nanomaterials

MDPI

Supporting information:

Enhanced Visible-Light-Driven Photocatalysis of $Ag/Ag_2O/ZnO$ Nanocomposite Heterostructures

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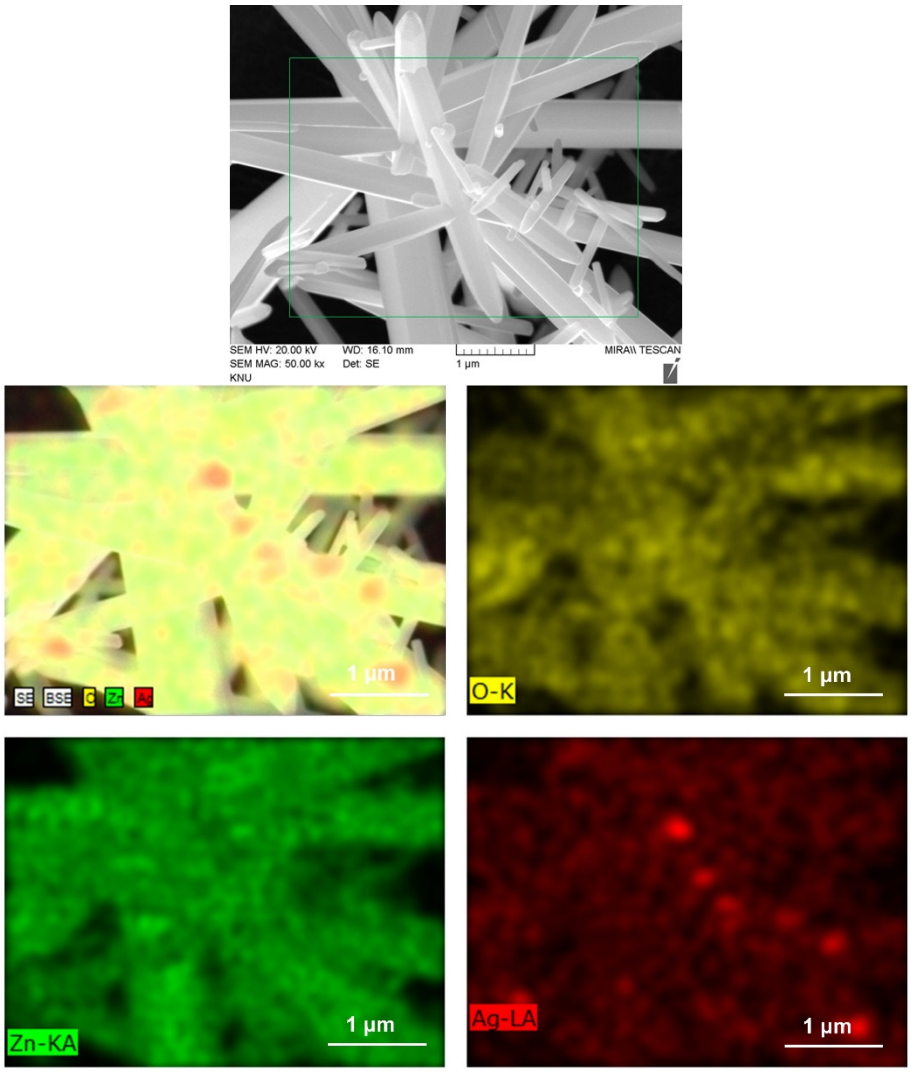

Figure S1. SEM image with corresponding EDX elemental mapping images of Zn, Ag, and O correspond to the 5% Ag-ZnO photocatalyst.

