

Supporting Information

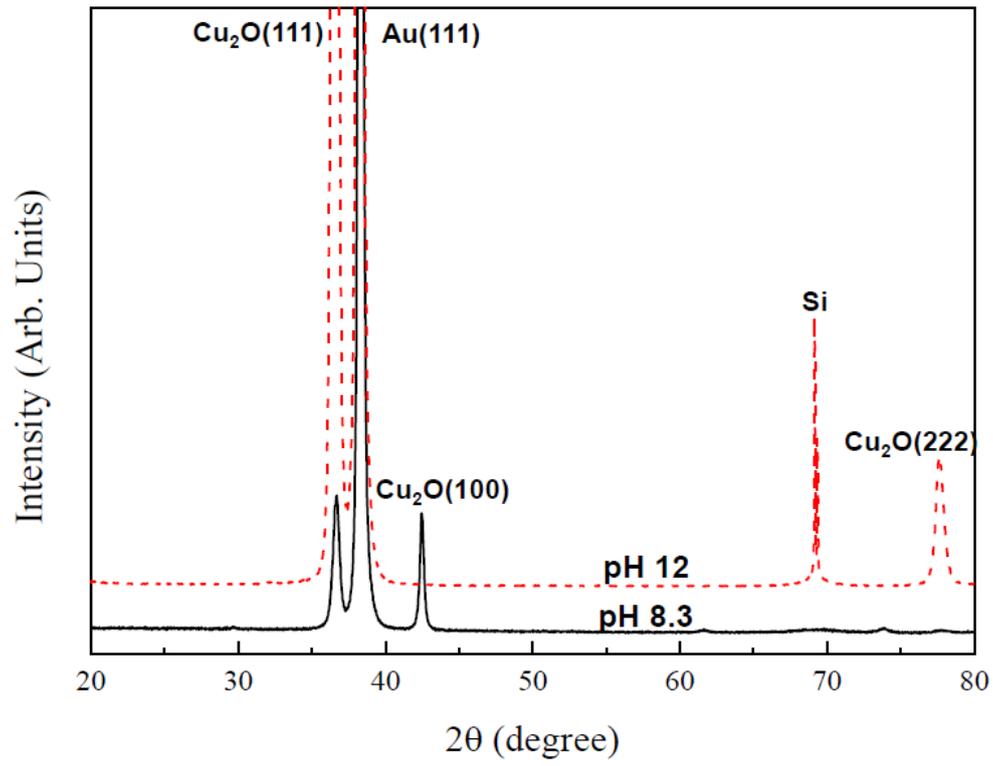
Manipulation of Cuprous Oxide Surfaces for Improving Their Photocatalytic Activity

