Supporting Information for

Amphiphilic Poly(vinylferrocene)-*b*-Poly(ethylenoxide) Diblock Copolymers with Functional Junction Points: From Synthesis to Cross-linked Redox Responsive Micellar Structures

Jan Morsbach, [†] Adrian Natalello, [†,#] Johannes Elbert, [‡] Svenja Winzen, [§]

Holger Frey,[†,*] Markus Gallei[‡,*]

[†]Institute of Organic Chemistry, Organic and Macromolecular Chemistry, Johannes Gutenberg-University (JGU), Duesbergweg 10-14, D-55099 Mainz, Germany

[#]Graduate School Materials Science in Mainz, Staudinger Weg 9, D-55128 Mainz, Germany

[§]Max Planck Institute for Polymer Research, Ackermannweg 10, D-55128 Mainz, Germany

[‡]Ernst-Berl Institut für Technische und Makromolekulare Chemie, Technische Universität Darmstadt, Alarich-Weiss-Str. 4, D-64287 Darmstadt, Germany

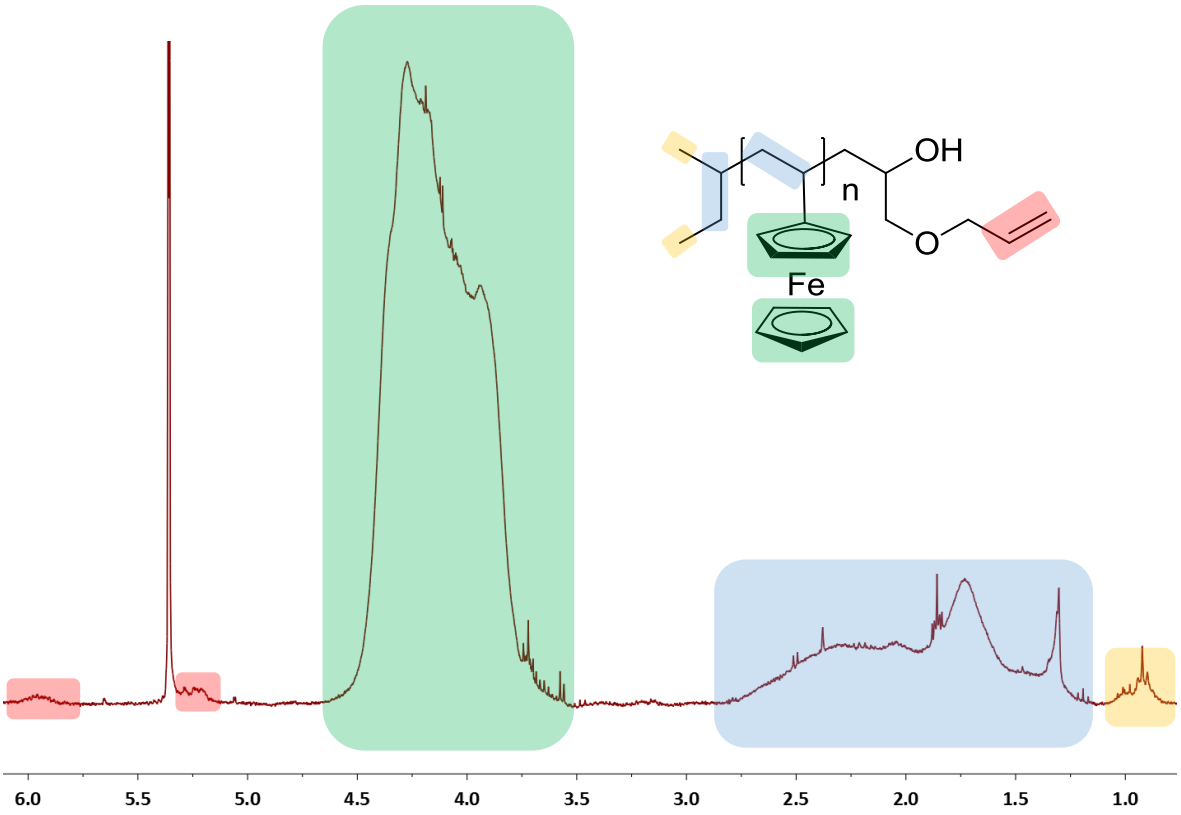

Figure S1: ^{1}H-NMR spectrum of PVFc-AGE in CD_2Cl_2 (400 MHz, 64 scans).

