Module Macromolecular Chemistry

This module targets Biochemistry students who have a special interest in Macromolecular Chemistry and therefore wish to deepen their synthetic and analytical skills in this discipline. The aim of the module is to bring participants to roughly the same level of knowledge in Macromolecular Chemistry as students of Chemistry (and "Wirtschaftschemie") and therefore open the possibility for pursuing research careers in Chemistry (besides the Life Sciences).

The following technical content will be taught:

- General knowledge on the various synthesis methods (step-growth and chain-growth polymerization) for generating macromolecular architectures: linear, branched, networks, etc. and their structure-property relations.
- Specialized knowledge on modern research topics of Macromolecular Chemistry such as Polymeric Materials, Colloid Chemistry, Biomacromolecules, Synthetic techniques for Precision Macromolecules, which all have relevance for research in pharmaceutical academia and industry.
- Practical skills on the art of synthesizing organic molecules, including syntheses carried out within research labs that deal with the synthesis of macromolecules.

Organizational aspects:

- The practical course will take place on afternoons in the period October - January (with some flexibility). A short protocol will be written up for each compound synthesized.
- The mandatory lecture "Macromolecular Chemistry I" (typically held in German) takes place during the winter semester. Specialized lectures (e.g. Biopolymers, Precision Macromolecules, Polymeric Materials, Soft Matter I: Colloid Chemistry) take place throughout the year. Lectures are accompanied by an exam (written or oral).
- Max. Participants: 5-10 (depending on capacity in "Synthesepraktikum" lab)
- Electable for Master Biochemistry
- ECTS: 15