

SUPPORTING INFORMATION

**Chitosan Microspheres as a Template for TiO₂ and ZnO
Microparticles: Studies on Mechanism, Functionalization
and Applications in Photocatalysis and H₂S Removal**

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Figure S1: Photo of the photocatalytic reactor placed in front of the lamp and on a stirrer plate.

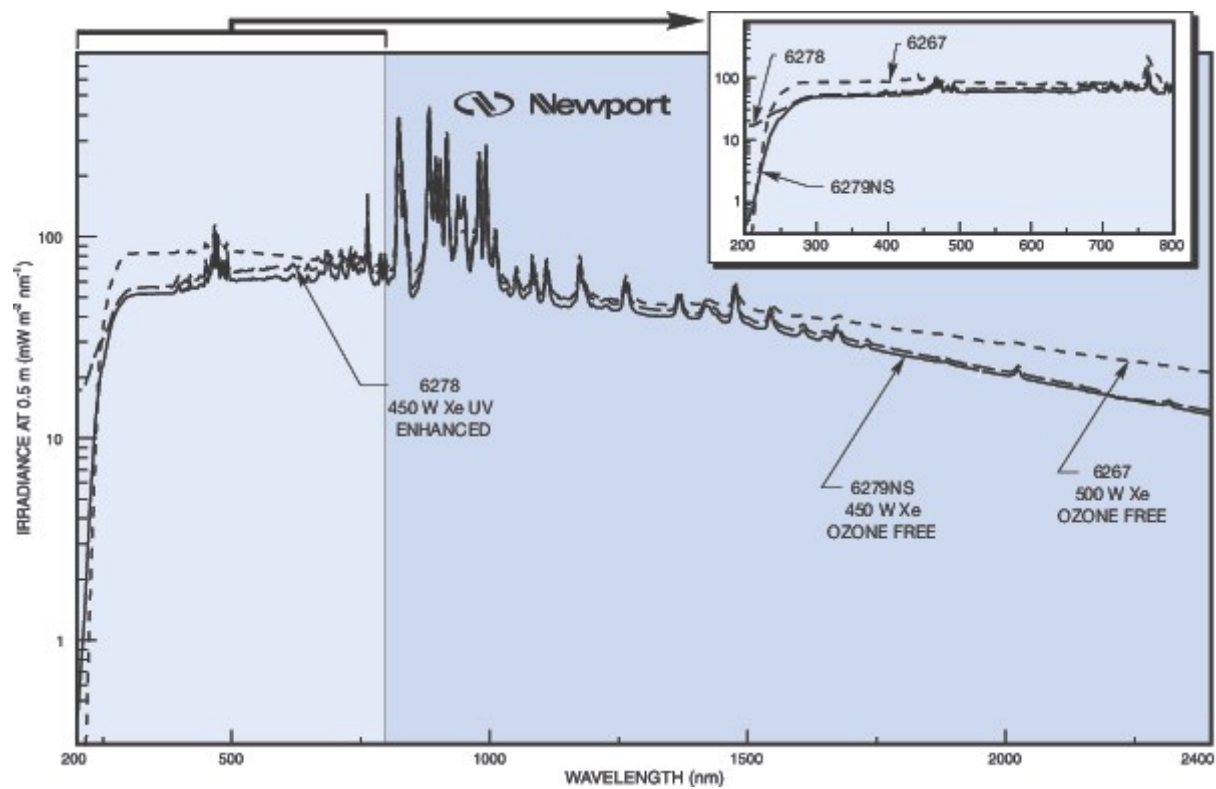


Figure S2: Emission spectra of the lamp used for the photocatalysis (6279NS 450W Xe OZONE FREE) obtained from the supplier (NEWPORT).

