Electronic Supplementary Information

Dual Enhanced Anti-Bacterial Strategy Based on High Chlorin e6 Loaded Polyethyleneimine Functionalized Graphene

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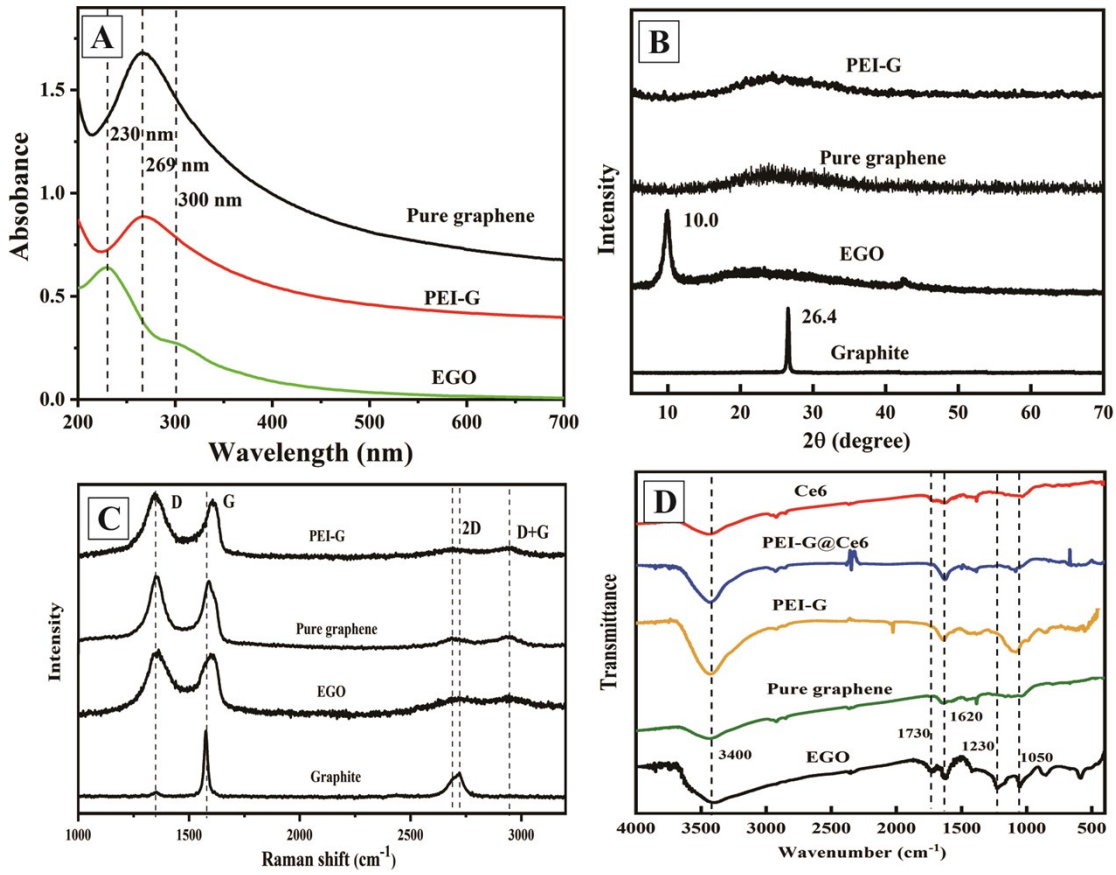

Fig. S1 UV-Vis (A) spectrum of EGO, pure graphene and PEI-G, XRD (B), Raman (C) spectrum of Graphite, EGO, pure graphene and PEI-G, FT-IR (D) spectrum of EGO, pure graphene, PEI-G, PEI-G@Ce6 and Ce6.

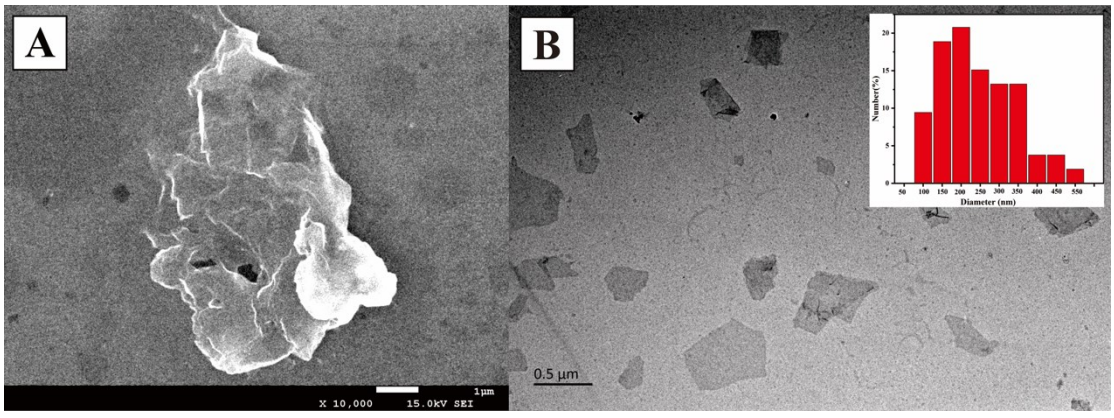

Fig. S2 SEM (A) and TEM (B) images of PEI-G. Inset of B was the size distribution of PEI-G.

