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Guan-Hang Yu, Qing Han, and Liang-Ti Qu

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### Graphene Fibers: Advancing Applications in Sensor, Energy Storage and Conversion

Guan-Hang Yu, Qing Han, and Liang-Ti Qu

This review highlights advancing applications of graphene fibers in the fields of sensor, energy storage, and energy conversion such as supercapacitors, lithium ion batteries, actuators, solar cells, and power generator.



*Chinese Journal of Polymer Science*, 2019, 37(6), 535–547  
<https://doi.org/10.1007/s10118-019-2245-9>

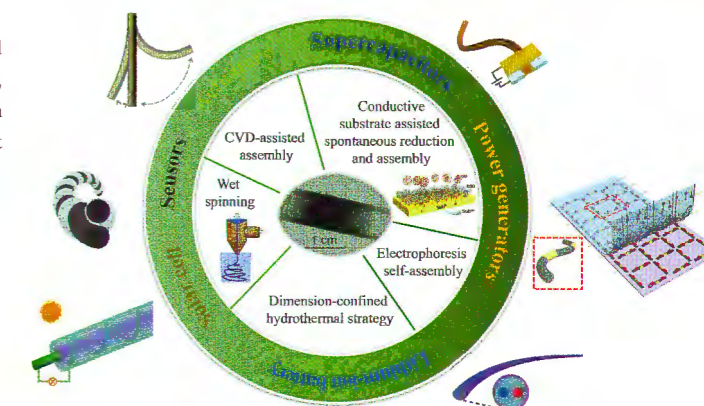
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### Feature Articles

#### Graphene Fibers: Advancing Applications in Sensor, Energy Storage and Conversion

Guan-Hang Yu, Qing Han, and Liang-Ti Qu

This review summarizes the recent advances in the fabrication and functionalization of graphene fibers and their applications in sensor, energy storage, and energy conversion, such as supercapacitor, lithium ion battery, actuator, power generator, and solar cell. The current challenges and future perspectives of graphene fibers are also discussed.

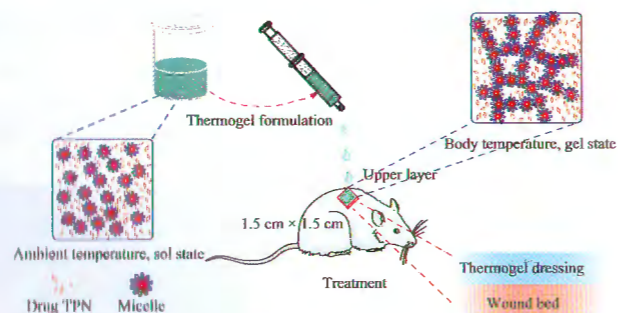


*Chinese Journal of Polymer Science*, 2019, 37(6), 535–547  
<https://doi.org/10.1007/s10118-019-2245-9>

## Accelerated Cutaneous Wound Healing Using an Injectable Teicoplanin-loaded PLGA-PEG-PLGA Thermogel Dressing

Wei-Ke Xu, Jing-Yu Tang, Zhang Yuan, Cai-Yun Cai, Xiao-Bin Chen, Shu-Quan Cui, Peng Liu, Lin Yu, Kai-Yong Cai, and Jian-Dong Ding

In this study, an injectable TPN-loaded thermogel system exhibited a sol-gel transition as the temperature increased, acting as both dressing and depot of the antibiotic for cutaneous wound repair.

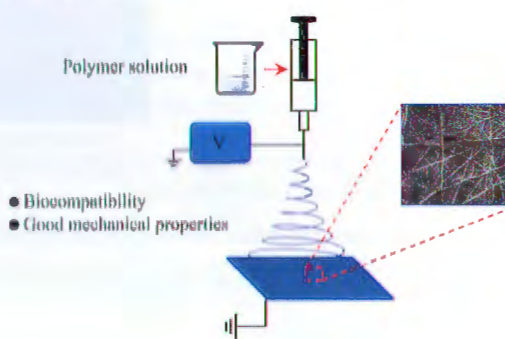


Chinese Journal of Polymer Science, 2019, 37(6), 548–559  
<https://doi.org/10.1007/s10118-019-2212-5>

Electrospun Poly(*p*-dioxanone)/Poly(ester-urethane)ureas Composite Nanofibers for Potential Heart Valve Tissue Reconstruction

Juan Du, Ji-Hu Wang, Hai-Yan Yu, Yan-Yan Zhang, Li-Hui Pu, Jin-Cheng Wang, Shu-Yang Lu, Si-Hao Chen, and Tong-He Zhu

This work reports the preparation of PDO/PBUU composite nanofibers via electrospinning and reveals the unique properties of PDO/PBUU composite nanofibers (biocompatibility, good mechanical properties).

