

# Journal of Materials Chemistry B

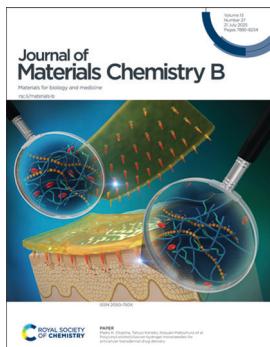
Materials for biology and medicine

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## IN THIS ISSUE

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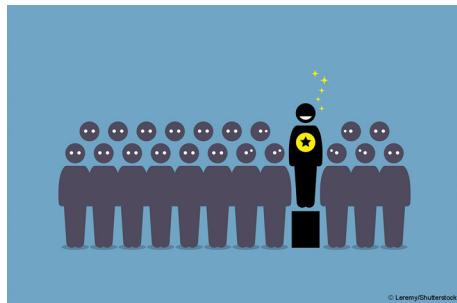
### Cover

See Maiko K. Okajima,  
Tatsuo Kaneko,  
Kazuaki Matsumura et al.,  
pp. 8014–8025.  
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*J. Mater. Chem. B*,  
2025, 13, 8014.

## EDITORIAL

7895

Outstanding Reviewers for *Journal of Materials Chemistry B* in 2024

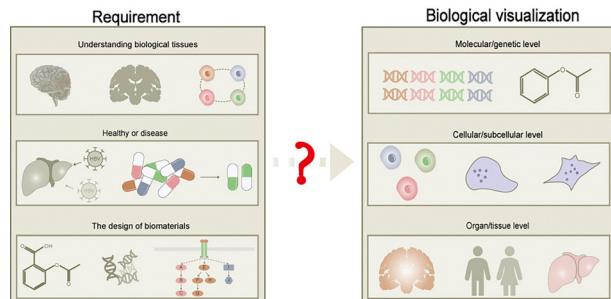


## REVIEWS

7897

Decoding tissue complexity: multiscale mapping of chemistry–structure–function relationships through advanced visualization technologies

Zhiyuan Zhao, Haijun Cui\* and Haitao Cui\*





# RSC Applied Interfaces

GOLD  
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## Interfacial and surface research with an applied focus

### Interdisciplinary and open access



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Fundamental questions  
Elemental answers

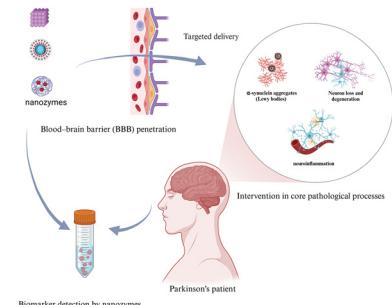
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## REVIEWS

7919

**Nanozymes in Parkinson's disease: strategic approaches, clinical considerations, and challenges**

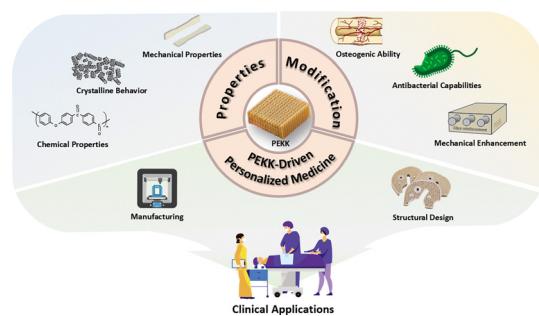
Wanli Huang, Xiaofang Ye, Zhengping Huang, Mimi Li, Binbin Yu, Lichao Ye, Shaobin He\* and Chunnuan Chen\*



7934

**Exploring PEKK: properties, applications and promise of personalized medicine**

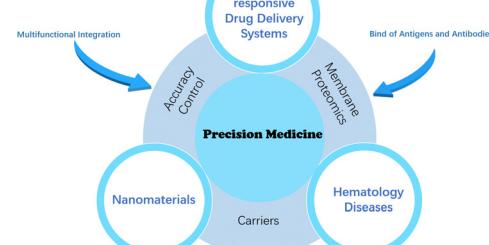
Honglin Zhu, Zhize Liu, Ming Lu, Xiao Han and Shuang Zhang\*



