Electronic Supplementary Material (ESI) for RSC Advances.

Polypyrrole-Methylene Blue Nanoparticles as a Single Multifunctional Nanoplatform for Near-Infrared Photo-induced Therapy and Photoacoustic Imaging

by

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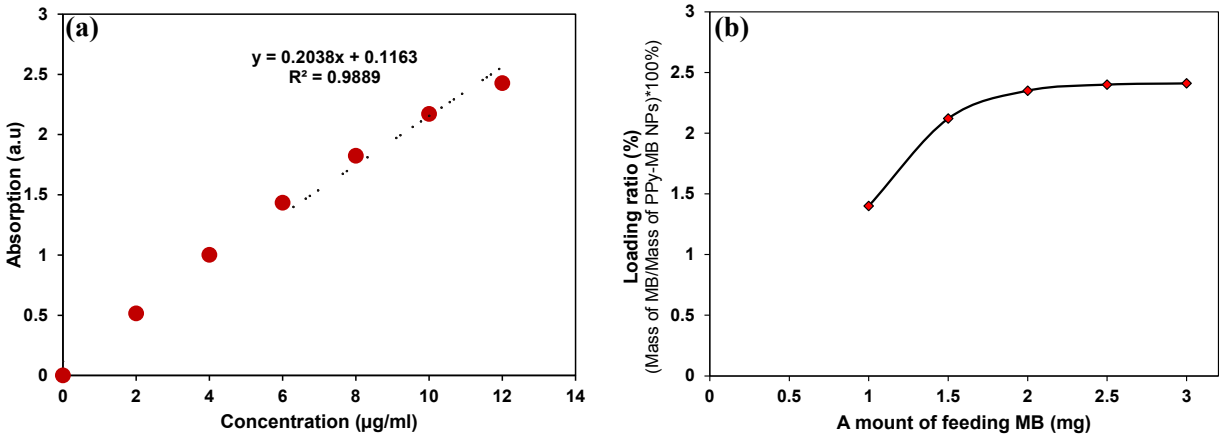

Figure S1: (a) The standard curve of MB, and (b) The plot of the loading amount of MB on the PPy NPs.

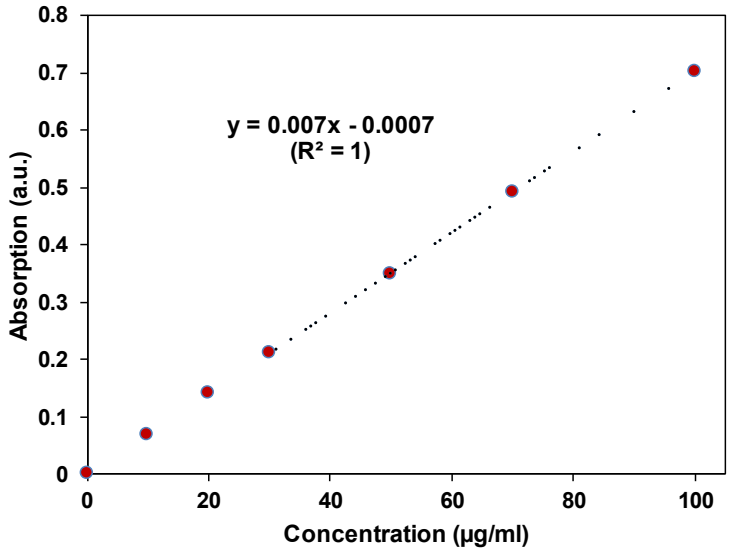

Figure S2: The standard curve of PPy-MB NPs (based on 808 nm peak absorption).

