

Supplementary Materials

Hydrothermally Synthesized Ag@MoS₂ Composite for Enhanced Photocatalytic Hydrogen Production

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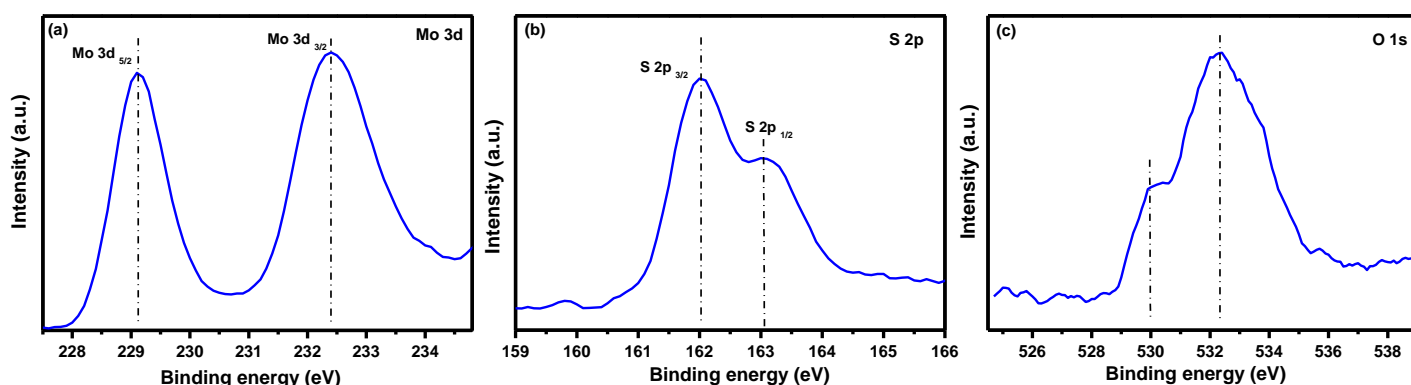


Figure S1. XPS spectrum of MoS₂ a) Mo 3d spectrum, b) S 2p spectrum and c) O 1s spectrum.

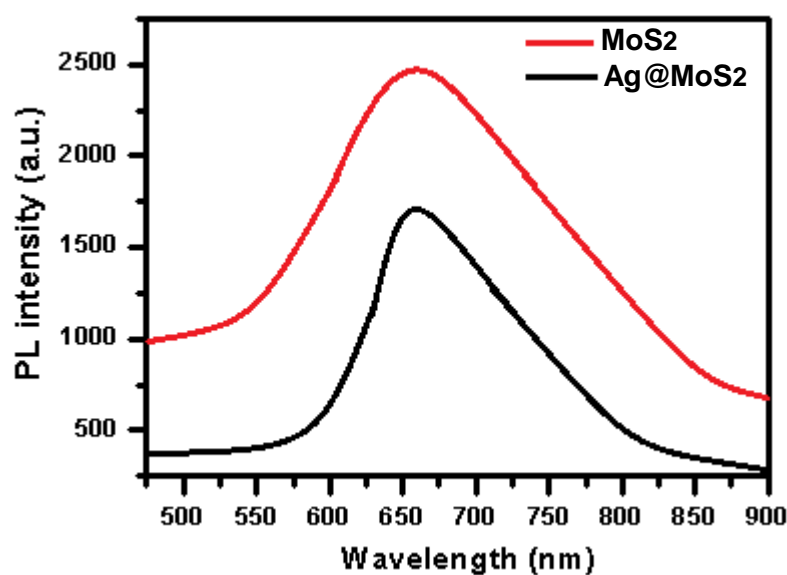


Figure S2. Photoluminescence spectra of MoS₂ and Ag@MoS₂ composite.

