Supporting Information
Low-Bandgap Conjugated Polymer Dots for Near-Infrared Fluorescence Imaging

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UV-visible Absorption and Fluorescence Spectra of Low-Bandgap Conjugated Polymers in THF and CPdots

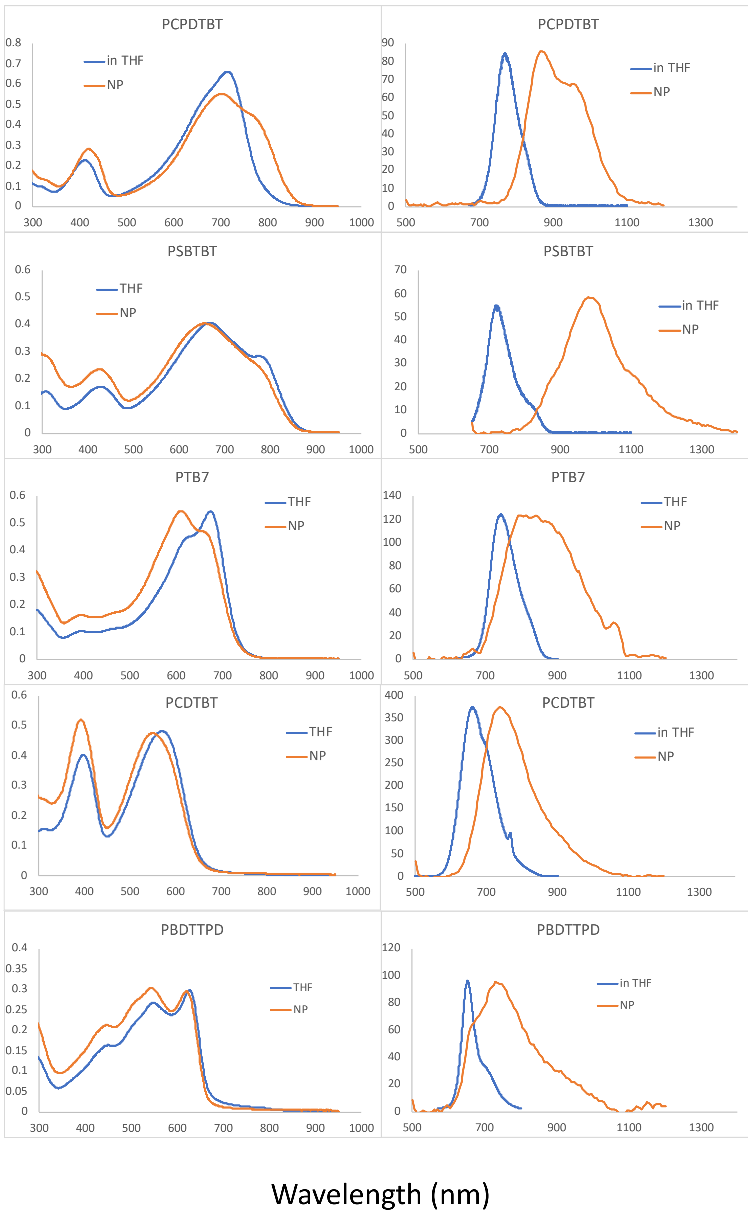


Figure S1: UV-visible absorption spectra (left) and fluorescence spectra (right) of low-bandgap conjugated polymer chains (in THF) and CPdots.

