

Chem Soc Rev

Chemical Society Reviews

rsc.li/chem-soc-rev

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 0306-0012 CODEN CSRVBR 53(1) 1-548 (2024)



Cover

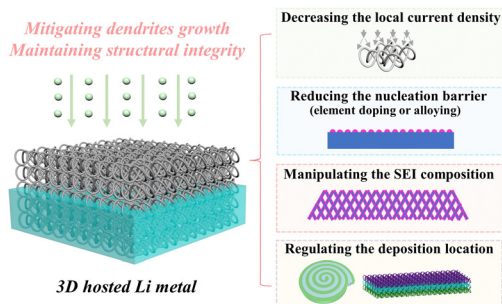
See Youzhi Xu, Max von Delius *et al.*, pp. 47–83.
Image reproduced by permission of Max von Delius from *Chem. Soc. Rev.*, 2024, **53**, 47.
Image by Dr Johannes Richers (Jo Richers Studio).

TUTORIAL REVIEWS

9

3D-hosted lithium metal anodes

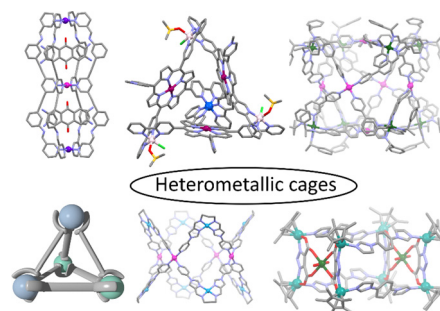
Xin He, Kai Zhang, Zhiqiang Zhu, Zhangfa Tong and Xiao Liang*



25

Heterometallic cages: synthesis and applications

Lana K. Moree, Logan A. V. Faulkner and James D. Crowley*



RSC Advances

At the heart of open access for
the global chemistry community

Editor-in-chief

Russell J Cox

Leibniz Universität Hannover, Germany

We stand for:



Breadth We publish work in all areas of chemistry and reach a global readership



Affordability Low APCs, discounts and waivers make publishing open access achievable and sustainable



Quality Research to advance the chemical sciences undergoes rigorous peer review for a trusted, society-run journal

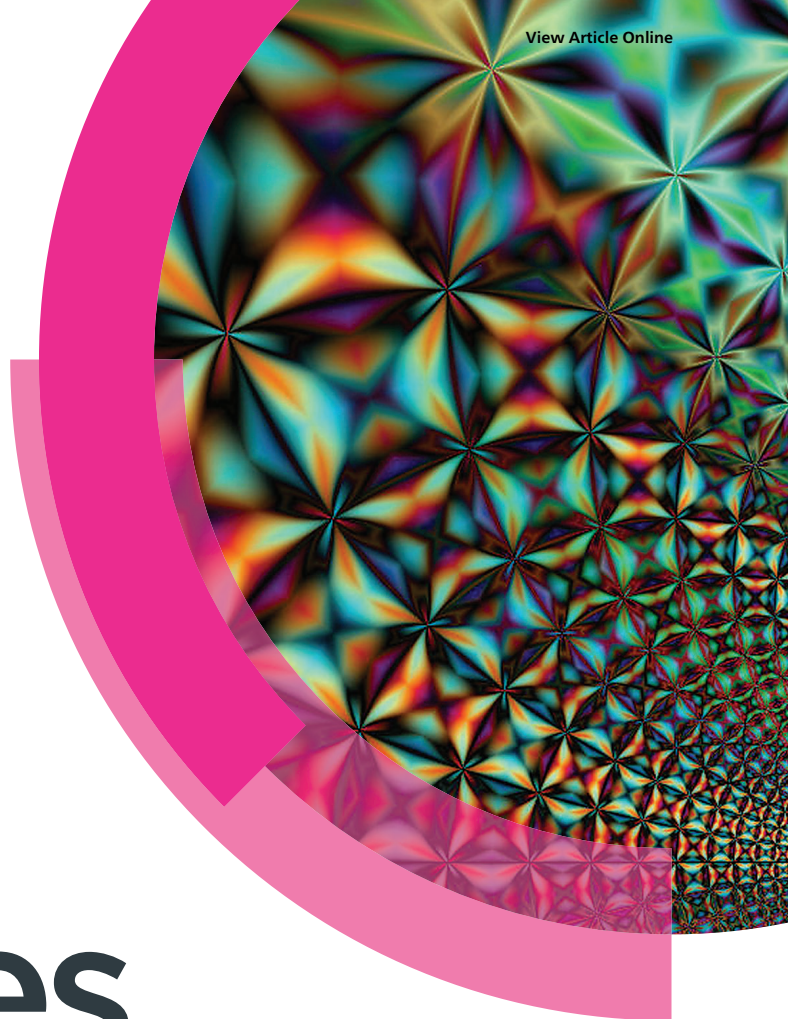


Community Led by active researchers, we publish quality work from scientists at every career stage, and all countries

