

Journal of Materials Chemistry B

Materials for biology and medicine

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(38) 11875-12308 (2025)



Cover

See Raluca Borlan, Monica Focsan *et al.*, pp. 12056–12072. Image reproduced by permission of Raluca Borlan and Monica Focsan from *J. Mater. Chem. B*, 2025, 13, 12056.



Inside cover

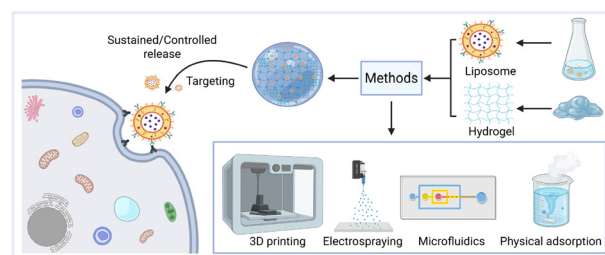
See Yishun Yang, Tong Zhang *et al.*, pp. 12073–12084. Image reproduced by permission of Yishun Yang and Tong Zhang from *J. Mater. Chem. B*, 2025, 13, 12073.

REVIEWS

11885

Advances in drug delivery systems based on liposome-composite hydrogel microspheres

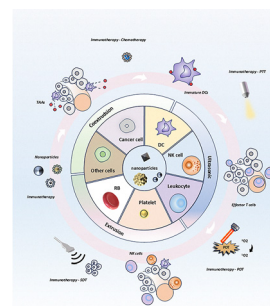
Shuanghong Yang, Ze Li, Sicheng Li, Jinpeng Zhang, Jinjian Huang,* Jianan Ren* and Xiuwen Wu*



11909

Cell membrane biomimetic nanomaterials: a novel strategy for tumor immunotherapy

Ziyuan Jing, Wenyu Zhao, Xuezhu Wang, Guifang Chen* and Bo Tian*



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training



**SAVE
10%**

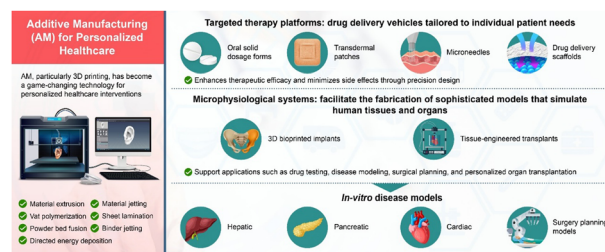


REVIEWS

11928

Innovations in additive manufacturing approaches for the fabrication of advanced drug delivery platforms, biomimetics, and predictive 3D microphysiological interfaces

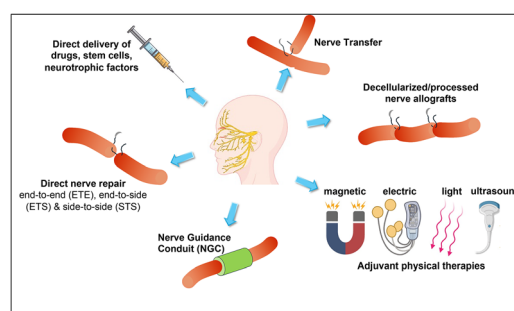
Anushikha Ghosh, Arka Sanyal, Mamta Kumari, Souvik Mukerjee, Santanu Kaity and Subhadeep Roy*



11971

Facial nerve pathology: emerging strategies for regeneration and functional restoration

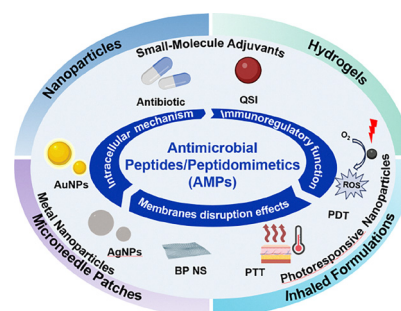
Suranji Wijekoon, Allen Zennifer, Sai Sadhananth Srinivasan, Sama Abdulmalik, Bin Duan and Sangamesh G. Kumbar*



