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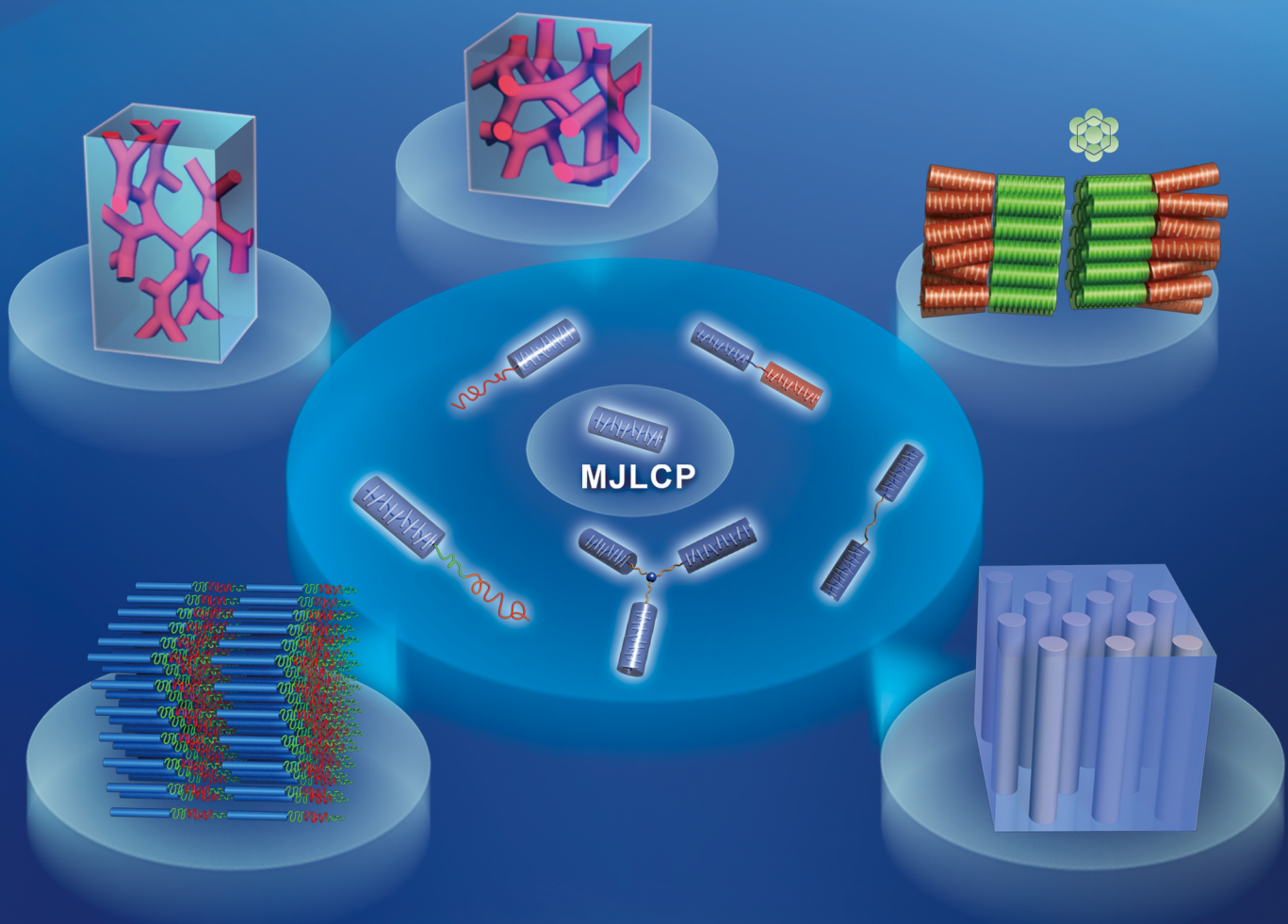
# Chinese Journal of POLYMER SCIENCE

# 高分子科学

Volume 36 Number 7 July 2018

Chinese Chemical Society
Chinese Association for Science and Technology

Institute of Chemistry
Chinese Academy of Sciences




Springer

Chinese Journal of Polymer Science

Vol. 36 No. 7 July 2018 PP. 799-896

# Chinese Journal of Polymer Science

Volume 36 • Number 7 • July 2018

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ISSN 0256-7679



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## Cover Image

### Self-assembly and Properties of Block Copolymers Containing Mesogen-Jacketed Liquid Crystalline Polymers as Rod Blocks

Xiao-Lin Lyu, Hong-Bing Pan, Zhi-Hao Shen, and Xing-He Fan

Mesogen-jacketed liquid crystalline polymer (MJLCP) has a rigid conformation and excellent structural controllability. Various MJLCP-based block copolymers synthesized exhibit a wide range of self-assembled structures. They can find applications as liquid crystalline thermoplastic elastomers, solid polymer electrolytes, and so on.




