Supporting information file

Vertically aligned 3D core-shell of $CuO/ZnCO_2O_4$ on flexible support for efficient and scalable electrochemical water splitting

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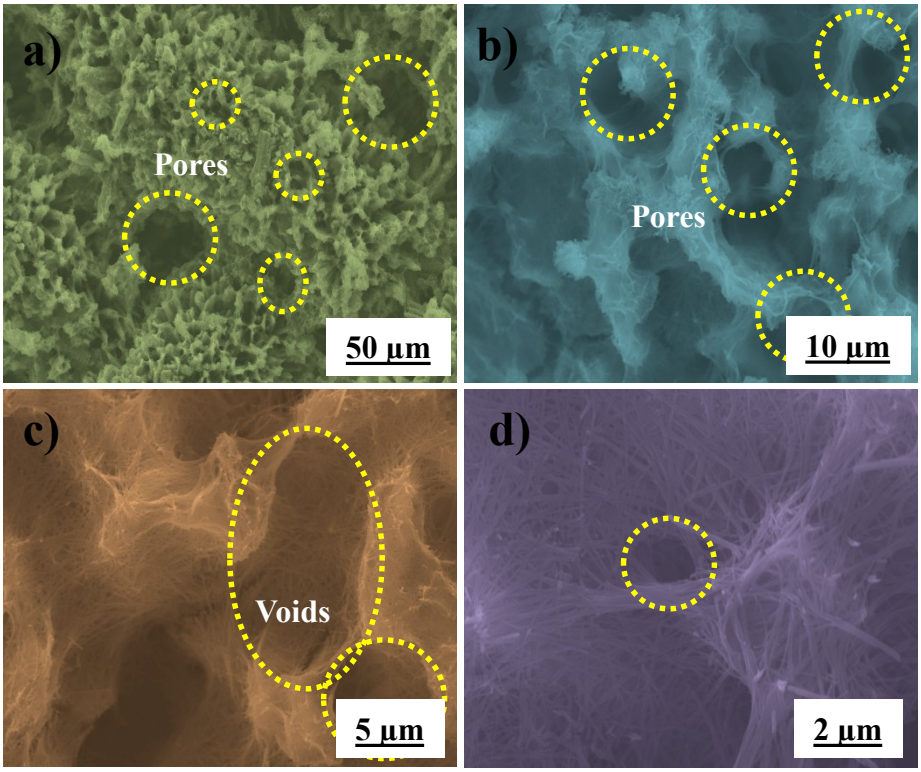

Fig. S1 (a-d) SEM images of $CuO/ZnCo_2O_4$@FSSM at different magnifications showing porous nanostructure.

