

Electronic Supplementary Material (ESI) for Chemical Science.

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Electronic Supplementary Material

Oxygen-Supplied Mesoporous Carbon Nanoparticles for Enhanced Photothermal/ Photodynamic Synergetic Therapy of Antibiotic-Resistant Bacterial Infection

Jiamei Zhou,^a Wenjie Wang,^b Qiuyang Zhang,^a Zijun Zhang,^a Jiangna Guo,^{a,*} Feng Yan^{a,*}

^aJiangsu Engineering Laboratory of Novel Functional Polymeric Materials, College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou, 215123, China

^bHematology Center, Cyrus Tang Medical Institute, Soochow University, Suzhou, 215123, China

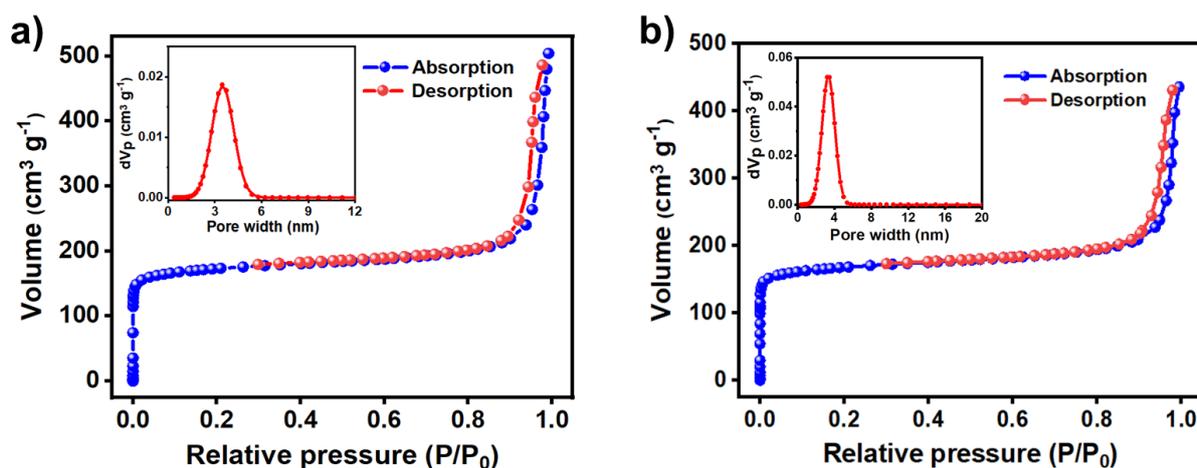


Fig. S1 N₂ desorption-adsorption isotherms at 77 K and pore size distribution (inset) curves of a) MCN, b) OMCN.

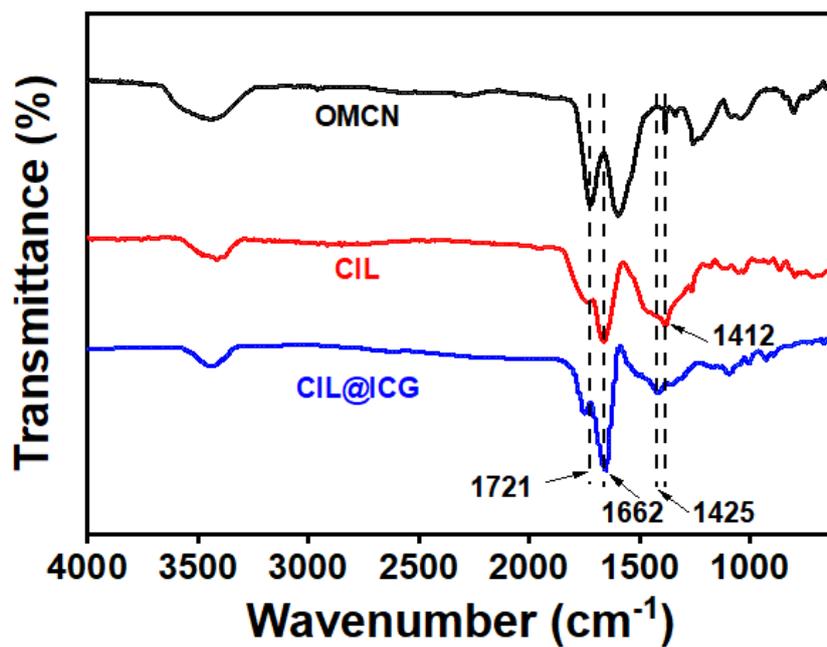


Fig. S2 FT-IR spectra of OMCN, CIL and CIL@ICG.