*Chinese Journal of Polymer Science, 2018, 36(7), 811–821*
*https://doi.org/10.1007/s10118-018-2115-x*

# Chinese Journal of Polymer Science Vol. 36, No. 7, July 2018

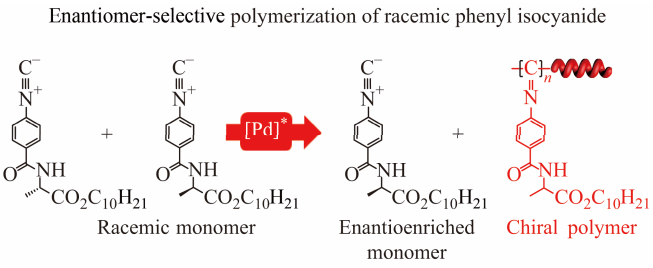
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**Enantiomer-selective Living Polymerization of *rac*-Phenyl Isocyanide Using Chiral Palladium Catalyst**

Jian Huang, Ling Shen, Hui Zou, and Na Liu

We report an enantiomer-selective polymerization of *rac*-phenyl isocyanide using the chiral palladium(II) catalyst. The chiral initiating system preferentially reacted one enantiomer of racemic isocyanide *via* kinetic resolution to generate opitically active polymer and another enantiomer monomer simultaneously.

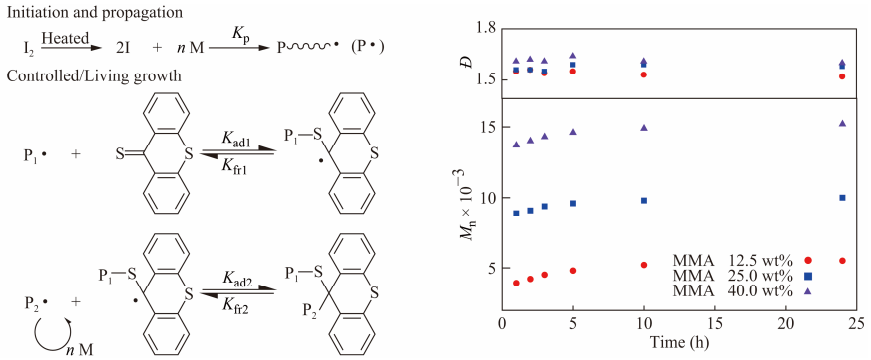



*Chinese Journal of Polymer Science, 2018, 36(7), 799–804*
*https://doi.org/10.1007/s10118-018-2136-5*

## Thioxanthene-9-thione Mediated MMA Polymerization

Xu Yan, Guan Wang, Li-Hua Zhang, Li Wang, Xiao-Fei Liu, and Wan-Tai Yang

A novel cycloketyl thioketone, thioxanthene-9-thione (TXT), had been synthesized by Lawesson's reagent. This TXT molecule was used as the radical capture agent in the AIBN/TXT polymerization system. The character of "livingness" was observed in this AIBN/TXT system where the molecular weight increased with the conversion and the re-initiating reactions had been achieved.



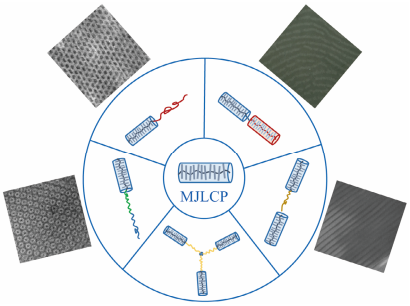

*Chinese Journal of Polymer Science, 2018, 36(7), 805–810*
*https://doi.org/10.1007/s10118-018-2140-9*

## *Feature Articles*

### Self-assembly and Properties of Block Copolymers Containing Mesogen-Jacketed Liquid Crystalline Polymers as Rod Blocks

Xiao-Lin Lyu, Hong-Bing Pan, Zhi-Hao Shen, and Xing-He Fan

Mesogen-jacketed liquid crystalline polymer (MJLCP) has a rigid conformation, with facile synthesis and structural controllability. This feature article reviews the self-assembly of block copolymers with rod-like MJLCP segments. The potential applications of these self-assembled block copolymers such as liquid crystalline thermoplastic elastomers and solid polymer electrolytes are also summarized.