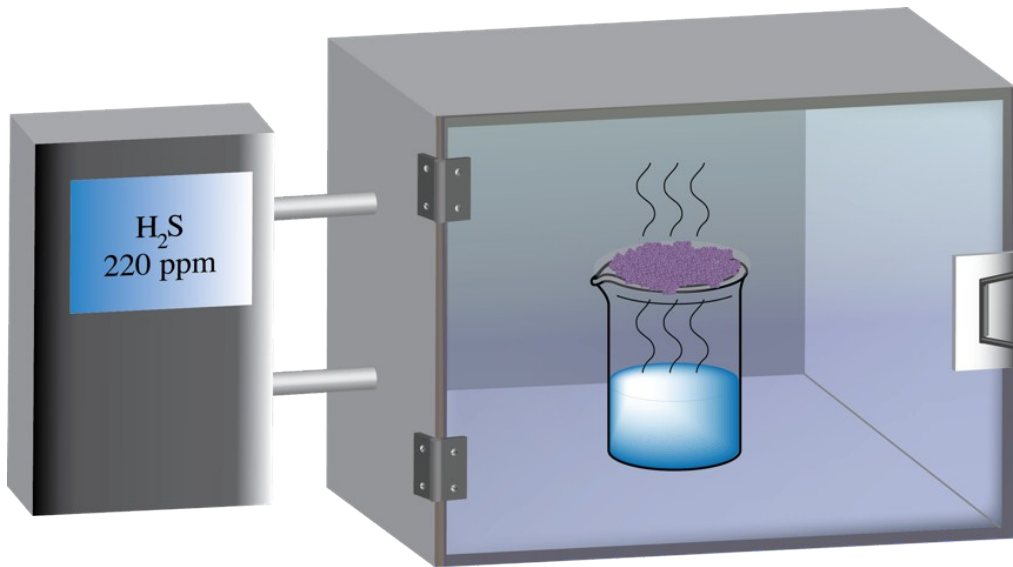


Figure S3: Sealed chamber for H₂S adsorption experiments.

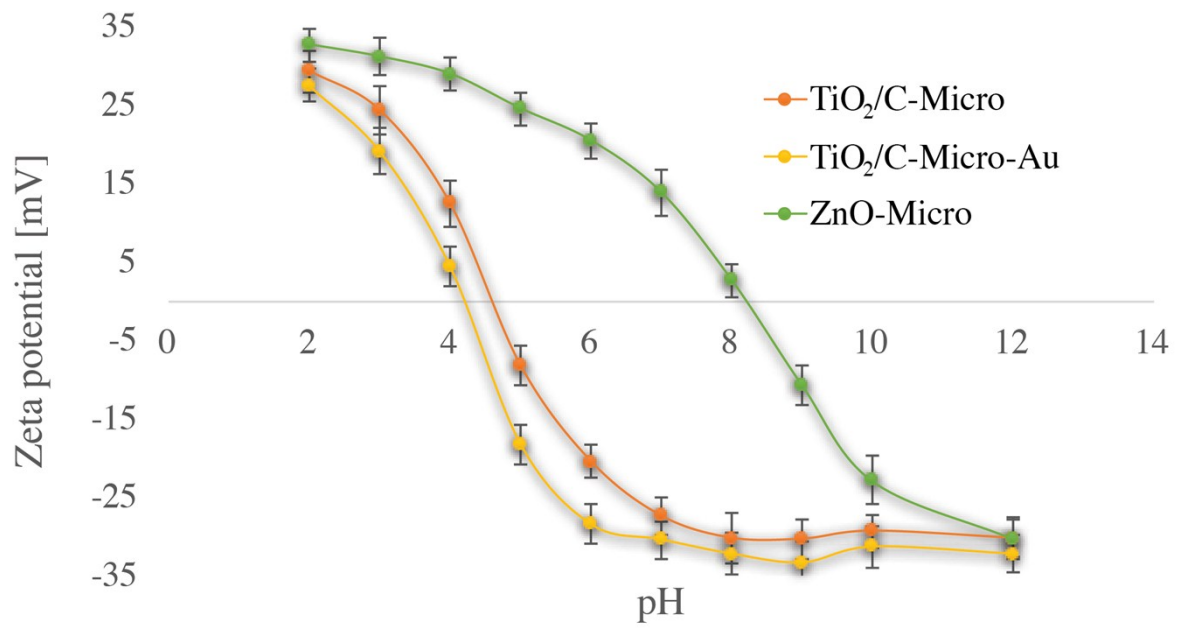


Figure S4: Zeta potential analyses for TiO₂/C-Micro, ZnO-Micro and TiO₂/C-Micro-Au.

