

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(22) 6267–6562 (2025)



Cover

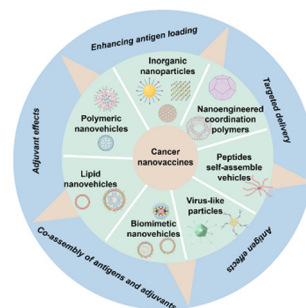
See Ying Zhuo,
Xiao-Jing He *et al.*,
pp. 6342–6350.
Image reproduced
by permission of
Xiao-Jing He from
J. Mater. Chem. B,
2025, **13**, 6342.
Image creation assisted
by Gemini 2.0.

REVIEWS

6276

Nanovehicles for delivery of antigens and adjuvants as cancer nanovaccines

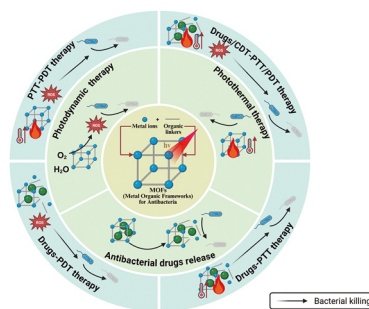
Xin Chen, Meng Zhao, Longlong Zheng, Huadong Zhao* and Zhishen Ge*



6299

Photo-responsive antibacterial metal organic frameworks

Xiaojie Yan, Zhengzheng Lin, He Shen, Yu Chen* and Liang Chen*



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

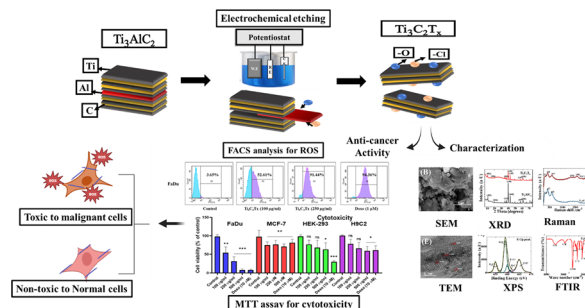


COMMUNICATION

6329

Engineered $\text{Ti}_3\text{C}_2(\text{O},\text{Cl})$ MXenes with dual functionalization: a new Frontier in targeted head and neck squamous cell carcinoma and breast adenocarcinoma

Jhansi Chintakindi, Ganesh Panditrao Lahane, Arti Dhar* and Afkham Mir*

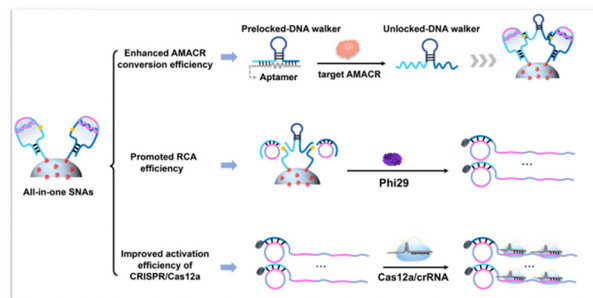


PAPERS

6342

Programmable spherical nucleic acids integrated with MOF-confined copper nanoclusters facilitate electrochemiluminescence detection of prostate-specific biomarkers

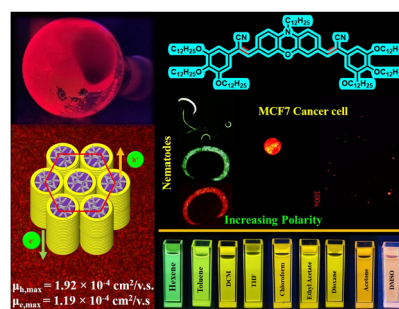
Yi Li, Mei-Ling Liu, Wen-Jing Yang, Xue-Mei Zhou, Ying Zhuo* and Xiao-Jing He*



6351

Phenoxazine-based ambipolar luminescent room-temperature liquid crystals capable of being used in bioimaging applications

