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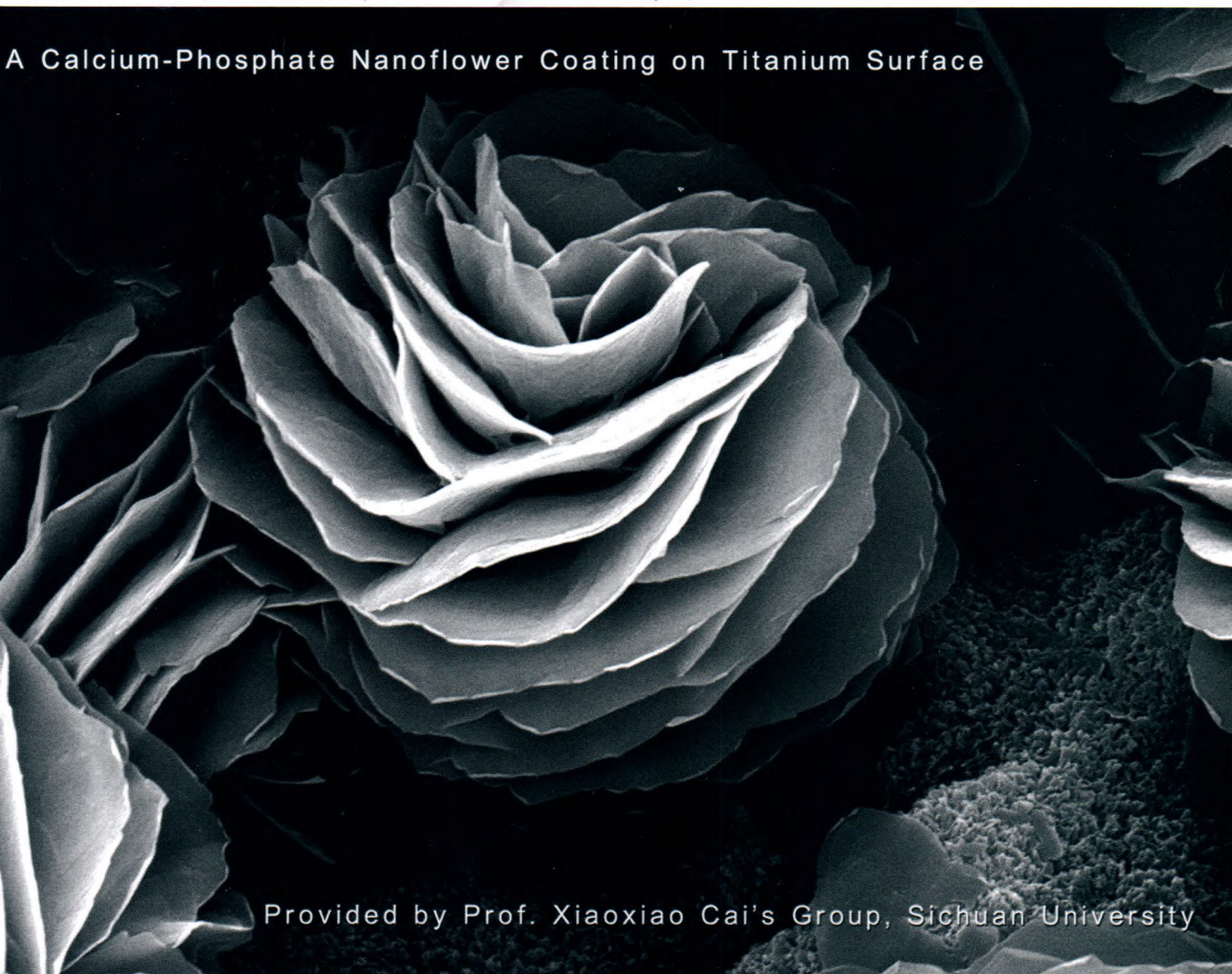


# CCL

## Chinese Chemical Letters

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A Calcium-Phosphate Nanoflower Coating on Titanium Surface



