

ARTICLES

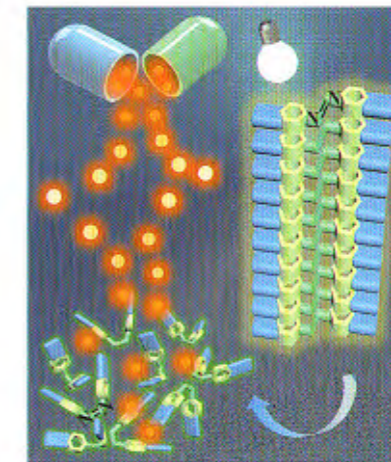
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Cover Image

Photoresponsive Supramolecular Hydrogel Co-assembled from Fmoc-Phe-OH and 4,4'-Azopyridine for Controllable Dye Release

Xiao-Qiu Dou, Chang-Li Zhao, Nabila Mehwish, Ping Li, Chuan-Liang Feng, and Holger Schönherr

Photoresponsive co-assemblies for controllable dye release show great potential as smart soft materials in the biomedical field, especially as drug release systems.



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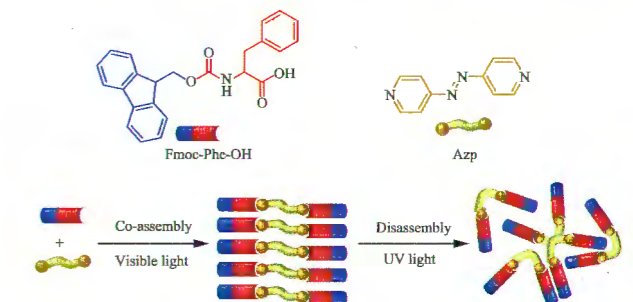
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Xiao-Qiu Dou, Chang-Li Zhao, Nabila Mehwish, Ping Li, Chuan-Liang Feng, and Holger Schönherr

A new photoresponsive hydrogel is prepared via co-assembly of Fmoc-Phe-OH and Azp molecules without any chemical synthesis. The dye release can be controlled by manipulating photoirradiation time. The hydrogel shows great potential as smart soft materials in the biomedical field, especially as drug release system.



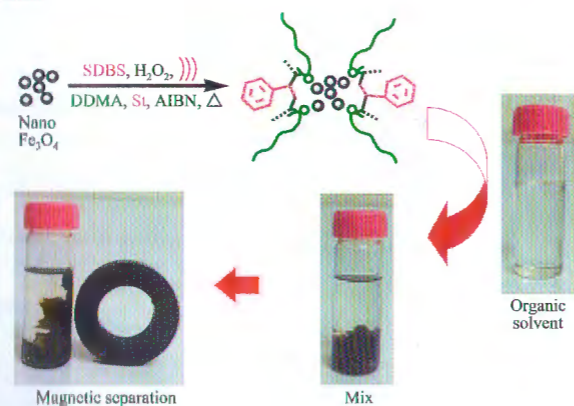
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Nanomagnetic Organogel Based on Dodecyl Methacrylate for Absorption and Removal of Organic Solvents

Hossein Ghasemzadeh, Maryam Dargahi, Ghazaleh Eyvazi, and Bahman Vasheghani Farahani

A nanomagnetic organogel as a new absorbent material was synthesized using dodecyl methacrylate (DDMA) and styrene (St) monomers *via* emulsion polymerization. The oil absorbency and thermal stability of the nanomagnetic organogel were investigated as well as its potential for pollutant recovery and the recyclability afterwards.



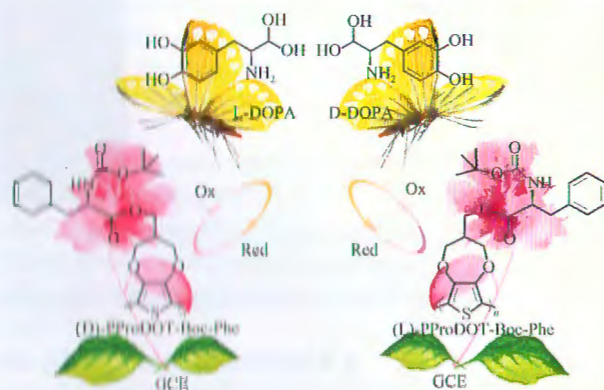
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Boc-phenylalanine Grafted Poly(3,4-propylenedioxythiophene) Film for Electrochemically Chiral Recognition of 3,4-Dihydroxyphenylalanine Enantiomers

Jun-Long Niu, Ke-Ke Chai, Mei-Xing Zeng, Tian-Tian Wang, Chun-Yan Zhang, Shuai Chen, Jing-Kun Xu, and Xue-Min Duan

Chiral Boc-phenylalanine grafted poly(3,4-propylenedioxythiophene) (PProDOT-Boc-Phe) films were used to identify DOPA enantiomers. The recognition efficiencies of (D)-PProDOT-Boc-Phe and (L)-PProDOT-Boc-Phe using square wave voltammetry were 1.28 and 1.17, respectively.