11996

Combating the post-antibiotic era crisis: antimicrobial peptide/peptidomimetic-integrated combination therapies and delivery systems

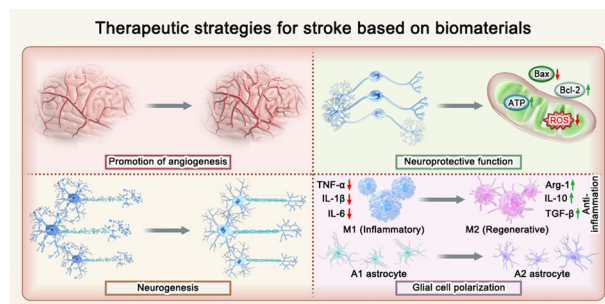
Jiaying Chi, Qiaoni Lin, Bingrui Jin, Jiayu Ou, Ling Jiang, Xinyu Yang, Jialiang Guo, Tingting Peng* and Chao Lu*



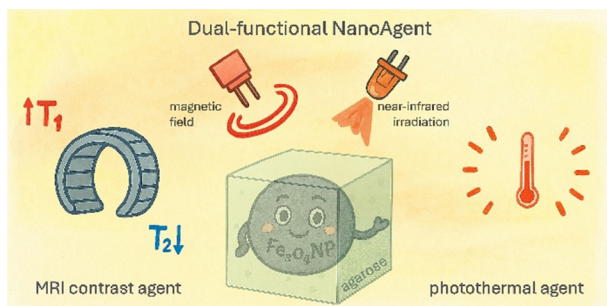
12020

Advanced regenerative biomaterials for ischaemic stroke: a comprehensive therapeutic strategy

Shufang Niu, Xiaoyin Liu, Zepei Wu, An Zhu, Yunfan Zhang, Fuheng Hu, Kunlun Ding, Jun Wu* and Anqi Xiao*



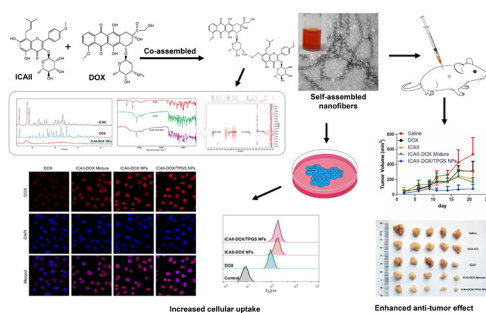
12056



From fundamentals to applications: magnetic nanoparticles for MRI imaging and NIR-induced thermal activation in tissue-mimicking environments

Radu Lapusan, Andreea Balmus, Radu Fechete, Bogdan Viorel Neamtu, Jessica Ponti, Raluca Borlan* and Monica Focsan*

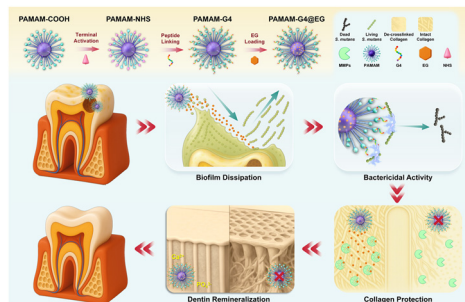
12073



Co-delivery of icaricide II and doxorubicin by self-assembled carrier-free nanofibers for anti-lung cancer therapy

Yishun Yang,* Yue Ding and Tong Zhang*

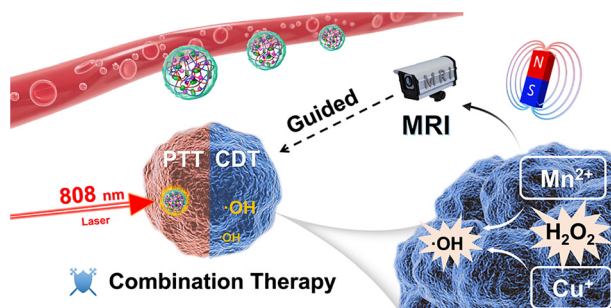
12085



Multifunctional PAMAM nanoparticles with sequential antimicrobial-reminerzation therapy for dentin caries management

