

Biomaterials Science

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

rsc.li/biomaterials-science

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 2047-4849 CODEN BSICCH 13(1) 1-334 (2025)



Cover

See Yun Chen, Xintao Shuai, Guanxun Cheng, Li Liu, Tingting Zheng *et al.*, pp. 179–192.

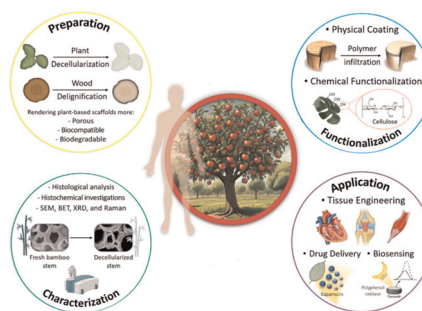
Image reproduced by permission of Tingting Zheng from *Biomater. Sci.*, 2025, **13**, 179.

REVIEWS

9

Hijacking plant skeletons for biomedical applications: from regenerative medicine and drug delivery to biosensing

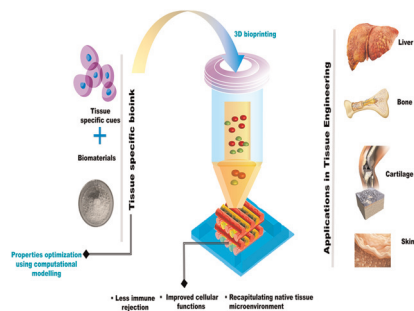
Elham Asadian, Samin Abbaszadeh, Fatemeh Ghorbani-Bidkorpheh, Saman Rezaei, Bo Xiao,* Hélder A. Santos* and Mohammad-Ali Shahbazi*



93

Engineering considerations in the design of tissue specific bioink for 3D bioprinting applications

Shivi Tripathi, Madhusmita Dash, Ruchira Chakraborty, Harri Junaedi Lukman, Prasoon Kumar,* Shabir Hassan, Hassan Mehboob, Harpreet Singh and Himansu Sekhar Nanda*



EES Catalysis

GOLD
OPEN
ACCESS

**Exceptional research on energy
and environmental catalysis**

Open to everyone. Impactful for all

rsc.li/EESCatalysis

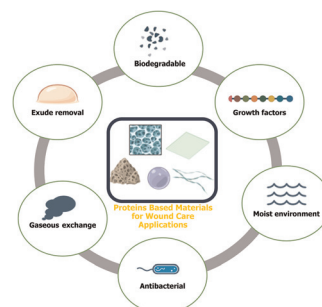
**Fundamental questions
Elemental answers**

REVIEWS

130

Trends in protein derived materials for wound care applications

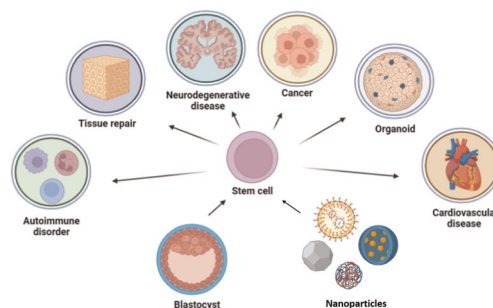
Muhammad Zubair, Saadat Hussain, Mujeeb- ur-Rehman, Ajaz Hussain, Muhammad Ehtisham Akram, Sohail Shahzad, Zahid Rauf, Maria Mujahid and Aman Ullah*



161

Nanotechnology at the crossroads of stem cell medicine

Sweny Jain, Jay Bhatt, Sharad Gupta* and Dhiraj Devidas Bhatia*

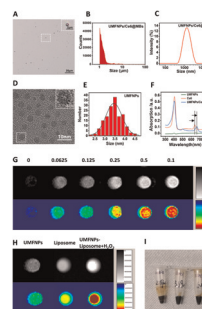


PAPERS

179

Use of UMFNPs/Ce6@MBs in multimodal imaging-guided sono-photodynamic combination therapy for hepatocellular carcinoma

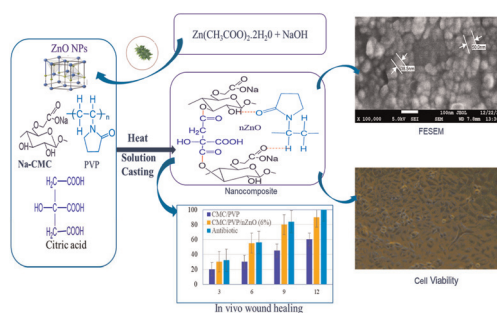
Lijun Xing, Xiaoting Yang, Jianhua Bai, Chunting Zhong, Jing Cai, Qing Dan, Yiran Ji, Bingxuan Xu, Keyan Yu, Xiaoyu Chen, Yulong Qi, Li Li, Yun Chen,* Xintao Shuai,* Guanxun Cheng,* Li Liu* and Tingting Zheng*



