Beitrag ID: **122** Typ: **Poster**

Polyelectrolytes: Interchain hydrodynamic interaction and internal friction

Dienstag, 17. September 2024 22:40 (20 Minuten)

Polyelectrolytes (PE) are polymeric macromolecules in aqueous solution characterized by their chain topology and intrinsic charge in a neutralizing fluid. Structure and dynamics are related to several characteristic screening length scales determined by electrostatic, excluded volume and hydrodynamic interactions. We examine PE dynamics in dilute to semidilute conditions using dynamic light scattering, neutron spinecho spectroscopy and pulse field gradient NMR spectroscopy. We connect macroscopic diffusion to segmental chain dynamics revealing a decoupling of local chain dynamics from interchain interactions. Collective diffusion is described within a colloidal picture including electrostatic and hydrodynamic interactions. Chain dynamics is characterized by the classical Zimm model of a neutral chain retarded by internal friction. We observe that hydrodynamic interactions are not fully screened between chains and that the internal friction within the chain increases with increasing ion condensation on the chain.

Interchain Hydrodynamic Interaction and Internal Friction of Polyelectrolytes; Buvalaia, E., Kruteva, M., Hoffmann, I., Radulescu, A., Förster, S., & Biehl, R.; ACS Macro Letters, 22, 1218–1223

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Sitzung Einordnung: Mounting Posters, Beer and light Dinner

Track Klassifizierung: Soft Matter