

Supporting information for:

Production of Reactive Oxygen Species and Electrons from Photoexcited ZnO and ZnS Nanoparticles: A Comparative Study for Unraveling their Distinct Photocatalytic Activities

Weiwei He^{†}, Huimin Jia[†], Junhui Cai[†], Xiangna Han[†], Zhi Zheng[†], Wayne G. Wamer[‡], Jun-Jie Yin^{†*}*

[†]Key Laboratory for Micro-Nano Energy Storage and Conversion Materials of Henan Province, Institute of Surface Micro and Nanomaterials, Xuchang University, Xuchang, Henan 461000, China

[‡]Division of Bioanalytical Chemistry and Division of Analytical Chemistry, Office of Regulatory Science, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, College Park, Maryland 20740, United States.

*Corresponding Authors: heweiweixcu@gmail.com (W. He) and junjie.yin@fda.hhs.gov (J. Yin)

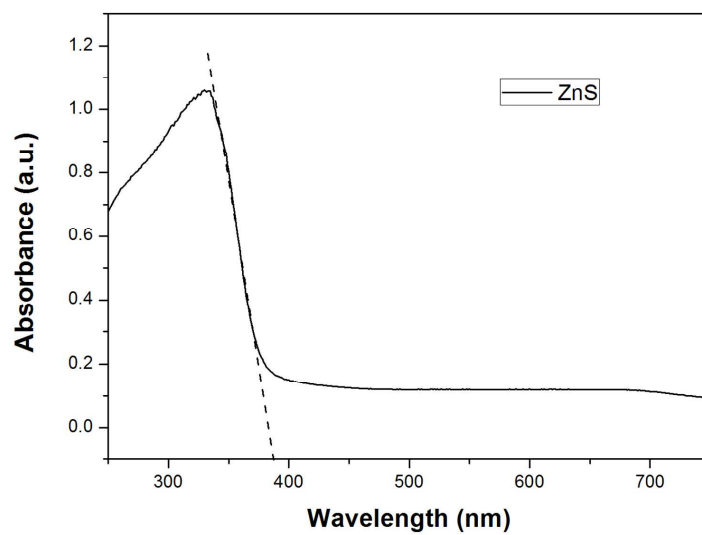


Figure S1. UV-VIS spectra of as-prepared ZnS nanoparticles.

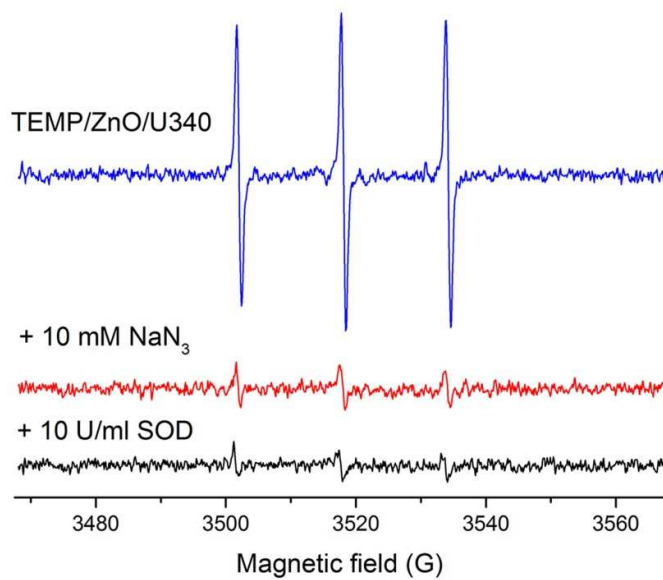


Figure S2. Effect of NaN₃ and SOD on the TEMPONE ESR signal generated during irradiation of ZnO with light (> 350 nm).

