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IN THIS ISSUE

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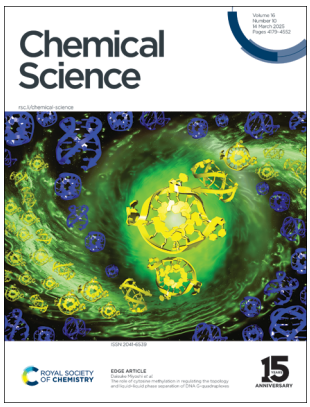


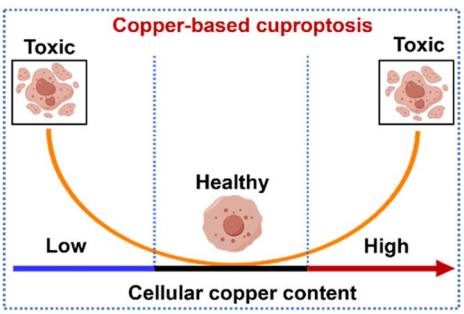
Cover
See Daisuke Miyoshi *et al.*, pp. 4213–4225. Image reproduced by permission of Daisuke Miyoshi from *Chem. Sci.*, 2025, **16**, 4213.

COMMENTARY

4192

A focus on copper depletion-induced cuproptosis for cancer therapy

Hongjie Zhang

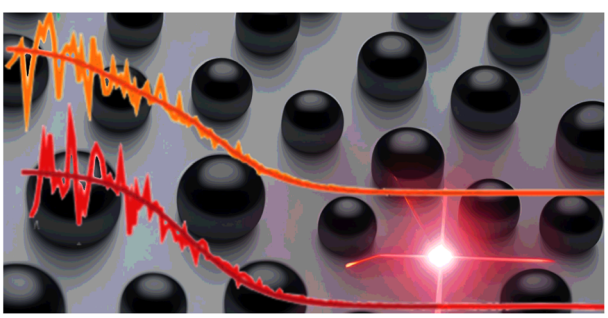


REVIEW

4195

Bottom-up carbon dots: purification, single-particle dynamics, and electronic structure

Zhengyi Bian, Eric Gomez, Martin Gruebele,* Benjamin G. Levine, Stephan Link, Arshad Mehmood and Shuming Nie



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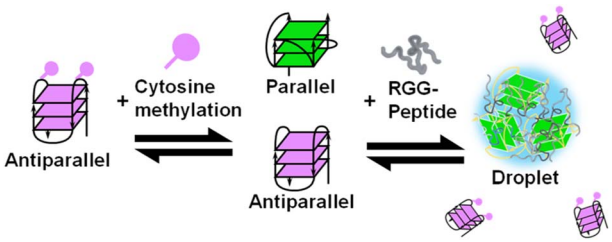
EDGE ARTICLES

4213

The role of cytosine methylation in regulating the topology and liquid–liquid phase separation of DNA G-quadruplexes

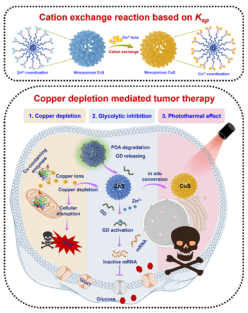
Mitsuki Tsuruta, Sumit Shil, Shinya Taniguchi, Keiko Kawauchi and Daisuke Miyoshi*



4226

Copper depletion-induced tumor cuproptosis

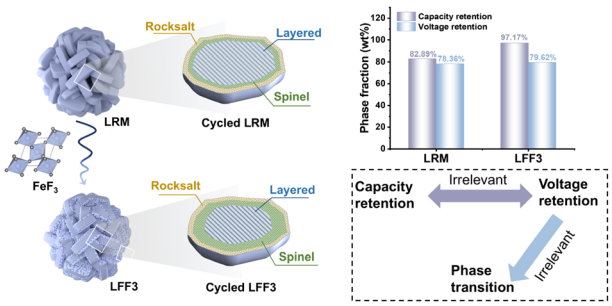
Min Zhou, Faheem Muhammad, Yihong Zhang, Tong Li, Jiayuan Feng, Jingyuan Zhao and Hui Wei*



4237

Resolving the relationship between capacity/voltage decay and the phase transition by accelerating the layered to spinel transition