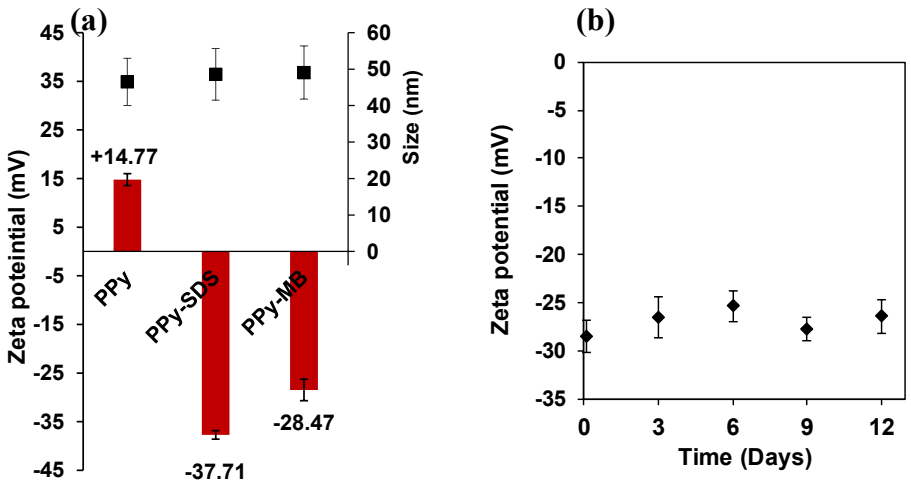

Figure S3: (a) Zeta potential of PPy, PPy-SDS and PPy-MB NPs, (b) Zeta potentials are recorded for PPy-MB NPs over 12 days.

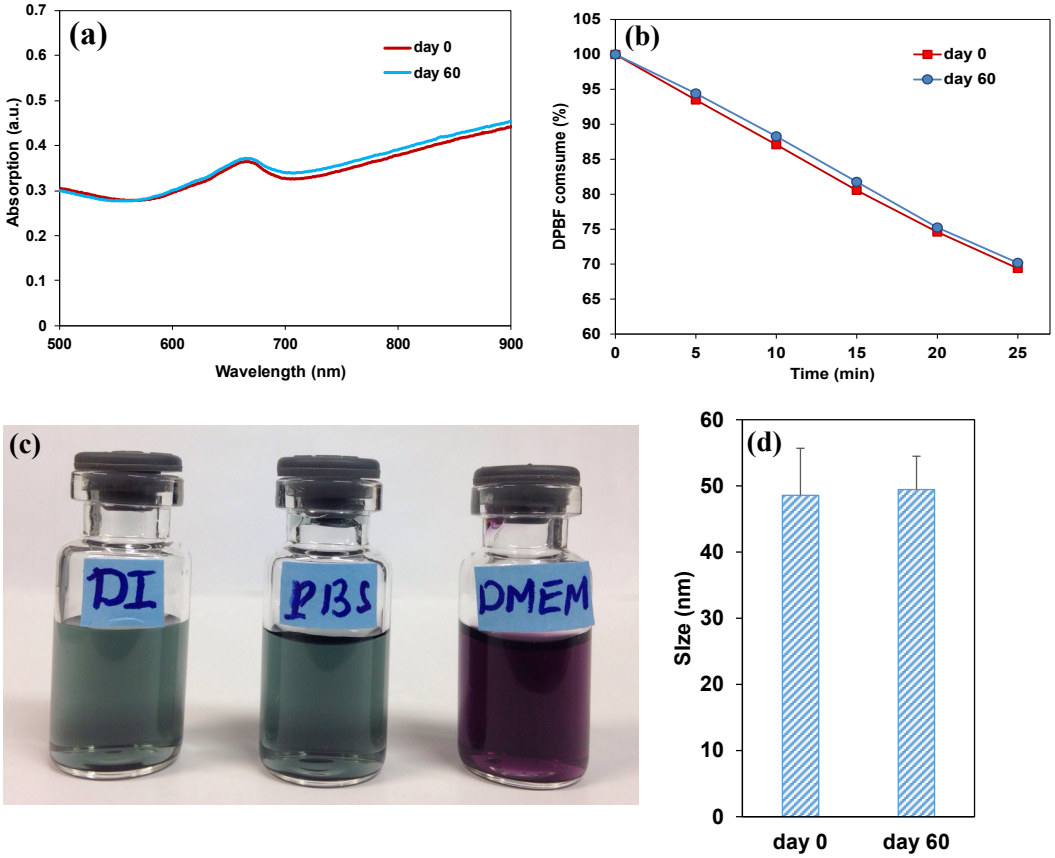

Figure S4: (a) The UV-Vis-NIR absorption spectra of PPy-MB NPs at the first day and the 60th day of long-term storage test. (b) Decay profiles of the DPBF consumed in the presence of PPy-MB NPs (at 50 µg/ml concentration) with 808 nm laser at 0.5 W/cm^2 at the first day and the 60th day. (c) The photos of PPy-MB NPs in different media after 20 days storage. (d) The particles size of PPy-MB NPs at the first day and the 60th day of long-term storage test.