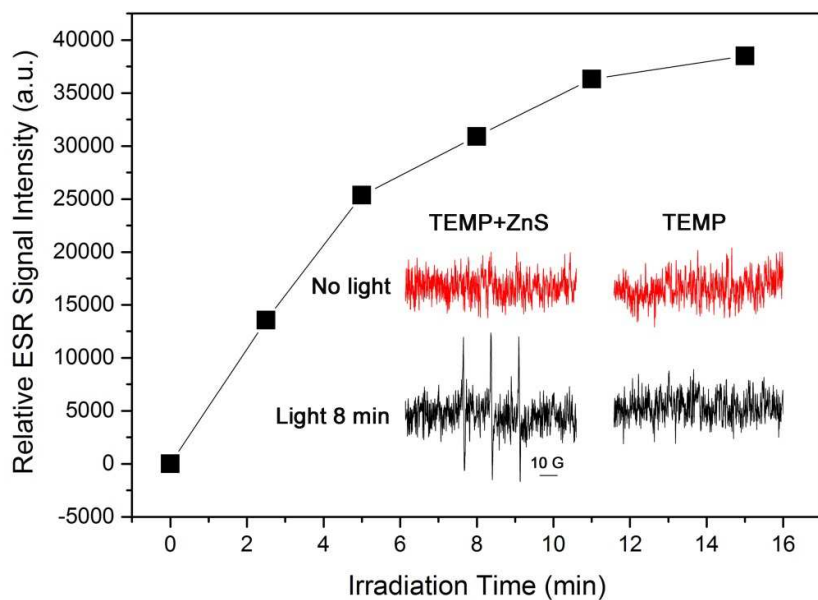


Figure S3. ESR signal intensity variation during irradiation of ZnS with light (> 350 nm). Inset shows the ESR spectra obtained from samples containing TEMP only or containing TEMP and 0.1 mg/ml ZnS before and after irradiation for 8 min.

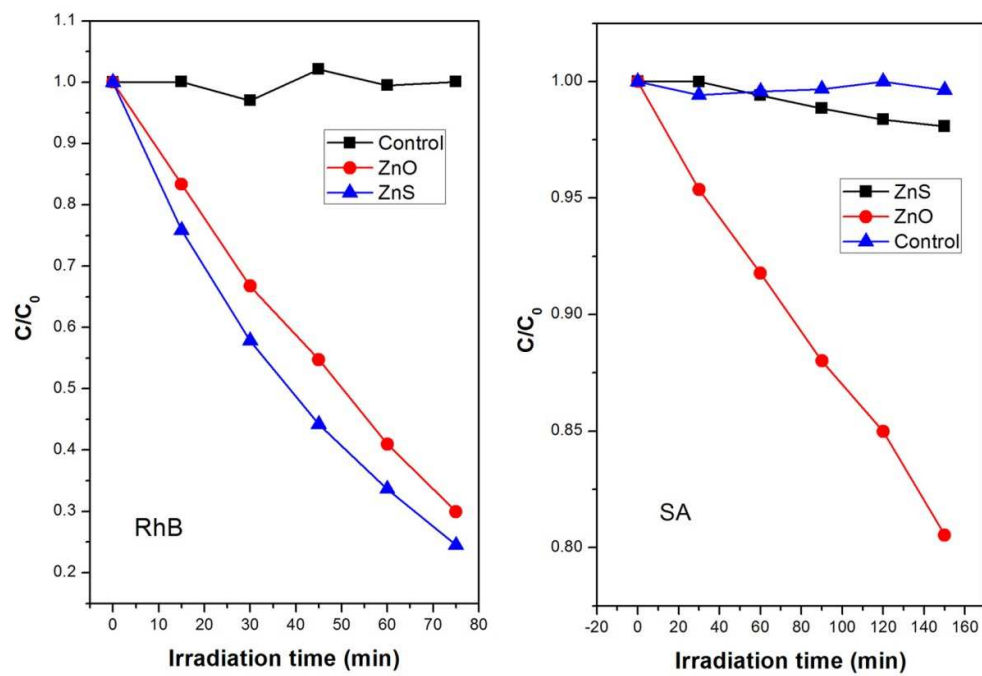


Figure S4. Photocatalytic activity of ZnO and ZnS toward degradation of rhodamine B (RhB) and salicylic acid (SA) during irradiation with simulated sunlight.