

Photoelectrochemical performance of nanoscale Cu_2O by integrating ZnO thin films mimicking as 3D-2D heterojunction: Experiments & First-Principles analysis

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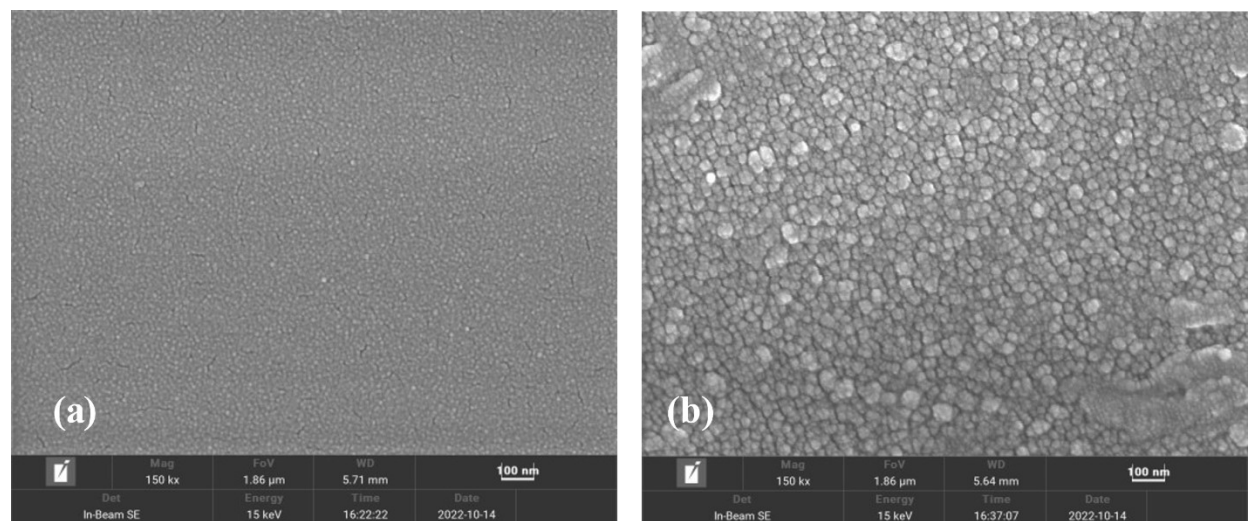


Figure S1 FE- SEM micrographs of (a) ZnO ; (b) Cu_2O .

