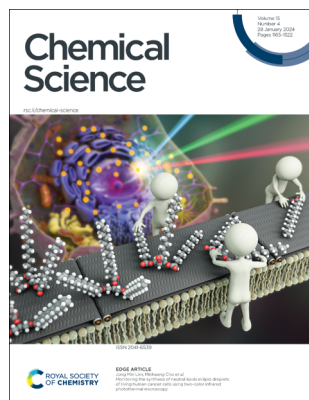
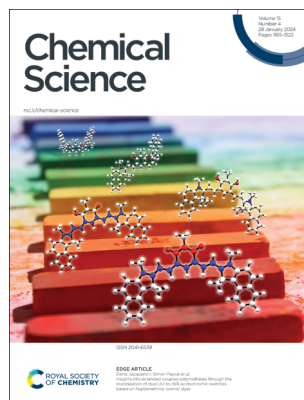


## IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 15(4) 1165–1522 (2024)



**Cover**  
See Jong Min Lim, Minhaeng Cho *et al.*, pp. 1237–1247.  
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**Inside cover**  
See Denis Jacquemin, Simon Pascal *et al.*, pp. 1248–1259.  
Image reproduced by permission of Simon Pascal and Cinhya Liang from *Chem. Sci.*, 2024, 15, 1248.

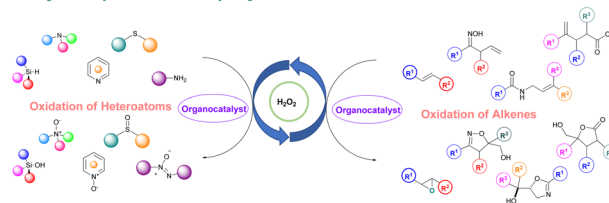
## PERSPECTIVE

1177

### Organocatalytic activation of hydrogen peroxide: towards green and sustainable oxidations

Efthymios T. Poursaitidis, Petros L. Gkizis, Ierasia Triandafillidi and Christoforos G. Kokotos\*

Organocatalytic Activation of Hydrogen Peroxide: Towards Green and Sustainable Oxidations

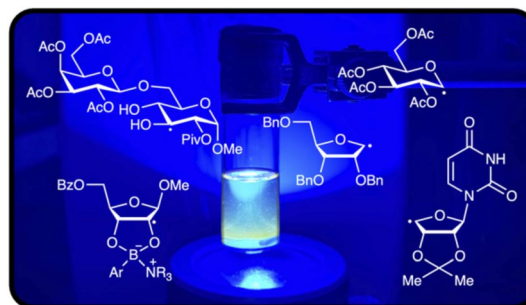


## REVIEW

1204

### Transformations of carbohydrate derivatives enabled by photocatalysis and visible light photochemistry

Daniel J. Gorelik, Shrey P. Desai, Sofia Jdanova, Julia A. Turner and Mark S. Taylor\*



# RSC Applied Interfaces

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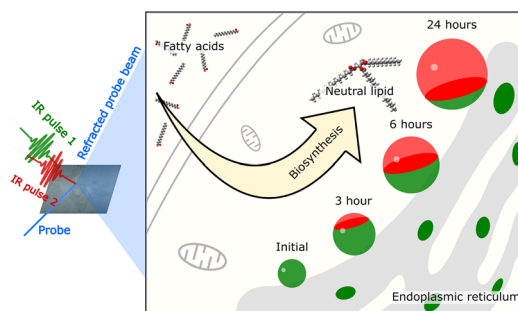
[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)

Fundamental questions  
Elemental answers

1237

### Monitoring the synthesis of neutral lipids in lipid droplets of living human cancer cells using two-color infrared photothermal microscopy

