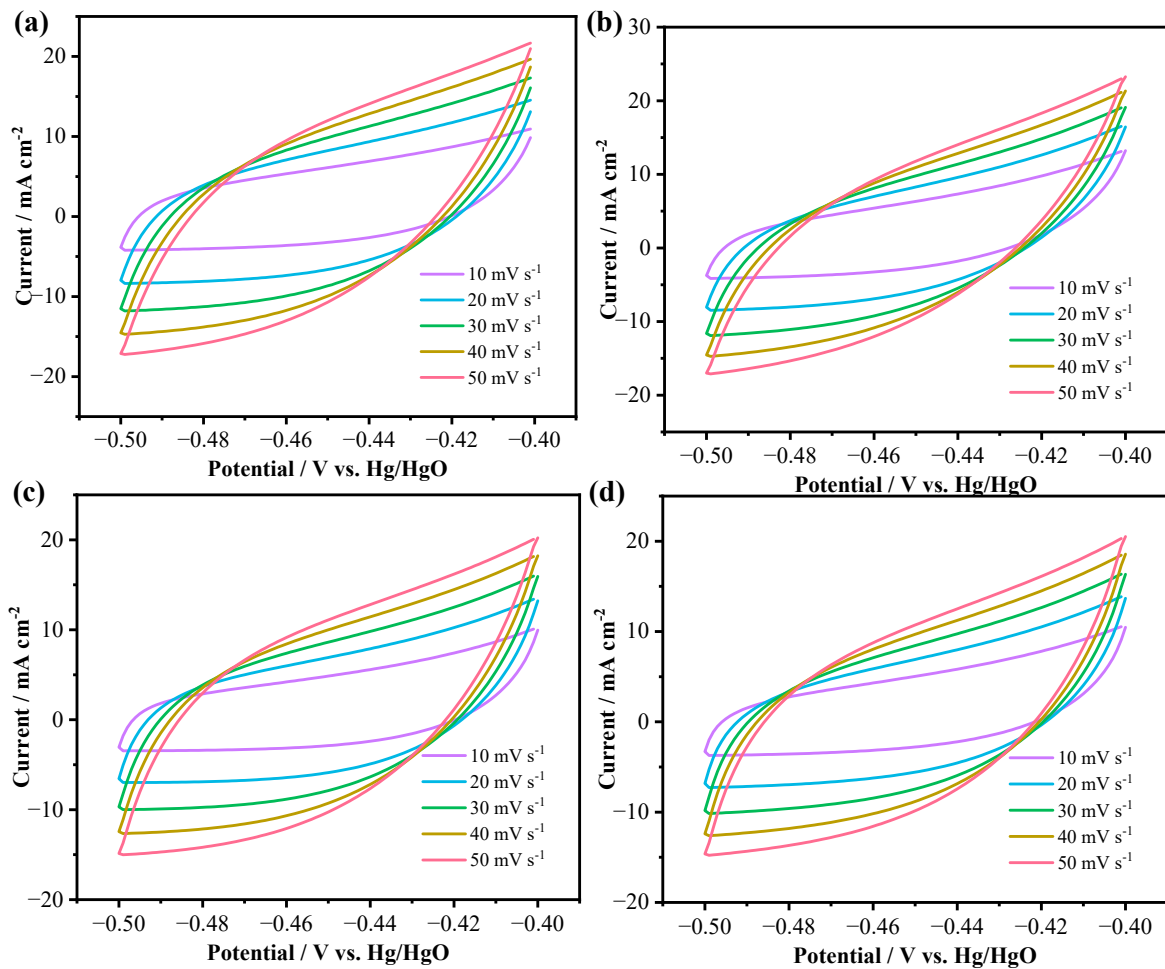


Figure S3 CV curves of HER of the as-obtained samples in KOH solutions;
 (a) curves of CuCo_2S_4 ; (b) curves of $\text{CuCo}_2\text{S}_4@\text{CoF}_2$; (c) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.1}$; (d) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.2}$.

