

IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 16(32) 14411–14824 (2025)



Cover
See Ming Liu *et al.*,
pp. 14448–14454. Image
reproduced by permission of
Ming Liu from *Chem. Sci.*,
2025, 16, 14448.



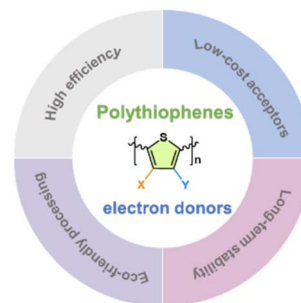
Inside cover
See Wen Chen, Tong Wang
et al., pp. 14455–14467.
Image reproduced by
permission of Tong Wang and
Wen Chen from *Chem. Sci.*,
2025, 16, 14455. Artwork
created by Xiao-Jia Liu.

PERSPECTIVE

14424

Polythiophenes as electron donors in organic solar cells

Xiyue Yuan, Jianglong Li, Wanting Deng, Xia Zhou and Chunhui Duan*



EDGE ARTICLES

14448

Construction of helicates based on six-coordinated silicon centres

Yu-Tao Guan, Heng Ji, Ju Yang, Sai-Sai Yu and Ming Liu*



- ✓ Biocompatible Coordination Centers
- ✓ Construction of Chiral Helices from Achiral Ligands
- ✓ Interconversion between Helicate and Mesocate



Industrial Chemistry & Materials

GOLD
OPEN
ACCESS

Focus on industrial chemistry
Advance material innovations
Highlight interdisciplinary feature

Innovative.
Interdisciplinary.
Problem solving

APCs currently waived

Learn more about ICM
Submit your high-quality article

 [@IndChemMater](https://www.facebook.com/IndChemMater)

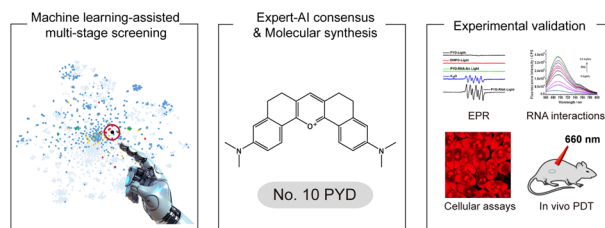
 [@IndChemMater](https://twitter.com/IndChemMater)

rsc.li/icm

14455

Data-driven discovery of near-infrared type I photosensitizers for RNA-targeted tumor photodynamic therapy

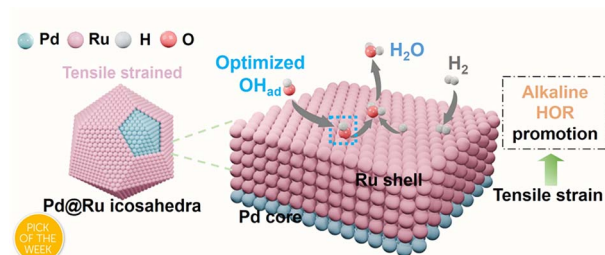
Wen Chen,* Xiao-Qiong Mao, Xiao-Zhi Wang, Ya-Cong Liao, Xiao-Yue Yin, Hai-Long Wu, Tai-Yi Chen, Meng-Qing Liu, Tong Wang* and Ru-Qin Yu



14468

Understanding the strain effect in alkaline hydrogen oxidation reaction over well-defined Ru surfaces: insights into catalyst design

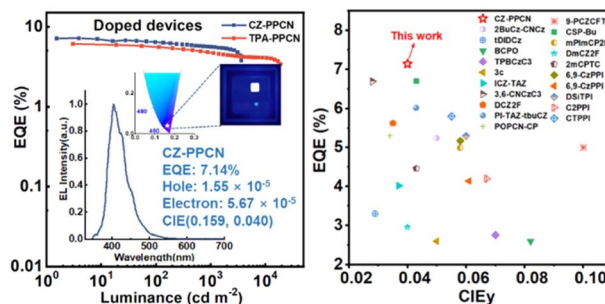
Zihan Guo, Yan Qiao, Mengfan Li, Zhenghe Gong, Jingwei Yu, Yanan Wang, Liang Zhao, Yang Li, Zehua Hu,* Yangfan Lu and Hongwen Huang*



