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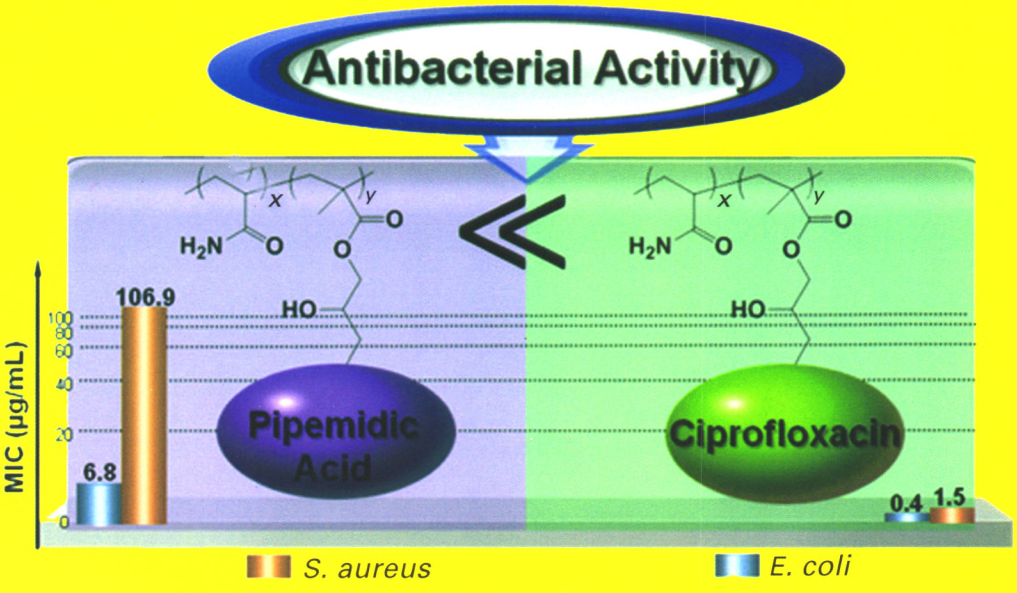

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——卷　终——

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JOURNAL OF FUNCTIONAL POLYMERS
Vol. 27 No. 4 December 2014

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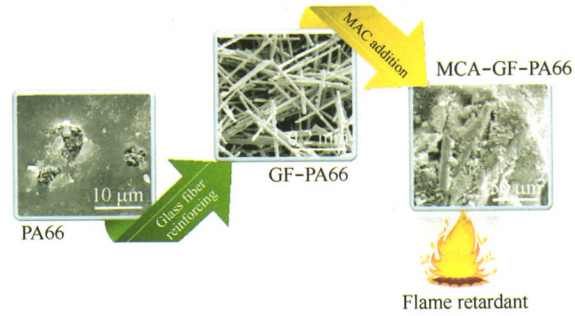
Papers

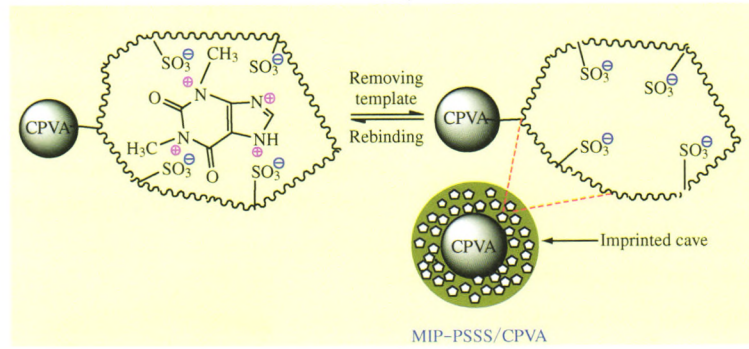
Flame Retardant Effect of Melamine Cyanurate on Glass Fiber Reinforced Nylon 66 Composites



XI Steven, WEI Jun-chao, CHEN Bao-an, ZHU Hong, LIU Tian-xi
Journal of Functional Polymers, 2014, 27(4): 365-371.

The flame retardant melamine cyanurate (MCA) was added into glass fiber reinforced nylon 66 composites (GF-PA66). The UL-94 results demonstrate that the flame retardant effect can reach UL-94 V-0 rate, and SEM and TGA results show that MCA is dispersed homogenously in nylon matrix, which can adsorb heat and release noncombustible gas to isolate the samples from the air, and thus prevent fire from spreading and leave nanopores on burning surface.