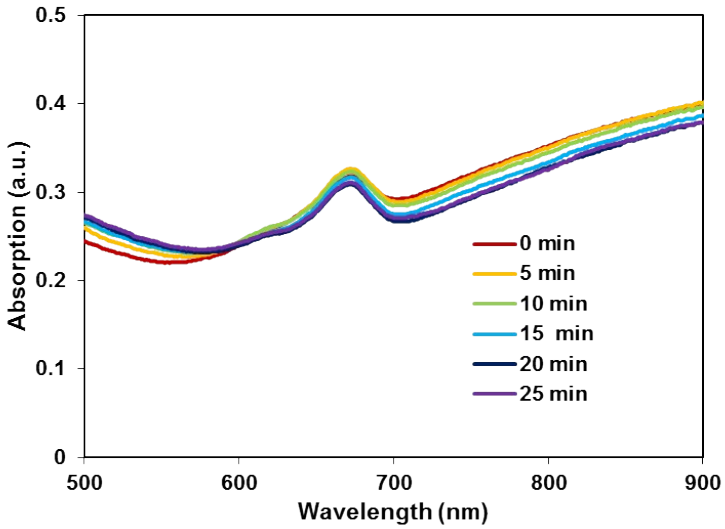

Figure S5: The UV-Vis-NIR absorption spectra of PPy-MB NPs with DPBF (diluted in DMSO) under 808 nm laser during 0-25 minutes.

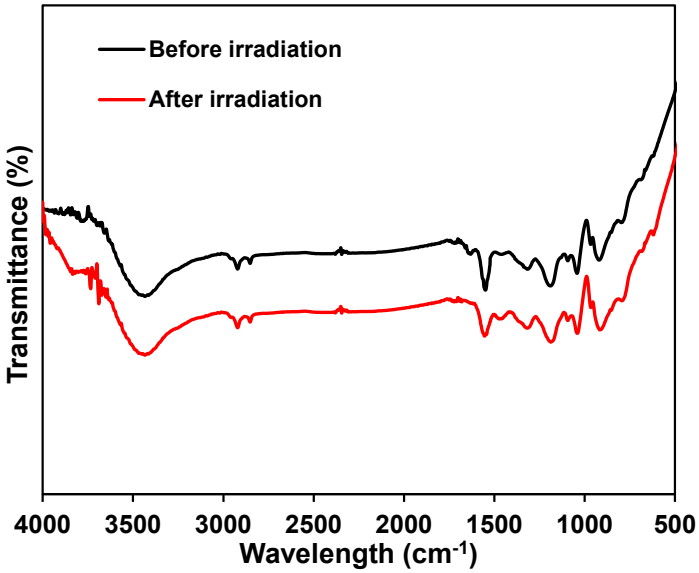

Figure S6: FTIR of PPy-MB NPs before and after 808 nm laser (1 W/cm^2) irradiation for 30 minutes.