7953

**Nanomaterials in stimulus-responsive drug delivery systems facilitate precise therapy for hematologic diseases**

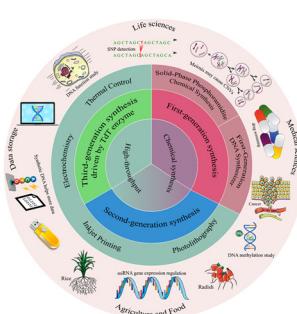
Lingrui Li, Wei Jiang\* and Shaowei Qiu\*



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**Research progress in high-throughput DNA synthesis and its applications**

Chongyu Liu, Weihua Zhuang, Liheng Liu, Ying Chen, Chengli Yang, Hao Chen,\* Yongchao Yao,\* Xuping Sun\* and Wenchuang (Walter) Hu\*

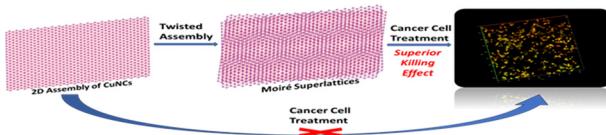


## COMMUNICATION

8005

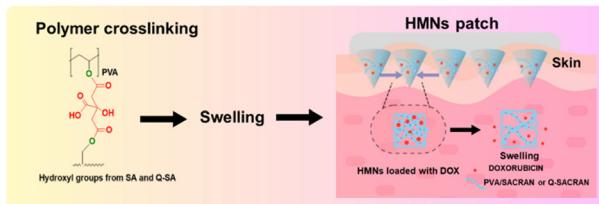
**Moiré superlattices of copper nanocluster assemblies for cancer theranostics**

Priya Das, Debasree Debasmita, Sawna Roy, Siddhartha Sankar Ghosh\* and Arun Chattopadhyay\*



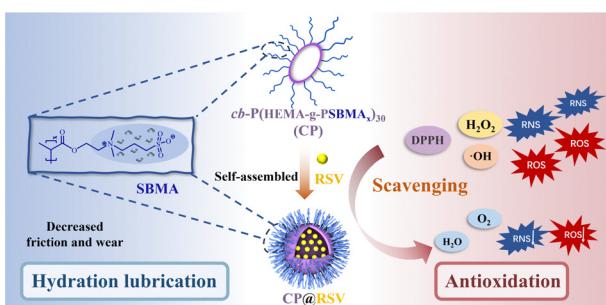
## PAPERS

8014

**Poly(vinyl alcohol)/sacran hydrogel microneedles for anticancer transdermal drug delivery**

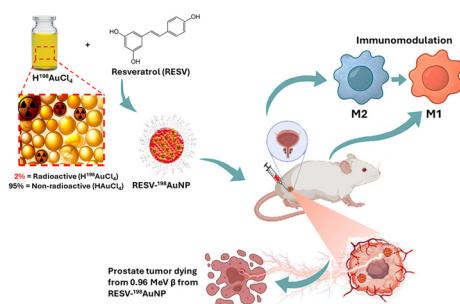
Chamaiporn Supachettapun, Mohammad Asif Ali, Nongnuj Muangsin, Linh Viet Nguyen, Van Anh Ho, Maiko K. Okajima,\* Tatsuo Kaneko\* and Kazuaki Matsumura\*

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**Zwitterionic-based cyclic brush polymer nanomicelles with improved lubrication and antioxidant properties**

Huizhu Wang, Miao Zhang, Ying Chen, Shaopei Ding, Meng Qin, Tong Wu,\* Jianshu Li and Jing Xie\*

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**Immunomodulatory green nanomedicine production, tumor cellular targeting, *in vivo* biodistributions and preclinical therapeutic efficacy investigations of resveratrol-functionalized gold and theranostic <sup>198</sup>gold nanoparticles**

Tamer M. Sakr, Velaphi C. Thipe, Kavita K. Katti, Lisa Watkinson, Terry Carmack, Charles J. Smith, Cathy Cutler, Prajna Hegde, Anantkumar Hegde, Ademar B. Lugão and Kattesh V. Katti\*

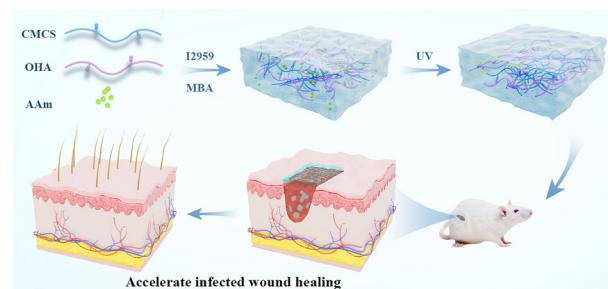


## PAPERS

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## Extracellular matrix-inspired natural polymer-based composite hydrogel dressings for infected wound healing

