

Electronic Supplementary Information

Photovoltaic molecule with ultra-high light energy utilization for near-infrared laser triggered synergetic photodynamic and photothermal therapy

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Table S1. The summary of the energy utilization efficacy of the reported works.

PTT Agents	Wavelength (nm)	PCE (%)	$^1\text{O}_2$ (%)	Energy Utilization Efficacy	Reference
IEICO NPs	808	85.4	11	96.4	This work
Nano-PT	785	27.8	/	27.8	1
ZSY-TPE	808	28.4	13.8	42.2	2
BTA NPs	808	33	28.3	61.3	3
DTRGD NPs	721	33	0.51	33.51	4
SQP-NPs	810	36	/	36	5
TPBT NPs	808	36.5	18.3	54.8	6
BPN-BBTD NPs	785	39.8	/	39.8	7
P@BDP	808	42	6.4	48.4	8
PF	808	42.3	/	42.3	9
FS-GdNDs	808	43.99	/	43.99	10
DPP-BT NPs	730	50	27.3	77.3	11
ETTC NPs	808	52.8	2.56	55.36	12
IT-S NPs	635	72.3	/	72.3	13
F8-PEG NPs	808	82	/	82	14

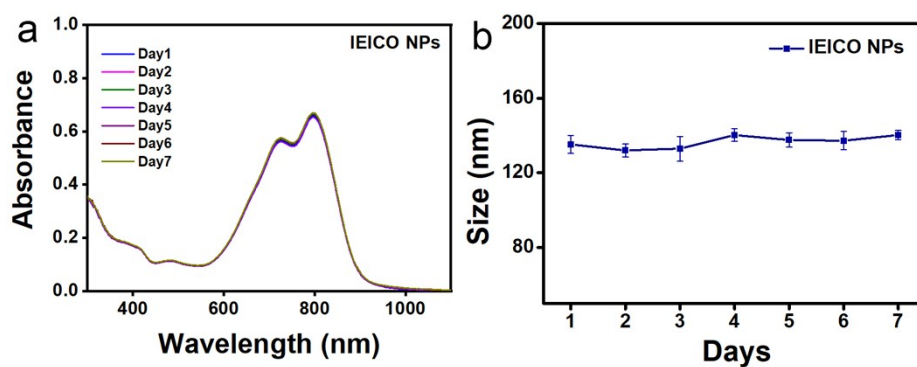


Figure S1. The (a) absorbance spectra and (b) size distribution of IEICO NPs within 7

days.

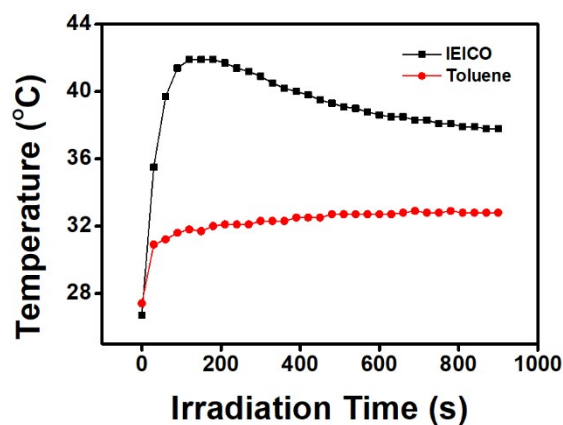


Figure S2. Time-dependent temperature variation of IEICO aqueous (in Toluene) and pure toluene under the 808 nm laser irradiation (1 W/cm^2).

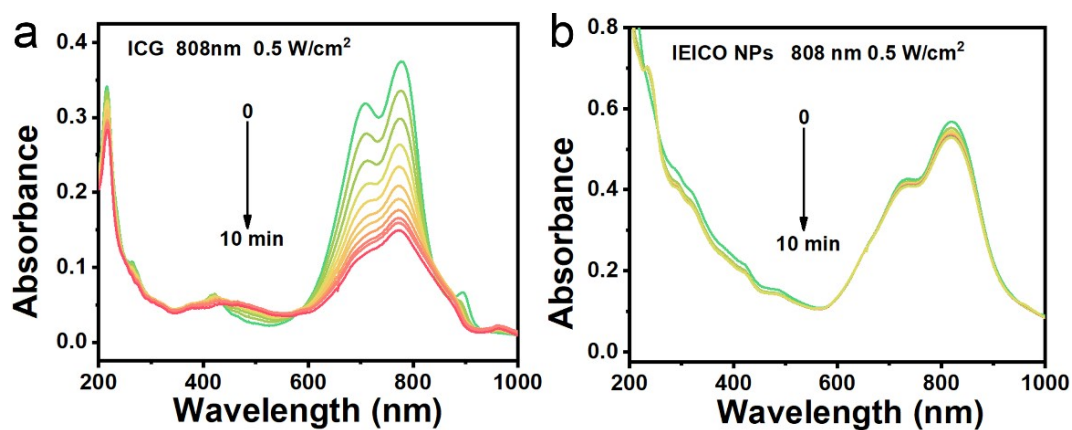


Figure S3. Time-dependent absorption spectra of (a) ICG and (b) IEICO NPs under laser irradiation.