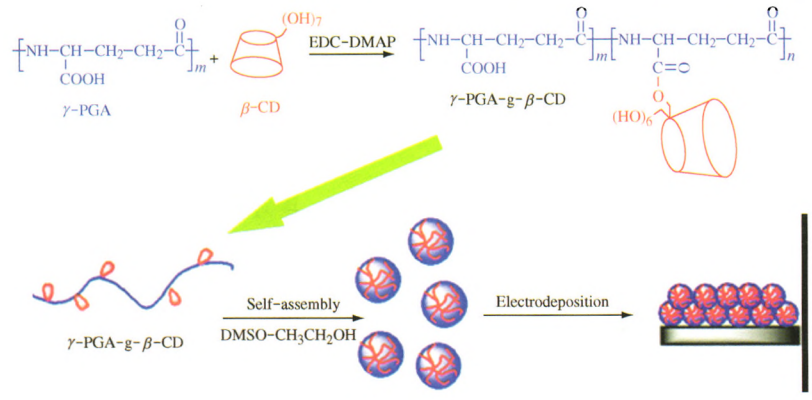
Preparation of Theophylline Surface Imprinted Microsphere and Its *in vitro* Drug Release Performance



MEN Ji-ying, GAO Bao-jiao, TANG Zhi-xue, ZHOU Wei-hong, DONG Na-yan
Journal of Functional Polymers, 2014, 27(4): 372-378.

Theophyllinecolon-specific drug delivery system is constructed by the molecular surface imprinted technique. The prepared microspheres exhibit excellent pH and time-delayed double sensitive colon-specific drug release behavior.

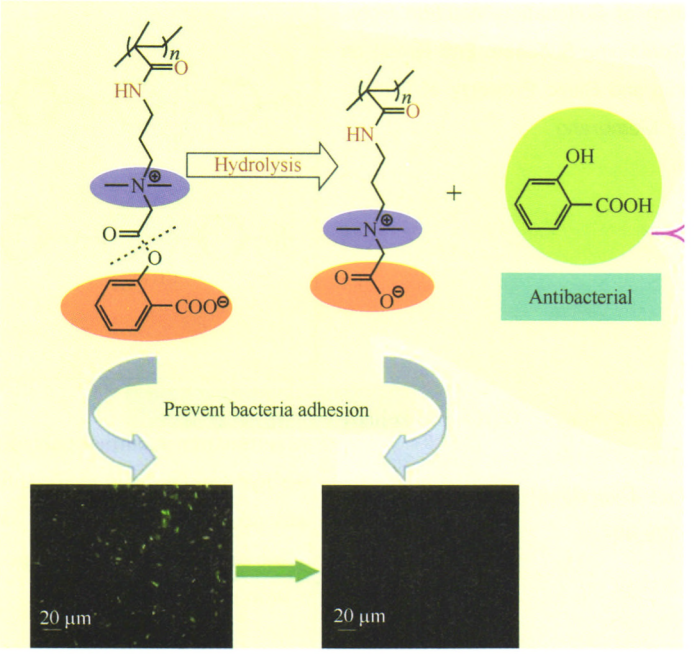
Self-Assembly of γ-PGA-*g*-β-CD and Its Application in Biomedical Nanostructured Coating



LI Yang, SHEN Jia-li, DONG Han-xing, QU Dong-an, SUN Jia-di, LIU Xiao-ya
Journal of Functional Polymers, 2014, 27(4): 379-385.

Amphiphilic γ-polyglutamic acid-*g*-β-cyclodextrin (γ-PGA-*g*-β-CD) copolymer was synthesized. The copolymer could self-assemble into colloidal particles in ethanol. Combining with electrodeposition technique, nanostructured coating was prepared on the surface of magnesium alloy. And the corrosion resistance of the magnesium substrates was improved by the coating.

