

Supporting Information

Thermo-responsive Self-assembly of Two-fold Fluorescently Labelled Block Copolymers in Aqueous Solution and Microemulsions

*Michelle Hechenbichler,[†] Albert Prause,[‡] Michael Gradzielski,[‡] * and André Laschewsky^{†, §, *}*

[†] Institut für Chemie, Universität Potsdam, Karl-Liebknecht-Straße 24-25, 14476, Potsdam-
Golm/Germany

[‡] Stranski-Laboratorium für Physikalische und Theoretische Chemie, FG Physical Chemistry/
Molecular Material Science Institute of Chemistry, Technische Universität Berlin, Straße des 17.
Juni 124, 10623, Berlin/Germany

[§] Fraunhofer Institute of Applied Polymer Research IAP, Fraunhofer Institute, Geiselbergstr. 69,
14476, Potsdam-Golm/Germany

1. Analysis of key intermediates in the synthesis of chain transfer agent FRET-TTC

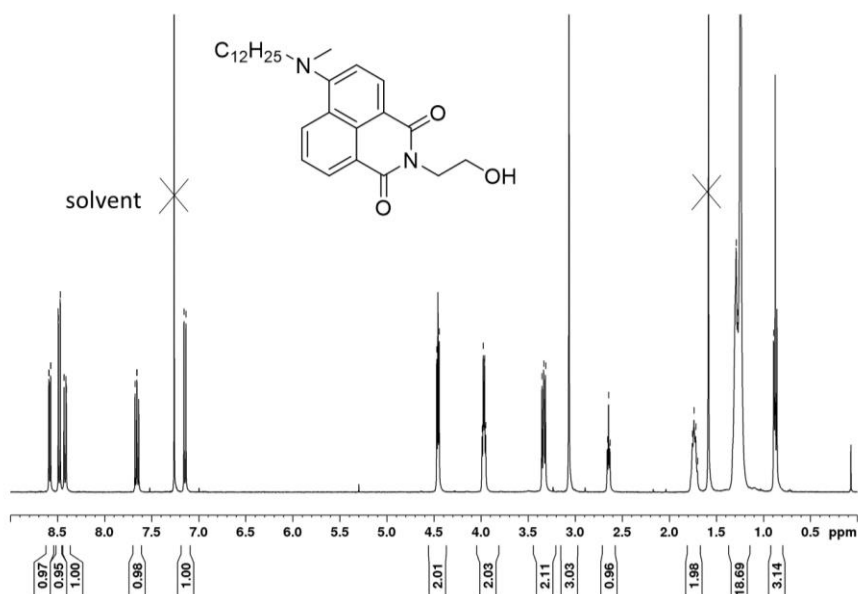


Figure S1. ¹H NMR spectrum of the functionalized naphthalimide intermediate **2** (4-(N'-dodecyl-N'-methylamino)-N-2-hydroxyethyl-1,8-naphthalimide) in CDCl₃.

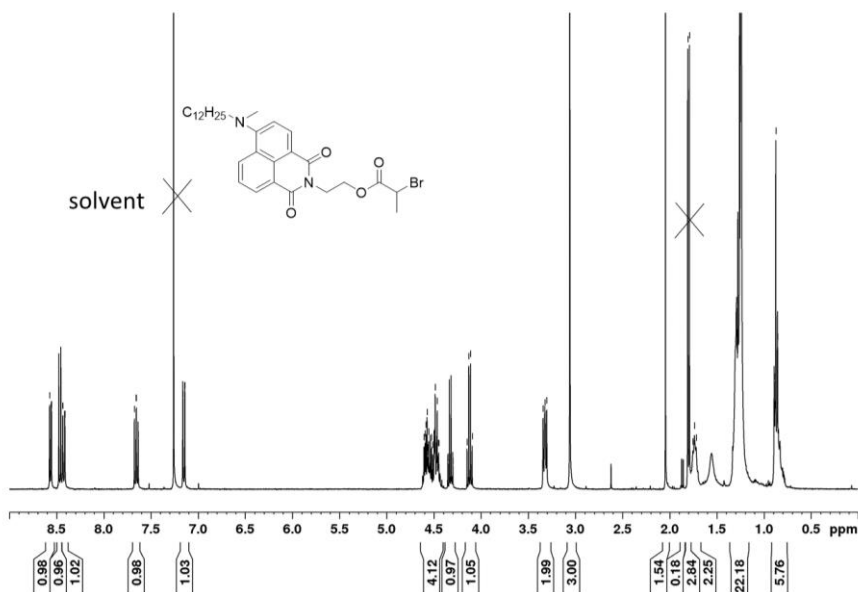


Figure S2. ¹H NMR spectrum of the functionalized naphthalimide intermediate **3** (4-(dodecyl(methyl)amino)-1,3-dioxo-1H-benzo[de]isoquinolin-2(3H)-yl ethyl 2-bromopropanoate) in CDCl₃.

