

# Journal of Materials Chemistry B

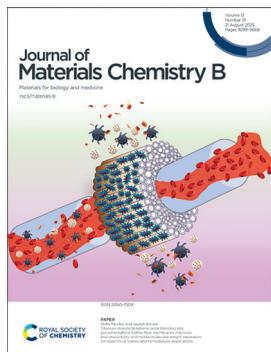
Materials for biology and medicine

[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 13(31) 9299–9668 (2025)



### Cover

See Nidhi Pandey and Jayesh Bellare, pp. 9392–9406.  
Image reproduced by permission of Nidhi Pandey and Jayesh Bellare from *J. Mater. Chem. B*, 2025, 13, 9392.



### Inside cover

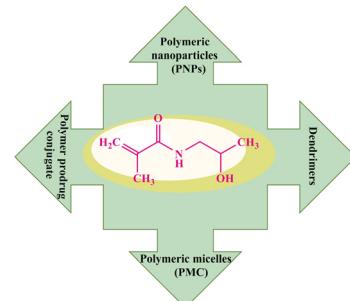
See Francisco M. Raymo, Serena Riela et al., pp. 9407–9417.  
Image reproduced by permission of Serena Riela from *J. Mater. Chem. B*, 2025, 13, 9407.

## REVIEWS

9309

### HPMA nanomedicine: targeting cancer with precision

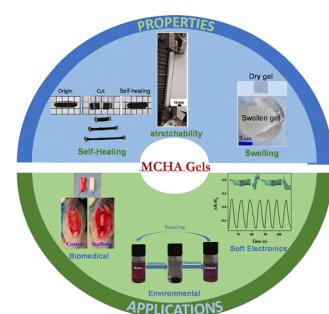
Sarita Rani, Vinay Kumar, Sofiya Tarannum and Umesh Gupta\*



9329

### A state-of-the-art review of multi-cross-linked hydrophobic associated hydrogels for soft electronic, biomedical, and environmental applications

Pooria Rahmani,\* Akbar Shojaei,\* Mohammadreza Sahabi, Mohammad Akbarizadeh, Mani Mahmoodi and Aref Zarghanishiraz



# Advance your career in science

with professional recognition that showcases your **experience, expertise and dedication**

## Stand out from the crowd

Prove your commitment to attaining excellence in your field

## Gain the recognition you deserve

Achieve a professional qualification that inspires confidence and trust

## Unlock your career potential

Apply for our professional registers (RSci, RSciTech) or chartered status (CChem, CSci, CEnv)

**Apply now**  
[rsc.li/professional-development](http://rsc.li/professional-development)

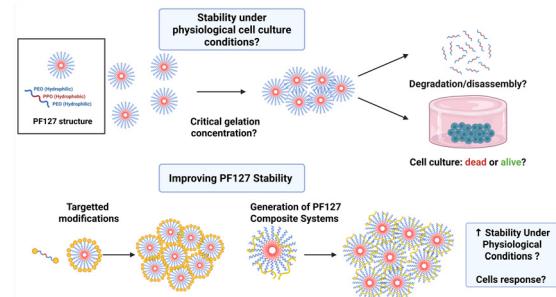


## REVIEWS

9351

## Thermoresponsive polymers for cell support: poloxamers as a case study of promise and challenge

Shane Clerkin, Krutika Singh, Danielle Winning, Ivan Krupa, John Crean, Dermot F. Brougham\* and Jacek K. Wychowaniec\*