Mingxiao Liu, Jiahe Li, Ziyou Wang, Miao Chen, Jianru Yi,* Zhihe Zhao* and Kunneng Liang*

12101



Copper–manganese hybrid nanogel for MRI-guided combined photothermal and chemodynamic tumor theranostics

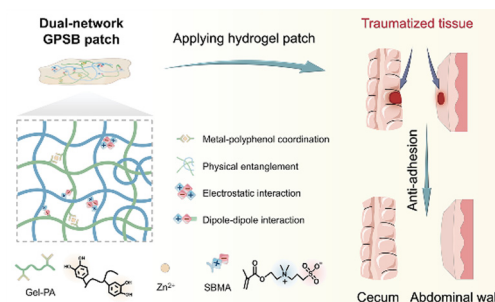
Yijie Luo, Xiaotong Liang, Kai Wang, Tuohuan Li, Jia Hua, Dalin Wu and Zhong Cao*



12111

A zwitterionic dual-network hydrogel patch with anti-inflammatory properties for efficient peritoneal adhesion prevention

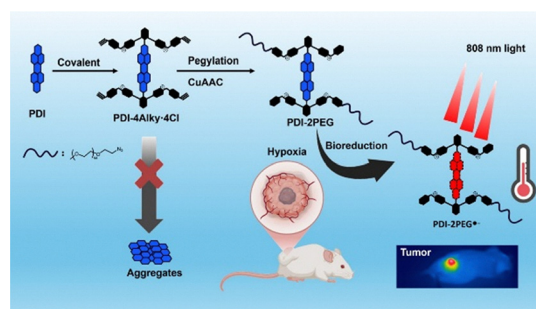
Yangrui Du, Li Ma, Shiyang Lang, Shan Liu, Kang Dai, Kaijun Li, Qian Wang* and Gongyan Liu*



12124

Molecular engineering based on four-arm perylene diimide chromophores toward hypoxia-induced specific photothermal therapy

Kecheng Huang, Xiangkun Cui, Miaomiao Zhen, Xueying Zhang, Fei Yang,* Wei Wei and Yanqing Xu*

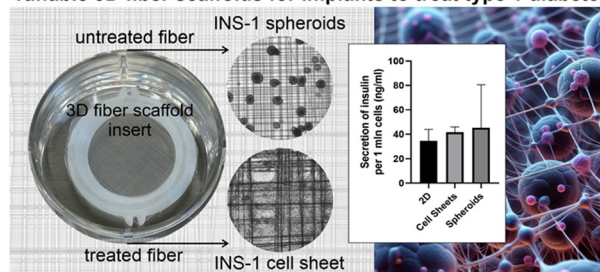


12134

Insulin-producing INS-1 cell cultures on biomimetic 3D scaffolds

Mikhail Parker, Nataraja Sekhar Yadavalli,* Kristina Peranidze, Eugene Boland, Vladimir Reukov and Sergiy Minko*

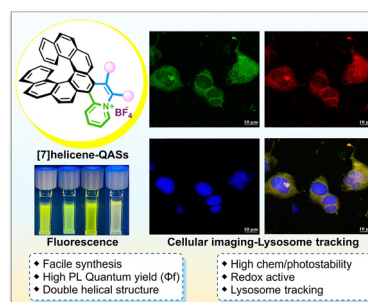
Tunable 3D fiber scaffolds for implants to treat type 1 diabetes



12146

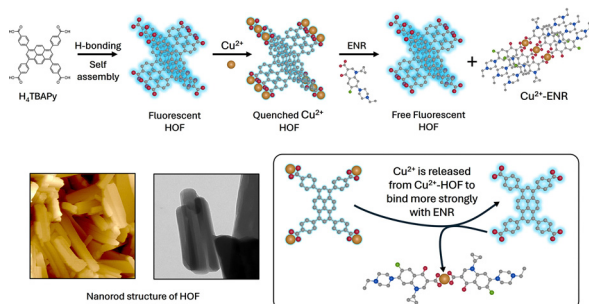
[7]Helicene-backed quaternary ammonium salts: synthesis, photophysical investigation, and lysosomal tracking