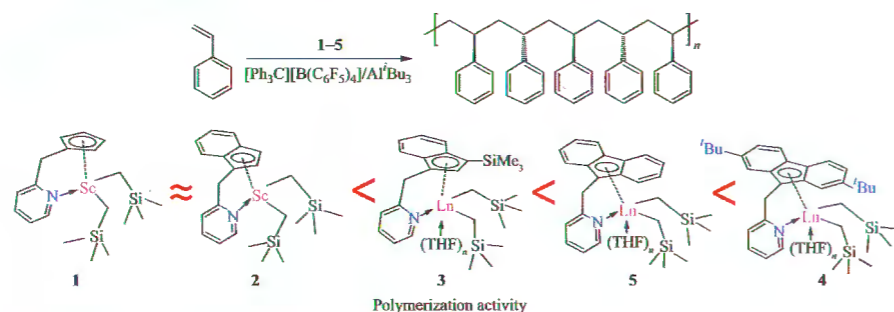


Chinese Journal of Polymer Science, 2019, 37(6), 560–569  
<https://doi.org/10.1007/s10118-019-2231-2>

## Substituent Effects of Pyridyl-methylene Cyclopentadienyl Rare-earth Metal Complexes on Styrene Polymerization

Zhen Zhang, Zhong-Yi Cai, Yu-Peng Pan, Yan-Li Dou, Shi-Hui Li, and Dong-Mei Cui

The electronic effects of cyclopentadienyl segments of rare-earth metal catalysts on polymerization activity were explored. Most efficient lutetium and yttrium catalysts for styrene polymerization were obtained by introducing electron-donating group on fluorenyl segment.

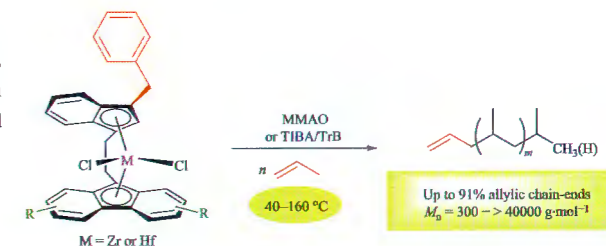


Chinese Journal of Polymer Science, 2019, 37(6), 570–577  
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Ethylene-bridged Indenyl-fluorenyl Metallocene Complexes for Efficient Preparation of Allyl-terminated Propylene Oligomers and Polymers via Selective  $\beta$ -Methyl Transfer

Lei Zhang, Bin Zhang, and Haiyan Ma

Novel ethylene-bridged metallocene complexes were synthesized and characterized, which enabled highly selective  $\beta$ -methyl transfer in the propylene polymerization process, allowing efficient preparation of allyl-terminated propylene oligomers and polymers.

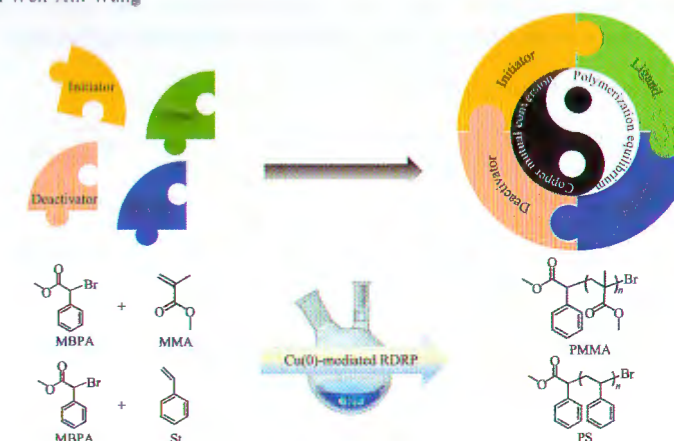


Chinese Journal of Polymer Science, 2019, 37(6), 578–590  
<https://doi.org/10.1007/s10118-019-2224-1>