14478

Efficient near-ultraviolet (NUV) electroluminescence based on a benzonitrile acceptor HLCT material with balanced carrier mobilities and high color purity

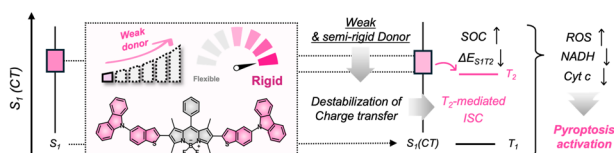
Li Zhang, Chenglin Ma, Xin Wang, Yannan Zhou, Jingru Song, Mizhen Sun, Qikun Sun, Shi-Tong Zhang, Wenjun Yang and Shanfeng Xue*



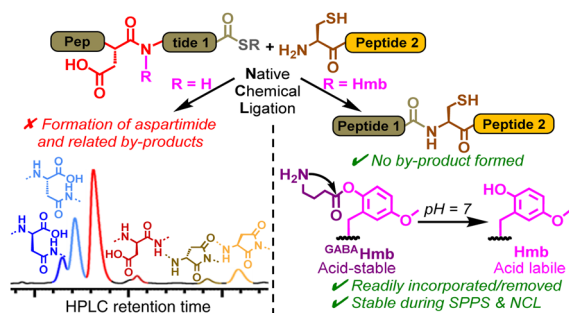
14485

Breaking the heavy-atom paradigm: weak-donor-engineered triplet harvesting in BODIPY photosensitizers for immunogenic pyroptosis therapy

Hyeong Seok Kim, Hyeonji Rha, Mohammad Izadyar, Supphachok Chanmungkalakul, Haiqiao Huang, Yi Young Kang, Jae-Won Ka, Yunjie Xu,* Mingle Li,* Xiaogang Liu* and Jong Seung Kim*



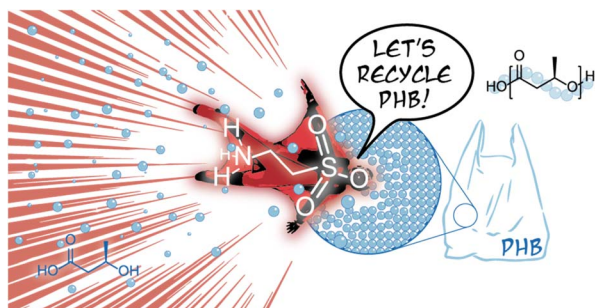
14496



Identification, occurrence and prevention of aspartimide-related byproducts in chemical protein synthesis

El Hadji Cisse and Vincent Aucagne*

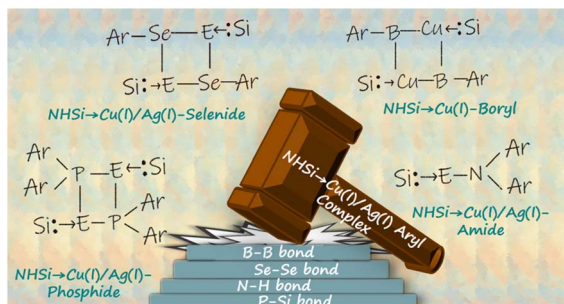
14509



Selective chemical recycling of polyhydroxybutyrate into high-value hydroxy acid using the taurine organocatalyst

Elena Gabirondo, Ainhoa Maiz-Iginitz, Marta Ximenis, Katarzyna Świderek, Daniel Andrés-Sanz, Vicent Moliner, Luis Cabedo, Andrea H. Westlie, Eugene Y.-X. Chen, Daniel Alonso Cerrón-Infantes, Miriam M. Unterlass, Fernando López-Gallego, Agustin Etxeberria and Haritz Sardon*

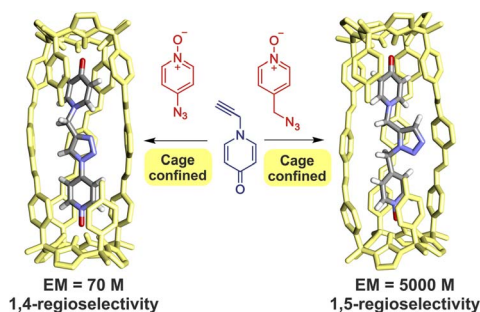
14518



Driving diverse bond functionalisation with N-heterocyclic silylene-coincage metal-aryl complexes