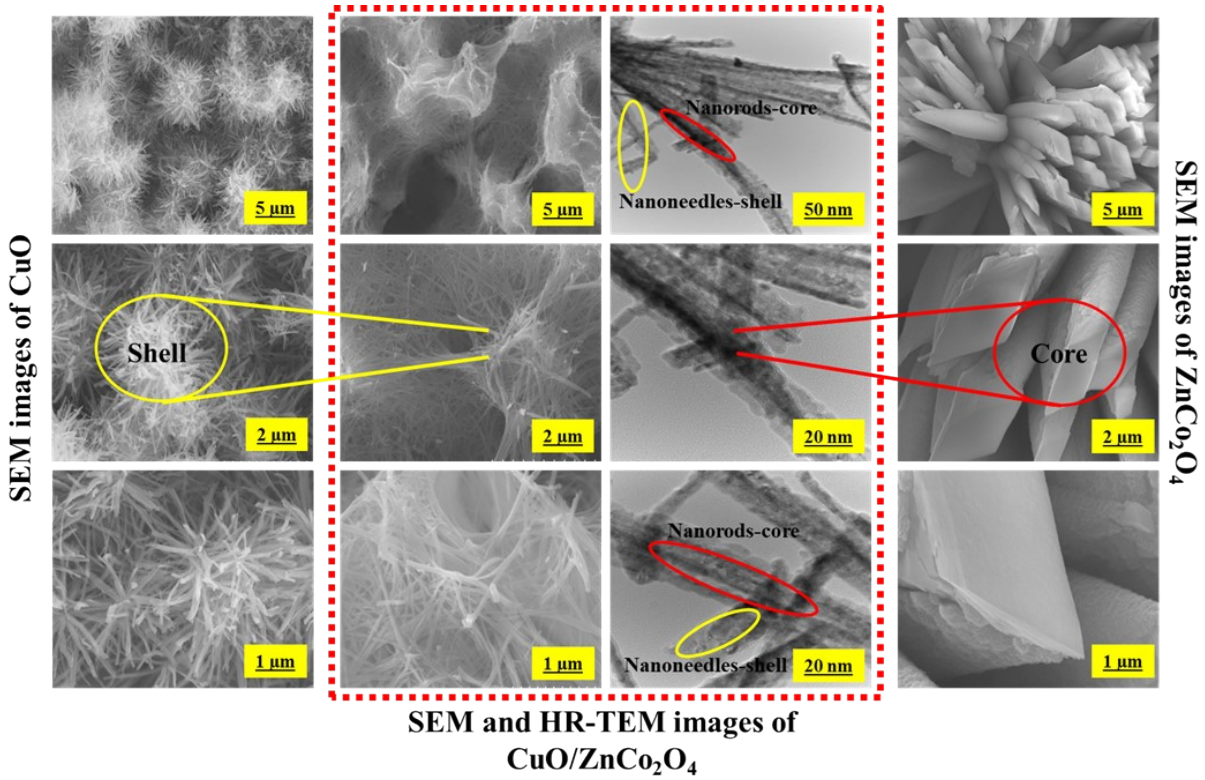

Fig. S2 SEM and HR-TEM images of CuO, ZnCo2O4, and CuO/ZnCo2O4 at different magnifications showing the core-shell structure of CuO/ZnCo2O4 electrode.

