Supporting Information

Oxidation of Quantum Dots Encapsulated in Block Copolymer Micelles as a Function of Polymer Terminal Charge"

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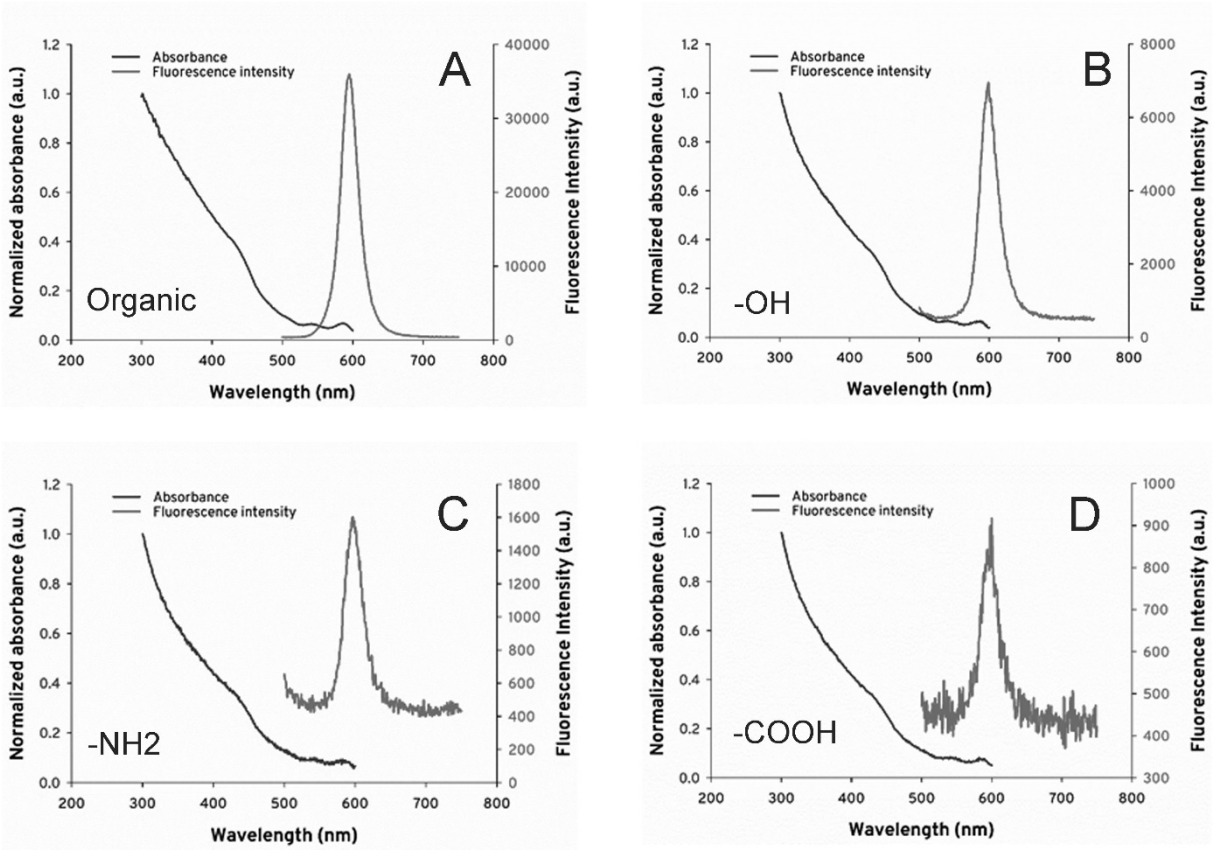

Figure S1. Absorbance and photoluminescence spectra for (A) organic QDs (red, λ_{em} = 600) and QDs encapsulated in polystyrene-polyethylene oxide block copolymers terminated in (B) -OH, (C), NH_2, and (D) -COOH functional groups.