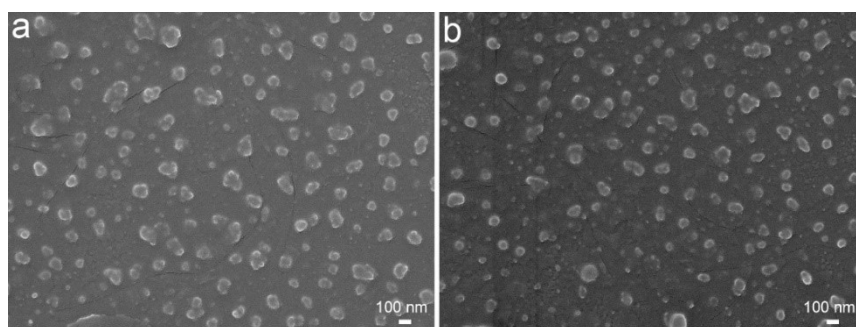


Figure S4. The SEM images of IEICO NPs after (a) 5 min and (b) 10 min laser

irradiation.

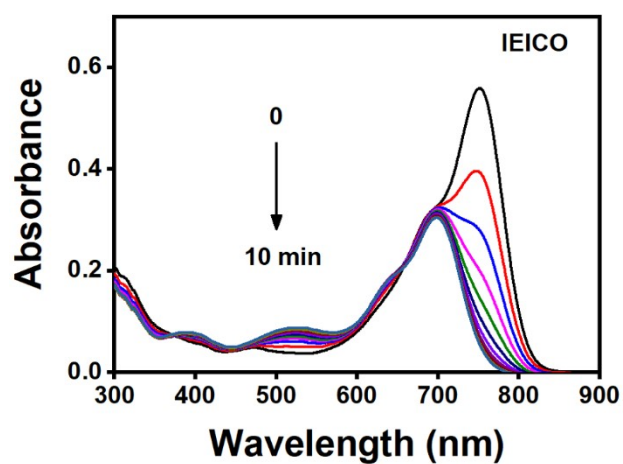


Figure S5. Time-dependent absorption spectra of IEICO dissolve in toluene under laser irradiation (0.5 W/cm^2 , 10 min).

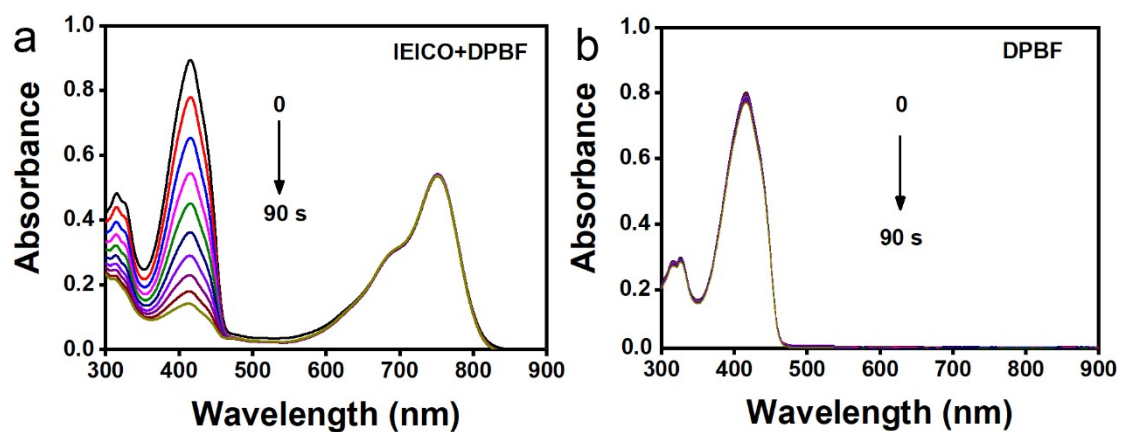


Figure S6. The absorbance spectrum of (a) IEICO+DPBF (in Toluene) and (b) DPBF (in Toluene) under the laser irradiation (0.05 W/cm^2).

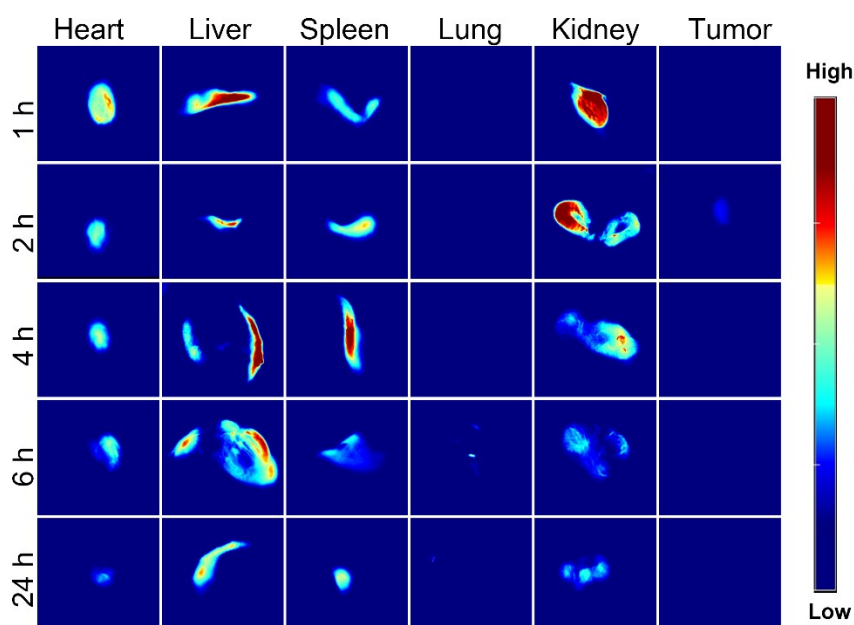


Figure S7. Photoacoustic imaging of organs and tumor after intravenous injection at different times.

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