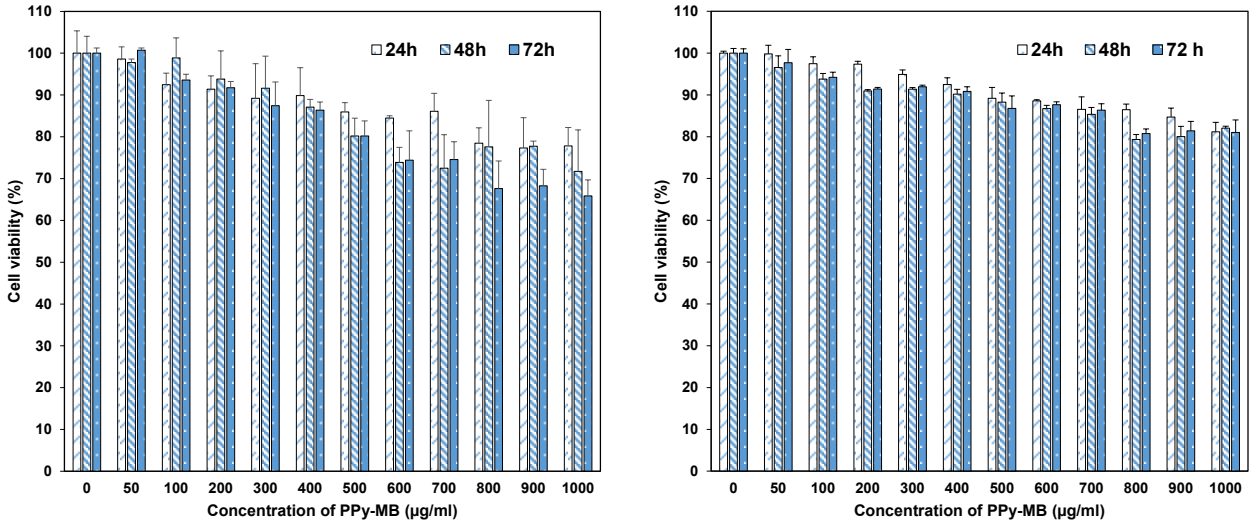

Figure S7: The cell viability (with MTT assay) of (a) MDA-MB-231 cells and (b) NHDF-Neo cells incubated with PPy-MB NPs with different concentrations for 24, 48, and 72 hours**.**

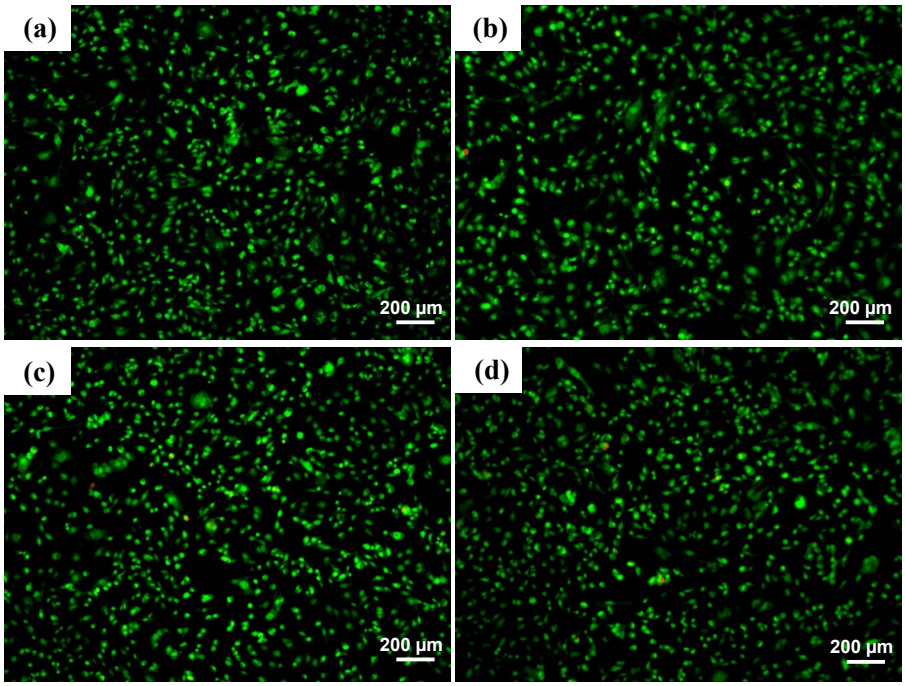

Figure S8: Fluorescence images of MDA-MB-231 cells incubated with PPy-MB NPs with different concentrations for 24 hours. (a) Control without nanoparticles (b) Incubated with 50 µg/ml PPy-MB NPs, (c) Incubated with 100 µg/ml PPy-MB NPs, and (d) Incubated with 200 µg/ml PPy-MB NPs.

