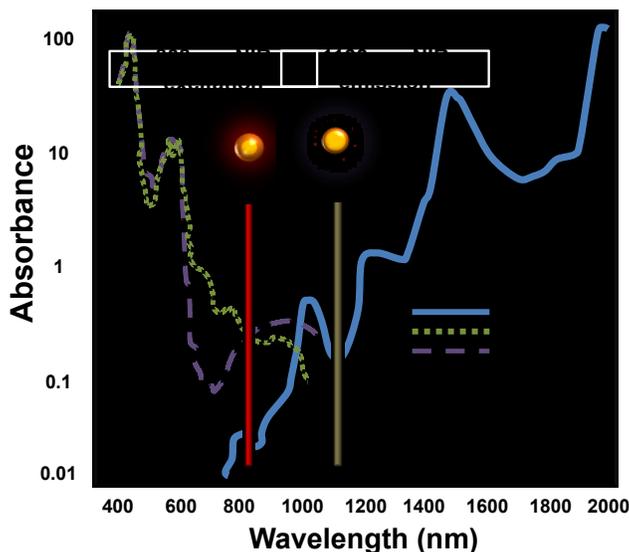
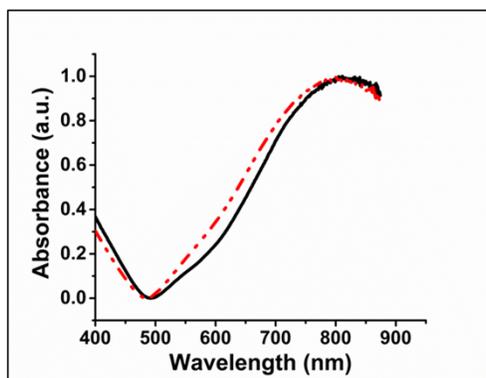


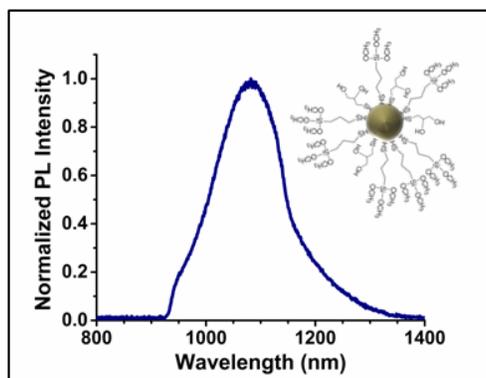
Supplementary Information



Supplemental Figure 1. Absorption spectra for oxygenated haemoglobin (HbO₂), deoxygenated haemoglobin (Hb), melanin, and water (H₂O) over wavelengths in NIR range. Diagram describes the optical functionality of the NP complex and absorption profile of tissue. The QNs are excited at the same wavelength used to photothermally activate the HGNs. Once excited, the QNs emit at 1100 nm avoiding the absorption peak of water located at 1000 nm. Upon further increase in laser power to ablate, the surrounding tissue temperature rise results in photoluminescent quenching of the QNs.



Supplemental Figure 2. UV-Vis-NIR absorption spectra of HGNs bare (black solid line) and silica coated (broken red line). There is an observed plasmon shift from 808 nm to 814 nm.



Supplemental Figure 3. Normalized PL measurement of quantum nanocrystals displaying sharp peak width. MPTMS/TGL ratio 0.287 was used to tune PL output to 1100 nm wavelength.