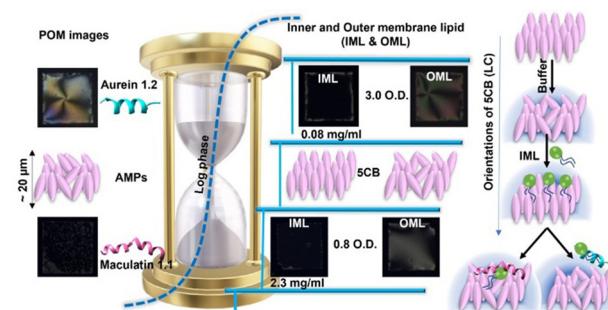
Jun-Hui Yang, Wen-Ling Du, Hao-Jie Tan, Yu-Xin Zong, Qing-Ning Wang, Bai-Song Zhao, Zhi-Guo Wang, Rui Zhang,\* Jia-Zhuang Xu\* and Zhong-Ming Li



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## Liquid crystal–aqueous interface renders selective detection of distinct mycobacterial cell envelope responses

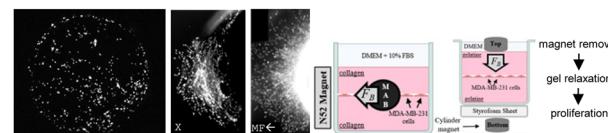
Tarang Gupta, Anjana P Menon, Shobhna Kapoor\* and Santanu Kumar Pal\*



8068

## Breast cancer extracellular matrix invasion depends on local mechanical loading of the collagen network

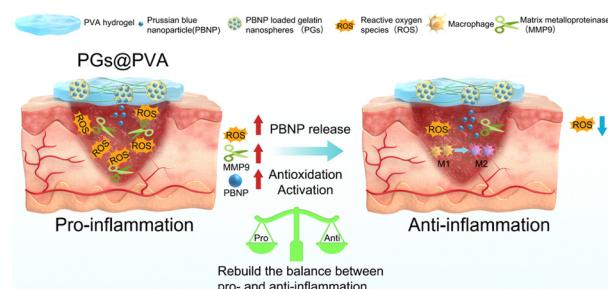
Hanadi M. Alqasiri, Hadeel M. Alqasiri, Sara E. Alqasire, Victor E. Nava, Bidhan C. Bandyopadhyay and Christopher B. Raub\*



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## A MMP9-responsive nanozyme hydrogel to promote diabetic wound healing by reconstructing the balance of pro-inflammation and anti-inflammation

Jinze Wang, Haiqi Zhang, Sentao Hu and Lie Ma\*



## PAPERS

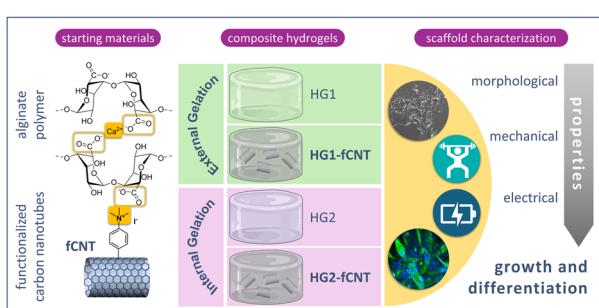
8094



### Charge microenvironment and bioactivity of *in situ*-formed PEG-RGD dual hydrogel dressings promote wound healing

Chuanjie He, Yulin Wang, Xinyu Fang, Wenkai Jiang, Sihan Liu, Xiaoli Yi, Kai Zhang, Hai Lin, Qin Zeng, Xiangdong Zhu, Ya Li,\* Xu Song\* and Xingdong Zhang

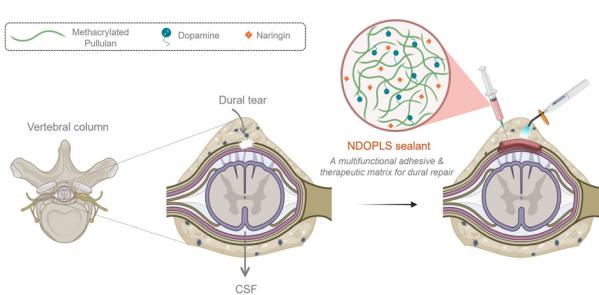
8105



### Quaternary ammonium-functionalized carbon nanotubes/alginate nanocomposite hydrogels support myoblast growth and differentiation

