Supplementary Information (SI) for Nanoscale.
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Supporting information

Supporting Tables

Table S1 Properties of $NiFe_2O_4$ nanoparticles

Size (nm)	Purity (%)	Shape	Color	Density (g/mL)	Molecular Weight
30	99	Spherical	Brown	5.368	234.38

Table S2 Parameters of Experimental Equipment

Name	Model	Range	Supplier
Electronic balance	FA1004	0-100g	Supervised by Shanghai Xiniulaibo Instrument
UV-Vis spectrophotometer	UV-5500PC	190-1100nm	Shanghai Yipu Instrument
Ultrasonic cleaning machine	F-100 S	/	Shenzhen Fuyang Technology Group
Xenon light source system	CEL-PE300L-3A	0-20000w/m^2	Beijing Zhongjiao Jinyuan
Thermocouple thermometer	TCMU8-K15	-200~1360℃	Guangdong Dajia Sensing
Gaussmeter	NK-5	0-2400mT	Tianjin Liaowang Photoelectric

Table S3 Comparison of photothermal conversion efficiency of different magnetic materials

Sample	concentration	Photothermal conversion efficiency
$NiFe_2O_4$	200ppm	66.96%
	250ppm	74.19%
	300ppm	71.15%
Fe_3O_4	0.2wt%	58%
Fe_3O_4/graphene	200ppm	58.21%
Fe_3O_4@C	0.02wt%	48.69%

Supplementary Figures

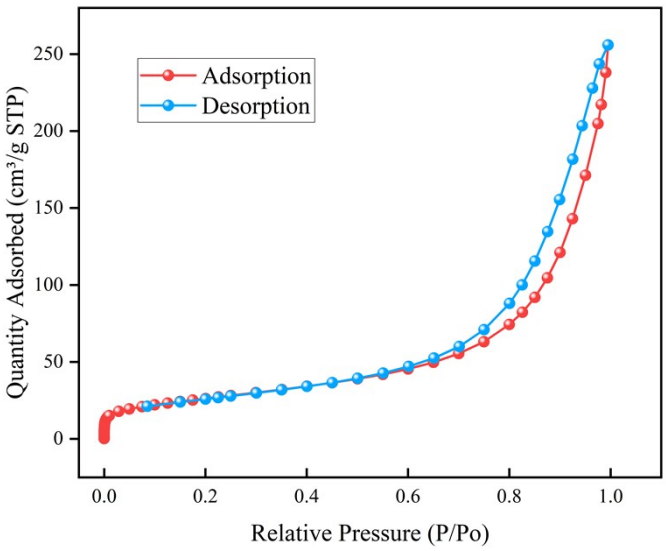

Fig.S1. BET characterization of $NiFe_2O_4$ nanoparticles