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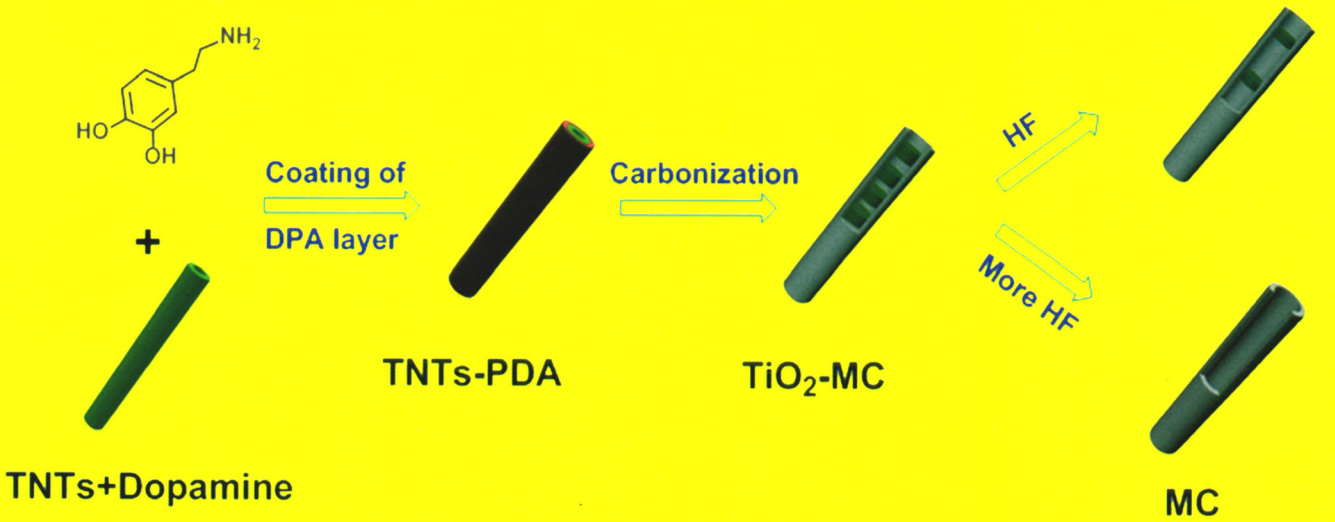

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研究论文

研究简报

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JOURNAL OF FUNCTIONAL POLYMERS
Vol. 27 No. 2 June 2014

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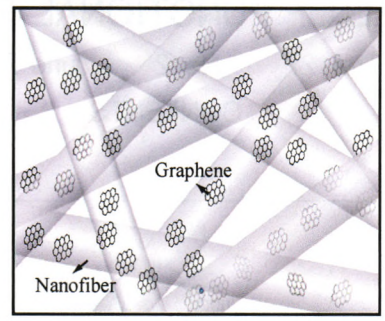
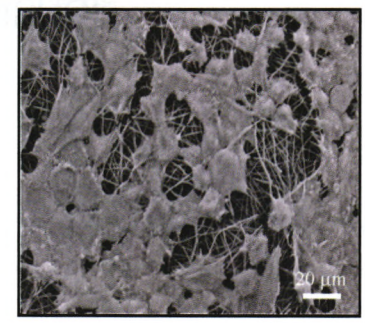
Papers

Preparation and Cytocompatibility Evaluation of PLLA-Graphene Composite Nanofibers



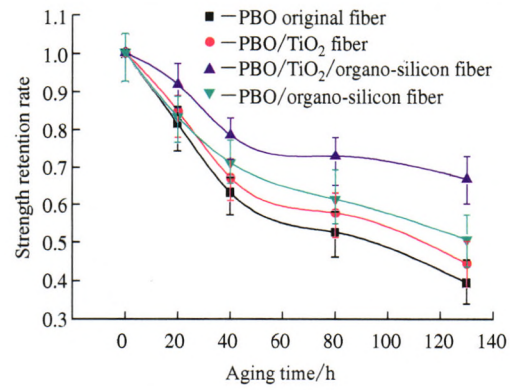


DONG Wen, BAO Min, LI Bi-yun, YUAN Hui-hua, LOU Xiang-xin, ZHANG Yan-zhong

Journal of Functional Polymers, 2014, 27(2): 147-156.