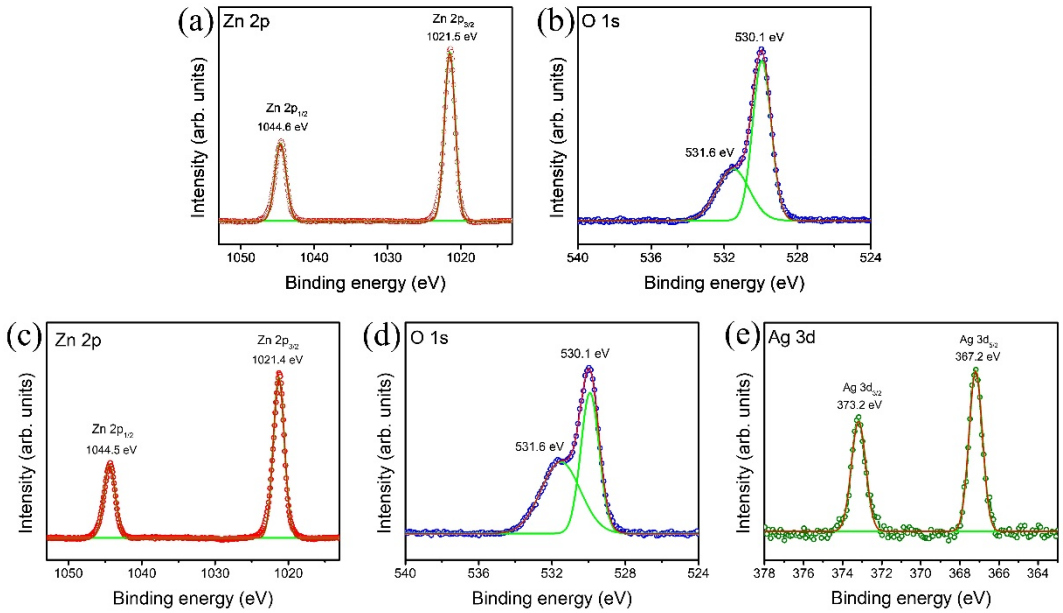

Figure S2. High-resolution XPS spectra of the pure ZnO (a, b), and 2% Ag-ZnO (c-e).

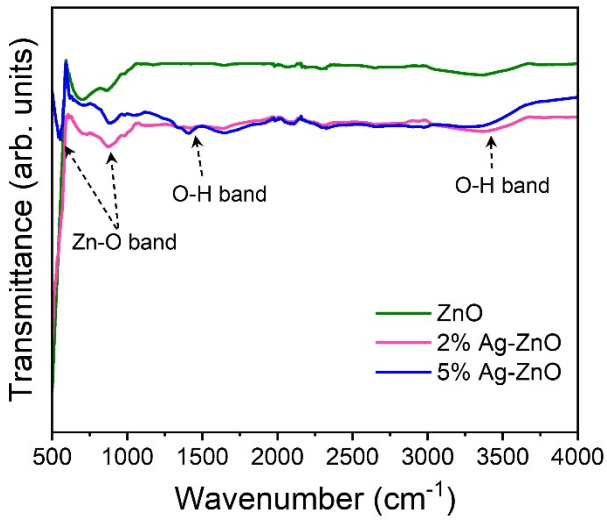

Figure S3. FTIR spectra of the pure ZnO, 2% Ag-ZnO, and 5% Ag-ZnO samples.

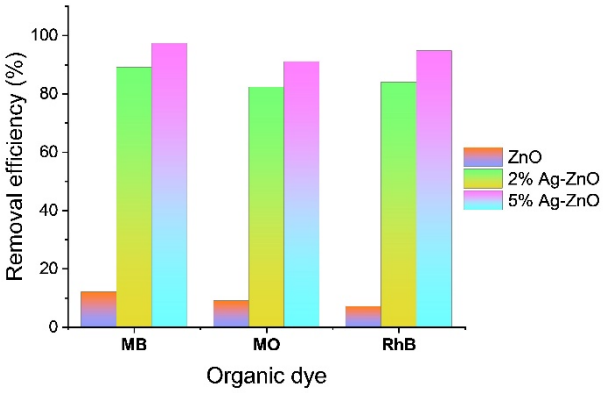

Figure S4. Photocatalytic removal efficiency of the ZnO, 2% Ag-ZnO, and 5% Ag-ZnO within 60 min under visible light irradiation for methylene blue (MB), methyl orange (MO), and rhodamine (RhB).

Table S1. Photocatalytic performance of the pure ZnO, 2% Ag-ZnO, and 5% Ag-ZnO under visible light irradiation for different organic dyes MB, MO, and RhB.

Sample	Dye degradation efficiency (%)			Rate constant, k (min^{-1})		
	MB	MO	RhB	MB	MO	RhB
ZnO	12	9	7	0.2×10^{-2}	0.1×10^{-2}	0.09×10^{-2}
2%Ag-ZnO	89.1	82.3	84.0	3.6×10^{-2}	2.8×10^{-2}	3.1×10^{-2}
5%Ag-ZnO	97.3	91.1	94.8	5.7×10^{-2}	3.7×10^{-2}	5.1×10^{-2}