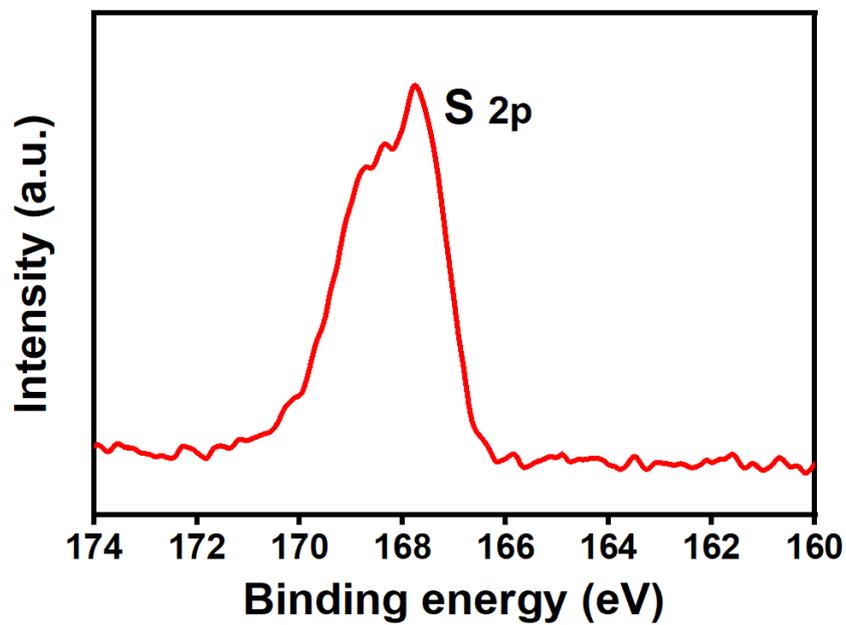


Fig. S3 High-resolution XPS spectrum of S 2p of CIL@ICG.

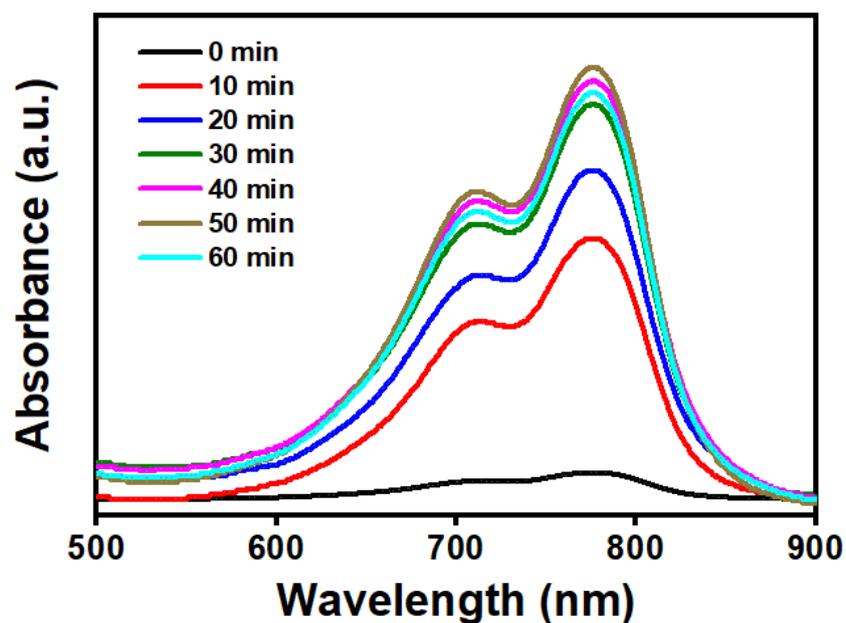


Fig. S4 Release profiles of ICG from CIL@ICG in PBS (pH=7.4). The stability of CIL@ICG was evaluated by monitoring the absorption of the released ICG from CIL@ICG in PBS suspension at different time.