The electrospun nanofibers of poly(*L*-lactic acid) containing graphene are cytocompatible by supporting the adhesion and proliferation of the Schwann cells, which suggests the great potential for applications in neural tissue engineering.

Improving Photoaging Stability of Poly (*p*-phenylene-2, 6-benzobisoxazole) Fiber by Multiple Sol-Gel Method

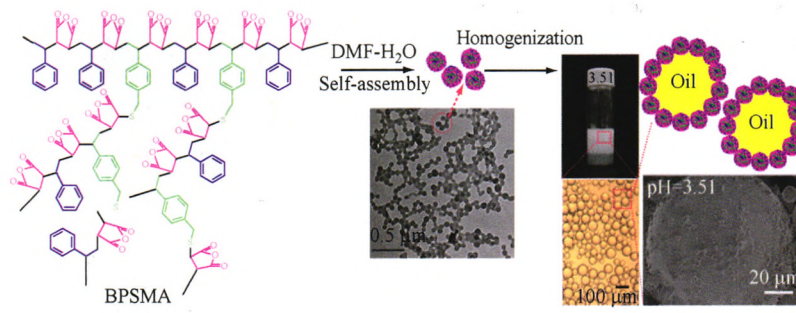


WU Jun-ling, LIU Xiao-yun, QIAN Jun, HAN Zhe-wen

Journal of Functional Polymers, 2014, 27(2): 157-163.

After photoaging for 130 h, the tensile strength retention rate of PBO fibers individually coated by nano-TiO_2 hydrosol-gel method and nano-organo-silicon sol-gel method are just 5% and 10% higher than the uncoated PBO fiber, respectively. Whereas the tensile strength retention rate of PBO fiber successively coated by nano-TiO_2 hydrosol-gel method and nano-organo-silicon sol-gel method is 27% higher than the uncoated PBO fiber.

Emulsifying Performance of Self-Assembled Micelles Based on Branched Alternating Copolymer Poly (styrene-*alt*-maleic anhydride)

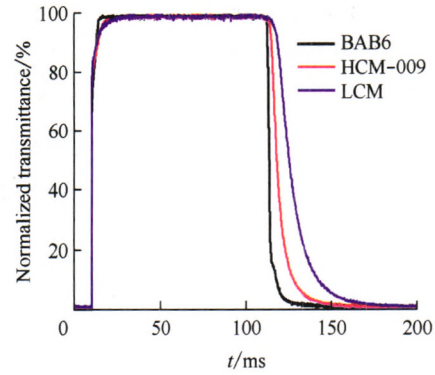


WANG Ting, YI Cheng-lin, LIU Jing-cheng, LIU Xiao-ya

Journal of Functional Polymers, 2014, 27(2): 164-171.

BPSMA micelles exhibit excellent emulsifying efficiency, and the emulsions stabilized by BPSMA micelles are pH-dependent and show distinguish long-term stability at initial pH of 3.51, even with very low micelle mass concentration of 0.25—1.00 mg/mL.