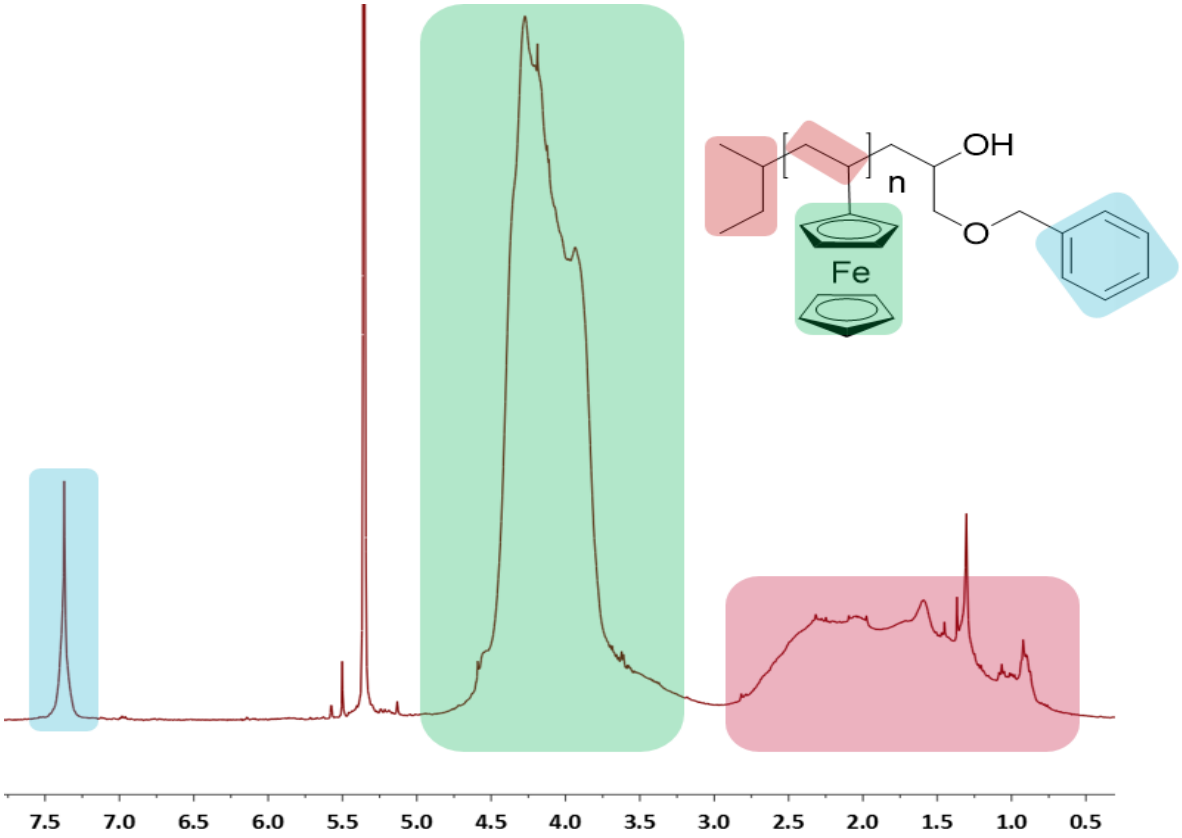

Figure S2: ^{1}H-NMR spectrum of PVFc-BGE in CD_2Cl_2 (400 MHz, 64 scans).