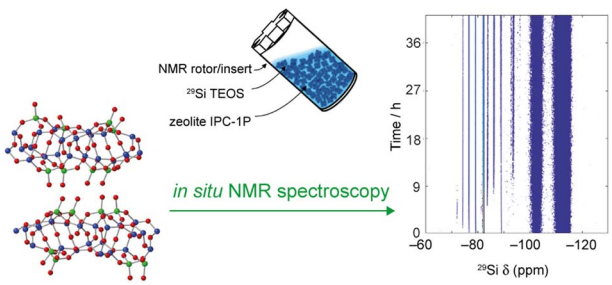
Qi Pang, Mengke Zhang, Yang Song, Yueying Liu, Manqi Tang, Sunqi Su, Lang Qiu,* Yao Xiao* and Xiaodong Guo*



4245

Exploiting *in situ* NMR spectroscopy to understand non-traditional methods for zeolite synthesis

Nicole L. Kelly, Emma A. L. Borthwick, Gaynor B. Lawrence, Paul S. Wheatley, Colan E. Hughes, Kenneth D. M. Harris,* Russell E. Morris* and Sharon E. Ashbrook*



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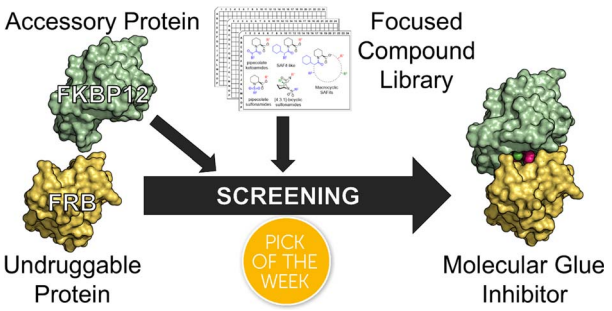
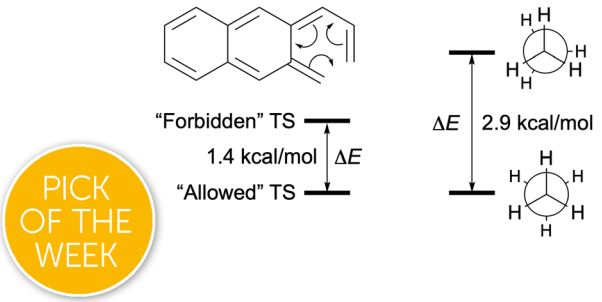


Discovery of fully synthetic FKBP12-mTOR molecular glues

Robin C. E. Deutscher, Christian Meyners, Maximilian L. Repity, Wisely Oki Sugiarto, Jürgen M. Kolos, Edvaldo V. S. Maciel, Tim Heymann, Thomas M. Geiger, Stefan Knapp, Frederik Lermyte and Felix Hausch*

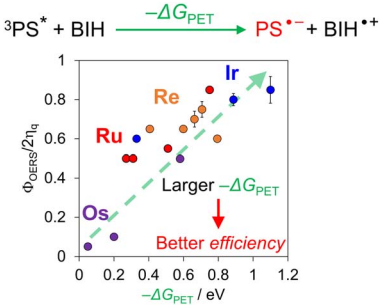
4264



An argument for abandoning the "allowed" and "forbidden" classification of electrocyclic reactions

Barry K. Carpenter

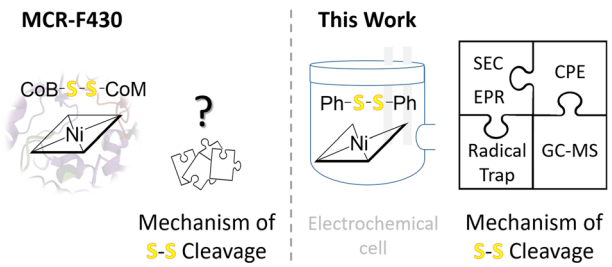
4279



The main factor that determines the formation-efficiencies of photochemically derived one-electron-reduced species

Naoki Hosokawa, Kyohei Ozawa, Kazuhide Koike, Yusuke Tamaki and Osamu Ishitani*

4290



Biomimetic thiyl radical formation from diphenyl disulfide with the low valent Ni(I) state of a cofactor F430 model

Samira Amini, Kerstin Oppelt, Olivier Blacque, Mikhail Agrachev, Gunnar Jeschke and Felix Zelder*

