

Support Information

A Self-Energized Photodynamic Therapy Agent Based on Persistent Luminescence Nanoparticles

Pengfei Lu^a, Chang Yin^a, Kai Long^a, Yuan Tian^a, Zijin Wei^a, Yifei Wang^a, Wei Wang^{*a} and Zhi Yuan^{*a}

Affiliations:

a. Key Laboratory of Functional Polymer Materials of Ministry of Education, Institute of Polymer Chemistry, College of Chemistry, Nankai University, Tianjin 300071, China.

*Corresponding author: Prof. Wei Wang. Email: duroo@nankai.edu.cn

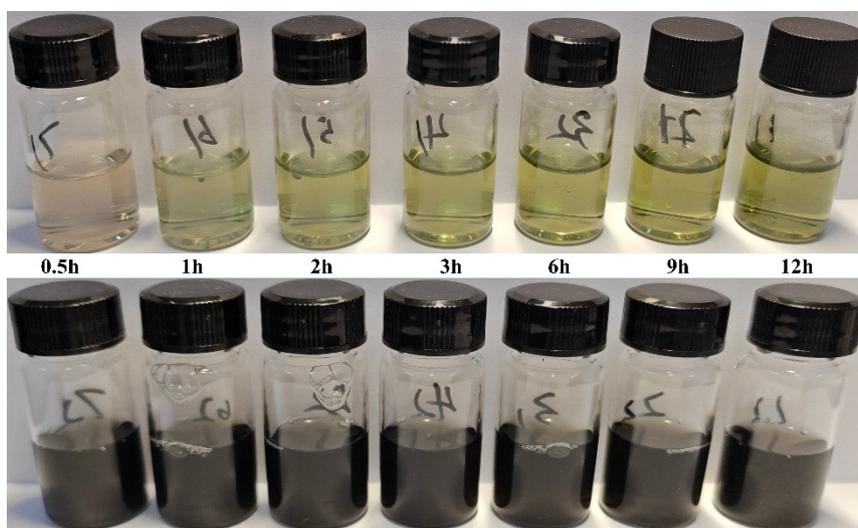


Figure S1. Photographs illustrating the color evolution of the reaction solution over time. The upper row shows the solution in the absence of SDS, while the lower row shows the solution in the presence of 0.025 M SDS.

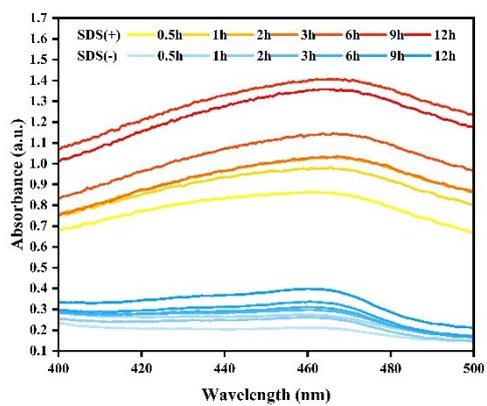


Figure S2. UV-Vis spectra of the solution under different reaction times and in the presence or absence of SDS.

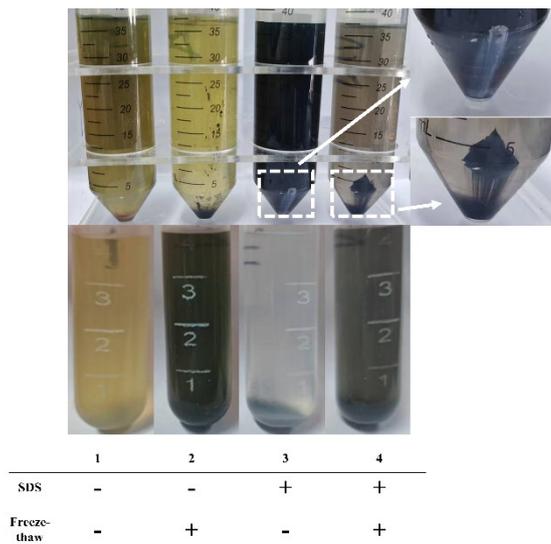


Figure S3. Evaluation of centrifugation strategies and product redispersibility. The upper panel shows samples after centrifugation, and the lower panel shows the redispersion of dried products.

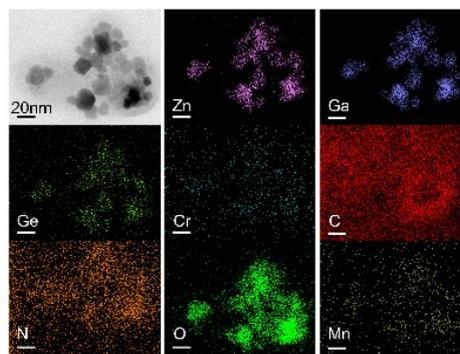


Figure S4. TEM image of ZPM and the corresponding elemental mapping images showing the distribution of Zn, Ga, Ge, Cr, C, N, O, and Mn.