Effects of Monomer Structures on Morphology and Electro-Optic Property of Polymer-Stabilized Cholesteric Texture

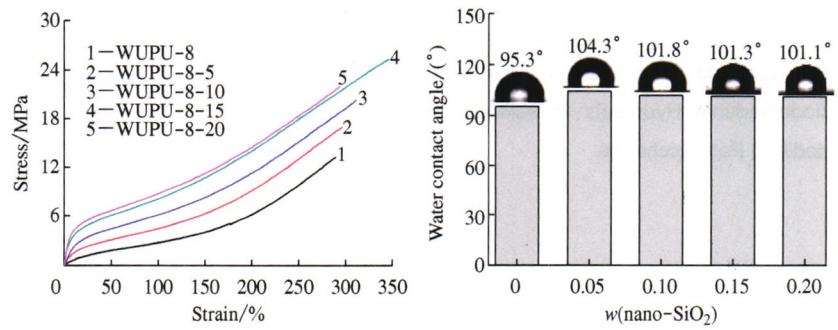


SONG Zhi-gang, ZHANG Jun, LU Hong-bo, WANG Jie-ran, DING Yun-sheng

Journal of Functional Polymers, 2014, 27(2): 172-177.

From BAB6 to LCM, with increased anchoring effect, smaller threshold (saturated) voltage, longer decay time and larger hysteresis width were observed for normal-mode PSCT. Whereas for reverse-mode PSCT, higher driving voltage and faster response time were found.

Preparation and Properties UV-Curing Waterborne PCD-PDMS Polyurethane/Nano-SiO_2 Nanocomposites

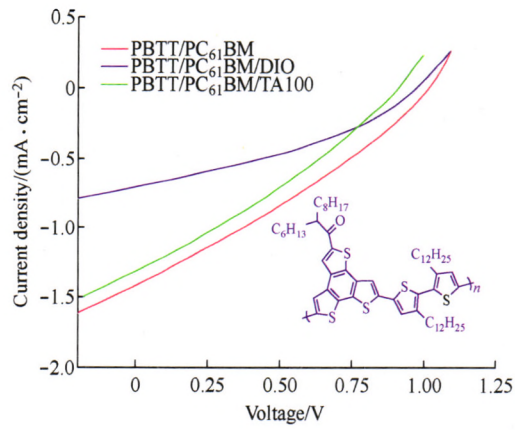


CHEN Zi-dong, ZHANG Sheng-wen, GUO Meng, LIU Qiu-hua, LIU Xiao-ya

Journal of Functional Polymers, 2014, 27(2): 178-183.

The waterborne polyurethane-PDMS-SiO_2 nanocomposite dispersions were prepared. Young modulus, tensile strength, elongation at break, surface hydrophobicity of the nanocomposite films were significantly increased with the incorporation of PDMS and SiO_2.

Benzotrithiophene-Based Conjugated Polymer and Application in Organic Photovoltaic

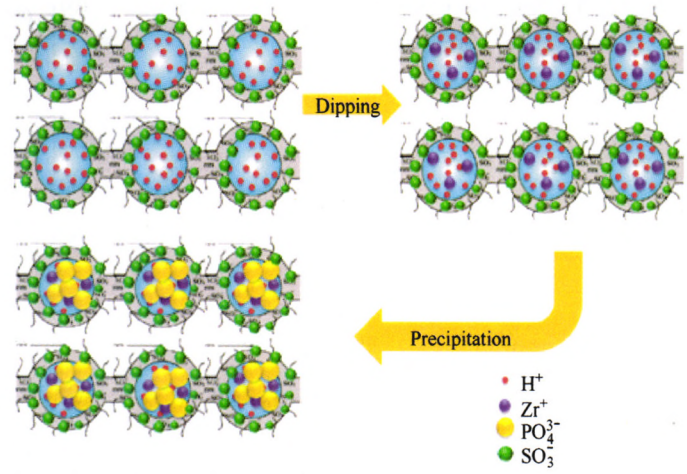


XIANG Yan, GUO Jing-hua, LI Peng, ZHANG Guo-bing, LÜ Guo-qiang

Journal of Functional Polymers, 2014, 27(2): 184-188.

The photovoltaic devices were fabricated based on PBTT and [6,6]-phenyl-C_{61}-butyric acid methyl ($PC_{61}BM$), and exhibited power conversion efficiency of 0.43% with an open-circuit voltage as high as 1.00 V under AM 1.5 G illumination at 100 mW/cm² with a solar simulator.