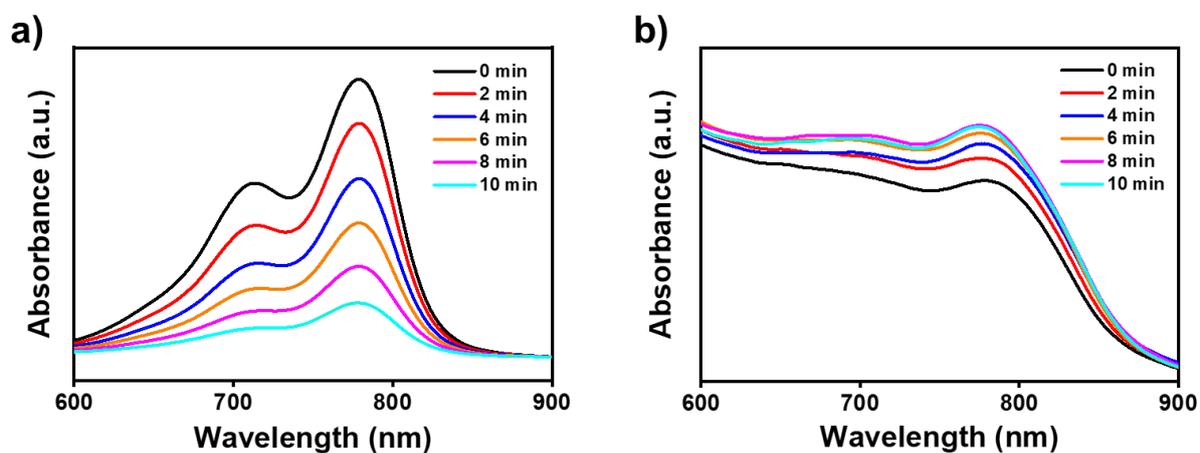


Fig. S5 UV-vis-NIR absorption spectra of a) free ICG aqueous solution and b) CIL@ICG/PFH@O₂ dispersion irradiated with 808 nm NIR laser (808 nm, 1 W cm⁻²) for different time.

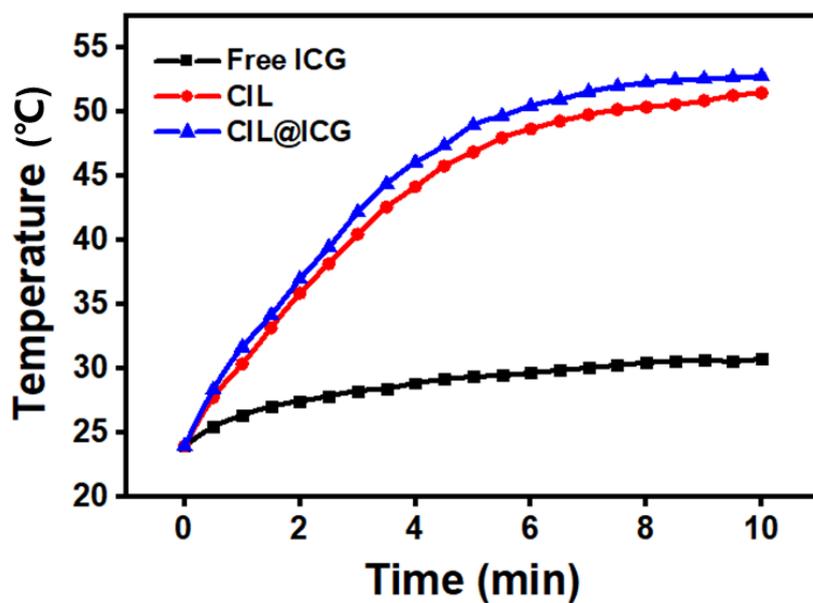


Fig. S6 Time-temperature profiles of $100 \mu\text{g mL}^{-1}$ CIL, CIL@ICG suspension and equivalent concentration of free ICG solution under NIR laser irradiation (808 nm , 1 W cm^{-2}).