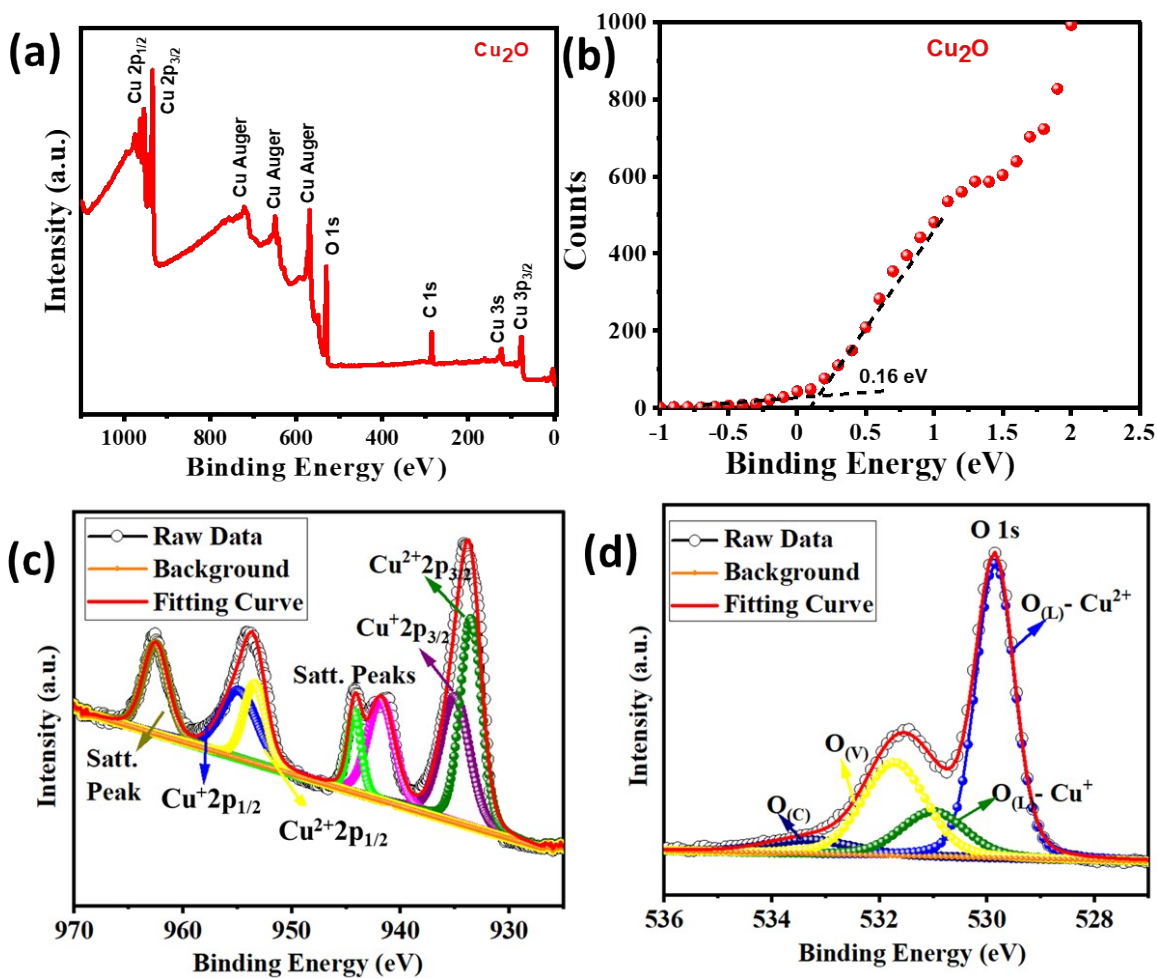


Figure S2 Cu_2O XPS (a) Survey Spectrum; (b) Valence band spectra; elemental analysis (c) $\text{Cu } 2p$; (d) $\text{O } 1s$.