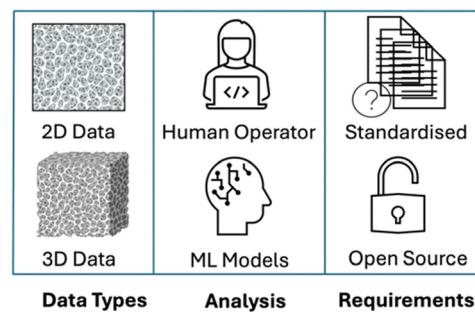


## PERSPECTIVE

9377

## Automated analysis of pore structures in biomaterials

Nicola Rossberg, Simon Corrie, Lisbeth Grøndahl and Imanda Jayawardena\*

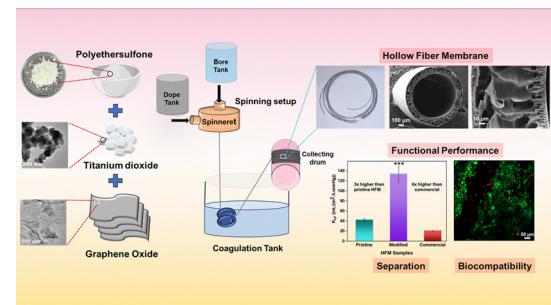


## PAPERS

9392

## Titanium dioxide/graphene oxide blending into polyethersulfone hollow fiber membranes improves biocompatibility and middle molecular weight separation for bioartificial kidney and hemodialysis applications

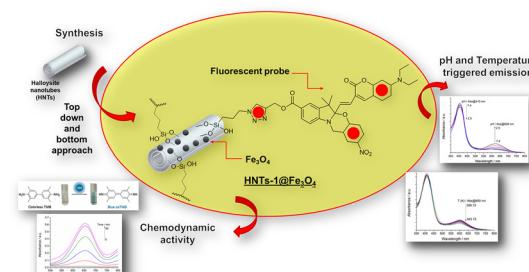
Nidhi Pandey and Jayesh Bellare\*



9407

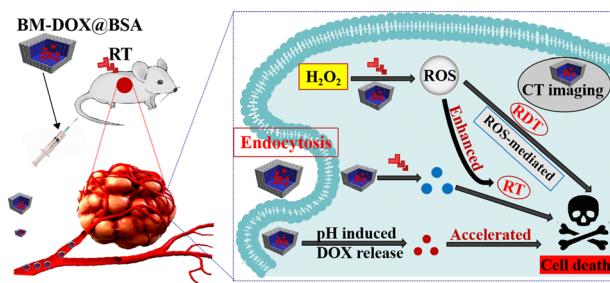
## Design of halloysite nanotube-based nanomaterials for theranostic applications: fluorescent probes and chemodynamic activity

Marina Massaro, Federica Leone, Francisco M. Raymo,\* Raquel de Melo Barbosa, Rita Sánchez-Espejo, César Viseras, Renato Noto and Serena Riela\*



## PAPERS

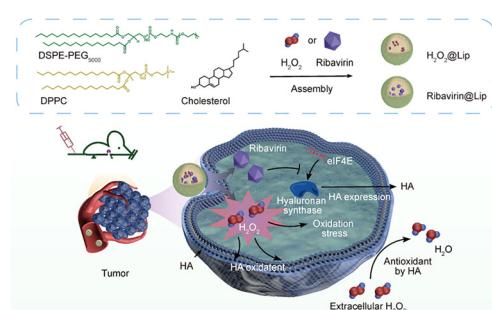
9418



**pH-Responsive bimetallic MOF nanoparticles enable triple-synergistic radiosensitization for enhanced radiotherapy**

Qijun Du, Guohua Wu, Ao Xie, Di Wu, Wenqi Hu, Qinrui Lu, Jie Liu, Jiashu Wang, Youlong Yang, Bangchuan Hu,\* Haijie Hu\* and Shuqi Wang\*

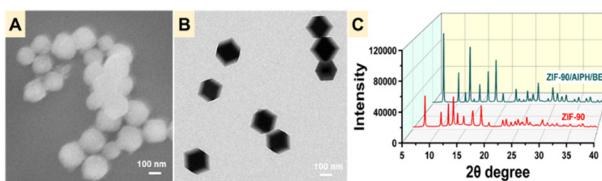
9430



**Impairing antioxidant protection by diminishing hyaluronic acid using nanoliposomes for tumor therapy**

Hegang Lu, Yunjian Yu, Shengke Zhao, Youtao Xin, Hongyu Liu, Qinghua Feng, Mahmoud Elsabahy and Hui Gao\*