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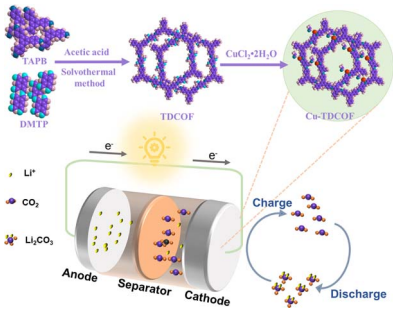
4295

Targeted anchoring of Cu sites in imine-based covalent organic frameworks as catalytic centers for efficient Li–CO_2 batteries

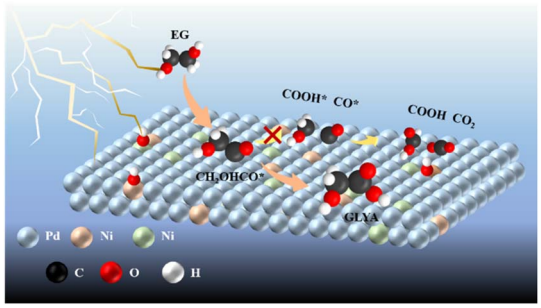
Haixia Chen, Zhixin Liu, Yunyun Xu, Xingyu Yu, Yinglei Tao, Yue Li, Xianli Huang, Jianping He and Tao Wang*



4303

Anti-poisoning of CO and carbonyl species over Pd catalysts during the electrooxidation of ethylene glycol to glycolic acid at elevated current density

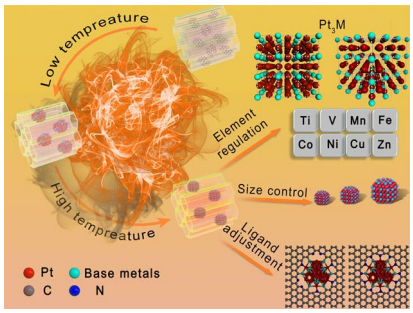
Jia Cheng, Yunchuan Tu, Yang Xiang, Jingtian Ni, Tao Guo, Xun Huang,* Bin Liu* and Zidong Wei*



4311

Coordination-in-pipe engineering of Pt-based intermetallic compounds with nanometer to angstrom precision

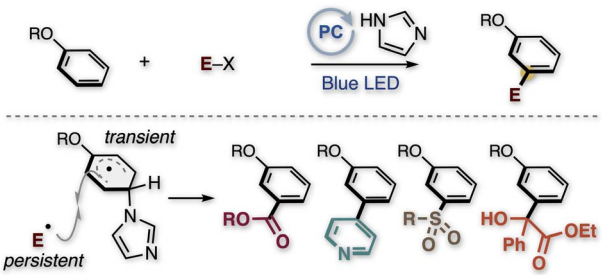
Shouyao Hu, Jiaxin Gong, Yu Tao, Runze Ma, Jianping Guan, Xu Liu, Jinhua Hu, Jun Yan,* Shibin Wang, Zedong Zhang, Xiao Liang, Zechao Zhuang, Yunhu Han, Xusheng Zheng, Wensheng Yan, Chengjin Chen, Wei Zhu, Dingsheng Wang and Yu Xiong*



4320

Distal C–H functionalization of alkoxyarenes through organic photoredox-catalyzed radical–radical coupling

Yamato Goto and Hirohisa Ohmiya*



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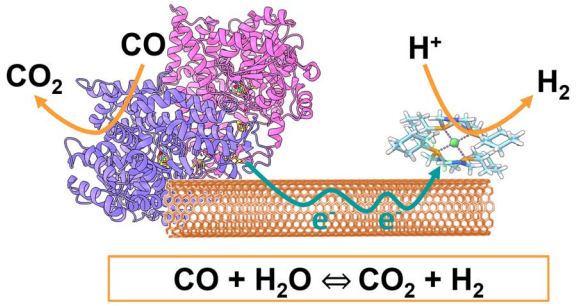
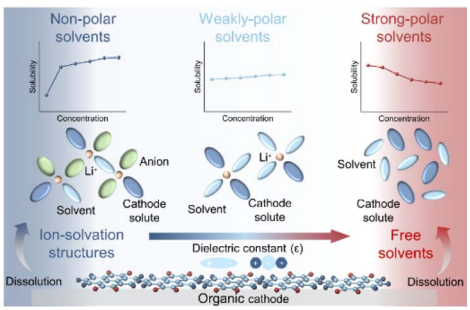