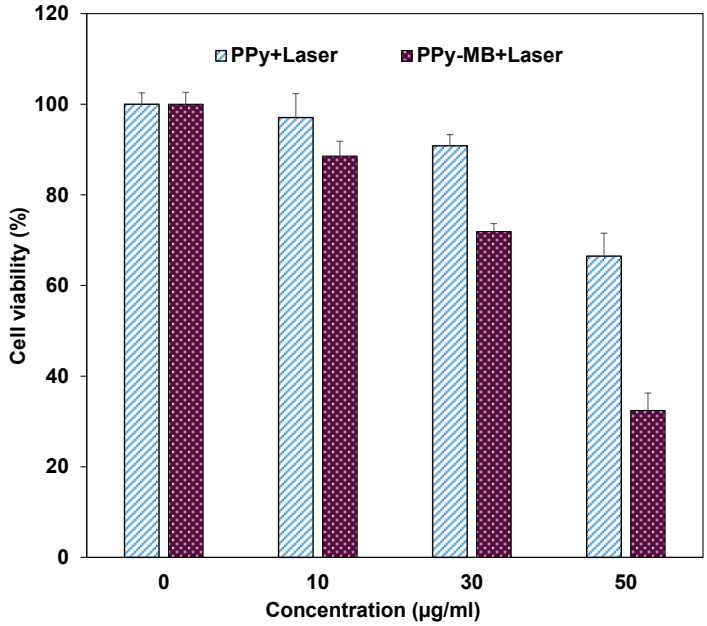

Figure S9: The cell viability (with MTT assay) of MDA-MB-231cells treated with PPy NPs, and PPy-MB NPs at various concentrations. The cells were irradiated under 808 nm laser for 6 minutes at 0.5 W/cm^2.

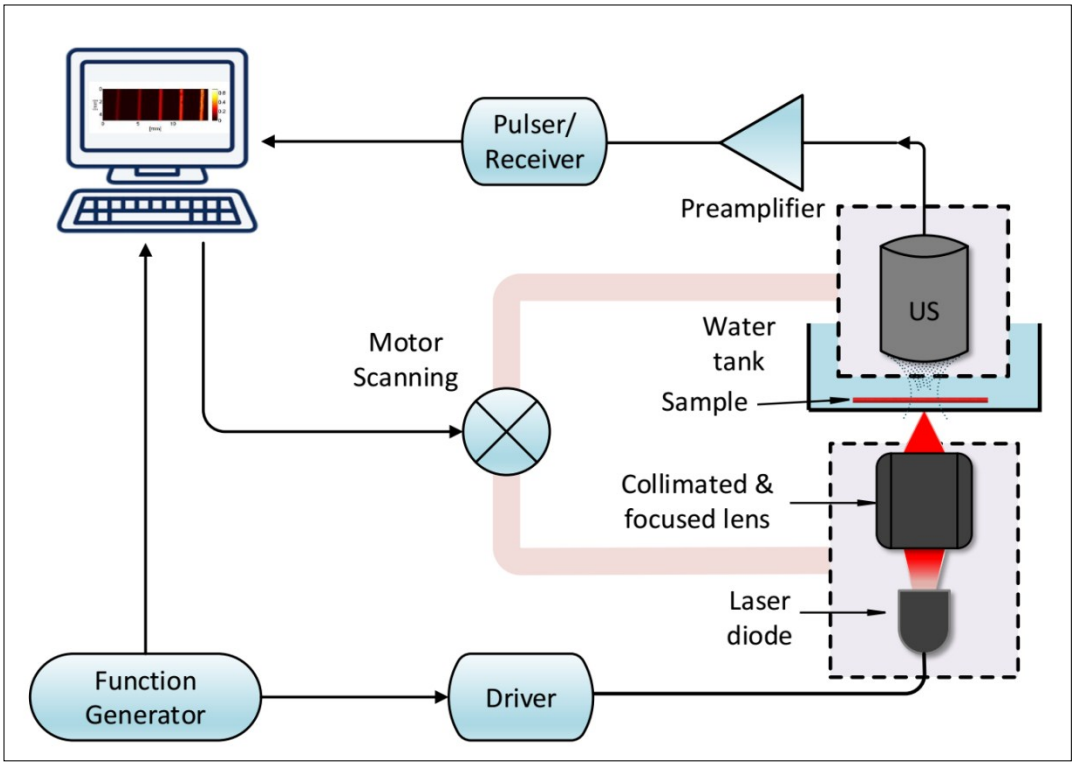

Figure S10: Experimental setup of photoacoustic microscopy (PAM) laser diode on PPy-MB NPs injected samples.

