

# Biomaterials Science

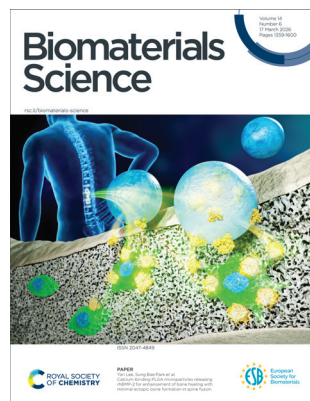
An international high impact journal exploring the underlying science behind the function, interactions and design of biomaterials

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## IN THIS ISSUE

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### Cover

See Yan Lee,  
Sung Bae Park *et al.*,  
pp. 1418–1430.

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Yan Lee from  
*Biomater. Sci.*,  
2026, **14**, 1418.

## EDITORIAL

1368

### Editorial for the ESB 2025 collection

Silvia Farè, Gianluca Ciardelli, Nicholas J. Dunne and  
Maria E. Southall

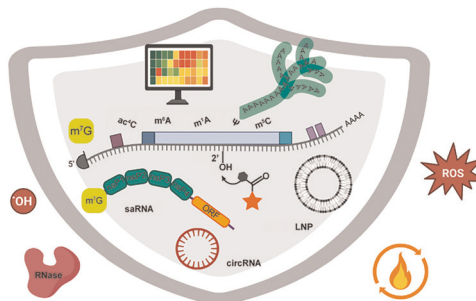


## REVIEWS

1370

### Chemical engineering strategies to enhance mRNA–LNP stability for therapeutic applications

Ze Zhang, Yen Hui Ong, Bowei Yang, Bangda Fan,  
Yi Yan Yang and Qianqian Ni\*



# EES Catalysis

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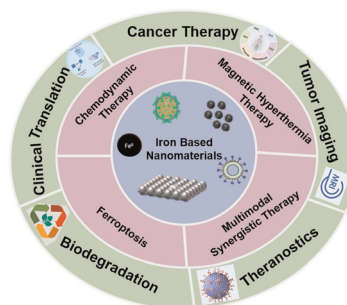
Fundamental questions  
Elemental answers

## REVIEWS

1393

### Iron-based nanomaterials for tumor therapy: structural engineering and functional mechanisms

Afeera Saghir, Yunxiu Zhang,\* Qingyan Jia, Mishal Hameed and Peng Li\*

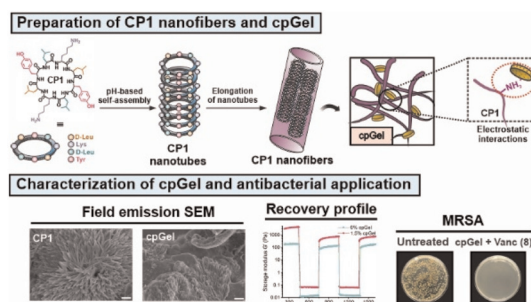


## COMMUNICATION

1411

### Cyclic peptide-based shear-thinning and self-healing hydrogels as injectable nanotherapeutics

Fátima Santillán, Yasmeen Shamiya, Aishik Chakraborty, Alap Ali Zahid, Lorena Veliz, François Lagugné-Labarhet, Leonard G. Luyt and Arghya Paul\*

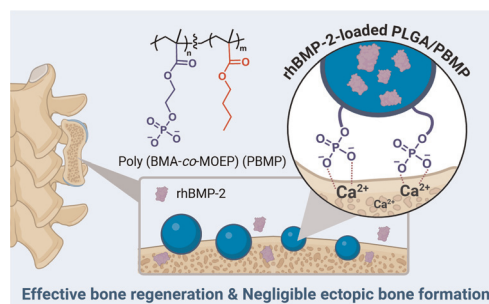


## PAPERS

1418

### Calcium-binding PLGA microparticles releasing rhBMP-2 for enhancement of bone healing with minimal ectopic bone formation in spine fusion

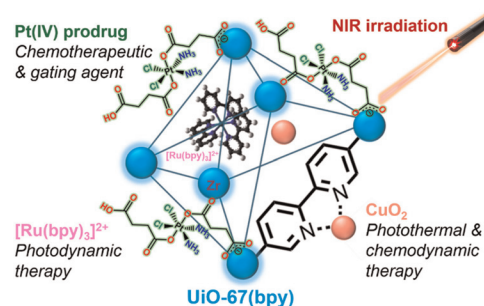
Minjae Kim, Jungwoo Kim, Minji Kang, So Hee Nam, Chi Heon Kim, Yan Lee\* and Sung Bae Park\*