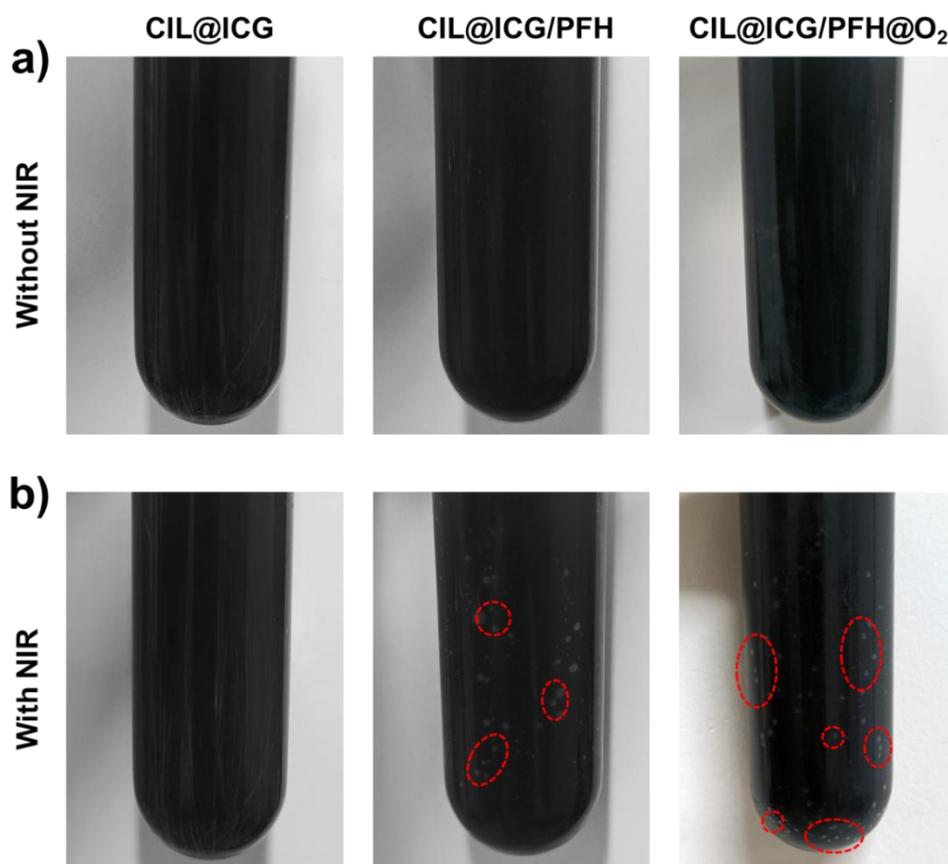


Fig. S7 Photographs of CIL@ICG, CIL@ICG/PFH and CIL@ICG/PFH@ O_2 dispersion a) with and b) without of 808 nm NIR irradiation (5 min).