Ludovica Ceroni, Tianqi Feng, Laura Calvillo, Stefano Casalini, Patrick Van Rijn\* and Enzo Menna\*

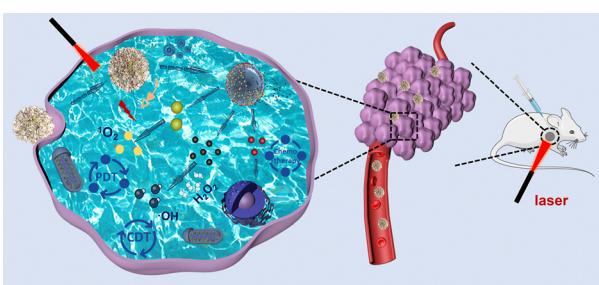
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### Light-responsive pullulan-based dural adhesive with enhanced anti-fibrotic properties, *in vitro*

Chinaithi Narzary, Sailakshmi Ganesh, Tanjot Kaur, Tarun Shyam Mohan, Sandhya Natesan and Greeshma Thrivikraman\*

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### A TME-responsive oxygen-self-supplying hybridized polymersome for synergistic triple-modal therapy and precision theranostics in hypoxic tumors

Zhe Tang, Wanru Luo, Mengmeng Xu, Yuan Liu, Qianqian Yu\* and LinGe Wang\*

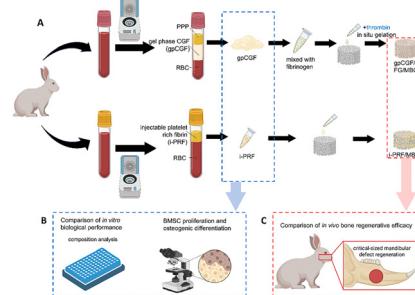


## PAPERS

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## Construction and evaluation of platelet concentrate/mesoporous bioactive glass composite scaffolds for bone repair: injectable platelet-rich fibrin (i-PRF) vs. concentrated growth factors (CGF)

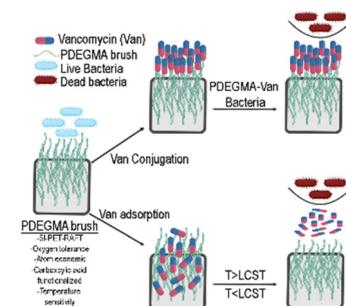
Yuanyuan Guo, Zhizheng Li, Mengran Ma, Lingqiang Meng\* and Dan Lin\*



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## Antibacterial abilities of Vancomycin interactions in PDEGMA brushes fabricated by interface-mediated PET-RAFT polymerization on implant surfaces

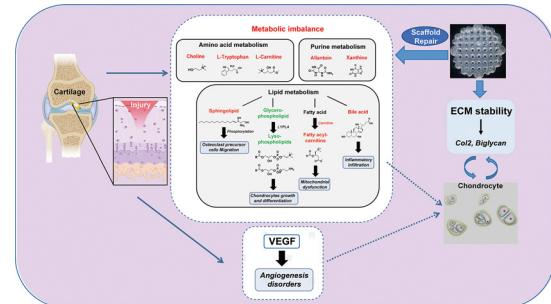
Ayla Abbaslı, Kübra Erkan Türkmen, Dilek Cimen Eren and Ertan Yıldırım\*



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## Astragalus polysaccharide-containing 3D-printed scaffolds promote cartilage regeneration by correcting metabolic disorders and promoting cellular matrix remodeling

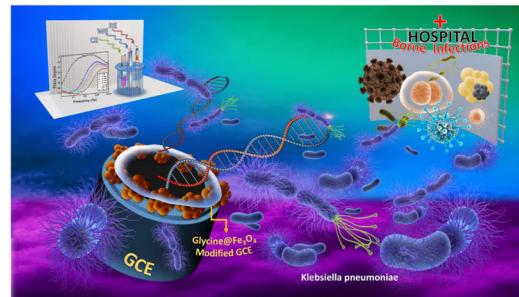
Weibin Du,\* Zhenwei Wang, Wenxiang Zeng, Huahui Hu, Yanghua Tang, Guoping Cao, Gang Qu and Rongliang Chen\*



