

Supporting Information

Fabrication of perylene tetracarboxylic diimide-graphitic carbon nitride heterojunction photocatalyst for efficient degradation of aqueous organic pollutants

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Contents

Table S1	S-2
Figure S1.....	S-3
Figure S2.....	S-4
Figure S3.....	S-5
Figure S4.....	S-6
Figure S5.....	S-7
Figure S6.....	S-9
Figure S7.....	S-8

Table S1 EIS fitted results of R_{ct} for g-C₃N₄ and PDI/GCN heterojunctions.

Sample	g-C ₃ N ₄	0.5% PDI/GCN	1% PDI/GCN	2% PDI/GCN	3% PDI/GCN	5% PDI/GCN	10% PDI/GCN	30% PDI/GCN
R_{ct}/Ω	143140	73871	48980	58096	83115	93276	118850	129160

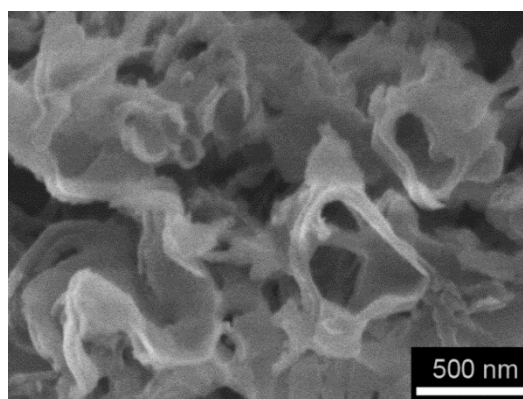


Figure S1. SEM image of 1% PDI/GCN heterojunction.

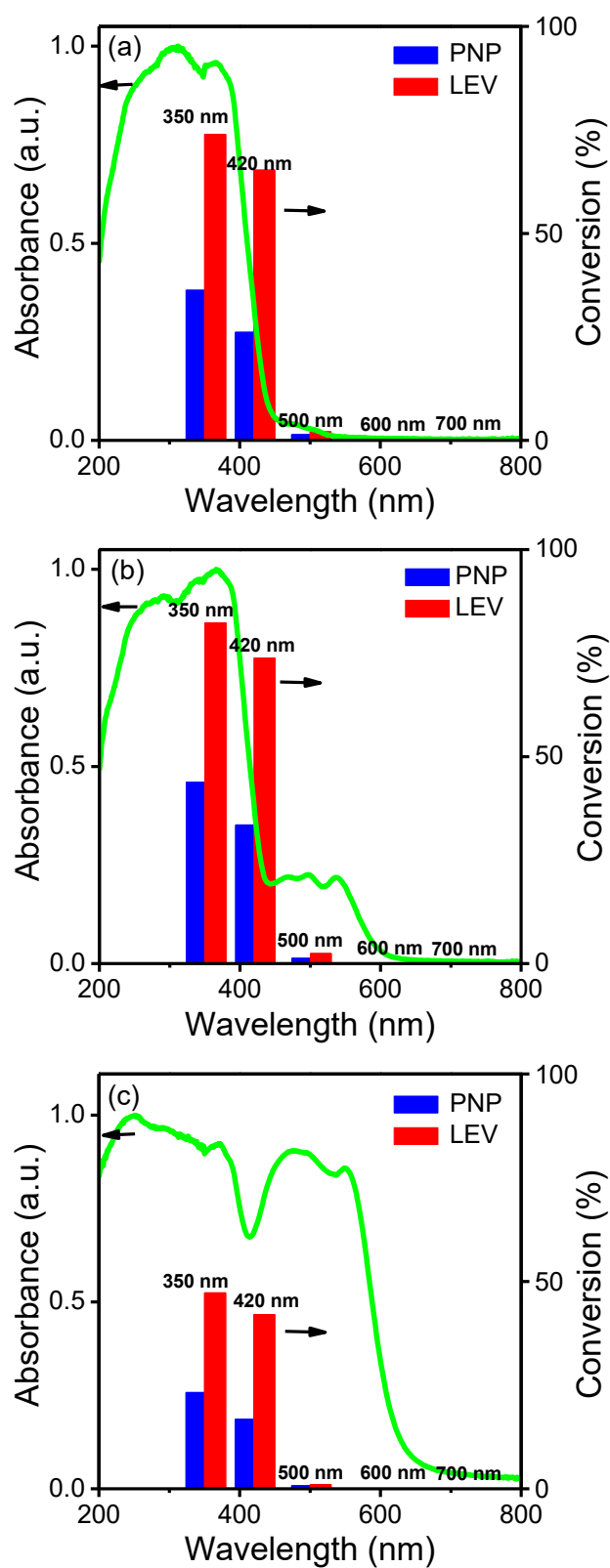


Figure S2. Overlay of the UV-Vis spectra and wavelength-dependent photocatalytic degradation of PNP for 60 min and LEV for 15 min over g-C₃N₄ (a), 1% PDI/GCN (b) and 30% PDI/GCN (c) using band-pass filters.