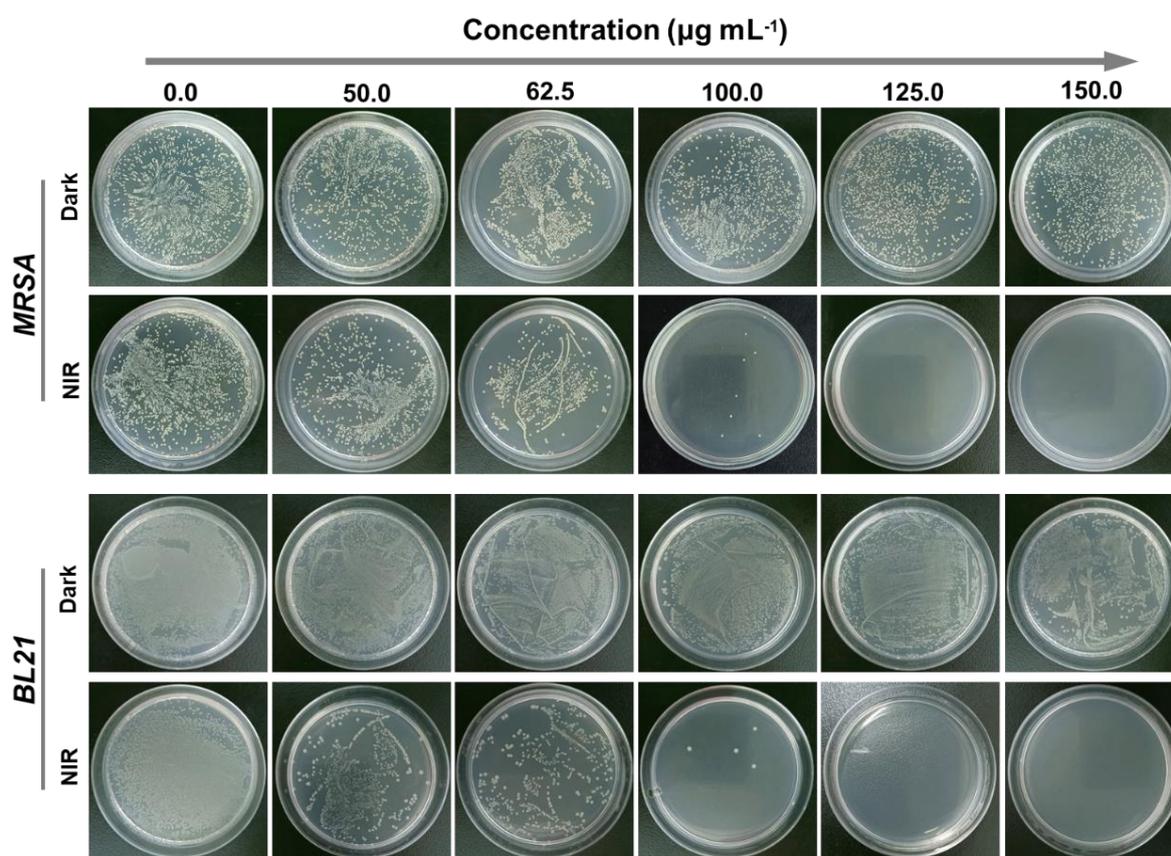


Fig. S8 Colony plate photographs of MRSA and BL21 mixed with a series of concentrations of CIL@ICG/PFH@O₂ with or without NIR irradiation (1 W cm⁻², 5 min).