Deepshikha, Sanjay S. Bisht, Nand Lal, Puja Singh, Jonaid A. Malik, Javed N. Agrewala and Aslam C. Shaikh*



PAPERS

12154



Selective detection of an antibiotic using hydrogen-bonded organic frameworks (HOFs): insights from DFT mechanistic analysis

Malabika Ghosh, Uddipan Dasgupta, Prashanth Venkatesan, Manas Kumar Sarangi, Rupali Gangopadhyay,* Ruey-An Doong* and Ankan Dutta Chowdhury*

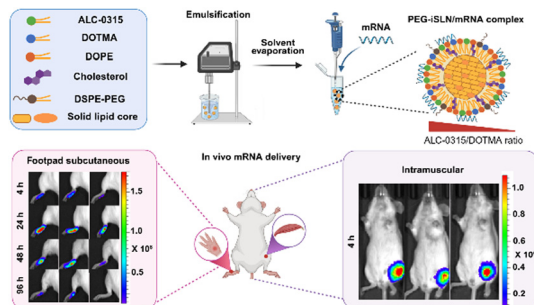
12166



Reversible photo-induced formation of iron alginate hydrogels

Alexey S. Sokolov,* Arkady S. Abdurashitov, Pavel I. Proshin and Gleb B. Sukhorukov

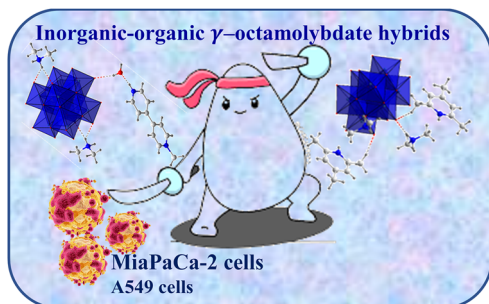
12172



Enhanced mRNA and pDNA delivery via PEGylated solid lipid nanoparticles with an optimally balanced ionizable/cationic lipid content

Nipuni Maniyangama, Ki Hyun Bae, Jialing Lee, James Hoi Po Hui and Yi Yan Yang*

12185



Inorganic-organic γ -octamolybdate hybrids for targeted anticancer applications against MiaPaCa-2 and A549 cells

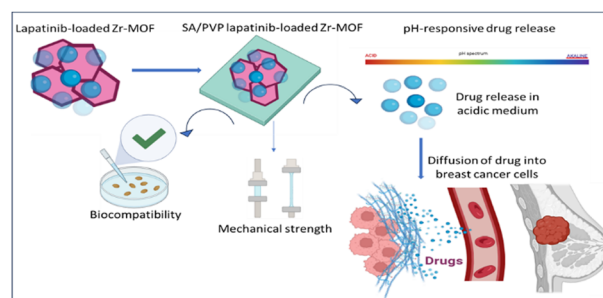
Ankita Pardiwala, Nandini Bajaj, Arup Kumar Ghosh, Deepika Sharma,* Komal Kumar Jangir* and Ritambhara Jangir*



12205

Sodium alginate/polyvinylpyrrolidone/lapatinib-loaded Zr–metal organic framework: biocompatibility evaluation and pH-responsive *in vitro* drug release for oral delivery applications

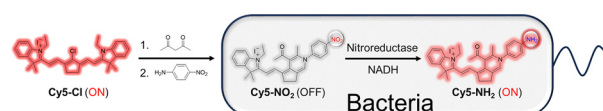
Sneha Rajeev, Naja Hasoon K T and Unnikrishnan Gopalakrishna Panicker*



12224

Cyanine-scaffold fluorogenic probes for visual detection of nitroreductase in living bacteria