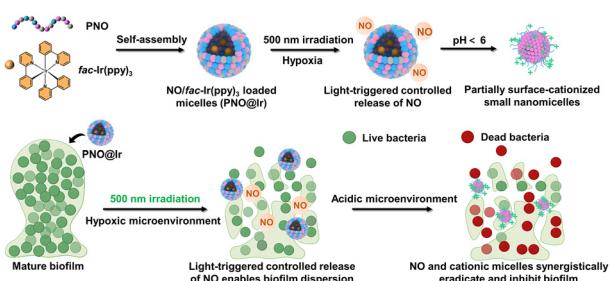
9442



**Lung-targeted feedback regulation of the mitochondrial ATP synthesis pathway for orthotopic tumor suppression**

Zhou Jiang, Songlan Pan, Jianhua Chen, Huihuang Yi, Yingfeng Li, Yi Qing, Erhu Xiong\* and Zhen Zou\*

9452



**Light-mediated activation of nitric oxide and antibacterial polymers for anti-biofilm applications**

Siyuan Luo, Zuotao Zhou, Yu Jin, Haochuan Ding, Faxing Jiang\* and Zhiqiang Shen\*

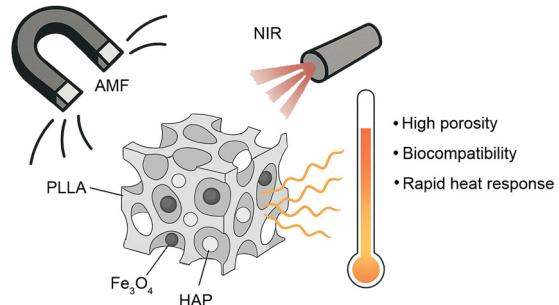


## PAPERS

9465

## Triggered by light and magnetism: smart foam PLLA/HAP/Fe<sub>3</sub>O<sub>4</sub> scaffolds for heat-controlled biomedical applications

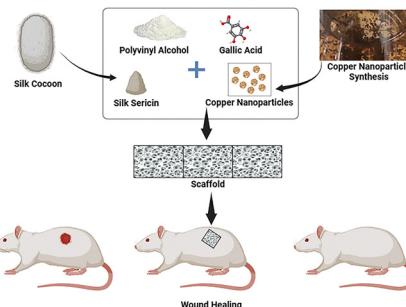
Emilia Zachanowicz,\* Anna Tomaszewska, Magdalena Kulpa-Greszta, Piotr Krzemiński, Jean-Marie Nedelec, Dominika Zákutná, Štefan Hricov, Aleksandra Nurzyńska, Anna Belcarz-Romaniuk and Robert Paziak\*



9486

## SSP-CG scaffolds: a synergistic approach to enhance wound healing and tissue repair

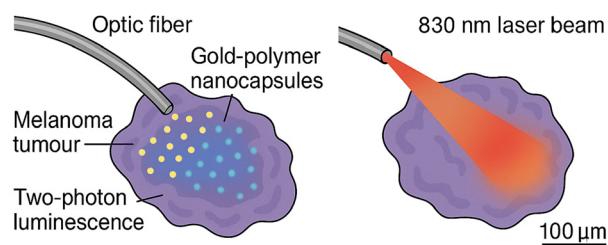
Tasaduq Manzoor, Lateef Ahmad Dar, Yaawar Bashir Mir, Showkat Ahmad Shah, Sheikh F. Ahmad, Meena Godha and Syed Mudasir Ahmad\*



9498

## Two photon-responsive gold nanocapsules enable targeted photothermal hyperthermia of chemoresistant melanoma: injection-route-dependent efficacy and renal evidence of fragment clearance

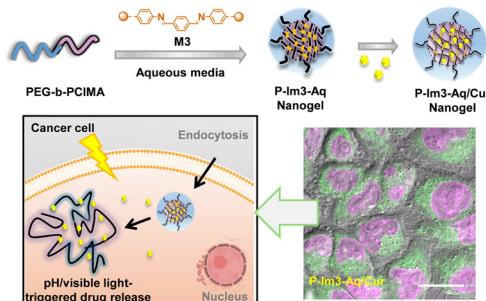
Paula Zamora-Pérez, Qiutian She, Harrisson D. Santos, Jose J. Conesa, M. Carmen Iglesias de la Cruz, Nuria Fernández, Daniel Jaque and Pilar Rivera-Gil\*



