Supporting Information

1) Spectral changes upon adding concentrated DTAC/DMF to n-PDI solution

Figure S1 (a) and (b) Absorption and emission spectra of n-PDI titrated by concentrated DTAC DMF solution. Red curves represent the spectra of n-PDI in water. Inset shows the fluorescence versus DTAC concentration and the arrow indicates increasing DTAC concentration.
Figure S2 (a) and (b) Absorption and emission spectra of p-PDI titrated by concentrated SDS DMF solution. Red curves represent the spectra of p-PDI in water. Inset shows the fluorescence versus SDS concentration and the arrow indicates increasing SDS concentration.
2) Fluorescence decay curves and best fit to a sum of exponentials
Figure S3. Fluorescence decay and fitting curves of p-PDI or n-PDI in different medias. The fitting residues were also shown. a: n-PDI in water; b: n-PDI/DTAC; c: n-PDI/SDS; d: p-PDI in water; e: p-PDI/SDS; f: p-PDI/DTAC
3) Mixing p-PDI/SDS with n-PDI/SDS

Figure S4. (a) Absorption and emission spectra of p-PDI/SDS mixing with n-PDI/SDS at [SDS]=10mM (Red) and the average absorption spectrum of individual p-PDI/SDS and n-PDI/SDS at [SDS]=10mM (black). (b) Fluorescence intensity upon mixing p-PDI/DTAC and n-PDI/DTAC (red circle) and averaging the individual p-PDI/DTAC and n-PDI/DTAC (black triangle) as a function of SDS concentration.
4) n-TDI/DTAC

Figure S5. (a) and (b) Absorption and emission spectra of n-TDI upon mixing with DTAC solutions at different concentrations. $\lambda_{ex} = 640$ nm. Emission spectrum of n-TDI in pure water is shown as the red line. The arrow indicates the concentration increasing of DTAC.
Figure S6. (a) Fluorescence intensity upon mixing p-PDI/DTAC and n-TDI/DTAC (red circle) and averaging the individual p-PDI/DTAC and n-PDI/DTAC (black triangle) as a function of DTAC concentration. (b) Absorption spectra of n-TDI/DTAC mixing with p-PDI/DTAC at [DTAC] = 30 mM (Red) and the average absorption spectrum of individual n-TDI/DTAC and p-PDI/DTAC at [DTAC] = 30 mM (black).
5. Dilution experiments

Figure S7. (a) and (b) The peak absorbance (Triangle) and fluorescence intensity (Circle) upon the gradual dilution of concentrated n-PDI and p-PDI aqueous solution, respectively, as a function of the concentration. All the points were taken by LOG.