Moushaki Ghosh, Kumar Gaurav, Prakash Panwaria, Rishukumar Panday, Srinu Tothadi and Shabana Khan*

14534



Acceleration and regioselectivity switching in 1,3-dipolar cycloaddition reactions confined in a bis-calix[4]pyrrole cage

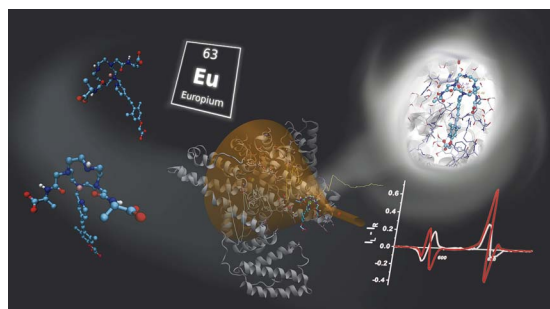
Yifan Li, Gemma Aragay and Pablo Ballester*



14544

Europium probe binding to serum albumin and α_1 -AGP, key importance of configuration, charge and size complementarity

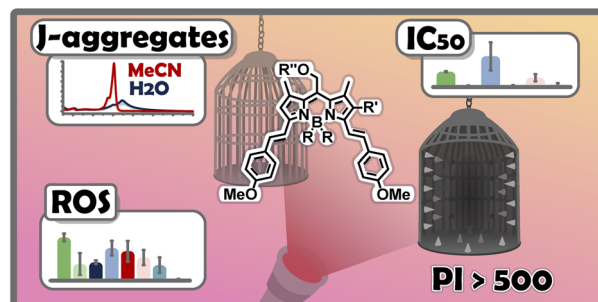
Huishan Li, Sally Lok-Wan Ng, Dominic J. Black, Wei Han, Robert Pal and David Parker*



14553

Phototoxicity of hydroxymethyl-BODIPYs: are photocages that innocent?

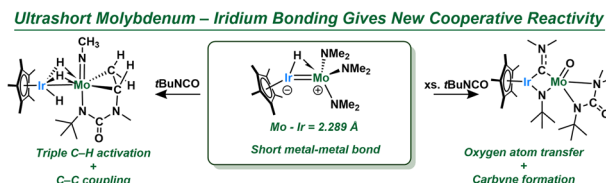
Kirill M. Kuznetsov, Pierre Mesdom, Kallol Purkait, Olivier Blacque, Arthur H. Winter,* Kevin Cariou* and Gilles Gasser*



14564

Synergistic C–H bond activation across molybdenum–iridium multiply bonded complexes: a cascade of transformations

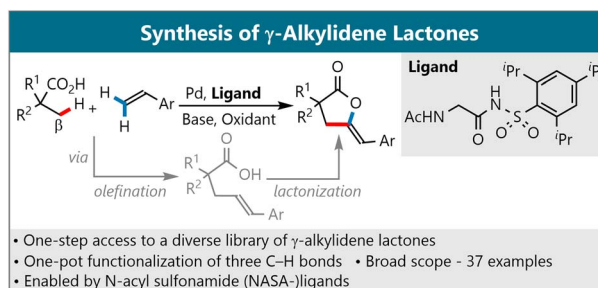
Zachary Dubrawski, Iker Del Rosal, Erwann Jeanneau, Laurent Maron, Chloé Thieuleux and Clément Camp*



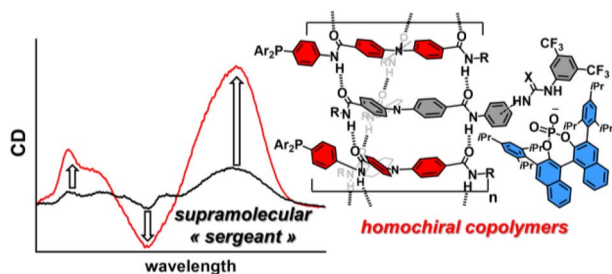
14578

Synthesis of γ -alkylidene lactones via molecular stitching of carboxylic acids and olefins