9512

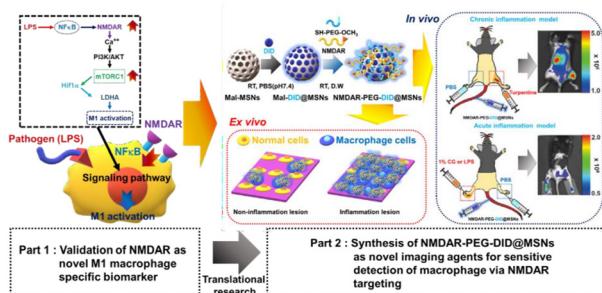
## Development of dual acid-visible light-degradable core-crosslinked nanogels with extended conjugate aromatic imines for enhanced drug delivery

Kadambari Bairagi, Mehdi Shamekhi, Ioanna Tountas, Natasha Letourneau, Gilles H. Peslherbe, Alisa Piekny and Jung Kwon Oh\*



## PAPERS

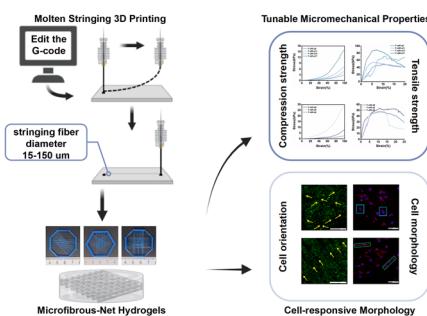
9526



## *N*-Methyl-D-aspartate receptors as novel M1 macrophage-specific biomedical imaging nanoparticle agents: feasibility of targeted imaging in an inflammatory mice model

Sang Bong Lee, Hui-Jeon Jeon, Dinesh Kumar, Hoon Hyun\* and Yong Hyun Jeon\*

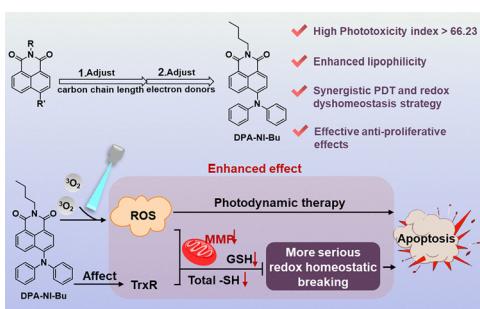
9536



## Molten stringing 3D printed microfibrous net-integrated mineralized hydrogels with tunable micromechanical and cell-responsive properties

Dongxuan Li, Fengxiong Luo, Yu Yang, Ziqi Zhao, Ruiqi Mao, Yawen Huang, Yafang Chen,\* Kefeng Wang,\* Yujiang Fan and Xingdong Zhang

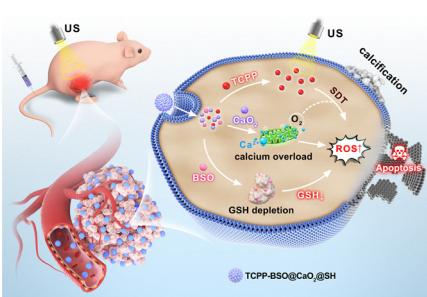
9550



## Boosting PDT with DPA-Ni-Bu: high photocytotoxicity through redox homeostasis perturbation

Jingwen Tu, Zhiyuan Wang, Mengzhao Zhang, Suntao Shi, Miao Zhong, Zhengyu Ma, Haijuan Zhang, Jiang Wu, Zhongtian Bai and Baoxin Zhang\*

9559



## A versatile nanoparticle for enhanced sonodynamic therapy via hypoxia alleviation, glutathione depletion, and calcium overload

Min Zhang, Xuehui Wang, Chaocai Zhang, Dandan Sun, Zhuole Wu, Dayan Yang, Pingyang Zhang\* and Xiangxiang Jing\*