In situ Durability of ZrP-Nafion115 Composite Membrane for Direct Methanol Fuel Cell

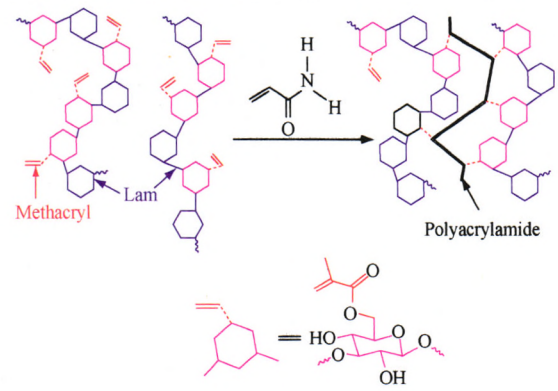


HU Xue-han, HOU Hong-ying, LIU Xian-xi, MENG Rui-jin, GAO Yan

Journal of Functional Polymers, 2014, 27(2): 189-193.

DMFC with ZrP/Nafion115 composite membrane can stably run above 0.4 V for at least 116 h without significant loss of ZrP nano-particles, and also, the corresponding reason of micro-structure ZrP/Nafion115 composite membrane was disclosed.

Synthesis and Drug Release Property of Biodegradable Hydrogels Crosslinked by Modified Polysaccharide

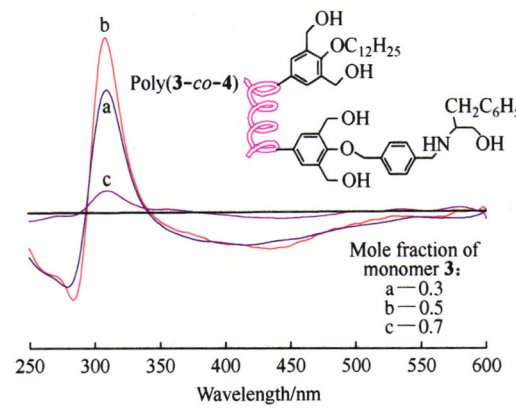


XIAO Yun-ruo, WU Jing-jun, ZHAO Qian

Journal of Functional Polymers, 2014, 27(2): 194-199.

Polyacrylamide hydrogels were prepared using the Lam-GMA as crosslinker. The conversion of the grafting reaction was high, and the graft ratio could be controlled. BSA released slowly from the degraded hydrogels upon the degradation process.

Preparation and Gas Permeation of Helical Polyphenylacetylene Membrane

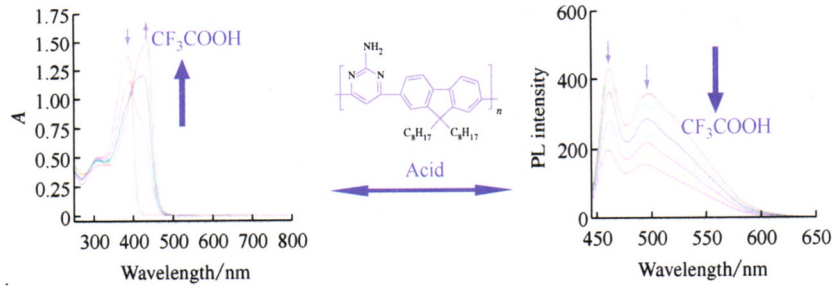


JIA Hong-ge, SHI Yong-qiang, LUN Ying-hui, MA Li-qun, LI Fa-jia, ZHANG Ming-yu

Journal of Functional Polymers, 2014, 27(2): 200-206.

Three chiral polyphenylacetylene monomers and an achiral polyphenylacetylene monomer were copolymerized to give soluble high molecular weight copolymers with one-handed helical structure in the main chains.