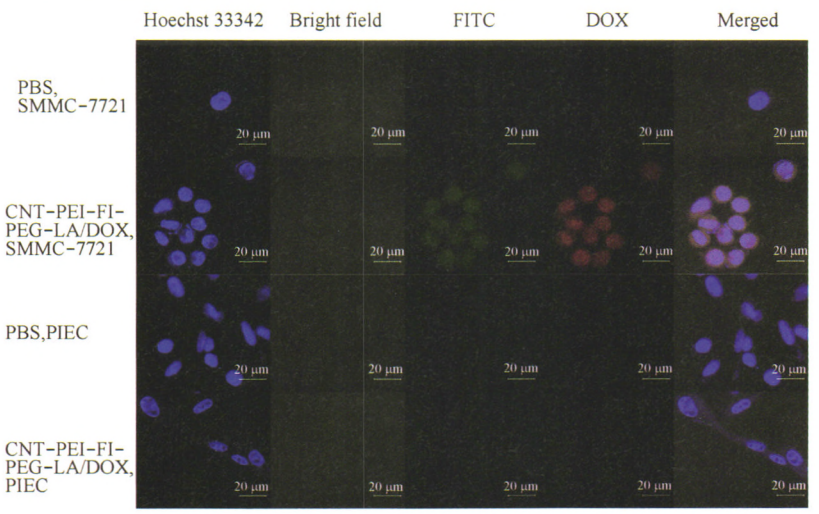
Zwitterionic Hydrogel with Dual Antibacterial Action



ZUO Yan, XING Xiao-dong
Journal of Functional Polymers, 2014, 27(4): 386-391.

A novel methylacrylamide derivative zwitterionic monomer was synthesized, and hydrogel with dual antibacterial action was prepared via radical polymerization. The hydrogel with dual antibacterial action can not only prevent bacteria surface adhesion but also release salicylic acid to achieve antibacterial action.

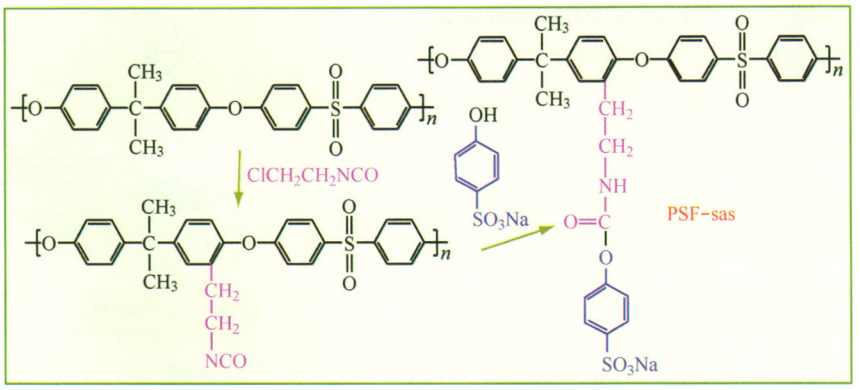
Synthesis and Characterization of Lactose Acid Modified Multi-Walled Carbon Nanotubes as a Composite Drug Carried System



TAO Lei, SHEN Xia-xia, ZHU Li-min
Journal of Functional Polymers, 2014, 27(4): 392-398.

Lactose acid modified PEI-CNT drug delivery carrier was successfully prepared and doxorubicin hydrochloride(DOX) was loaded on it. The drug release rate of CNT-PEI-FI-PEG-LA/DOX was significantly higher in acidic media than that in alkaline condition, while the drug delivery carrier can target on hepatocellular carcinoma cell (SMMC-7721).

Preparation of Sulfonation-Modified Polysulfone Containing Sulfonate End Group on Side-Chain and Basic Property of Cation-Exchange Membrane

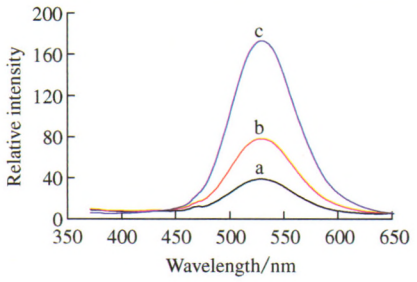


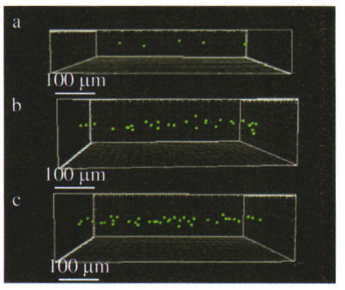
QIAO Zong-wen, GAO Bao-jiao, CHEN Tao

Journal of Functional Polymers, 2014, 27(4): 399-407.

A sulfonation-modified polysulfone with micro-phase separation structure, in which the hydrophilic main-chain and hydrophobic sulfonate groups are in separate state, was prepared by two steps-"one pot" method. The prepared cation-exchange membrane has higher ion exchange capacity, water uptake of a certain value and higher proton conductivity.

