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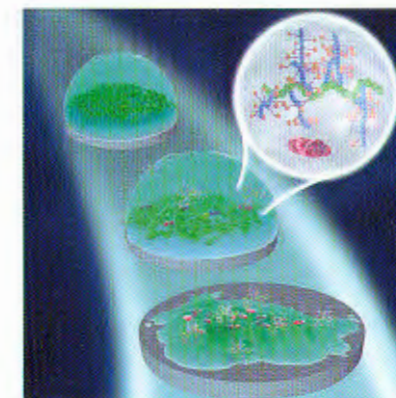
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## Cover Image

### Biofilm Disruption Utilizing $\alpha/\beta$ Chimeric Polypeptide Molecular Brushes

Si Zhang, Xi-Mian Xiao, Fan Qi, Peng-Cheng Ma, Wei-Wei Zhang, Cheng-Zhi Dai, Dan-Feng Zhang, and Run-Hui Liu

It is the process in which the  $\alpha/\beta$  chimeric polypeptide molecular brush disrupts mature biofilms that is highly resistant to one of the most active antibiotics – colistin.



Chinese Journal of Polymer Science, 2019, 37(11), 1105–1112

<https://doi.org/10.1007/s10118-019-2278-0>

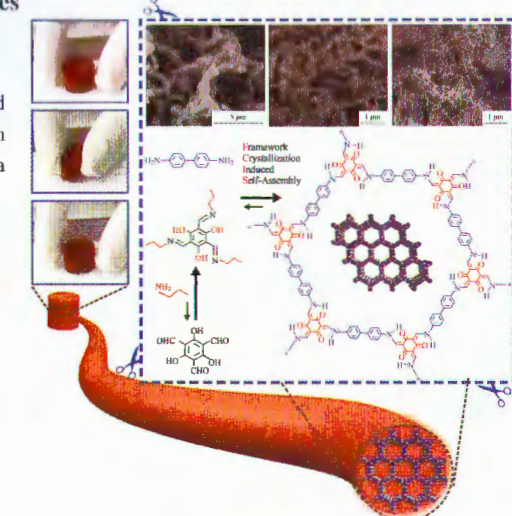
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Wei Zhao, Tian-Pin Wang, Jia-Li Wu, Ru-Ping Pan, Xiang-Yang Liu, and Xi-Kui Liu

Here through the synergism between kinetic dynamic imine-exchange control and thermodynamic control, rarely observed compressible, porous, crystalline COF aerogels with extremely high BET surface over 2000 m<sup>2</sup>/g were synthesized. The mechanism behind is a framework crystallization induced self-assembly process (FCISA).



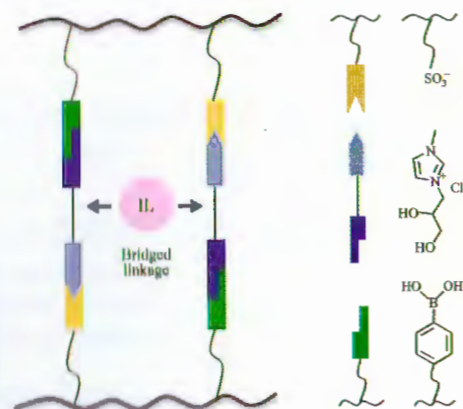
Chinese Journal of Polymer Science, 2019, 37(11), 1045–1052

<https://doi.org/10.1007/s10118-019-2313-1>

## Conductive, Stretchable, and Self-healing Ionic Gel Based on Dynamic Covalent Bands and Electrostatic Interaction

Yi Sun, Yong-Yuan Ren, Qi Li, Rong-Wei Shi, Yin Hu, Jiang-Na Guo, Zhe Sun, and Feng Yan

A conductive, stretchable, and self-healing ionic liquid-based gel based on the electrostatic interaction between imidazolium cations and sulfonate anions and reversible dynamic covalent bonds of boronic ester was synthesized. Such a gel showed the ability to alleviate the migration of electronegative polysulfide and promote the transportation of electropositive lithium ion in lithium-sulfur battery.

