

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 CSRVBB 53(12) 6013–6628 (2024)



Cover

Cover
See Daniel Razansky *et al.*,
pp. 6068–6099.
Image reproduced
by permission of
Daniel Razansky from
Chem. Soc. Rev.,
2024, 53, 6068



Inside cover

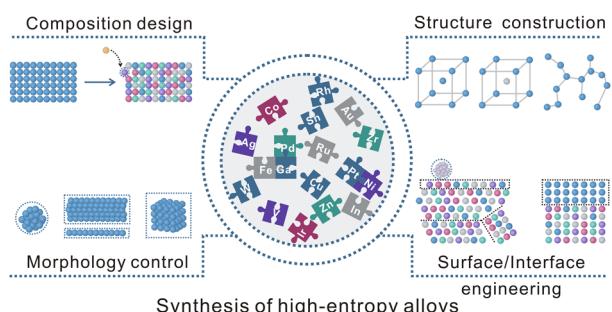
Inside Cover
See Kanishka Biswas
et al., pp. 6100–6149.
Image reproduced
by permission of
Kanishka Biswas from
Chem. Soc. Rev.,
2024, 53, 6100

TUTORIAL REVIEWS

6021

Controllable synthesis of high-entropy alloys

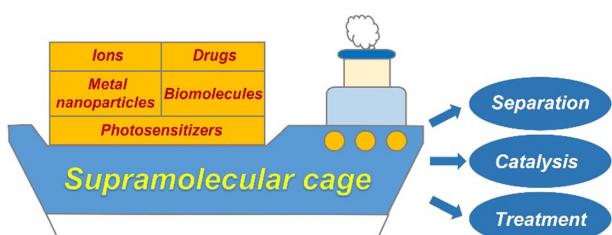
Jingjing Liang, Guanghui Cao, Mengqi Zeng* and Lei Fu*



6042

Supramolecular cage-mediated cargo transport

Qing-Hui Ling, Zhen-Chen Lou, Lei Zhang, Tongxia Jin,*
Wei-Tao Dou,* Hai-Bo Yang* and Lin Xu*



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%

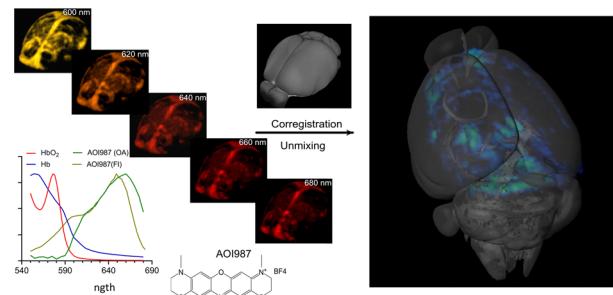


REVIEW ARTICLES

6068

Multimodal optoacoustic imaging: methods and contrast materials

Zhenyue Chen, Irmak Gezginer, Quanyu Zhou, Lin Tang, Xosé Luís Deán-Ben and Daniel Razansky*



6100

Hidden structures: a driving factor to achieve low thermal conductivity and high thermoelectric performance

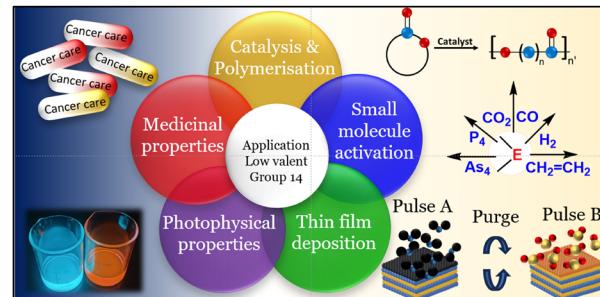
Debattam Sarkar, Animesh Bhui, Ivy Maria, Moinak Dutta and Kanishka Biswas*



6150

Applications of low-valent compounds with heavy group-14 elements

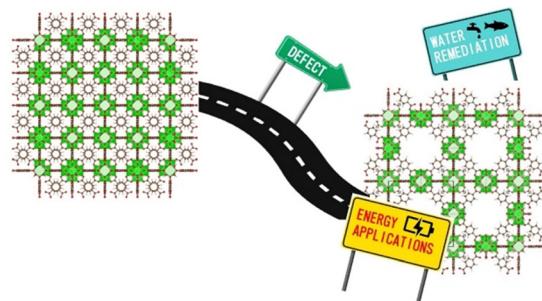
Ruksana Akhtar, Kumar Gaurav and Shabana Khan*



6244

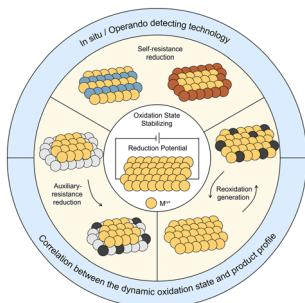
Defect-enabling zirconium-based metal–organic frameworks for energy and environmental remediation applications

Saba Daliran,* Ali Reza Oveisi,* Chung-Wei Kung,* Unal Sen, Amarajothi Dhakshinamoorthy, Cheng-Hsun Chuang, Mostafa Khajeh, Mustafa Erkatal and Joseph T. Hupp*



REVIEW ARTICLES

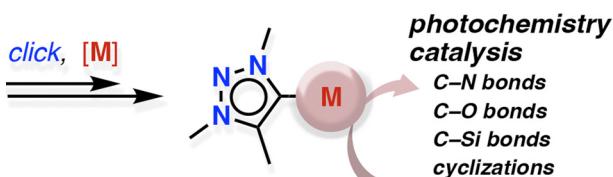
6295



Stabilizing the oxidation state of catalysts for effective electrochemical carbon dioxide conversion

