Shedding Light on Polymer Nanostructure

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It is a well-known story that copolymers beside their molar mass distribution (MMD) can exhibit a functionality type distribution (FTD), a copolymer composition distribution (CCD), a monomer sequence distribution (MSD) and additionally different topologies within one sample. Nowadays a wide range of different analytical separation techniques and multi-detection possibilities are available.

The challenge consists in a clever combination of these techniques coordinated with the heterogeneity to be investigated.

A number of applications will be presented from e.g. topology elucidation of branched EO-PO "academic" copolymers to copolymer composition of partially broadly distributed progressively tailored "industrial relevant" copolymers consisting of e.g. polyamides, polycarbonates and polysiloxanes.

Multidimensional separation techniques will be demonstrated with focus on mass spectrometric detection techniques (ESI-/MALDI-TOF-MS) coupled online or semi-online to prior separation.