Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Photothermal theranostics with glutathione depletion and enhanced reactive oxygen species generation for efficient antibacterial treatment

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Table S1. The correlation parameters of photothermal conversion ability of PDA-FDM-23.

Parameter	T_{max}	T_{suur}	A_{808}	m	c	τ_s	η
Value	55.8	23.3	1.982	0.5g	4.2 J/g	266.364	17.26%

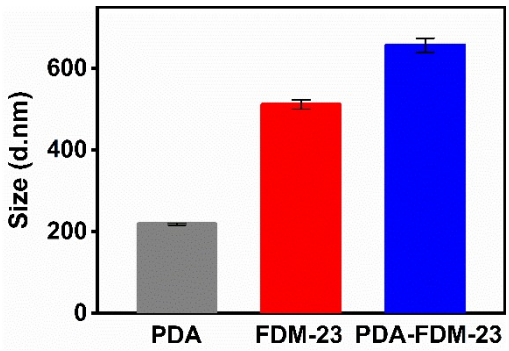

Fig. S1 DLS analysis of PDA, FDM-23, and PDA-FDM-23.

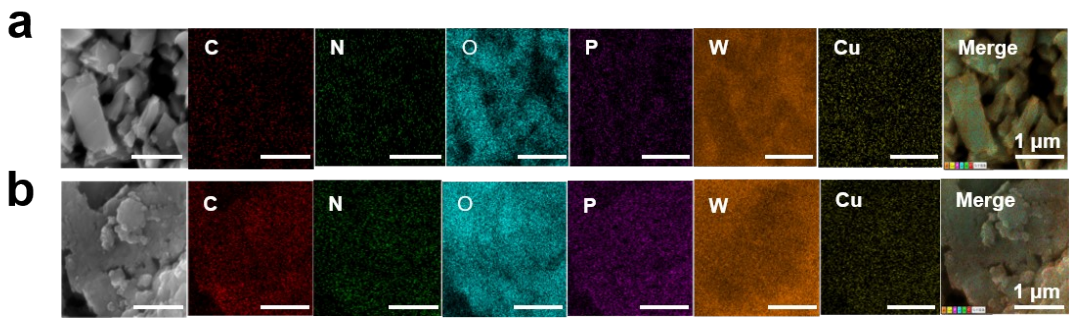

Fig. S2 EDS mapping images of FDM-23 **(a)** and PDA-FDM-23 **(b)**.

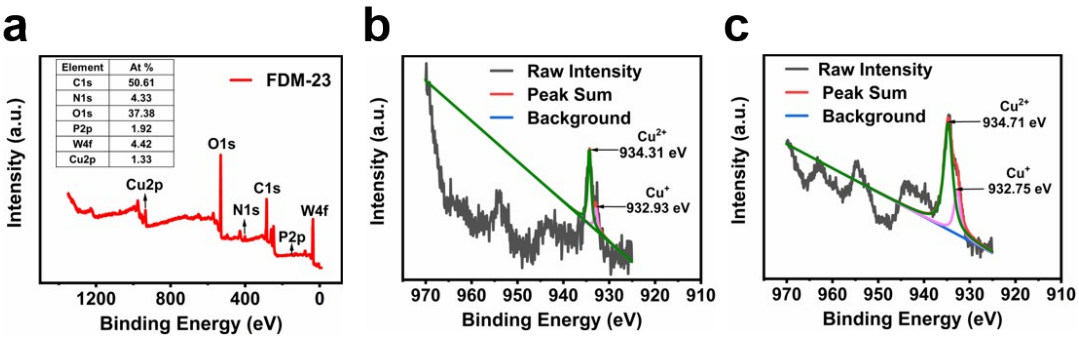

Fig. S3 (a) XPS survey spectra analysis of FDM-23. **(b)** Cu2p core of PDA-FDM-23 level spectra. **(c)** Cu2p core of FDM-23 level spectra.

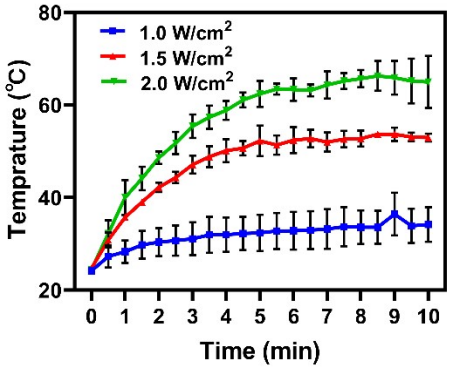

Fig. S4 Heating curves of 100 μg/mL PDA-FDM-23 under laser irradiation with different powers (1.0 W/cm^2, 1.5 W/cm^2 and 2.0 W/cm^2).