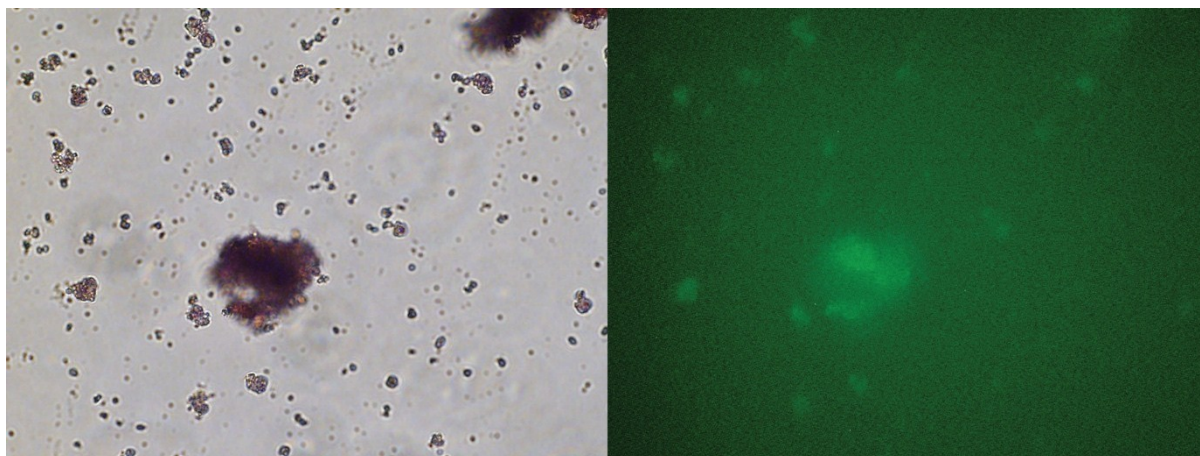


Figure S5: Optical microscope images of $\text{TiO}_2/\text{C-Micro-Au}$.

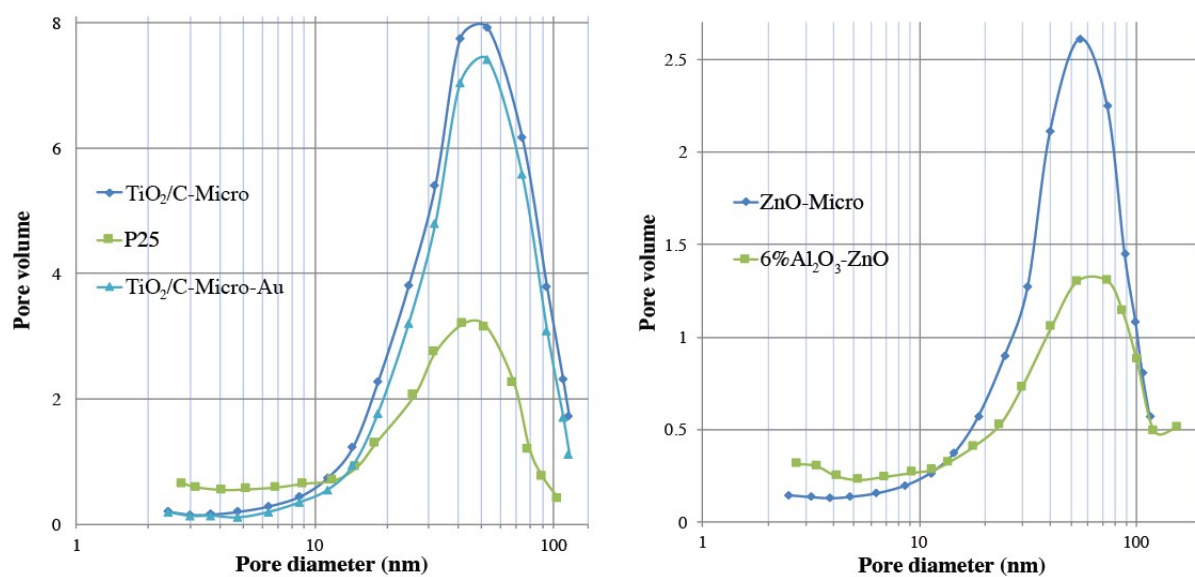


Figure S6: BET pore size distribution analyses of $\text{TiO}_2/\text{C-Micro}$, $\text{TiO}_2/\text{C-Micro-Au}$ and ZnO-Micro.

