

Electronic Supplementary Information

Plasmon-enhanced visible-light photocatalytic antibacterial activity of metal-organic framework/gold nanocomposites

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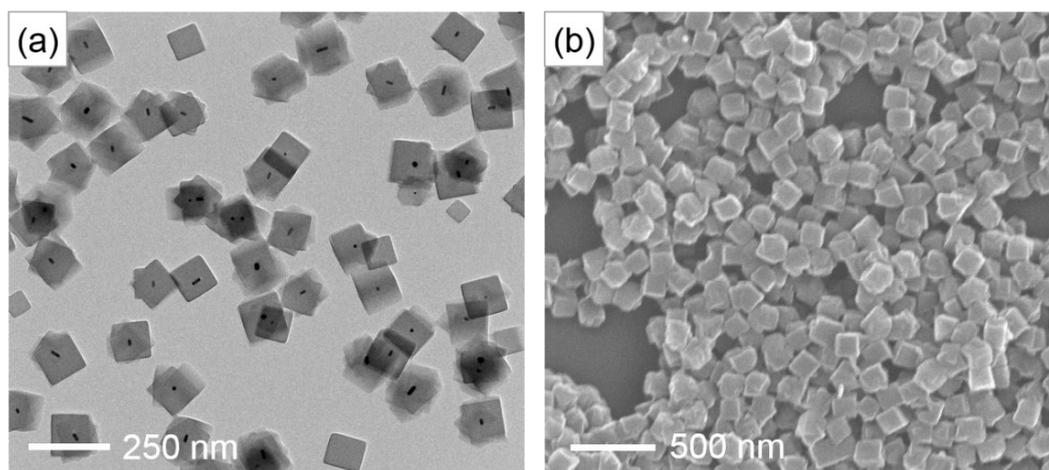


Fig. S1 (a) TEM and (b) SEM images of AuNR@ZIF-8.

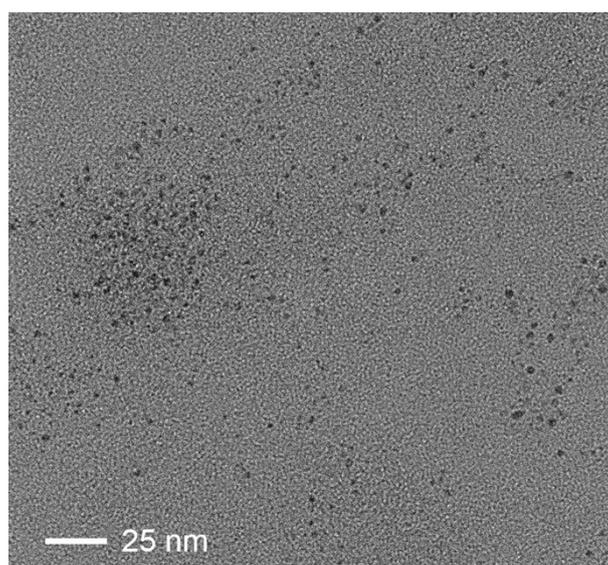


Fig. S2. TEM image of AuNCs.

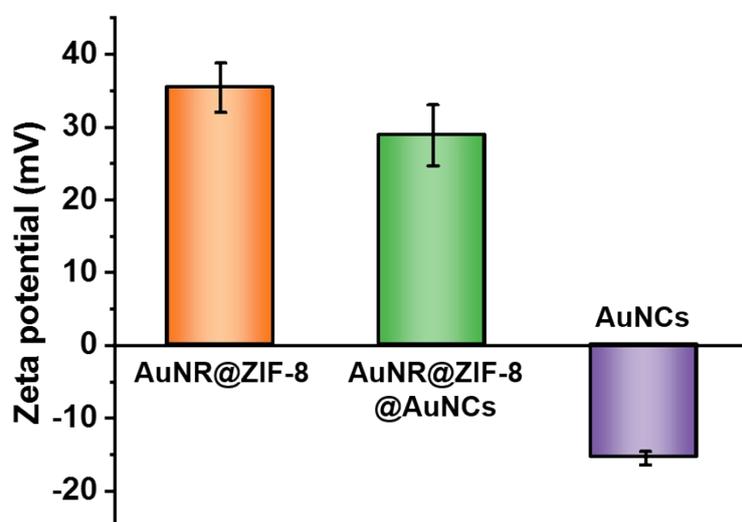


Fig. S3. Zeta potential results of different samples in aqueous solution (n: 3).