## Controlled Polymerization of Methyl Methacrylate and Styrene via Cu(0)-Mediated RDRP by Selecting the Optimal Reaction Conditions

Yong-Peng Miao, Jing Lyu, Hai-Yang Yong, Sigen A, Yong-Sheng Gao, and Wen-Xin Wang

Based on the consideration of two equilibria (mutual conversion of different copper species and polymerization equilibrium), the appropriate parameters (Initiator, ligand, solvent, and deactivator) can be selected to control the polymerization process, and polymers with predetermined molecular weight and low dispersity can be synthesized.

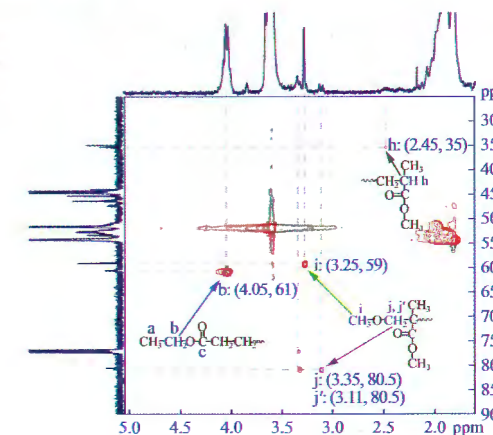


Chinese Journal of Polymer Science, 2019, 37(6), 591–597  
<https://doi.org/10.1007/s10118-019-2236-x>

Polymerization Mechanism of Methyl Methacrylate Initiated by Ethyl Acetate/*t*-BuP<sub>4</sub>

De-Yong Xia, Qi-Min Jiang, Wen-Yan Huang, Hong-Jun Yang, Xiao-Qiang Xue, Li Jiang, and Bi-Biao Jiang

Polymers with relatively narrow molecular weight distribution can only be prepared with excessive *t*-BuP<sub>4</sub> at moderate temperature. Besides the initiation from ethyl acetate, initiation by methoxy anion has been confirmed, which derived from the hydrolysis of ester bond in methyl methacrylate.

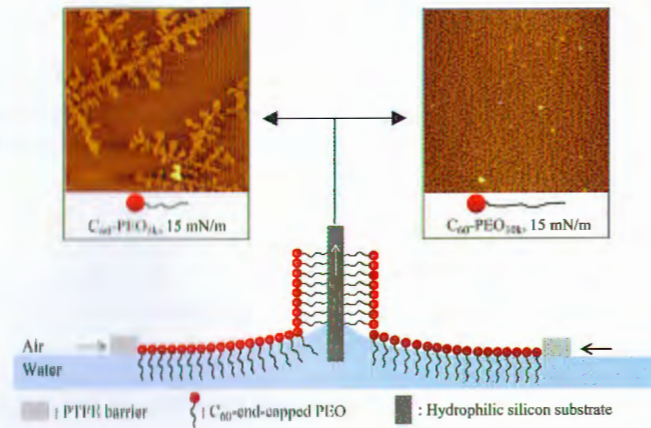


Chinese Journal of Polymer Science, 2019, 37(6), 598–603  
<https://doi.org/10.1007/s10118-019-2228-x>

### Langmuir-Blodgett Films of C<sub>60</sub>-end-capped Poly(ethylene oxide)

Ke Ou, Xian Xu, Yu Shao, Wei-Jie Wang, Wen-Bin Zhang, and Shu-Guang Yang

Buckyballs (C<sub>60</sub>) are linked to the ends of linear poly(ethylene oxide) (PEO) chains through click chemistry to obtain giant amphiphilic molecules C<sub>60</sub>-PEO and C<sub>60</sub>-PEO-C<sub>60</sub>. Their Langmuir-Blodgett (LB) films are prepared. C<sub>60</sub>-PEO and C<sub>60</sub>-PEO-C<sub>60</sub> exhibit fractal growth behaviors on the substrate owing to crystallization ability of the PEO segment.

