

ELECTRONIC SUPPLEMENTARY INFORMATION
for the Article

Encapsulation of photoactive porphyrinoids in polyelectrolyte hollow microcapsules viewed by Fluorescence Lifetime Imaging Microscopy (FLIM)

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SUPPLEMENTARY INFORMATION

1. Porphyrin/Polyelectrolyte interactions

TSPP/PAH

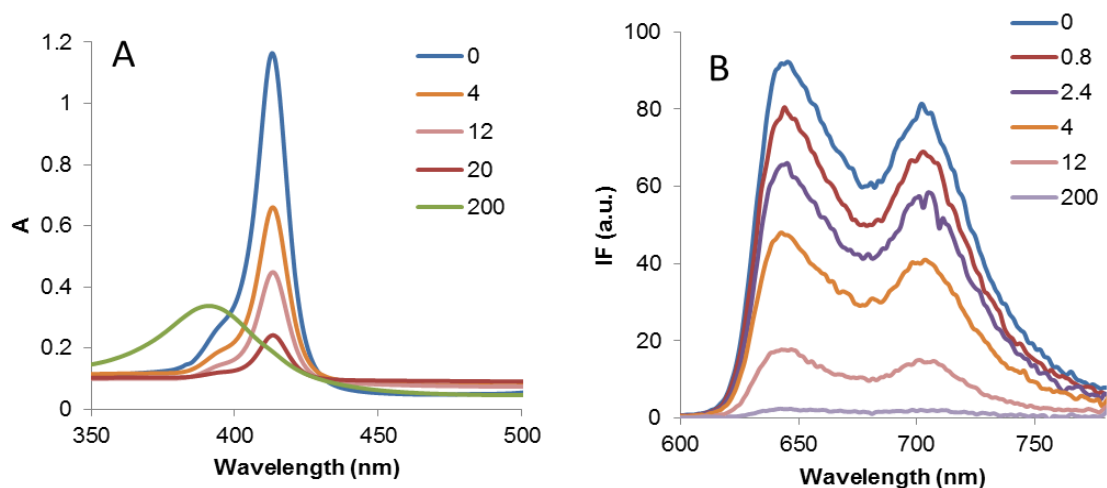


Fig S1 Absorption (A) and emission spectra (B, $\lambda_{\text{exc.}} = 400$ nm) of TSPP (5 μM) with increasing concentrations of oppositely charged polyelectrolyte PAH (concentrations are given in μM).

TMPyP/PSS

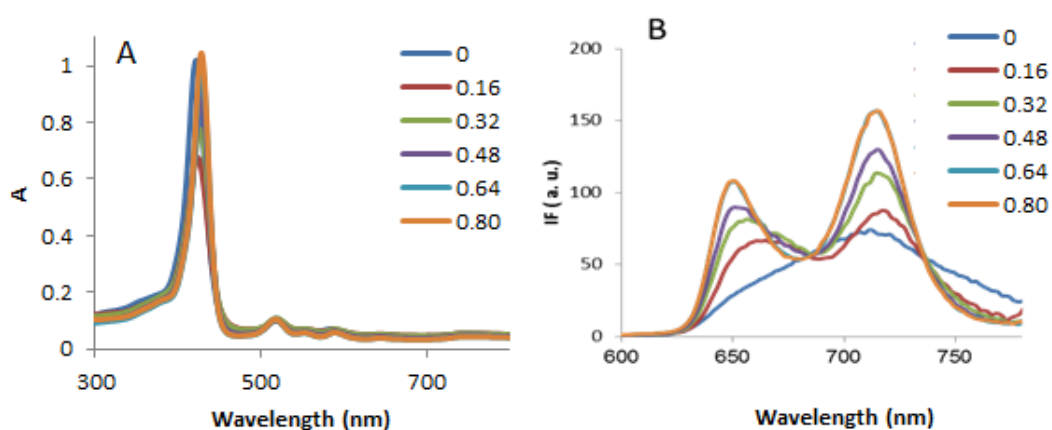


Fig S2 Absorption (A) and emission spectra (B, $\lambda_{\text{exc.}} = 400$ nm) of TMPyP (5 μM) with increasing concentrations of oppositely charged polyelectrolyte PSS (concentrations are given in μM).