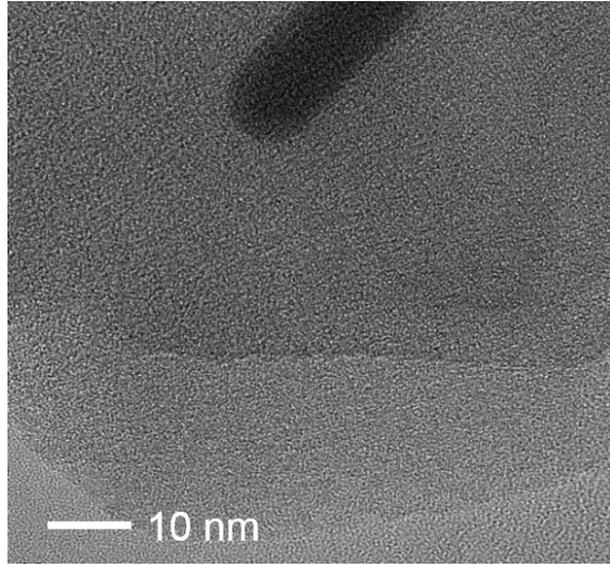


Fig. S4. TEM image of AuNR@ZIF-8.

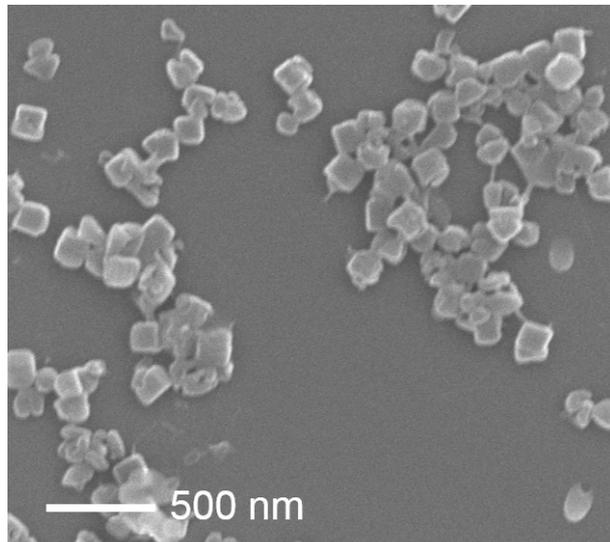


Fig. S5. SEM image of AuNR@ZIF-8@AuNCs.

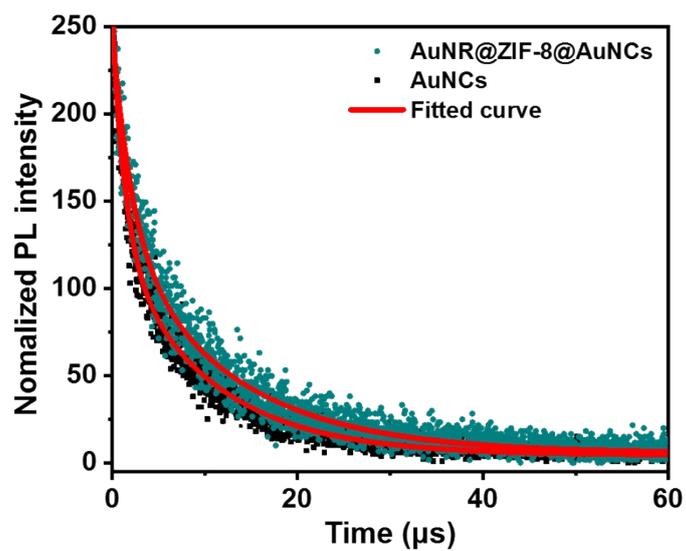


Fig. S6. Fluorescence decay spectra of ZIF-8 and AuNR@ZIF-8 under irradiation of 405 nm light.

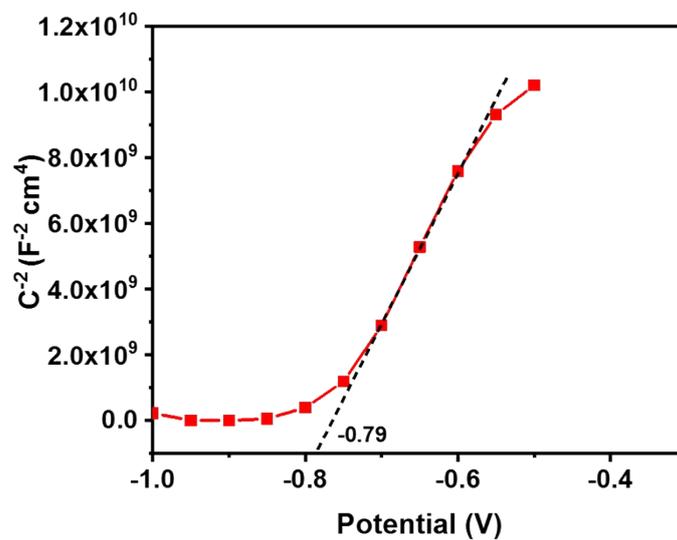


Fig. S7. Mott-Schottky plots of ZIF-8.

