

功能高分子学报

JOURNAL OF FUNCTIONAL POLYMERS



Tobacco mosaic virus

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中国科学引文数据库来源期刊
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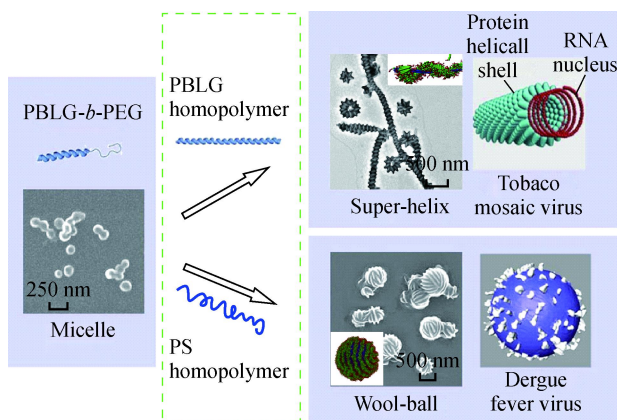
下期发表论文摘要预报 (188)

Highlight

Cooperative Self-assembly of Polypeptide Block Copolymer and Homopolymer Mixtures : A Route towards Virus-Like Particles

ZHOU Yong-feng

Journal of Functional Polymers , 2018 , 31 (2) :95-97 .



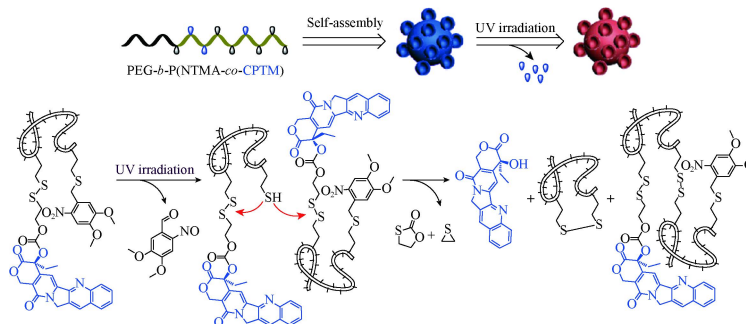
Fabrication virus-like particles (VLPs) with ordered surface nanostructure in a controlled way is still a challenge . Prof . Chunhua Cai and co-workers from East China University of Science and Technology have made significant contributions to prepare polypeptide-based rod-like and spherical VLPs through solution self-assembly of a mixture containing polypeptide block copolymers and homopolymers .

Papers

Synthesis of Dual Responsive Amphiphilic Polyprodrug and Its Application in Controlled Drug Release

HAN Ke, ZHANG Guo-ying

Journal of Functional Polymers , 2018 , 31 (2) :98-107 .



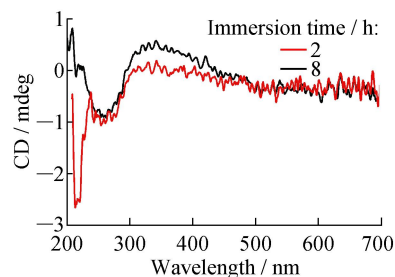
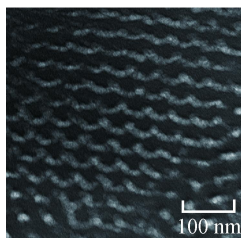
In the hydrophobic domains of the compound vesicles self-assembled from dual responsive PEG-b-P (NTMA-co-CPTM) amphiphilic polyprodrug diblock copolymer , mercapto groups could be degraded due to the photo-cleavage of the o-nitrobenzyl thioether moieties under UV irradiation , thus *in-situ* constructing reductive microenvironments . Then, CPT drug molecules were released via the exchange reaction between the degraded mercapto groups and the adjacent disulfide linkages .

Chiral Assembly of Chiral Gold Nanoparticles Induced by Chiral Porous Block Copolymer Film

LI Jing-min, LU Xue-min, LU Qing-hua

Journal of Functional Polymers, 2018, 31(2):108-113.