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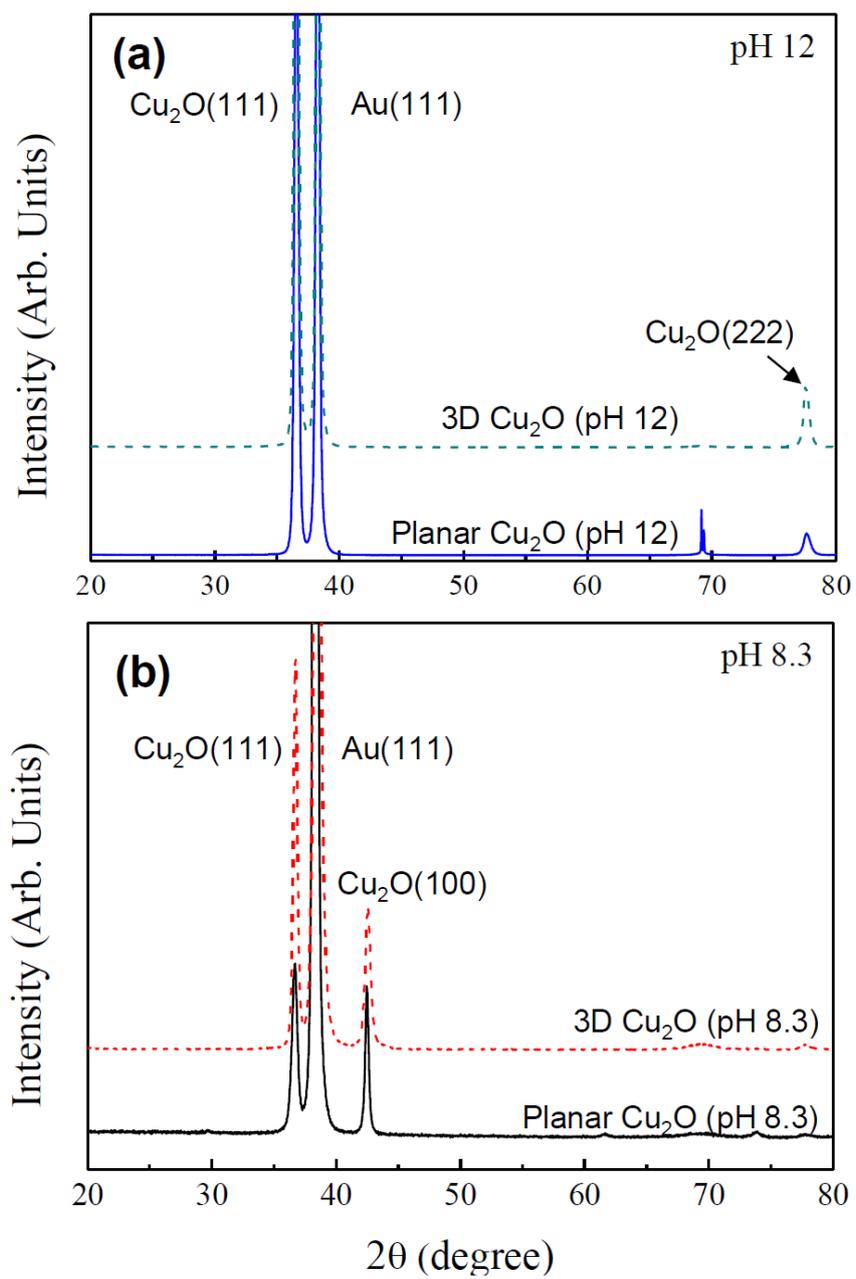
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FigureS1. XRD patterns of the Cu₂O films deposited at both pH values of 8.3 and 12.



FigureS2. XRD patterns of the 2D and 3D Cu_2O films deposited at pH 8.3 and pH 12.