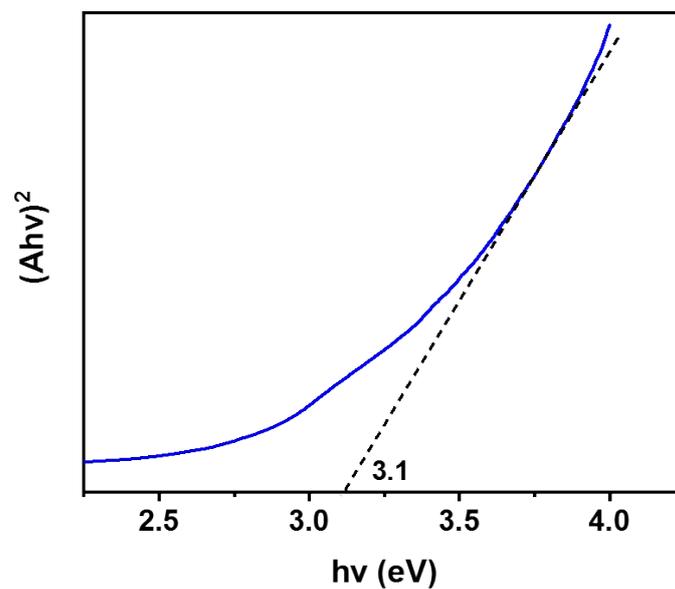


Fig. S8. Tauc plot of ZIF-8. Its bandgap was calculated to be 3.1 eV.

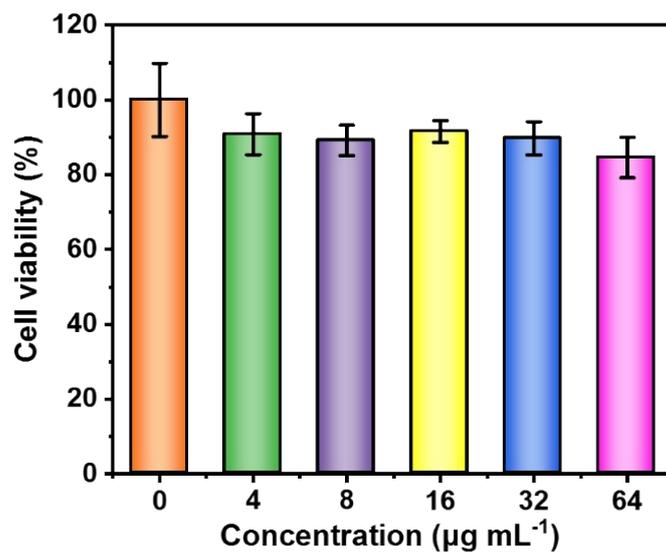


Fig. S9. CCK8 results of L929 cells treated with AuNR@ZIF-8@AuNCs at different concentrations for 24 h.

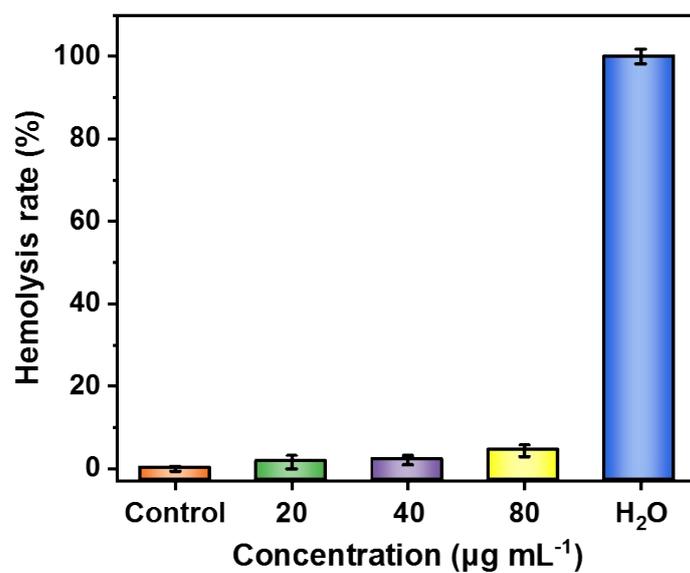


Fig. S10. Hemolysis assay of mice red blood cells in the presence of AuNR@ZIF-8@AuNCs sample at various concentrations (n = 3).

