

Electronic Supplementary Information

One-pot, template-free syntheses of spherical ZnS nanocrystals using a new S²⁻ source and their photocatalytic study

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Fig. S1 FT-IR spectrum of uncapped ZnS sample S3.

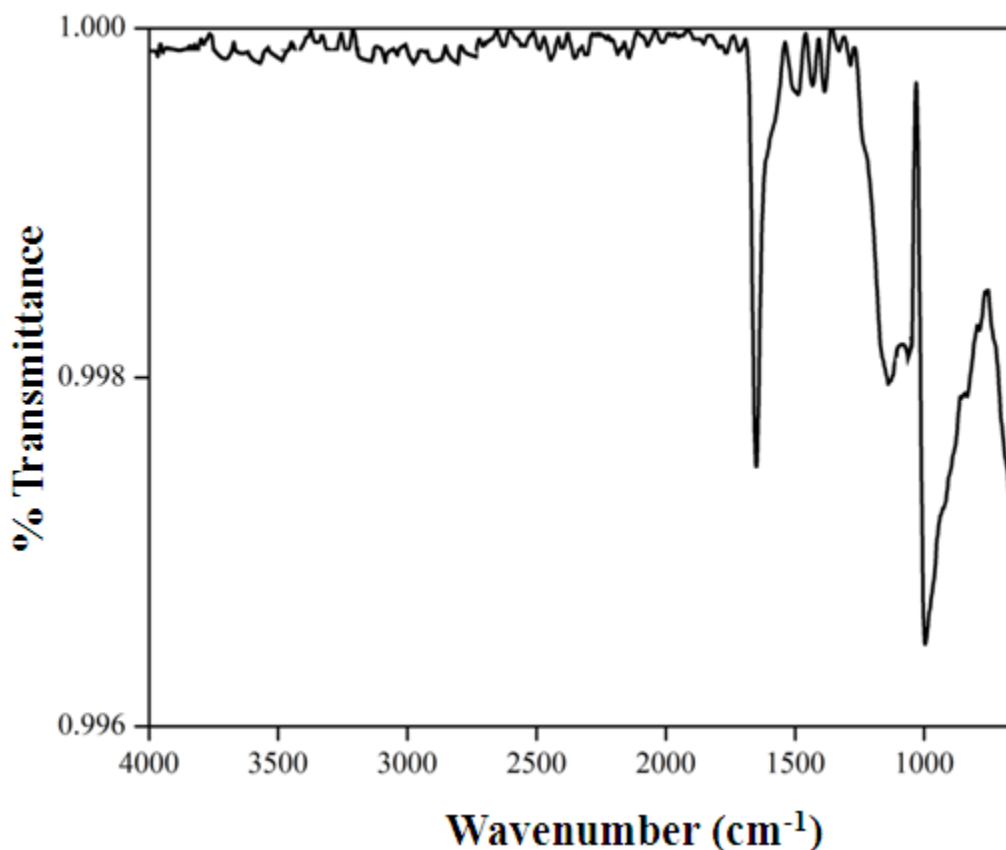


Fig. S2 FT-IR spectrum of MCE-capped ZnS sample S4.