Submit your work now

rsc.li/rsc-advances

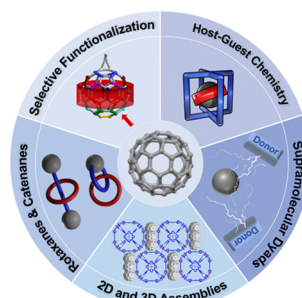
@RSC_Adv



47

Recent advances in supramolecular fullerene chemistry

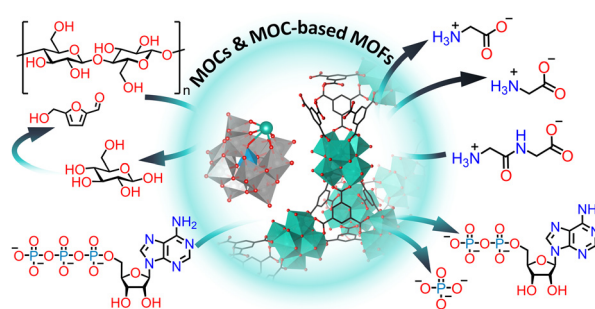
Xingmao Chang, Youzhi Xu* and Max von Delius*



84

Reactivity of metal–oxo clusters towards biomolecules: from discrete polyoxometalates to metal–organic frameworks

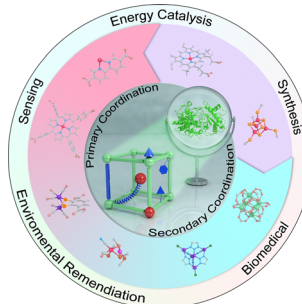
David E. Salazar Marcano, Nada D. Savić, Kilian Declerck, Shorok A. M. Abdelhameed and Tatjana N. Parac-Vogt*



137

Atomic-level design of metalloenzyme-like active pockets in metal–organic frameworks for bioinspired catalysis

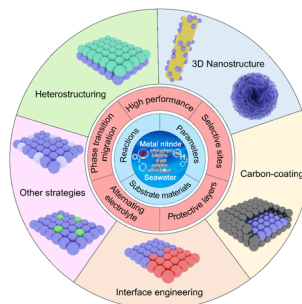
Weiqing Xu, Yu Wu, Wenling Gu, Dan Du, Yuehe Lin* and Chengzhou Zhu*



163

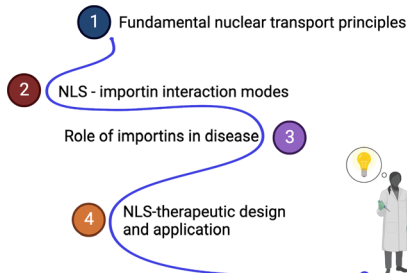
Metal nitrides for seawater electrolysis

Huashuai Hu, Xiaoli Wang, J. Paul Attfield and Minghui Yang*



204

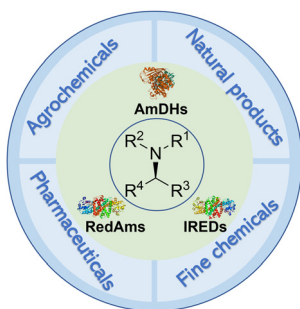
Roadmap for Next-Generation NLS-Therapeutics



Nuclear localization signal-tagged systems: relevant nuclear import principles in the context of current therapeutic design

Ritabrita Goswami, Aarohi Gupta, Olga Bednova, Gaël Coulombe, Dipika Patel, Vincent M. Rotello* and Jeffrey V. Leyton*

227



Biocatalytic reductive aminations with NAD(P)H-dependent enzymes: enzyme discovery, engineering and synthetic applications

