

## Publication

## Amphiphilic PEG-b-PMCL-b-PDMAEMA Triblock Copolymers : from Synthesis to Physico-Chemistry of Self-Assembled Structures

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 984421**Author(s)** Matter, Y.; Enea, R.; Casse, O.; Lee, C. C.; Baryza, J.; Meier, W.**Author(s) at UniBasel** [Meier, Wolfgang P.](#) ;**Year** 2011**Title** Amphiphilic PEG-b-PMCL-b-PDMAEMA Triblock Copolymers : from Synthesis to Physico-Chemistry of Self-Assembled Structures**Journal** Macromolecular Chemistry and Physics**Volume** 212**Number** 9**Pages / Article-Number** 937-949**Keywords** ATRP, light scattering, methylcaprolactone, self assembly, triblock copolymers

A synthetic route toward a new family of amphiphilic mPEG-b-PMCL-b-PDMAEMA triblock copolymers is reported. Chemical structures and compositions are confirmed by  $^1\text{H}$  NMR and SEC. Polydispersity indices are typically  $>1.4$ , indicating good control of the reactions. The physicochemical parameters associated with mPEG-b-PMCL-b-PDMAEMA self-assembled structures are investigated. Nanoparticles are prepared via a co-solvent method, and parameters such as nanoparticle  $\langle M \rangle$ ,  $N(\text{agg})$ ,  $A(2)$ , and  $R(h)$  are calculated based on static and dynamic light scattering data. Critical aggregation concentrations for the polymers are determined by measuring surface tensions of polymer solutions. TEM is employed to visualize the morphology of the assemblies.

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