



Supplementary Materials

Impact of Quantum Dot Surface on Complex Formation with Chlorin e₆ and Photodynamic Therapy

Artiom Skripka ¹, Dominyka Dapkute ^{1,2}, Jurga Valanciunaite ¹, Vitalijus Karabanovas ^{1,3} and Ricardas Rotomskis ^{1,4*}

¹ Biomedical Physics Laboratory, National Cancer Institute, P. Baublio st 3b, LT-08406, Vilnius, Lithuania

² Life Science Center, Vilnius University, Sauletekio ave. 7, LT-10223 Vilnius, Lithuania; artiom.skripka@emt.inrs.ca (A.S.); dominyka.dapkute@nvi.lt (D.D.); Jurgaval7@gmail.com (J.V.); Vitalijus.Karabanovas@nvi.lt (V.K.)

³ Department of Chemistry and Bioengineering, Vilnius Gediminas Technical University, Sauletekio ave. 11, LT-10221, Vilnius, Lithuania

⁴ Biophotonics Group of Laser Research Center, Faculty of Physics, Vilnius University, Sauletekio ave. 9, LT-10222, Vilnius, Lithuania

* Correspondence: ricardas.rotomskis@nvi.lt; Tel.: +370-5-219-0908

Spectral properties of QDs

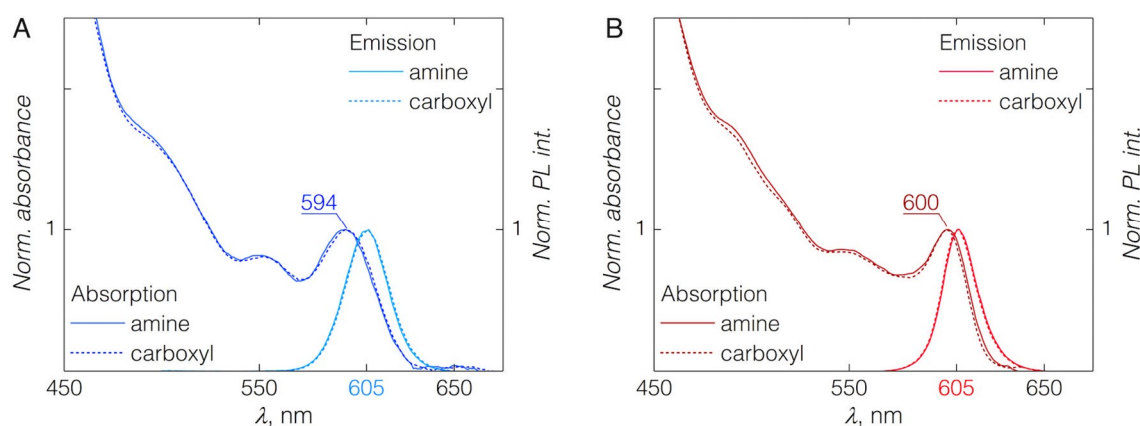


Figure S1. Normalized absorption and emission spectra of QDs functionalized with either phospholipids (L-QDs) (A) or amphiphilic polymer (P-QDs) (B) and bearing amine or carboxyl surface charge.

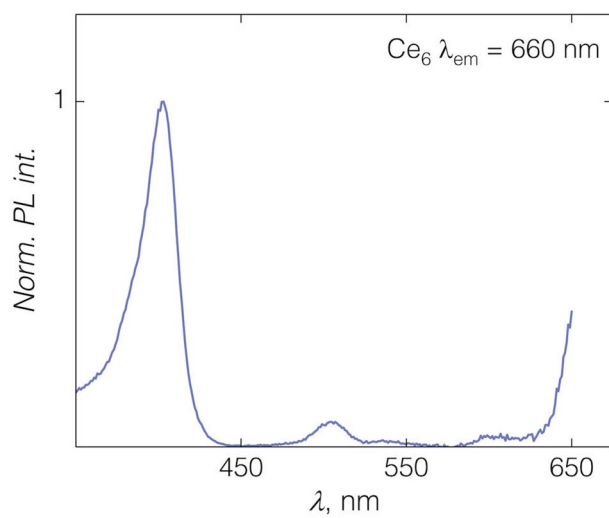
Fluorescence excitation of Ce₆

Figure S2. Normalized fluorescence excitation spectrum of Ce₆ in phosphate buffer (pH=7), measured at emission wavelength of 660 nm.

