

Supporting information

Effect of Cu₂O Substrate on Photoinduced Hydrophilicity of TiO₂ and ZnO Nanocoatings

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XRD data

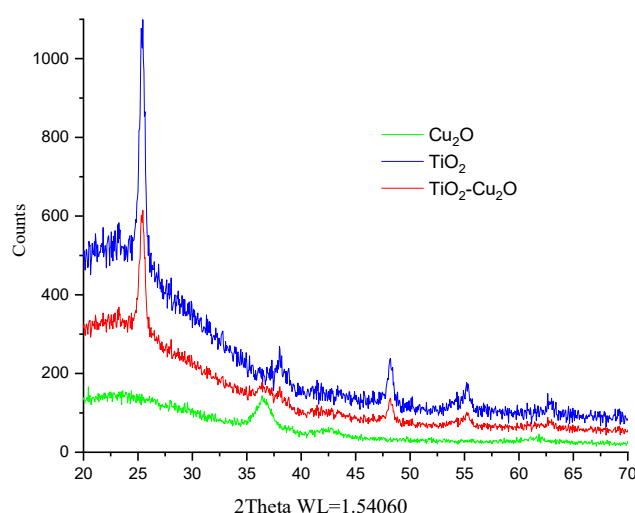


Figure S1. XRD patterns of Cu₂O, TiO₂ and TiO₂/Cu₂O heterostructured coatings.

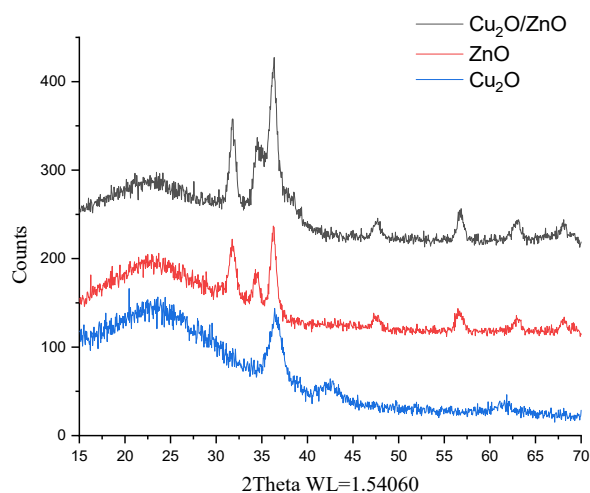


Figure S2. XRD patterns of Cu_2O , ZnO and $\text{ZnO}/\text{Cu}_2\text{O}$ heterostructured coatings.

SEM images of the sample surfaces and cross-sections

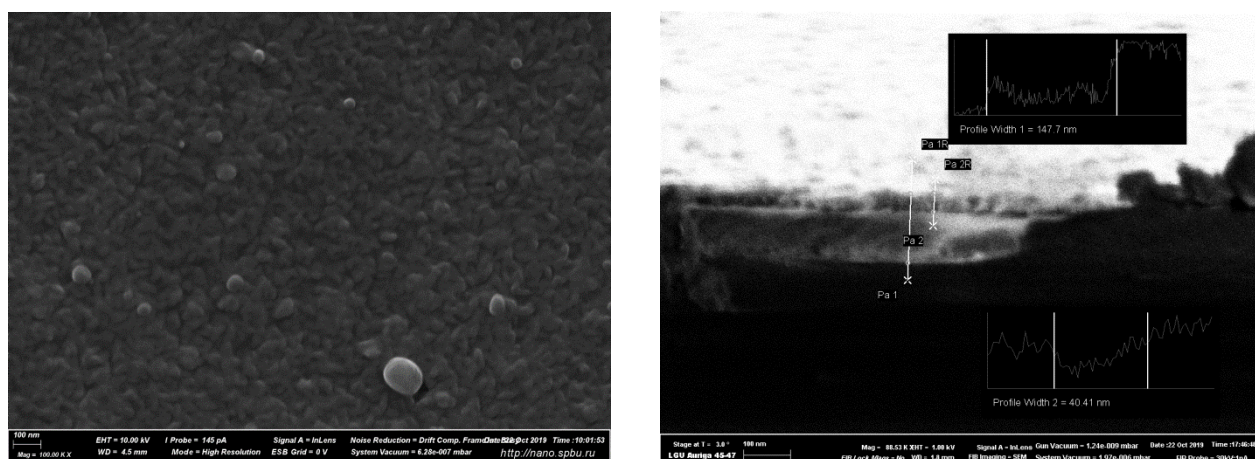


Figure S3. SEM images of the TiO_2 surface and $\text{TiO}_2/\text{Cu}_2\text{O}$ cross-section of $\text{TiO}_2/\text{Cu}_2\text{O}$ coating.