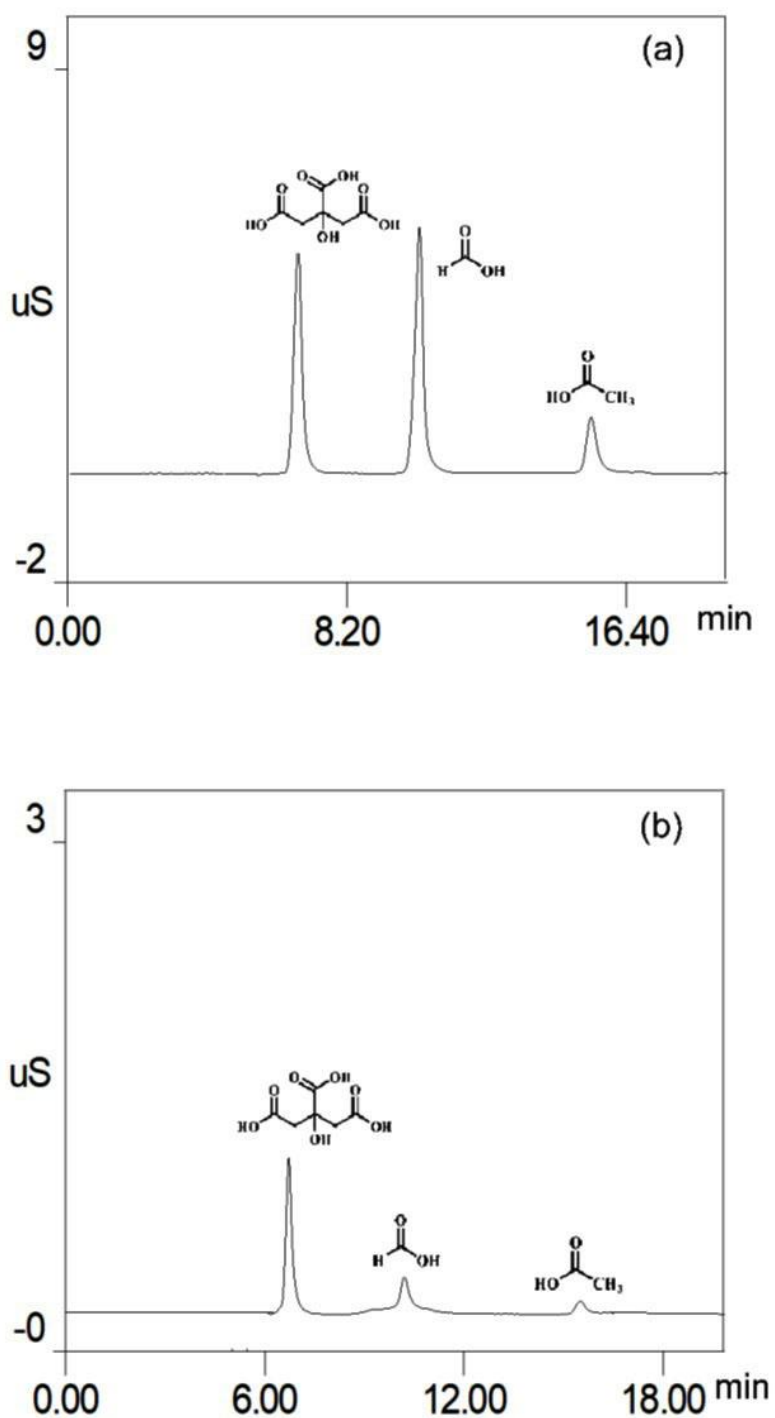


Figure S3. Ion chromatography (IC) analysis results of standard sample for various organic acids (a) and the 1% PDI/GCN-mediated photocatalytic degradation of an aqueous LEV (b) for 24 h; $400\text{ nm} < \lambda < 680\text{ nm}$; catalyst amount 50 mg; $c_0 = 50\text{ mg L}^{-1}$; volume 50 mL.

