

# Journal of Materials Chemistry B

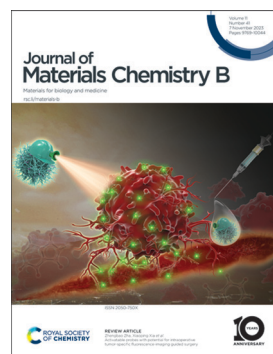
Materials for biology and medicine

[rsc.li/materials-b](https://rsc.li/materials-b)

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 2050-750X CODEN JMCBDV 11(41) 9769–10044 (2023)



### Cover

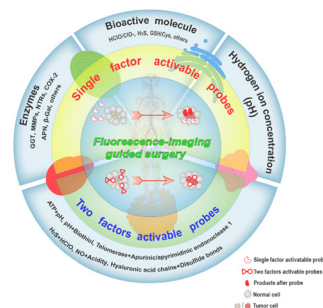
See Zhengbao Zha, Xiaoping Xia *et al.*, pp. 9777–9797. Image reproduced by permission of Zhengbao Zha from *J. Mater. Chem. B*, 2023, 11, 9777.

## REVIEWS

9777

### Activatable probes with potential for intraoperative tumor-specific fluorescence-imaging guided surgery

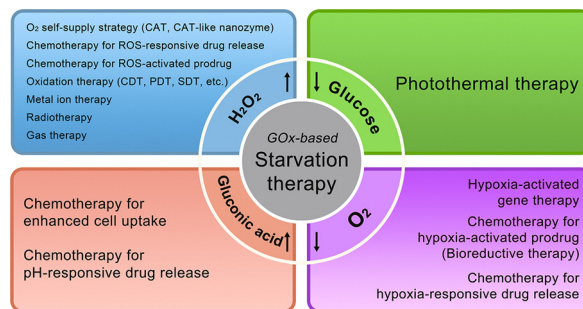
Mingzhu Wu, Deyan Gong, Yuanyuan Zhou, Zhengbao Zha\* and Xiaoping Xia\*



9798

### Cascade strategy for glucose oxidase-based synergistic cancer therapy using nanomaterials

Ruixuan He, Peida Yang, Aoxue Liu, Yueli Zhang, Yuqi Chen, Cong Chang\* and Bo Lu\*



## Editorial Staff

### Executive Editor

Michaela Mühlberg

### Deputy Editor

Geraldine Hay

### Editorial Production Manager

Jonathon Watson

### Senior Publishing Editor

Fiona Iddon

### Development Editor

Natalie Cotterell

### Publishing Editors

Eleanor Griffiths, Francesca Jacklin, Brian Li

### Editorial Assistant

Daniel Smith

### Publishing Assistant

Jane Paterson

### Publisher

Sam Keltie

For queries about submitted papers, please contact Jonathon Watson, Editorial Production Manager in the first instance. E-mail: [materialsB@rsc.org](mailto:materialsB@rsc.org)

For pre-submission queries please contact Michaela Mühlberg, Executive Editor. E-mail: [materialsB-rsc@rsc.org](mailto:materialsB-rsc@rsc.org)

Journal of Materials Chemistry B (electronic: ISSN 2050-7518) is published

48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK

Tel +44 (0)1223 432398; E-mail [orders@rsc.org](mailto:orders@rsc.org)

2023 Annual (electronic) subscription price: £2192; \$3516.

Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at [www.rsc.org/ip](http://www.rsc.org/ip)

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK, Telephone: +44 (0) 207 4378 6556.

### Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017;

E-mail [advertising@rsc.org](mailto:advertising@rsc.org)

For marketing opportunities relating to this journal, contact [marketing@rsc.org](mailto:marketing@rsc.org)

# Journal of Materials Chemistry B

[rsc.li/materials-b](http://rsc.li/materials-b)

*Journal of Materials Chemistry A, B & C* cover high quality studies across all fields of materials chemistry. The journals focus on those theoretical or experimental studies that report new understanding, applications, properties and synthesis of materials. *Journal of Materials Chemistry B* covers materials with applications in biology and medicine.

