Course title: Innovative methods in polymer chemistry / selectable course

Number of contact hours: 15 hours (15h lectures)

ETCS credits: 1

Course description: The lecture is devoted to the presentation of different methods of polymerization and chemical modification of polymers. The main content of the lecture is divided into two parts on vinyl polymers and non vinyl polymers. Starting from vinyl polymers and free radical polymerization, then passes to the ionic polymerization, polymerization with complex coordination catalysts and finally reactions of vinyl polymers. Next, in the topic of non vinyl polymers step-reaction and ring-opening polymerizations are presented. Controlled radical polymerization methods - Atom Transfer Radical Polymerization (ATRP) and Reversible Addition/Fragmentation Chain Transfer Polymerization (RAFT) will be also discussed.

Education effects (P7S_UW, P7S_WG)**:**

- **knowledge**: student knows the most important methods of polymerization; understands their influence on polymer structure and properties

- **skills**: student can choose the proper method for polymerization of different monomers, knows the characteristics of different polymerization methods

- **social**: student is able to work independently and in the group.

Literature:
[1] Stevens M.P. – Polymer Chemistry an introduction, Oxford, 1999, Oxford University Press
[2] Matyjaszewski, K. (Ed.), Controlled Radical Polymerization – Mechanisms, Oxford, 2016, Oxford University Press

Assessment method: Final test

Prerequisites: Basic knowledge in organic chemistry and technology

Primary target group: All specialties students

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