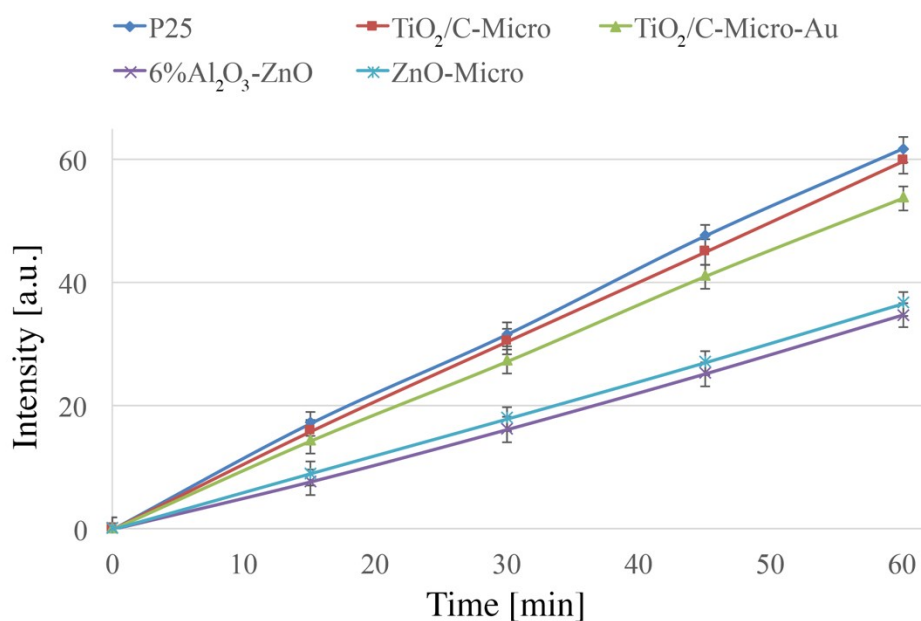


Figure S7: Radical measurements of the catalysts studied. Excitation performed at 332 nm, and emission recorded between 350 and 600 nm, with the maximum emission at 455 nm. 3nm for both slits, emission and excitation.

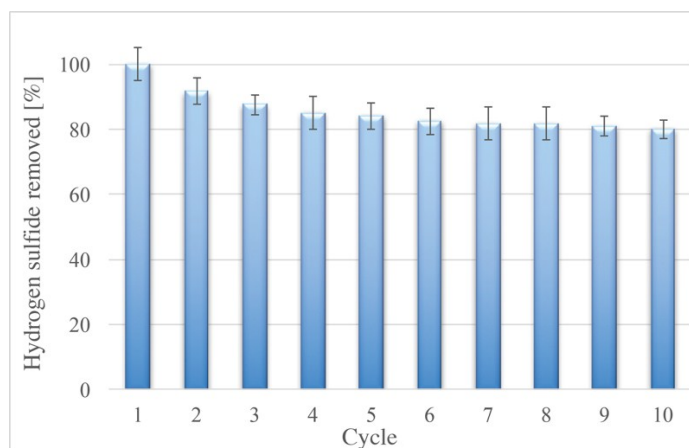


Figure S8: Efficiency of H₂S adsorption and degradation cycles.

Sample	TEM	XRD	DLS	SEM
P25	25 nm ± 5 nm	28 nm	74 nm (D[4,3])	-
TiO ₂ /C-Micro	-	32 nm	8 μm (D[4,3])	10 μm ± 5 μm
TiO ₂ /C-Micro-Au	-	33 nm	23 μm (D[4,3])	25 μm ± 4 μm
6%Al ₂ O ₃ -ZnO	38 nm ± 4 nm	46 nm	97 nm (D[4,3])	-
ZnO-Micro	-	49 nm	10 μm (D[4,3])	14 μm ± 3 μm

Table S1: Table collecting the sizes of the catalysts measured using different techniques. In the TEM and SEM analyses, 50 particles were counted per catalyst and standard deviation was calculated. For the XRD analysis, Scherrer equation was used. DLS analysis were performed after dispersion and sonication with 3 mm horn at the power 160 W for 30 second.