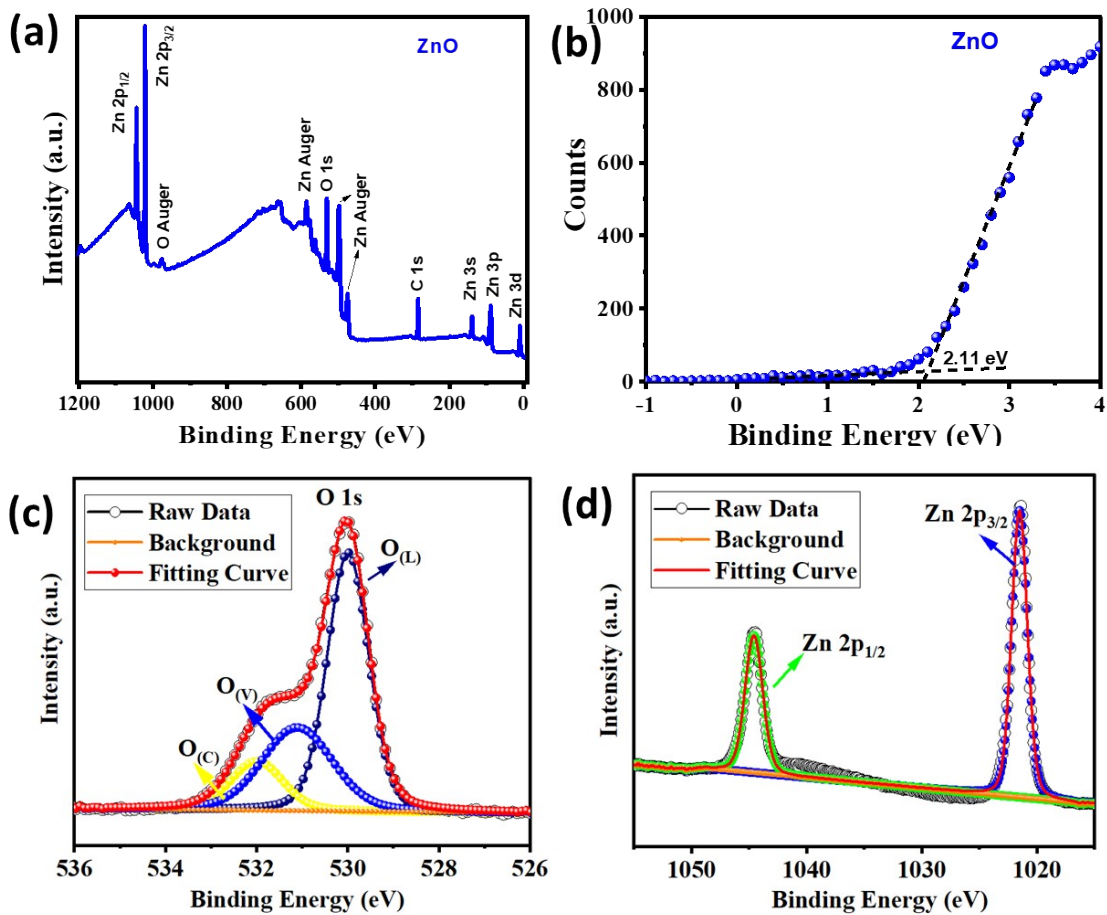


Figure S3 ZnO XPS (a) Survey Spectrum; (b) Valence band spectra; elemental analysis (c) Zn 2p; (d) O 1s.