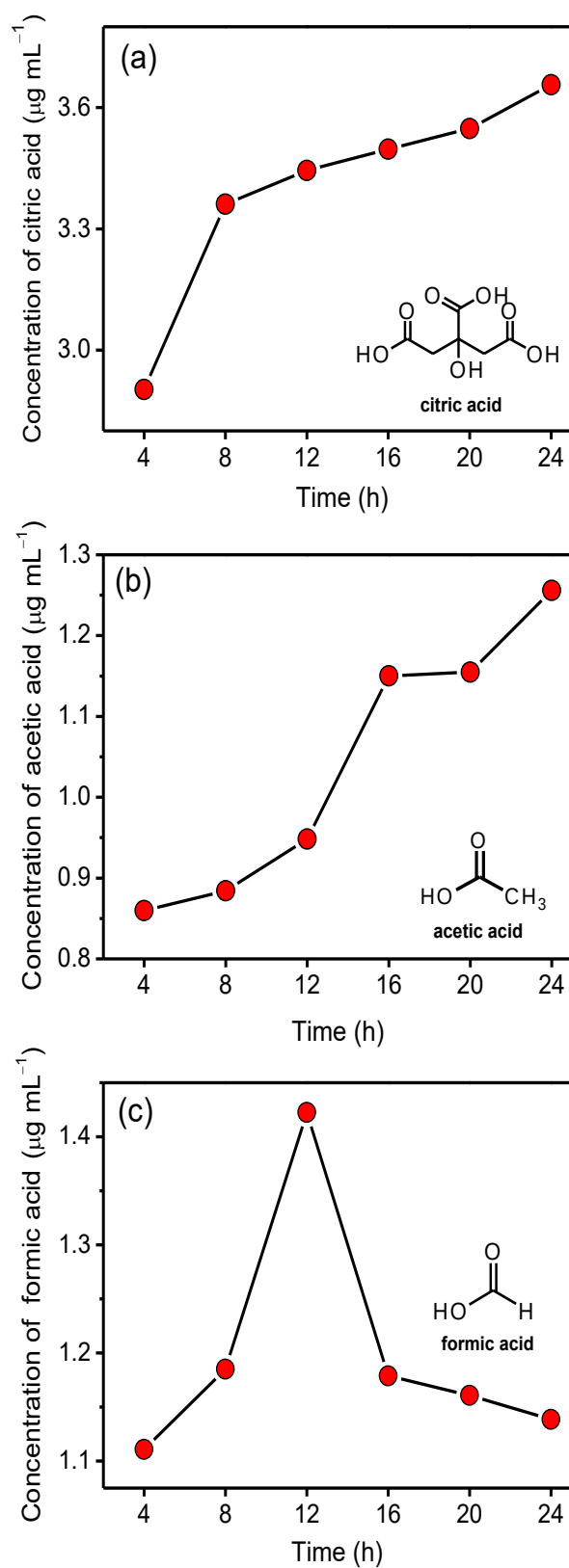


Figure S4. Concentration changes of the yielded citric acid (a), acetic acid (b) and formic acid (c) during the process of the 1% PDI/GCN-mediated photocatalytic degradation of an aqueous LEV. $400\text{ nm} < \lambda < 680\text{ nm}$; catalyst amount 50 mg; $c_0 = 50\text{ mg L}^{-1}$; volume 50 mL.