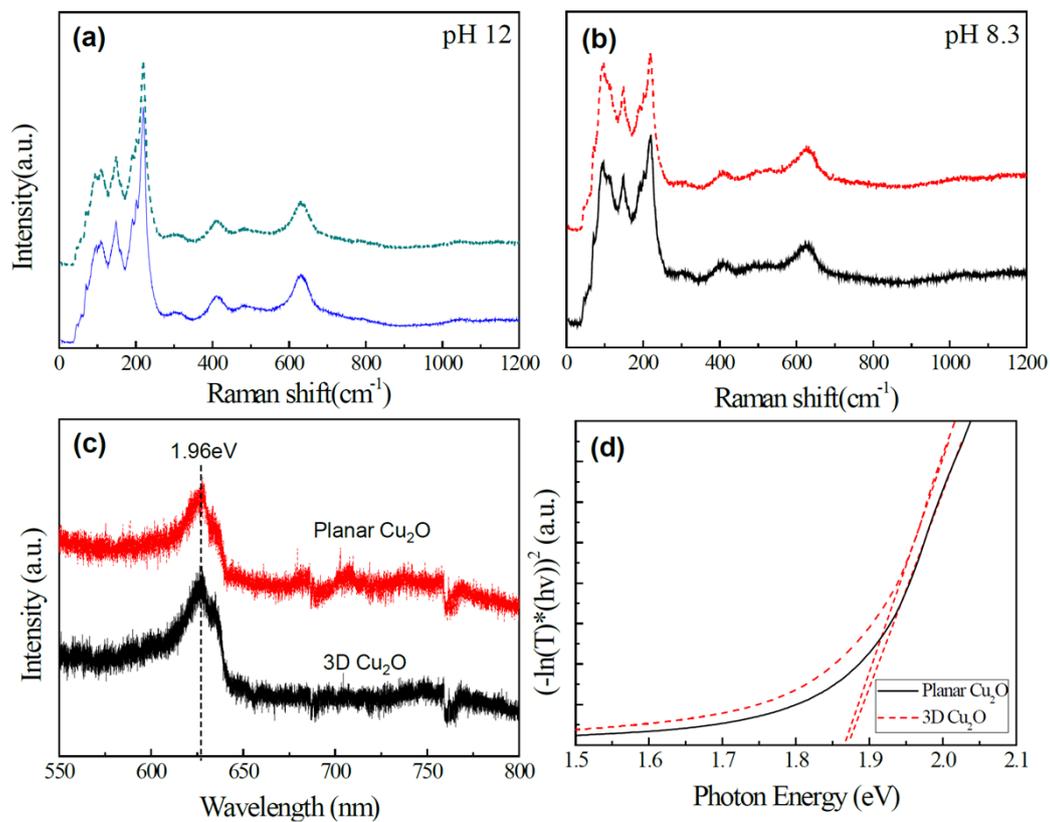


Figure S3. Raman spectra of the 2D and 3D Cu_2O films deposited at (a) pH 12 and (b) pH 8.3. (c) PL spectra of the 2D and 3D Cu_2O films and (d) the optical band gap of the Cu_2O films deposited at pH 12 using a template of PS beads 1000 nm in diameter.

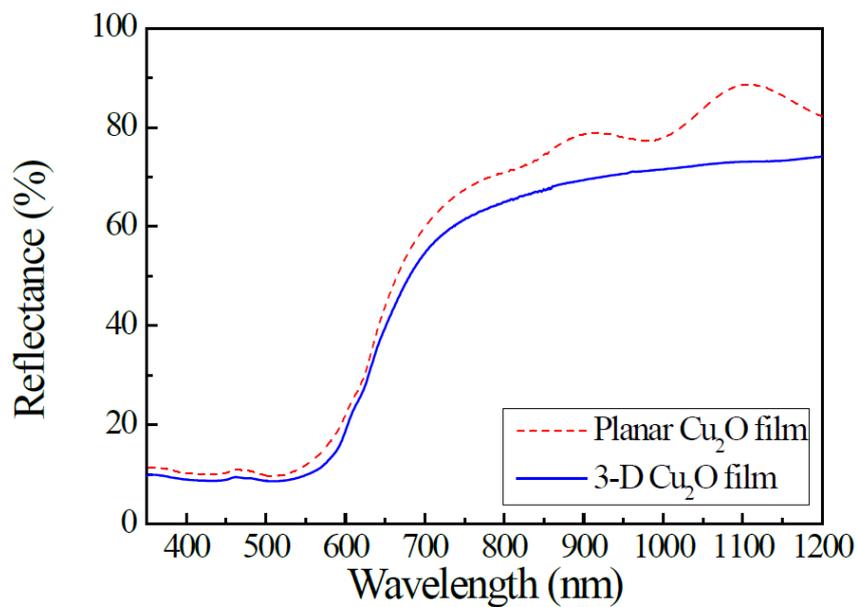


Figure S4. Reflectance spectra of the 2D and 3D Cu₂O films (deposited at pH 12) over wavelengths ranging from 350 to 1200 nm.