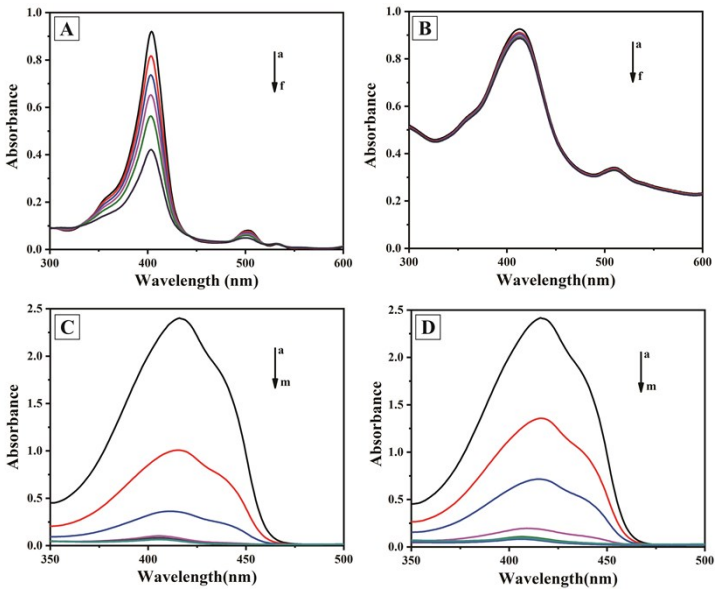

Fig. S3 UV-Vis spectrum of (A) Ce6, (B) PEI-G@Ce6 in photostability and (C) Ce6, (D) PEI-G@Ce6 incubated with DPBF for singlet oxygen generation

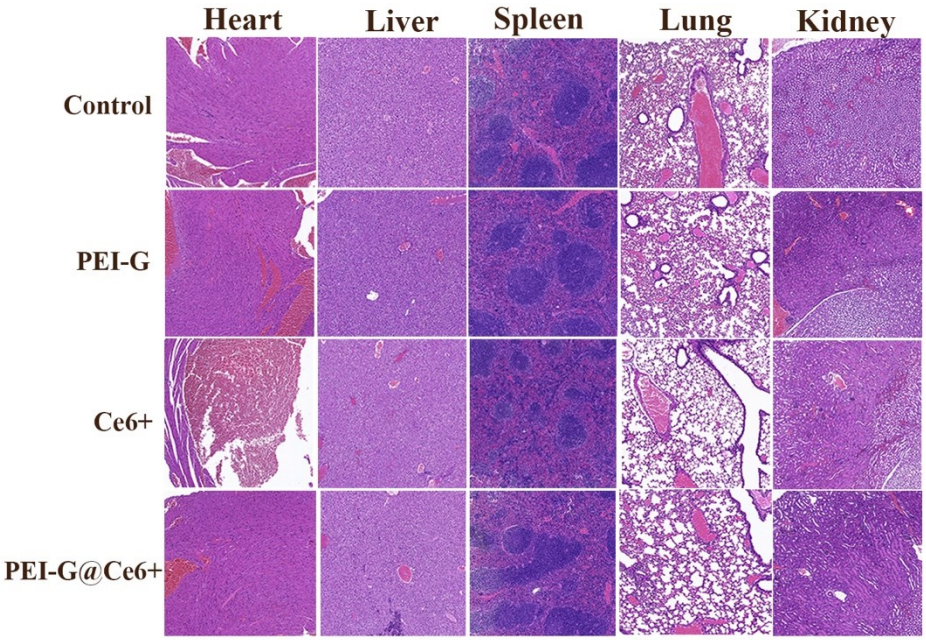

Fig. S4 Haematoxylin and eosin stain images of the major organs of mice in PEI-G@Ce6 group (heart, liver, spleen, lung and kidney)

Table S1 Comparation of Ce6 loading capacity with other nanomaterials reported in published articles

Nanomaterials	Ce6 loading capacity (%)	References
Magnetic polydopamine nanoparticles	18.03%	1
Silica nanoparticles	7.80%	2
Poly (dopamine) nanospheres	20.44%	3
PEGylated graphene oxide	15.00%	4
Black Phosphorus Nanosheets	12.80%	5
Pd nanosheets	5.25%	6
PEI-G	32.91%	This work

Table S2 Wound healing activity of PEI-G, Ce6 and PEI-G@Ce6 in mice

Group	Wound size (mm) and Percentage of wound healing at			
	1^{th} day	7^{th} day	9^{th} day	13^{th} day
Control	100.00±0.00	89.73±1.8	86.26±2.3	69.74±2.5
	0%	10.27%	13.74%	30.26%
PEI-G	100.00±0.00	89.72±0.9	83.95±1.5	60.58±2.0
	0%	10.28%	16.05%	39.42%
Ce6+	100.00±0.00	87.25±2.2	80.27±2.6	49.95±2.8
	0%	12.75%	19.73%	50.46%
PEI-G@Ce6+	100.00±0.00	56.25±2.6	53.22±1.8	10.35±1.7
	0%	43.75%	46.78%	89.65%

References

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