Edis Crnovrsanin, Sourjya Mal and Manuel van Gemmeren*



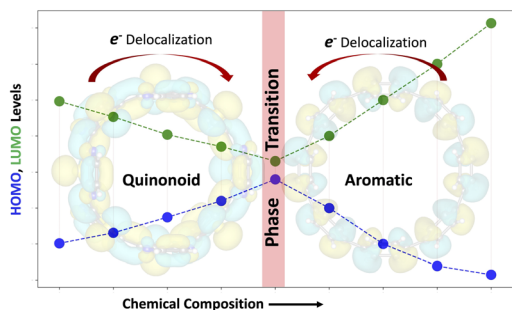
14584



Supramolecular "sergeants": *in situ* and multi-level induction of chirality in helical assemblies of triarylamine trisamide monomers

Antoine Perennes, Quentin Sallembien, Weiwei Fang, Stéphane Grass, Jérôme Lacour, Laurent Bouteiller and Matthieu Raynal*

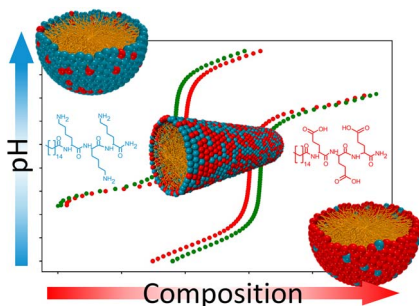
14595



Quinonoid radial π -conjugation

Rameswar Bhattacharjee,* John D. Tovar and Miklos Kertesz*

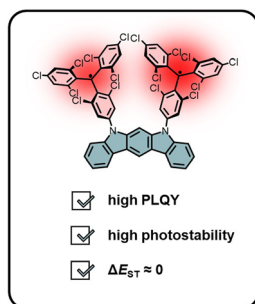
14605



Fine tuning the morphology of peptide amphiphile nanostructures *via* co-assembly

Maria Mercedes Fiora, Huihua Xing, Marilina Cathcarth, Octavio Garate, Santiago Herrera, Agustin S. Picco, Gabriel Ybarra, Martin Conda-Sheridan* and Mario Tagliacuzzi*

14616



Photostable triphenylmethyl-based diradicals with a degenerate singlet-triplet ground state and strong photoluminescence

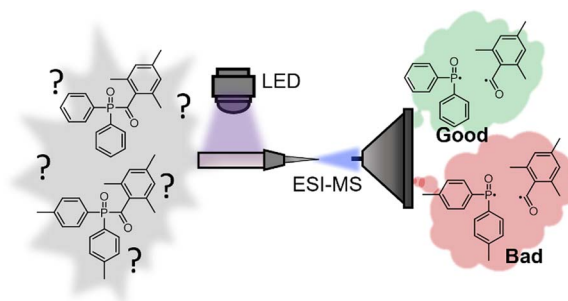
Mona E. Arnold, Anika Lebzelter, Philipp Thielert, Rémi Blinder, Jonas Schmid, Julia Zolg, Emanuele Spatola, Fedor Jelezko, Max von Delius, Sabine Richert* and Alexander J. C. Kuehne*



14625

Beyond absorption: online photoreactor mass spectrometry assessment of new acylphosphine oxide photoinitiators

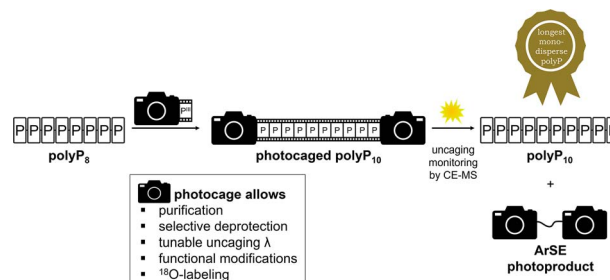
Maria Menti-Platten, Brett R. Burns, Oisín J. Shiels, Philip J. Barker,* Paul A. Keller* and Adam J. Trevitt*



14635

Synthesis of monodisperse inorganic polyphosphate polyP₁₀ via a photocaging strategy