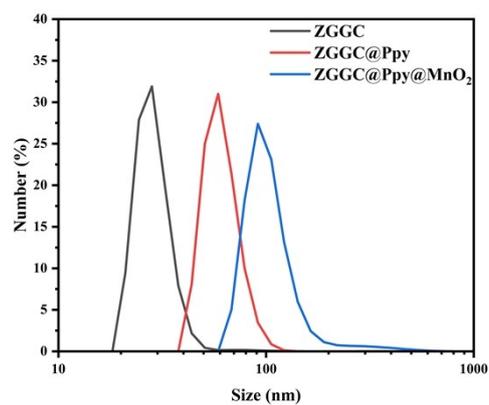


Figure S5. Particle sizes of ZGGC, ZP, and ZPM.

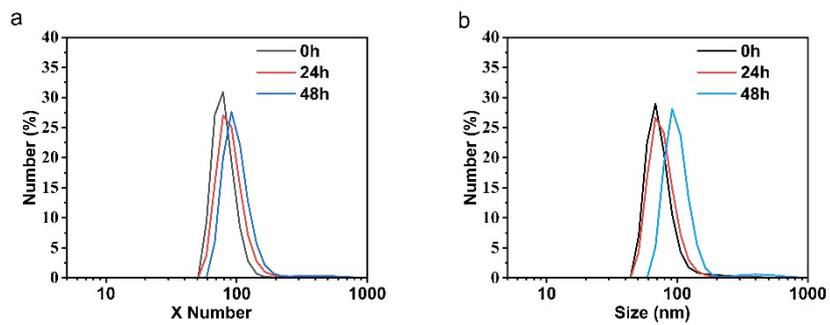


Figure S6. Hydrodynamic size evolution of ZPM over 48 h in (a) water and (b) pH 7.4 PBS containing 10% FBS.

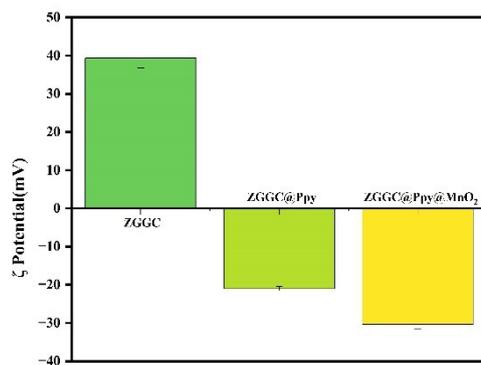


Figure S7. Measurements of zeta potential for ZGGC, ZP, and ZPM nanoparticles.

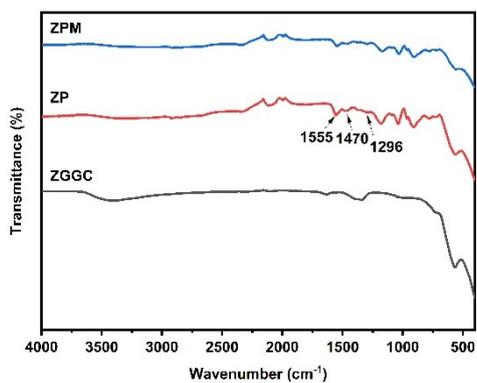


Figure S8. Fourier transform infrared (FT-IR) spectra of the as-synthesized ZGGC, ZP, and ZPM nanoparticles.

Element	ug/mL	mol%
Zn	2.48	41.41%
Ga	3.31	51.83%
Ge	0.248	3.73%
Cr	0.01	0.21%
Mn	0.143	2.84%

Figure S9. Metal content in ZPM nanoparticles determined by ICP-OES analysis.