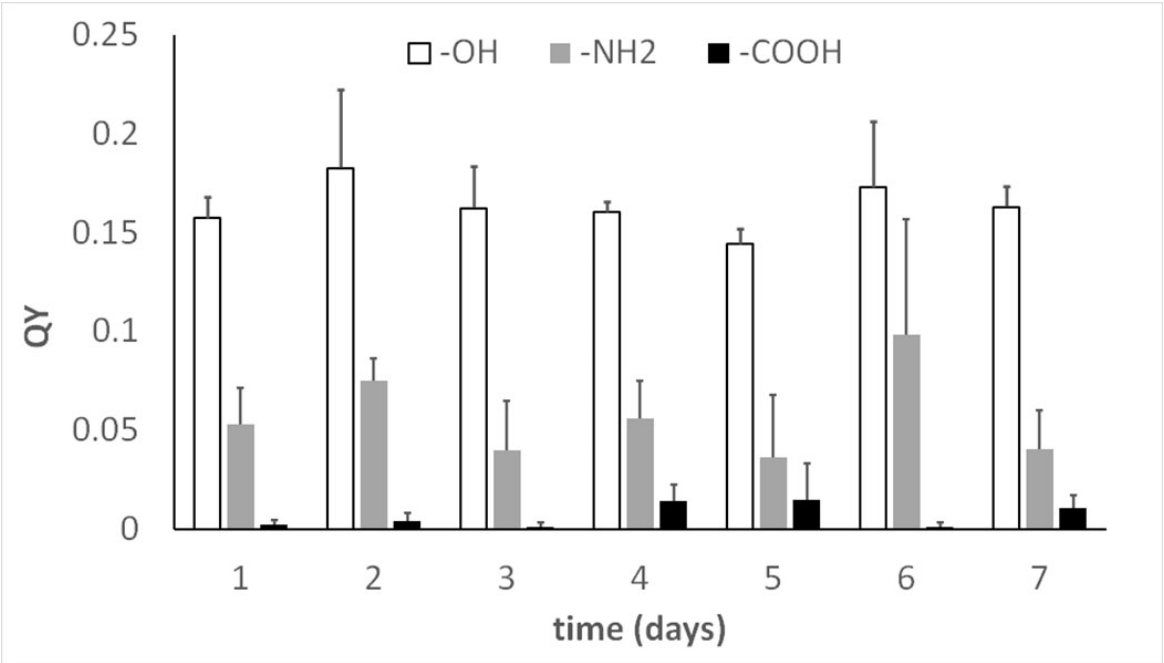

Figure S2. Fluorescence quantum yield of -OH, -NH_2, and -COOH terminated MultiDots over 7 days of observation. Day 1 is the day the nanocomposites were synthesized, following solvent evaporation.

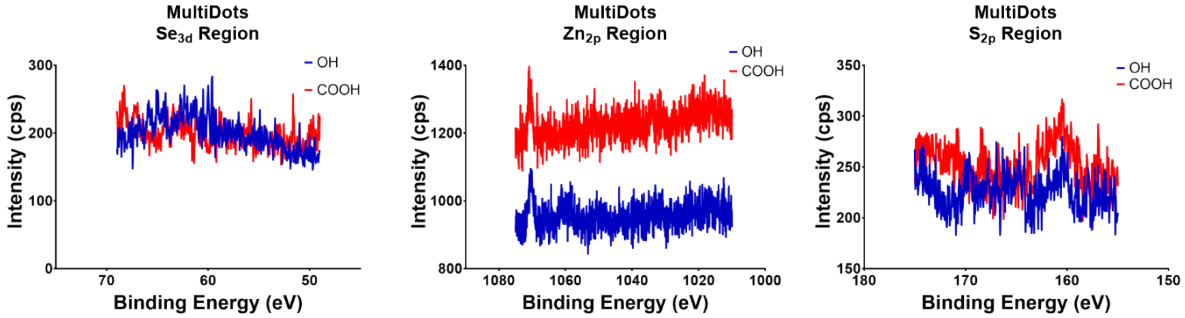

Figure S3. XPS measurements: Se_{3d}, Zn_{2p}, and S_{2p} core level spectra for MultiDots encapsulating red QDs (λ_{em} = 600 nm) with -OH and -COOH terminated BCPs at the syntheszied concentration (1X).