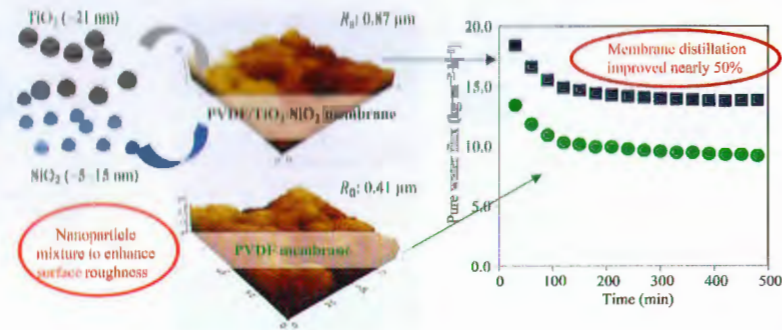


*Chinese Journal of Polymer Science*, 2019, 37(6), 604–608  
<https://doi.org/10.1007/s10118-019-2234-z>

### Superhydrophobic PVDF/TiO<sub>2</sub>-SiO<sub>2</sub> Membrane with Hierarchical Roughness in Membrane Distillation for Water Recovery from Phenolic Rich Solution Containing Surfactant

N. Hamzah, C. P. Leo, and B. S. Ooi

A mixture of TiO<sub>2</sub>-SiO<sub>2</sub> nanoparticles was blended into poly(vinylidene fluoride) (PVDF) thin film to create the hierarchical roughness. Superhydrophobic PVDF membranes formed after phase inversion with dual bath coagulation and silane modification, showing minimum fouling and wetting in membrane distillation for water recovery from phenolic solution containing surfactant.

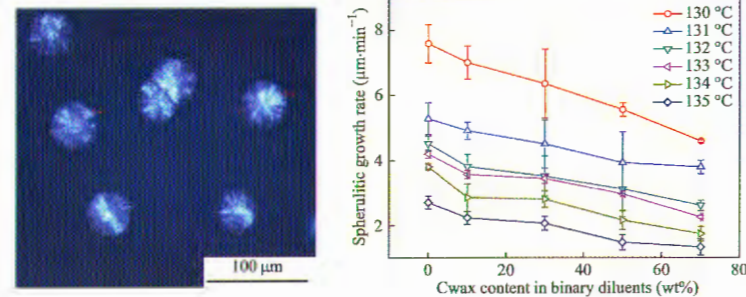


*Chinese Journal of Polymer Science*, 2019, 37(6), 609–616  
<https://doi.org/10.1007/s10118-019-2235-y>

### Isothermal Crystallization of *i*PP in Environment-friendly Diluents: Effect of Binary Diluents and Crystallization Temperature on Crystallization Kinetics

Yu-Jie Wang, Su-Ying Yan, Zhi-Ping Zhao, and Zhen-Yu Xi

Isothermal crystallization of *i*PP in environment-friendly diluents comprising carnauba wax and soybean oil was investigated. Carnauba wax promoted droplet growth due to weakened interaction with polymer, and further retarded isothermal spherulitic growth of *i*PP.

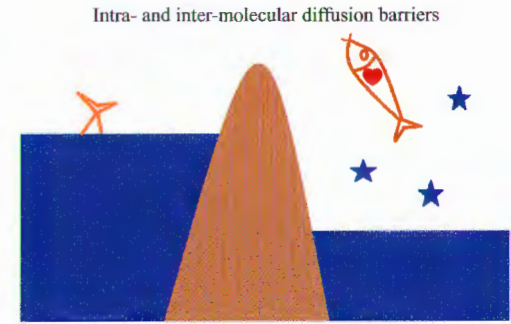


*Chinese Journal of Polymer Science*, 2019, 37(6), 617–626  
<https://doi.org/10.1007/s10118-019-2219-y>

### Kinetic Monte Carlo Simulations of Polymer Cold Crystallization

Cheng-Huan Xu, Ji-Ping Wang, and Wen-Bing Hu

Intra- and inter-molecular diffusion barriers were introduced into dynamic Monte Carlo simulations of a lattice polymer model to reproduce the cold crystallization behaviors of polymers.



*Chinese Journal of Polymer Science*, 2019, 37(6), 627–632  
<https://doi.org/10.1007/s10118-019-2222-3>