

## **Supporting Information**

for

## pH-Responsive fluorescent supramolecular nanoparticles based on tetraphenylethylene-labelled chitosan and a six-fold carboxylated tribenzotriquinacene

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Solid-state CP/MAS <sup>13</sup>C NMR spectra of CS-TPE, optical transmittance and concentration-dependent transmittance of CS-TPE, Tyndall effect of CS-TPE and TBTQ-C<sub>6</sub>/CS-TPE and pH-responsive properties of TBTQ-C<sub>6</sub>/CS-TPE

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Figure S1: Solid-state CP/MAS <sup>13</sup>C NMR spectra of (a) CS, (b) CS-TPE-2%, (c) CS-TPE-10% and (d) CS-TPE-20%.



**Figure S2:** (a) Optical transmittance and (b) concentration-dependent transmittance at 293 nm of **CS-TPE-2%**; (c) Optical transmittance and (d) concentration-dependent transmittance at 293 nm of **CS-TPE-10%**; (e) Optical transmittance and (f) concentration-dependent transmittance at 293 nm of **CS-TPE-20%** in aqueous solutions (pH 5.3).



**Figure S3:** Tyndall effect of (a) **CS-TPE-2%**, (b) **CS-TPE-10%** and (c) **CS-TPE-20%** at concentrations below and above the CACs in aqueous solutions (pH 5.3).



Figure S4: Tyndall effect of (a) TBTQ-C<sub>6</sub>, (b) TBTQ-C<sub>6</sub>/CS-TPE-2%, (c) TBTQ-C<sub>6</sub>/CS-TPE-10% and (d) TBTQ-C<sub>6</sub>/CS-TPE-20% in aqueous solution at pH 5.3 ([TBTQ-C<sub>6</sub>] = 0.10 mM, [CS-TPE] =  $10 \mu$ g/mL).



**Figure S5:** TEM images of (a) **TBTQ-C<sub>6</sub>/CS-TPE-2%** in aqueous solution at pH 5.3; (b) after adjustment of the solution (a) to pH 10.4; (c) after readjustment of solution (b) to pH 5.3; (d) DLS data of **TBTQ-C<sub>6</sub>/CS-TPE-2%** assembly; (e) Optical transmittance and (f) dependence of the optical transmittance at 310 nm of the **TBTQ-C<sub>6</sub>/CS-TPE-2%** assembly under acidic and alkaline conditions over several cycles ([**TBTQ-C<sub>6</sub>]** = 0.10 mM, [**CS-TPE-2%**] = 48 µg/mL).



Figure S6: TEM images of (a) TBTQ-C<sub>6</sub>/CS-TPE-20% in aqueous solution at pH 5.3; (b) after adjustment of the solution (a) to pH 10.4; (c) after readjustment of solution (b) to pH 5.3; (d) DLS data of TBTQ-C<sub>6</sub>/CS-TPE-20% assembly; (e) optical transmittance and (f) dependence of the optical transmittance at 450 nm of the TBTQ-C<sub>6</sub>/CS-TPE-20% assembly under acidic and alkaline conditions over several cycles ([TBTQ-C<sub>6</sub>] = 0.10 mM, [CS-TPE-20%] = 60 µg/mL).