

# Journal of Materials Chemistry B

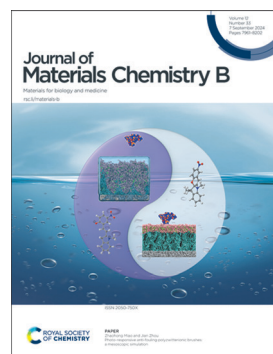
Materials for biology and medicine

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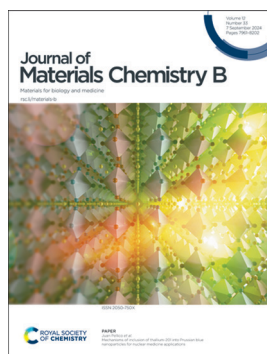
## IN THIS ISSUE

ISSN 2050-750X CODEN JMCBDV 12(33) 7961–8202 (2024)



### Cover

See Zhaohong Miao and Jian Zhou, pp. 8076–8086. Image reproduced by permission of Jian Zhou from *J. Mater. Chem. B*, 2024, 12, 8076.



### Inside cover

See Juan Pellico *et al.*, pp. 8087–8098. Image reproduced by permission of Juan Pellico and Phillip Blower from *J. Mater. Chem. B*, 2024, 12, 8087.

## PERSPECTIVE

7969

### Sculpturing the future of water-soluble cyclodextrin branched polymers in pharmaceutical applications

Marco Agnes\*, Arianna Mazza, Milo Malanga and Ilse Manet\*

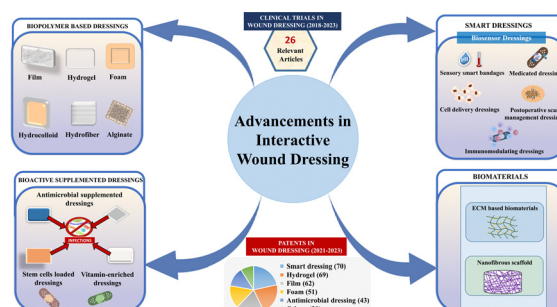


## REVIEWS

7977

### Innovative approaches to wound healing: insights into interactive dressings and future directions

Radhika Yadav, Rohtash Kumar, Muskan Kathpalia, Bakr Ahmed, Kamal Dua, Monica Gulati, Sachin Singh, Pushvinder Jit Singh, Suneel Kumar, Rohan M. Shah, Parneet Kaur Deol\* and Indu Pal Kaur\*



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## Huali Cao, Ming Wang, Jianwei Ding and Yiliang Lin\*

8033

Haide Dong, Danyang Wang, Hanyue Deng, Lijuan Yin,  
Xiongying Wang, Weihu Yang\* and Kaiyong Cai\*

8048

Mingyu Wu, Yao Xiao, Rongkun Wu, Jiaojiao Lei, Tian Li\*  
and Youkun Zheng\*

COMMUNICATIONS

## 8062

Yupeng Ren, Ling Zeng, Yingsen Tang, Jing Liao,  
Meng Jiang, Xinxiu Cao,\* Hui Fan\* and Jinjin Chen\*

**Hydrogel dressing on psoriatic skin lesion**

**Tunable porosity**

**Tunable stiffness/viscoelasticity**

**Tunable degradability**

**Good adhesiveness**

**Controlled drug delivery**

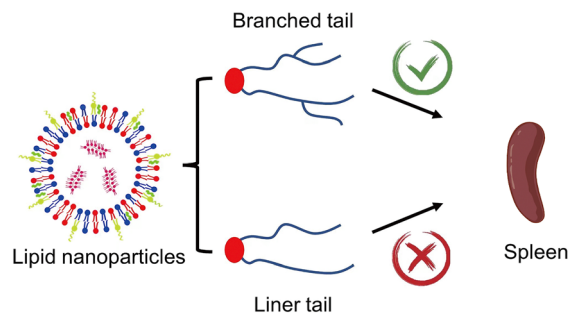
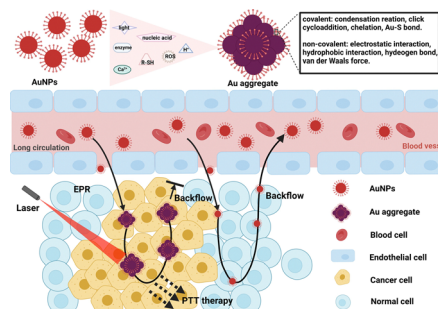
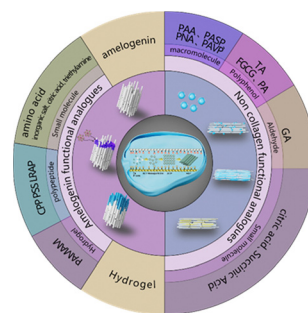
**Good moisture retention**