Zhitong Wang, Lizhi Xu, Yansong Zhou, Ying Liang, Jinlin Yang, Daoxiong Wu, Shuyu Zhang, Xingqi Han, Xiaodong Shi, Jing Li, Yuliang Yuan, Peilin Deng* and Xinlong Tian*

6322

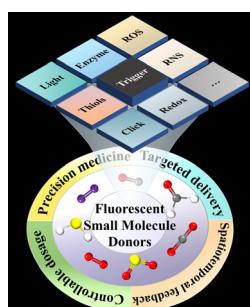


21 <i>Sc</i> Scandium 4.956	22 <i>Ti</i> Titanium 47.867	23 <i>V</i> Vanadium 50.942	24 <i>Cr</i> Chromium 51.996	25 <i>Mn</i> Manganese 54.938	26 <i>Fe</i> Iron 55.845	27 <i>Co</i> Cobalt 58.933	28 <i>Ni</i> Nickel 58.693	29 <i>Cu</i> Copper 63.546
--------------------------------------	---------------------------------------	--------------------------------------	---------------------------------------	--	-----------------------------------	-------------------------------------	-------------------------------------	-------------------------------------

Application of first-row transition metal complexes bearing 1,2,3-triazolylidene ligands in catalysis and beyond

Wowa Stroek and Martin Albrecht*

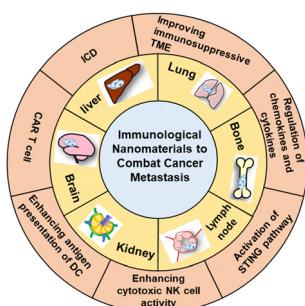
6345



Fluorescent small molecule donors

Guang Chen,* Jing Yu, Luling Wu, Xinrui Ji, Jie Xu, Chao Wang, Siyue Ma, Qing Miao, Linlin Wang, Chen Wang, Simon E. Lewis, Yanfeng Yue,* Zhe Sun,* Yuxia Liu,* Bo Tang* and Tony D. James*

6399



Immunological nanomaterials to combat cancer metastasis

Yuanbo Pan, Junjie Cheng, Yang Zhu,* Jianmin Zhang,* Wenpei Fan* and Xiaoyuan Chen*

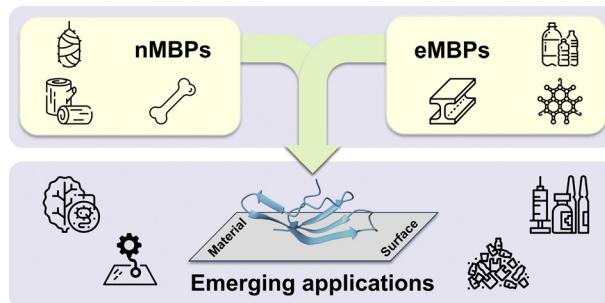


REVIEW ARTICLES

6445

Material-specific binding peptides empower sustainable innovations in plant health, biocatalysis, medicine and microplastic quantification

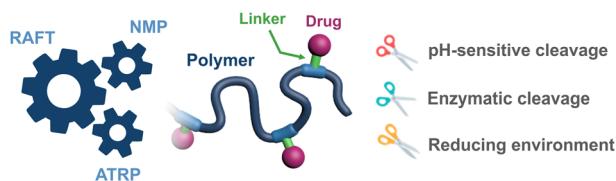
Maochao Mao, Leon Ahrens, Julian Luka,
Francisca Contreras, Tetiana Kurkina, Marian Bienstein,
Marisa Sária Pereira de Passos, Gabriella Schirinzi,
Dora Mehn, Andrea Valsesia, Cloé Desmet,
Miguel-Ángel Serra, Douglas Gilliland and
Ulrich Schwaneberg*



6511

Stimuli-sensitive polymer prodrug nanocarriers by reversible-deactivation radical polymerization

Léa Guerassimoff, Marianne Ferrere, Amaury Bossion
and Julien Nicolas*



6568

Recent advances in rational structure design for nonlinear optical crystals: leveraging advantageous templates

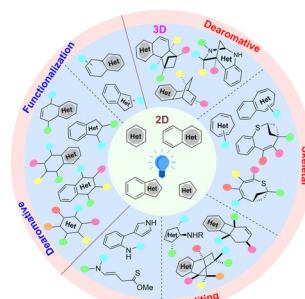
Ziting Yan, Jinbin Fan, Shilie Pan* and Min Zhang*



6600

Photochemical dearomatic skeletal modifications of heteroaromatics

Peng Ji,* Kuaikuai Duan, Menglong Li, Zhiyuan Wang,
Xiang Meng, Yueteng Zhang* and Wei Wang*



CORRECTIONS

6625

Correction: Defect-enabling zirconium-based metal–organic frameworks for energy and environmental remediation applications

Saba Daliran,* Ali Reza Oveisí,* Chung-Wei Kung,* Unal Sen, Amarajothi Dhakshinamoorthy, Cheng-Hsun Chuang, Mostafa Khajeh, Mustafa Erkatal and Joseph T. Hupp*

6626

Correction: Recent advances in the chemistry of isolable carbene analogues with group 13–15 elements

Mian He, Chaopeng Hu, Rui Wei, Xin-Feng Wang and Liu Leo Liu*