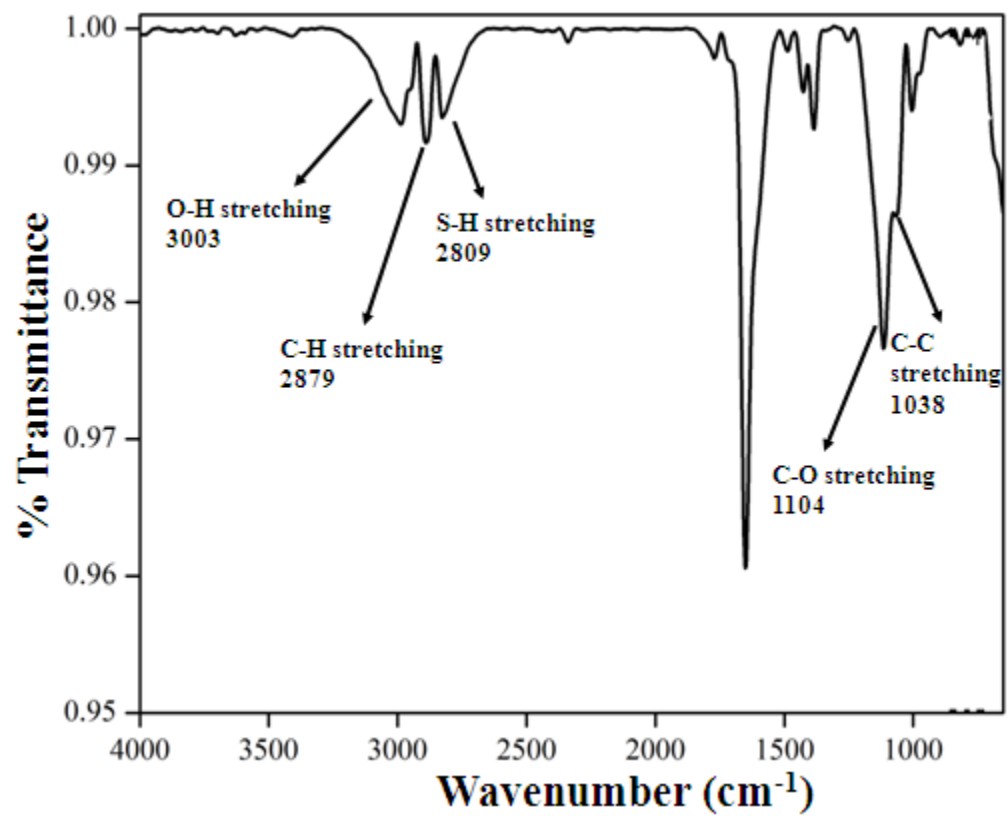


Fig. S3. Band gap calculation plot for S1.

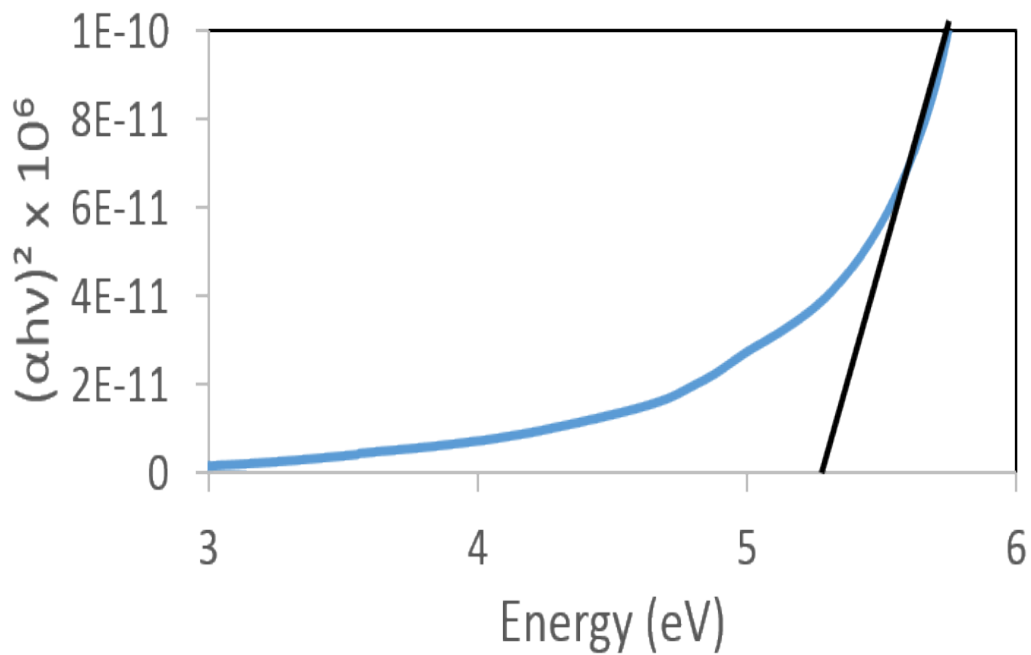


Fig. S4. Band gap calculation plot for S2.