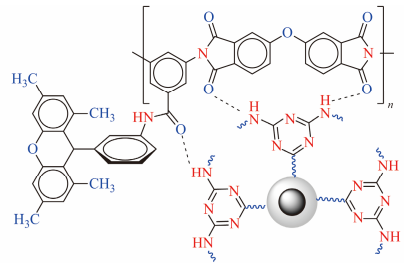

*Chinese Journal of Polymer Science, 2018, 36(7), 811–821*
*https://doi.org/10.1007/s10118-018-2115-x*

## *Articles*

### Magnetic and Heat Resistant Poly(imide-ether) Nanocomposites Derived from Methyl Rich 9*H*-xanthene: Synthesis and Characterization

Khalil Faghihi, Hassan Moghanian, Fatemeh Mozafari, and Meisam Shabanian

New magnetic nanocomposites containing two different types of magnetic nanoparticles were successfully prepared based on a highly soluble poly(imide-ether) derived from 9*H*-xanthene and 4,4'-oxydiphthalic dianhydride (ODPA).

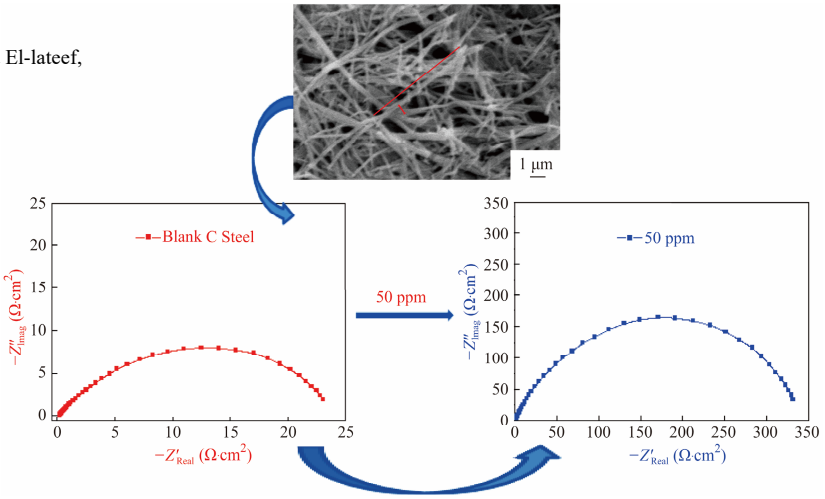


*Chinese Journal of Polymer Science, 2018, 36(7), 822–834*
*https://doi.org/10.1007/s10118-018-2094-y*

## New Polymer Syntheses Part 60: A Facile Synthetic Route to Polyamides Based on Thieno[2,3-*b*]thiophene and Their Corrosion Inhibition Behavior

Kamal I. Aly, Amr H. Moustafa, Essam K. Ahmed, Hany M. Abd El-lateef, Mohamed Gamal Mohamed, and Sahar M. Mohamed

Eight new polyamides based on thieno[2,3-*b*]thiophene were reported and the inhibitive effect of the selected two polymers on carbon steel in 1.0 mol/L HCl was studied using potentiodynamic polarization (PDP) and electrochemical impedance spectroscopy (EIS) methods.

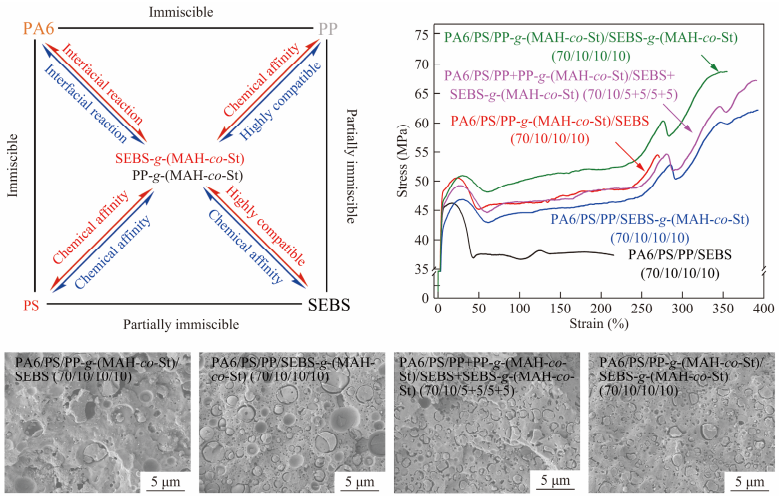



*Chinese Journal of Polymer Science, 2018, 36(7), 835–847*
*https://doi.org/10.1007/s10118-018-2101-3*

