

## Supporting Information

### **Black Phosphorus Quantum Dots Encapsulated in Anionic Waterborne Polyurethane Nanoparticles for Enhancing Stability and Reactive Oxygen Species Generation for Cancer PDT/PTT Therapy**

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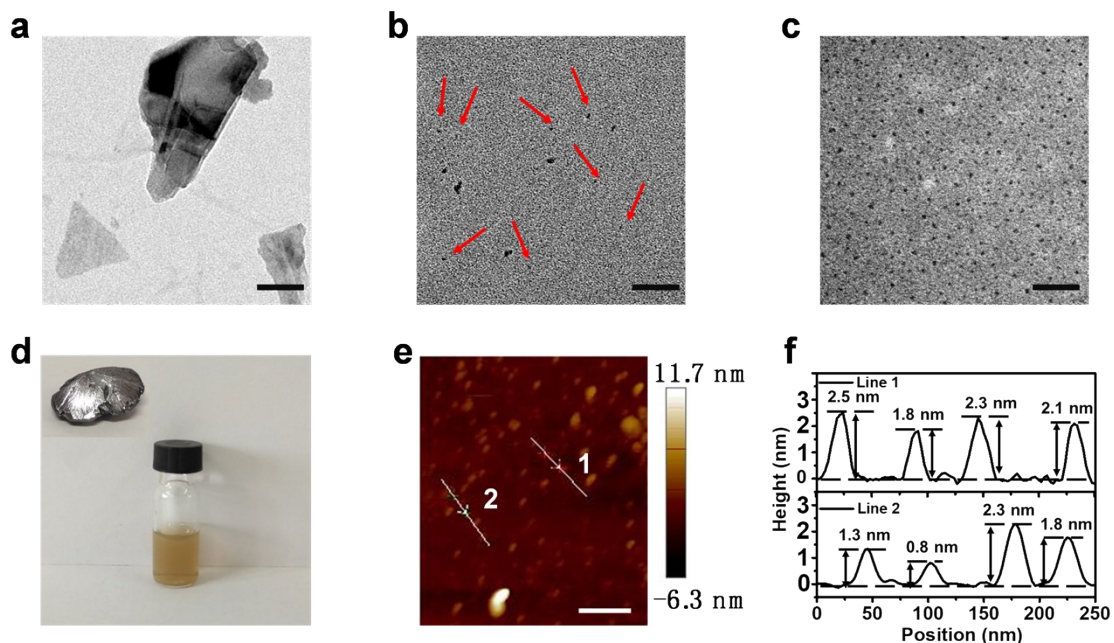
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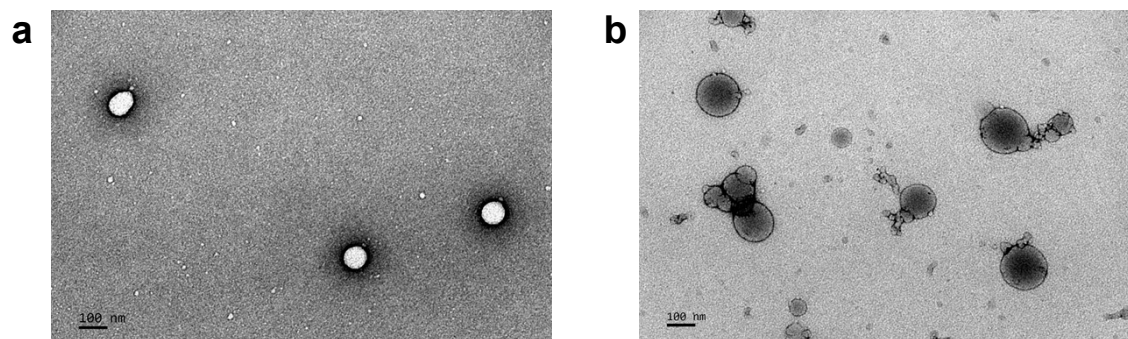
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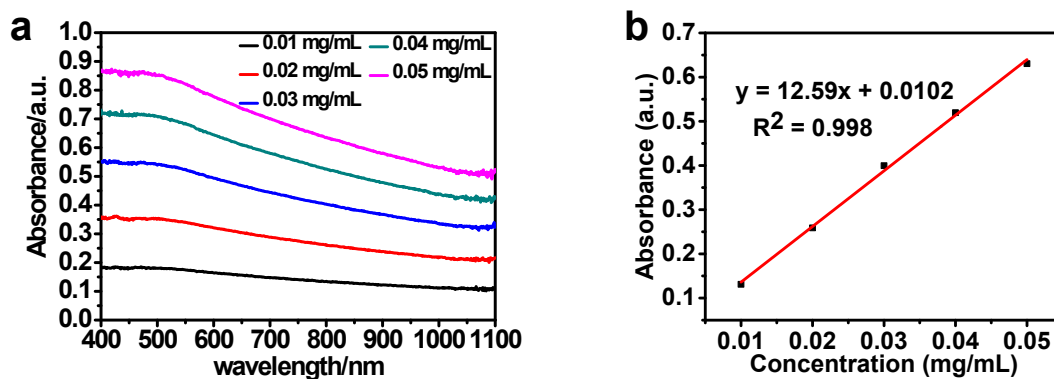