BOPYP/PSS

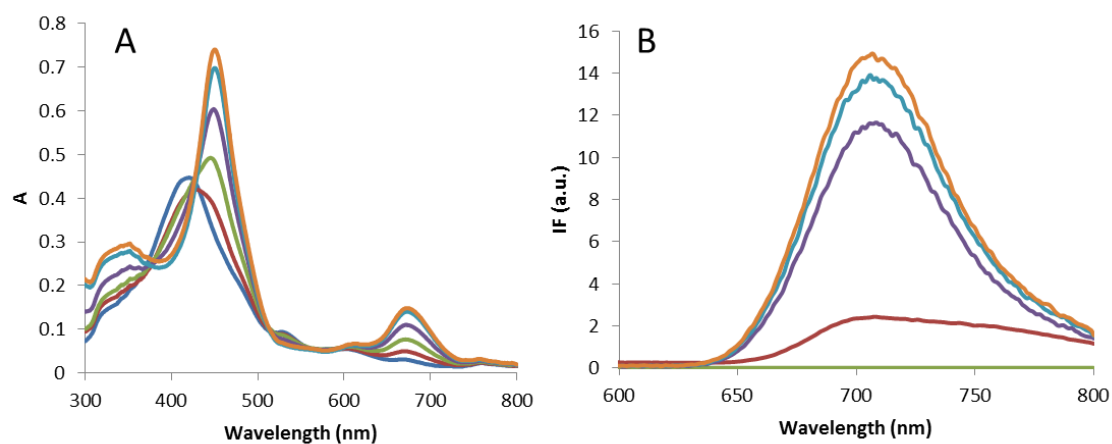


Fig S3 Absorption (A) and emission spectra of BOPYP (B. $\lambda_{exc.} = 440$ nm) with increasing concentrations of PSS at pH = 2.0 (concentrations are given in μM).

BOPYP/PAA

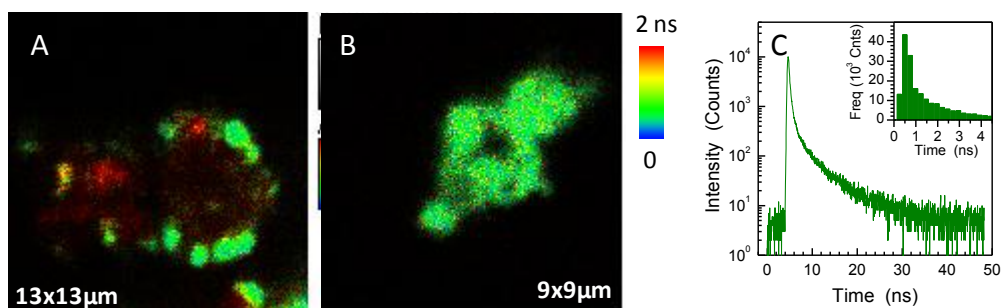


Fig. S4 FLIM images of polyelectrolyte microcapsules $(\text{PAA/PSS})_4\text{BOPYP}$, after CaCO_3 dissolution. B) Circular aggregate formed between BOPYP and polyelectrolyte PAA prior to adsorption procedure. C) Fluorescence decay and lifetime histogram (inset) from image A.