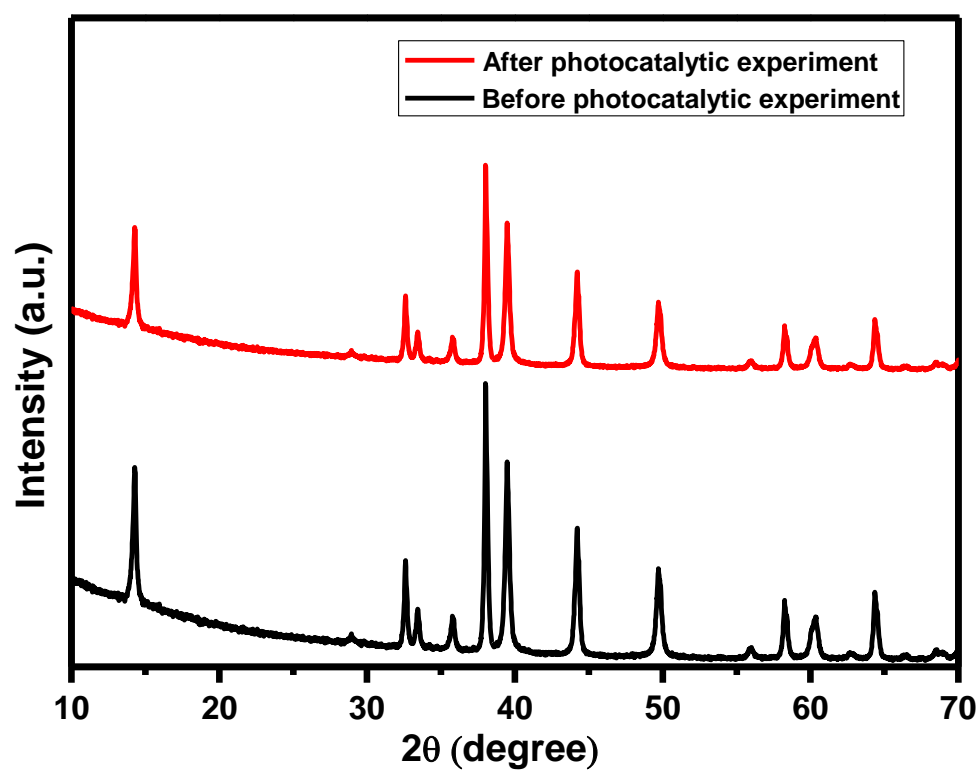


Figure S3. XRD patterns Ag@MoS₂ composite before and after (third cycle) the photocatalytic experiment.

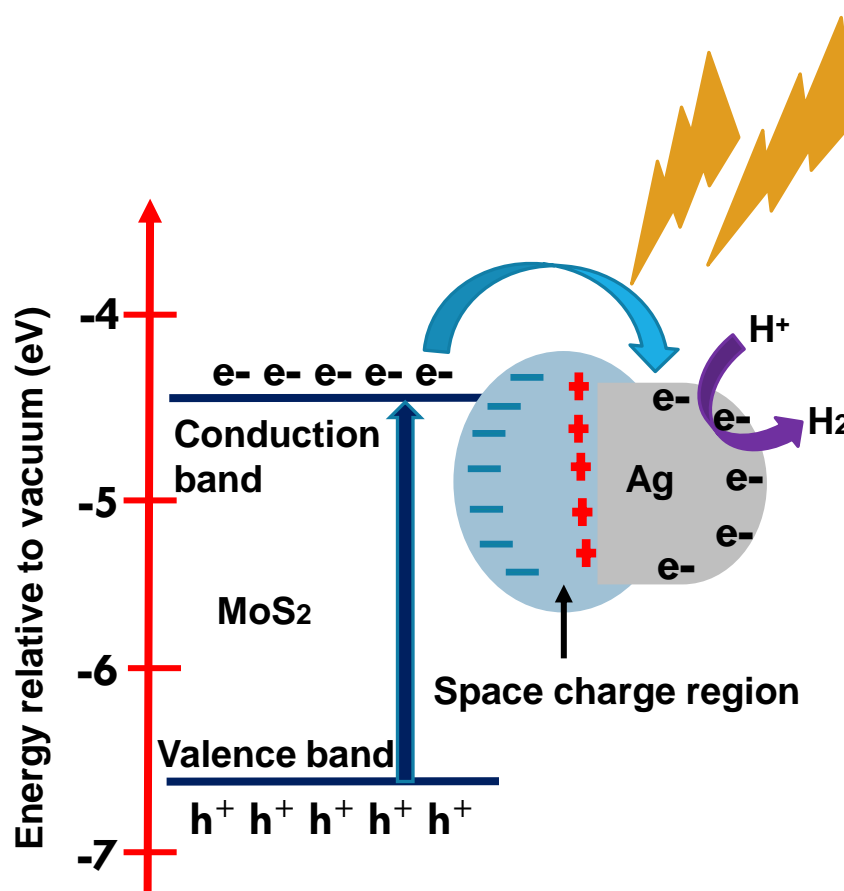


Figure 4. Schematic diagram of visible light hydrogen gas evolution over MoS₂ in the presence of Ag NPs as co-catalyst.

Table S1. Comparison of photocatalytic hydrogen activity using different photocatalysts.

Photocatalyst materials	Light source	Hydrogen production rate	Reference
Ag/MoS ₂ nanocomposite	300 W Xe arc lamp	179.5 μmol (5 hr.)	[7]
g-C ₃ N ₄ /Ag/MoS ₂	300 W of xenon arc lamp	10.40 μmol/h	[44]
Ag/MoS ₂	300 W of xenon arc lamp	1.185 μmol/h	[44]
Ni–Ag–MoS ₂ ternary nanocatalyst	Visible/sun light	73 μmol/h	[45]
Carbon nitride (SSCN) @ MoS ₂	MAX-302 xenon lamp	0.91 μmol/h	[46]
Ag@MoS ₂ composite	300 W Xe arc lamp	181.3 μmol (4 hr.)	Present work