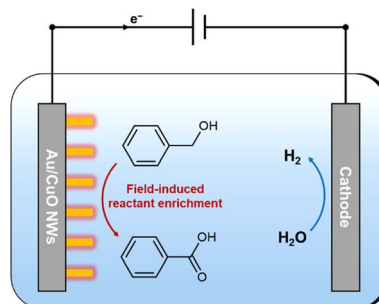
Sandra Moser, Gloria Hans, Jiahui Ma, Thomas Haas, Nikolaus Jork, Felix Bauer, Bernhard Breit and Henning J. Jessen*



14646

Field-induced reactant enrichment enhances benzyl alcohol electrooxidation coupled with hydrogen evolution

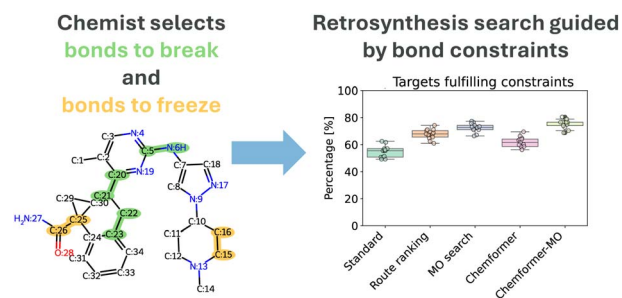
Yifan Yan, Lina Chen, Shaoyu Kang, Xiaofei Li, Claire Coulthard, Jianqin Tang, Chunping Chen, Zhenhua Li, Mingfei Shao* and Dermot O'Hare*



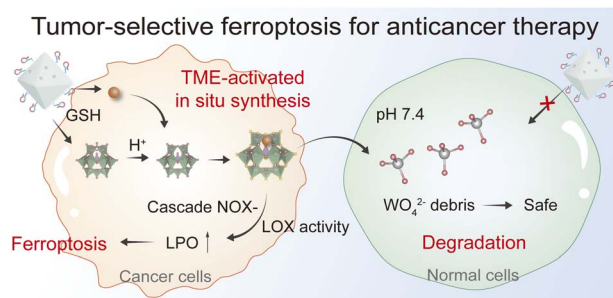
14655

Human-guided synthesis planning via prompting

Annie M. Westerlund,* Lakshidaa Saigiridharan and Samuel Genheden



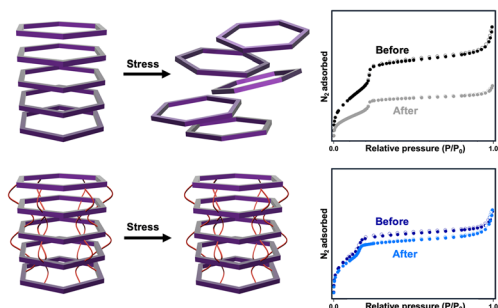
14668



Mimicking NADPH oxidase and lipoxygenase by using a biodegradable single-site catalyst via a cascade reaction to trigger tumor-specific ferroptosis

Xiyang Ge, Yiyang Yin, Xiaoni Wang, Xiang Li, Jin Ouyang and Na Na*

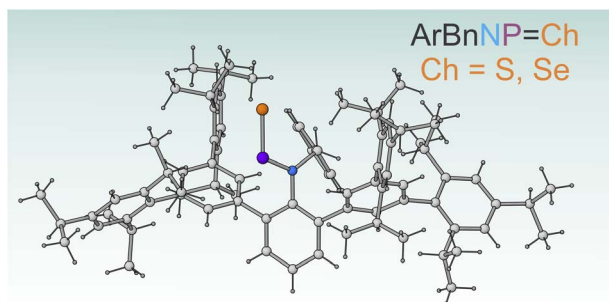
14681



2D-to-3D transformations of a covalent organic framework via post-synthetic crosslinking