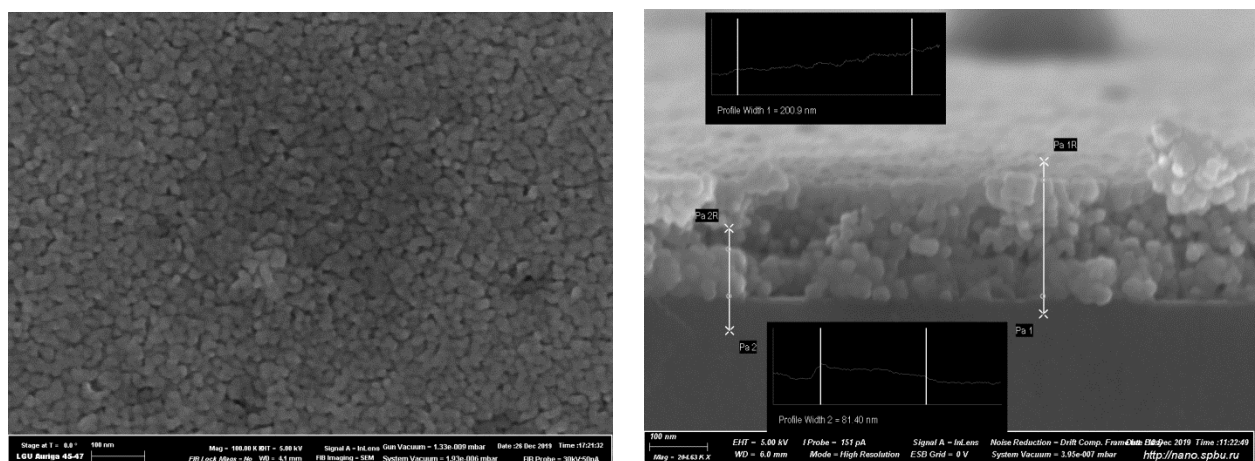


Figure S4. SEM images of the TiO_2 surface and $\text{ZnO}/\text{Cu}_2\text{O}$ cross-section of $\text{ZnO}/\text{Cu}_2\text{O}$ coating.

AFM image of the surfaces and roughness profiles

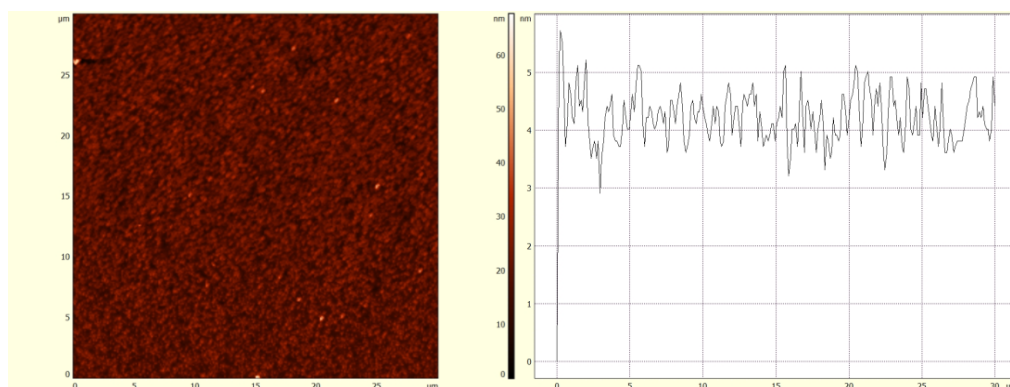


Figure S5. AFM image of the TiO_2 surface and roughness profile of $\text{TiO}_2/\text{Cu}_2\text{O}$ coating.

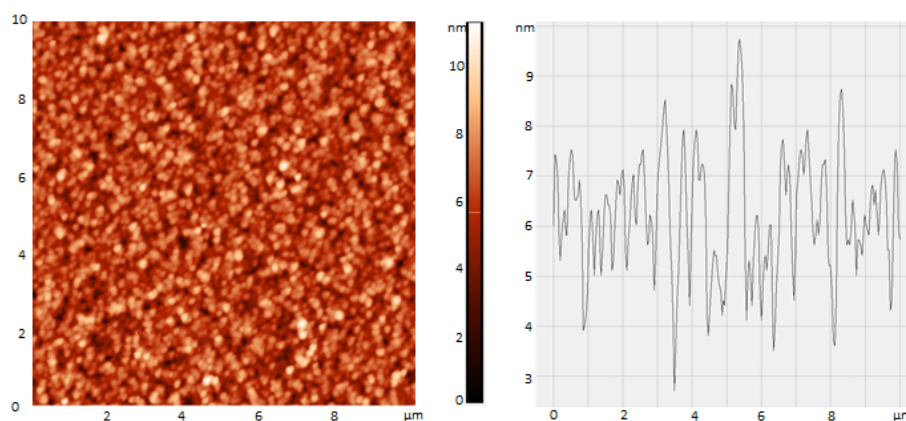


Figure S6. AFM image of the ZnO surface and roughness profile of $\text{ZnO}/\text{Cu}_2\text{O}$ coating.