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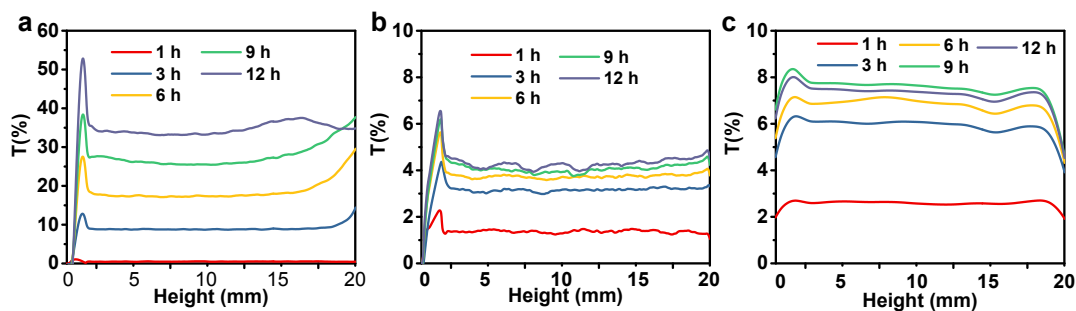
**Figure S1.** Characterizations of BPQDs. a) TEM images of BPQDs precipitated by centrifugation for 30 min at 7,000 rpm. b) TEM images of BPQDs in the precipitate by centrifugation for 30 min at 40,000 rpm. c) TEM images of the supernatant by after centrifugation for 30 min at 40,000 rpm, scale bar, 100 nm. d) The photograph of BPQDs dispersed in aqueous solution and bulk BP (the inset picture). e) AFM image of the BPQDs (scale bar, 200 nm). f) Height profiles along the white lines in e.