Preparation and Properties of the Fluorescent Anti-Counterfeiting Poly(lactic acid) Fibers





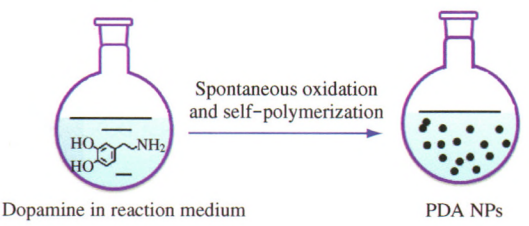
w(FP)/%: a—1; b—5; c—10

WANG Rong, LIU Ya-jun, LI Zu-fa, ZHANG Hui-hui, SHAO Hui-li

Journal of Functional Polymers, 2014, 27(4): 408-412.

The emission spectra of fluorescent anti-counterfeiting PLA fibers peaked at 530 nm, indicating the fibers show yellow-green under UV light. 3D fluorescence distribution of fluorescent anti-counterfeiting PLA fibers was simulated by using the confocal laser scanning microscopy.

Effects of Reaction Medium on the Synthesis of Polydopamine Nanoparticles

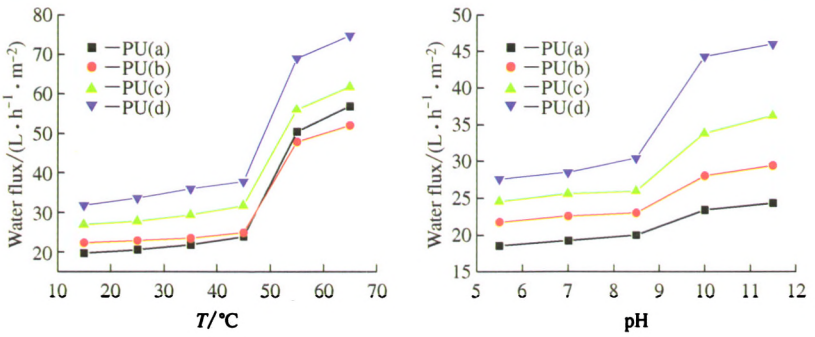


ZHANG Hong-tao, JIANG Jin-hong, MO Meng-ting, ZHU Li-ping

Journal of Functional Polymers, 2014, 27(4): 413-418.

PDA NPs were successfully prepared in various reaction medias including NaOH solution, Tris buffer solution, ammonia solution and phosphate buffer solution. The reaction medium type had a notable effect on the morphologies and sizes of the obtained PDA NPs.

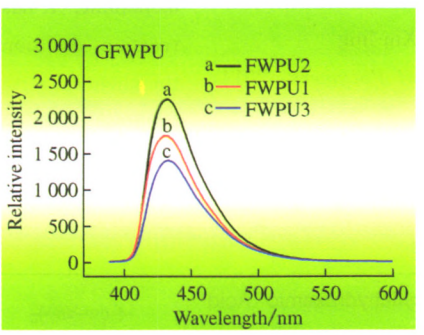
Preparation and Properties of Temperature- and pH-Sensitive Polyurethane Membranes



ZHOU Hu, XUN Rui-ping, WU Ke-jian, ZHOU Zhi-hua, YU Bin, TANG You-xin
Journal of Functional Polymers, 2014, 27(4): 419-425.

When temperature varied near the crystalline melting transition temperature, the water fluxes of polyurethane membranes changed markedly, showing the temperature sensitivity. When the pH value changed from 8.5 to 10, their water fluxes were also obviously changed, showing the pH sensitivity.

Synthesis and Fluorescence Properties of Waterborne Polyurethane Fluorescent Materials

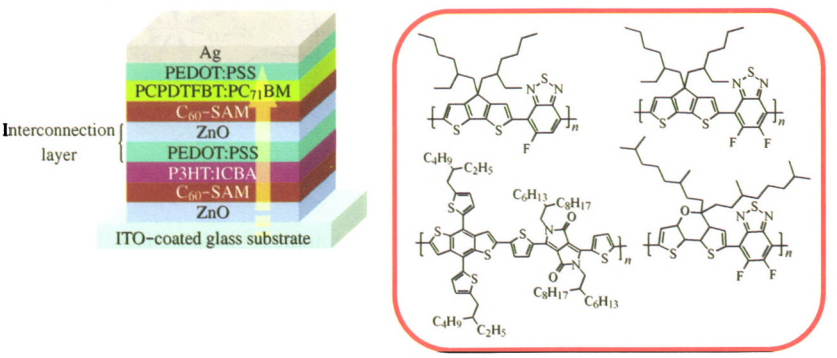


XIE Zhi-qian, WANG Ji-yin, TAO Can, YANG Ming-di, HUANG Yi-ping, XU Ge-wen
Journal of Functional Polymers, 2014, 27(4): 426-431.