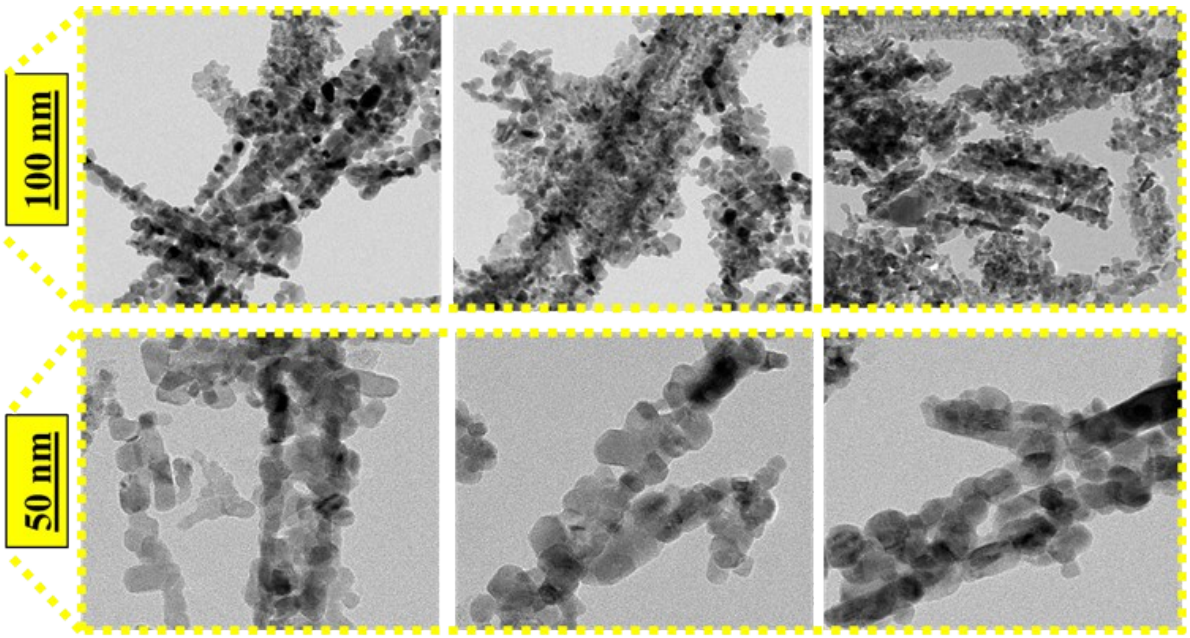

Fig. S3 HR-TEM images of $CuO/ZnCo_2O_4$ at different magnifications showing the core-shell structure of $CuO/ZnCo_2O_4$ electrode.

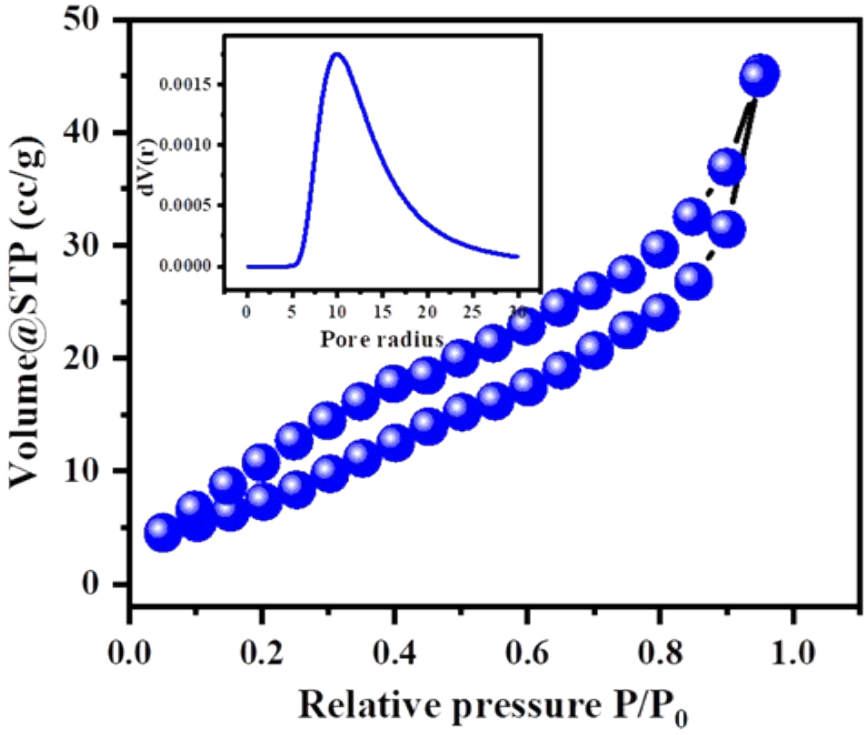

Fig. S4 BET plots of $CuO/ZnCo_2O_4$ and the respective BJH plots (inset).