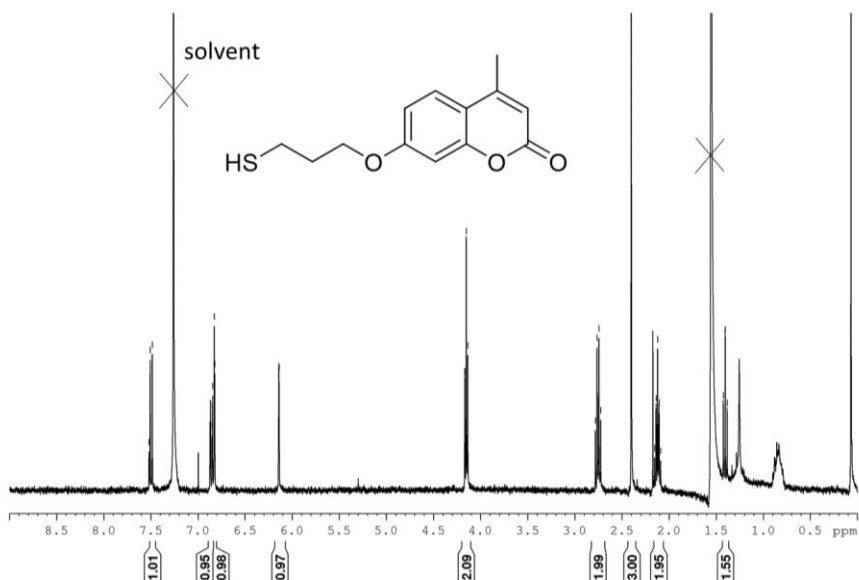


Figure S3. ¹H NMR spectrum of intermediate **6**, 7-(3-mercaptopropoxy)-4-methylcoumarin, in CDCl₃.

2. Analysis of the polymers

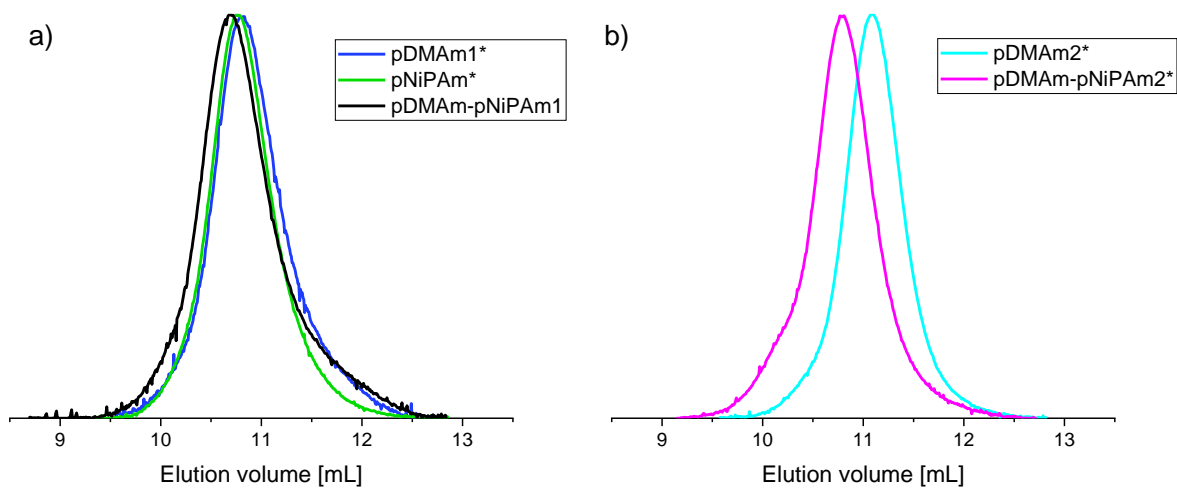


Figure S4. SEC elugrams of the polymers studied, using 0.1% LiBr in NMP as eluent.