Waterborne polyurethane fluorescent (FWPU) materials with different chain extenders were synthesized by grafting 4-amine-4′-(*N*, *N*-diphenyl-amino)-1,2-stilbene (ADAS) which dissolved in *N*, *N*-dimethylformamide (DMF). Results showed that the chain extender structure affected the fluorescence intensity of FWPU.

Reviews

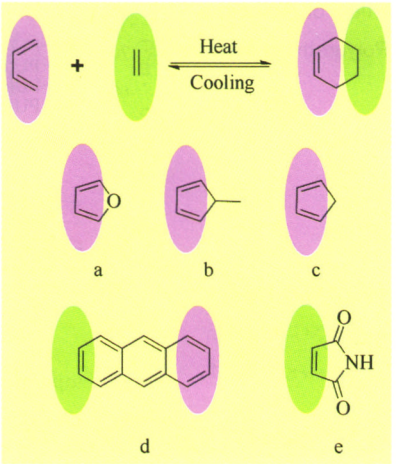
Advance in Polymeric Materials for Organic Solar Cells



LI Yong-xi, CHEN Yu, LI Chao, LIU Liu, CHENG Hong-xia, SONG Yi
Journal of Functional Polymers, 2014, 27(4): 432-452.

Organic photovoltaic technology provides an essential way for the effective utilization of solar energy. However, the power conversion efficiency (PCE) of polymer solar cells (PSCs) far beyond practical requirements. Upon this, design and synthesis of appropriately low bandgap polymers and probing into the mechanisms become the extremely interesting topics in the field of high efficiency PSCs.

Research Progress in Self-Healing Materials Based on Diels-Alder Reaction

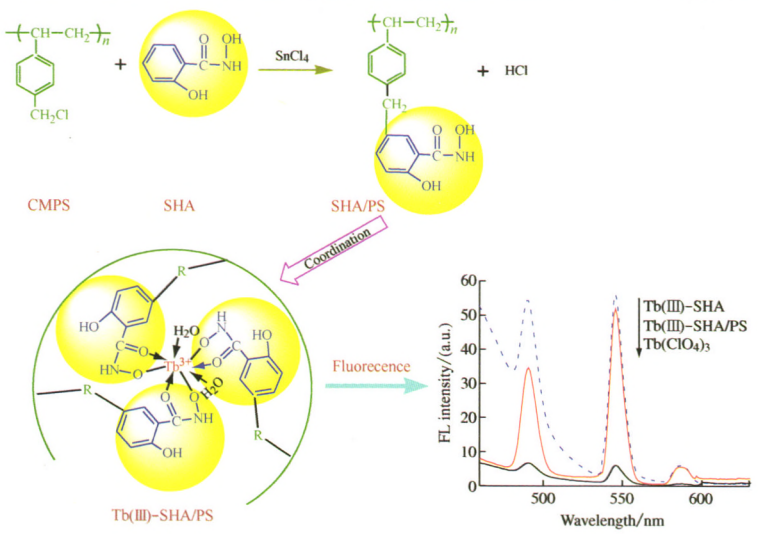


WANG Li, WANG Xin-ling
Journal of Functional Polymers, 2014, 27(4): 453-463.

Diels-Alder (DA) reaction is a kind of [4+2] cycloaddition between diene and dienophile. It has become a research hotspot in the self-healing field due to its mild reaction conditions, catalyst useless and unique thermal reversibility. Classified by the chemical structure of the prepared polymers based on DA reaction, the research progress is reviewed and the development of self-healing polymer materials is prospected.

Brief Reports

Preparation of Salicylichydroxamic Acid Functionalized Polystyrene and Fluorescence Character Preliminary Exploration of Its Complex with Tb(Ⅲ)



LEI Cai-ping, SHI Xiao-hui, WANG Hong-jing, GAO Bao-jiao, WANG Rui-xin
Journal of Functional Polymers, 2014, 27(4): 464-468.

The complex Tb(Ⅲ)-SHA/PS was obtained by the coordination between salicylichydroxamic acid (SHA)-functionalized polystyrene (SHA/PS) and Tb(Ⅲ). The complex Tb(Ⅲ)-SHA/PA emitted the characteristic fluorescence of Tb(Ⅲ), further more, the intensity could be strongly sensitized by macromolecular ligand SHA/PS for the Antenna effect of SHA/PS on Tb(Ⅲ).

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(以姓氏笔画为序)

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