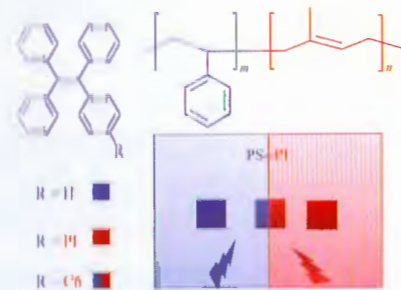


*Chinese Journal of Polymer Science*, 2019, 37(11), 1053–1059  
<https://doi.org/10.1007/s10118-019-2325-x>

## The Location-influenced Fluorescence of AIEgens in the Microphase-separated Structures

Ya-Fang Zhi, Chao Li, Ze-Hua Song, Zhong-Jin Yang, Hong-Wei Ma, and Long-Cheng Gao

Three different AIEgen derivatives are selectively located in different positions of microphases of a block copolymer self assembly. The main relaxation, as well as the secondary relaxation of the surrounding polymer chains influences their fluorescence.



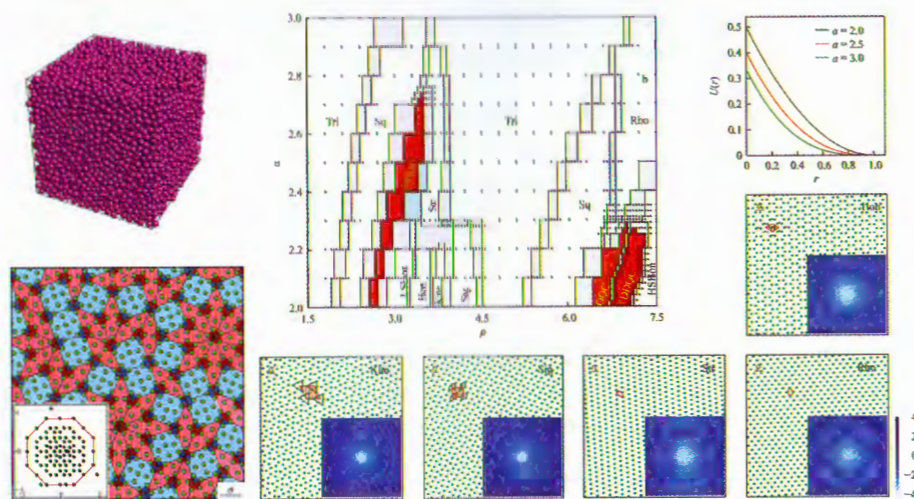
*Chinese Journal of Polymer Science*, 2019, 37(11), 1060–1064  
<https://doi.org/10.1007/s10118-019-2333-x>

## Feature Articles

### Phase Behaviors of Soft-core Particle Systems

Ning Xu

Soft-core particles interacting via finite-range repulsions exhibit both hard and soft features, depending on densities. Taking advantage of this dual nature, we employ soft-core particle systems to study the transitions from liquids to disordered solids such as jamming and glass transition, two-dimensional melting, and quasicrystal formation.

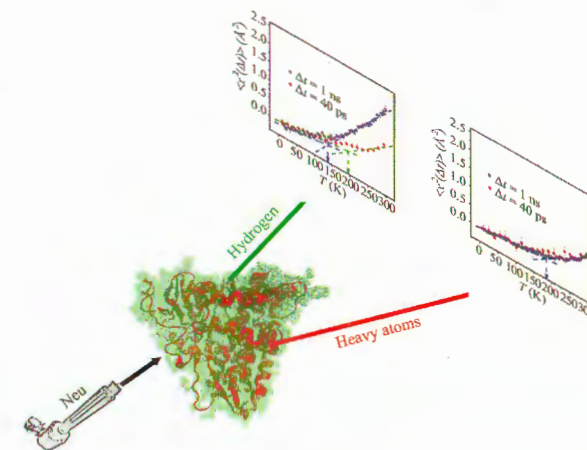


*Chinese Journal of Polymer Science*, 2019, 37(11), 1065–1082  
<https://doi.org/10.1007/s10118-019-2304-2>

## Combining Neutron Scattering, Deuteration Technique, and Molecular Dynamics Simulations to Study Dynamics of Protein and Its Surface Water Molecules

Li-Rong Zheng and Liang Hong

The present article mainly summarizes the work conducted in our group: I. Illustration on decomposition of different dynamical components in the protein/water system by combining the neutron scattering, MD simulation, and the deuteration technique; II. Using the decomposition method to explore the microscopic origin of the protein dynamical transition.