193

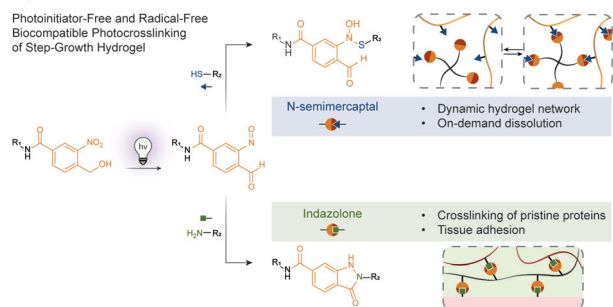
Enhanced wound healing with biogenic zinc oxide nanoparticle-incorporated carboxymethyl cellulose/polyvinylpyrrolidone nanocomposite hydrogels

Md. Ibrahim H. Mondal,* Md. Monirul Islam and Firoz Ahmed



PAPERS

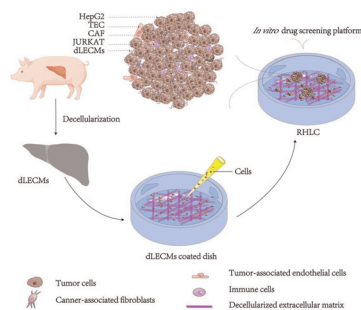
210



Photoinitiator-free light-mediated crosslinking of dynamic polymer and pristine protein networks

Riccardo Rizzo,* Dylan M. Barber, Jackson K. Wilt, Alexander J. Ainscough and Jennifer A. Lewis*

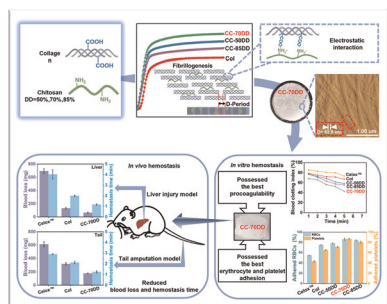
223



Construction of 3D tumor *in vitro* models with an immune microenvironment exhibiting similar tumor properties and biomimetic physiological functionality

Yuhong Jiang, Lijuan Jin, Wenyu Liu, Hui Liu, Xiao Liu* and Zhikai Tan*

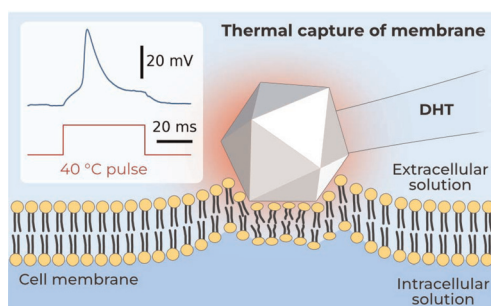
236



Co-assembled biomimetic fibrils from collagen and chitosan for performance-enhancing hemostatic dressing

Xingling Zeng, Zhaohui Sun, Lidan Chen, Xiaoxia Zhang, Xin Guo and Guoying Li*

250



Rapid neurostimulation at the micron scale with an optically controlled thermal-capture technique

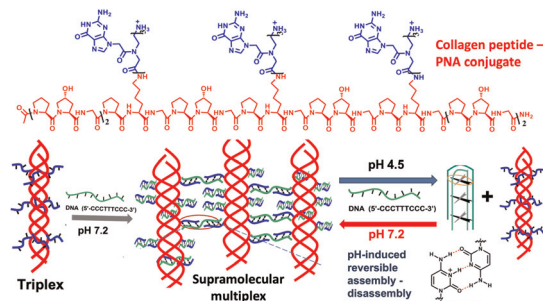
Alexey M. Romshin,* Nikolay A. Aseyev,* Olga S. Idzhilova, Alena A. Koryagina, Vadim E. Zeeb, Igor I. Vlasov and Pavel M. Balaban



261

Supramolecular multiplexes from collagen mimetic peptide-PNA(GGG)₃ conjugates and C-rich DNA: pH-induced reversible switching from triplex–duplex to triplex-i-motif