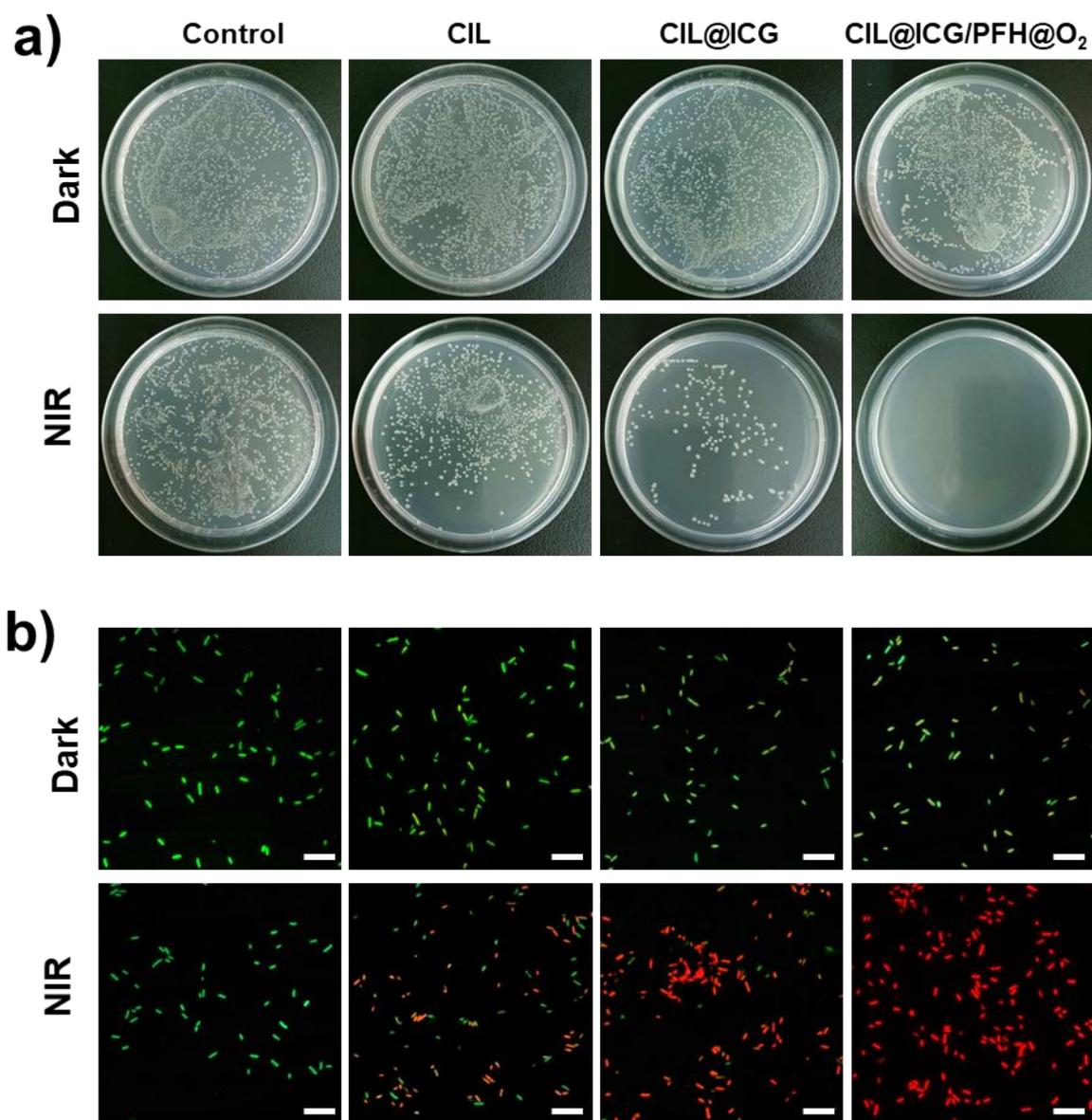


Fig. S9 a) Plate diffusion results and b) Live/dead fluorescence staining images of BL21 co-cultured with $100 \mu\text{g mL}^{-1}$ CIL, CIL@ICG and CIL@ICG/PFH@O₂ with/without 808 nm NIR irradiation. Red and green fluorescence represent dead and viable bacteria, respectively. Laser irradiation conditions: 1 W cm^{-2} , 5 min. Scale bar: $8 \mu\text{m}$.

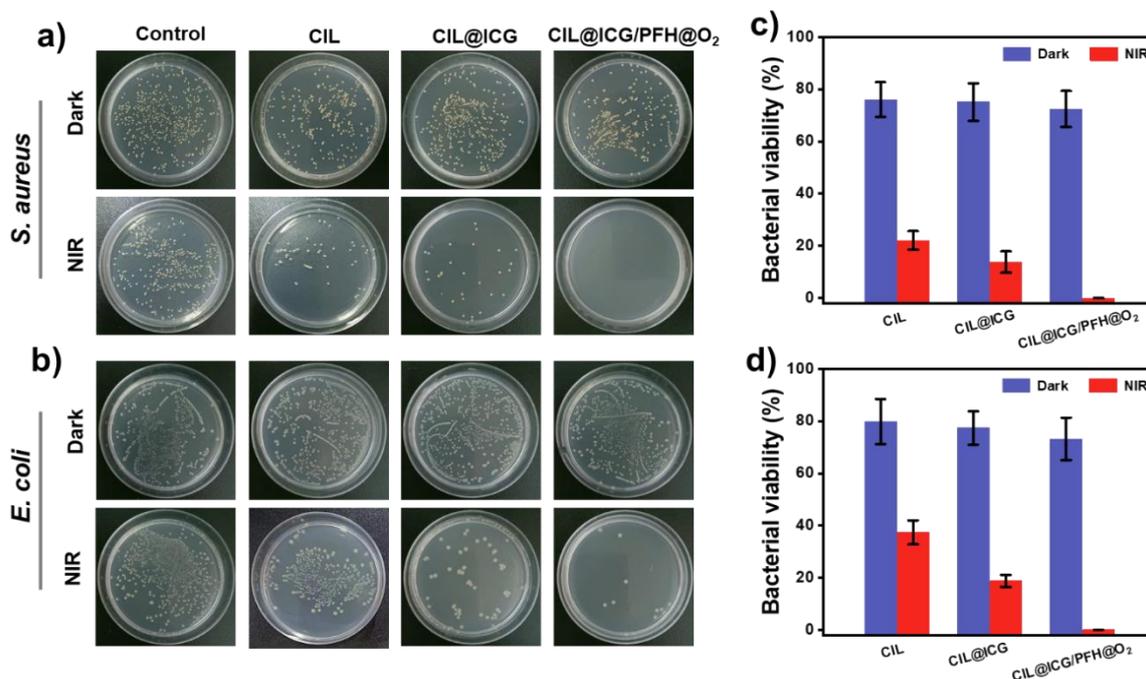


Fig. S10 Plate diffusion results of a) *S. aureus* and b) *E. coli* mixed with $100 \mu\text{g mL}^{-1}$ of CIL, CIL@ICG and CIL@ICG/PFH@O₂, exposed to NIR irradiation or kept in dark. Corresponding bacterial viabilities of c) *S. aureus* and d) *E. coli*. Laser irradiation conditions: 1 W cm^{-2} , 5 min.