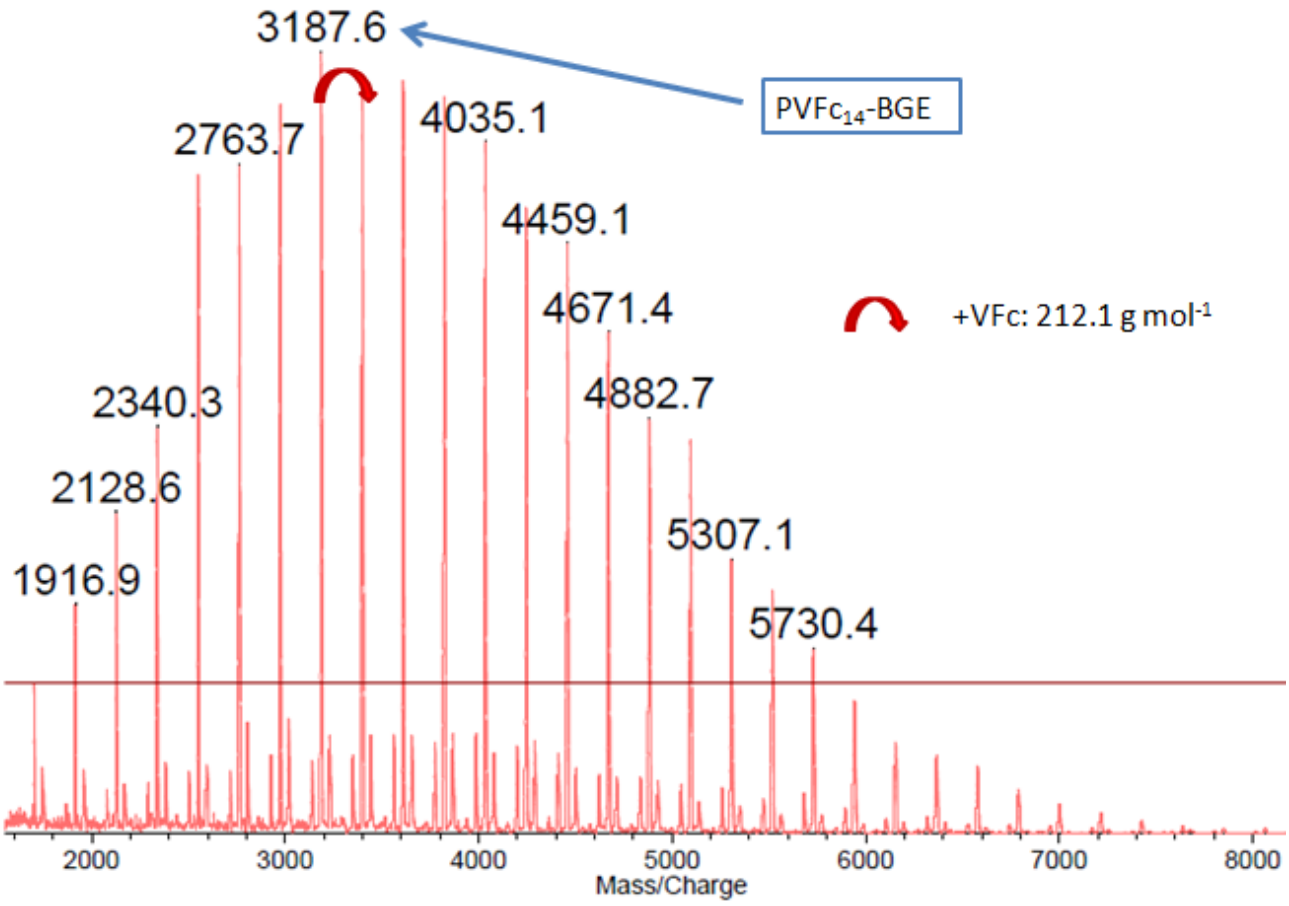

Figure S3: MALDI-ToF spectrum of PVFc-BGE (matrix: Dithranol).