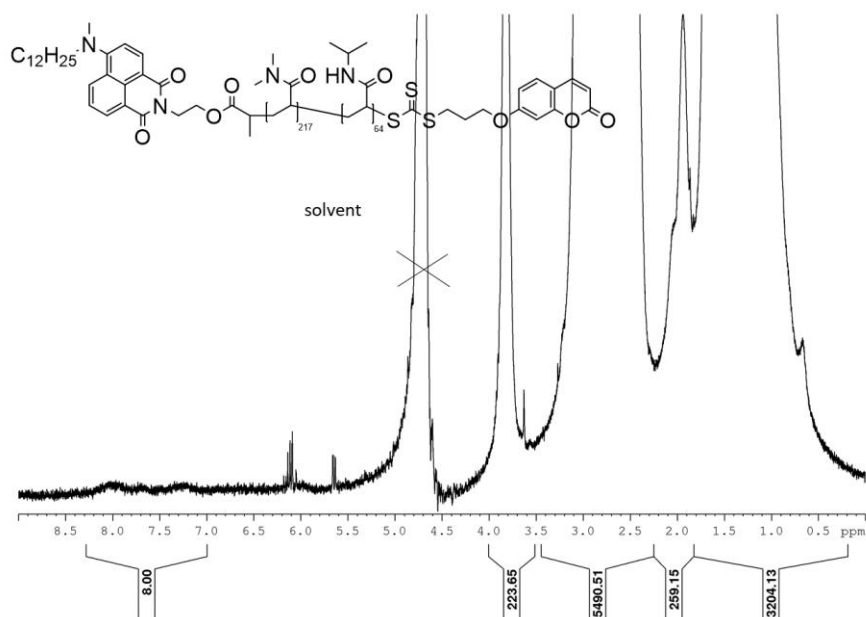


Figure S5. ^1H NMR spectrum of diblock copolymer **pDMAM-pNiPAM2*** in D_2O .

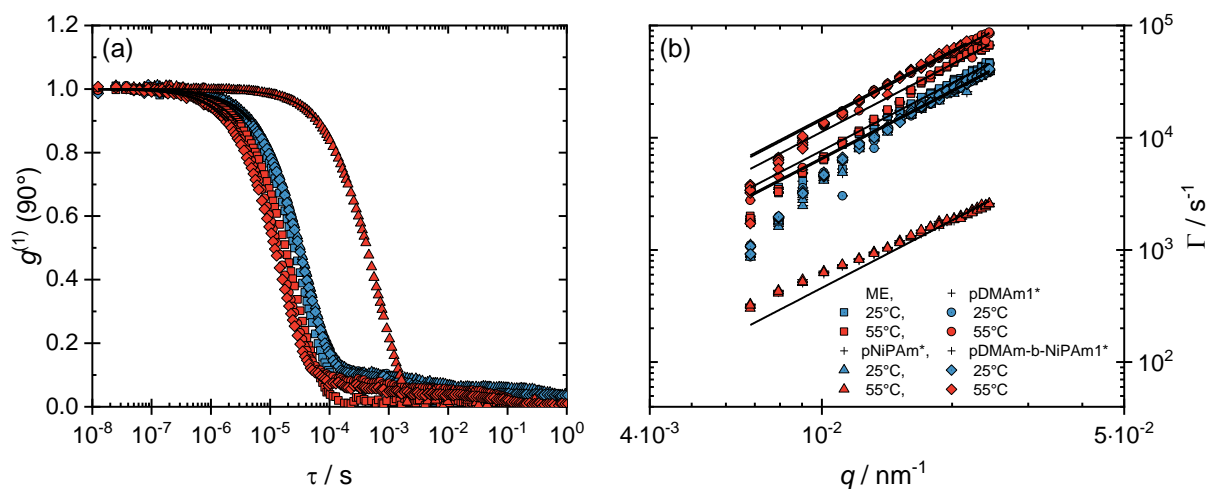


Figure S6. Characterization of the solutions of polymers **pDMAM1***, **pNiPAM***, and **pDMAM-b-pNiPAM1*** in the TDMAO-decane microemulsion (ME) at 25°C (blue symbols) and at 55°C (red symbols). (a) Field correlation function $g^{(1)}$ at 90° in dependence on the correlation time τ . The solid lines correspond to a corresponding simple exponential fit; (b) log-log plot of the decay rate Γ as function of scattering vector q . The solid lines represent the function $\Gamma = Dq^2$. The meanings of the symbols in figures (a) and (b) are the same.