**Skin barrier repairment**

**Anti-inflammation agents**

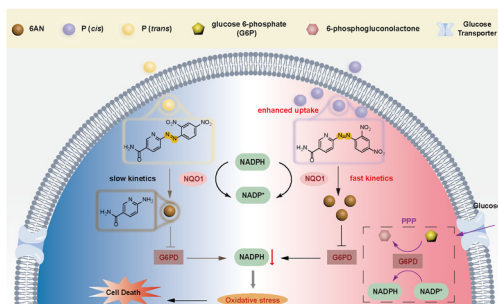
**Immune cell**

**Protease**



## COMMUNICATIONS

8067

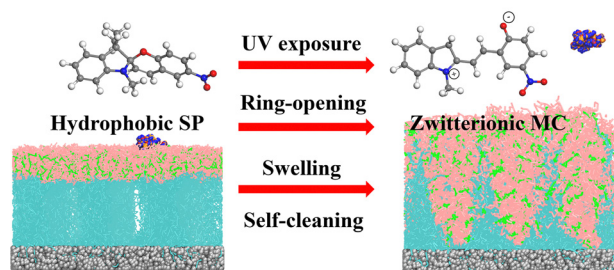


### Engineering hypoxia-responsive 6-aminonicotinamide prodrugs for on-demand NADPH depletion and redox manipulation

Mingye Li, Yuyu Dong, Zheng Wang, Yanjun Zhao,\* Yujie Dai\* and Baoxin Zhang\*

## PAPERS

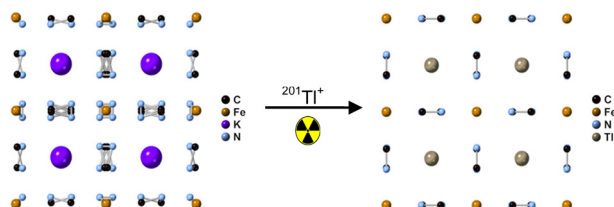
8076



### Photo-responsive anti-fouling polyelectrolyte brushes: a mesoscopic simulation

Zhaohong Miao and Jian Zhou\*

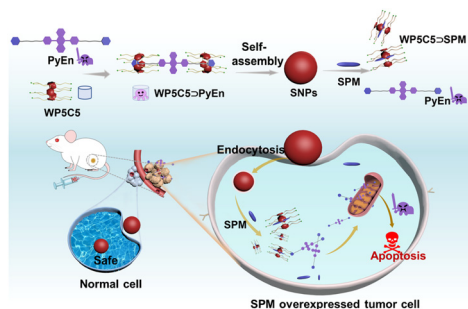
8087



### Mechanisms of inclusion of thallium-201 into Prussian blue nanoparticles for nuclear medicine applications

Katarzyna M. Wulfmeier, Philip J. Blower, Galo Paez Fajardo, Steven Huband, Rafael T. M. de Rosales, David Walker, Samantha YA Terry, Vincenzo Abbate and Juan Pellico\*

8099



### A spermine-responsive supramolecular chemotherapy system constructed from a water-soluble pillar[5]arene and a diphenylanthracene-containing amphiphile for precise chemotherapy

Yongfei Yin, Pei Zeng, Yifan Duan, Jun Wang, Wei Zhou, Penghao Sun, Zhanting Li, Lu Wang,\* Huageng Liang\* and Shigui Chen\*