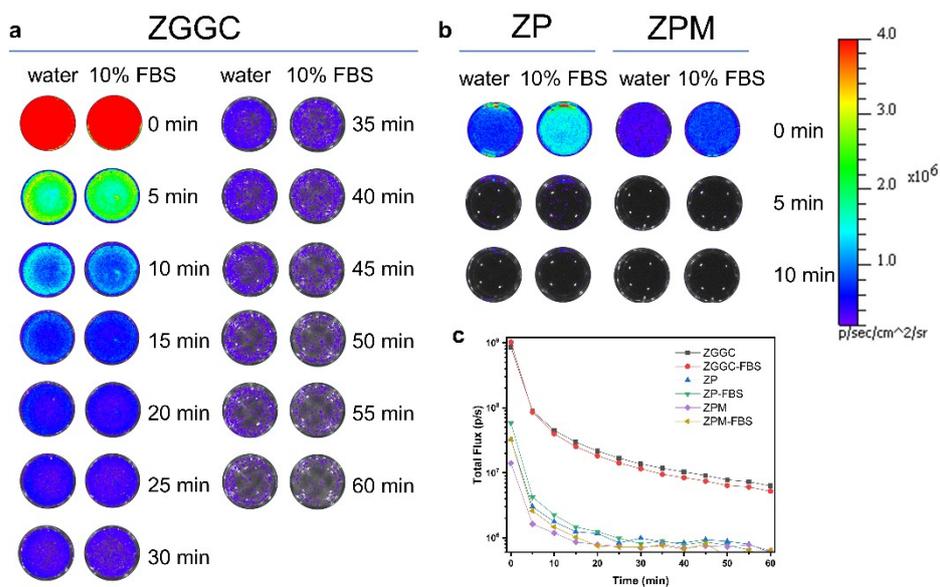


Figure S10. (a) Persistent luminescence images of ZGGC, (b) ZP and ZPM in water and pH 7.4 PBS containing 10% FBS. (c) Quantification of the fluorescence intensity changes.

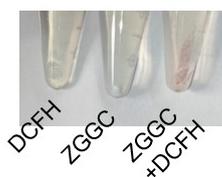


Figure S11. Photographs of DCFH, ZGGC, and the mixture of ZGGC and DCFH after co-incubation for 24 h followed by centrifugation.

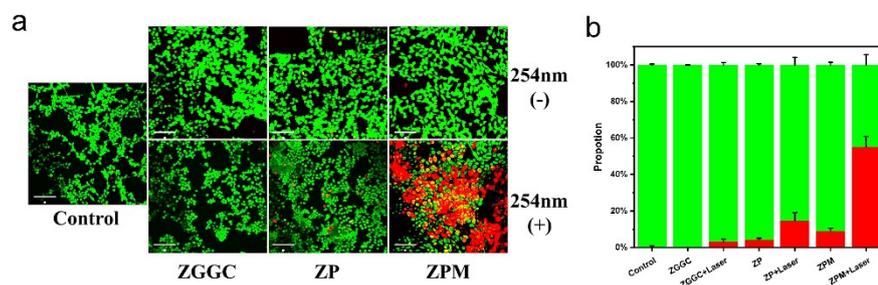


Figure S12. (a) Fluorescence images of cells stained with calcein-AM (live cells, green) and propidium iodide (dead cells, red). (b) Quantification of the red/green fluorescence intensity ratio.

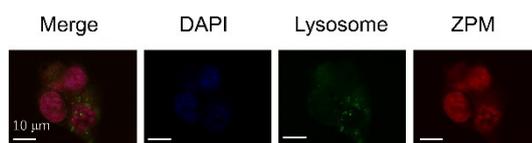


Figure S13. Cellular uptake images of ZPM labeled with lysosome-targeting probes.

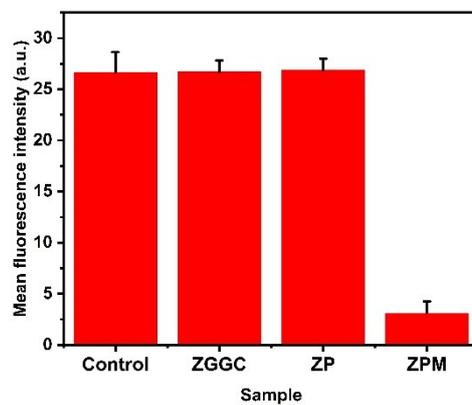


Figure S14. Quantification of mean fluorescence intensity in Fig. 5h.

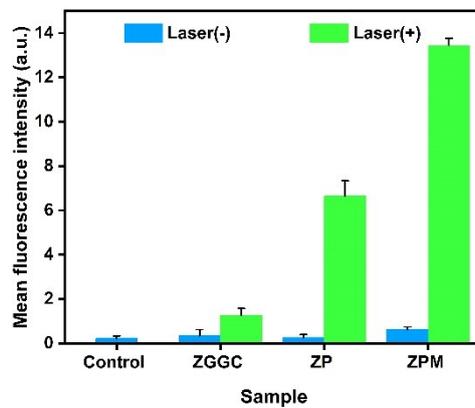


Figure S15. Quantification of mean fluorescence intensity in Fig. 5f.