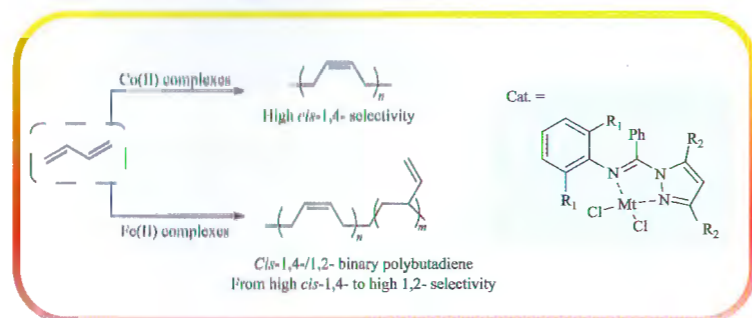
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1,3-Butadiene Polymerizations Catalyzed by Cobalt and Iron Dichloride Complexes Bearing Pyrazolylimine Ligands

Liang Fang, Wen-Ping Zhao, Chao Han, Chun-Yu Zhang, Heng Liu, Yan-Ming Hu, and Xue-Quan Zhang

Pyrazolylimine cobalt(II) and iron(II) complexes were found to display high activities and selectivities toward 1,3-butadiene polymerization, affording *cis*-1,4- and 1,2- enriched polybutadienes upon activation by ethylaluminum sesquichloride and methyl aluminoxane, respectively. Changing ligand structures and polymerization conditions posed significant influences on catalytic activities and polybutadiene properties.



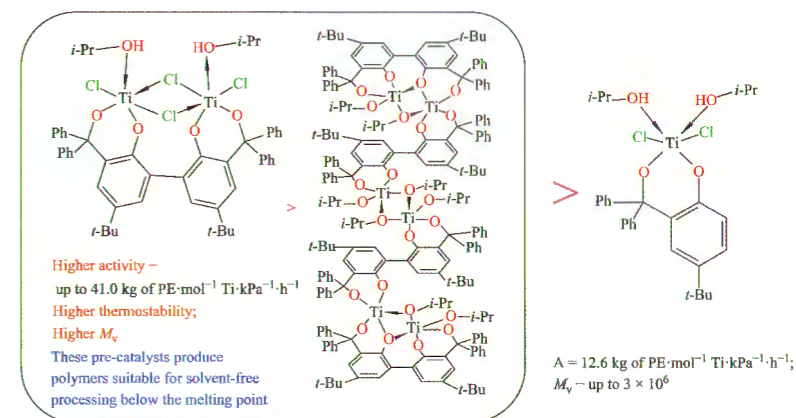
Chinese Journal of Polymer Science, 2019, 37(5), 462–470

<https://doi.org/10.1007/s10118-019-2198-z>

Binuclear and Hexanuclear Ti(IV) Complexes Supported by [O(O)O]⁴⁻-type Ligand for Preparing Disentangled UHMWPE

Vladislav A. Tuskaev, Svetlana Ch. Gagieva, Dmitry A. Kurmaev, Viktor G. Vasil'ev, Nikolay A. Kolosov, Sergey V. Zubkevich, Elena S. Mikhaylik, Evgenii K. Golubev, Galina G. Nikiforova, Pavel A. Zhizhko, Olga A. Serenko, and Boris M. Bulychev

UHMWPE powders, obtained on these precatalysts, were processed into high-strength (up to 2.5 GPa) and high-modulus (over 100 GPa) oriented film tapes by a solid-state uniaxial deformation. The binuclear titanium complex stabilized by [O(O)O]⁴⁻-type ligand showed significantly higher catalytic activity and thermal stability in comparison to its mononuclear analogue.