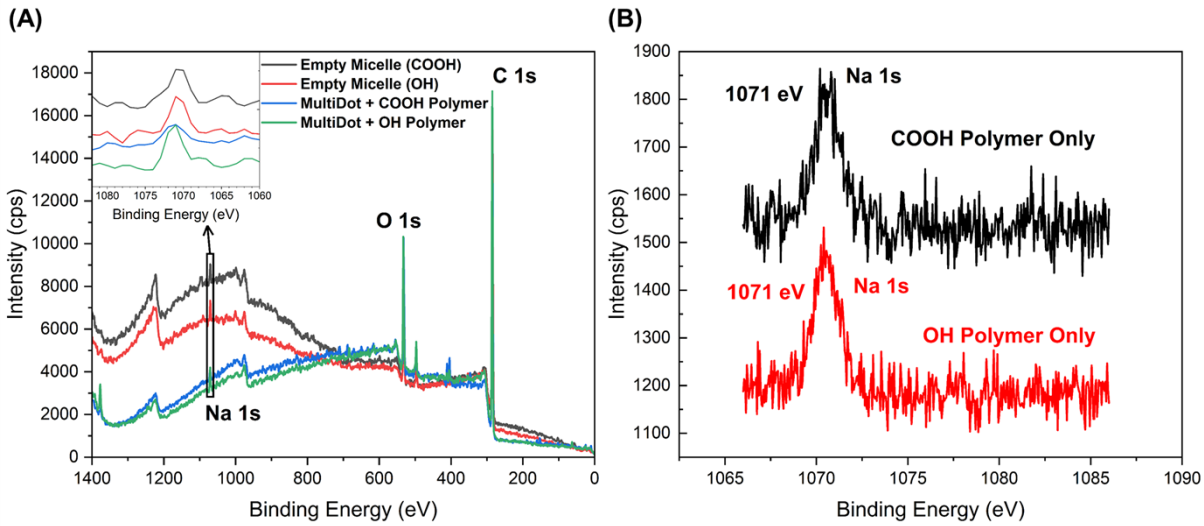

Figure S4. XPS measurements showing other features observable in the MultiDots-COOH: (A) the wide energy (0-1400 eV) range survey scans, and (B) the detailed region scans of Na 1s core level on MultiDots terminated with COOH and OH, showing potential salt contamination.

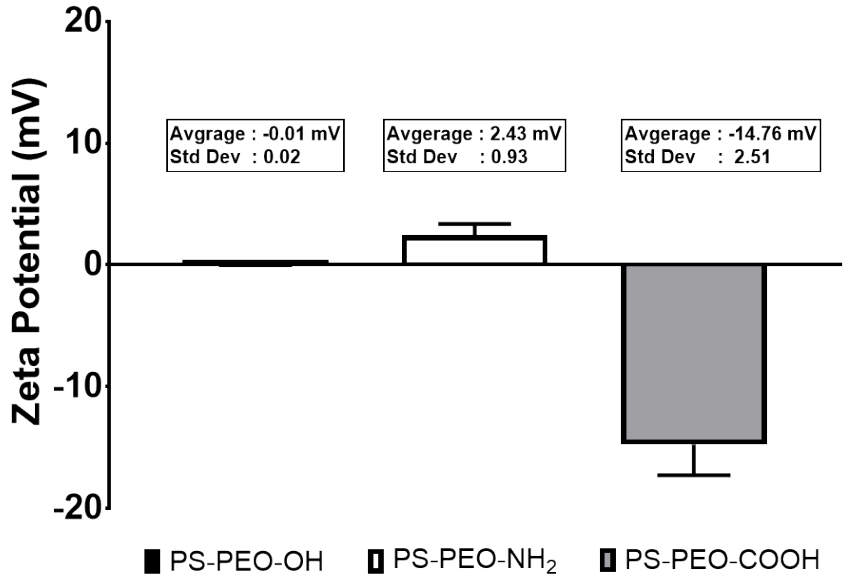

Figure S5. Surface charge of MultiDots passivated using BCPs terminated with: neutral (-OH), positive (-NH_2), and negative (-COOH) terminal groups measured using Zeta potential.