Provided by Prof. Xiaoxiao Cai's Group, Sichuan University



### REVIEW

Zhiyong Qian et al.  
Artificial periosteum in bone defect repair-A review

### ORIGINAL ARTICLE

Wenhai Lin, Zhigang Xie et al.  
PEGylated BODIPY assembling fluorescent nanoparticles for photodynamic therapy

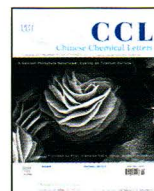
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## Graphical Abstracts/Chin Chem Lett 28 (2017) iii-vii

## Highlight

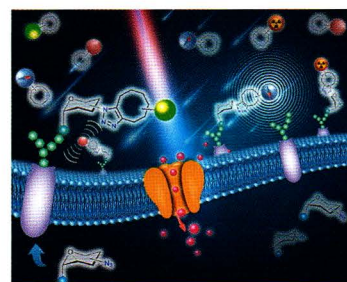
## Cell-surface cascaded landing location for nanotheranostics

En Ren, Junqing Wang, Gang Liu\*

State Key Laboratory of Molecular Vaccinology Molecular Diagnostics, Center for Molecular Imaging Translational Medicine, School of Public Health Xiamen University, Xiamen 361005, China

Cell-surface cascaded landing location is an effective strategy to develop functional drug-loading platforms to explore basic physiological processes at the cellular level and to facilitate the development of nanotheranostics for disease treatment.

Chinese Chemical Letters 28 (2017) 1799



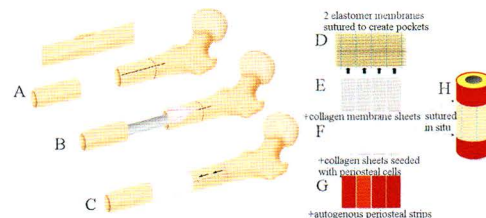
## Reviews

## Artificial periosteum in bone defect repair—A review

Quan Wang<sup>a,c,1</sup>, Jianxiang Xu<sup>a,1</sup>, Haiming Jin<sup>a</sup>, Wenhao Zheng<sup>a</sup>, Xiaolei Zhang<sup>a,c</sup>, Yixing Huang<sup>a</sup>, Zhiyong Qian<sup>a,b,\*</sup><sup>a</sup>Department of Orthopaedics, The Second Affiliated Hospital and Yuying Children's Hospital of Wenzhou Medical University, Wenzhou 325027, China<sup>b</sup>Department of Oncology and Cancer Center, West China Hospital, Sichuan University, Chengdu 610041, China<sup>c</sup>Zhejiang Provincial Key Laboratory of Orthopaedics, Wenzhou 325027, China

We review the development of artificial periosteum and classify it into three approaches based on the material source, that is, native tissues, scaffoldfree cell sheets and scaffold-cell composites. Mechanisms, methods and efficacy of each approach are provided. Existing obstacles and enabling technologies for future directions are also discussed.

Chinese Chemical Letters 28 (2017) 1801

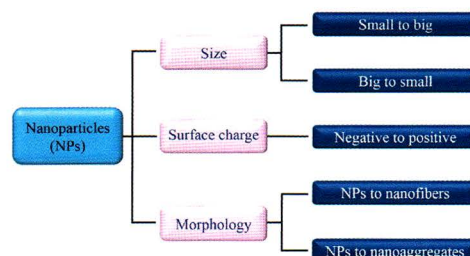


## Recent advances of transformable nanoparticles for theranostics

Kuo Zhang<sup>a,b</sup>, Pei-Pei Yang<sup>b</sup>, Jing-Ping Zhang<sup>a,\*</sup>, Lei Wang<sup>b,\*</sup>, Hao Wang<sup>b,\*</sup><sup>a</sup>School of Chemistry, Northeast Normal University, Changchun 130024, China<sup>b</sup>CAS Center for Excellence in Nanoscience, CAS Key Laboratory for Biological Effects of Nanomaterials and Nanosafety, National Center for Nanoscience and Technology (NCNST), Beijing 100190, China

We summary recent advances of transformable NPs for nanomedicine. In this review, the transformation of NPs is divided into three groups including changes in size, surface charge and morphology, which is induced by internal stimuli, such as pH, enzyme, receptor or external stimuli, such as light, temperature.

