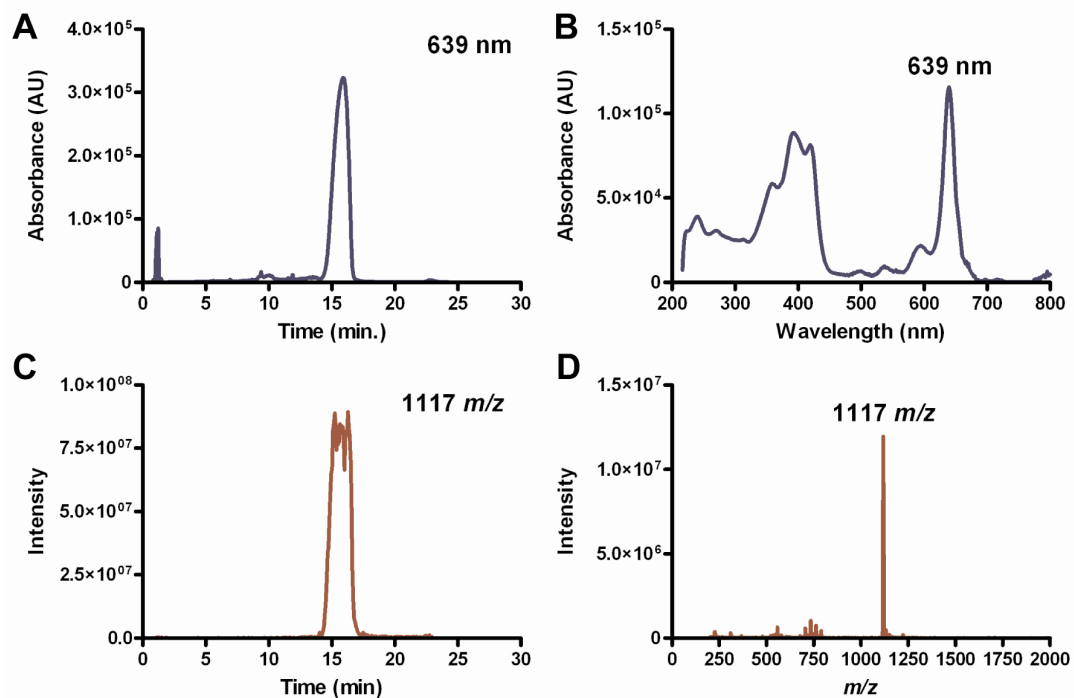
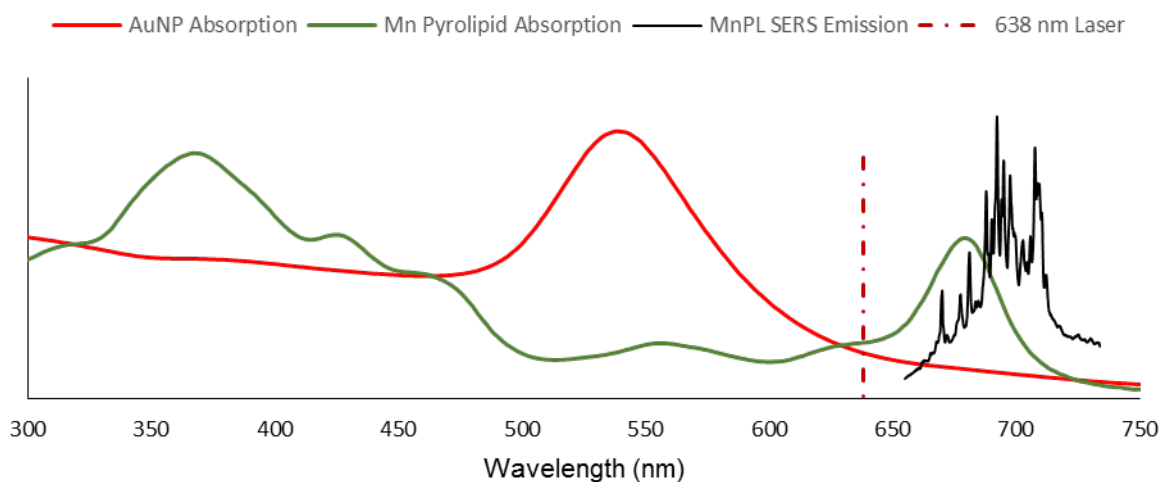