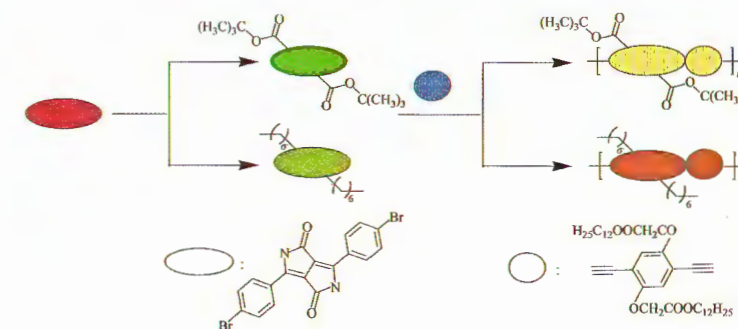
*Chinese Journal of Polymer Science*, 2019, 37(11), 1083–1091  
<https://doi.org/10.1007/s10118-019-2312-2>

## Articles

### Synthesis of Conjugated Polymers Containing Diketopyrrolopyrrole (DPP) Building Block and the Photophysical Study

Ying-Zhong Wu, Yi-Chen Zhang, Jiu-Jun Chen, and Li-Juan Fan

Two new conjugated polymers with the same backbone containing diketopyrrolopyrrole (DPP) moiety but different pendant groups are synthesized and characterized. The difference in the photophysics between the polymers is mainly due to the difference in the pendant groups.

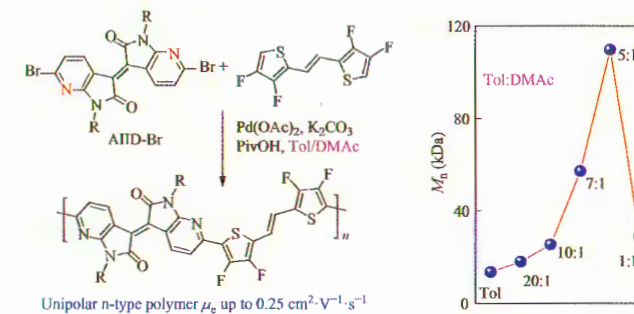


*Chinese Journal of Polymer Science*, 2019, 37(11), 1092–1098  
<https://doi.org/10.1007/s10118-019-2248-6>

### Dimethylacetamide-promoted Direct Arylation Polycondensation of 6,6'-Dibromo-7,7'-diazaisoindigo and (E)-1,2-bis(3,4-difluorothien-2-yl)ethene toward High Molecular Weight n-Type Conjugated Polymers

Kai Guo, Yu Jiang, Ying Sui, Yun-Feng Deng, and Yan-Hou Geng

Inhibitory effect of AIID-Br on direct arylation polycondensation stemmed from the coordination of nitrogen atom with catalyst can be overcome by the addition of dimethylacetamide (DMAc) as the co-solvent, resulting in high molecular weight product.

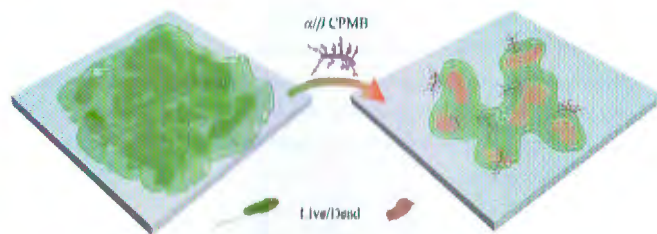


*Chinese Journal of Polymer Science*, 2019, 37(11), 1099–1104  
<https://doi.org/10.1007/s10118-019-2277-1>

## Biofilm Disruption Utilizing $\alpha/\beta$ Chimeric Polypeptide Molecular Brushes

Si Zhang, Xi-Mian Xiao, Fan Qi, Peng-Cheng Ma, Wei-Wei Zhang, Cheng-Zhi Dai, Dan-Feng Zhang, and Run-Hui Liu

Alpha-beta chimeric polypeptide molecular brush ( $\alpha/\beta$  CPMB) not only effectively inhibited the formation of multiple antibiotic-resistant gram-negative bacteria biofilms but also disrupted their mature biofilms at reasonable concentrations in contrast to that mature biofilms displayed potent resistance to colistin.