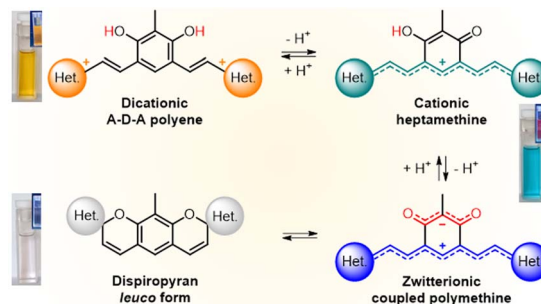
Chanjong Park, Jong Min Lim,\* Seok-Cheol Hong and Minhaeng Cho\*



1248

### Insights into extended coupled polymethines through the investigation of dual UV-to-NIR acidochromic switches based on heptamethine-oxonol dyes

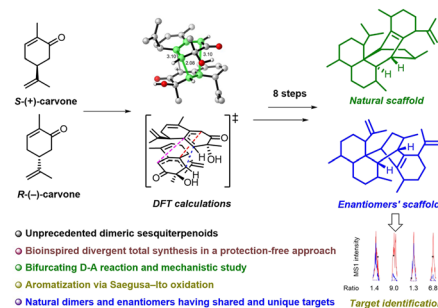
Benjamin Mourot, Valérie Mazan, Mourad Elhabiri, Rudraditya Sarkar, Denis Jacquemin,\* Olivier Siri and Simon Pascal\*



1260

### Discovery and bioinspired total syntheses of unprecedented sesquiterpenoid dimers unveiled bifurcating [4 + 2] cycloaddition and target differentiation of enantiomers

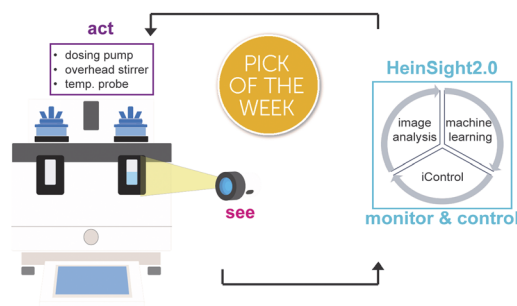
Tao-Bin He, Bing-Chao Yan, Yuan-Fei Zhou, Yue-Qian Sang, Xiao-Nian Li, Han-Dong Sun, Chu Wang, Xiao-Song Xue\* and Pema-Tenzin Puno\*



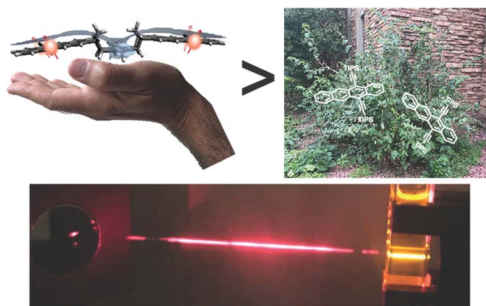
1271

### Keeping an "eye" on the experiment: computer vision for real-time monitoring and control

Rama El-khawaldeh, Mason Guy, Finn Bork, Nina Taherimakhsousi, Kris N. Jones, Joel M. Hawkins, Lu Han, Robert P. Pritchard, Blaine A. Cole, Sebastien Monfette\* and Jason E. Hein\*



1283

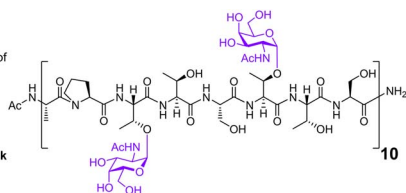


### Enhancing NIR-to-visible upconversion in a rigidly coupled tetracene dimer: approaching statistical limits for triplet–triplet annihilation using intramolecular multiexciton states

Alexander T. Gilligan, Raythe Owens, Ethan G. Miller, Nicholas F. Pompetti and Niels H. Damrauer\*