# Heavy-atom-free $\pi$ -twisted photosensitizers for fluorescence bioimaging and photodynamic therapy

✓ Highly emissive  
 ✓ ER targeting  
 ✓  $^1\text{O}_2$  and/or  $\text{O}_2^{\cdot -}$   
 ✓ Limited dark toxicity  
 ✓ Nanomolar phototoxicity

## D-Peptide cell culture scaffolds with enhanced antibacterial and controllable release properties

D-IK1 hydrogel

Protease K treatment

Sustained release of antibacterial D-IK1

Cell culture

NIH 3T3 cell

IK1 solution

D-IK1 hydrogel

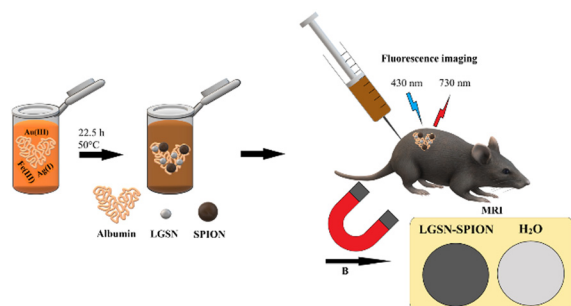
Killed *S. aureus*

## A multifunctional nanoplatform for precision-guided therapeutic intervention in bacterial infection

The diagram illustrates the synthesis and application of HCP. The top part shows the chemical synthesis of HCP from Cur, HA, HC, and PLL. The bottom part shows a mouse being injected with HCP, which then interacts with a cell, leading to the release of IL-12 and the activation of *S. aureus* and *E. coli*.

## A dry double-sided tape post-treated with tannic acid for long-term adhesion in a wet environment

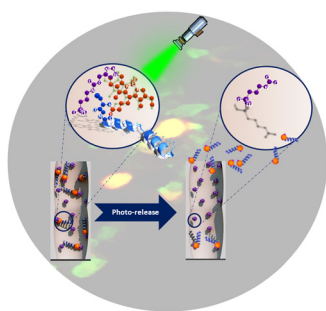
8153



### Trimetallic nanocomposites developed for efficient *in vivo* bimodal imaging via fluorescence and magnetic resonance

Veronika Svačinová, Aminadav Halili, Radek Ostruszka, Tomáš Pluháček, Klára Jiráková, Daniel Jiráček and Karolína Šišková\*

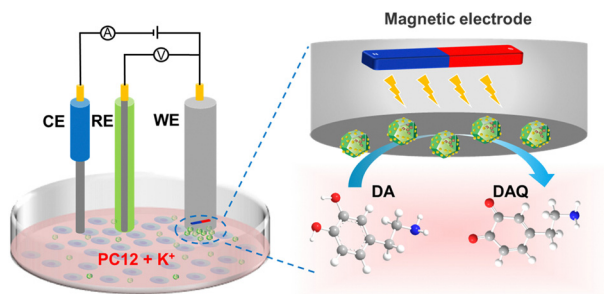
8167



### Grafting and controlled release of antimicrobial peptides from mesoporous silica

Mohadeseh Bagherabadi, Marie Fleckenstein, Oleksandr Moskalyk, Andrea Belluati, Olga Avrutina and Annette Andrieu-Brunsen\*

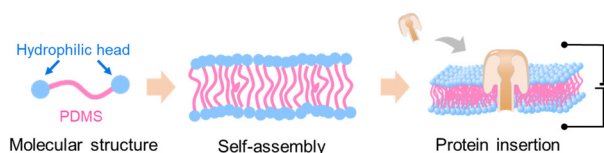
8181



### Magnetic MOF composites for the electrocatalysis and biosensing of dopamine released from living cells

Jiarong Guo, Ying Ma, Tongyu Han, Jiao Yang\* and Peng Miao\*

8189



### Formation of a planar biomimetic membrane with a novel zwitterionic polymer for nanopore sequencing

Xiaowei Yang, Jinfeng Yang, Lai Wei, Yuning Zhang, Jingnan Yang,\* Ming Ni\* and Yuliang Dong\*