Garrison A. Bauer and Mercedes K. Taylor*

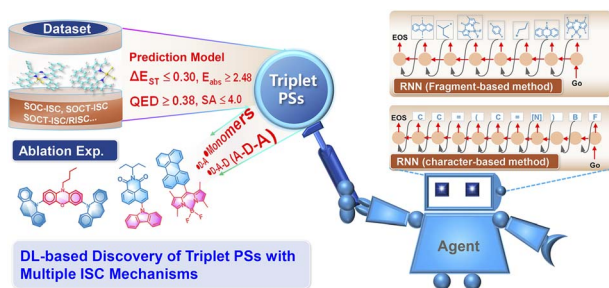
14690



Isolation of a phosphinidene sulfide and selenide

Chenyang Hu, Maren Pink and Jose M. Goicoechea*

14698



Effective generation of heavy-atom-free triplet photosensitizers containing multiple intersystem crossing mechanisms based on deep learning

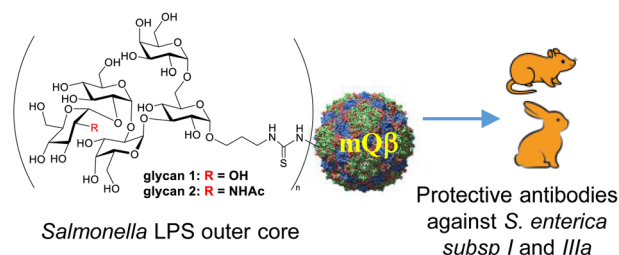
Kepeng Chen, Xiaoting Zhang, Jike Wang, Dan Li, Tingjun Hou,* Wenbo Yang* and Yu Kang*



14710

Synthesis and immunological evaluation of the lipopolysaccharide outer core of *Salmonella* for potential broad-spectrum protection against multiple *Salmonella* serovars

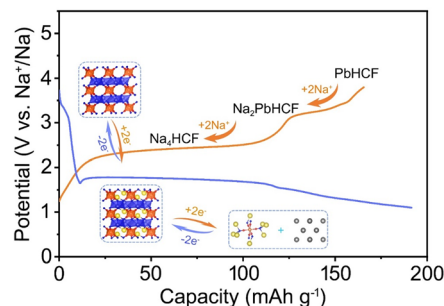
Xingling Pan, Ting-An Chen, Fatemeh Shafieichaharberoud, Sharon M. Tennant, Scott M. Baliban and Xuefei Huang*



14724

Synergistic intercalation–conversion reaction mechanism in Prussian blue analogue materials toward enhanced Na-storage

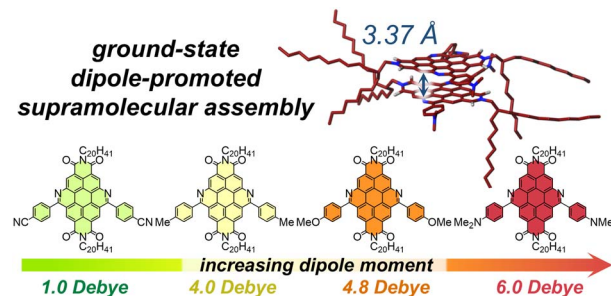
Na Liu, Xiaohan Wang, Jing Liu, Ningbo Liu and Liubin Wang*



14733

Supramolecular polymerization of permanently dipolar perylene diimide-based diazacoronenes

Ani. N. Davis, Colette M. Sullivan, Chengbin Fu, Rupam Roy, A. M. Mahmudul Hasan, Kaitlin Slicker, Haoyuan Li, Lea Nienhaus and Austin M. Evans*



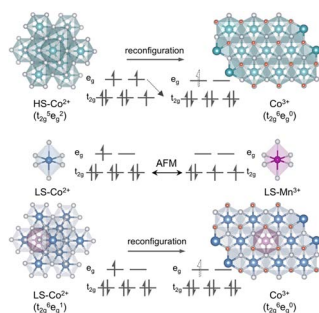
14742

Interfacial engineering of Ru–RuSb₂ for enhanced activity and stability towards alkaline hydrogen oxidation reaction

Chaoyi Yang, Zihao Dai, Jianchao Yue and Wei Luo*



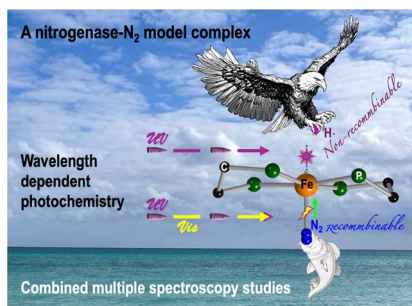
14750



Spin polarization induced rapid reconstruction of transition metal oxide for efficient water electrolysis