1297

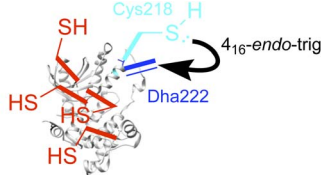
- azidophenylselenylation instead of azidonitration
- fast coupling in 2-MeTHF with 1.5 eq. Fmoc-Thr/Ser( $\alpha$ Ac<sub>2</sub>GalNAc)
- room temp. instead of microwave
- 80-mer with 20 GalNAc in one week



### Rapid building block-economic synthesis of long, multi-O-GalNAcylated MUC5AC tandem repeat peptides

Arseniy Galashov, Ekaterina Kazakova, Christian E. Stieger, Christian P. R. Hackenberger and Oliver Seitz\*

1306

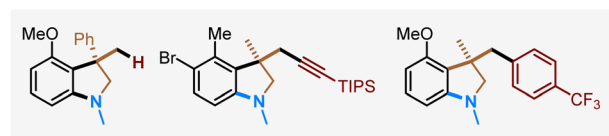
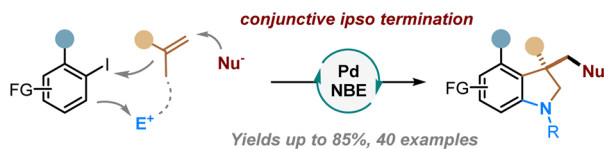


- canonical AAs
- no additional bridge or linker
- no enzyme
- bond-forming cyclization reports on stereoelectronics & 2° structure

### The Minimum Protein Staple? – Towards 'bio'-Baldwin's rules *via* inter-phosphosite linking in the MEK1 activation loop

Sébastien R. G. Galan, Ritu Raj, Dimitrios Mamalis, Lyn H. Jones, Shabaz Mohammed and Benjamin G. Davis\*

1318



### A four-component reaction to access 3,3-disubstituted indolines *via* the palladium–norbornene-catalyzed *ortho* amination/*ipso* conjunctive coupling

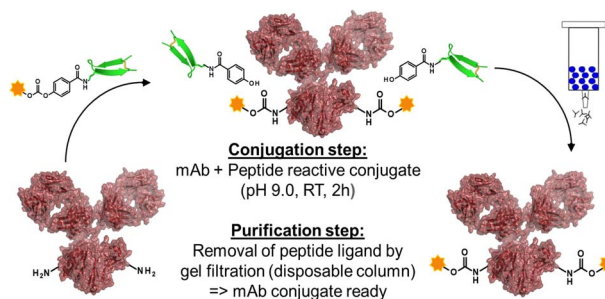
Alexander J. Rago, Rong Ye, Xin Liu\* and Guangbin Dong\*



1324

### Site-selective template-directed synthesis of antibody Fc conjugates with concomitant ligand release

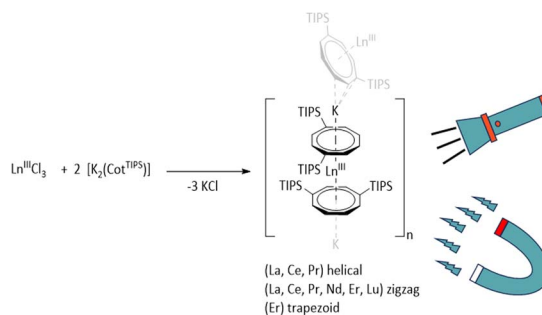
Viktoriia Postupalenko, Léo Marx, Mathilde Pantin, David Viertl, Nadège Gsponer, Gaëlle Giudice, Natalia Gasilova, Margret Schottelius, Frédéric Lévy, Patrick Garrouste, Jean-Manuel Segura and Origène Nyanguile\*