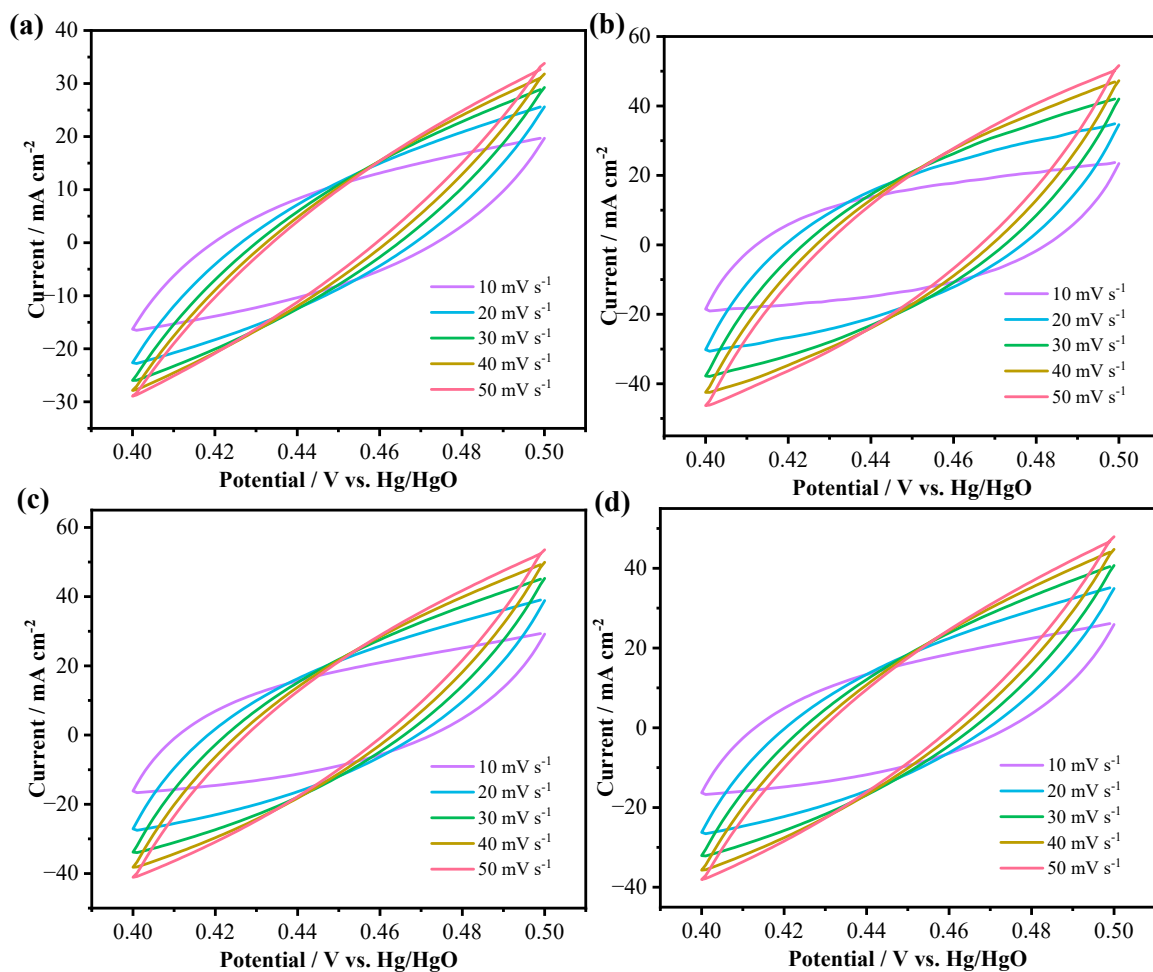


Figure S4 CV curves of OER of the as-obtained samples in KOH solutions;
 (a) curves of CuCo_2S_4 ; (b) curves of $\text{CuCo}_2\text{S}_4@\text{CoF}_2$; (c) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.1}$; (d) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.2}$.