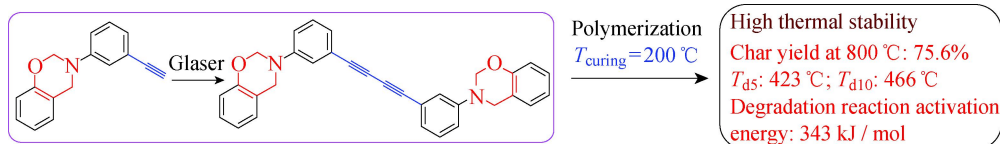
Helical structure with different handedness was firstly prepared by using PBD-*b*-PEO and tartaric acid (TA) molecules through additive-driven self-assembly approach. Porous PBD-*b*-PEO films were then prepared by immersing the PBD-*b*-PEO/TA hybrid films into LiBr aqueous solution. Chiral gold nanoparticles were backfilled into the porous film and the chiral optical property of the obtained PBD-*b*-PEO/Au NPs hybrid film was investigated.



Curing and Pyrolysis Kinetics of a New Benzoxazine Resin with High Char Yield

DAI Jie, LI Peng-cheng, ZHU Rong-qi, RAN Qi-chao, GU Yi

Journal of Functional Polymers, 2018, 31(2):114-120.



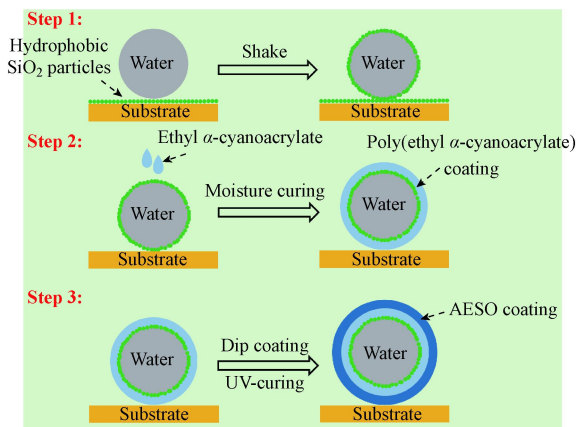
A new polybenzoxazine, which comes from the monomer containing conjugated diacetylene, shows a high char yield of 75.6% at 800 °C under nitrogen atmosphere, and its degradation activation energy is 343 kJ/mol which is higher than those of many thermosetting resins.

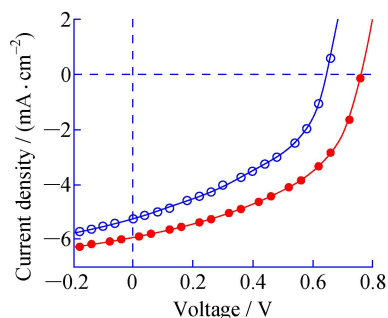
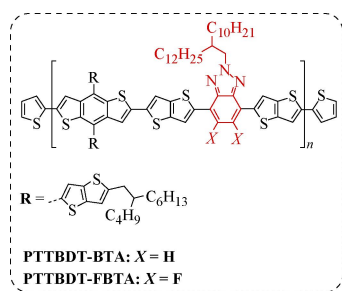
Water-Bearing Capsule *in situ* Prepared from Liquid Marble and Its Performance

ZHANG Ji, WEI Wei, HONG Liu, ZHU Ye, LUO Jing, LIU Xiao-ya

Journal of Functional Polymers, 2018, 31(2):121-127.

Liquid marble was first prepared by encapsulation of water droplet using hydrophobic silicon dioxide particles as stabilizer of liquid-gas interface. Then the as-prepared liquid marble was packaged using a polymer coating by moisture curing of ethyl α -cyanoacrylate on its surface. A coating of acrylated epoxidized soybean oil was further prepared on the marble surface by photocuring method to finally form a water-bearing capsule.