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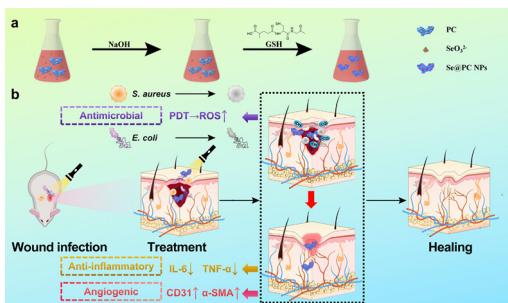
## Development of a glycine-modified iron oxide nanoparticle-electrochemical biosensor for specific detection of *Klebsiella pneumoniae* DNA

Rutuja Prashant Gambhir, Somnath Kundale, Sohel B. Shaikh, Amol S. Vedpathak, Rajanish K. Kamat, Tukaram D. Dongale, Yogendra Kumar Mishra, Ravindra N. Bulakhe,\* Ji Man Kim\* and Arpita Pandey Tiwari\*



## PAPERS

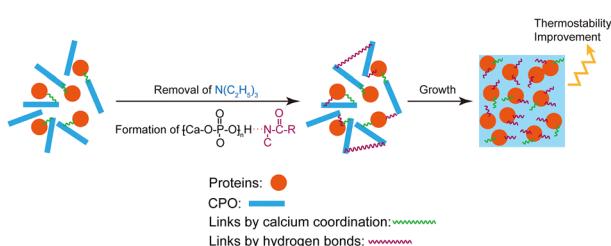
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### Phycocyanin functionalized selenium nanoparticles for type I photodynamic antibacterial therapy and wound healing

Zhi Xu, Yile Jin, Zhihui Zhang, Yixiang HePeng, Chen Zhang, Surui Yang, Kailin Qu, Qi Ning, Mory Kououma, Ruiyuan Liu,\* Xu Wu\* and Xiang Li\*

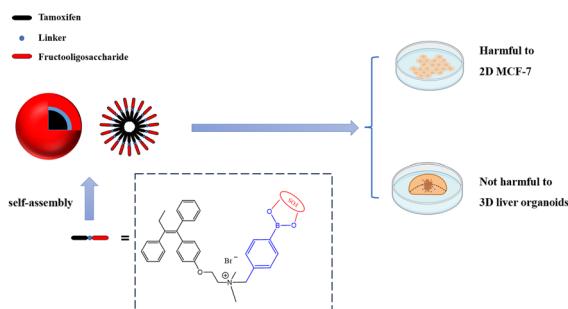
8219



### Biomimetic mineralization with enhanced hydrogen-bond interactions for protein stabilization

Yihao Cui, Shuling Tang, Tianren Liu, Chen Luo and Xiaoyu Wang\*

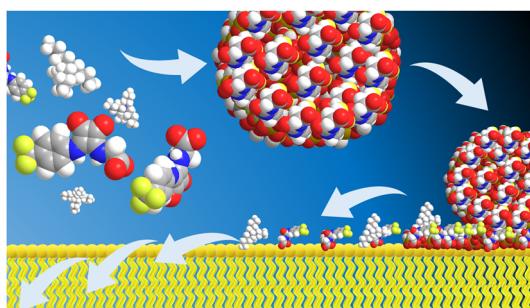
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### Efficacy and hepatotoxicity of tamoxifen-loaded fructose-based nanodrug for breast cancer treatment

Mingliang Fan, Jiayu Zheng, Yue Huang, Hongxu Lu\* and Mingxia Lu\*

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### Towards the development of supramolecular self-associating amphiphiles as antibiofilm agents against *Pseudomonas aeruginosa* and *Candida albicans* biofilms

Kira L. F. Hilton, Hendrik J. F. Steyn, Kusasalethu S. Luthuli, Matthew Rice, Bree R. Streather, Esther Sweeney, Lisa J. White, Findley R. Morgan, Jennifer Rankin, Jennifer Baker, Charlotte Bennett, Hollie B. Wilson, Perry A. Hailey, Michelle D. Garrett, Jose L. Ortega-Roldan, J. Mark Sutton,\* Charlotte K. Hind,\* Carolina H. Pohl\* and Jennifer R. Hiscock\*