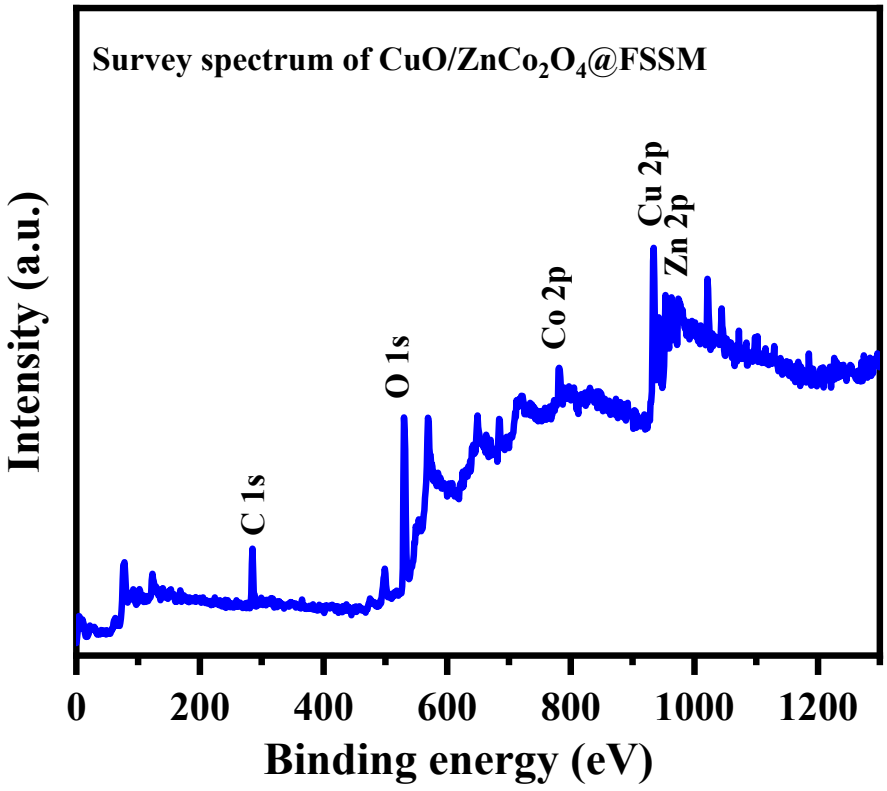

Fig. S5 Full XPS survey spectrum of $CuO/ZnCo_2O_4$

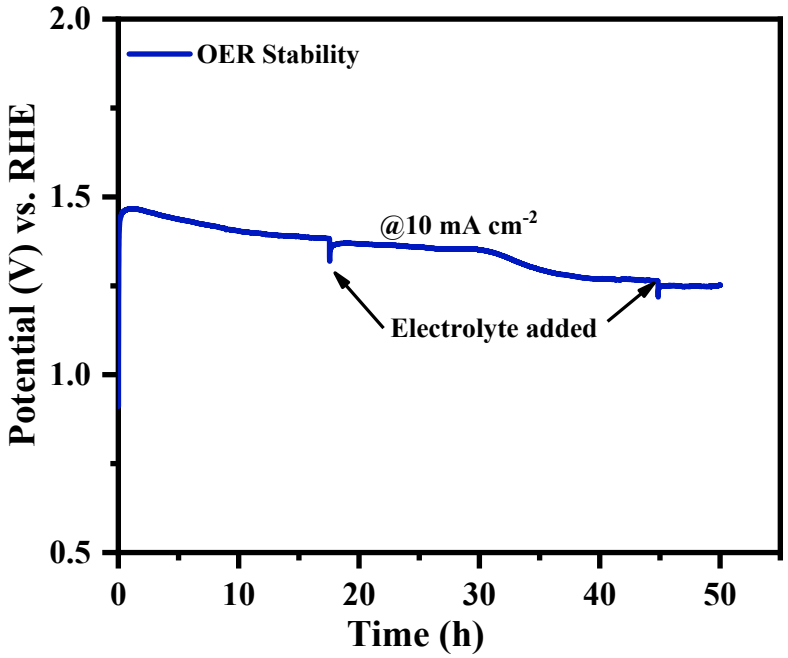

Fig. S6 Long-term stability test of $CuO/ZnCo_2O_4$@FSSM for 50 h at 10 mA cm^{-2} current density.