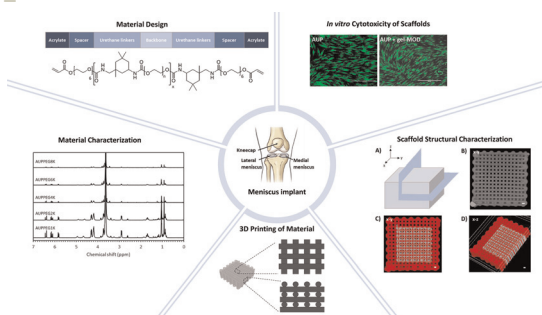
1431

### A Pt(IV) prodrug-gating MOF incorporating copper peroxide and ruthenium complex for NIR-mediated synergistic anticancer therapy

Romaine Parker, Rajeshkumar Anbazhagan, Chia-Yu Kuo and Teng-Hao Chen\*



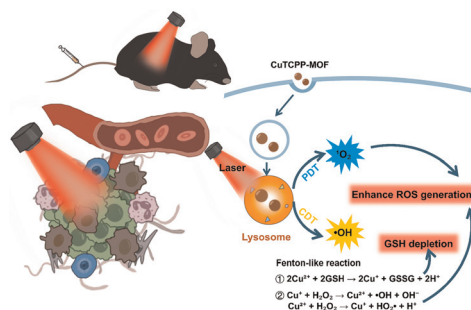
1441



### 3D printed hydrogel scaffolds for meniscal implant application: photo-crosslinkable urethane-based poly(ethylene glycol) as a case study

Ozge Begum Akalin, Andrada Serafim, Izabela-Cristina Stancu, Catherine Van Der Straeten and Peter Dubruel\*

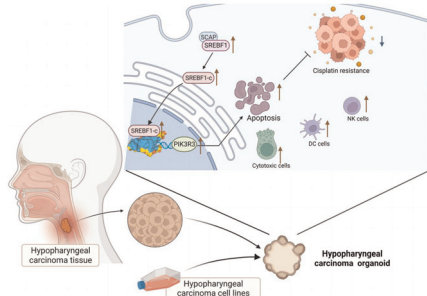
1462



### Combination prostate cancer therapy via CuTCPP-MOF-mediated chemodynamic and photodynamic effects

Yu Cao, Cheng Cao, Yingao Jiao, Huifang Hao, Dengyao Gao, Yan Gao, Kunhou Yao, Ruiyi Wu\* and Yanlei Liu\*

1475

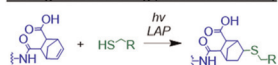


### SREBP1-mediated lipid metabolism reprogramming drives malignant progression and therapeutic resistance in HNSCC organoids and animal models

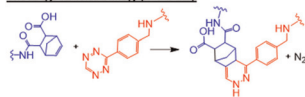
Xiangwan Miao, Haixia Hu, Hao Wang, Cui Fan, Yiqi Pan, Zhihan Zhang, Mingliang Xiang\* and Bin Ye\*

1488

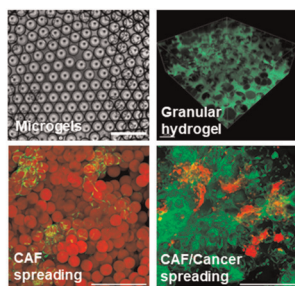
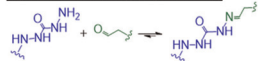
#### Microgel crosslinking (thiol-norbornene)



#### Microgel annealing (iEDDA)



#### Dynamic stiffening (Hydrazone)



### Dynamic granular hydrogels to assess pancreatic cancer cell fate

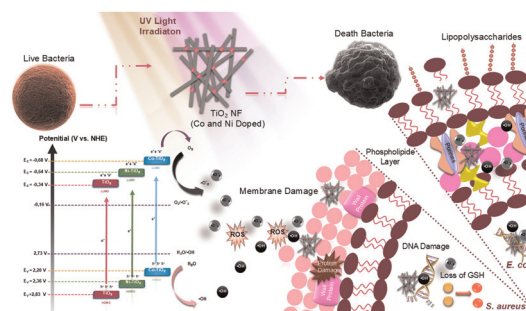
Ellen Frahm and Chien-Chi Lin\*



1500

### Ni- and Co-doped TiO<sub>2</sub> nanofibers for enhanced antibacterial and antibiofilm activities, and mechanistic insights

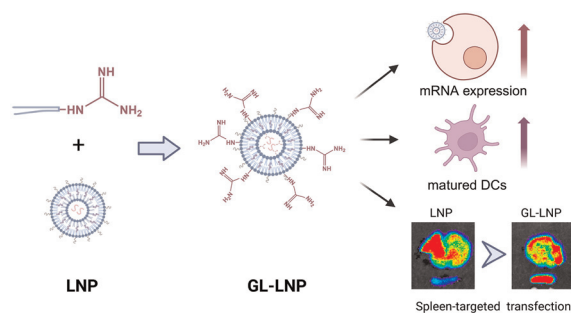
Tuğçe Özcan, İlknur Aksoy Çekceoğlu, Erkan Öner, Sultan Suleyman Ozel, Adem Sarılmaz, Emre Aslan, Faruk Özel and İmren Hatay Patır\*