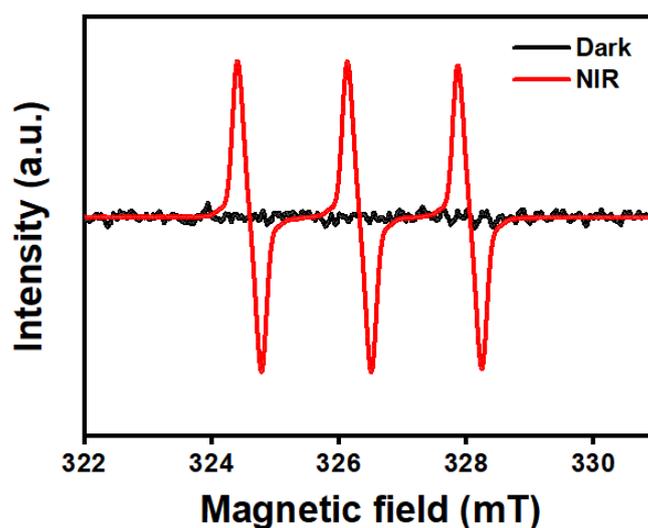


Fig. S11 ESR spectra of ICG to detect $^1\text{O}_2$ with (without) NIR irradiation.

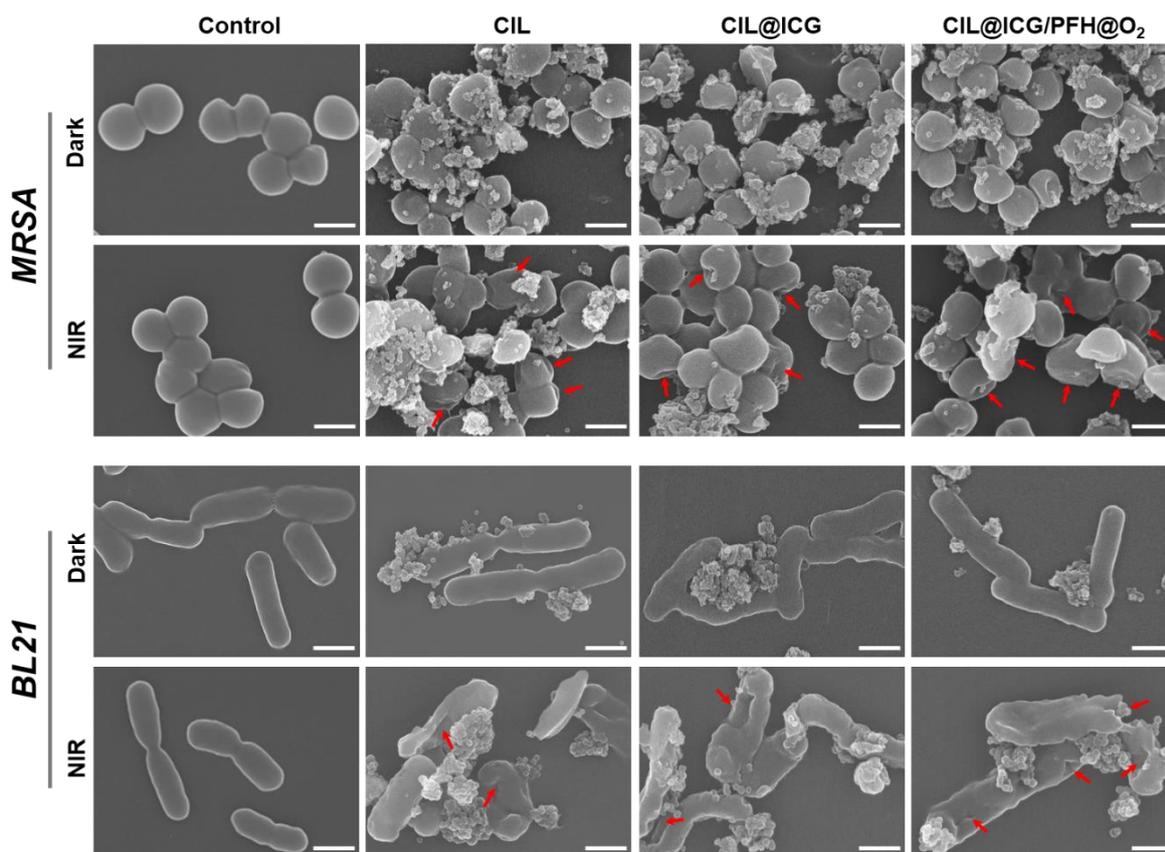


Fig. S12 SEM images of MRSA and BL21 after different treatments. Laser irradiation conditions: 1 W cm^{-2} , 5 min. Scale bar: $1 \mu\text{m}$.