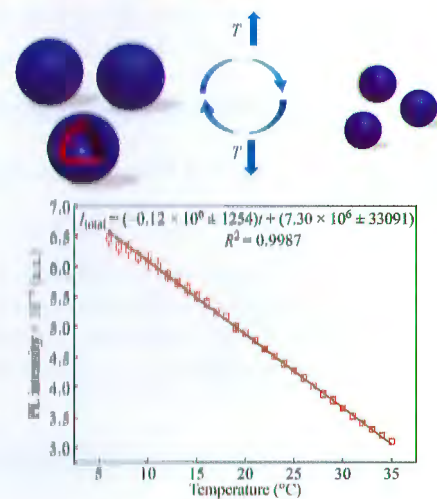


*Chinese Journal of Polymer Science*, 2019, 37(11), 1105–1112  
<https://doi.org/10.1007/s10118-019-2278-0>

## A Luminescent Thermometer Based on Linearly Thermo-responsive Copolymer and Polyoxometalates

Jin-Long Zhang, Jun-Yan Tan, Xin-Hua Wan, and Jie Zhang

A hybrid thermometer built by mixing linearly UCST-type copolymer with luminescent polyoxometalates (Ln-POMs) was introduced. Intense emission was observed in cold water as the Ln-POMs being trapped in hydrophobic cores provided by thermo-responsive copolymer. With the temperature going up and down, a switchable luminescence was obtained.

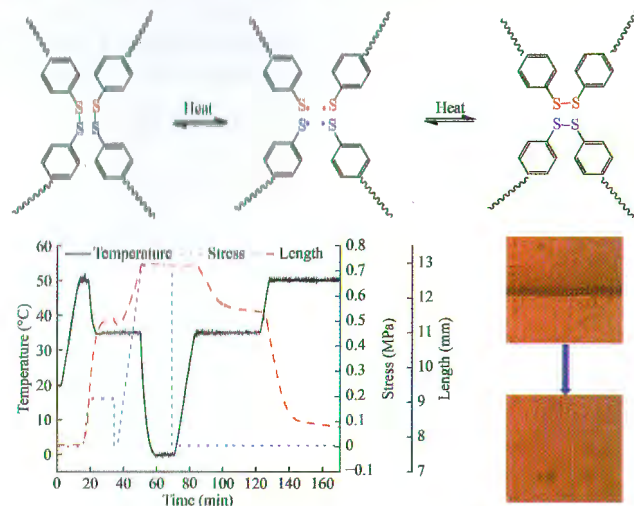


*Chinese Journal of Polymer Science*, 2019, 37(11), 1113–1118  
<https://doi.org/10.1007/s10118-019-2287-z>

## Synthesis and Properties of Reversible Disulfide Bond-based Self-healing Polyurethane with Triple Shape Memory Properties

Han Jia, Kun Chang, and Shu-Ying Gu

A reversible disulfide bond-based self-healing polyurethane with triple shape memory properties was obtained. The combination of triple shape memory with self-healing properties could meet the increasing requirements in multi-shape coatings, films, and step-by-step deploying structures.