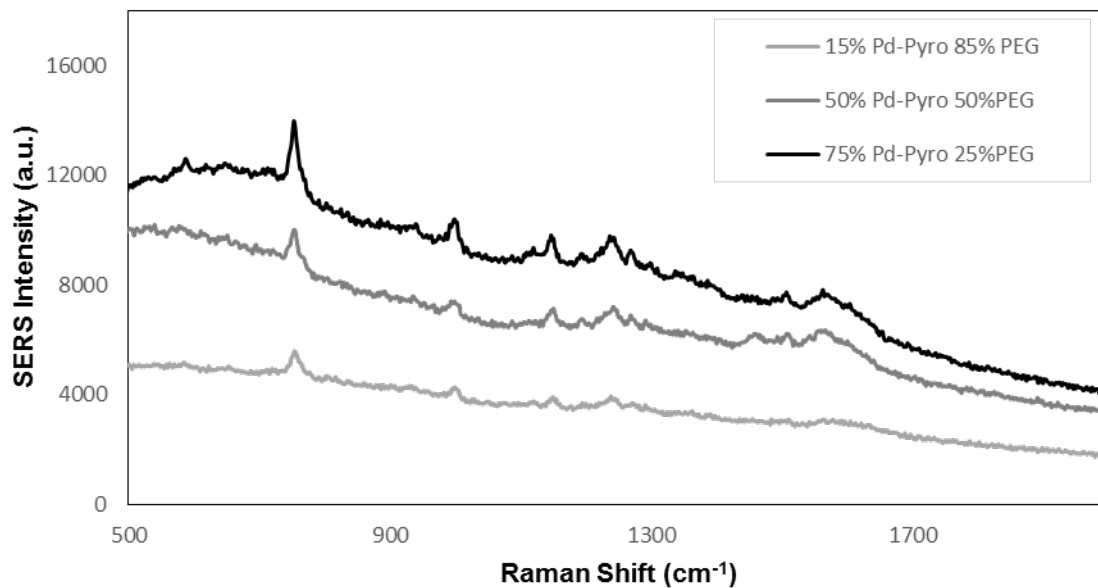
## Supplementary Material



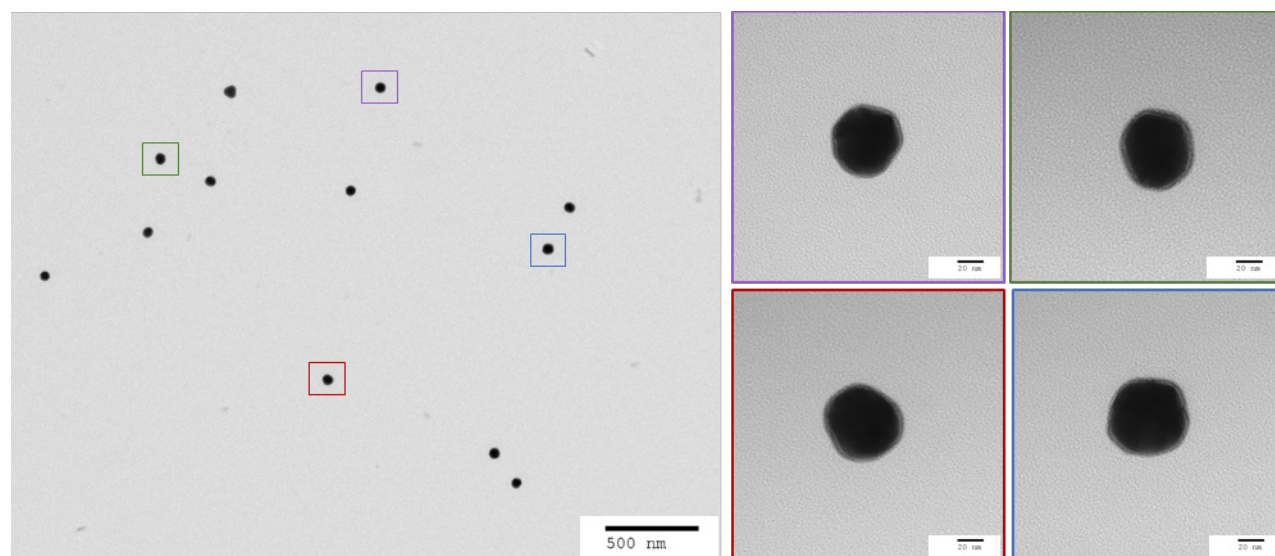
**Figure S1.** Analytical HPLC-MS characterization of Pd-pyrolipid showing A) the UV-vis absorbance chromatogram scanned for the Q<sub>y</sub>-band  $\lambda_{\max}$  (639 nm), B) the UV-vis absorbance spectrum, C) the mass spectrum chromatogram scanned for the  $[M+1]^+$  (1117 m/z) peak, and D) the ESI(+) mass spectrum