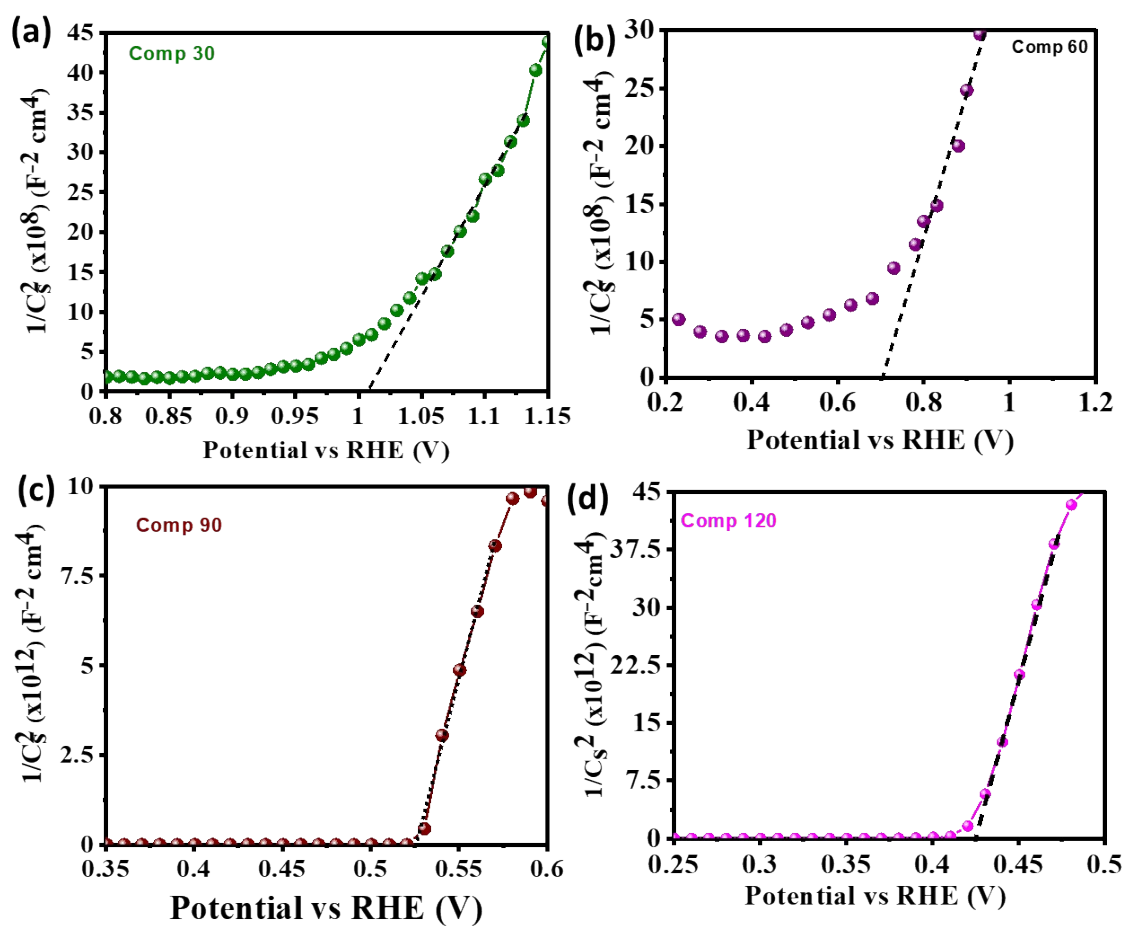


Figure S4 Mott-Schottky plots of (a) comp 30 (b) comp 60, (c) comp 90 and (d) comp 120.

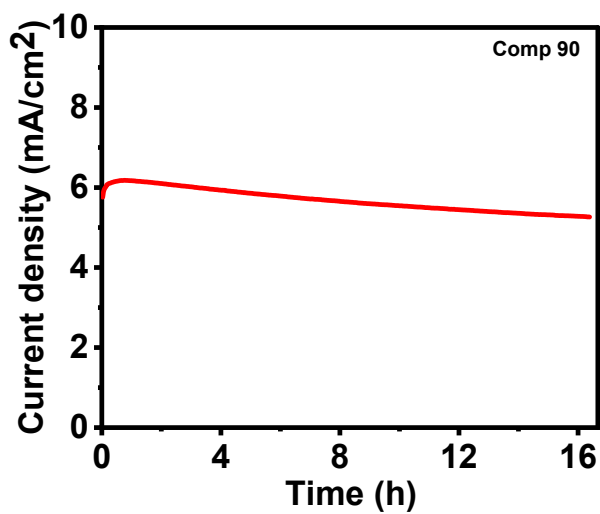


Figure S5 Chronoamperometry at 1.8 V vs. RHE under continuous light illumination of comp 90.