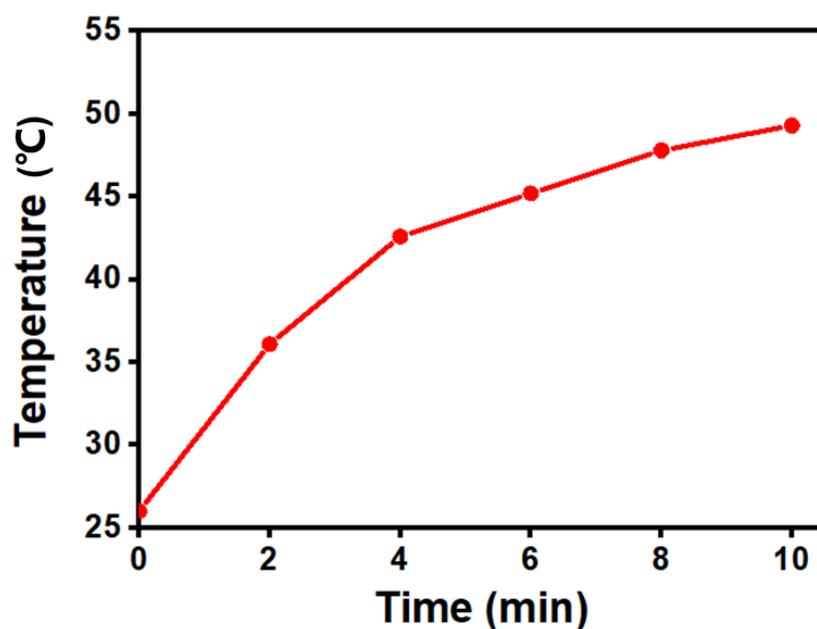


Fig. S13 Temperature curve of a rat treated with CIL@ICG/PFH@O₂ ($100 \mu\text{g mL}^{-1}$) at different times under NIR irradiation for 10 min (808 nm , 1 W cm^{-2}).

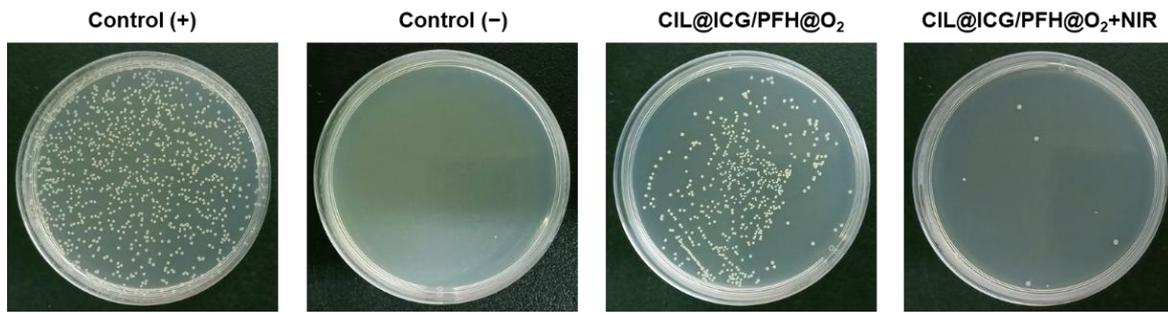


Fig. S14 Photographs of bacterial cultures of wound tissue in different treatment groups on day 6.