Chinese Chemical Letters 28 (2017) 1808



## Pediatric ocular nanomedicines: Challenges and opportunities

Natasha D. Sheybani<sup>a</sup>, Hu Yang<sup>b,c,d,\*</sup>

<sup>a</sup>Department of Biomedical Engineering, Virginia Commonwealth University, Richmond VA 23284, United States

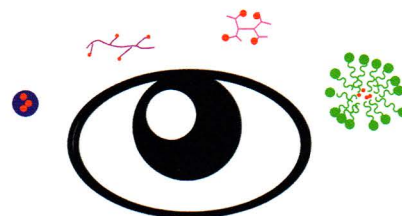
<sup>b</sup>Department of Chemical & Life Science Engineering, Virginia Commonwealth University, Richmond VA 23219, United States

<sup>c</sup>Department of Pharmaceuticals, Virginia Commonwealth University, Richmond VA 23298, United States

<sup>d</sup>Massey Cancer Center, Virginia Commonwealth University, Richmond VA 23298, United States

Challenges and opportunities to development of ocular drug delivery systems and nanomedicines for pediatric patients are reviewed.

Chinese Chemical Letters 28 (2017) 1817



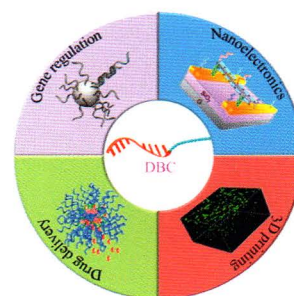
## Recent progress on DNA block copolymer

Gaifang Pan<sup>1</sup>, Xin Jin<sup>1</sup>, Quanbing Mou<sup>\*</sup>, Chuan Zhang<sup>\*</sup>

School of Chemistry and Chemical Engineering, State Key Laboratory of Metal Matrix Composites, Shanghai Jiao Tong University, Shanghai 200240, China

Organic polymers are combined with DNA resulting DNA block copolymers (DBC) that can simultaneously show the properties of the polymer and DNA. We will discuss some examples of recent developments in the syntheses, structure manipulations, and applications of DBCs.

Chinese Chemical Letters 28 (2017) 1822



## Development and application of nano-flavor-drug carriers in neurodegenerative diseases

Wei-Hong Ji<sup>a</sup>, Zuo-Bing Xiao<sup>b,c,\*\*</sup>, Gui-Ying Liu<sup>d,\*</sup>, Xin Zhang<sup>a,\*</sup>

<sup>a</sup>State Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100190, China

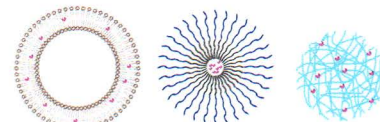
<sup>b</sup>School of Perfume and Aroma Technology, Shanghai Institute of Technology, Shanghai 200233, China

<sup>c</sup>Shanghai Research Institute of Fragrance & Flavor Industry, Shanghai 200232, China

<sup>d</sup>Department of Pediatrics, Capital Medical University Affiliated Beijing Anzhen Hospital, Beijing 100029, China

Nano-drug carriers such as liposomes, polymer micelles, and polymer nanoparticles are used for neurodegenerative diseases, which can help drug pass the blood-brain barrier easily, and improve the therapeutic effect.

Chinese Chemical Letters 28 (2017) 1829



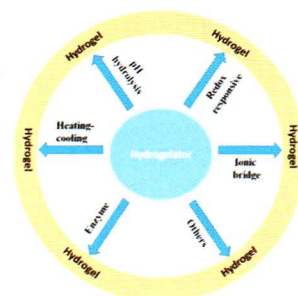
## Self-assembled small molecular weight hydrogels of prodrugs

Yanfang Zhou, Xingyi Li<sup>\*</sup>

Institute of Biomedical Engineering, School of Ophthalmology & Optometry and Eye Hospital, Wenzhou Medical University, Wenzhou 325027, China

Prodrugs as building unit for construction of various hydrogelator in response to different stimulus (e.g., temperature, enzyme, pH value, ion).