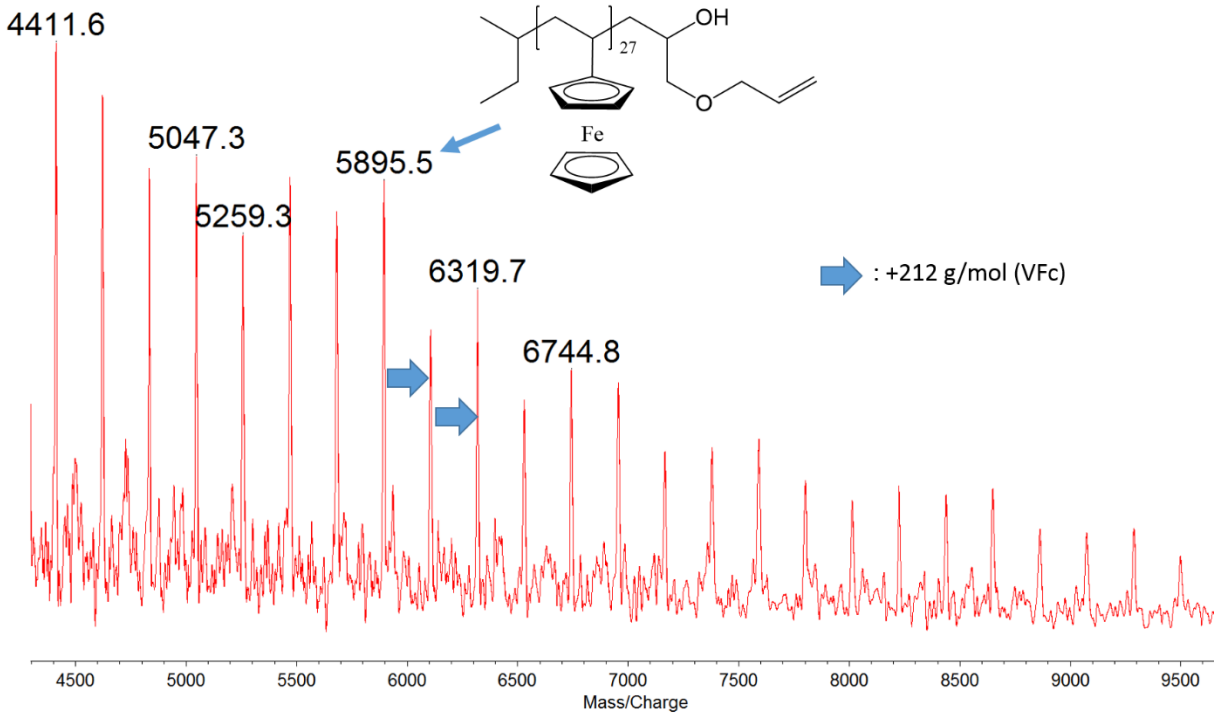

Figure S4: MALDI-ToF spectrum of $PVFc_{33}$-AGE (matrix: Dithranol).

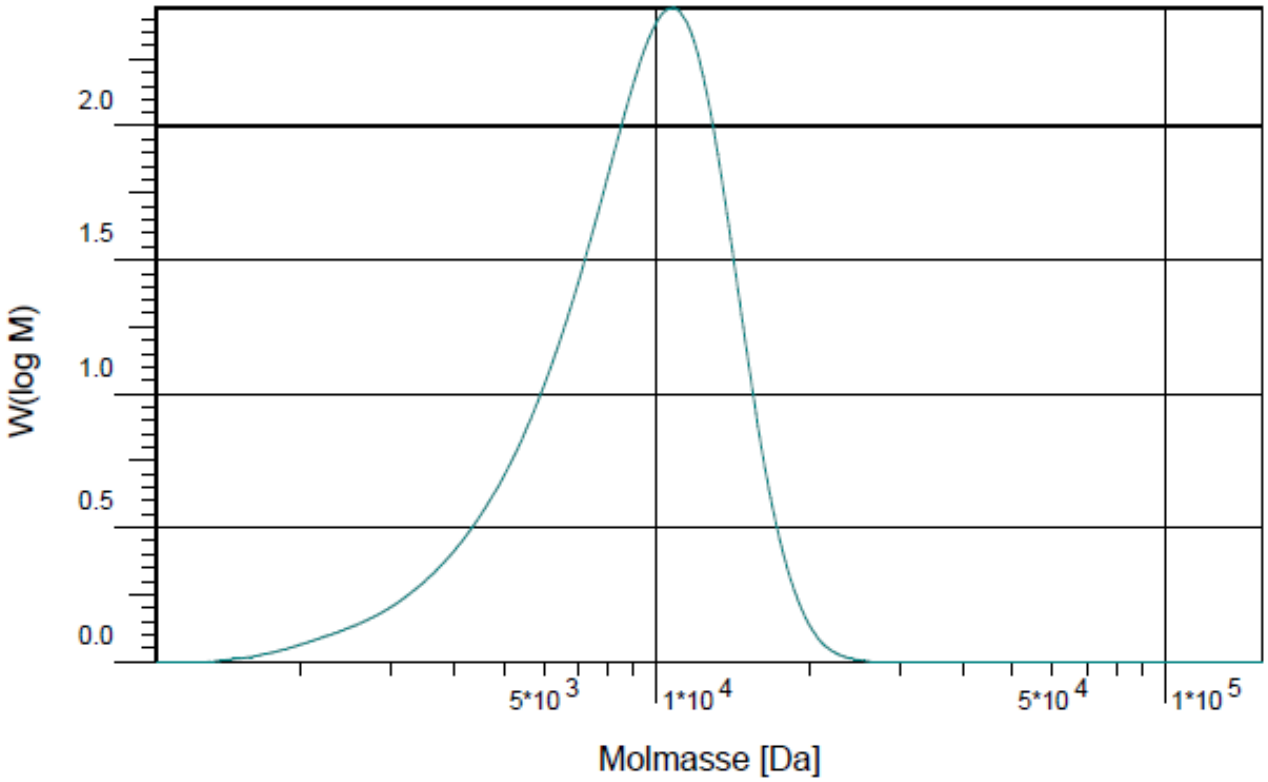

Figure S5: SEC-traces of $PVFc_{36}$-BGE macroinitiator, molecular weight determination with SEC-MALLS (solvent: THF).