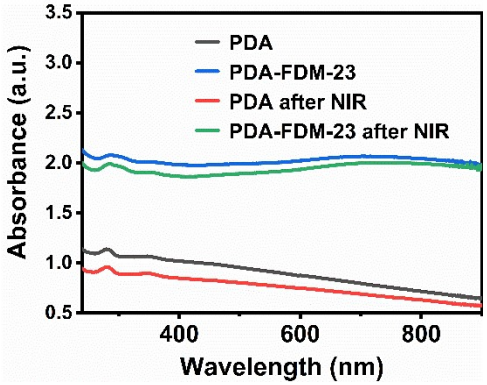

Fig. S5 The UV–vis absorption spectra of PDA-FDM-23 composites before and after laser irradiation (1.5 W/cm^2, 10 min).

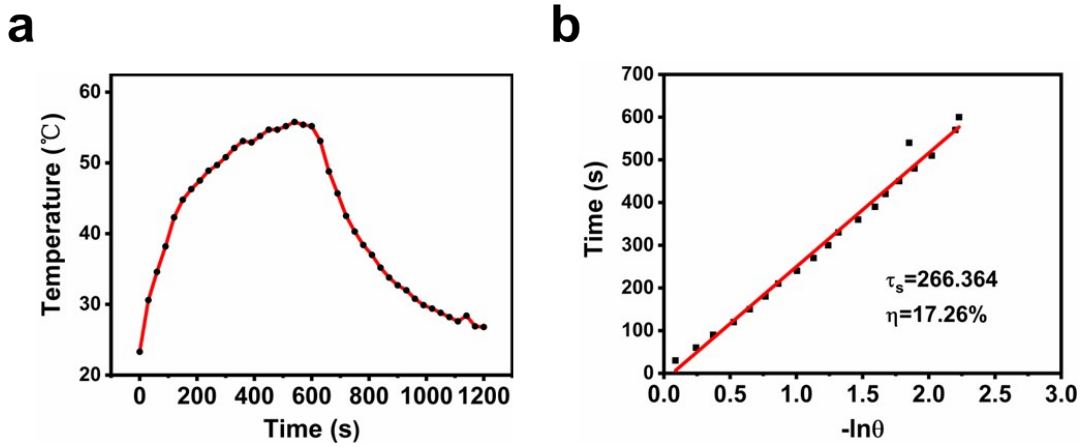

Fig. S6 (a) Heating and cooling curves of PDA-FDM-23 under laser irradiation (808 nm, 1.5 W/cm^2). **(b)** Linear time data versus −lnθ obtained from the cooling time.

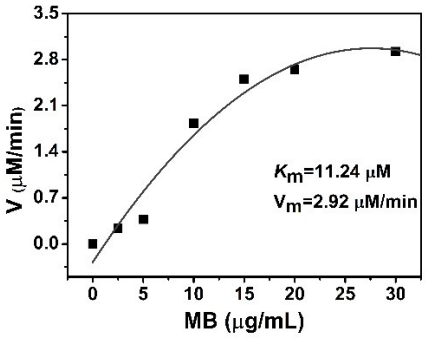

Fig. S7 The Michaelis–Menten curve for PDA-FDM-23.