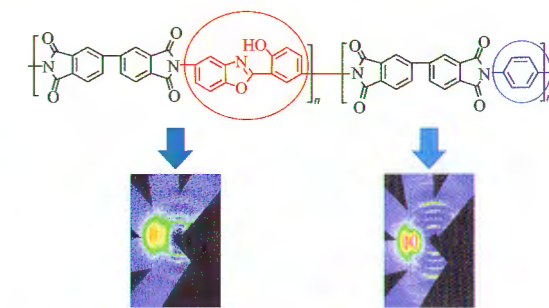
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Preparation and Properties of High-performance Polyimide Copolymer Fibers Derived from 5-Amino-2-(2-hydroxy-5-aminobenzene)-benzoxazole

Xue-Min Dai, Hong Gao, Ran Zhang, Zhi-Jun Du, Tong-Fei Shi, Xiang-Ling Ji, Xue-Peng Qiu, and Yong-Feng Men

A series of high-performance polyimide copolymer fibers with *para*-hydroxyl groups were designed and synthesized. The introduction of hydroxyl groups can form strong inter/intramolecular hydrogen bonding among polymer chains. The mechanical properties of PI fibers have been remarkably enhanced.



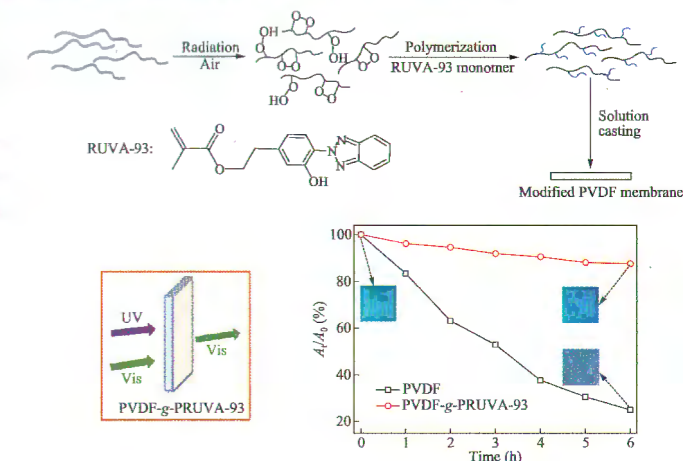
Chinese Journal of Polymer Science, 2019, 37(5), 478–492

<https://doi.org/10.1007/s10118-019-2205-4>

Preparation and Characterization of UV-absorbing PVDF Membranes *via* Pre-irradiation Induced Graft Polymerization

Li Dong, Xiang-Dong Liu, Zheng-Rong Xiong, De-Kun Sheng, Yan Zhou, and Yu-Ming Yang

Excellent UV-absorbing poly(vinylidene fluoride) (PVDF) membranes are prepared through pre-irradiation induced graft polymerization method. The transmittance of obtained films can be reduced to 0.04% between 280–320 nm.



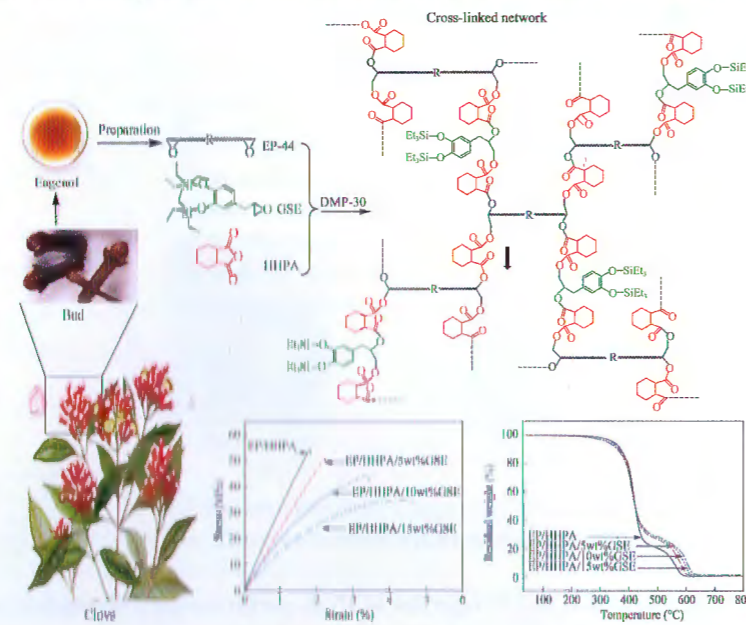
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<https://doi.org/10.1007/s10118-019-2194-3>

Synthesis of Eugenol Bio-based Reactive Epoxy Diluent and Study on the Curing Kinetics and Properties of the Epoxy Resin System

Bin Chen, Feng Wang, Jing-Yu Li, Jia-Lu Zhang, Yan Zhang, and Hai-Chao Zhao

Monoglycidyl silyl etherated eugenol (GSE) was synthesized as reactive epoxy diluents and its effects on the thermo-mechanical properties and thermal stability of EP/HHPA/GSE systems were studied, indicating that GSE can effectively improve the toughness and thermal decomposition temperature of the epoxy system.