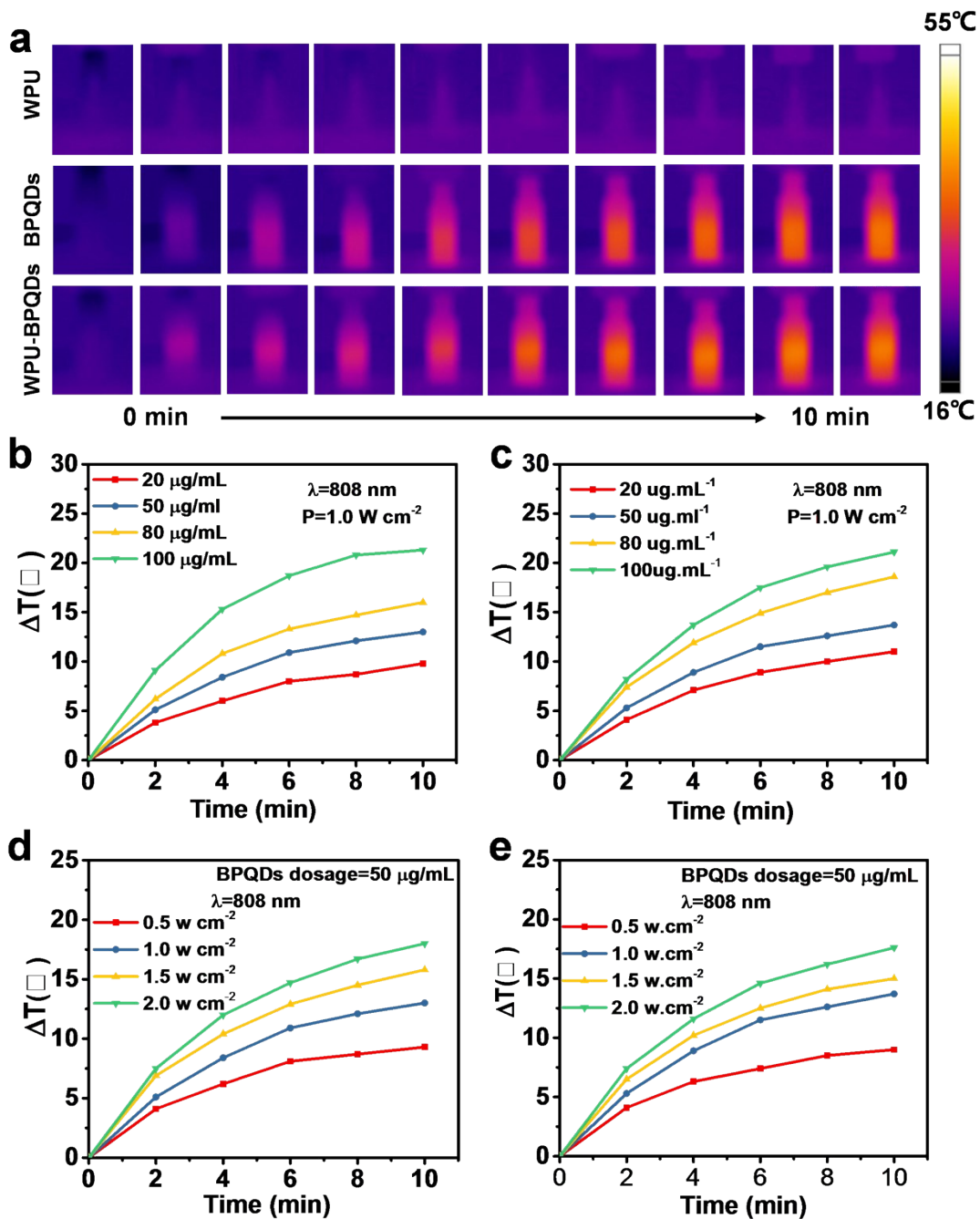
**Figure S2.** TEM images of a) WPU and b) WPU-BPQDs.