## Editorial Board

### Editor-in-Chief

Jeroen Cornelissen, University of Twente, The Netherlands

### Associate Editors

Kaushik Chatterjee, Indian Institute of Science, India  
Elizabeth Cosgriff-Hernandez, The

University of Texas at Austin, USA  
Gemma-Louise Davies, University of Birmingham, UK  
Håkan Engqvist, Uppsala University, Sweden  
Jian Ji, Zhejiang University, China  
Shaoqin Liu, Harbin Institute of Technology, China  
Yoshiko Miura, Kyushu University, Japan

Jessica Winter, The Ohio State University, USA  
Chengzhong Yu, University of Queensland, Australia

### Member

Claus Feldmann, Karlsruhe Institute of Technology, Germany

## Advisory Board

D. Benoit, University of Rochester, USA  
C. Bettinger, Carnegie Mellon University, USA  
W. Chan, University of Toronto, Canada  
J. Chang, Shanghai Institute of Ceramics, China  
H. Cölfen, University of Konstanz, Germany  
T. Da Ros, Trieste University, Italy  
T. Davis, Monash University, Australia  
T. Desai, University of California, San Francisco, USA  
X. Deng, Peking University, China  
E. Duguet, University of Bordeaux, France  
C. Fan, Shanghai Jiao Tong University, China  
Y. Fang, NCNST, China  
R. Forgan, University of Glasgow, UK  
J. Fu, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences, China  
A. Gedanken, Bar-Ilan University, Israel  
M. Grunlan, Texas A&M University, USA  
Y. Gun'ko, Trinity College Dublin, Ireland  
J. van Hest, Radboud University Nijmegen, The Netherlands  
K. Hamad-Schifferli, University of Massachusetts Boston, USA  
B. Harley, University of Illinois, USA  
A. Higuchi, National Central University, Chinese Taipei, and Wenzhou Medical

University, China  
S. Inal, KAUST, Saudia Arabia  
Y. Ito, RIKEN, Japan  
B. Keselowsky, University of Florida, USA  
J. Khandare, MIT WPU Campus, India  
A. Kloxin, University of Delaware, USA  
N. Kotov, University of Michigan, USA  
Z.-C. Li, Peking University, China  
E. Lipke, Auburn University, USA  
L. Liz-Marzan, CIC biomaGUNE, Spain  
D. Lynn, University of Wisconsin, USA  
E. D.-L. Ma, Hong Kong Baptist University, Hong Kong  
G. Malliaras, University of Cambridge, UK  
H.-Q. Mao, Johns Hopkins University, USA  
S. Marchesan, University of Trieste, Italy  
D. Martin, University of Delaware, USA  
K. Masters, University of Wisconsin-Madison, USA  
A. Miserez, Nanyang Technological University, Singapore  
R. O'Reilly, University of Birmingham, UK  
M. in het Panhuis, University of Wollongong, Australia  
A. Pannier, University of Nebraska, USA  
J. Park, KAIST, Korea  
S. Perrier, University of Warwick, UK  
X. Qu, Changchun Institute of Applied

Chemistry, Chinese Academy of Sciences, China  
M. Resmini, Queen Mary University of London, UK  
K. Schenke-Layland, NMI Natural and Medical Sciences Institute, University of Tübingen, Reutlingen, Germany  
C. Schmidt, University of Florida, USA  
L. Segatori, Rice University, USA  
T. Serizawa, Tokyo Institute of Technology, Japan  
Y. Shen, Zhejiang University, China  
S. Staniland, University of Sheffield, UK  
N. Steinmetz, University of California, San Diego, USA  
M. Stenzel, University of New South Wales, Australia  
M. Stevens, Imperial College London, UK  
S. Stoll, Georgetown Washington, USA  
L. Stugs, University of Texas at Austin, USA  
M. Takai, University of Tokyo, Japan  
J. Tementoff, Georgia Institute of Technology, USA  
P. Théato, Karlsruhe Institute of Technology, Germany  
R. Uljin, City University of New York, US  
J. Zheng, University of Akron, USA