—●— $m(\text{PTTBDT-FBTA}) / m(\text{PC}_{61}\text{BM}) = 1 / 1, 3\% \text{DIO}$

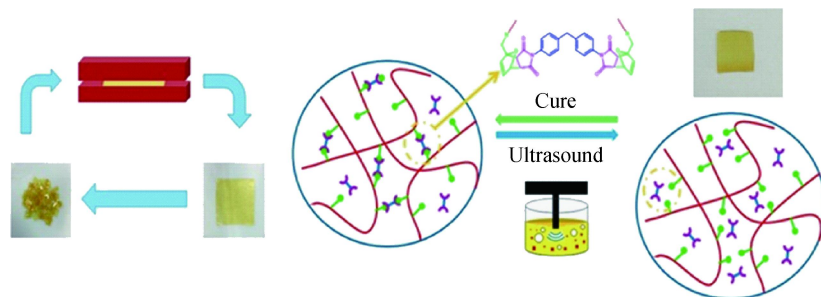
—○— $m(\text{PTTBDT-BTA}) / m(\text{PC}_{61}\text{BM}) = 1 / 1, 3\% \text{DIO}$

Two wide bandgap copolymers, PTTBDT-BTA and PTTBDT-FBTA, were prepared. Compared with PTTBDT-BTA, the 49.3% PCE enhancement of fluorinated PTTBDT-FBTA based device was benefited from simultaneous increases of U_{oc} , J_{sc} and FF.

Preparation and Characterization of Thermal Reversible Polyetheramine Based on Diels-Alder Reaction

HE Qing, BAI Jing, SHI Zi-xing, YIN Jie

Journal of Functional Polymers, 2018, 31(2):140-146.



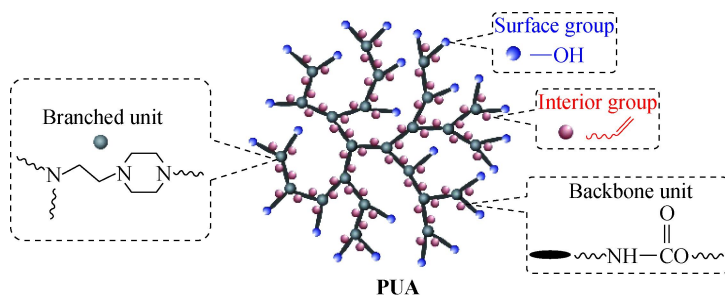
A series of polyetheramine (PEA) samples with self-healing and remolding properties were synthesized via Diels-Alder reaction. Hot press and ultrasound remolding approaches were conducted and studied in this system. After remolding for two generations, the regenerated PEA samples maintained above 70% of the original breaking strength and above 80% of the elongation at break. To be concluded, this series of PEA samples exhibited great performance on self-healing and remolding properties.

Preparation and Characterization of Novel Bifunctional Hyperbranched Polymers

LIU Xing-liang, LUO Jing, LI Xiao-jie, LIU Xiao-ya

Journal of Functional Polymers, 2018, 31(2):147-152.

A new type of B_3 monomer bearing three hydroxyl groups and three allyl groups was synthesized from allyl glycidyl ether and *N*-aminoethyl piperazine. The synthesized B_3 monomer could react with A_2 monomer hexamethylene diisocyanate to generate bifunctional hyperbranched poly(urethane amine) bearing both hydroxyl and allyl groups.