2. Mechanism of TCPP-PAH synthesis

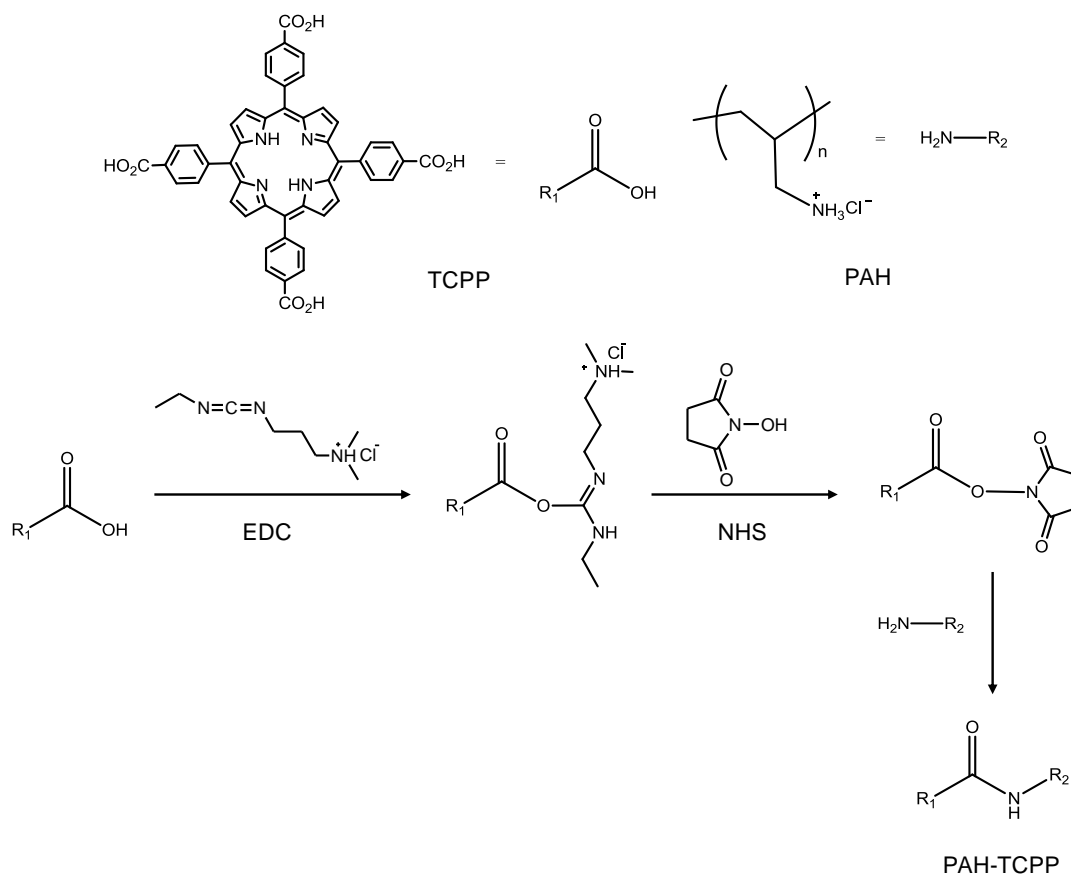


Fig. S5 Labelling of the positive polyelectrolyte (PAH) with a hydrophobic porphyrin (TCPP) using amide coupling reaction in two steps.

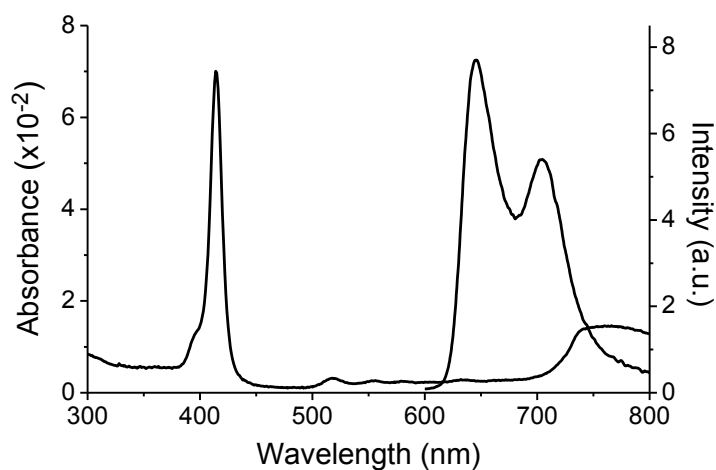


Fig S6 Absorption and emission spectra of coupled TCPP/PAH incorporated in PAH/PSS polyelectrolyte microcapsules. The pH of the colloidal suspension is 7.0; the emission spectrum was obtained with an excitation at the maximum of the Soret absorption band.