## Information for Authors

Full details on how to submit material for publication in Journal of Materials Chemistry B are given in the Instructions for Authors (available from <http://www.rsc.org/authors>). Submissions should be made via the journal's homepage: [rsc.li/materials-b](http://rsc.li/materials-b). Submissions: The journal welcomes submissions of manuscripts for publication as Full Papers, Communications, Reviews, Highlights and Applications. Full Papers and Communications should describe original work of high quality and impact which must highlight the novel properties or applications (or potential properties/applications) of the materials studied.

Additional details are available from the Editorial Office or <http://www.rsc.org/authors>

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of

Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)-Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023.

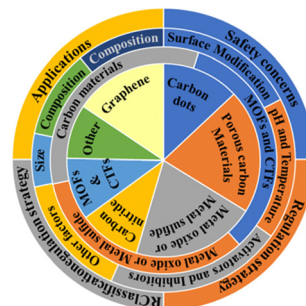
Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

Registered charity number: 207890



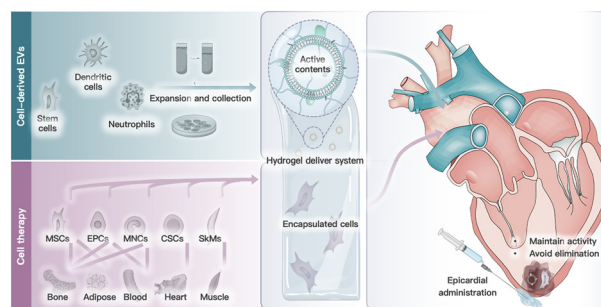
## 9840

Jiping Han, Yaohua Gu, Changyi Yang, Lingchen Meng,  
Runmei Ding,\* Yifan Wang, Keren Shi\* and Huiqin Yao\*



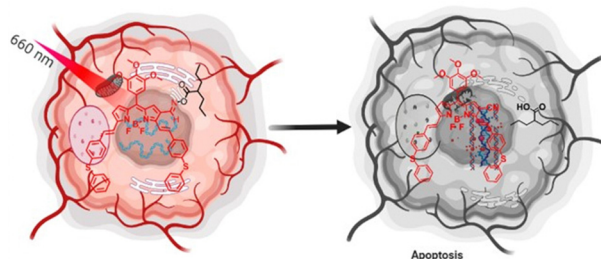
## Cell or cell derivative-laden hydrogels for myocardial infarction therapy: from the perspective of cell types

Ziqing Xiong, Qi An, Liqiang Chen, Yucheng Xiang,  
Lian Li\* and Yaxian Zheng\*



## 9889

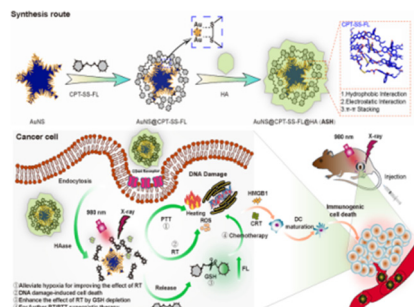
Zhaoxiong Wan, Shupeí Yu, Qí Wang, Karthik Sambath,  
Roshena Harty, Xiangshan Liu, Hao Chen, Chen Wang,  
Xuan Liu and Yuanwei Zhang\*



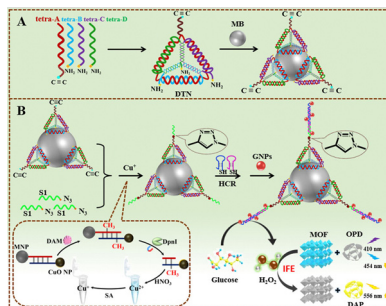
## 9894

# GSH-activatable camptothecin prodrug-loaded gold nanostars coated with hyaluronic acid for targeted breast cancer therapy *via* multiple radiosensitization strategies