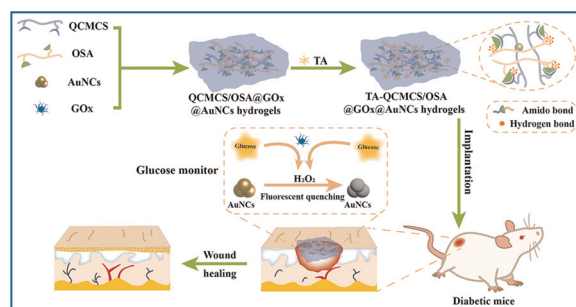
Shahaji H. More,* Marc Schmutz, Loïc Jierry and Krishna N. Ganesh*



275

A glucose responsive multifunctional hydrogel with antibacterial properties and real-time monitoring for diabetic wound treatment

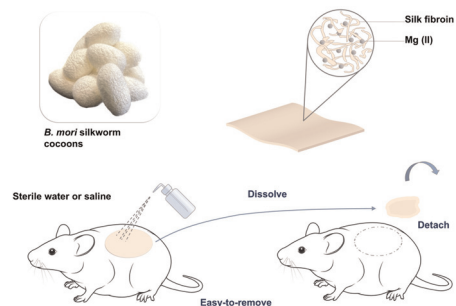
Zhifei Yang, Jiayu Zhang, Chen Wang, Fangzheng Yu, Wen Yu* and Zheng Zhao*



287

Adhesive silk fibroin/magnesium composite films and their application for removable wound dressing

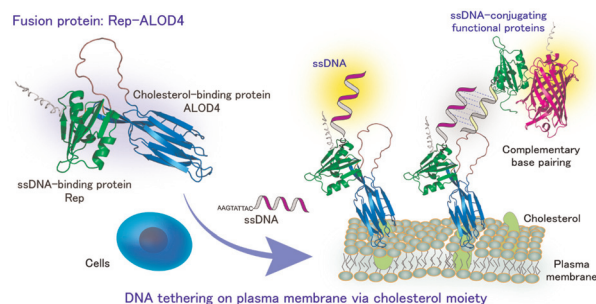
Qiaolin Chen, Kang Wu, Jinrong Yao, Zhengzhong Shao and Xin Chen*



299

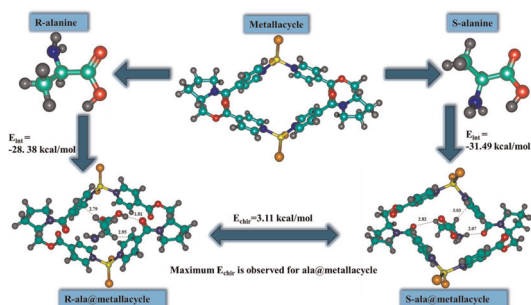
Cholesterol- and ssDNA-binding fusion protein-mediated DNA tethering on the plasma membrane

Kei Nishida, Minon Ishizuka, Eiry Kobatake and Masayasu Mie*



PAPERS

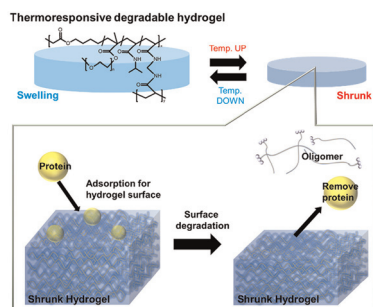
310



Chiral recognition of amino acids through homochiral metallacycle $[ZnCl_2L]_2$

Maria Maqbool and Khurshid Ayub*

324



Thermoresponsive degradable hydrogels with renewable surfaces for protein removal

Syuuhei Komatsu, Naoki Kamei and Akihiko Kikuchi*

EXPRESSION OF CONCERN

330

Expression of concern: An 'on-demand' photothermal antibiotic release cryogel patch: evaluation of efficacy on an ex vivo model for skin wound infection

Léa Rosselle, Anna Rita Cantelmo, Alexandre Barras, Nadia Skandrani, Michael Pastore, Duygu Aydin, Laura Chambre, Rana Sanyal, Amitav Sanyal,* Rabah Boukherroub and Sabine Szunerits*

CORRECTION

331

Correction: Bioactivity of cerium dioxide nanoparticles as a function of size and surface features

Veronika Sarnatskaya,* Yuliia Shlapa,* Denis Kolesnik, Olexandra Lykhova, Dmytro Klymchuk, Serhii Solopan, Svitlana Lyubchyk, Iuliia Golovynska, Junle Qu, Yurii Stepanov and Anatolii Belous