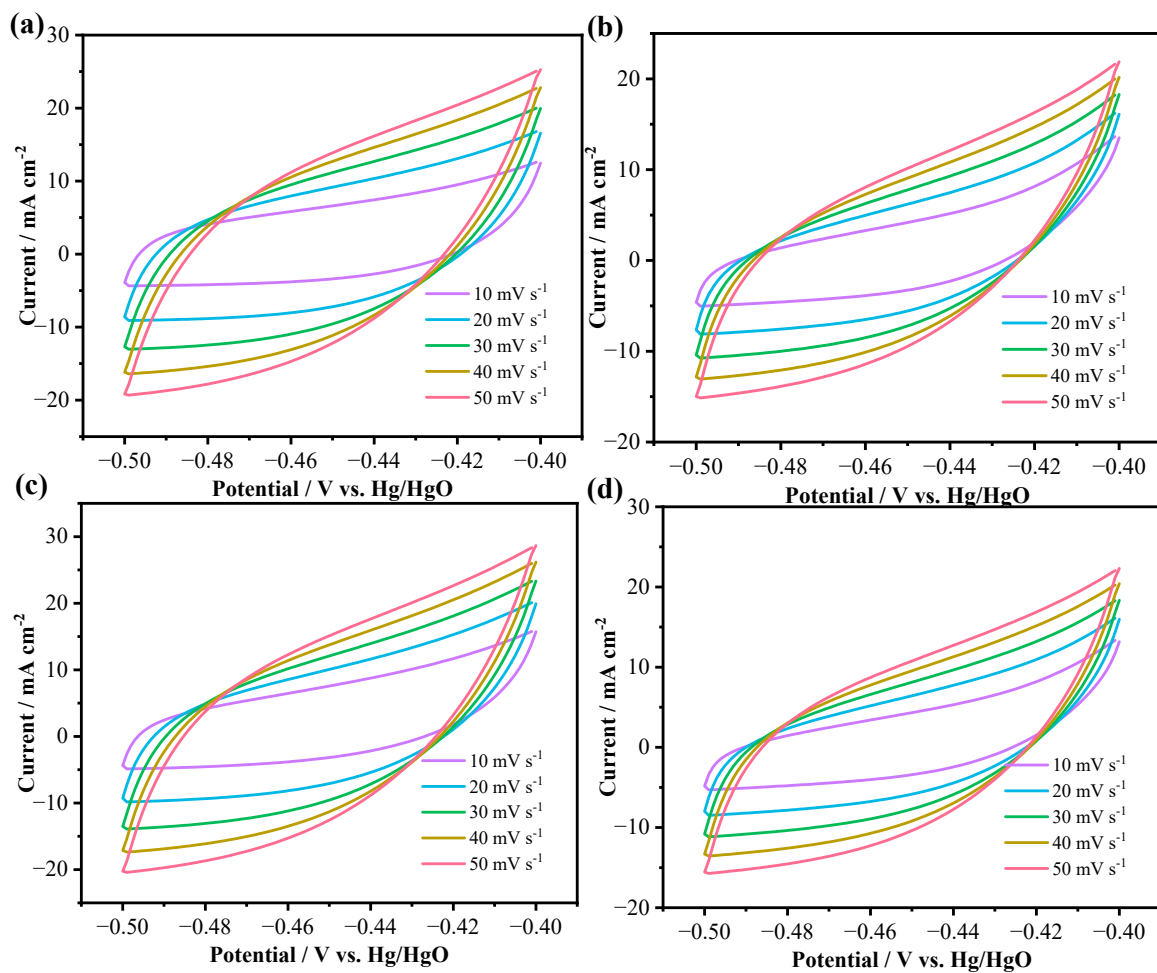


Figure S5 CV curves of HER of the as-obtained samples in seawater;

(a) curves of CuCo_2S_4 ; (b) curves of $\text{CuCo}_2\text{S}_4@\text{CoF}_2$; (c) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.1}$; (d) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.2}$.

