Tentative Outline

Title of thematic issue

Synthesis of polymers catalyzed by organic or organometallic compounds

Guest Editor's Name, affiliation and email addresses: Dai Shengyu, Anhui University, daiyu@ustc.edu.cn

Aims & Scope: **This Special Issue wants to bring the attention of the academic community to the latest developments of polymer synthesis mediated by organometallic or organic catalytic chemistry in recent decades. These include methods of polymer synthesis, mechanism of polymer synthesis, and synthesis of special polymers mediated by organometallic or organic catalytic chemistry.**

Keywords: **polymer; catalysis; organometallic chemistry; organocatalysts.**

The subtopics to be covered within this issue are listed below:

1-Title: Recent progress in nickel-catalyzed copolymerization of olefin with polar monomers

Authors names: Guanglin Zhou, Hongliang Mu, Zhongbao Jian

Affiliation: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences

Email address: zbjian@ciac.ac.cn

Abstract: Late transition metal catalysts hold potential in the copolymerization of olefins with polar monomers, which generates polar functionalized copolymers with improved performance and broadened application relative to otherwise nonpolar polyolefin. Nickel catalyst is regarded as a promising industrial candidate due to abundant nickel source. We show in this review recent progress in the copolymerization of ethylene with polar comonomers using nickel catalysts bearing phosphine-sulfonate, salicylaldimine, phosphino-phenolate, bisphosphine-monoxide and other ligands, focusing on ligand modification and catalyst design strategies.

Keywords: Nickel catalysts, olefin polymerization, polar monomer, functionalized polyolefin

Manuscript submission deadline: 31/5/2020

Peer Review Due: 31/7/2020

Revision Due: 31/8/2020

Announcement of acceptance by the Guest Editors: 15/9/2020

Final manuscripts due: 01/10/2020

2- Title: The recent advances in organocatalytic ring-opening polymerization

Authors names: Ji Mingjun, Guo Lihua*, Wu Mengqi, Han Jiayu,
Affiliation: School of Chemistry and Chemical Engineering, Qufu Normal University
Email addresses: guolihua@qfnu.edu.cn

Abstract: Compared with various polyolefin products, aliphatic polyester has been widely used in biomedicine, electronics, packaging and other fields due to its unique degradability and biocompatibility. At present, ring-opening polymerization (ROP) of lactone monomer is the main means to synthesize polyester. There are many monomers that can ROP, such as rac-LA, γ-BL and so on. And two types of catalysts that are most researched today. One kind is metal complex catalyst, the other kind is organocatalyst. However, use metal complexes as catalysts can result metal residues in polymer, which can affect its properties and applications in biomedicine, electronics, etc. Therefore, it is important to research organocatalyst. In this context, this review article systematically summarizes the progress of monomers and organocatalysts in ring-opening polymerization by focusing on there structure and polymerization behavior in recent years. The potential challenges in this field, and development directions in future, are also presented.

Keywords: Ring-opening polymerization, Organocatalysts, Aliphatic polyesters, Lactone monomer

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3- Title: Recent progress in ethylene polymerization by α-diimine catalysts with bulky backbone

Authors names: Haiyang, Gao
Affiliation: Sun Yat-sen University **Email address**: gaohy@mail.sysu.edu.cn **Abstract**:
Keywords:

4- Title: Recent progress in olefin polymerization by early transition metal catalysts

Authors names: Takeshi Shiono **Affiliation**:
Hiroshima University **Email address**:
tshiono@hiroshima-u.ac.jp **Abstract**:
Keywords:

5- Title: Recent progress in cyclic monomer polymerization by α-diimine catalysts

Authors names: Daisuke Takeuchi
Affiliation: Tokyo Institute of Technology **Email address**:
dtakeuch@res.titech.ac.jp **Abstract**:

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