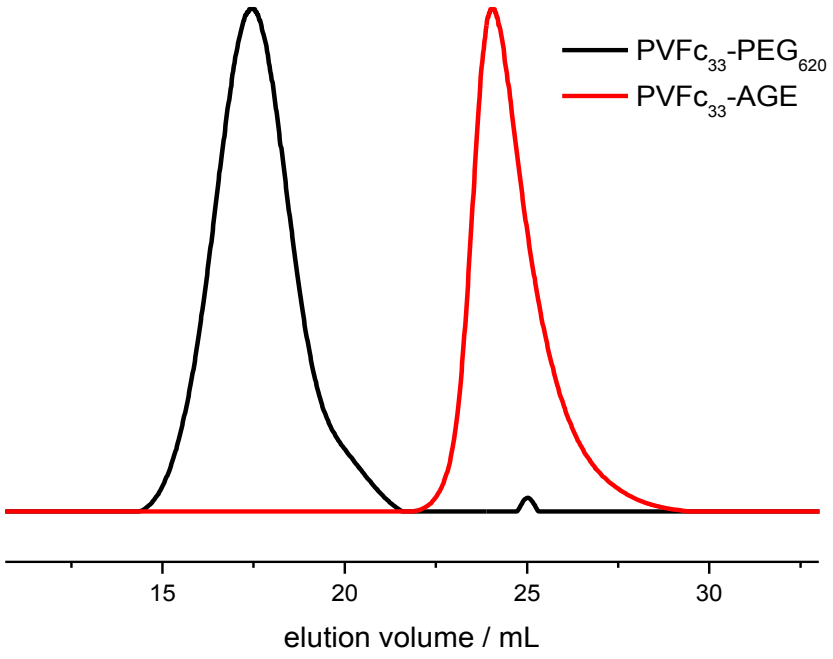

Figure S6: Overlay of SEC-traces of $PVFc_{33}$-AGE macroinitiator and corresponding $PVFc_{33}$-*b*-PEG_{620} block copolymer (THF).