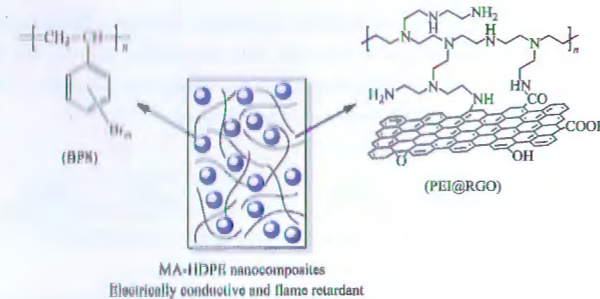


Chinese Journal of Polymer Science, 2019, 37(5), 500–508
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Electrically Conductive and Flame Retardant Graphene/Brominated Polystyrene/Maleic Anhydride Grafted High Density Polyethylene Nanocomposites with Satisfactory Mechanical Properties

Yu Chen, Jian Yao, Ming-Ke Xu, Zhi-Guo Jiang, and Hao-Bin Zhang

Electrically conductive and flame-retardant maleic anhydride grafted high density polyethylene (MA-HDPE) nanocomposites are fabricated with polyethylenimine (PEI) modified reduced graphene oxide (PEI@RGO) as the conductive nanofiller. The optimized interfacial compatibility and uniform dispersion of graphene nanosheets afford excellent electrical, flame-retardant, and reasonable mechanical properties.

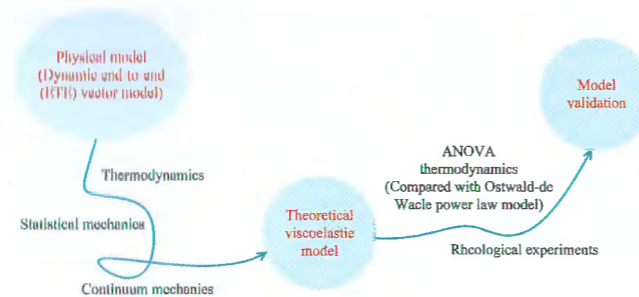


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A Theoretical Study on Transitional Shear Flow Behavior of the Compressible and Isothermal Thermoplastic Polymer

Dong-Lei Liu, Feng Zhou, and Kun Fang

By using a dynamic ETE vector to describe the polymer chain instantaneous morphology, a viscoelastic model was deduced to describe the shear flow behavior of the polymer materials. The viscoelastic model shows a better agreement with the rheological practices than the Ostwald-de Waele power law model.

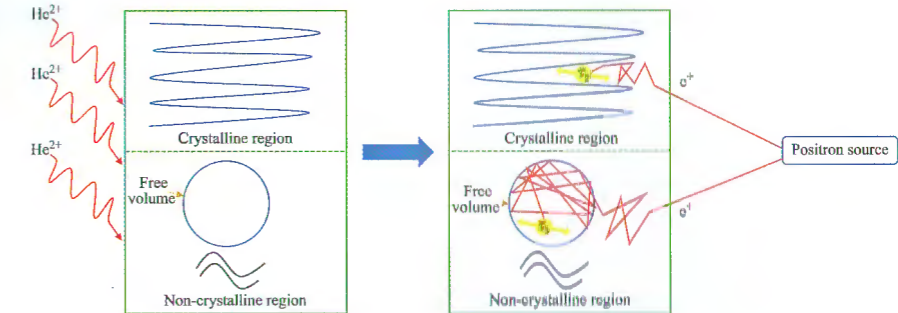


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Positron Spectroscopy of Free Volume in Poly(vinylidene fluoride) after Helium Ions Irradiation

Jin-Zhe Lyu, Roman Laptev, and Natalya Dubrova

Helium-ion irradiation results in a change in PVDF structure, which can be studied based on the second and third components of the PALS.



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