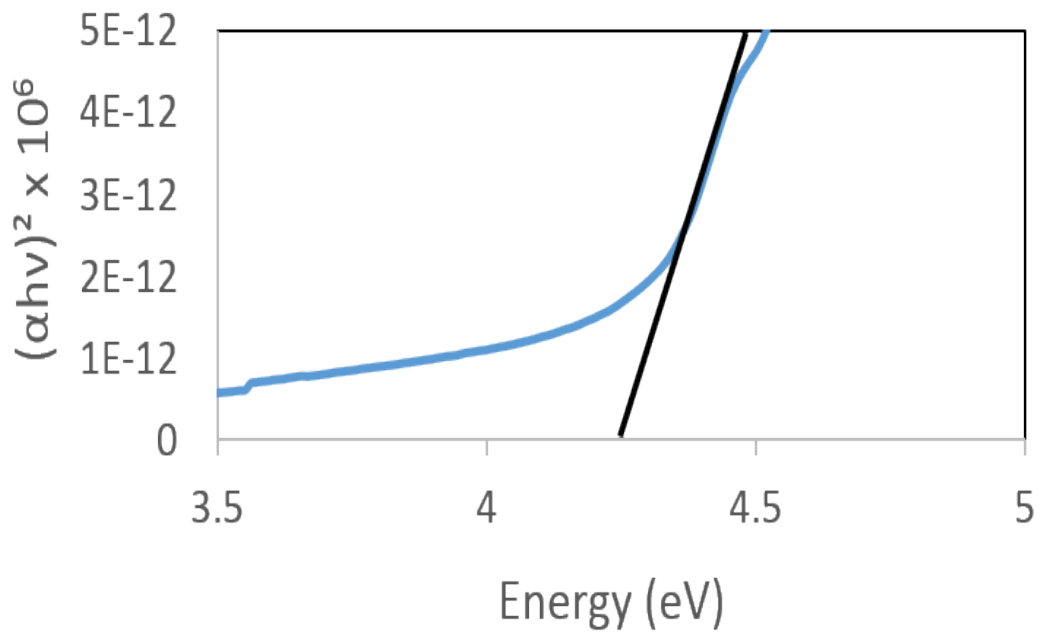


Fig. S5. Band gap calculation plot for S3.

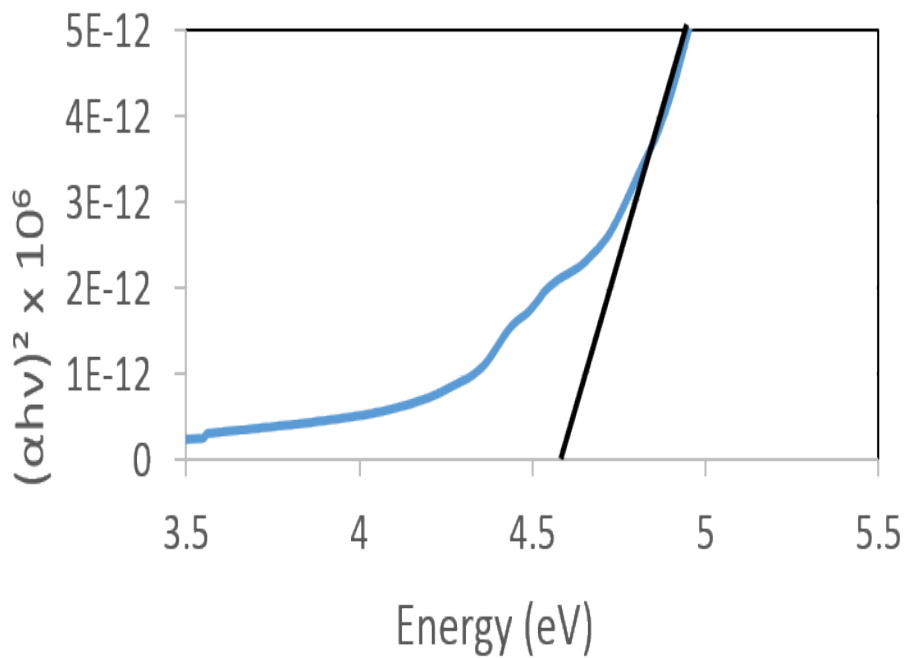


Fig. S6. Band gap calculation plot for S4.