Chinese Chemical Letters 28 (2017) 1835





## H<sub>2</sub>O<sub>2</sub>-responsive theranostic nanomedicine

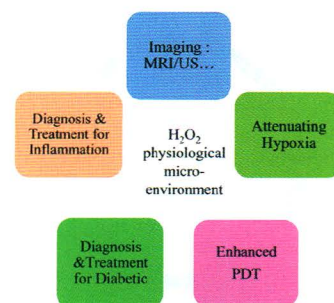
Luodan Yu<sup>a,b</sup>, Yu Chen<sup>a,\*</sup>, Hangrong Chen<sup>a,\*</sup>

<sup>a</sup>State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China

<sup>b</sup>University of Chinese Academy of Sciences, Beijing 100049, China

This review summarizes and discusses the very-recent developments of H<sub>2</sub>O<sub>2</sub>-responsive theranostic nanoplatforms for versatile biomedical applications, including diagnostic imaging, attenuating tumor hypoxia, enhancing the therapeutic efficiency of photodynamic therapy/radiation therapy/chemotherapy and theranostic of inflammation/diabetic. It is highly believed that H<sub>2</sub>O<sub>2</sub>-responsive theranostic nanomedicine will be extensively developed a new specific and efficient theranostic modality to benefit the personalized biomedicine in the near future.

Chinese Chemical Letters 28 (2017) 1841



## Advances in quantum dot-mediated siRNA delivery

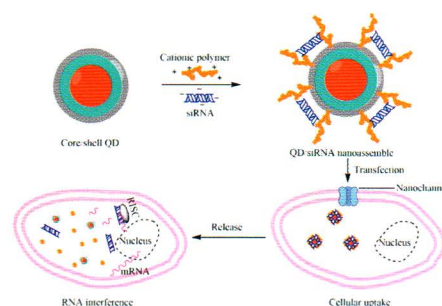
Zhi-Yao He<sup>a</sup>, Zhao-Hui Jin<sup>a</sup>, Mei Zhan<sup>a</sup>, Zhou Qin<sup>a</sup>, Zhi Li<sup>b,\*</sup>, Ting Xu<sup>a,\*</sup>

<sup>a</sup>Department of Pharmacy, and Cancer Center, West China Hospital, Sichuan University and Collaborative Innovation Center of Biotherapy, Chengdu 610041, China

<sup>b</sup>Department of Gastroenterology, Hospital (T.C.M) Affiliated to South west Medical University, Southwest Medical University, Luzhou 646000, China

Quantum dot-mediated siRNA theranostic systems enhance the siRNA delivery, and track the uptake and distribution of siRNA.

Chinese Chemical Letters 28 (2017) 1851



## The design, mechanism and biomedical application of self-healing hydrogels

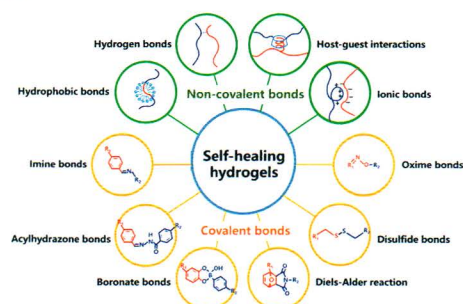
Qiwen Li<sup>a,1</sup>, Chenlu Liu<sup>a,b,1</sup>, Junru Wen<sup>a</sup>, Yongzhi Wu<sup>a</sup>, Yue Shan<sup>a</sup>, Jinfeng Liao<sup>a,\*</sup>

<sup>a</sup>State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, China

<sup>b</sup>Laboratory of Molecular and Translational Medicine, Key Laboratory of Birth Defects and Related Diseases of Women and Children of Ministry of Education at Sichuan University, West China Second University Hospital, Sichuan University, Chengdu 610061, China

Current advances made in self-healing hydrogels relating to the design strategies, self-healing mechanism, testing methods and biomedical application *in vivo* were extensively reviewed in this article.