Complex equilibration dynamics

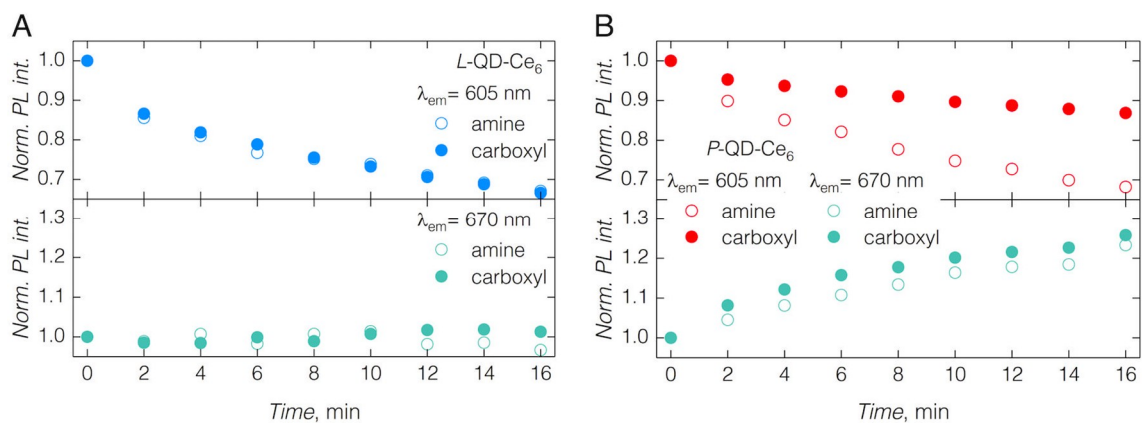


Figure S3. Temporal change of the QD and Ce₆ PL intensity in the QD-Ce₆ complex after its initial formation. **(A)** – Represents the normalized PL intensity changes in *L*-QD-Ce₆ complex composed out of amine/carboxyl bearing *L*-QDs; **(B)** – in case of amine/carboxyl bearing *P*-QDs.

Influence of n and κ^2 on R_0 and r

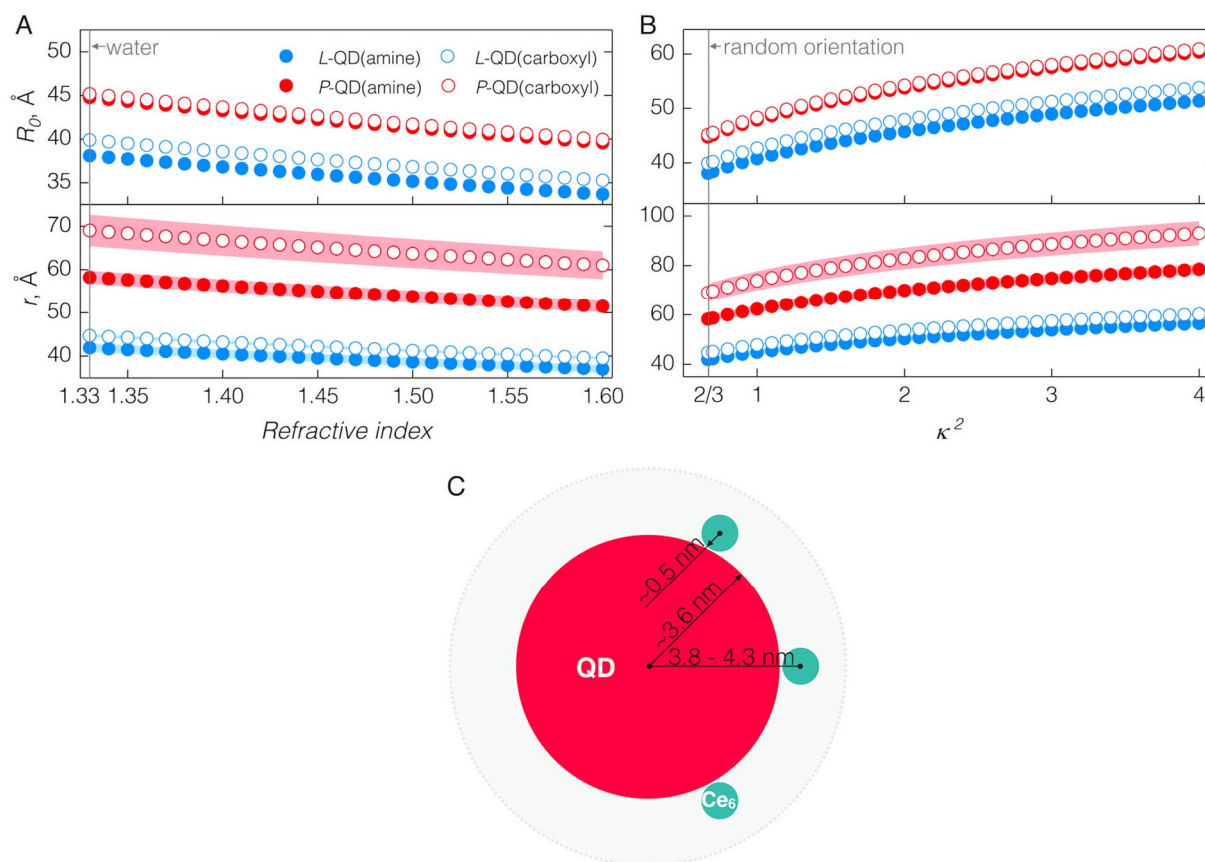


Figure S4. Change of the Förster distance R_0 (top) and the center-to-center distance between QDs and Ce6 r (bottom) as a function of the refractive index of the medium (**A**; when $\kappa^2 = 2/3$) or orientation factor κ^2 (**B**; when $n = 1.33$). Center-to-center distances between the different QDs and Ce6 were averaged taking values for different amounts (m) of Ce6. Errors of r are represented by the shaded areas. (**C**) – schematic representation of the Ce6 in the amphiphilic coating of QDs and the possible center-to-center separation between the two.