From two-component enzyme complex to nanobiohybrid for energy-efficient water–gas shift reaction

Thomas Pichon, Claudio Righetti, Julien Pérard, Alan Le Goff* and Christine Cavazza*

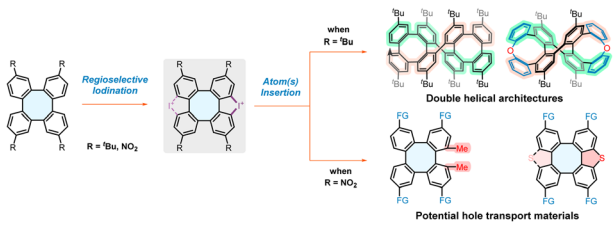
4335



Revealing the dissolution mechanism of organic carbonyl electrodes in lithium–organic batteries

Shu Zhang, Weiwei Xie, Zhuo Yang, Shuo Xu, Qi Zhao, Yong Lu, Kai Zhang, Zhenhua Yan and Jun Chen*

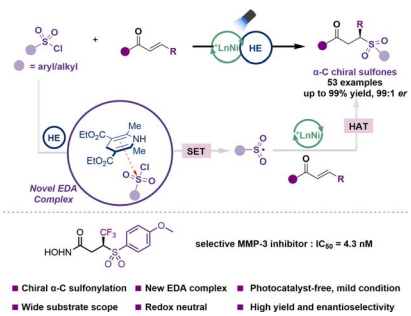
4342



Regioselective late-stage functionalization of tetraphenylenes: rapid construction of double helical architectures and potential hole transport materials

Xiang Xu, Hao-Ran Ma, Jian-Fang Cui,* Xiao-Shui Peng* and Henry N. C. Wong*

4352



Catalytic enantioselective synthesis of α-C chiral sulfones enabled by merging photoactive electron donor–acceptor complexes with nickel catalysis

Ze-Min Lai, Ying Xie, Le-Le Huang, Jing Guo* and Gui Lu*

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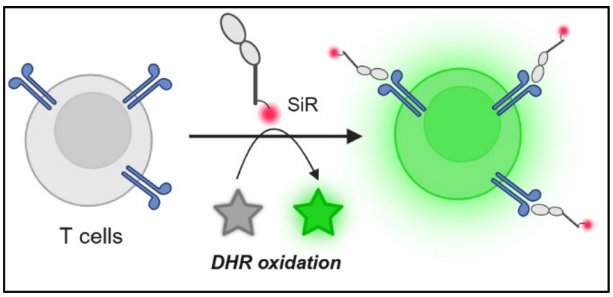
4360

An encodable amino acid for targeted photocatalysis

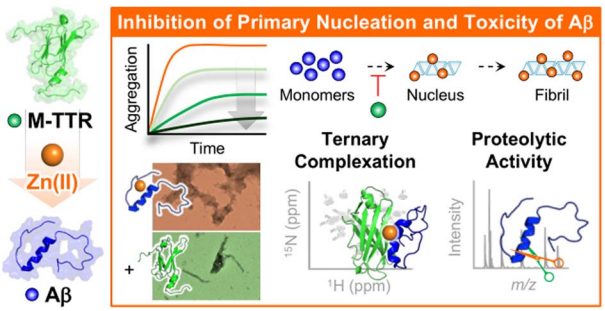
Man Sing Wong, Utsa Karmakar, Marco Bertolini, Abigail E. Reese, Lorena Mendive-Tapia and Marc Vendrell*



4366

Zn(II)-driven impact of monomeric transthyretin on amyloid-β amyloidogenesis

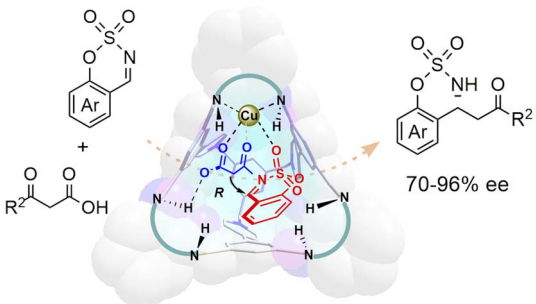
Yelim Yi, Bokyung Kim, Mingeun Kim, Young Ho Ko, Jin Hae Kim* and Mi Hee Lim*



4374

Copper(II)-catalyzed enantioselective decarboxylative Mannich reaction coordinated by supramolecular organic amine cages

