Supporting information

For

Mussel-inspired thermoresponsive polymers with tunable LCST by Cu(0)-LRP for the construction of smart TiO₂ nanocomposites

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Fig. S1. $^1$H NMR spectrum of poly(DEGEEA)-r-(PEGA$_{480}$) in D$_2$O.

Fig. S2. Molecular weight distributions of poly(DEGEEA)-r-(PEGA$_{480}$) synthesized via aqueous Cu(0)-LRP as measured by SEC.
Fig. S3. Temperature dependence of optical transmittance at 500 nm obtained for 1 mg/mL aqueous solutions of poly(DEGEEA)-r-(PEGA₄₈₀) (the LCST was defined as the temperature corresponding to 1% decrease of transmittance).

Fig. S4. Temperature dependence of optical transmittance at 500 nm obtained for 5 mg/mL aqueous solutions of poly(DEGEEA)-r-(PEGA₄₈₀) (the LCST was defined as the temperature corresponding to 1% decrease of transmittance).
Fig. S5. Transmittance-temperature curves during heating (solid lines) and cooling (dashed lines) of the solution (5 mg/mL) of Poly(DEGEEA)-r-(PEGA_{480}) copolymer \((R_{co} = 0.12)\) obtained by UV/Vis spectroscopy at 500nm.

Fig. S6. \(^1\)H NMR spectrum of poly(DEGEEA)-\(b\)-(PEGA_{480}) in D\(_2\)O.
Fig. S7. Temperature dependence of optical transmittance at 500 nm obtained for 1 mg/mL aqueous solutions of poly(DEGEEA)-b-(PEGA₄₈₀) (the LCST was defined as the temperature corresponding to 1% decrease of transmittance).

Fig. S8. ¹H NMR spectra for a one-pot Cu(0)-LRP of DEGEEA/PEGA₄₈₀ in the presence of TiO₂ at 0 & 2 hours in D₂O.
Fig. S9. FTIR (A) and TGA (B) spectra for TiO$_2$@poly(DEGEEA)-r-(PEG$_{480}$) obtained by one-pot Cu(0)-LRP.

Fig. S10. Molecular weight distributions of free linear copolymers synthesized via a “one-pot” Cu(0)-LRP in the presence of TiO$_2$ as measured by SEC.