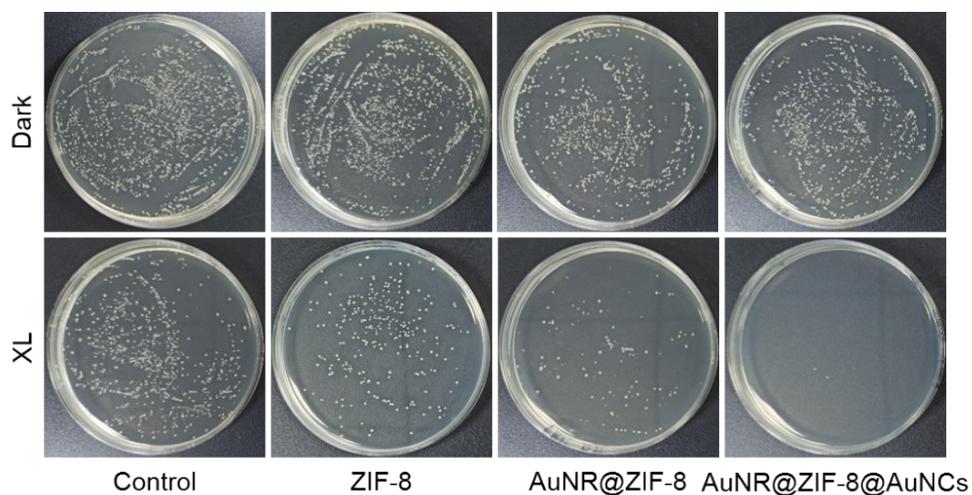


Fig. S11. Photographs of bacterial colonies obtained by *S. aureus* upon treatment with saline, ZIF-8, AuNR@ZIF-8, and AuNR@ZIF-8@AuNCs either in the dark or under light irradiation (XL, 30 min).

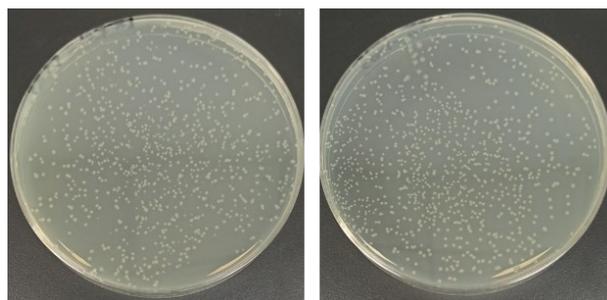


Fig. S12. Photographs of bacterial colonies obtained by *E. coli* upon treatment with AuNRs in the dark (left) or under light irradiation (right). AuNRs ($10 \mu\text{g mL}^{-1}$, the concentration of AuNRs in composites during antibacterial experiments) and *E. coli* were mixed and treated by dark or xenon lamp irradiation for 30 min, then incubated for 4 h before plate coating.

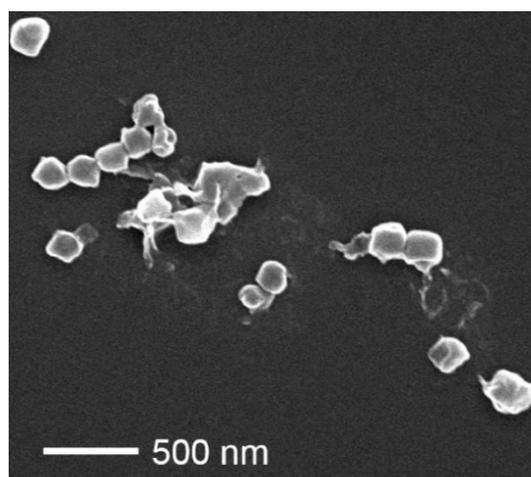


Fig. S13. SEM image of AuNR@ZIF-8@AuNCs after incubating with *E. coli* under a xenon lamp for 30 minutes before incubating for 4 h.