Chinese Chemical Letters 28 (2017) 1857



## Communications

### PEGylated BODIPY assembling fluorescent nanoparticles for photodynamic therapy

Yu Zhu<sup>a,b</sup>, Wenhai Lin<sup>b,c,\*\*</sup>, Wei Zhang<sup>b,c</sup>, Yuqin Feng<sup>d</sup>, Zhineng Wu<sup>d</sup>, Li Chen<sup>a</sup>, Zhigang Xie<sup>b,\*</sup>

<sup>a</sup>Department of Chemistry, Northeast Normal University, Changchun 130024, China

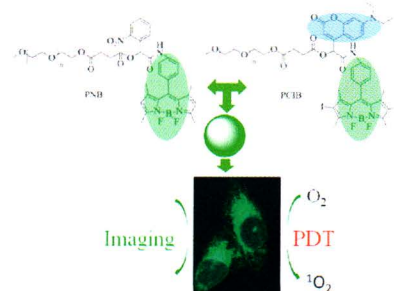
<sup>b</sup>State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun 130022, China

<sup>c</sup>University of Chinese Academy of Sciences, Beijing 100049, China

<sup>d</sup>College of Materials Science and Engineering, Jilin University, Changchun 130024, China

Two PEGylated BODIPY which could self-assemble into nanoparticles were synthesized via multicomponent Passerini reaction for cellular imaging and photodynamic therapy.

Chinese Chemical Letters 28 (2017) 1875



## pH Readout enhanced ELISA for point-of-care testing of cardiac troponin I

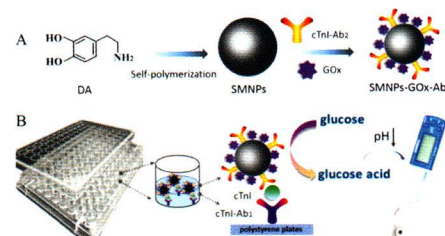
Luyang Miao<sup>a,1</sup>, Lianhua Zhang<sup>b,1</sup>, Lei Jiao<sup>a</sup>, Xiaofeng Tan<sup>a</sup>, Qin Wei<sup>a</sup>, He Li<sup>a,\*</sup>

<sup>a</sup>School of Chemistry and Chemical Engineering, University of Jinan, Jinan 250022, China

<sup>b</sup>Department of Urology, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai 200127, China

In this study, we described a pH ELISA using synthetic melanin nanoparticles (SMNPs) for the co-immobilization of glucose oxidase and second antibody as signal labels, portable pH meter as signal readout device for detecting biomarker of myocardial injury. This assay is easy-to-use, portable, sensitive and able to realize point-of-care testing (POCT), which was demonstrated the significant promising in the early diagnosis and screening of acute myocardial infarction.

Chinese Chemical Letters 28 (2017) 1878



## Immune fluorescence test strips based on quantum dots for rapid and quantitative detection of carcino-embryonic antigen

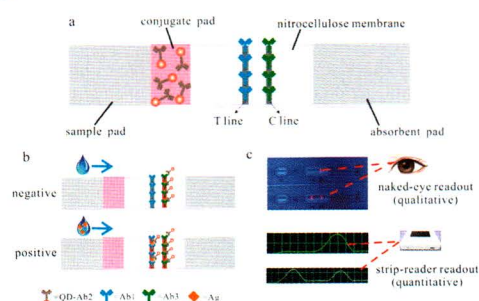
Yudong Wu<sup>a,1</sup>, Weipan Peng<sup>a,1</sup>, Qian Zhao<sup>a</sup>, Jiafang Piao<sup>a</sup>, Bo Zhang<sup>a</sup>, Xiaoli Wu<sup>a</sup>, Hanjie Wang<sup>a</sup>, Zhihong Shi<sup>b</sup>, Xiaoqun Gong<sup>a,\*</sup>, Jin Chang<sup>a,\*</sup>

<sup>a</sup>School of Life Sciences, School of Materials Science and Engineering, Tianjin University and Tianjin Engineering Center of Micro-Nano Biomaterials and Detection-Treatment Technology (Tianjin), Tianjin 300072, China

<sup>b</sup>Department of Neurology, and Tianjin Neurosurgery Institute, Tianjin Huanhu Hospital, Tianjin 300060, China

A QDs-based immune fluorescence test strips was built up for carcino-embryonic antigen detection to realize cancers POCT diagnostic, with a sensitivity of 0.72 ng/mL in 25 min.