## Correlation of Morphology Evolution with Superior Mechanical Properties in PA6/PS/PP/SEBS Blends Compatibilized by Multi-phase Compatibilizers

Huanmin Li, Xianwei Sui, and Xu-Ming Xie

The PA6/PS/PP/SEBS blends compatibilized by multi-phase compatibilizers (PP-*g*-(MAH-*co*-St) and SEBS-*g*-(MAH-*co*-St)) have superior mechanical properites. There is a strong correlation between the structure and property in the blends.

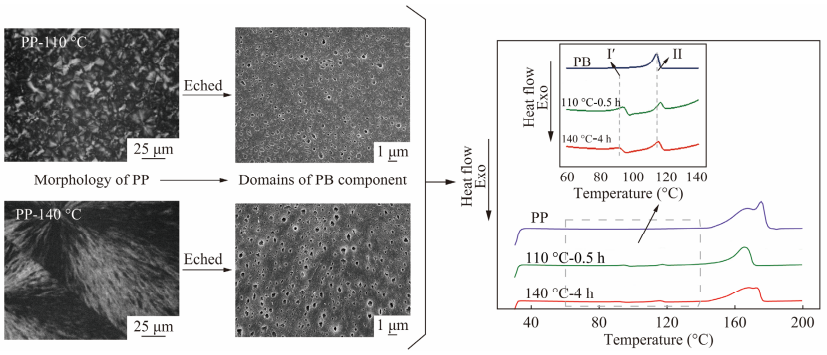



*Chinese Journal of Polymer Science, 2018, 36(7), 848–858*
*https://doi.org/10.1007/s10118-018-2102-2*

## Fractionated and Confined Crystallization of Polybutene-1 in Immiscible Polypropylene/Polybutene-1 Blends

Yao Xu, Chen-Guang Liu, Hua-Rong Nie, and Ai-Hua He

In this work, the crystallization of immiscible polypropylene (PP)/polybutene-1 (PB) blends was studied. Crystallization of PP at different crystallization temperatures brought about different crystal morphologies and the residing of PB phase, and therewith the fractionated and confined crystallization of PB became prominent and was discussed in details.

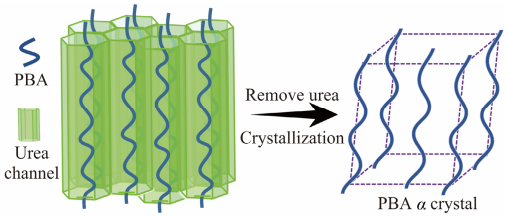



*Chinese Journal of Polymer Science, 2018, 36(7), 859–865*
*https://doi.org/10.1007/s10118-018-2103-1*

## Prominently Promoting the Formation of Poly(butylene adipate) *α*-Form Crystals by Coalescing from Inclusion Complex

Hai-Mu Ye, Xiao-Tong Chen, Ping Liu, and Na Yan

The inclusion complex between poly(butylene adipate) (PBA) and urea, in which PBA chains are isolated and fixed with specific conformation, was used as precursor to regulate polymorphism of PBA for the first time, and the coalesced PBA chains were found to solely crystallize into *α*-form crystals.