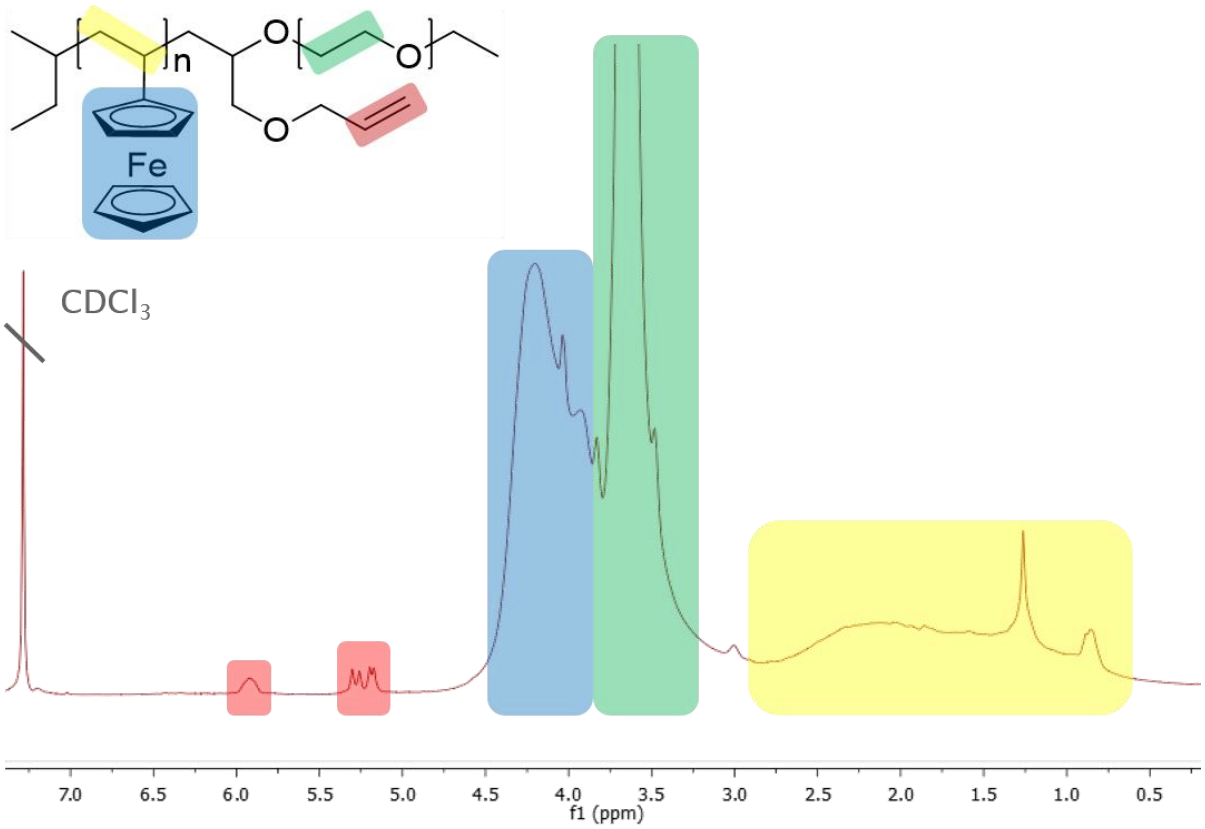

Figure S7: ^{1}H-NMR spectrum of PVFc-*b*-PEO in $CDCl_3$ (400 MHz, 64 scans).

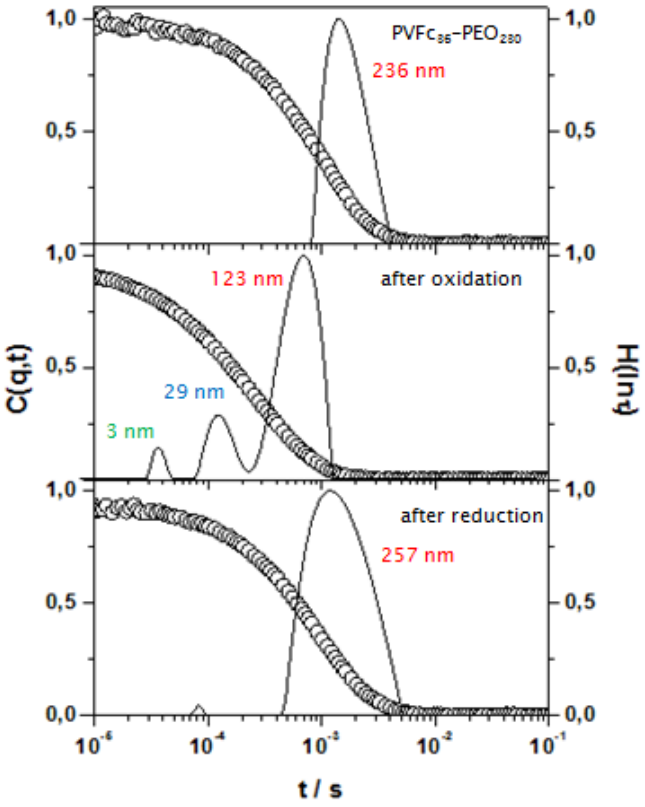

Figure S8. Relaxation functions $C(q,t)$ (empty circles) for the concentration fluctuations along with the corresponding distributions of relaxation times $H(ln\tau)$ (straight line) of $PVFc_{36}$-*b*-PEO_{230} (top), $PVFc_{36}$-*b*-PEO_{230} after oxidation (middle) and $PVFc_{36}$-*b*-PEO_{230} after reduction (bottom).

DLS data evaluation was performed by using the the CONTIN algorithm. The CONTIN algorithm is used for the analysis of multiple decay processes and is given by

$$C(q,t) = \int_{-\infty}^{\infty} H_\tau(\ln \tau) \exp\left[-\frac{t}{\tau}\right] d(\ln \tau) \qquad (1)$$

where $C(q,t)$ is the computed correlation function, τ the relaxation time and $H_\tau(\ln \tau)$ the distribution function of relaxation times.[1]

REFERENCES

(1) Winzen, S.; Bernhardt, M.; Schaeffel, D.; Koch, A.; Kappl, M.; Koynov, K.; Landfester, K.; Kroeger, A. *Soft Matter*. **2013**.