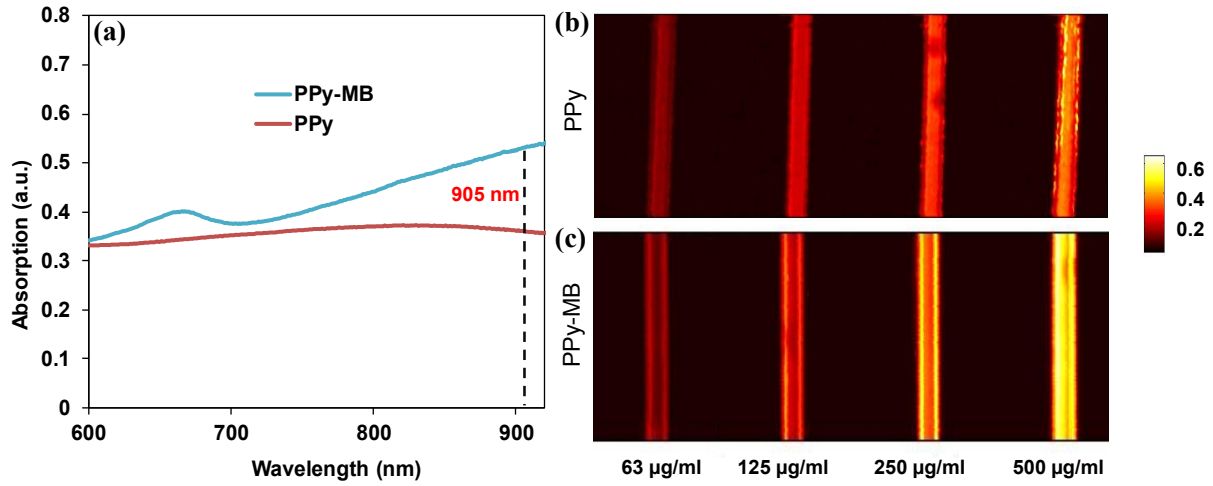

Figure S11: (a) The UV-Vis absorption of PPy and PPy-MB NPs (the amount of PPy is 50 µg/mL), (b) and (c) PA responses of PPy NPs and PPy-MB NPs at various concentrations.

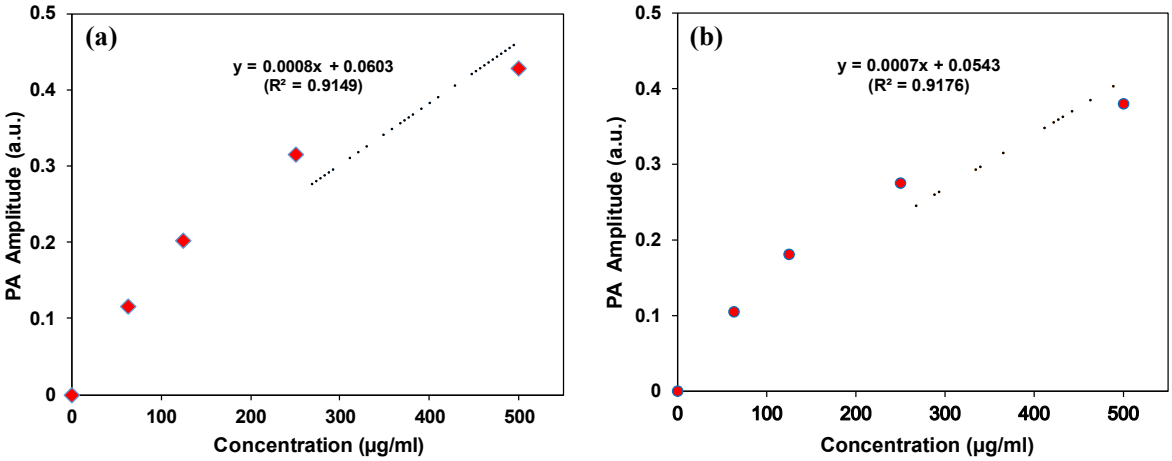

Figure S12: The standard curve of PA amplitude using (a) PPy NPs and (b) PPy-MB NPs.