

Supporting information

Synergistic Enhancement of Hydrogen Peroxide Generation: WO₃ Photocatalyst Modified with MXene and Au Nanoparticles under Visible Light

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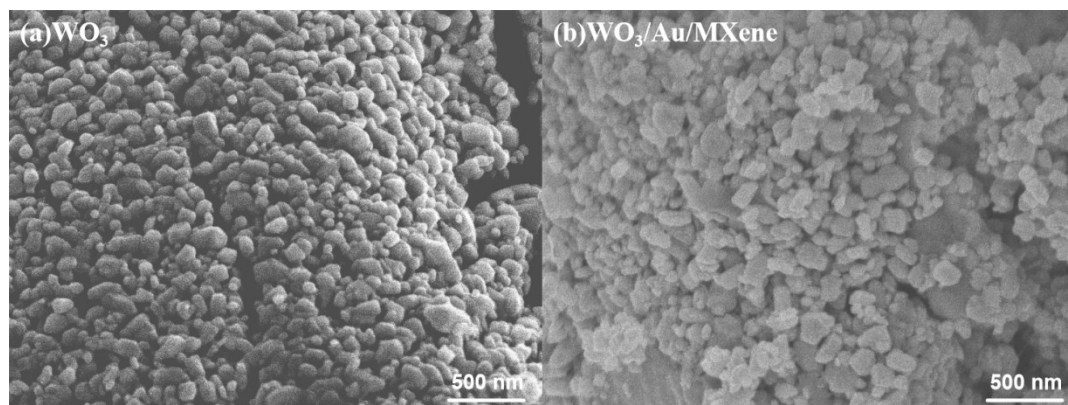


Figure S1. (a)-(b) SEM images of pure WO₃ and WO₃/Au/MXene.

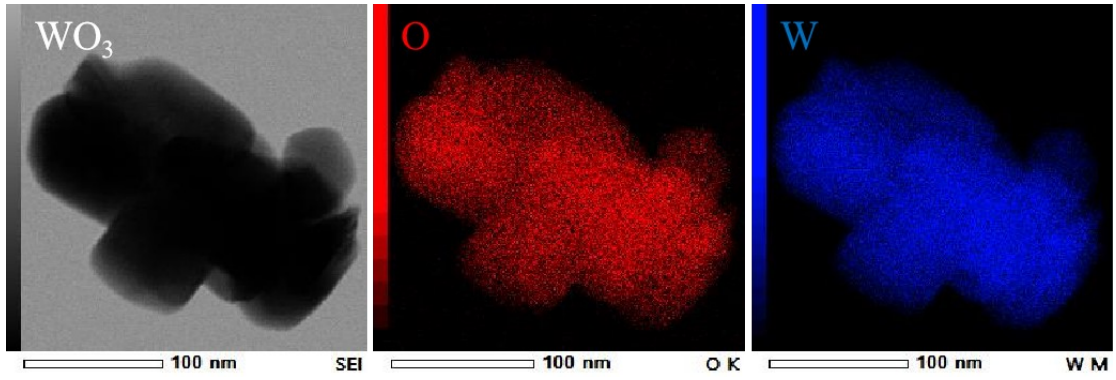


Figure S2. HR TEM and EDS mapping pictures of WO_3 .