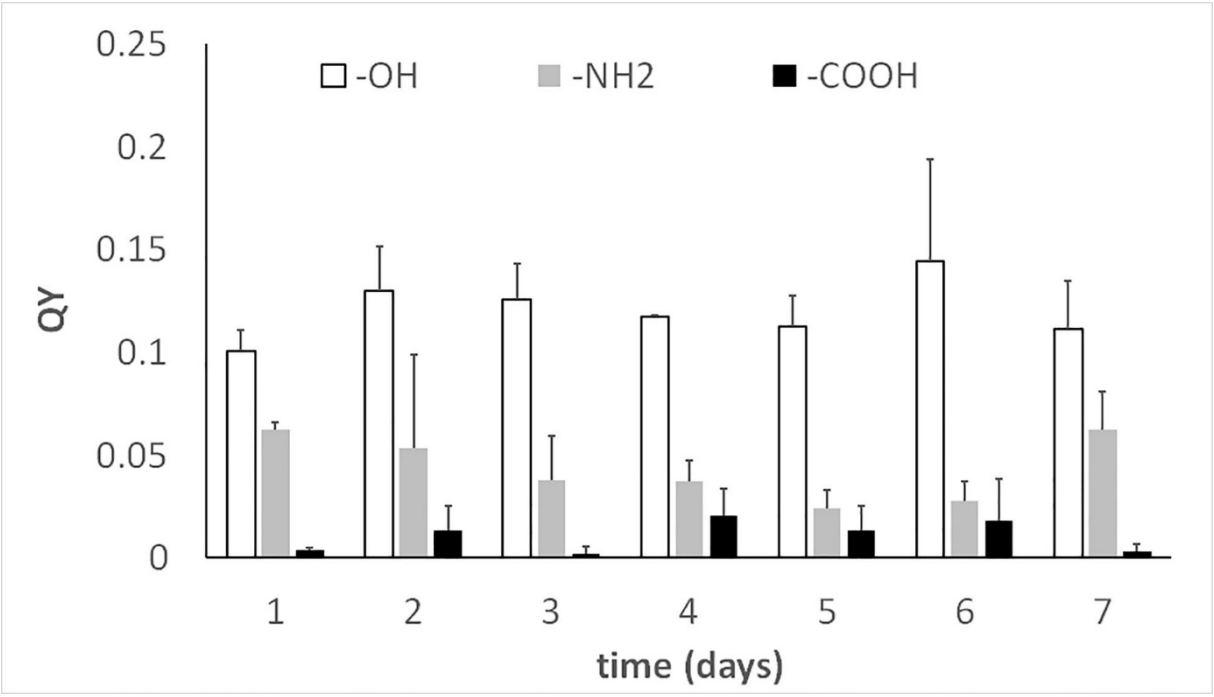

Figure S6. Fluorescence quantum yield of -OH, -NH_2, and -COOH terminated MultiDots synthesized under an N_2 blanket over 7 days of observation. Day 1 is the day the nanocomposites were synthesized, following solvent evaporation. Comparing to Figure S2 synthesized in open air, only -OH samples showed statistical difference ($p < 0.05$).