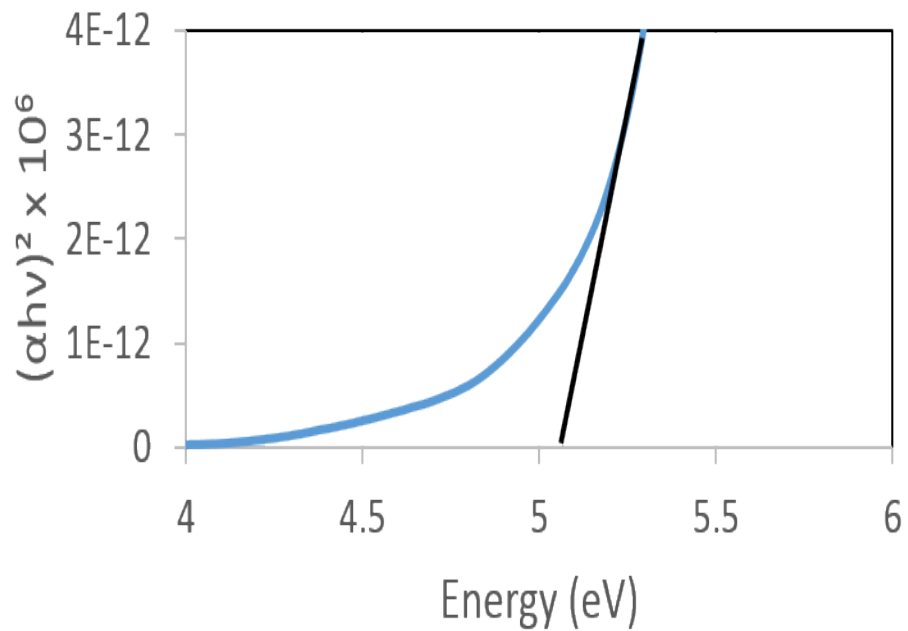
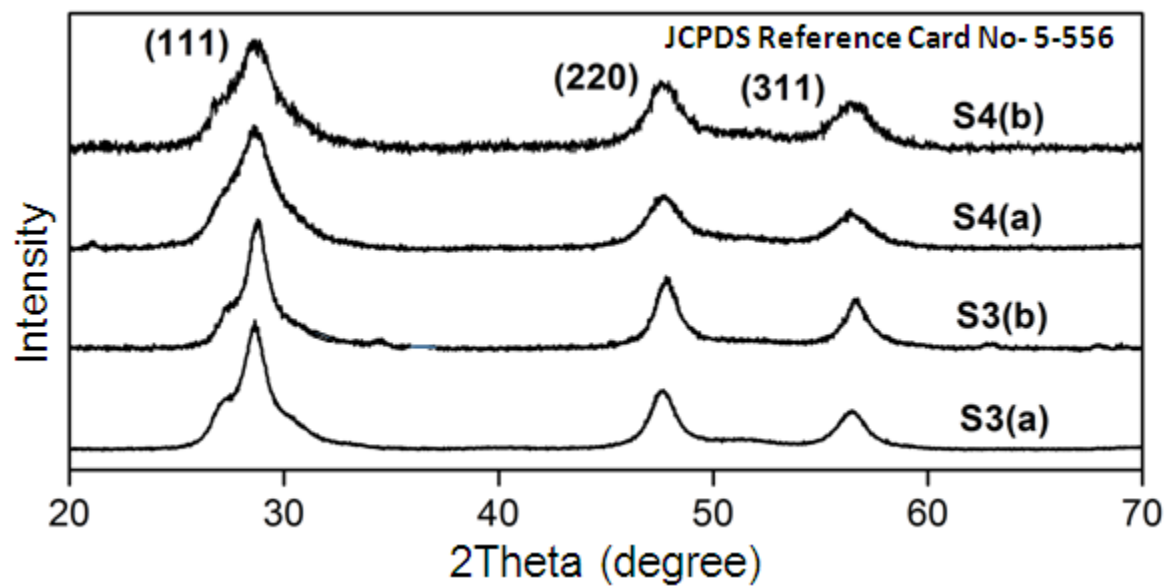


Fig. S7 XRD patterns of the as-prepared ZnS microspheres, uncapped (**S3(a)**) and MCE-capped (**S4(a)**) and the recycled samples after photocatalysis (**S3(b)**) and MCE-capped (**S4(b)**).



Scheme S1. Proposed mechanism of photocatalytic degradation of MO showing possible pathways en route to the formation of CO₂ and H₂O.