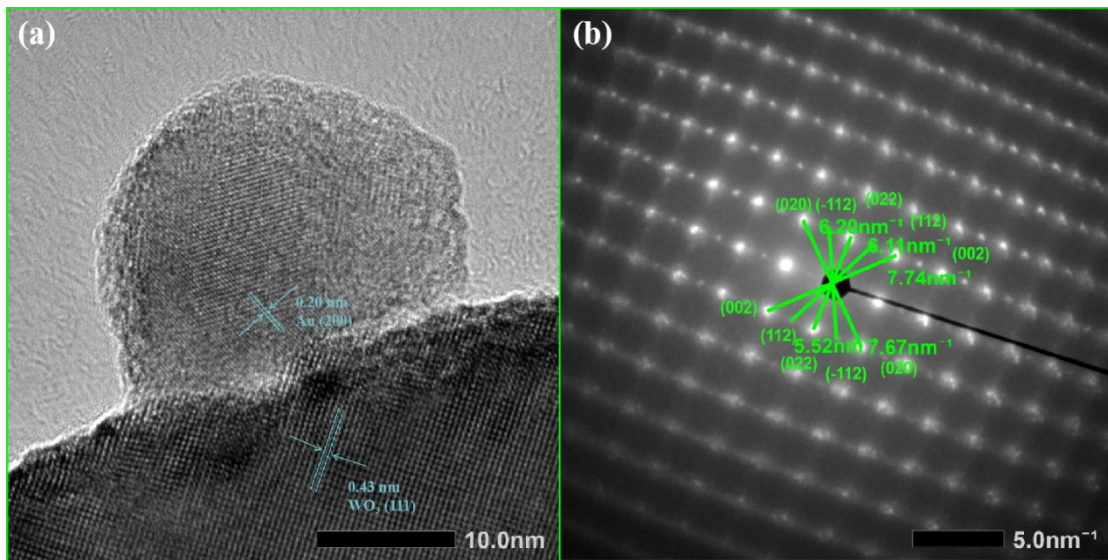


Figure S3. HR TEM lattice fringes and electron diffraction analysis pictures of WO_3/Au .

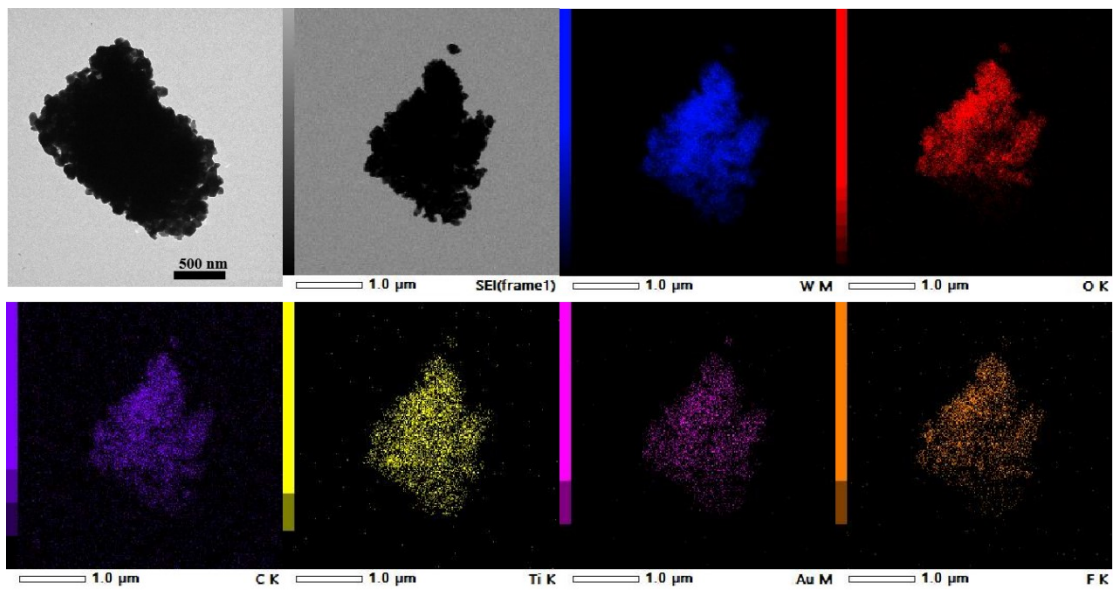


Figure S4. HR TEM and EDS mapping pictures of $\text{WO}_3/\text{MXene}/\text{Au}$.

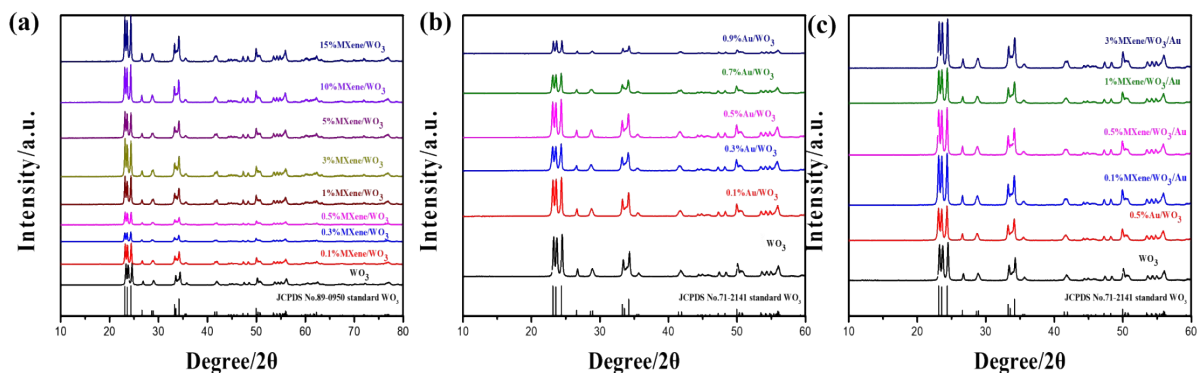


Figure S5. (a) XRD data of WO_3 and $WO_3/MXene$ with different MXene contents, (b) XRD data of WO_3 and WO_3/Au with different Au contents and (c) XRD data of WO_3 and $WO_3/Au/MXene$ with different MXene contents.