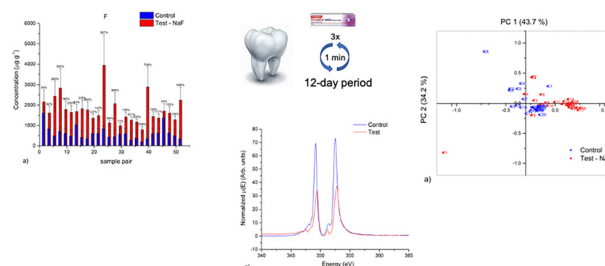
Rahul Ahmed, Anjana K. N, Vinay S. Sharma, Shweta Thakar, Anitha B, Paresh Kumar Behera, Dharmendra Adak, D. S. Shankar Rao, Manoj AG Namboothiry* and Ammathnadu Sudhakar Achalkumar*



6366

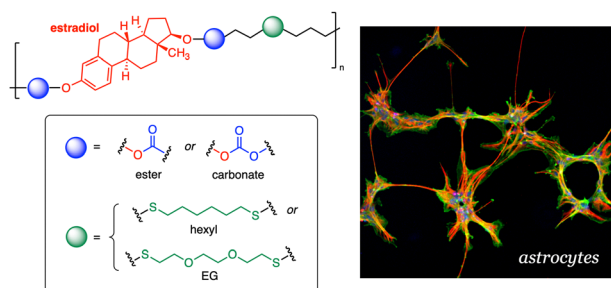
Multi-technique computational assessment of fluoride uptake in enamel using PIGE, NEXAFS, and Raman spectroscopy

Sofia Pessanha,* António Fortes, Marta B. Lopes, Ana Guilherme Buzanich, Inés Ortega-Feliu, Miguel A. Respaliza, Blanca Gomez Tubio, Anna Makarova, Dmitry Smirnov, Sourabh Kumar, António Mata and João Silveira



PAPERS

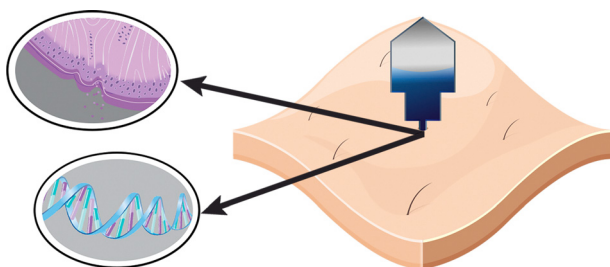
6376



Modular molecular design of polymerized pro-estrogen materials enables controlled astrocyte response

Devan L. Puhl, Alexis Ziemba, Samuel A. T. Ellman, Alex Hsu, Jayant Saksena, Penelope Phillips Falcone, Bailey Balouch, Deniz Rende, Tanner Fink, R. Helen Zha, Ryan J. Gilbert* and Edmund F. Palermo*

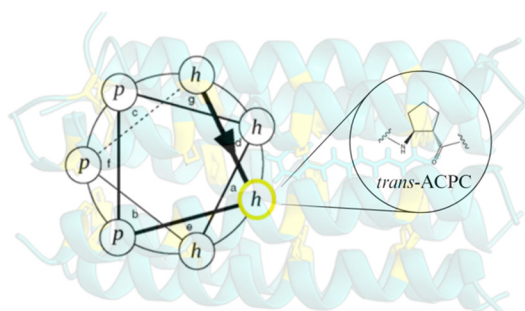
6393



Molecular and histological evidence for the biocompatibility of PEDOT-coated microneedles in human skin

Siti Musliha Ajmal Mokhtar, Nathalie J Nataren, Drew R Evans, Mark Moore, Samuel Bradley, Sofia MacHacaz Palmar, Tarl W Prow and Miko Yamada*

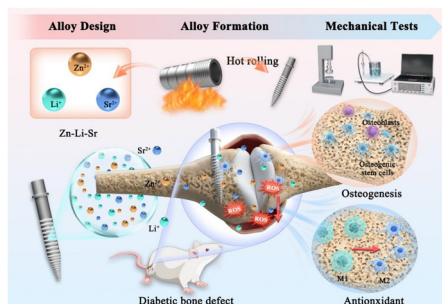
6402



Construction and cytotoxicity evaluation of peptide nanocarriers based on coiled-coil structures with a cyclic β -amino acid at the knob-into-hole interaction site

Monika Szeftczyk,* Natalia Szulc, Dominika Bystranowska, Anna Szczepańska, Juan Lizandra Pérez, Anita Dudek, Aleksandra Pawlak, Andrzej Ozyhar and Łukasz Berlicki