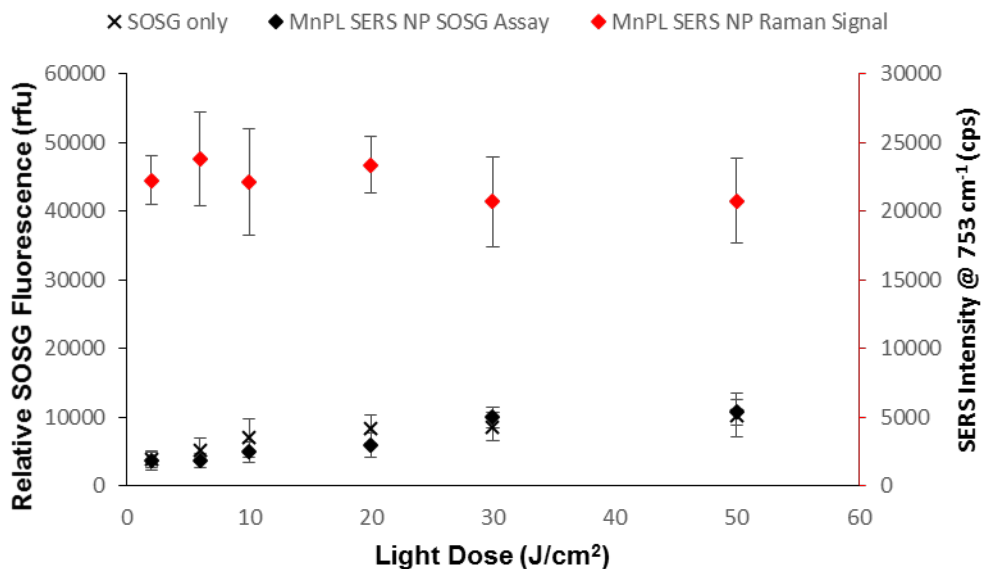
**Figure S2.** Absorption and emission spectrum of different features of MnPL-NP.



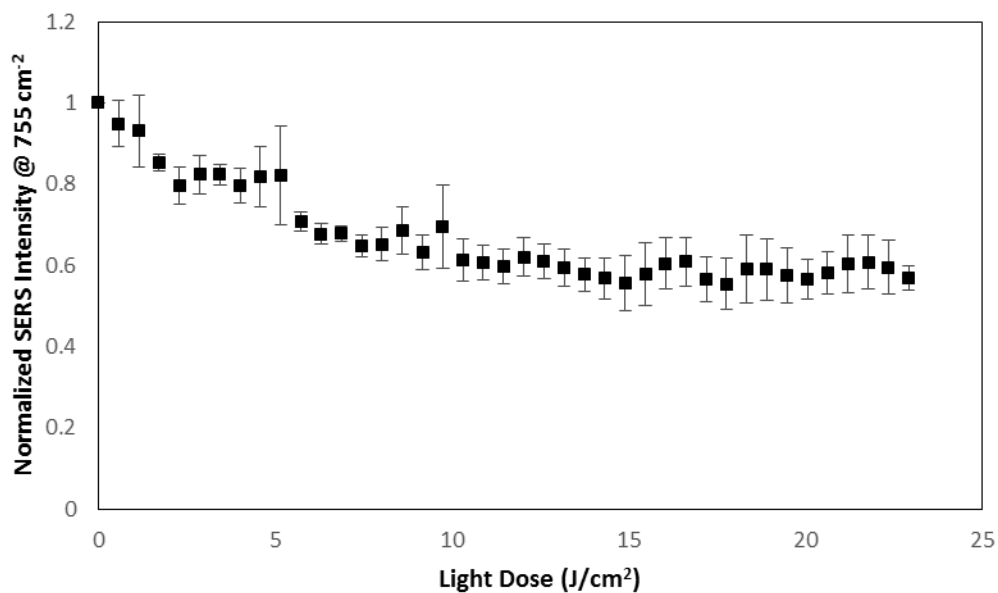
**Figure S3.** SERS spectrum of PdPL-NPs containing increasing relative amount of PdPL content results in increased SERS intensity.



**Figure S4.** Left image is a representative low magnification TEM image of monodispersed PdPL-NPs. Four high magnification images are presented on the right with the outline color indicating the four particles in the low magnification image. Scale bar is 20 nm for the high magnification images.



**Figure S5.** MnPL-NP irradiated with 250 mW/cm<sup>2</sup> at light dose of 0-50J/cm<sup>2</sup>. SERS intensity (red diamond) remains constant. SOSG assay of MnPL-NP (black diamond) remains at background fluorescence intensity with respect to SOSG only samples (black cross).



**Figure S6.** Pronounced PDT activity at 1.3 W/cm<sup>2</sup> resulting in marked photobleaching dependent SERS intensity decrease.