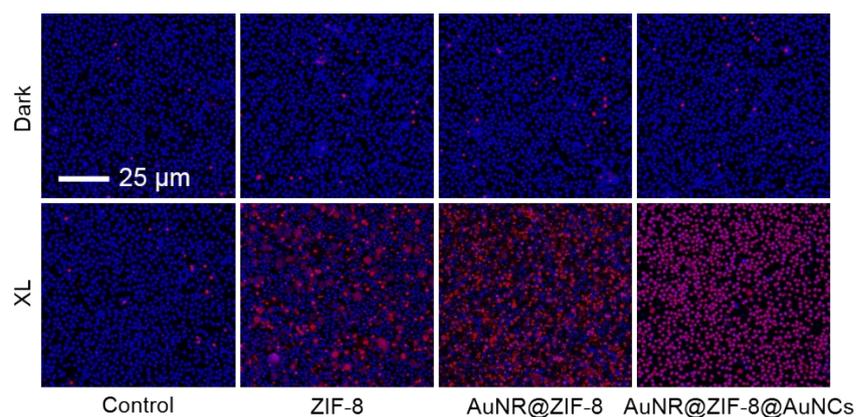


Fig. S14. Fluorescence staining images of *S. aureus* treated with saline, ZIF-8, AuNR@ZIF-8, and AuNR@ZIF-8@AuNCs either in the dark or under light irradiation (XL, 30 min). All the bacteria were stained by Hoechst 33342 (false color: blue). Dead bacteria were visualized by PI (false color: red).

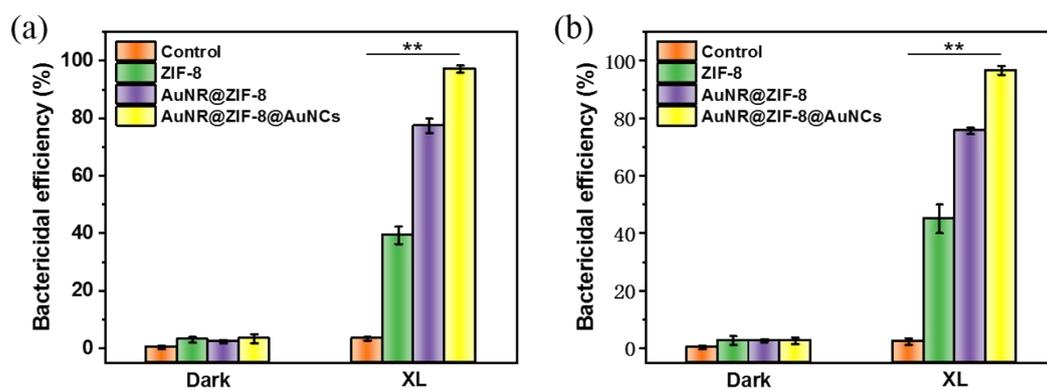


Fig. S15. (a) and (b) are statistical results of the bactericidal efficiency of *E. coli* and *S. aureus*, respectively, based on the fluorescence staining images. The error bars mean variations among three separate measurements (**: $p < 0.01$).

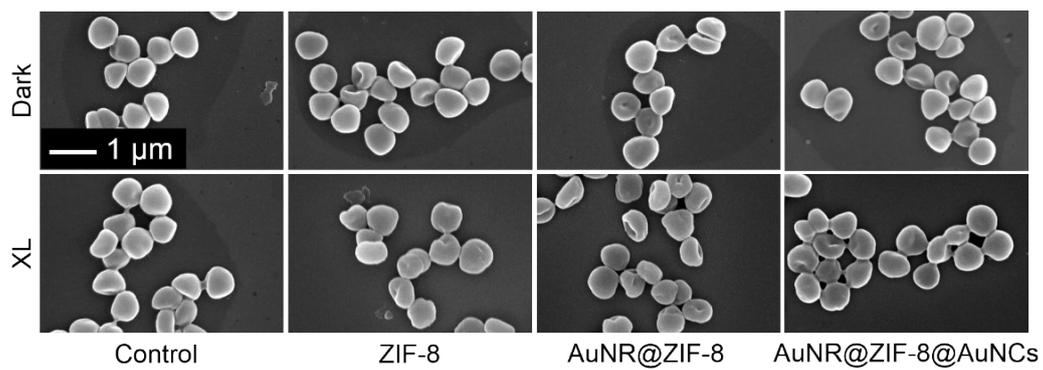


Fig. S16. SEM images of *S. aureus* treated with saline, ZIF-8, AuNR@ZIF-8, and AuNR@ZIF-8@AuNCs either in the dark or under light irradiation (XL, 30 min).