Chinese Chemical Letters 28 (2017) 1881



## Fabrication of a polypseudorotaxane nanoparticle with synergistic photodynamic and chemotherapy

Tao-Tao Xu<sup>a</sup>, Jun-Hua Li<sup>a</sup>, Fu-Rong Cheng<sup>a</sup>, Yi-Xin Zhang<sup>b</sup>, Jun Cao<sup>a</sup>, Wen-Xia Gao<sup>c</sup>, Bin He<sup>a,\*</sup>

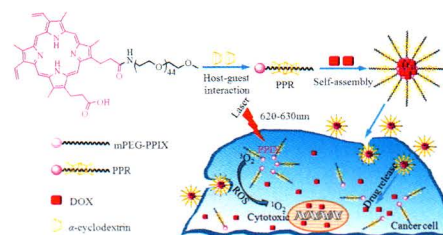
<sup>a</sup>National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, China

<sup>b</sup>School of Chemical Engineering, Sichuan University, Chengdu 610065, China

<sup>c</sup>College of Chemistry and Materials Engineering, Wenzhou University, Wenzhou 325027, China

Polypseudorotaxane (PPR) nanoparticles were fabricated by the self-assembly of mPEG-protoporphyrin IX (PpIX) conjugate and  $\alpha$ -CDs via the host-guest interaction for achieving synergistic photodynamic and chemotherapy.

Chinese Chemical Letters 28 (2017) 1885



## C<sub>60</sub>(OH)<sub>n</sub>-loaded nanofibrous membranes protect HaCaT cells from ROS - associated damage

Mengyu Guo<sup>a,1</sup>, Shuying Bi<sup>b,1</sup>, Jing Liu<sup>a</sup>, Wenshi Xu<sup>c</sup>, Guoqiang Zhou<sup>c</sup>, Ying Liu<sup>a,\*</sup>, Chunying Chen<sup>a,\*</sup>

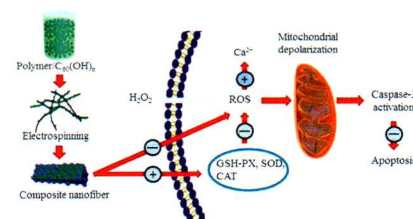
<sup>a</sup>CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety and CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology, Beijing 100190, China

<sup>b</sup>Chinese PLA Air Force General Hospital, Beijing 100142, China

<sup>c</sup>Key Laboratory of Medicinal Chemistry and Molecular Diagnosis of Ministry of Education, College of Chemistry and Environmental Science, Hebei University, Baoding 071002, China

C<sub>60</sub>(OH)<sub>n</sub>-loaded nanofibrous membranes were prepared by electrospinning to suppress the elevation of intracellular ROS and Ca<sup>2+</sup>, and to protect human keratinocyte cells from ROS-associated damage and apoptosis.

Chinese Chemical Letters 28 (2017) 1889



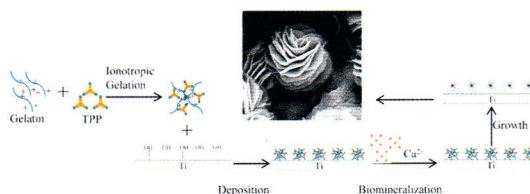


## A potential flower-like coating consisting of calcium-phosphate nanosheets on titanium surface

Quanquan Ma, Jinfeng Liao, Taoran Tian, Qi Zhang, Xiaoxiao Cai\*

State Key Laboratory of Oral Diseases, National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, China

A potential calcium-phosphate flower-like nanocoating were coated onto the titanium surface in an easy approach. It has high surface area, low cytotoxicity as well as promising cell affinity, which makes it a potential alternative modification method for titanium surface.