Hydrodynamic Diameters of CPdots

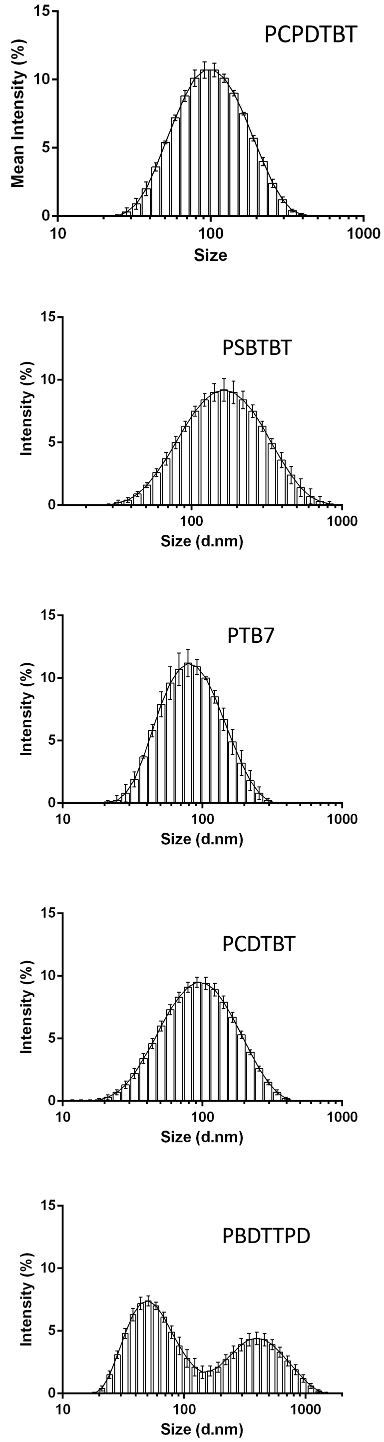
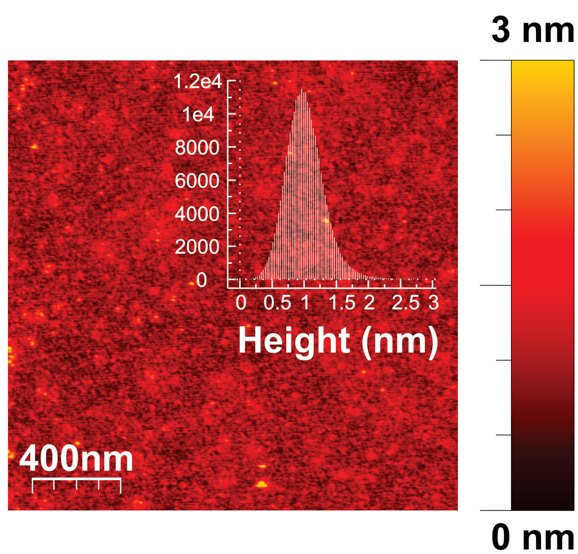


Figure S2: Distribution of hydrodynamic diameter of low-bandgap CPdots measured using DLS.

Zeta Potential and AFM Measurements of Titania Surfaces

The zeta potentials of titania surfaces were determined from streaming potential measurements, using a ZetaSpin 2.0 instrument (Zetametrix, USA).[1,2] The pH of MilliQ water was adjusted to 4 using 0.1 M HCl (Scharlau, Spain) ensuring the ionic strength of the solution was 10^{-4}. The determined value of the zeta potential for such a solution composition was $11\,\mathrm{mV}$ ($\pm\,0.9\,\mathrm{mV}$), which is in a good agreement with literature data.[3] The positive value of the zeta potential facilitated the adsorption of negatively charged CPdots. AFM was used to characterized the titania surface and the image of a typical titania surface is shown in Figure SS3. The results indicate a surface height variation of $\sim$1 nm, highlighting the surface flatness that is suitable for height measurements of the low-bandgap CPdots.



surface.jpg

Figure S3: $2 \times 2\,\mu\mathrm{m}^2$ AFM topography image of titania acquired *in situ* after 30 min of immersion in in MilliQ water at pH 4. Inset presents height histogram of the imaged surface.