Transmittance spectra of individual components and heterostructures.

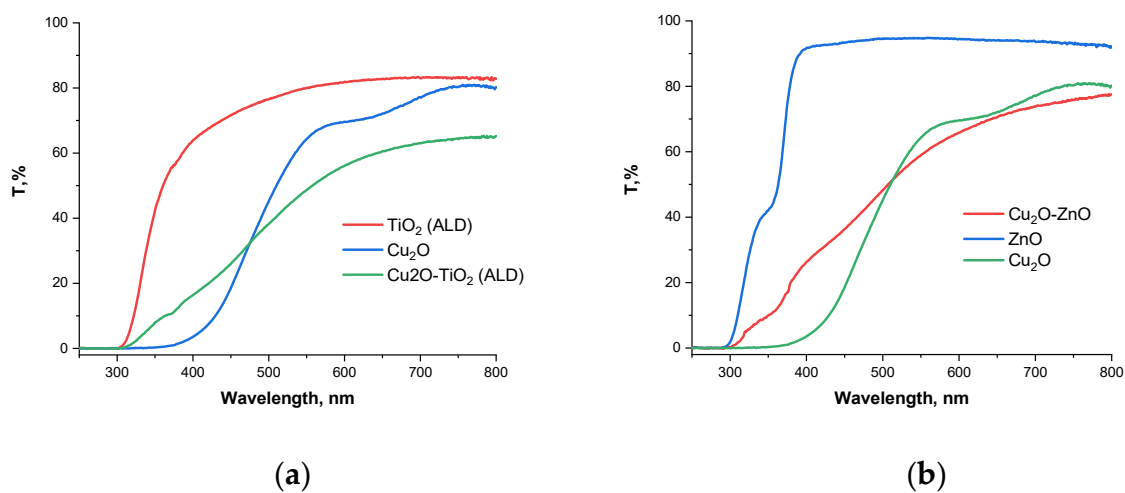


Figure S7. Transmittance spectra of (a) $\text{TiO}_2/\text{Cu}_2\text{O}$ heterostructured coating and its components, and (b) $\text{ZnO}/\text{Cu}_2\text{O}$ heterostructured coating and its components.

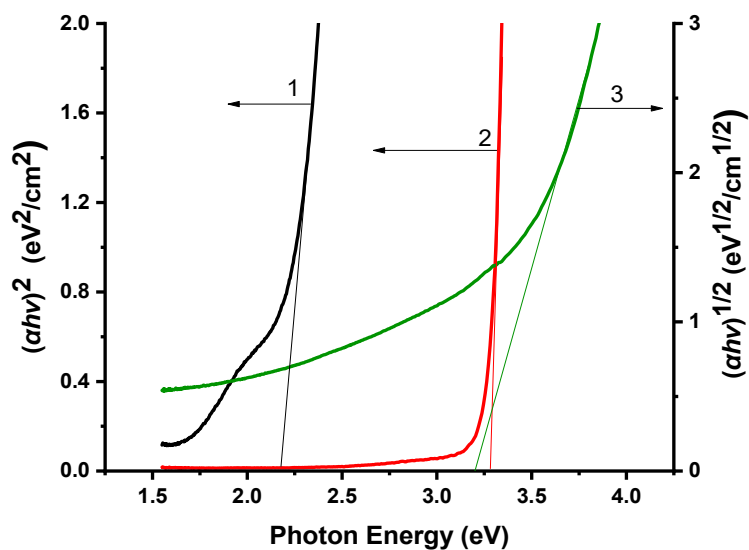


Figure S8. Tauc plots for 1 – Cu₂O, 2 – ZnO, and 3 – TiO₂.

Alteration of SFE and its polar and dispersive components.