1518

### Amphiphilic guanidine-based lipids enhance mRNA delivery and immune activation

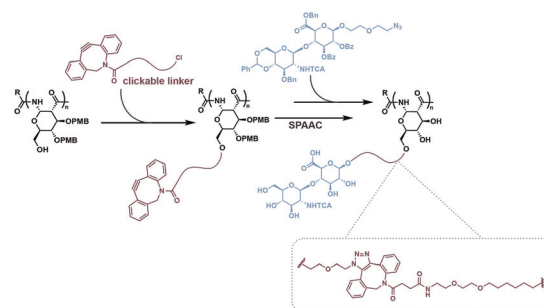
Qi Wei, Ruoshui Li, Jiaqi Fan, Mengyuan Xu, Pengcheng Yuan, Jiwei Liu, Qian Wang, Youqing Shen, Nigel K. H. Slater and Jianbin Tang\*



1530

### Clickable polyamidosaccharides: accessing bottlebrush inspired hyaluronic acid glycopolymers for CD44 targeting of breast cancer cells

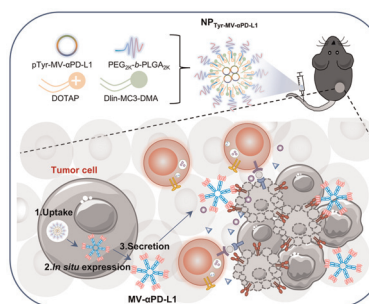
Kaitlynn A. Sockett, Madeline K. Loffredo, Christian D. DeMoya, Zoe G. Garman and Mark W. Grinstaff\*



1544

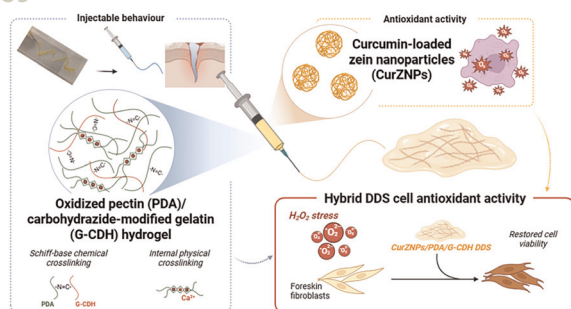
### In situ induction of multivalent PD-L1 antibody secretion to enhance cancer immunotherapy

Li-Li Chen, Shi-Kun Zhou, Shui-Qing Jiang, Yi-Qun Sun, Xin-Yu Tan, Yi-Fang Chen, Yang Liu,\* Zi-Dong Lu\* and Cong-Fei Xu\*



## PAPERS

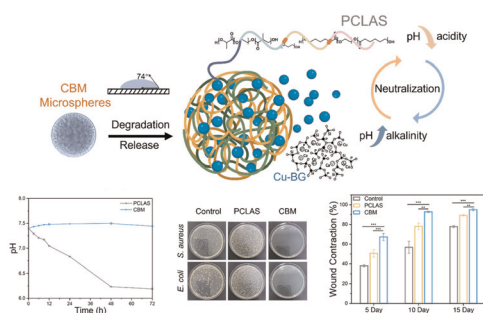
1559



### Injectable self-healing oxidized pectin and carbonyl-terminated gelatin hydrogels for curcumin-loaded zein nanoparticle delivery in antioxidant therapy

Francesca Tivano, Elena Marcello, Camilla Paoletti, Alice Zoso, Clara Mattu, Irene Carmagnola and Valeria Chiono\*

1582



### Composite microspheres of bioactive glass and hydrophilic biodegradable polymers to accelerate infected wound healing

Ziyun He, Zirui Xu, Shuhua Chang, Quan Zhao, Zhuangzhuang Zhang, Yun Bai, Ju-E Cun,\* Jun Cao and Bin He

## EXPRESSIONS OF CONCERN

1595

### Expression of concern: 3D-printed dimethylallyl glycine delivery scaffolds to improve angiogenesis and osteogenesis

Zhu Min, Zhao Shichang, Xin Chen, Zhu Yufang\* and Zhang Changqing\*

1596

### Expression of concern: A multifunctional substance P-conjugated chitosan hydrochloride hydrogel accelerates full-thickness wound healing by enhancing synchronized vascularization, extracellular matrix deposition, and nerve regeneration

Hao Li, Mengna Li, Pei Liu, Kaiyang Wang, Haoyu Fang, Junhui Yin, Daoyu Zhu, Qianhao Yang, Junjie Gao, Qinfei Ke, Hongping Yu,\* Yaping Guo,\* Youshui Gao\* and Changqing Zhang



## CORRECTION

1597

**Correction: A biomimetic human disease model of bacterial keratitis using a cornea-on-a-chip system**

Yudan Deng, Lingjun Li,\* Jian Xu, Yili Yao, Jiangtao Ding, Lei Wang, Chunxiong Luo, Wei Yang\* and Lingli Li\*