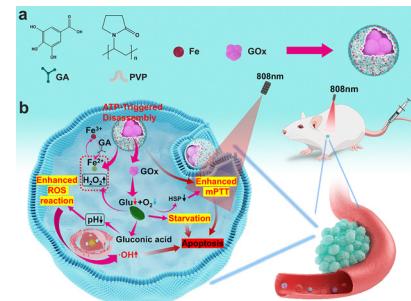


## PAPERS

9576

## An ATP-activated self-cascade nanoplatform for ROS/mPTT/starvation tri-therapy through tumor microenvironment remodeling

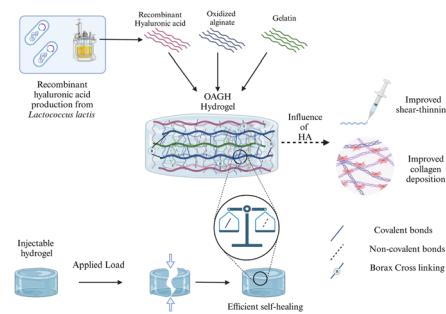
Jing Yu,\* Hao Gao, Huayu Zhang, Shenglei Che and Dan Su\*



9589

## Recombinant hyaluronic acid-incorporated self-healing injectable hydrogels for cartilage tissue engineering: a case study on effects of molecular weight

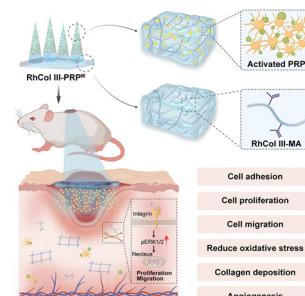
Manoj Kumar Sundaram,  
Chelladurai Karthikeyan Balavigneswaran,\*  
Iniyar Saravanakumar, Guhan Jayaraman and  
Vignesh Muthuvijayan\*



9607

## Recombinant human collagen microneedle patches loaded with PRP for diabetic wound treatment

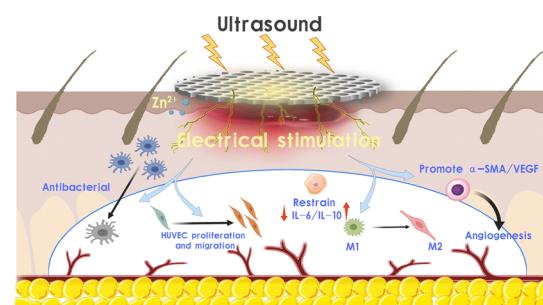
Xinyue Wang, Xinyue Zhang, Yihan Zhao, Xue Zhan,  
Chen Hu, Haihang Li, Xiaoju Fan, Jie Liang,  
Yafang Chen\* and Yujiang Fan



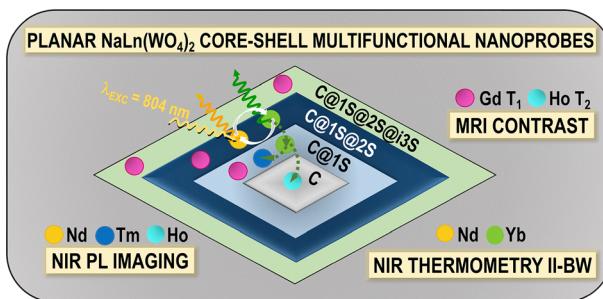
9625

## A multifunctional piezoelectric ZIF-8/PVDF fiber dressing for managing infected wound healing

Mengnan Chai, Shengqian Wang, Jiangshan Liu, Yufan Li,  
Yulun Liu, Yubao Li and Jidong Li\*



9642



## Biocompatible $\text{NaLn}(\text{WO}_4)_2$ core–shell nanoplatelets for multimodal MRI contrast, NIR imaging, and high sensitivity infrared luminescent ratiometric thermometry

Carlos Alarcón-Fernández, Carlos Zaldo, Manuel Bañobre-López, Juan Gallo, Pedro Ramos-Cabrera, Sandra Plaza-García, Gonzalo Villaverde, Alejandro Ruperti and Concepción Cascales\*

