KEMIJSKI INŠTITUT

Slovensko kemijsko društvo
Slovenian Chemical Society

Vabilo na seminar / Invitation to the seminar

Torek / Tuesday 06. 08. 2019, ob / at 11:00

Velika predavalnica / Great Lecture Hall,
Kemijski inštitut / National Institute of Chemistry; Hajdrihova 19, Ljubljana

Hybrid Copolymerization of Cyclic and Vinyl Monomers

Prof. Dr. Guangzhao Zhang

Faculty of Materials Science and Engineering, South China University of Technology, Guangzhou, P. R. China

Copolymerization of cyclic monomers with vinyl monomers is interesting because it can produce new types of polymers and open up new research directions in polymer chemistry. Yet, it is a challenge because the reactivity and polymerization mechanism of the two types of monomers are quite different. By using organocatalyst, we realized such a polymerization or the so-called hybrid copolymerization that combines vinyl polymerization and ring-opening polymerization together.

Sequence-Selective Ring-Opening Copolymerization

Prof. Dr. Junpeng Zhao

Faculty of Materials Science and Engineering, South China University of Technology, Guangzhou, P. R. China

The sequence in which different monomeric units are covalently connected is one decisive factor for the macroscopic properties of polymers. As a new force in polymer synthesis, metal-free polymerization has exhibited high potency for the synthesis of sequence-controlled polymer. Our group has developed a series of simple but highly efficient and selective metal-free ring-opening (co)polymerization systems in the past few years. We have achieved sequence-selective terpolymerization combining ring-opening alternating copolymerization and classic ring-opening polymerization. Well-defined $(AB)_nC_m$ type block terpolymer can be synthesized in one step from three mixed monomers thanks to the perfectly matching activities of monomers, propagating chain ends, and the catalyst. Very recently, we have found that sequence-selective copolymerization from two mixed monomers is also feasible by use of a bicomponent metal-free catalytic system with finely tuned catalyst composition, thus have realized one-step synthesis of well-defined $(AB)_nB_m$ type block copolymers.

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Vljudno vabljeni / Kindly invited