Particle Width Distributions of CPdots

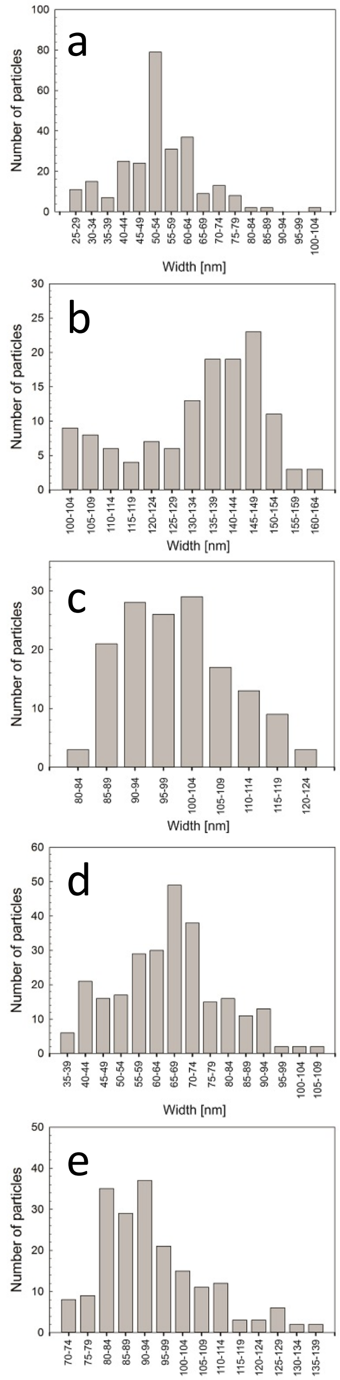


Figure S4: Distribution of particle width of (a) PCPDTBT, (b) PSBTBT, (c) PTB7, (d) PCDTBT, (e) PBDTTPD CPdots measured using AFM.

Colocalization of CPdots and Cell Nuclei

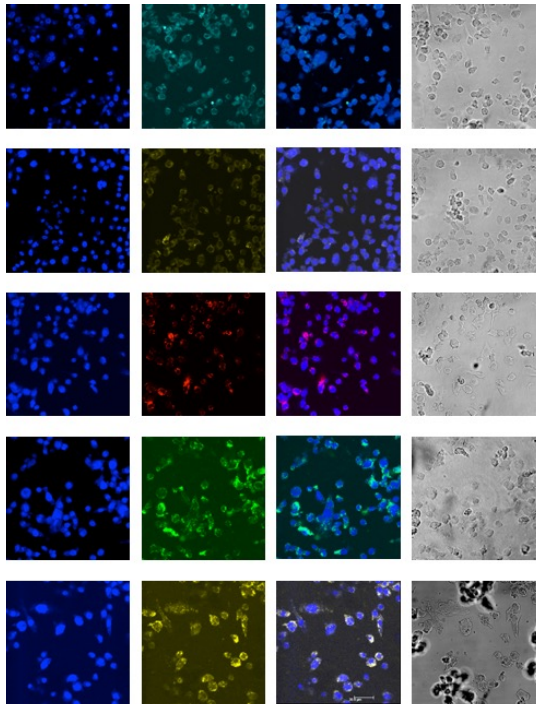


Figure S5: Fluorescence (first three) and bright-field images (rightmost) of macrophages, from left to right, with the cell nuclei (blue) stained with DAPI, with CPdots, and colocalization of DAPI image with CPdots, respectively. The CPdots, from top to bottom, are PCPDTBT, PSBTBT, PTB7, PCDTBT, PBDTTPD CPdots, respectively. The images have dimensions of 193.75 µm × 193.75 µm.

References

(1) Sides, P. J.; Hoggard, J. D. Measurement of the Zeta Potential of Planar Solid Surfaces by Means of a Rotating Disk. *Langmuir* **2004**, *20*, 11493–11498.

(2) Sides, P. J.; Newman, J.; Hoggard, J. D.; Prieve, D. C. Calculation of the Streaming Potential near a Rotating Disk. *Langmuir* **2006**, *22*, 9765–9769.

(3) Krasowska, M.; Carnie, S. L.; Fornasiero, D.; Ralston, J. Ultrathin Wetting Films on Hydrophilic Titania Surfaces: Equilibrium and Dynamic Behavior. *J. Phys. Chem. C* **2011**, *115*, 11065–11076.