Polymers under Multiple Constraints

Polymer- & Soft-Matter-Seminar

Prof. Kazuya Saito

(Department of Chemistry, Faculty of Pure and Applied Sciences,
University of Tsukuba, Japan)

“Quasi-Binary Picture of Thermotropics: Experimental Basis and Its Outcomes"

Tuesday,
7th May 2019

at: **5.15pm**

VDP 4 1.27,
Von-Danckelmann-Platz 4
06120 Halle

Molecules of most thermotropic liquid crystals are not highly anisotropic as widely assumed but consist of hard core and flexible alkyl chain(s). We discuss the effect of this molecular structure on the understanding of thermotropic liquid crystals. Through analyzing the entropy of transitions, the molten state of chains comparable to n-alkanes is established in any liquid crystalline phases. Molten chains serves as both of entropy reservoir to stabilize the liquid crystalline states and the internal solvent, which leads us to the quasi-binary (QB) picture of thermotropic liquid crystals. QB picture gives a renewed view on mesogenic phase sequences and helps understanding cubic organizations such as gyroid. QB picture is also a basis to clarify the aggregation structure of and molecular packing in layered (smectic) phases.
The talk will be understandable even for graduate students in both physics and chemistry while keeping the up-to-date level.