6414



Biodegradable Zn–Li–Sr alloy implants with antioxidant properties for improved bone osseointegration under diabetic conditions

Jiahui Rao, Yujin Li, Jiwei Sun, Hairui Gao, Chen Yang, Yueqi Ma, Ran Yu, Xueqing Zheng and Yumei Ding*

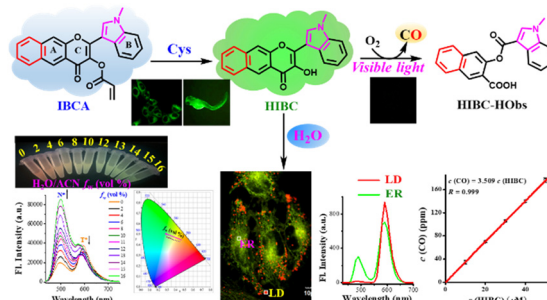


PAPERS

6429

LD and ER targeted cysteine fluorescence sensing driven A/B-ring-naphthalene/indole simultaneously substituted water hypersensitive flavonol: simultaneous dual-colour visualization of LDs and ER, and precisely controlled linear CO delivery

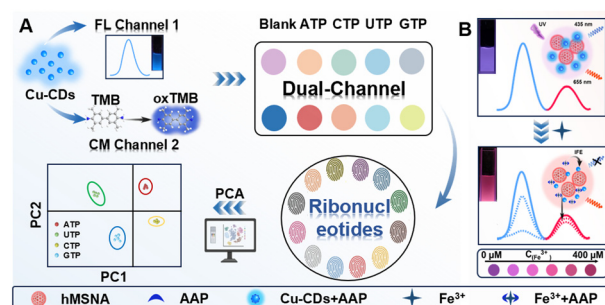
Ying-Ji Sun,* Deng-Jie Zhao and Yi Zhang



6444

Multifunctional carbon dot-based dual-channel and dual-signal sensors for ribonucleotide discrimination and Fe³⁺ detection

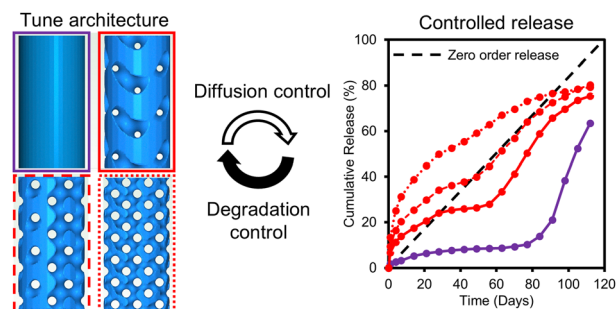
Runjie Miao, Yu Zhang, Haifeng Sha,* Wenyan Ma, Yuefeng Huang and Hangrong Chen*



6456

Engineering long-term controlled drug release from biodegradable devices 3D printed with vat polymerization

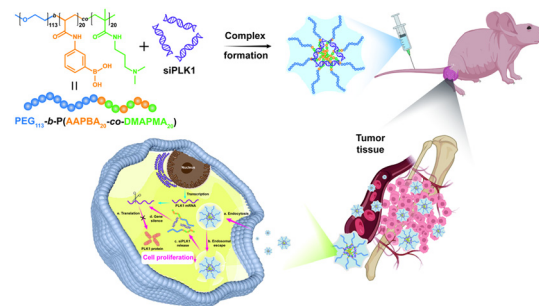
Hafiz Busari, O. Thompson Mefford* and M. Aaron Vaughn*



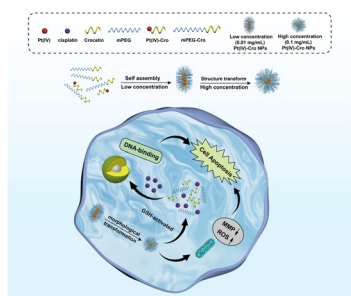
6469

Tailoring diblock copolymers for efficient siPLK1 delivery and enhanced gene therapy of orthotopic osteosarcoma

Hongyang Zhao, Chenglin Zhang, Chang Tian, Lingshu Li, Bohang Wu, Yuening Qiu, Yilei Yu, Martien A. Cohen Stuart, Rui Gao,* Xuhui Zhou* and Junyou Wang*