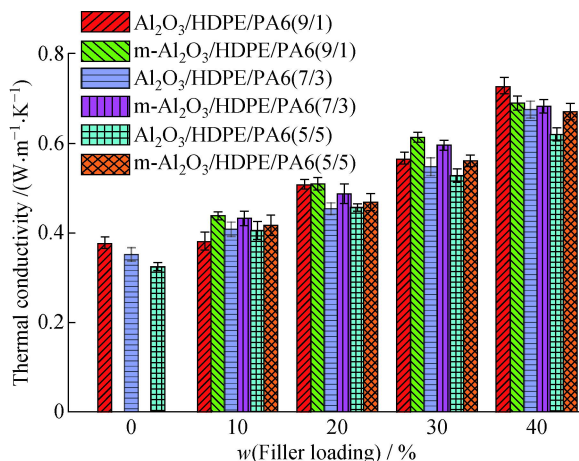


Effect of Modification of Al₂O₃ on Thermal Conductivity of HDPE/PA6 Composites

FAN Jia-ming, XU Shi-ai

Journal of Functional Polymers, 2018, 31(2):153-159.

The effect of Al₂O₃ modified by γ -aminopropyltriethoxysilane on the thermal conductivity of high density polyethylene/polyamide 6 blend was systematically studied. The modified Al₂O₃ (m-Al₂O₃) can further improve the thermal conductivity, heat resistance and Young's modulus of the composites compared with unmodified Al₂O₃.

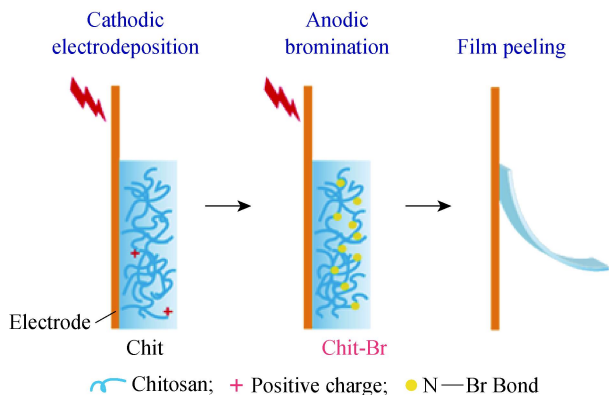


Electrochemical Fabrication and Properties of Brominated Chitosan Antimicrobial Dressing

ZHANG Chu-chu, LEI Yu, QU Xue, LIU Chang-sheng

Journal of Functional Polymers, 2017, 30(4):160-166.

Brominated chitosan wound dressing (Chit-Br) with high antimicrobial activity was fabricated by a two-step electrochemical method, which involved a cathodic electrodeposition of pristine chitosan film (Chit) triggered by a localized region of high pH and an anodic bromination of the deposited film in the presence of bromides. The generated brominated chitosan could be peeled from the electrode to get a free-standing film. Chit-Br films had excellent antimicrobial activities and could kill bacteria by destroying their surface structures.

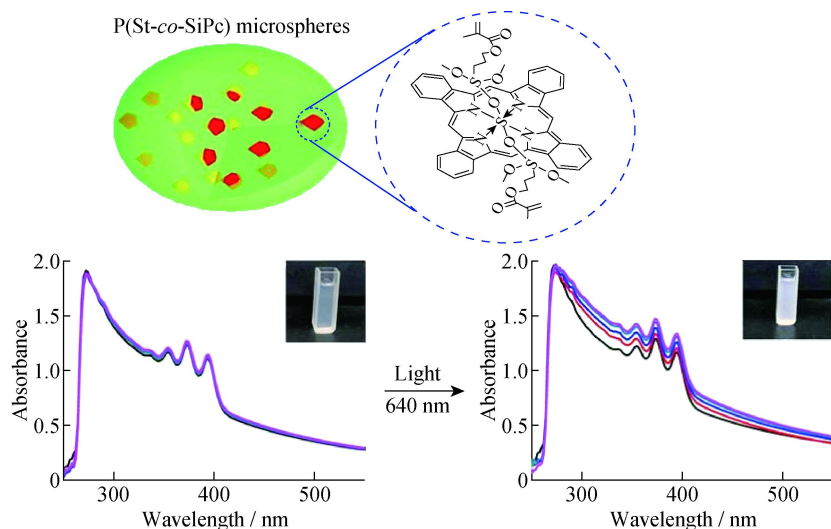


In-situ Copolymerization of Novel Photosensitive PS Microspheres Based on Silicon Phthalocyanine

LIU Dan-dan, WANG Yu, GUO Jian, ZHANG Jie-jie, GUAN Jian-ning, HAN Guo-zhi

Journal of Functional Polymers, 2018, 31(2):167-174.