Synthesis and Properties of Pyrimidine and Fluorene Containing π-Conjugated Copolymer

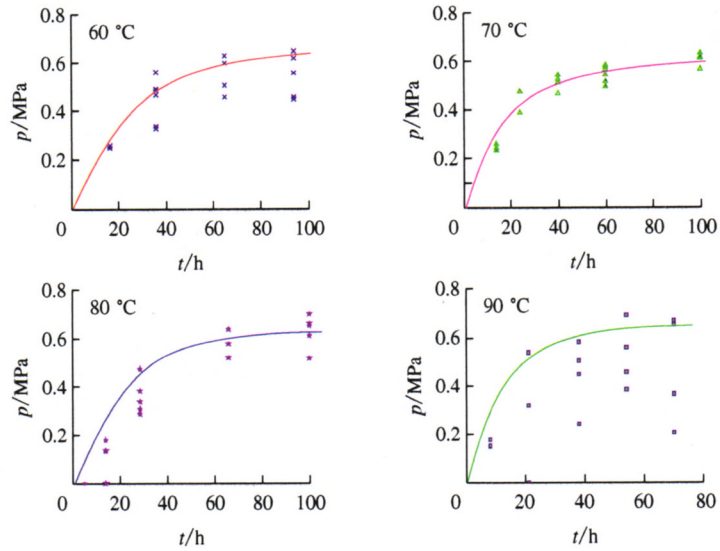


Sayyare SIDIK, Xirali MAMTIMIN, Ismayil NURULLA, Shawkat ABLIZ

Journal of Functional Polymers, 2014, 27(2): 207-212.

The copolymer displayed acidochromic properties when protonated with CF_3COOH acid in chloroform solutions and the red-shifted peaks were observed from 390 nm to 433 nm. Addition of CF_3COOH led to a quick decrease in the emission intensity of copolymer.

Neon Permeation in Polyvinyl Alcohol Multilayer Plastic Capsules

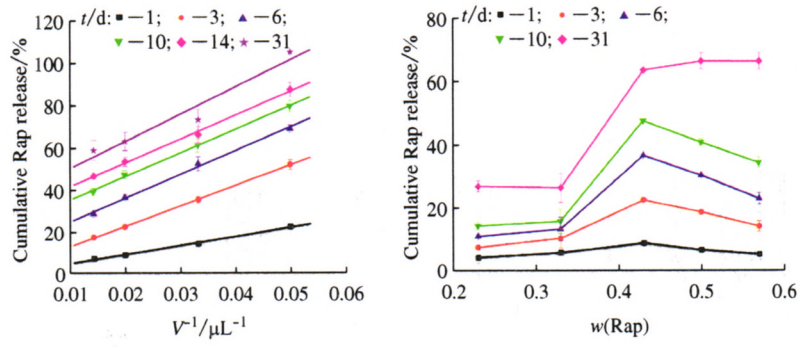


ZHANG Zhan-wen, LIU Mei-fang, LI Jing, CHEN Su-fen, LIU Yi-yang, LI Bo

Journal of Functional Polymers, 2014, 27(2): 213-218.

The hollow plastic capsules are composed of polystyrene, polyvinyl alcohol(PVA) and glow discharge polymer(GDP). The primary experiments show that the equilibrium time is 70—100 h at 60 ℃, while 50—90 h at 70 ℃, 30—60 h at 80 ℃ and 20—40 h at 90 ℃.