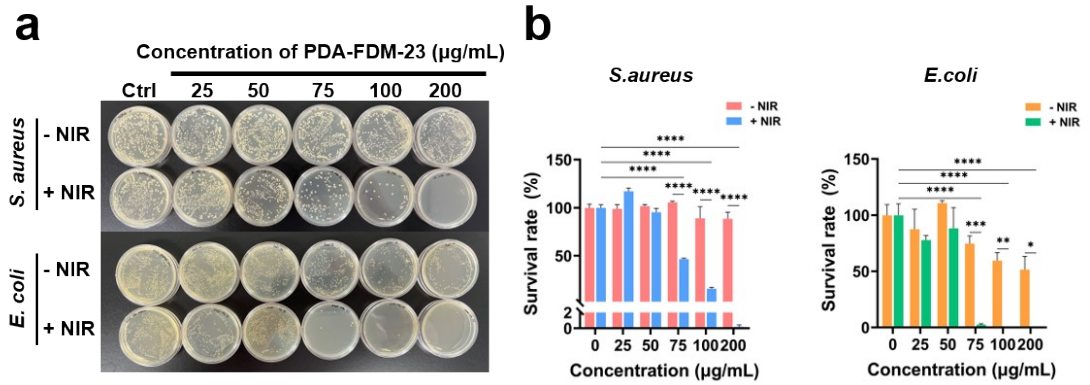

Fig. S8 (a) Plate photographs of *S. aureus* and *E. coli* treated with different concentrations of PDA-FDM-23 in the presence and absence of light (1.5 W/cm^2, 20 minutes). **(b)** Relative bacterial survival rates of *S. aureus* and *E. coli* based on **(a).** Data

were represented as means ± SEM (n = 3). ns: no significant difference, ****P < 0.0001, ***P < 0.001, **P < 0.01.

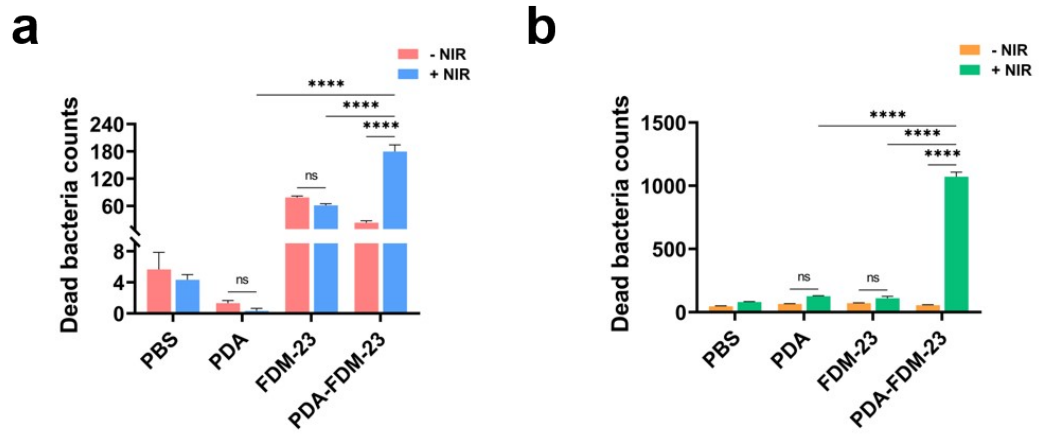

Fig. S9 The dead bacteria count of PI-labeled *S. aureus* **(a)** and *E. coli* **(b)**. Data were represented as means ± SEM (n = 3). ns: no significant difference. ****P < 0.0001.

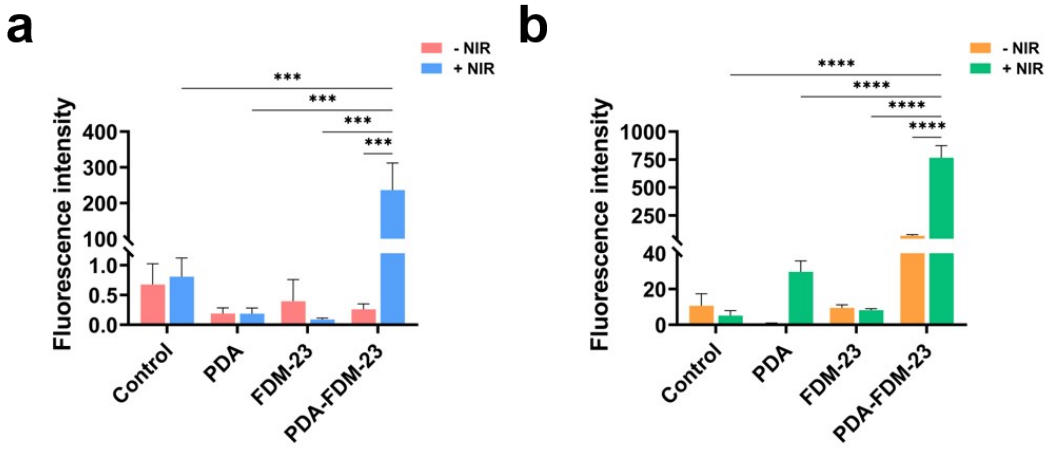

Fig. S10 Relative quantification of ROS fluorescence intensity after incubation with *S. aureus* **(a)** and *E. coli* **(b)** in each group. Data were represented as means ± SEM (n = 3). ***P < 0.001, ****P < 0.0001.