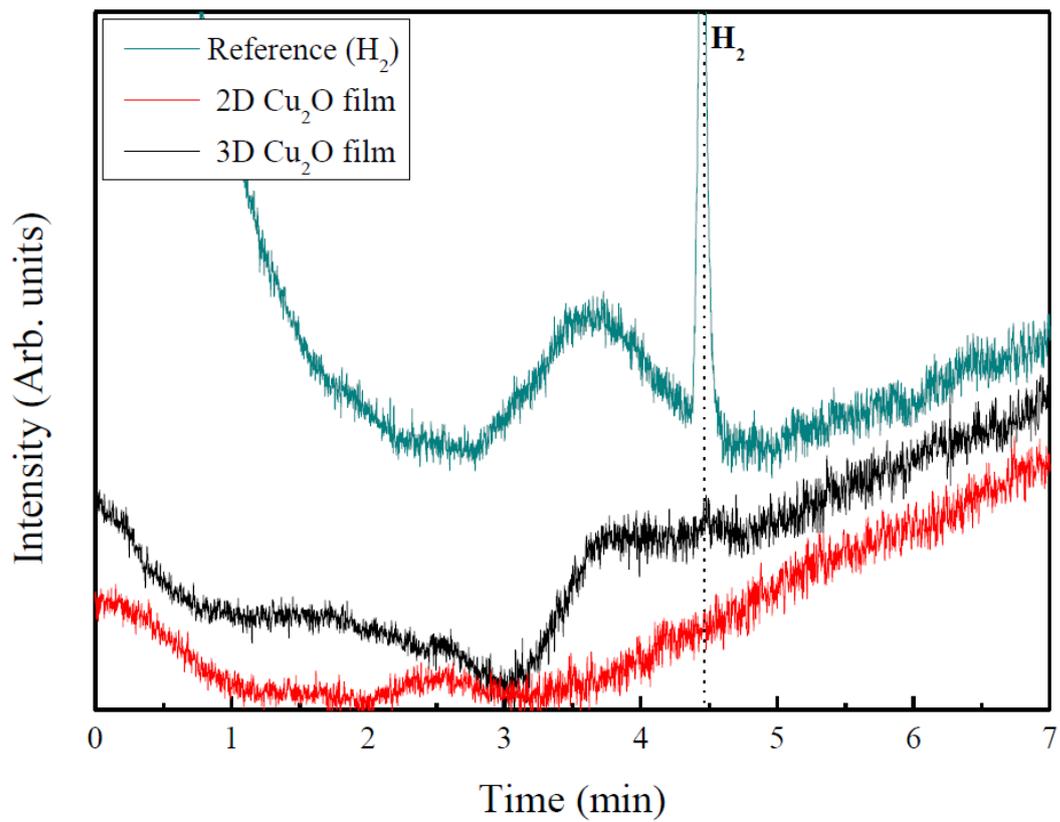


Figure S5. Gas chromatograph data demonstrating H₂ detection. The peak at 4.5 min is associated with H₂ gas.