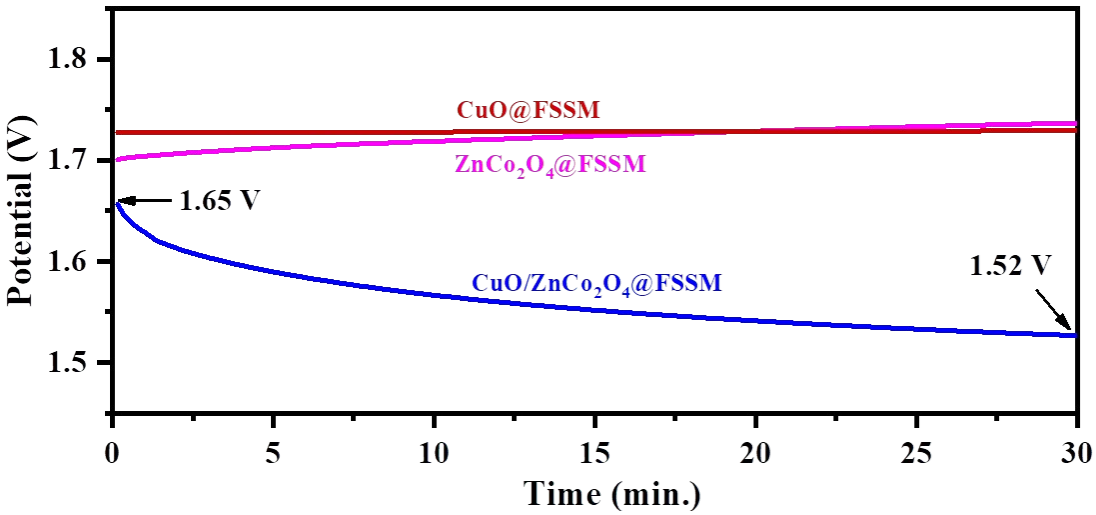

Fig. S7 CP test of CuO@FSSM, $ZnCo_2O_4$@FSSM, and CuO/$ZnCo_2O_4$@FSSM at 50 mA cm^{-2} current density.

Post-OER Analysis

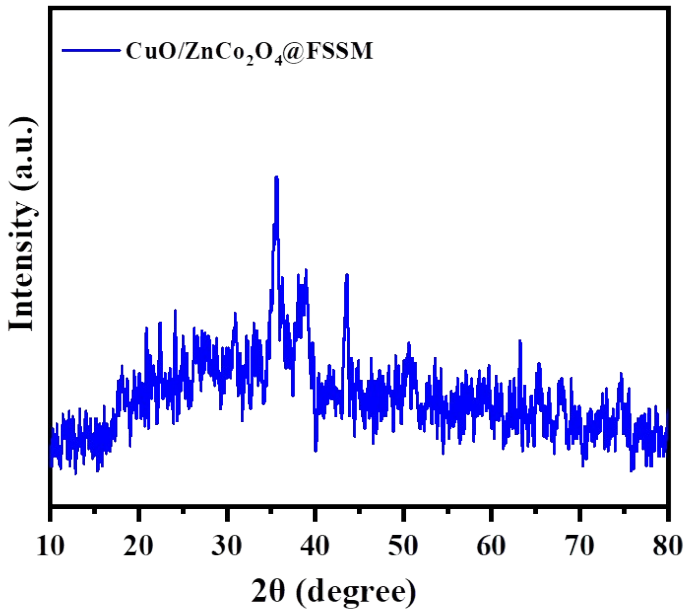

Fig. S8 XRD of CuO/$ZnCo_2O_4$@FSSM after the long-term stability test@10 mA cm^{-2} current density after 25 h.