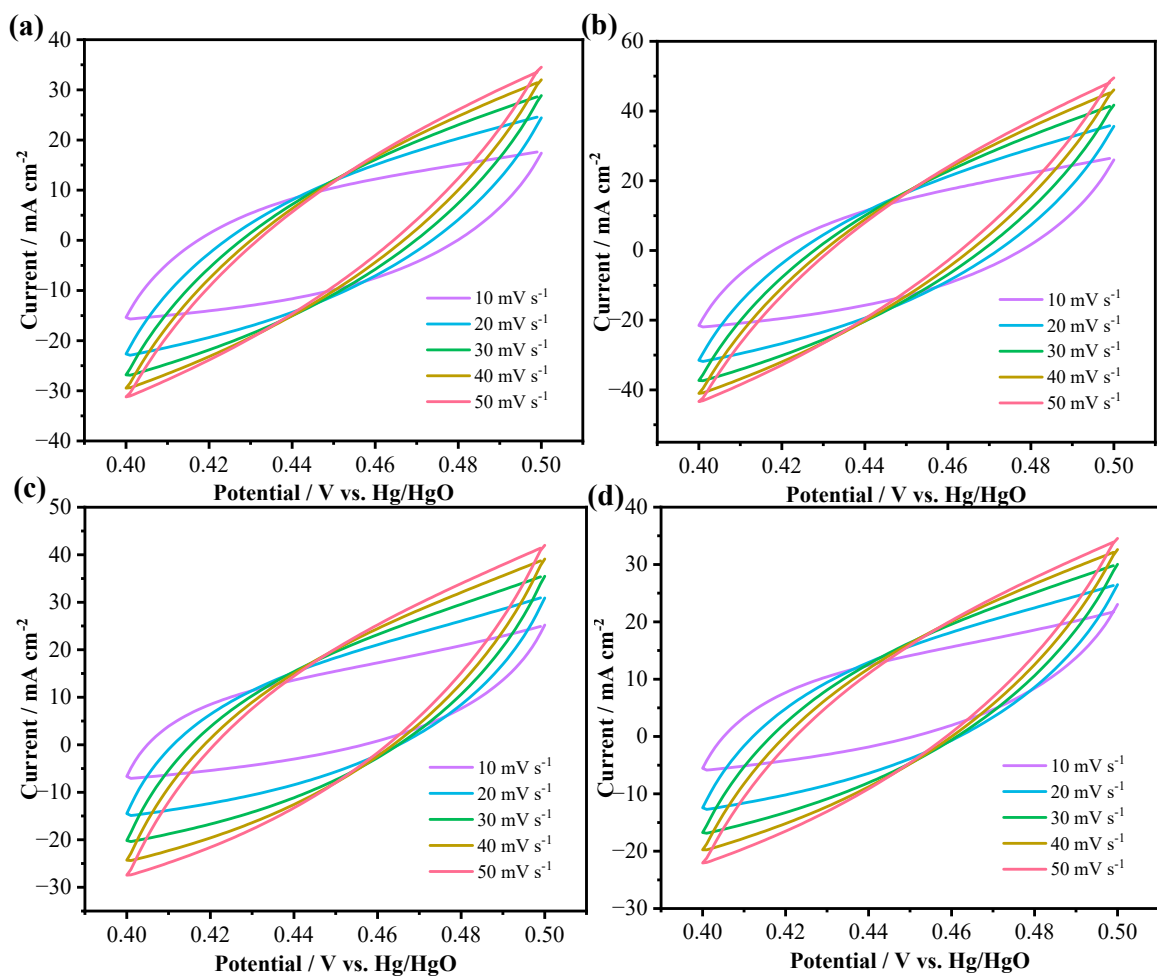


Figure S6 CV curves of OER of the as-obtained samples in seawater;

(a) curves of CuCo_2S_4 ; (b) curves of $\text{CuCo}_2\text{S}_4@\text{CoF}_2$; (c) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.1}$; (d) curves of $\text{CuCo}_2\text{S}_4@\text{Co-V-O-F}_{.2}$.