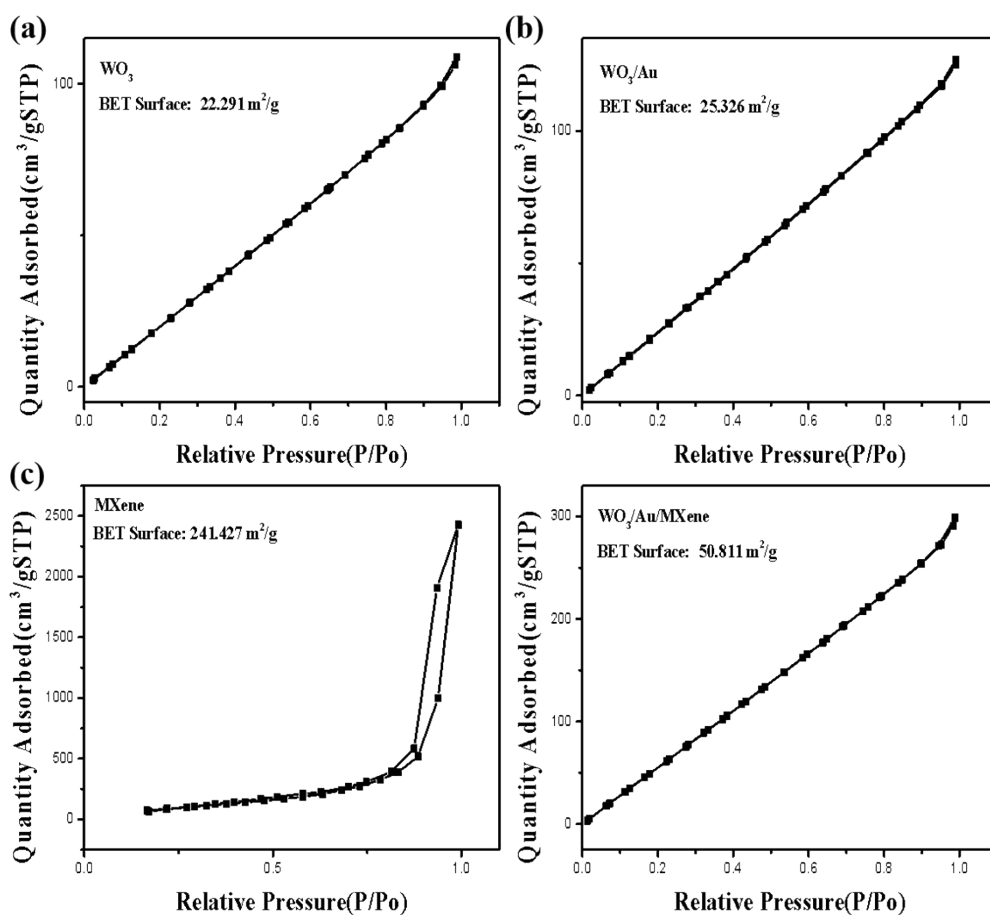


Figure S6. Nitrogen adsorption-desorption isotherms of WO_3 , WO_3/Au , MXene, and $WO_3/Au/MXene$.