1338

### It's not just the size that matters: crystal engineering of lanthanide-based coordination polymers

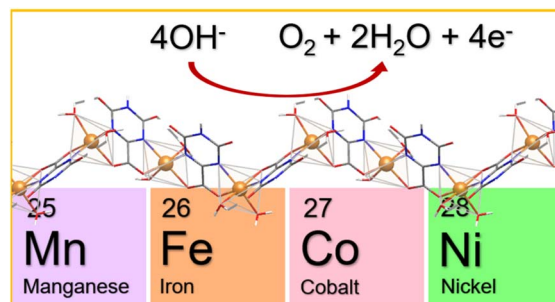
Adrian Hauser, Luca Münzfeld, Cedric Uhlmann, Sergei Lebedkin, Sören Schlittenhardt, Ting-Ting Ruan, Manfred M. Kappes, Mario Ruben and Peter W. Roesky\*



1348

### Harnessing the electronic structure of active metals to lower the overpotential of the electrocatalytic oxygen evolution reaction

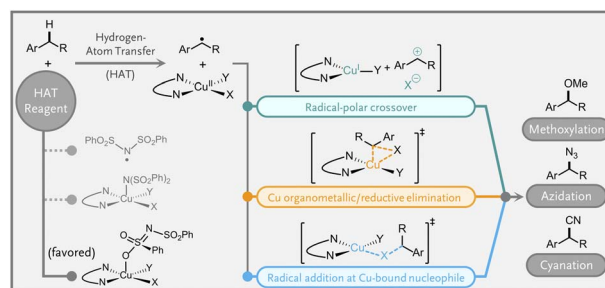
Lorenzo Baldinelli, Gabriel Menendez Rodriguez,\* Iolanda D'Ambrosio, Amalia Malina Grigoras, Riccardo Vivani, Loredana Latterini, Alceo Macchioni, Filippo De Angelis and Giovanni Bistoni\*



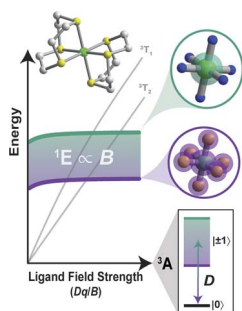
1364

### Mechanistic insights into radical formation and functionalization in copper/N-fluorobenzenesulfonimide radical-relay reactions

Mukunda Mandal,\* Joshua A. Buss, Si-Jie Chen, Christopher J. Cramer and Shannon S. Stahl\*



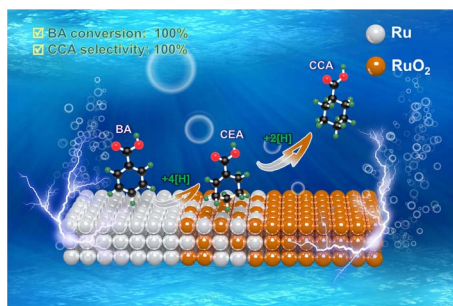
1374



### Ligand field design enables quantum manipulation of spins in Ni<sup>2+</sup> complexes

Michael K. Wojnar, Krishnendu Kundu, Arailym Kairalapova, Xiaoling Wang, Andrew Ozarowski, Timothy C. Berkelbach, Stephen Hill and Danna E. Freedman\*

1384

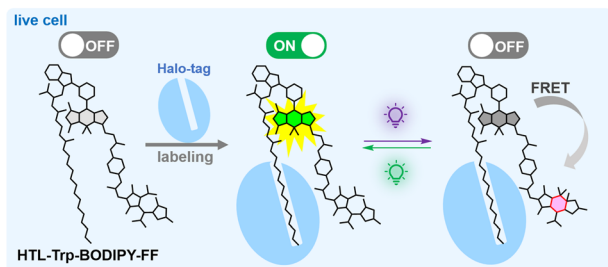


### A Ru/RuO<sub>2</sub> heterostructure boosting electrochemistry-assisted selective benzoic acid hydrogenation

Zifan Cao, Chenhui Wang, Yifan Sun, Menghui Liu, Wei Li, Jinli Zhang\* and Yan Fu\*