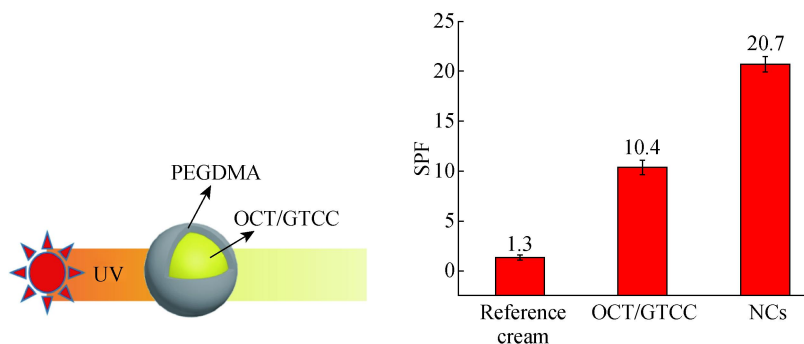
By using axially di-substituted silicon (IV) phthalocyanine (SiPc) as fluorescent monomer, which was synthesized through the reaction of silicon (IV) phthalocyanine dihydroxide with 3-(trimethoxysilyl) propyl methacrylate, potassium persulfate as initiator, and sodium dodecyl sulfate as emulsifier, a novel monodispersed polystyrene fluorescent microsphere (hereafter called as P(St-co-SiPc)) was prepared via *in-situ* copolymerization.



Fabrication and Properties of Suncream Nanocapsules Loaded with Octocrylene

LIU Tian-qun, ZHAO Di, LI Xue-ting, KANG Yuan-yuan, SHI Xiao-di, LU Xi-hua

Journal of Functional Polymers, 2018, 31(2):175-180.

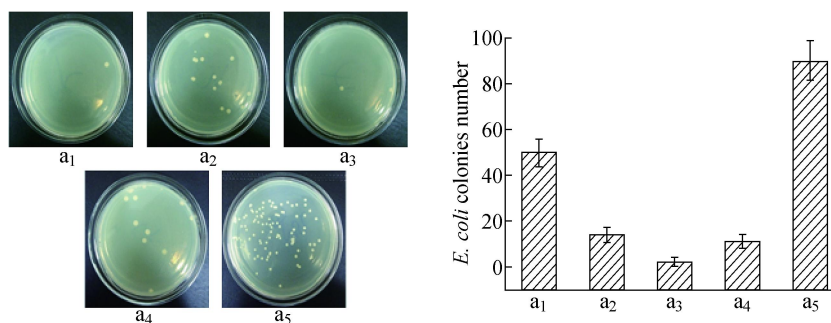


The biocompatible suncream nanocapsules loaded with OCT /GTCC were prepared by interfacial free-radical polymerization . Compared to the cream with the non-encapsulated OCT /GTCC , the cream containing NCs showed obviously higher SPF .

Preparation and Characterization of Zwitterionic Copolymer P(4-VPPS-co-DMAES) Membrane

SUN Yun-long, CHEN Chang-lin, LEI Kun, XU Guan-zhe, XU Heng, LANG Mei-dong

Journal of Functional Polymers, 2018, 31(2):181-188.



Degree of ionization modification : a₁—20% ; a₂—30% ; a₃—40% ; a₄—50% ; a₅—Blank control group

The P(4-VPPS-co-DMAES)-2/20% , which was synthesized by radical copolymerization of 4-VP and DMAEMA with 3/7 of feed molar composition (n_{4-VP} / n_{DMAEMA}) and 20% of ionization degree , exhibited excellent sterilization and anti-adhesion properties as well as proper thermal stability , elongation at break and breaking strength .