Yingke Hou, Bin Sun, Rongtian Li, Wei Meng,  
Wenhua Zhang, Nuan Jia, Ming Chen,\* Jinxiang Chen\*  
and Xiaoyan Tang\*



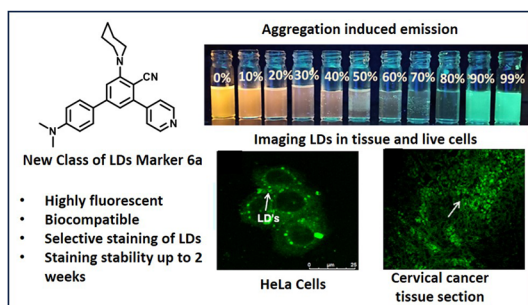
9912



### Tetrahedral DNA nanostructure-corbelled click chemistry-based large-scale assembly of nanozymes for ratiometric fluorescence assay of DNA methyltransferase activity

Guohui Cao, Huiying Jia, Shuling Xu, Ensheng Xu, Pin Wang,\* Qingwang Xue\* and Huaisheng Wang

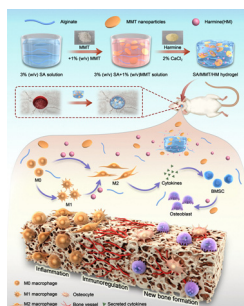
9922



### A new class of teraryl-based AIEgen for highly selective imaging of intracellular lipid droplets and its detection in advanced-stage human cervical cancer tissues

Chandra Prakash Sharma, Akanksha Vyas, Priyanka Pandey, Shashwat Gupta, Ravi Prakash Vats, Sakshi Priya Jaiswal, Madan Lal Brahma Bhatt, Monika Sachdeva\* and Atul Goel\*

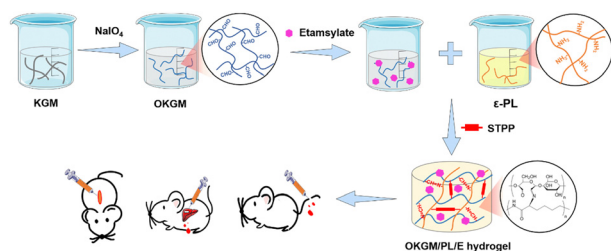
9933



### Osteoimmunity-regulating nanosilicate-reinforced hydrogels for enhancing osseointegration

Yuanyuan Li, Guangmei Yang, Yuting Wang, Yahong Li, Shu Zhang, Ruyi Li, Linxin Yang, Jian Wang, Xibo Pei, Qianbing Wan\* and Junyu Chen\*

9950



### Etamsylate loaded oxidized Konjac glucomannan-ε-polylysine injectable hydrogels for rapid hemostasis and wound healing

Shuo Xu, Jun You, Shaorong Yan, Luting Zhu\* and Xiaochen Wu\*

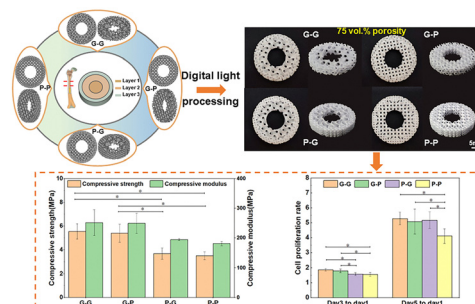




9961

## Design and fabrication of biomimicking radially graded scaffolds via digital light processing 3D printing for bone regeneration

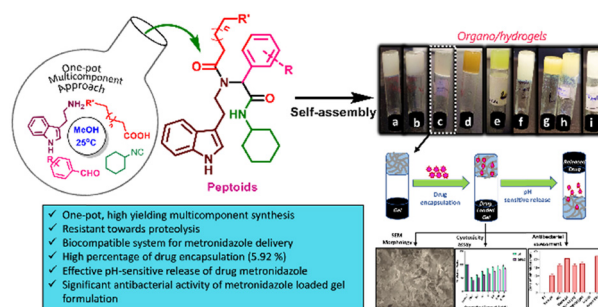
Yue Wang, Shangsi Chen, Haowen Liang, Jiaming Bai\* and Min Wang\*