Zi-Qiang Chen, Wei-Jie Cai, Hui-Jian Zhang, Kang Xiao, Bolong Huang* and Zhao-Qing Liu*

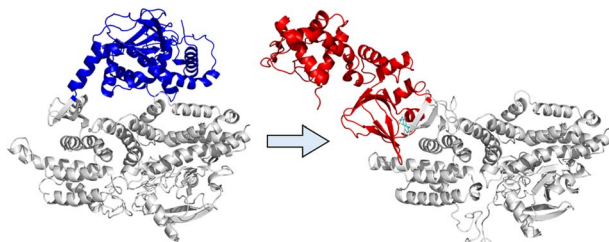
14760



Wavelength dependent photochemistry of an iron dinitrogen hydride complex via multiple spectroscopies – competing ejection of axial ligands

Weibing Dong, Hongxin Wang,* Saeed Kamali, David R. Tyler, Yisong Guo, Lifen Yan, Chantal G. Balesdent, Justin L. Crossland, David A. Case, Yoshitaka Yoda, Jiyong Zhao and Stephen P. Cramer*

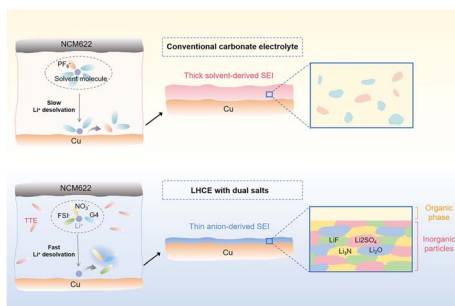
14771



Elucidation of the mechanism of partial activation of EPAC1 allosteric modulators by Markov state modelling

Adele Hardie, Frederick G. Powell, Silvia Lovera, Stephen J. Yarwood, Graeme Barker and Julien Michel*

14782



Regulating the donor number of solvents for long-cycle anode-free lithium metal batteries

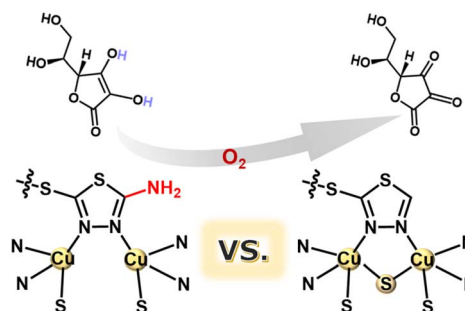
Yining Zhao, Shaopeng Li, Lingtong Zhu, Yahui Li, Shu Xu, Hui Dou and Xiaogang Zhang*



14793

Amino-induced cleavage of the electron-communicating S-bridge to unlock mixed-valence copper for potent oxidase-like catalysis and selective sensing

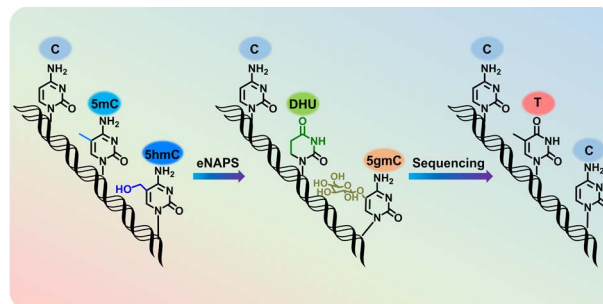
Bojin Li, Nannan Xia, Chaofeng Huang,* Xun Hu* and Fei He*



14800

Direct sequencing of DNA 5-methylcytosine by engineered dioxygenase NTET-assisted eNAPS

Shan Zhang, Neng-Bin Xie, Li Zeng, Fang-Yin Gang, Yao-Hua Gu, Min Wang, Xia Guo, Tong-Tong Ji, Jun Xiong* and Bi-Feng Yuan*



14811

Photosensitized diradical rearrangement of alkenyl oxime ethers towards amino-featured oxiranes: reaction, mechanism, and structural prediction

Tu-Ming Liu, Lin-Yuan Zhu, Min-Hao Qi, Si-Jia Li, Xiao-Jian Wang, Jia-Rui Xu and Bing Han*