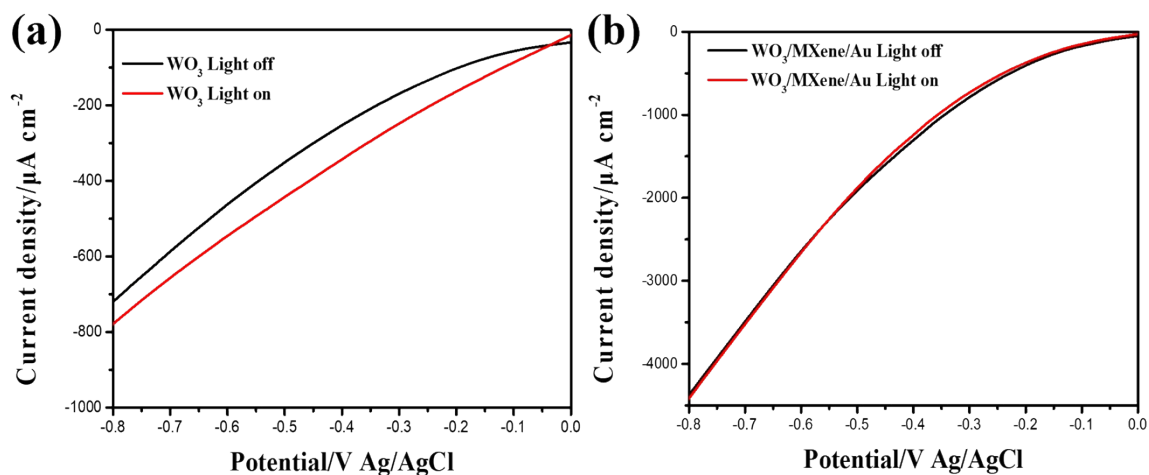


Figure S7. LSV data of (a) WO_3 and (b) $\text{WO}_3/\text{Au}/\text{MXene}$ at pH 6.09.

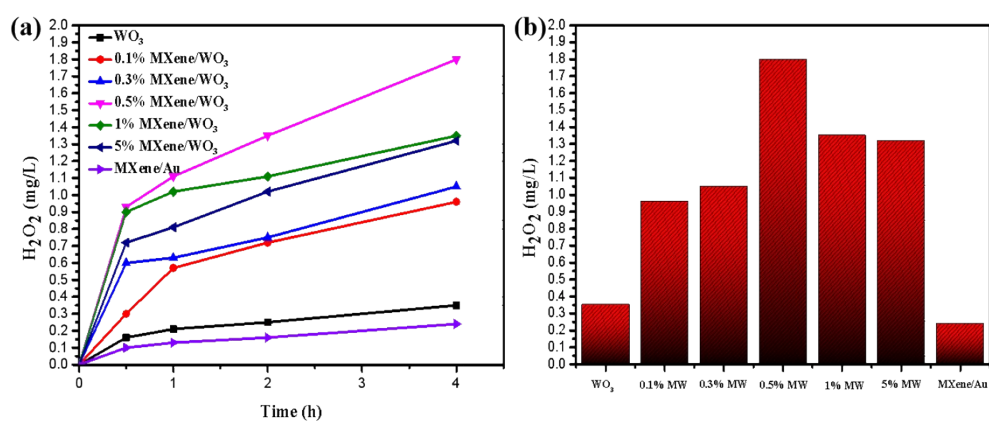


Figure S8. H_2O_2 generation from MXene/Au and WO_3/MXene with varying MXene concentrations over time under visible light at pH 7.

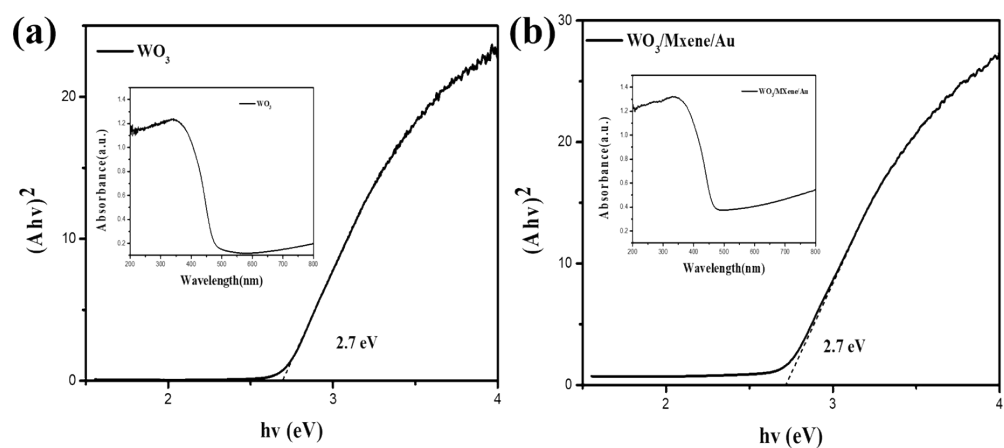


Figure S9. UV-vis data and tauc plots of (a) WO_3 and (b) $WO_3/MXene/Au$.