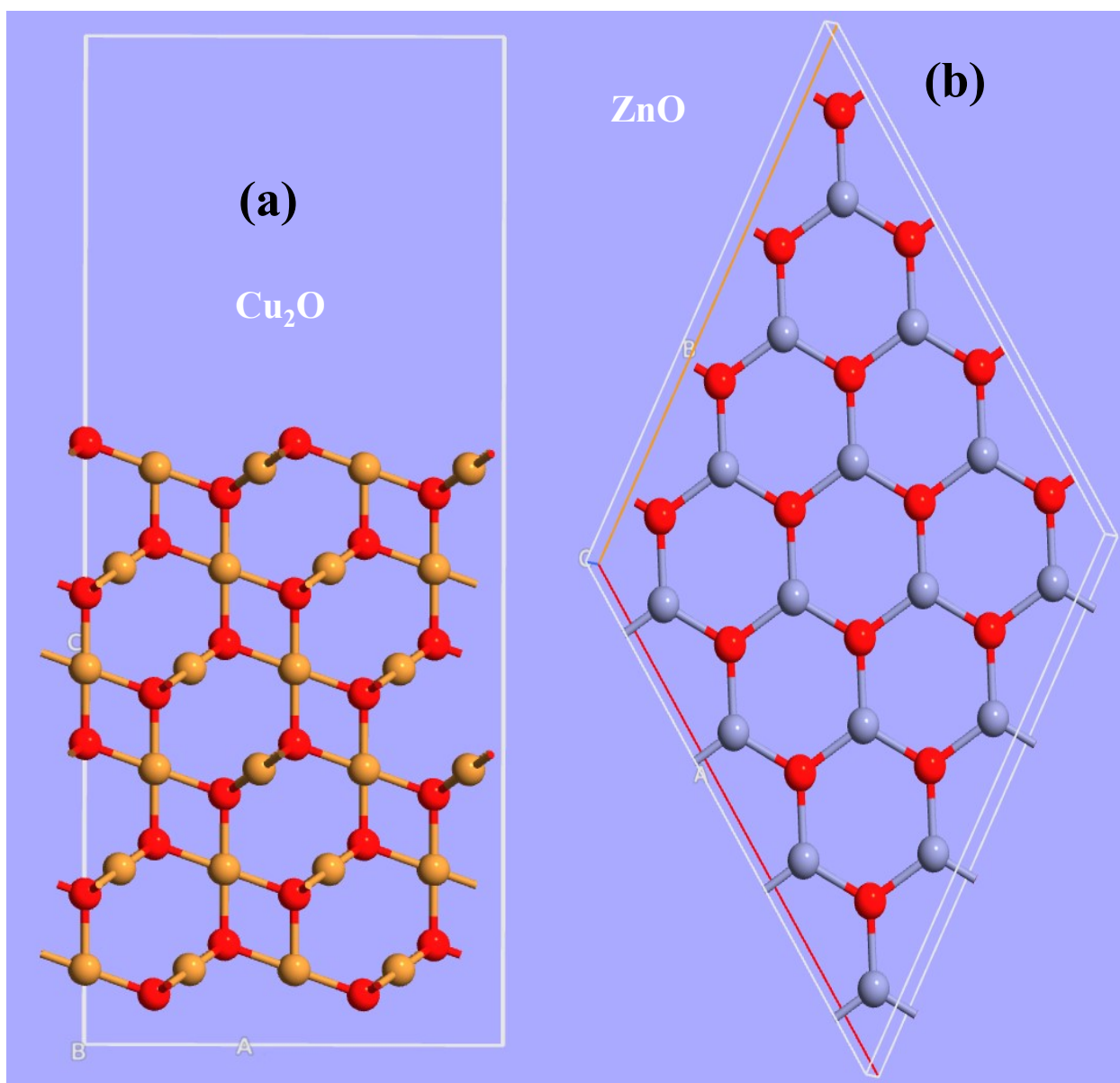


Figure S6 Relaxed (a) Cu_2O {111} surface; (b) ZnO nanosheet.

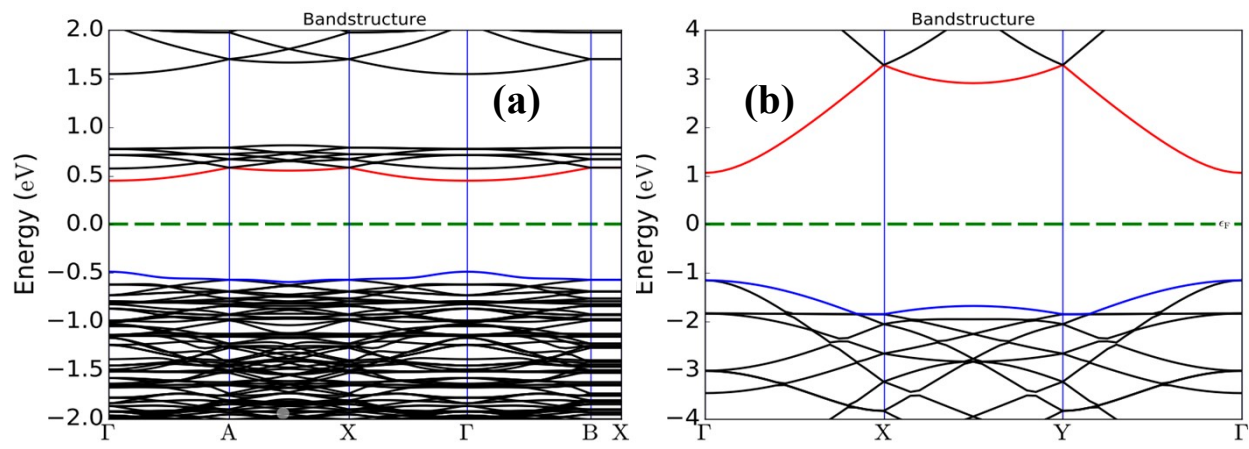


Figure S7 Simulated Bandstructure (a) Cu_2O ; (b) ZnO .