Drug Release Properties of Poly(lactic-*co*-glycolic acid) Coatings

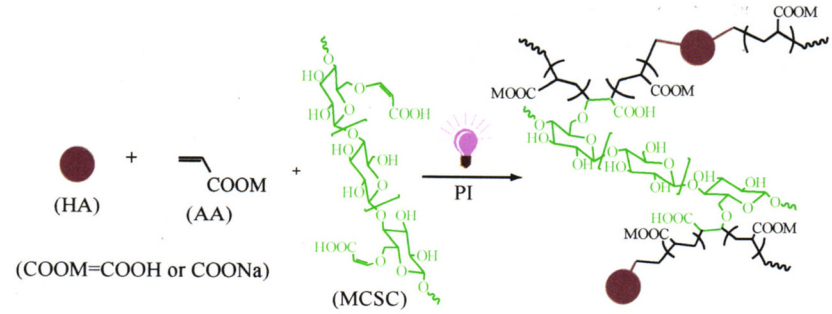


ZHANG Xing-kai, HAN Wei, FAN De-zeng, ZHENG Yu-feng

Journal of Functional Polymers, 2014, 27(2): 219-223.

The relationship between Rap release ratio and reciprocal of the volume of drop-coating solution showed linear, but with the increasing of Rap loading, Rap release ratio initially increased and then decreased.

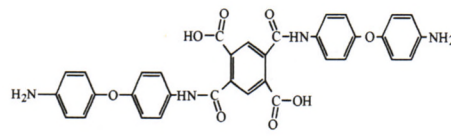
UV Polymerization and Performance of Cotton Stalk Cellulose-*g*-Acrylic Acid/Humic Acid Superabsorbent Resin

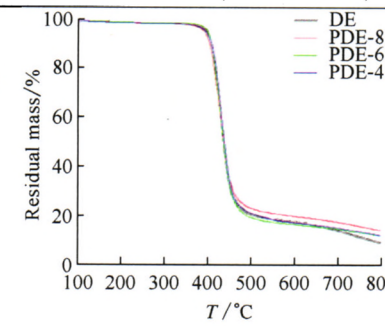


Amatjan SAWUT, Mamatjan YIMIT, Tunisagul AWUT, Ismayil NURULLA
Journal of Functional Polymers, 2014, 27(2): 224-230.

A novel biodegradable superabsorbent resin was prepared with acrylic acid(AA), maleylated cotton stalk cellulose(MCSC) and humic acid(HA) by ultraviolet (UV) polymerization, and 2,2-dimethoxy-2-phenylacetophenone as an initiator(PI).

Epoxy Resin Modified with Polyamide Acid Oligomer



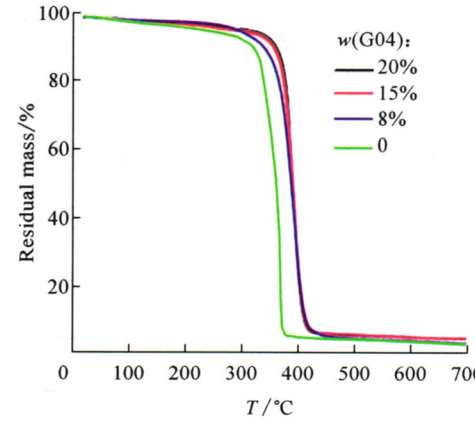


ZHANG Le, QIAN Jian-hua, SHI Chao, LIU Zuo-zhen
Journal of Functional Polymers, 2014, 27(2): 231-235.

A polyamide acid oligomer (PAA-n) had good chemical reactivity with epoxy resin. Thermo performances of modified epoxy resin system were studied using PAA-n to modify epoxy resin. The thermo performance of modified epoxy resin system was improved.

Brief Reports

Synthesis, Characterization and Application of Fluorine Containing Polyacrylate Emulsion



WAN Bin, WANG Xiao-mei, WU Xue-fen, LI Jian-ming
Journal of Functional Polymers, 2014, 27(2): 236-240.

Fluorine containing polyacrylate with fluorine-rich surfaces was synthesized with efficient crosslinking agent such as 4-hydroxybutyl acrylate (4HBA), butyl acrylate (BA), dodecafluoroheptyl methacrylate (G04), using a technic of core-shell polymerization in which fluoride monomer was dropped at last.

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(以姓氏笔画为序)

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Gongneng Gaofenzi Xuebao

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