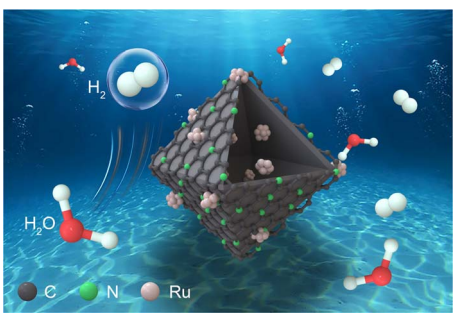
Yuanli Zhu, Houting Wang, Rui Liu,* Kaihong Liu, Xiaodong Hu, Jian Huang, Cheng Wang, Leyi Wang, Yan Liu,* Guohua Liu* and Chunxia Tan*



4383

Strengthened d–p orbital hybridization and hydrogen diffusion in a hollow N-doped porous carbon/Ru cluster catalyst system for hydrogen evolution reactions

Ruidong Li, Hongyu Zhao, Lin Wang, Qingqu Zhou, Xiong Yang, Linbo Jiang, Xu Luo, Jun Yu,* Jingwen Wei and Shichun Mu*



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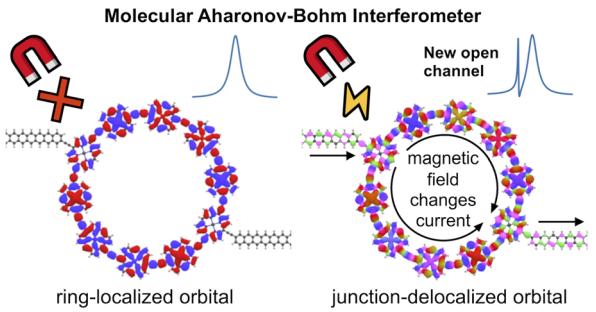
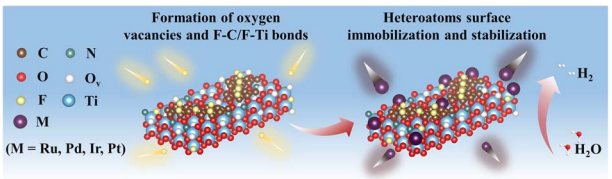


Molecular Aharonov–Bohm-type interferometers based on porphyrin nanorings

Chi Y. Cheng, Gil Harari, Igor Rončević, Juan E. Peralta, Harry L. Anderson,* Andrew M. Wibowo-Teale* and Oded Hod*

4402



Universal synthesis of single-atom electrocatalysts *via in situ* fluoride ion etching for hydrogen evolution

Peng Liu, Jiahui Ye, Kuan Deng, Xuesong Liu, Haohui Dong, He Zhang, Wen Tian and Junyi Ji*

4412

Integrating social responsibility and diversity, equity, and inclusion into the graduate chemistry curriculum

Kay T. Xia,* F. Dean Toste, Matthew B. Francis and Anne M. Baranger*

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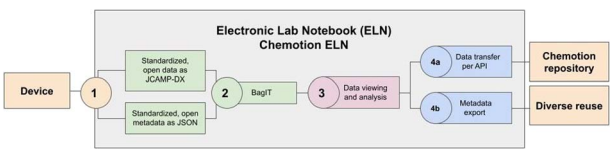

Enhancing FAIRdata by providing digital workflows from data generation to the publication of data: an open source approach described for cyclic voltammetry

David Herrmann, Patrick Hodapp, Martin Starman, Pei-Chi Huang, Chia-Lin Lin, Lan B. Q. Le, Tillmann G. Fischer, Claudia Bizzarri, Philipp Röse, Niklas Oppel, Jochen Klar, Pierre Tremouilhac, Laura Holzhauer, Sonja Herres-Pawlis, Alexander Hoffmann, Tobias Seitz, Alrik Dorn, Kirsten Zeitler, Nicole Jung* and Stefan Bräse*

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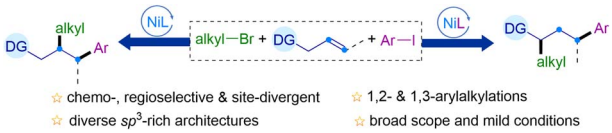
Ni-catalyzed regioselective and site-divergent reductive arylalkylations of allylic amines