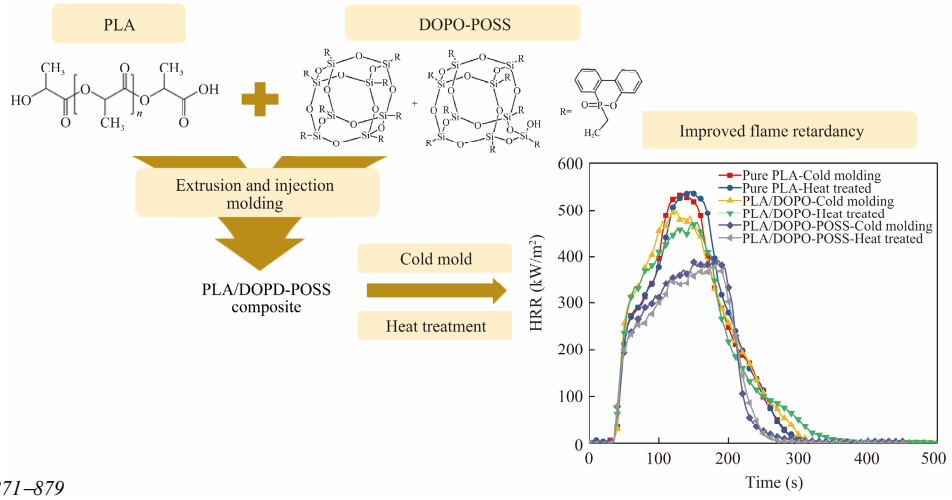



*Chinese Journal of Polymer Science, 2018, 36(7), 866–870*
*https://doi.org/10.1007/s10118-018-2095-x*

## Crystallization, Mechanical and Flame-retardant Properties of Poly(lactic acid) Composites with DOPO and DOPO-POSS

Lin Jia, Wen-Chao Zhang, Bin Tong, and Rong-Jie Yang

Poly(lactic acid) (PLA) composites with 9,10-dihydro-9-oxa-10-phosphaphenanthrene-10-oxide (DOPO) and DOPO-containing polyhedral oligomeric silsesquioxane (DOPO-POSS) were prepared *via* melting extrusion and injection molding. Cone calorimeter tests provided clear evidence that the DOPO-POSS could improve the flame retardancy of the PLA. The crystalline PLA composites had better mechanical and flame-retardant properties than the amorphous ones.

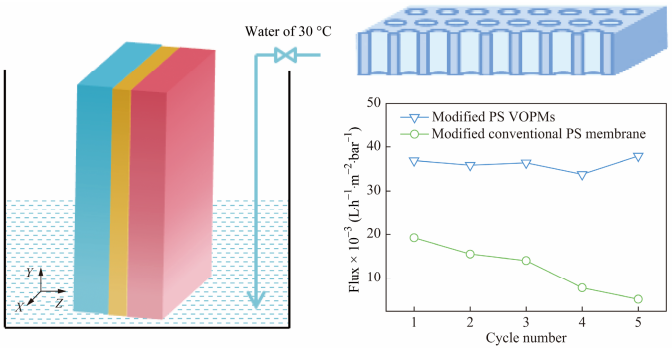



*Chinese Journal of Polymer Science, 2018, 36(7), 871–879*
*https://doi.org/10.1007/s10118-018-2098-7*

## Vertically Oriented Microporous Membranes Prepared by Bidirectional Freezing

Sen-He Chen, Bai-Heng Wu, Jin-Cheng Fu, Guo-Jun Wang, Ling-Shu Wan, and Zhi-Kang Xu

A novel environmental friendly method of bidirectional solvent freezing is used for the preparation of vertically-oriented porous polystyrene membranes. The membranes show large and stable fluxes in the processes of oil-water separation.

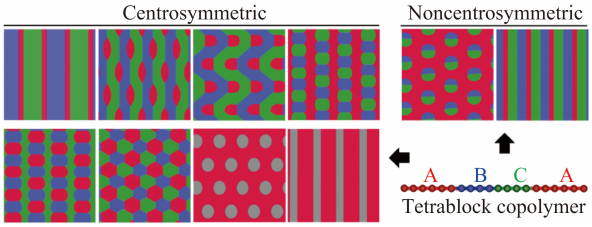



*Chinese Journal of Polymer Science, 2018, 36(7), 880–887*
*https://doi.org/10.1007/s10118-018-2113-z*

## Self-assembly Behavior of Symmetrical Linear ABCA Tetrablock Copolymer: A Self-consistent Field Theory Study

Dan Liu, Ying-Ying Wang, Ying-Chun Sun, Yuan-Yuan Han, Jie Cui, and Wei Jiang

Using self-consistent field theory, we obtain various ordered centrosymmetric and noncentrosymmetric structures self-assembled by symmetrical linear ABCA tetrablock copolymer *via* tuning chain length ratio of block A and interactions between different blocks. The simulation provides a useful guide for fabricating materials with desired structures using such kind of tetrablock copolymers.




*Chinese Journal of Polymer Science, 2018, 36(7), 888–896*
*https://doi.org/10.1007/s10118-018-2106-y*