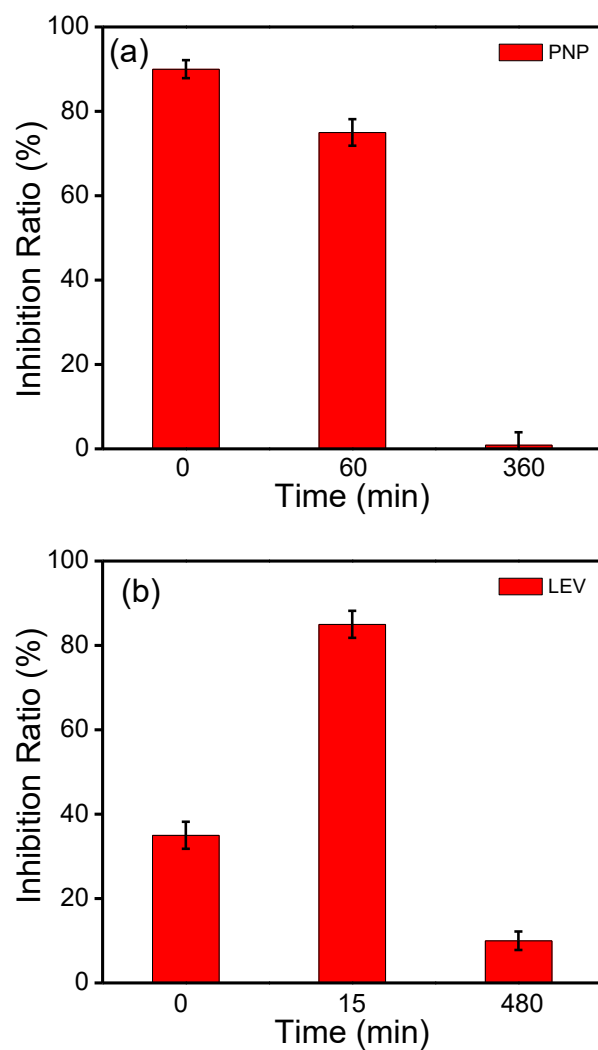


Figure S5. Evaluation of chronic toxicity of PNP (a) and LEV (b) to *Vibrio fischeri* 5269 before and after the 1% PDI/GCN-photocatalytic degradation reaction.