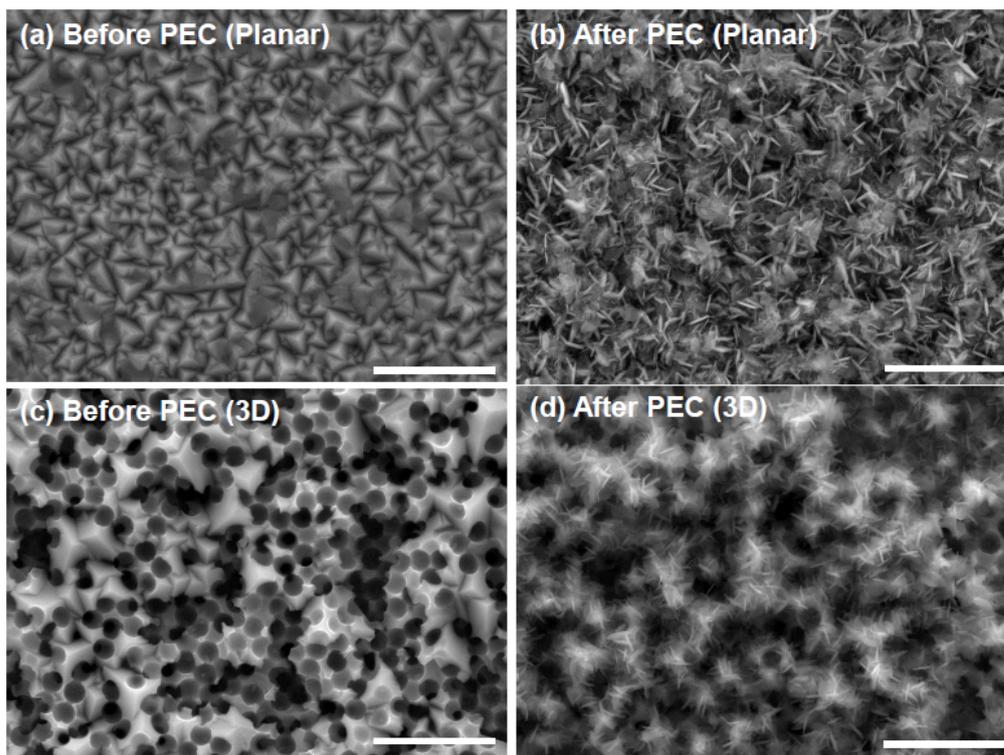


Figure S6. SEM images of 2D Cu₂O films (a) before PEC and (b) after PEC for 450s, and 3D Cu₂O films (c) before PEC and (d) after PEC at -0.6 V (vs. Ag/AgCl). The scalebar is 5 μ m.

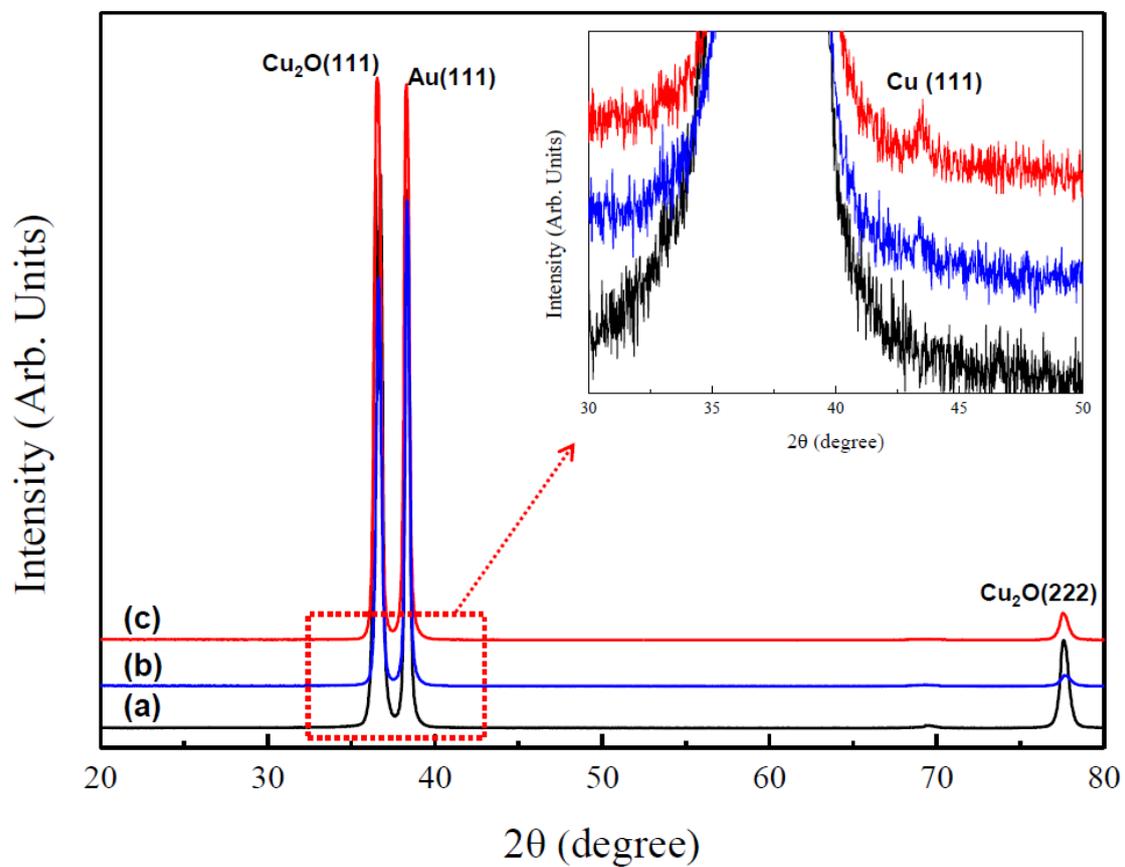


Figure S7. XRD patterns of (a) the 2D Cu₂O film before PEC measurement, (b) the 2D Cu₂O film after PEC measurement for 1 hr, and (c) 3D Cu₂O film after PEC measurement for 1 hr.