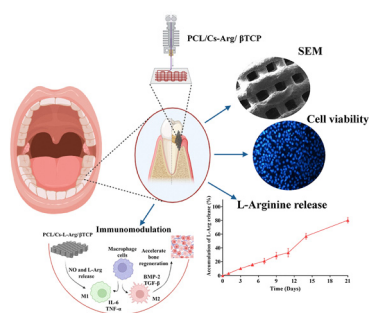
6483



A platinum(IV)–crocetin nanoplatform with intracellular morphological transformation for enhanced colorectal cancer therapy

Xue Rui, Zhetong Jin, Lu Li, Jia Liu, Jiarong Mao, Xuejiao Leng, Hongzhi Qiao, Wei Li, Lingchong Wang, Yugen Chen* and Jingjing Wang*

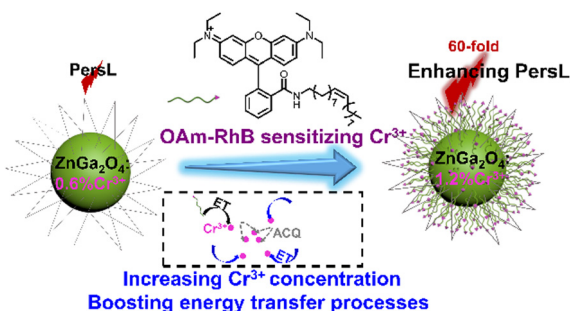
6493



Functionalized 3D-printed scaffolds for enhanced osteogenesis and guided bone regeneration

Mohammad Hosseini Hooshier, Negin Ostadsharifmemar, Tohid Javaheri, Negin Salehinia, Melika Golozar, Ensieh Sagheb Sadeghi, Atefeh Zamani, Parisa Heydari,* Ali Zarrabi* and Mohammad Mahdevar*

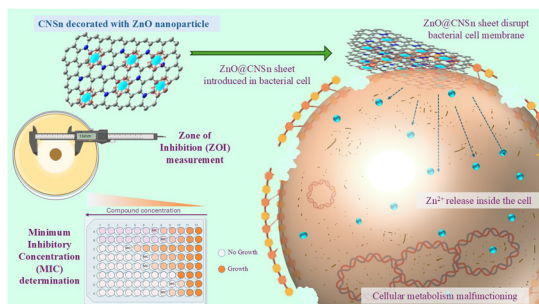
6508



One-pot synthesis of enhanced dye-sensitized persistent luminescence nanoparticles to alleviate concentration quenching

Zi-Jin Wei, Kai Long, Chang Yin, Xinxin Yuan, Mengjie Sun, Wei Wang and Zhi Yuan*

6519



Pioneering bactericidal efficacy with nitrogen doping and zinc oxide nanoparticle decoration on carbon nanosheets

Omharayan Agrawal, Bani Preet Kaur, Radhika Chaurasia, Hitesh Kumar Sharma, Geetika Jain, Madhav Krishn Goswami, Sandip Chakrabarti and Monalisa Mukherjee*

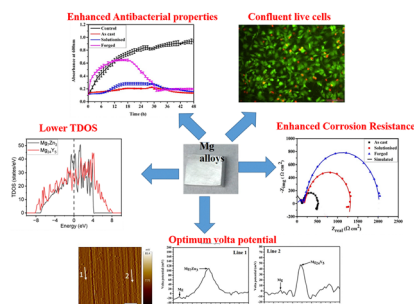


PAPERS

6533

Ab initio study of precipitate stability in an Mg–Zn–Zr–Y alloy and its effects on corrosion, antimicrobial and *in vitro* biocompatibility

Satyabrata Nigamananda Sahoo, Indu Avula, Santanu Mandal, Surasree Pal, Vamsi Krishna Balla and Mangal Roy*



6551

Synthesis of polyacrylic acid-coated AuPd@Fe_xO_y nanoparticles for synergistic chemodynamic and photothermal therapy of osteosarcoma

Zeping Liu, Haoyu Sun, Yongjie Shan, Haodong Wang, Wenqi Luo, Rui Gu* and Zhenxin Wang*