**Figure S3.** a) UV-vis-NIR absorbance spectra of BPQDs at different concentration. b) The standard curve of BPQDs determined by UV-vis spectrophotometer at 808 nm.

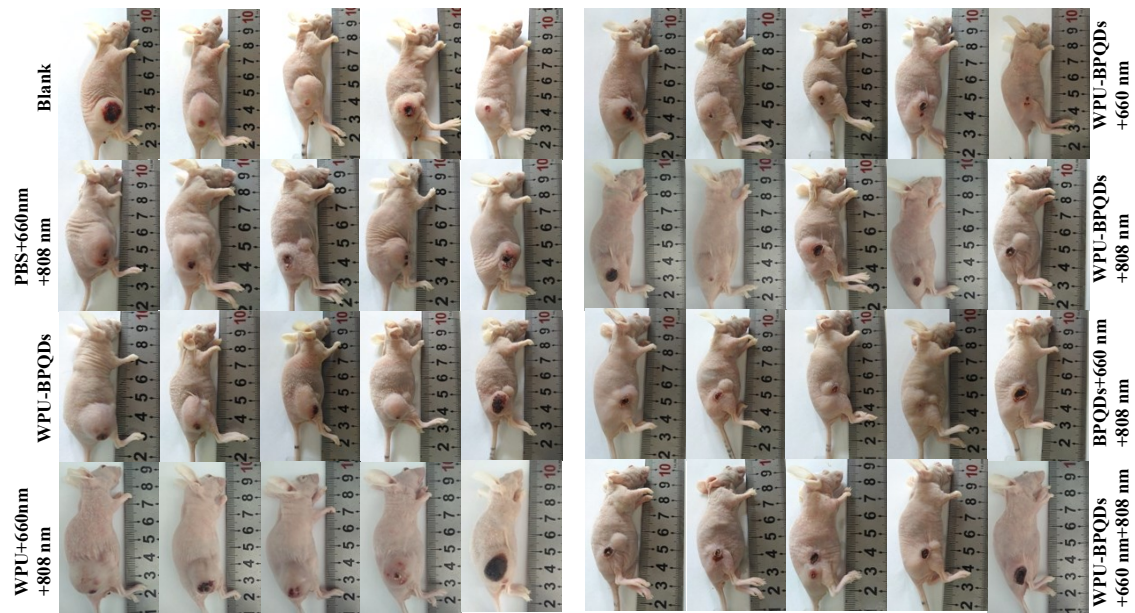


**Figure S4.** Transmittance (T%) profiles of a) BPQDs, b) WPU and c) WPU-BPQDs dispersed in 50 mM PB.

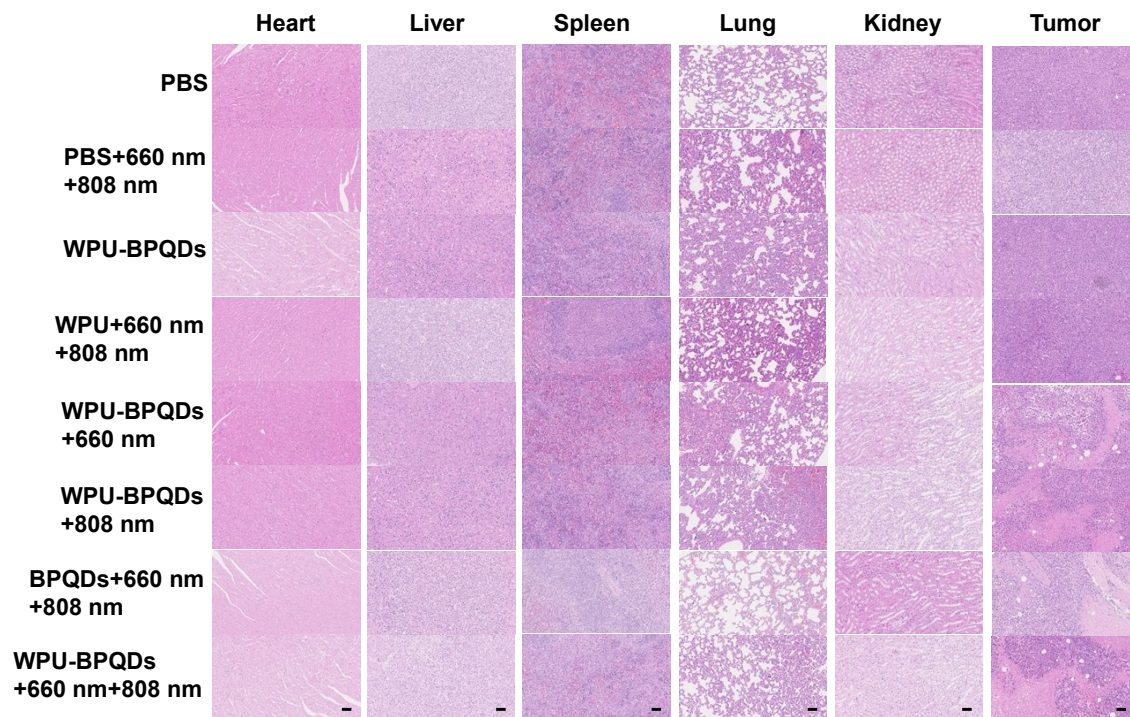


**Figure S5.** a) Thermal images of WPU, BPQDs and WPU-BPQDs exposed with 808 nm NIR laser (1 W/cm<sup>2</sup>) for 10 min. Photothermal heating curves of b) BPQDs and c) WPU-BPQDs with different concentration under 808 nm laser irradiation (1.0 Wcm<sup>-2</sup>) for 10 min. Photothermal heating curves of d) BPQDs and e) WPU-BPQDs (50  $\mu\text{g/mL}$ ) under 808 nm NIR laser with different laser power density.





**Figure S6.** Representative photographs of MCF7 tumor-bearing nude mice with different treatments.



**Figure S7.** The pathological analysis of major organs and tumor tissues evaluated by H&E staining (Scale bar, 50  $\mu$ m).