3. Hollow Microcapsules with Phthalocyanines

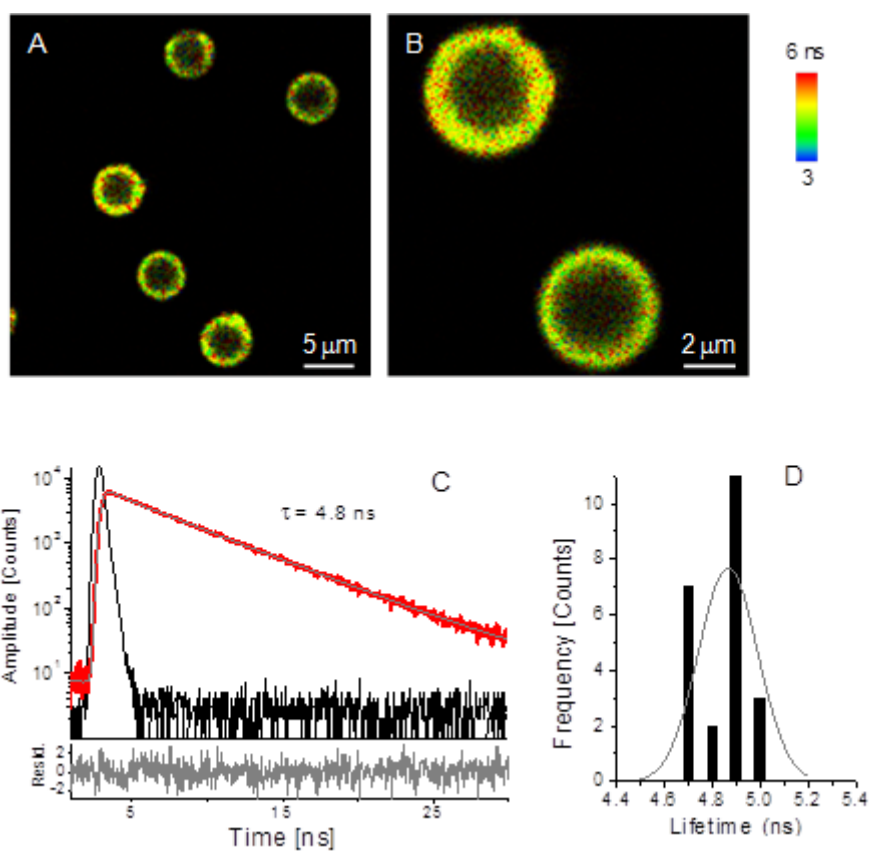


Fig.S7 (A) and (B) FLIM images of AIPc₄ in PAH/PSS microcapsules; (C) Fluorescence decay of a point in the image; and (D) Histogram of the lifetimes obtained from analysis of several point decays, obtained from different images.

4. Microcapsules with Gold Nanoparticles (AuNPs) and AIPCS_x

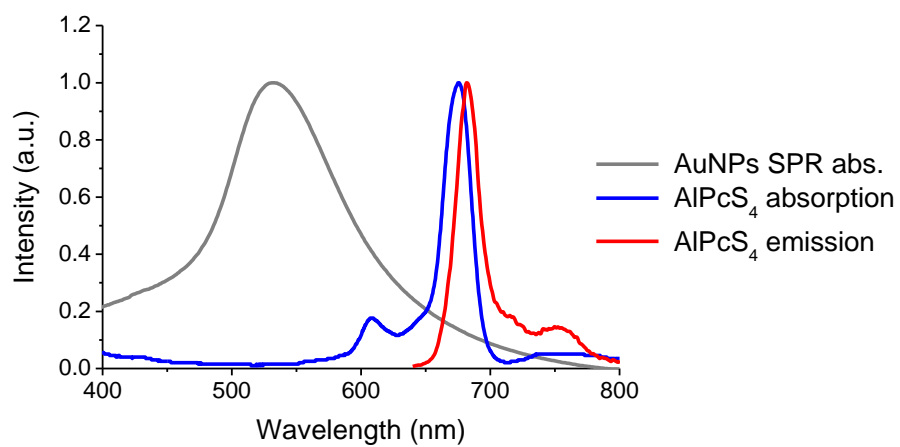


Fig. S8 Absorption and emission spectra of a tetra-sulfonated phthalocyanine (AIPcS₄) superimposed to the red-edge of the surface plasmon resonance absorption of AuNPs.