Chinese Chemical Letters 28 (2017) 1893

## Biocompatible microcapsules with a water core templated from single emulsions

Linlin Kong<sup>a,b</sup>, Esther Amstad<sup>c</sup>, Mingtan Hai<sup>c</sup>, Xinyou Ke<sup>c</sup>, Dong Chen<sup>a,b,c,\*</sup>, Chun-Xia Zhao<sup>c,d,\*</sup>, David A. Weitz<sup>c,\*</sup>

<sup>a</sup>Institute of Process Equipment, College of Energy Engineering, Zhejiang University, Hangzhou 310027, China

<sup>b</sup>State Key Laboratory of Fluid Power and Mechatronic Systems, Zhejiang University, Hangzhou 310027, China

<sup>c</sup>John A. Paulson School of Engineer and Applied Science, Harvard University, Cambridge, MA 02138, USA

<sup>d</sup>Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, St Lucia, QLD 4072, Australia

We use single emulsions as templates to fabricate monodisperse biocompatible microcapsules with a water core. These microcapsules are fabricated using FDA-approved polymer and non-toxic solvents and are of great use in drugs, cosmetics and foods.

Chinese Chemical Letters 28 (2017) 1897



## 11-Mercaptoundecanoic acid functionalized gold nanoclusters as fluorescent probes for the sensitive detection of Cu<sup>2+</sup> and Fe<sup>3+</sup> ions

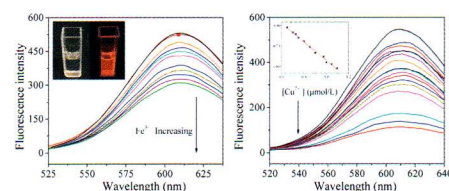
Zhiqun Bai<sup>a,b</sup>, Xiangling Ren<sup>b,\*</sup>, Zhen Gong<sup>a,b</sup>, Chenxi Hao<sup>a,b</sup>, Yongmei Chen<sup>a,\*</sup>, Pingyu Wan<sup>a</sup>, Xianwei Meng<sup>b,\*</sup>

<sup>a</sup>National Fundamental Research Laboratory of New Hazardous Chemicals, Beijing University of Chemical Technology, Beijing 100029, China

<sup>b</sup>Laboratory of Controllable Preparation and Application of Nanomaterials, CAS Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China

A facile synthetic fluorescent 11-MUA-Au NCs was applied to rapid and quantitative detection of Cu<sup>2+</sup> and Fe<sup>3+</sup> ions.

Chinese Chemical Letters 28 (2017) 1901



## Micelle or polymersome formation by PCL-PEG-PCL copolymers as drug delivery systems

Chunyan Hu<sup>a,1</sup>, Zhuo Chen<sup>a,1</sup>, Shengjie Wu<sup>a</sup>, Yanfeng Han<sup>b</sup>, Hai Wang<sup>a</sup>, Hongfan Sun<sup>a</sup>, Deling Kong<sup>a</sup>, Xigang Leng<sup>a</sup>, Chun Wang<sup>a,c</sup>, Linhua Zhang<sup>a,\*</sup>, Dunwan Zhu<sup>a,\*</sup>

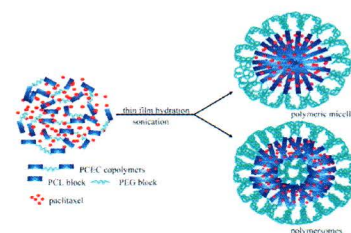
<sup>a</sup>Institute of Biomedical Engineering, Chinese Academy of Medical Sciences & Peking Union Medical College, Tianjin Key Laboratory of Biomedical Materials, Tianjin 300192, China

<sup>b</sup>School of Biomedical Sciences, The University of Queensland, Brisbane, QLD 4072, Australia

<sup>c</sup>Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN 55455, USA

Polymeric micelles and polymersomes may have great potential as the drug delivery vehicles for solubilization of hydrophobic drugs.