9975

## Facile one-pot multicomponent synthesis of peptoid based gelators as novel scaffolds for drug incorporation and pH-sensitive release

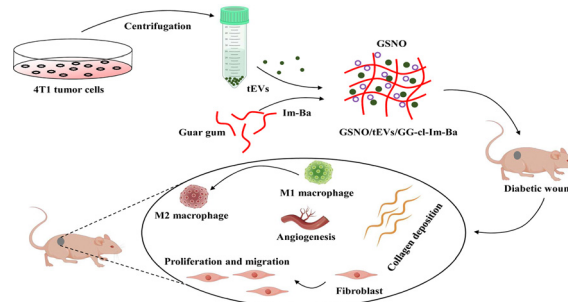
Sharol Sebastian, Eqvinshi Yadav, Priya Bhardwaj, Mulaka Maruthi, Deepak Kumar and Manoj K. Gupta\*



9987

## Synergistic wound repair effects of a composite hydrogel for delivering tumor-derived vesicles and S-nitrosoglutathione

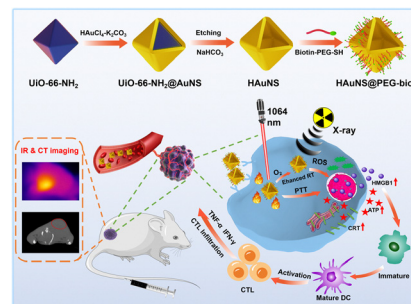
Wenbin Nan, Fan Wang, Hao Wang, Wenchi Xiao, Linxiao Li, Chao Zhang, Yulu Zhang, Linna Dai, Zhihao Xu, Guoyun Wan, Yongxue Wang, Hongli Chen, Qiqing Zhang\* and Yongwei Hao\*



10003

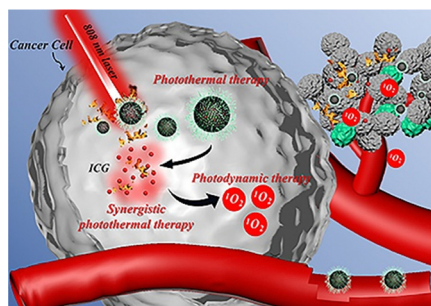
## Biotin-decorated hollow gold nanoshells for dual-modal imaging-guided NIR-II photothermal and radiosensitizing therapy toward breast cancer

Yongjian Chen, Wei Meng, Ming Chen, Lianying Zhang, Mingwa Chen, Xiaotong Chen, Jian Peng, Naihan Huang, Wenhua Zhang\* and Jinxiang Chen\*



## PAPERS

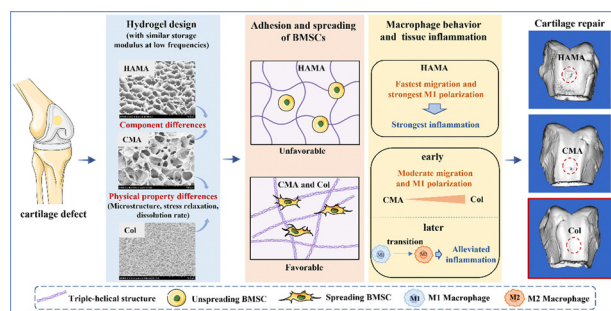
10019



### Multifunctional biocompatible Ni/Ni–P nanospheres for anti-tumor “neoadjuvant phototherapy” combining photothermal therapy and photodynamic therapy

Peizhe Song, Shujuan Jin, Yue Cao, Shaopeng Zhang, Na Yin, Hao Zhang and Daguang Wang\*

10029



### Components and physical properties of hydrogels modulate inflammatory response and cartilage repair

Yongli Gao, Wenling Dai, Shikui Li, Xingchen Zhao, Jing Wang, Weili Fu, Likun Guo,\* Yujiang Fan and Xingdong Zhang