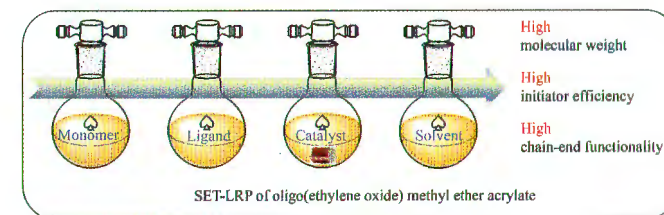


*Chinese Journal of Polymer Science*, 2019, 37(11), 1119–1129  
<https://doi.org/10.1007/s10118-019-2268-2>

## Cu(0) Wire-mediated Single-electron Transfer-living Radical Polymerization of Oligo(ethylene oxide) Methyl Ether Acrylate by Selecting the Optimal Reaction Conditions

Liang Ding, Juan Li, Rui-Yu Jiang, Ling-Fang Wang, Wei Song, and Lei Zhu

The effects of the Cu(0)-wire length, the ligand, and the solvent on single-electron transfer-living radical polymerization of oligo(ethylene oxide) methyl ether acrylate were evaluated, which displayed efficient polymerization processes with first-order kinetics to high conversion, linear dependence of experimental molecular weight on conversion, narrow molecular weight distribution, and near-quantitative chain end functionality.

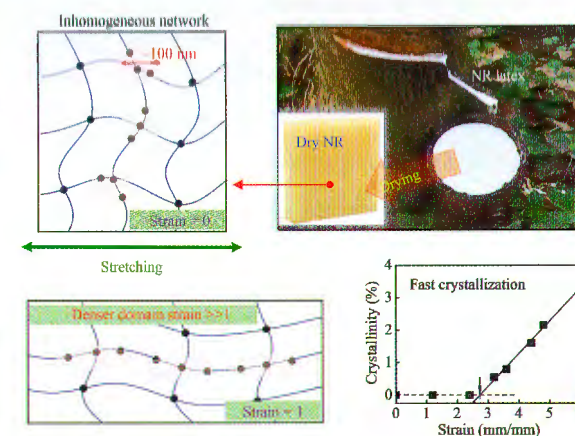


*Chinese Journal of Polymer Science*, 2019, 37(11), 1130–1141  
<https://doi.org/10.1007/s10118-019-2263-7>

## Inhomogeneous Natural Network Promoting Strain-induced Crystallization: A Mesoscale Model of Natural Rubber

Han Liu, Guang-Su Huang, Lal-Yun Wei, Jian Zeng, Xuan Fu, Cheng Huang, and Jin-Rong Wu

Solid-state DQ NMR and X-ray scattering experimental results prove an inhomogeneous structure in NR on mesoscale (100 nm), and a mesoscale model is proposed to qualitatively describe the crucial effect of this inhomogeneous structure on strain induced crystallization behaviors of NR during deformation.

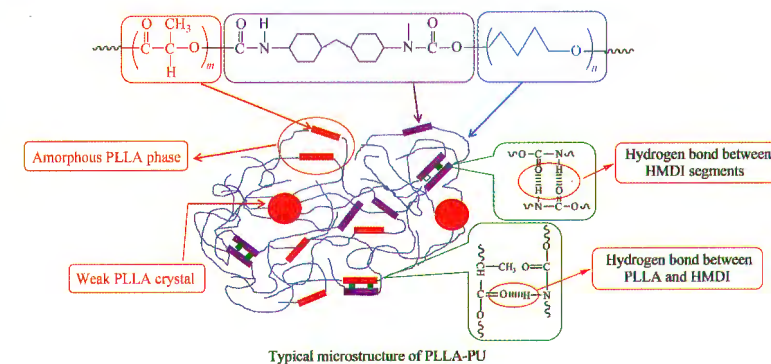


*Chinese Journal of Polymer Science*, 2019, 37(11), 1142–1151  
<https://doi.org/10.1007/s10118-019-2267-3>

## Polyether-polyester and HMDI Based Polyurethanes: Effect of PLLA Content on Structure and Property

Lei Shi, Ruo-Yu Zhang, Wu-Bin Ying, Han Hu, Yu-Bin Wang, Ya-Qian Guo, Wen-Qin Wang, Zhao-Bin Tang, and Jin Zhu

PLLA segment could enhance the mechanical properties of PUs, especially in modulus and strength. Hydrogen bonding between PLLA and HMDI segments disappeared after the elongation. The first and second yielding in stress-strain curves could be well explained by the structural variations.