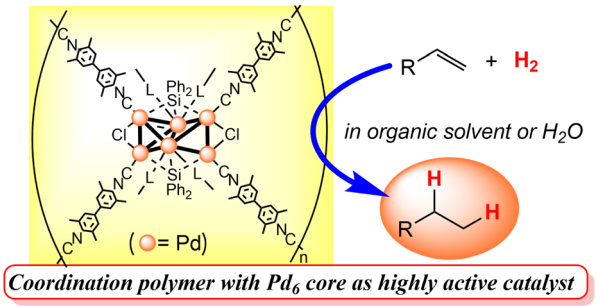
Huan Meng, Jun-Song Jia, Peng-Fei Yang, Yu-Long Li,* Qiong Yu* and Wei Shu*



4450

A coordination polymer with a silylene-supported Pd_6 core as an efficient heterogeneous hydrogenation catalyst

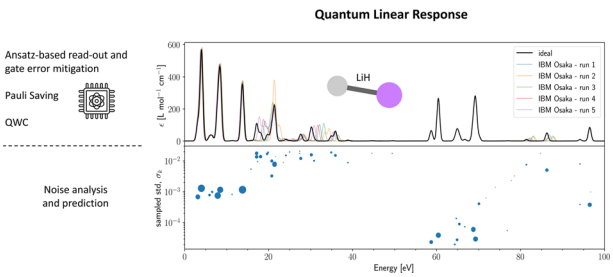
Taiga Mitomo, Yoshimasa Wada, Tetsuro Suda, Atsushi Tamura, Shunsuke Yagi, Soichi Kikkawa, Seiji Yamazoe and Yusuke Sunada*



4456

Understanding and mitigating noise in molecular quantum linear response for spectroscopic properties on quantum computers

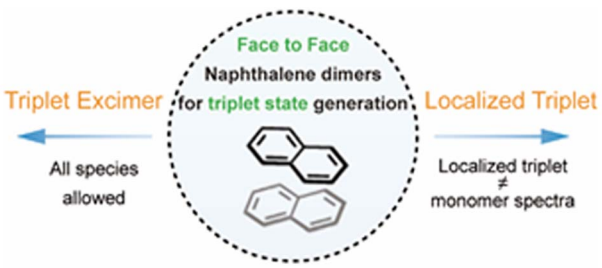
Karl Michael Ziems,* Erik Rosendahl Kjellgren, Stephan P. A. Sauer, Jacob Kongsted and Sonia Coriani



4469

On the nature of the triplet electronic states of naphthalene dimers

L. Martinez-Fernandez, Peicong Wu, Lin-Tao Bao, Xueli Wang, Rui-Hua Zhang, Wei Wang, Hai-Bo Yang, Jinquan Chen* and R. Improta*



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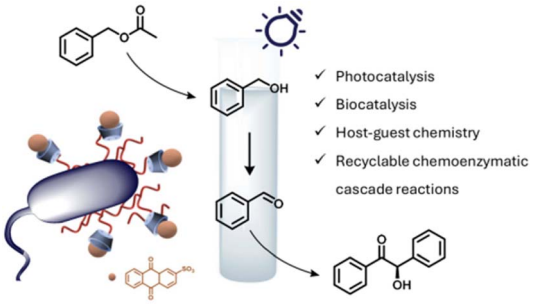
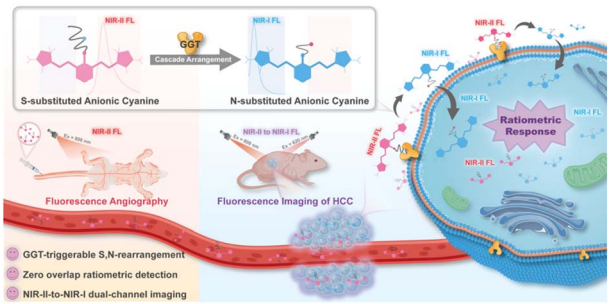


Host–guest chemistry on living cells enabling recyclable photobiocatalytic cascade

Jiaheng Zhang, Vasco F. Batista, René Hübner, Henrik Karring and Changzhu Wu*

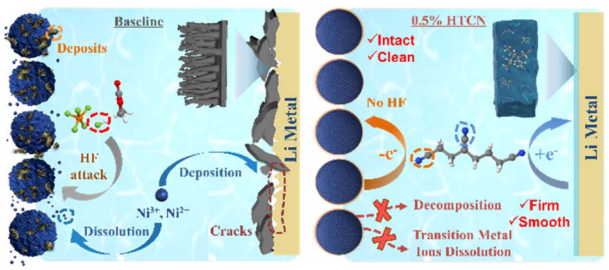
4490



Debut of enzyme-responsive anionic cyanine for overlap-free NIR-II-to-I dual-channel tumour imaging