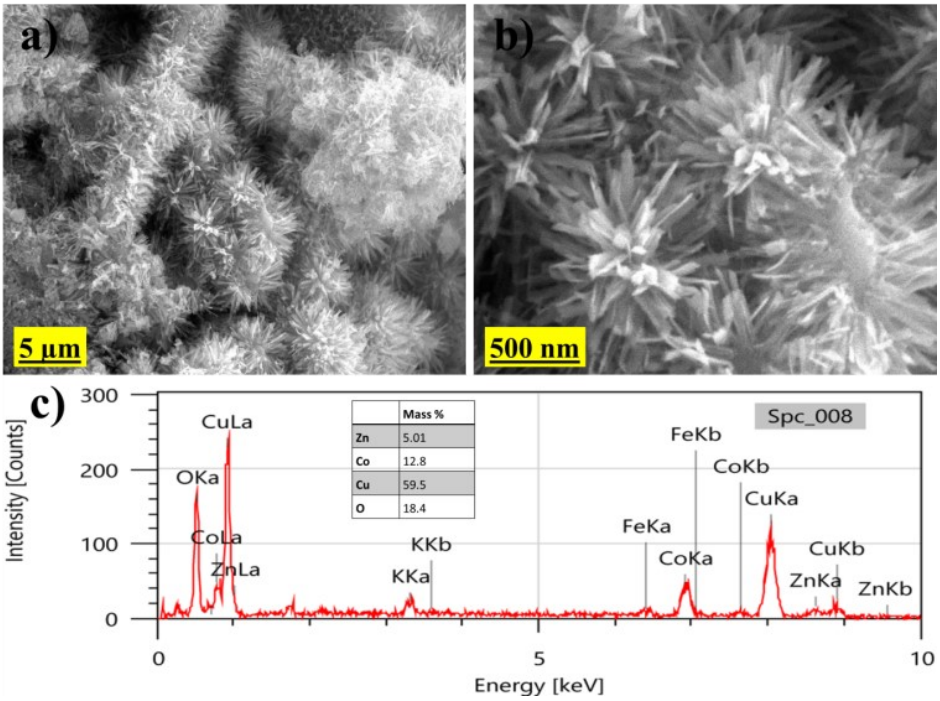

Fig. S9 (a-b) SEM images obtained at different magnifications from $CuO/ZnCo_2O_4$@FSSM after the stability test (c) EDS spectrum of $CuO/ZnCo_2O_4$@FSSM after stability test.