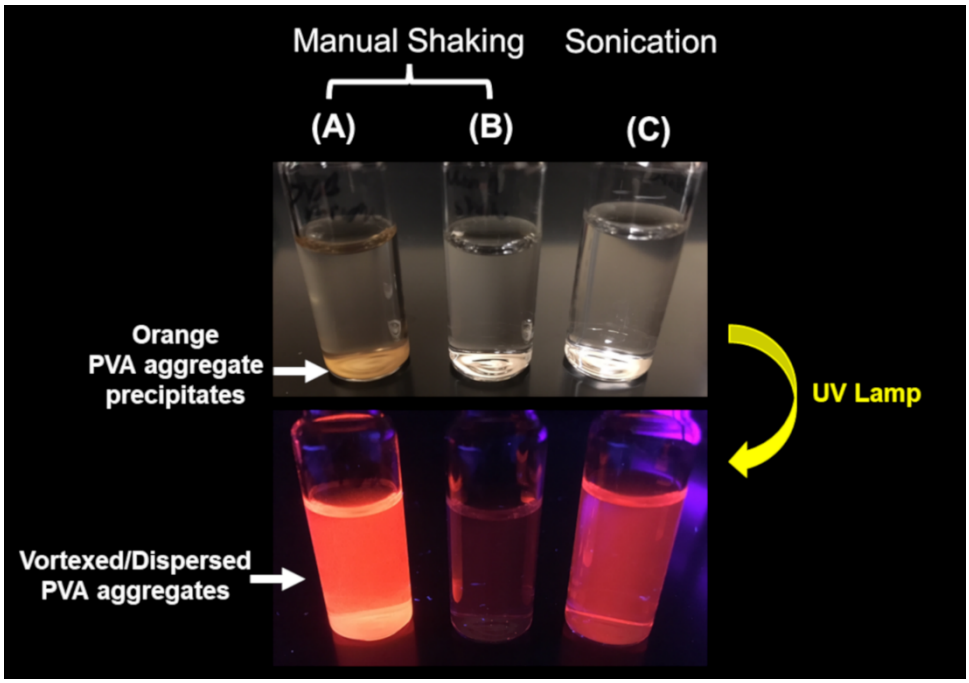

Figure S7. MultiDots passivated using the interfacial instablity process (IS) via manual shaking or sonication similar to Sun *et al.*[1]. Manual shaking resulted in the formation of (A) PVA aggregates, which were not colloidally stable, and (B) MultiDots, whereas sonication formed only (C) MultiDots. For manual shaking, (A) PVA aggregates were separated from (B) MultiDots by isolating PVA aggregate precipitates from the MultiDots that remained in solution. No precipitates or aggregates were observed for (C) MultiDots synthesized via sonication. (A) PVA aggregates retained the brightest fluorescence intensity, despite containing fewer QDs (as some were segregated to the MultiDot solution phase).

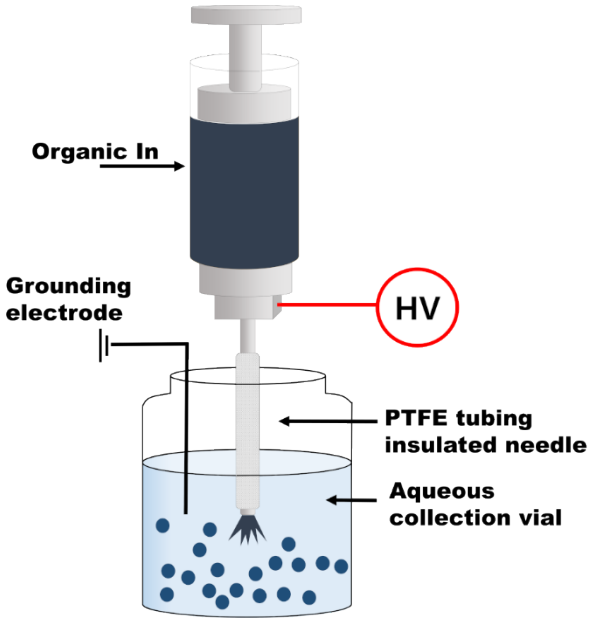

Figure S8. Schematic of Electrohydrodynamic Emulsification (EE) setup[2]

References

[1] Y. Sun, L. Mei, N. Han, X. Ding, C. Yu, W. Yang, G. Ruan, *Nanoscale Research Letters* **2017**, 12, 434.

[2] K. H. Lee, M. Ireland, B. L. Miller, B. E. Wyslouzil, J. O. Winter, *Journal of Colloid and Interface Science* **2021**, 586, 445.