Feiyi Chu, Bin Feng, Yiyang Zhou, Min Liu, Hailiang Zhang, Meihui Liu, Qian Chen, Shengwang Zhang, Yeshuo Ma, Jie Dong, Fei Chen and Wenbin Zeng*

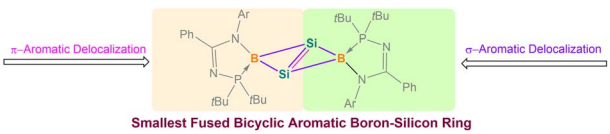
4501



Multi-functional nitrile-based electrolyte additives enable stable lithium metal batteries with high-voltage nickel-rich cathodes

Shu Yang, Haonan Huang, Hailin Shen, Mengyuan Zhou, Liang Yuan, Yunyun Gao, Jinlei Zhang, Yike Wei, Changchun Ye,* Weishan Li and Zhenghui Pan*

4512



A silicon analogue of a fused bicyclic borirene derivative

Si Jia Isabel Phang, Zheng-Feng Zhang, Chi-Shiun Wu, Zhen Xuan Wong, Ming-Der Su* and Cheuk-Wai So*

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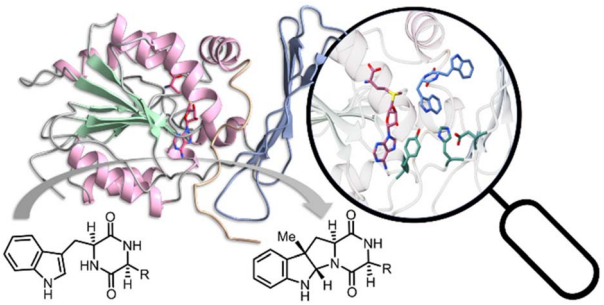
4519

Characterization of a C-methyltransferase from *Streptomyces griseoviridis* – crystal structure, mechanism, and substrate scope

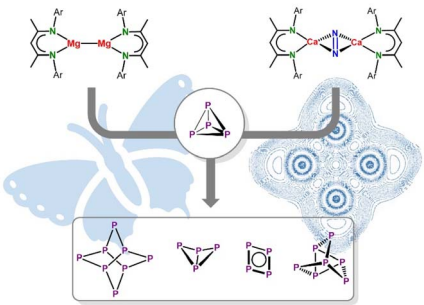
Mona Haase, Oliver H. Weiergräber,* Benoit David, Elias L. Pfirmann, Beatrix Paschold, Holger Gohlke* and Jörg Pietruszka*



4528

Tuning the selectivity of P_4 reduction at alkaline-earth metal centres

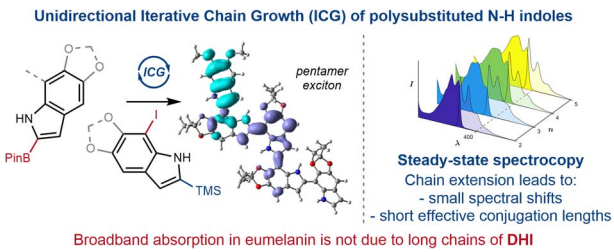
Stefan Thum, Oliver P. E. Townrow, Jens Langer and Sjoerd Harder*



4537

An iterative synthesis of poly-substituted indole oligomers reveals a short effective conjugation length in eumelanin model compounds

Haiyan Huang, Lilia Kinziabulatova, Anju Manickoth, Yiming Zhang, Marisa A. Barilla, Lluís Blancafort,* Bern Kohler* and Jean-Philip Lumb*



CORRECTION

4549

Correction: Construction of an autocatalytic reaction cycle in neutral medium for synthesis of life-sustaining sugars

Hiro Tabata, Genta Chikatani, Hiroaki Nishijima, Takashi Harada, Rika Miyake, Souichiro Kato, Kensuke Igarashi, Yoshiharu Mukouyama, Soichi Shirai, Minoru Waki, Yoko Hase* and Shuji Nakanishi*