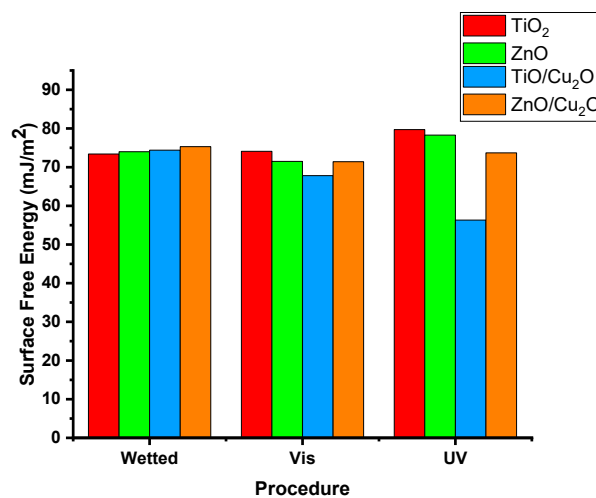


Figure S9. Alteration of the total SFE caused by irradiation with visible and UV light.

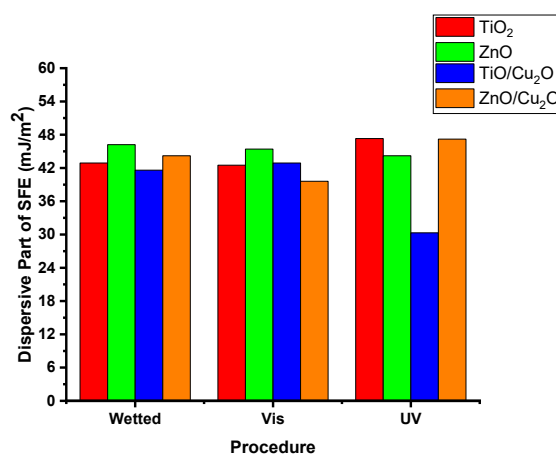


Figure S10. Alteration of the SFE polar component caused by irradiation with visible and UV light.

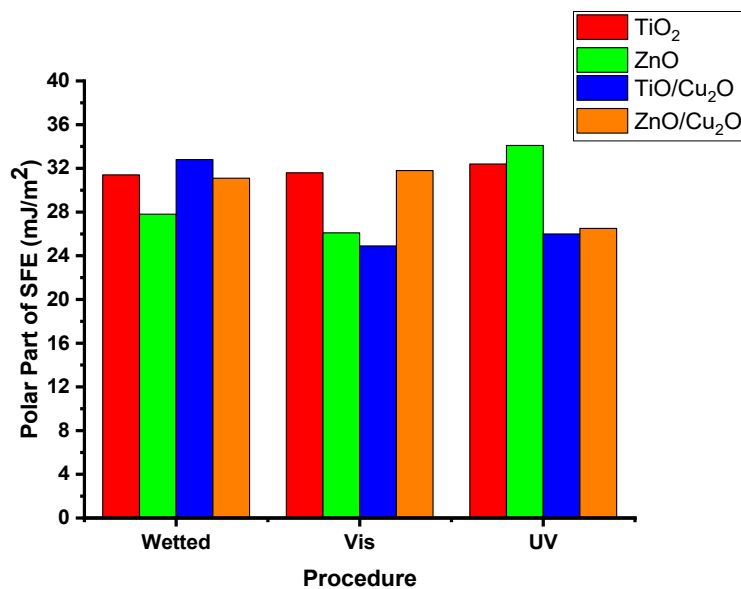


Figure S11. Alteration of the SFE dispersive component caused by irradiation with visible and UV light.

Alteration of the work function of nanocoatings induced by wetting and UV and visible light irradiation.

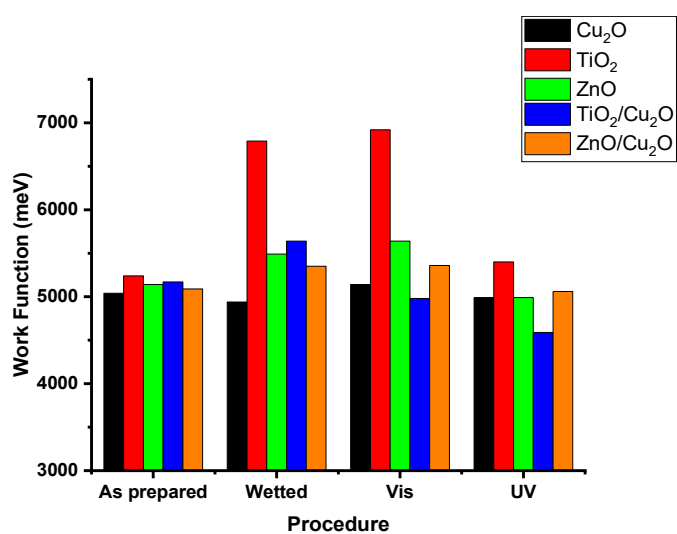


Figure S12. Alteration of the work function of nanocoatings induced by wetting and UV and visible light irradiation.