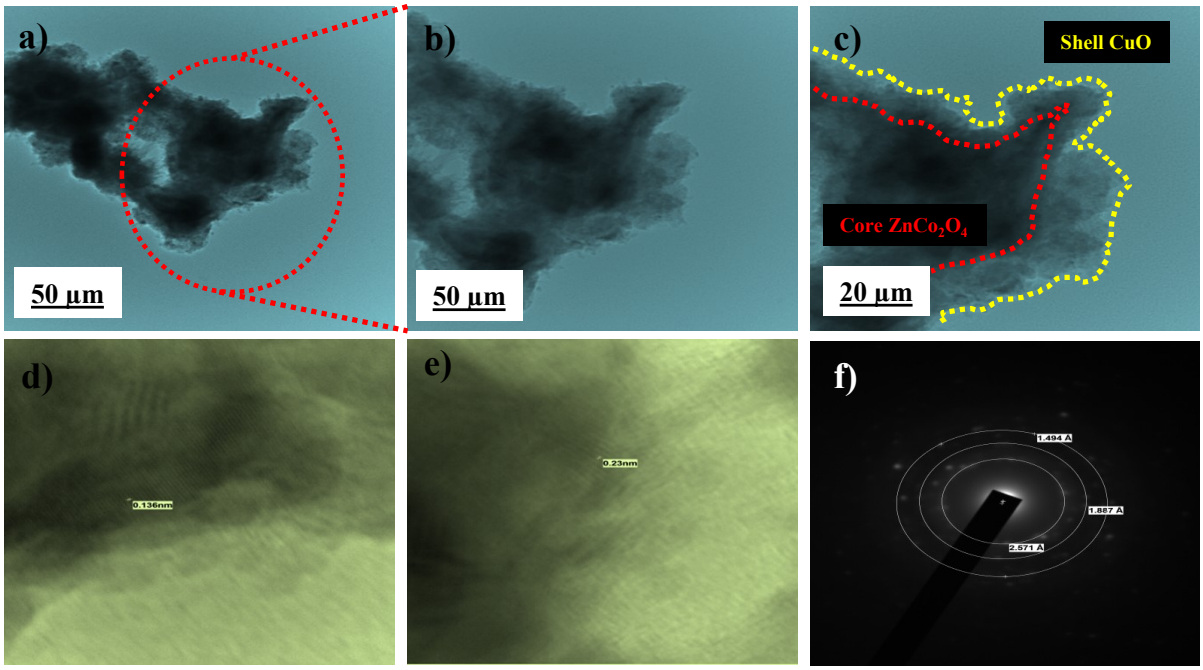

Fig. S10 (a-c) After stability test TEM images of 3-D $CuO/ZnCo_2O_4$ core-shell network obtained at different magnifications (d-e) HR-TEM images of $CuO/ZnCo_2O_4$@FSSM core-shell network, (f) SAED pattern.

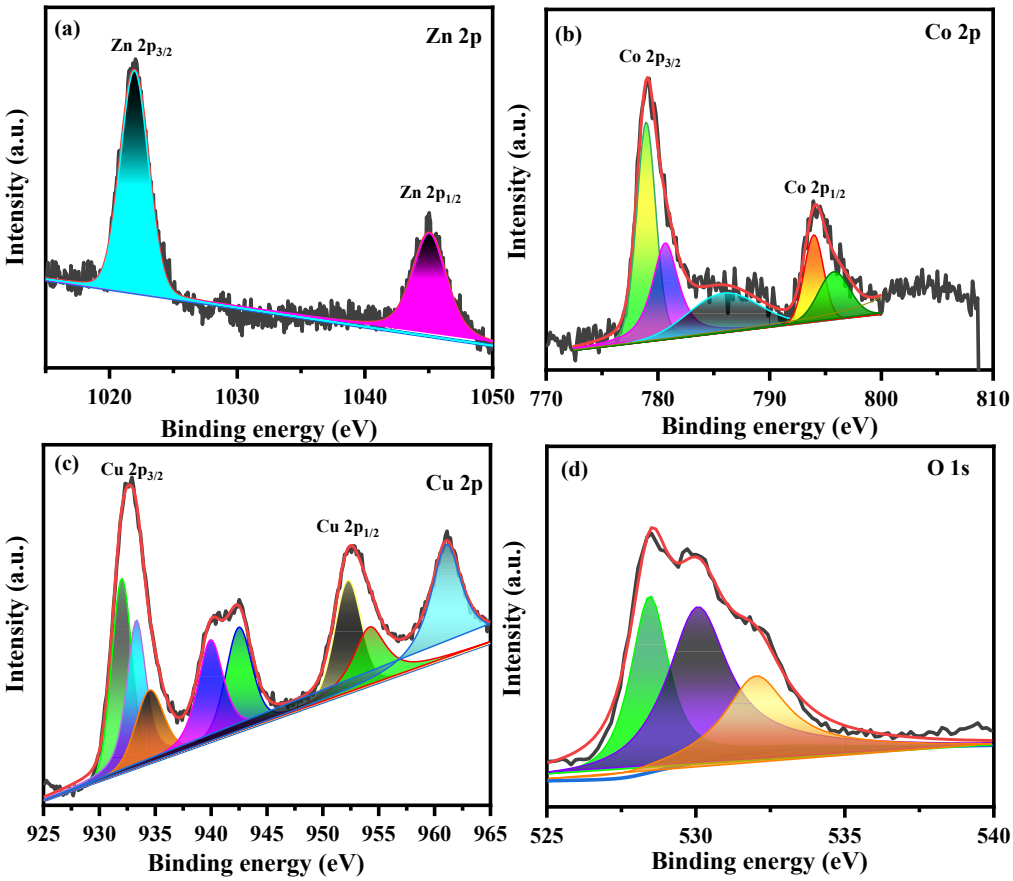

Fig. S11 Post OER XPS analysis of $CuO/ZnCo_2O_4$ (a) Zn 2p core spectra,(b) Co 2p core spectra, (c) Cu 2p core spectra, (d) O 1s core spectra.