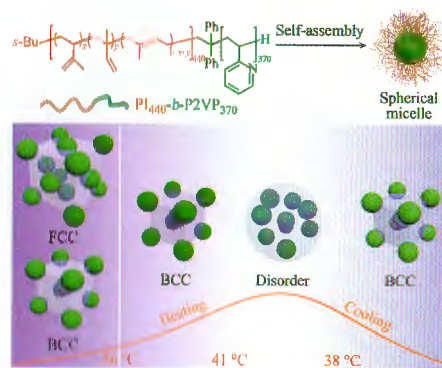


*Chinese Journal of Polymer Science*, 2019, 37(11), 1152–1161  
<https://doi.org/10.1007/s10118-019-2283-3>

## Crystallization and Phase Behavior in Block Copolymer Solution: An *in Situ* Small Angle X-ray Scattering Study

Hong-Yan Zhu, Feng Tian, Xiu-Hong Li, Hui-Bin Qiu, and Jie Wang

Herein, we report a facile strategy to prepare diverse morphologies, including disorder spheres, FCC/BCC mixed crystal structures, and pure BCC crystal structures, through the solution self-assembly of amphiphilic diblock copolymers in a selective solvent with varied concentrations, and the phase transition process upon thermal annealing experiments by *in situ* SAXS experiments.



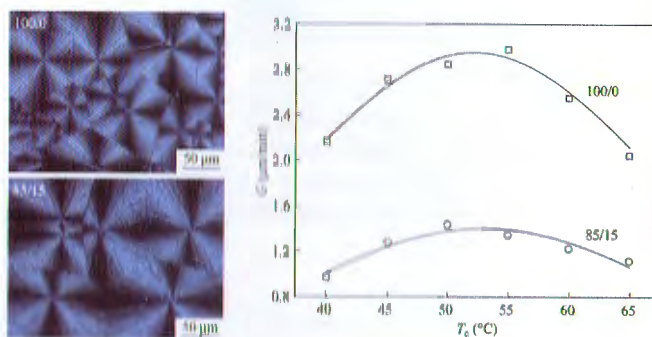
*Chinese Journal of Polymer Science*, 2019, 37(11), 1162–1168

<https://doi.org/10.1007/s10118-019-2258-4>

## Miscibility and Crystallization Behavior of Novel Branched Poly(ethylene succinate)/Poly(vinyl phenol) Blends

Kang-Jing Zhang and Zhao-Bin Qiu

The blending with PVPh decreased the nucleation density and spherulitic growth rate of b-PES in the miscible b-PES/PVPh polymer blend.



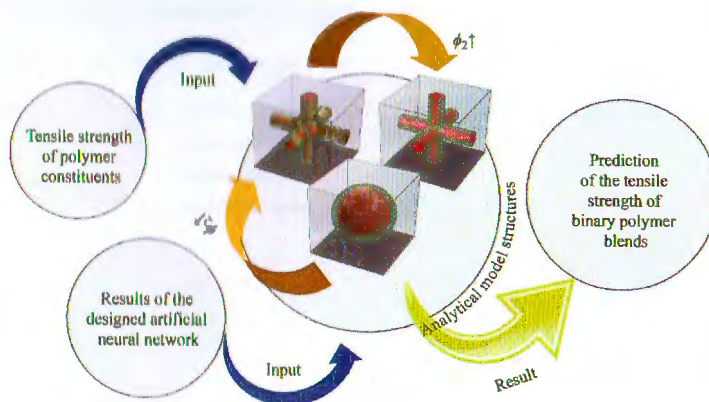
*Chinese Journal of Polymer Science*, 2019, 37(11), 1169–1175

<https://doi.org/10.1007/s10118-019-2269-1>

## Modeling of the Tensile Strength of Immiscible Binary Polymer Blends Considering the Effects of Polymer/Polymer Interface and Morphological Variation

Esmail Sharifzadeh

In this study, a new model is proposed for predicting the tensile strength of binary polymer blends considering the effects of the polymer/polymer interface and the system morphology. The model is designed based on the coupling of analytical modeling and artificial neural network methods.



*Chinese Journal of Polymer Science*, 2019, 37(11), 1176–1182

<https://doi.org/10.1007/s10118-019-2274-4>