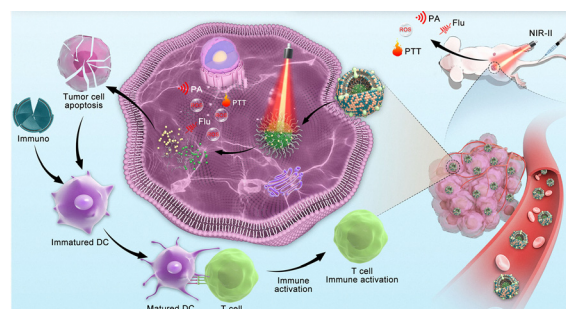
Jiqiang Liu, Abdulkadir Zakari Abdulkadir, Siye Wu, Yonghui Gao, Baraka Joseph Butuyuyu, Keith Man-Chung Wong, Chi-Sing Lee, Lintao Cai, Jihong Chen and Pengfei Zhang*



12234

Biomimetic semiconducting polymer dots for dual targeted NIR-II phototheranostic and multimodal coordinated immunostimulatory therapy

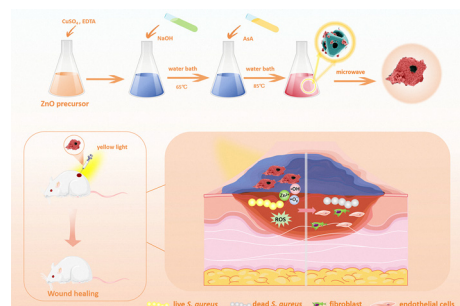
Jintong Guo, Xianyuan Wei, Ye Liu, Yun Li, Pu Chun Ke and Zhen Yuan*



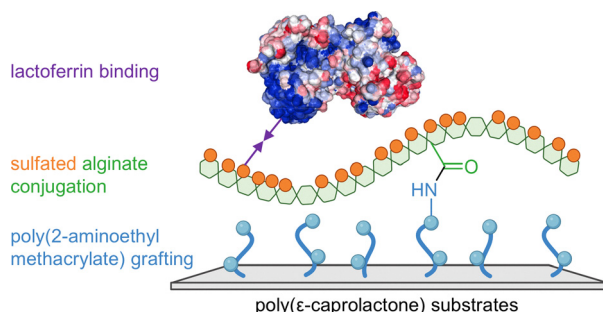
12246

Engineered hollow Cu₂O@ZnO p–n heterojunction nanocomposites for synergistic photocatalytic disinfection and tissue regeneration

Yu Fen, Miao Xinxin, Xiao Yang, Deng Jianjian, Deng Dan, Cheng Xinyan, Ding Rui and Wang Xiaolei*



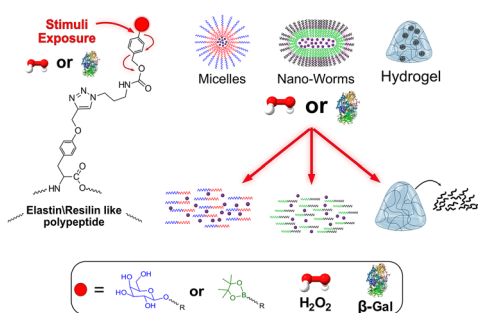
12257



Surface modification of polycaprolactone with sulfated alginate for enhanced binding of a heparin-binding protein

Alexandra L. Mutch, Jiankun Yang, A. Anitha, Sašo Ivanovski, Marco van de Weert and Lisbeth Grøndahl*

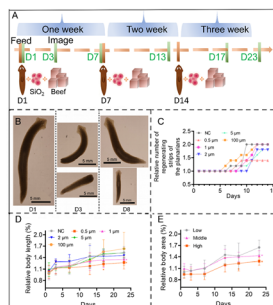
12276



Imparting new stimuli-responsive behaviors in protein-polymer *via* self-immolative linker conjugation

Federico Kaufman, Maya David, Michal Zaiden, Doron Shabat and Miriam Amiram*

12293



Submicron silica particles disrupt planarian homeostasis: bridging bioaccumulation, oxidative stress, and growth-regeneration trade-offs

Maonan Wang, Can Jiang, Shuojie Li, Weiting Chen, Jingting Zhang, Yongqian Zhao, Ruixin Feng, Na Han, Guang Shu, Xiang Li* and Gang Yin*