Bo Yuan,* Dameng Yang, Ge Qu, Nicholas J. Turner* and Zhoutong Sun*

263

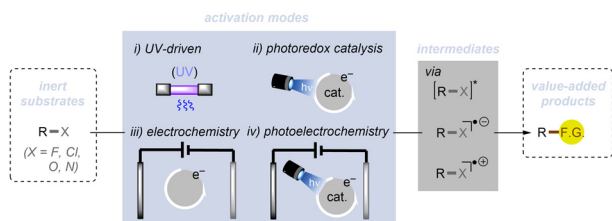
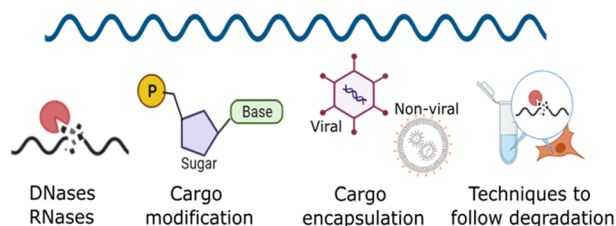


Photo- and electro-chemical strategies for the activations of strong chemical bonds

Xianhai Tian, Yuliang Liu, Shahboz Yakubov, Jonathan Schütte, Shunsuke Chiba* and Joshua P. Barham*

317

Therapeutic nucleic acid delivery



Nucleic acid degradation as barrier to gene delivery: a guide to understand and overcome nuclease activity

Heyang Zhang, Jo Vandesompele, Kevin Braeckmans, Stefaan C. De Smedt and Katrien Remaut*

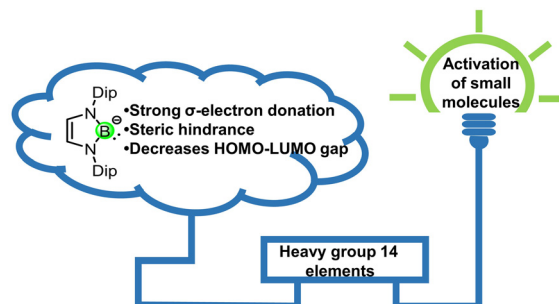


REVIEW ARTICLES

361

Boryl-substituted low-valent heavy group 14 compounds

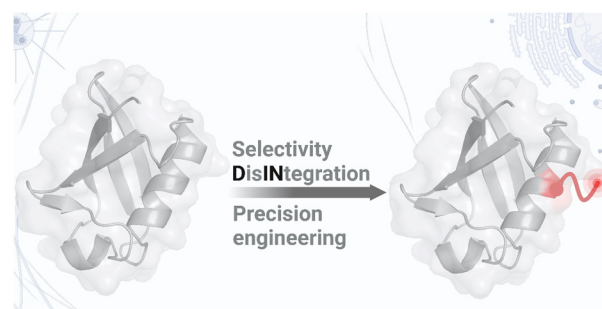
Chenxi Duan and Chunming Cui*



380

Chemical technology principles for selective bioconjugation of proteins and antibodies

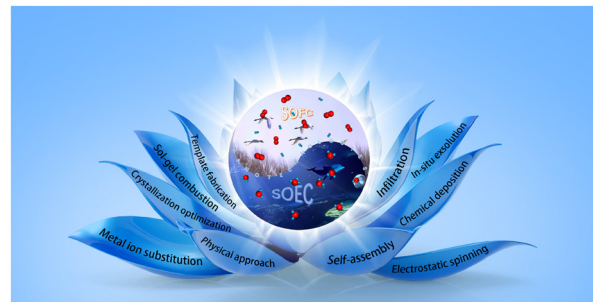
Preeti Chauhan, Ragendu V., Mohan Kumar, Rajib Molla, Surya Dev Mishra, Sneha Basa and Vishal Rai*



450

Nanotechnologies in ceramic electrochemical cells

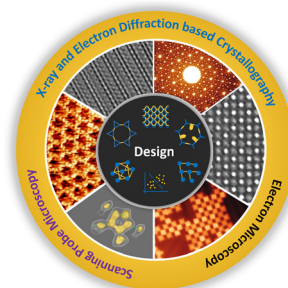
Jiafeng Cao,* Yuexia Ji and Zongping Shao*



502

Revolutionizing the structural design and determination of covalent-organic frameworks: principles, methods, and techniques

Yikuan Liu, Xiaona Liu, An Su, Chengtao Gong, Shenwei Chen, Liwei Xia, Chengwei Zhang, Xiaohuan Tao, Yue Li, Yonghe Li, Tulai Sun, Mengru Bu, Wei Shao, Jia Zhao, Xiaonian Li, Yongwu Peng,* Peng Guo,* Yu Han* and Yihan Zhu*



CORRECTION

545

Correction: A tutorial on asymmetric electrocatalysis

Jonas Rein, Samson B. Zacate, Kaining Mao and Song Lin*