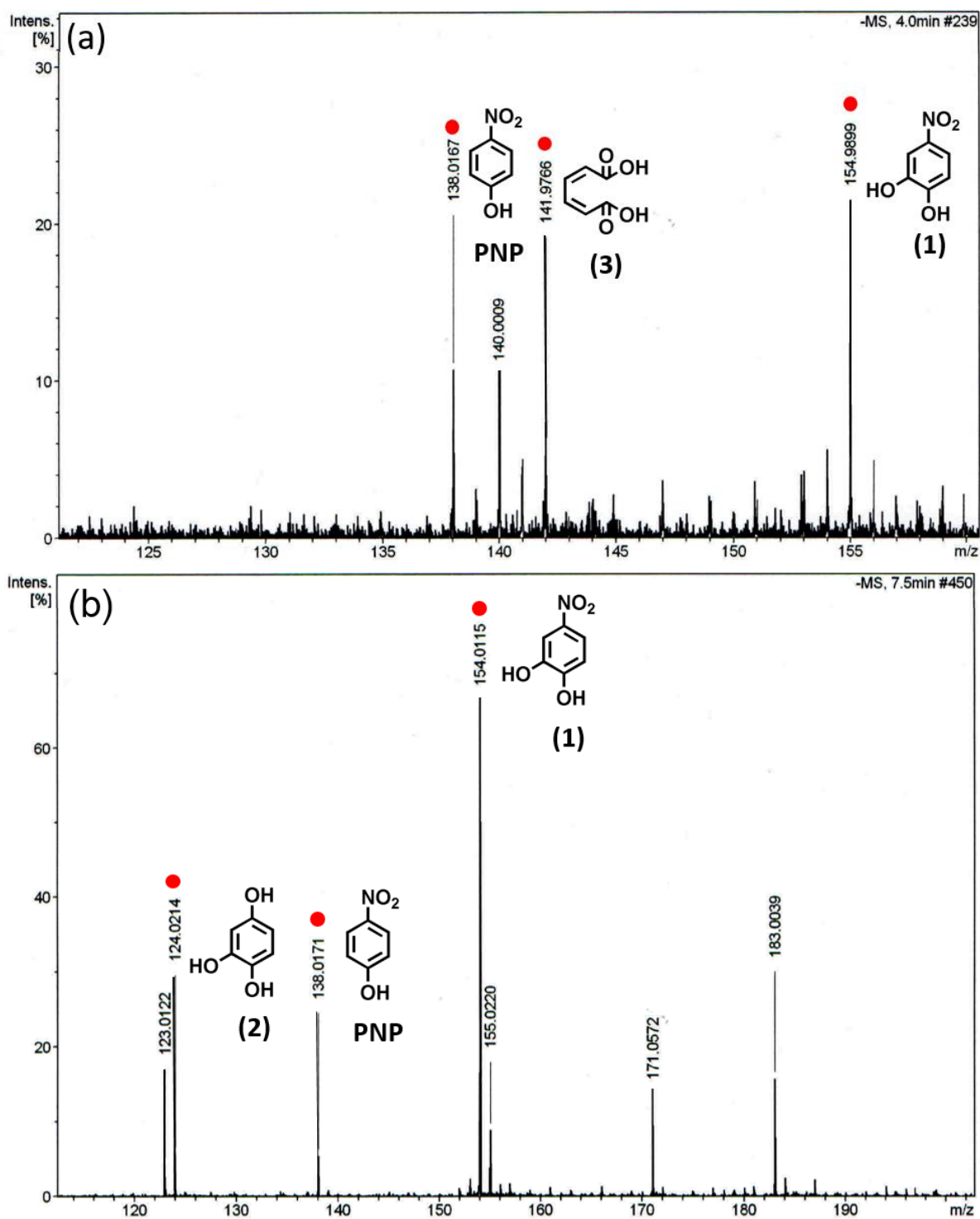


Figure S6. LC-MS analysis results of the 1% PDI/GCN-mediated photocatalytic degradation of an aqueous PNP for 1 h. $400\text{ nm} < \lambda < 680\text{ nm}$; catalyst amount 50 mg; $c_0 = 25\text{ mg L}^{-1}$; volume 50 mL. Mass spectrum chromatograms generated with retention time of 4.0 min (a) and 7.5 min (b) in liquid chromatograph.

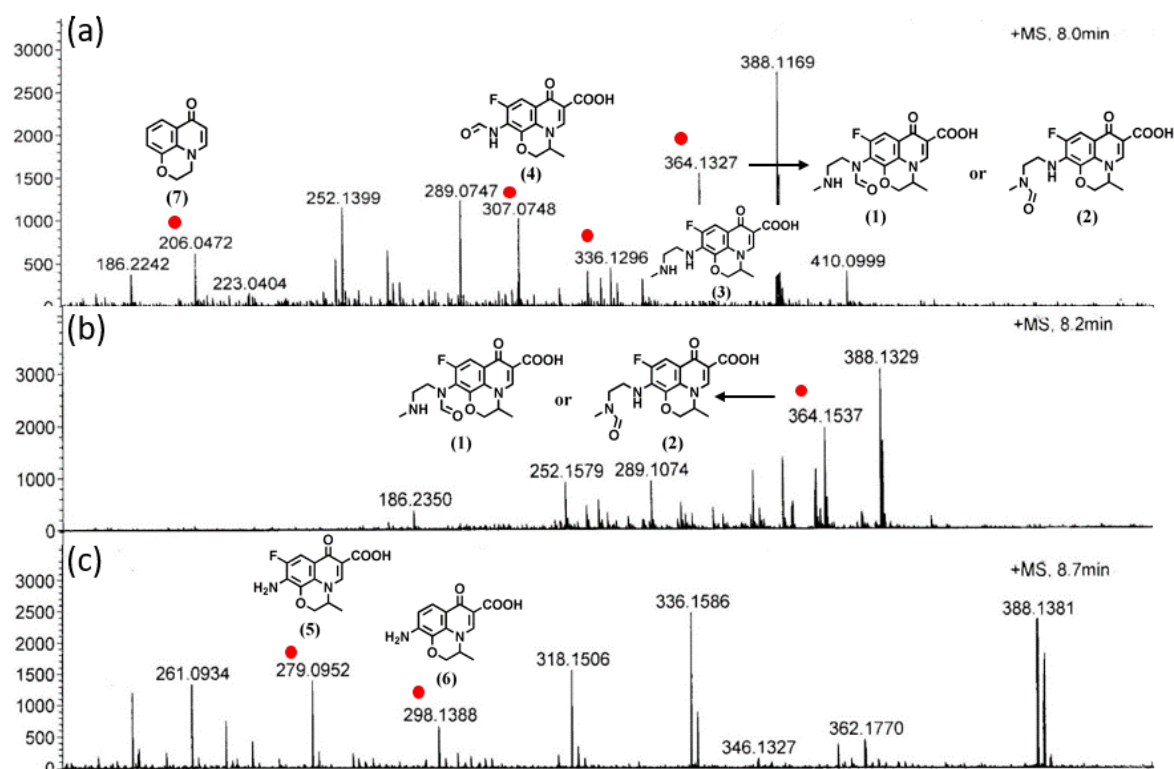


Figure S7. LC-MS analysis results of the 1% PDI/GCN-mediated photocatalytic degradation of an aqueous LEV for 1 h. $400\text{ nm} < \lambda < 680\text{ nm}$; catalyst amount 50 mg; $c_0 = 50\text{ mg L}^{-1}$; volume 50 mL. Mass spectrum chromatograms generated with retention time of 8.0 min (a), 8.2 min (b) and 8.7 min (c) in liquid chromatograph.