Chinese Chemical Letters 28 (2017) 1905



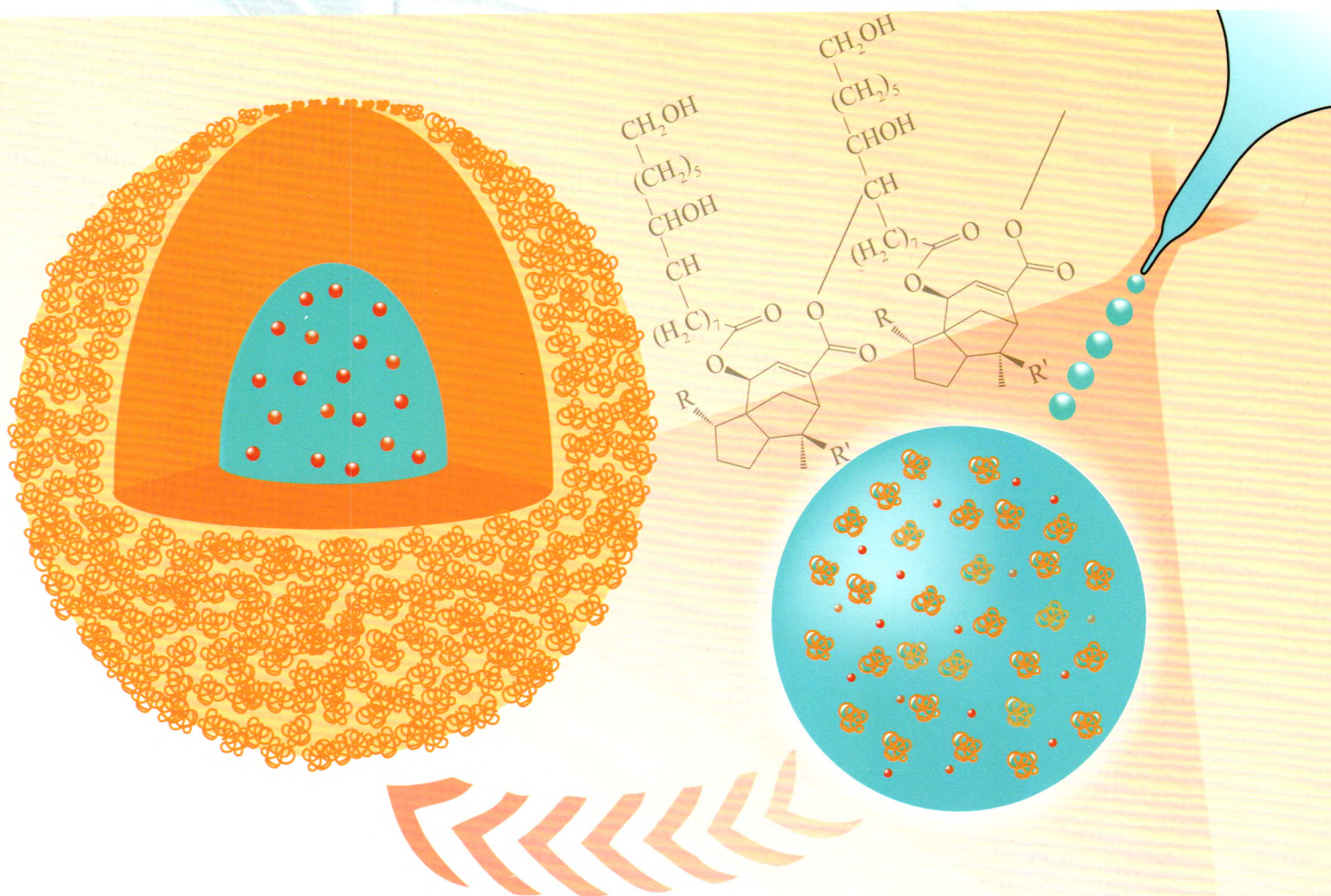


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