1393

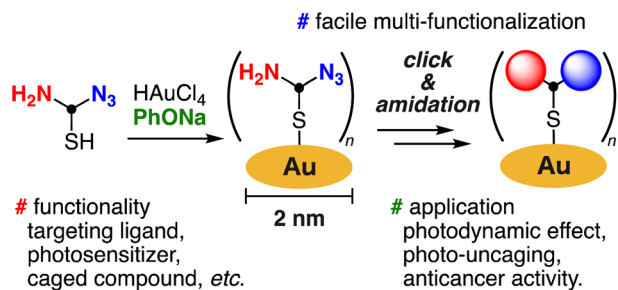
✓ No-wash fluorogenic labeling    ✓ Reversible photoswitching



### No-wash fluorogenic labeling of proteins for reversible photoswitching in live cells

Kenji Torii, Sam Benson, Yuichiro Hori,\* Marc Vendrell\* and Kazuya Kikuchi\*

1402



### Clickable bisreactive small gold nanoclusters for preparing multifunctionalized nanomaterials: application to photouncaging of an anticancer molecule

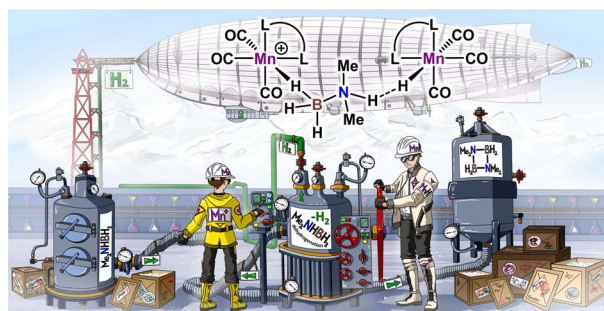
Kenji Watanabe,\* Qiyue Mao, Zhouen Zhang, Machi Hata, Masahito Kodera, Hiroaki Kitagishi, Takashi Niwa and Takamitsu Hosoya\*



1409

## Two active species from a single metal halide precursor: a case study of highly productive Mn-catalyzed dehydrogenation of amine-boranes via intermolecular bimetallic cooperation

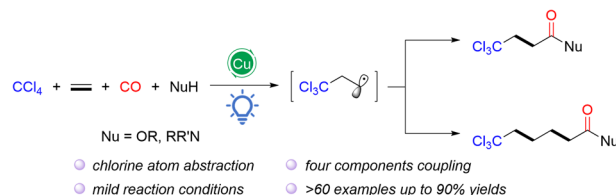
Ekaterina S. Gulyaeva, Elena S. Osipova, Sergey A. Kovalenko, Oleg A. Filippov,\* Natalia V. Belkova, Laure Vendier, Yves Canac,\* Elena S. Shubina\* and Dmitry A. Valyaev\*



1418

## Copper-catalyzed trichloromethylative carbonylation of ethylene

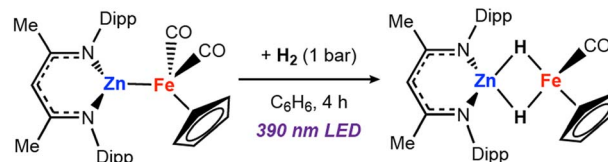
Youcan Zhang, Bing-Hong Teng and Xiao-Feng Wu\*



1424

## Photochemical H<sub>2</sub> activation by an Zn–Fe heterometallic: a mechanistic investigation

Marina Perez-Jimenez and Mark R. Crimmin\*

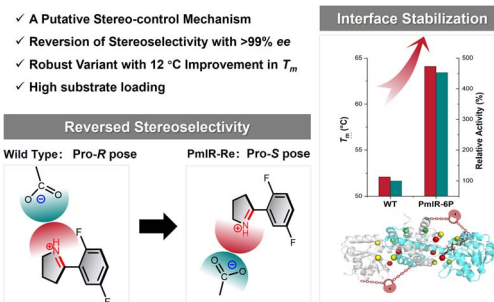


*Inhibition experiments | double-label cross-overs | radical trapping  
EPR spectroscopy | DFT calculations*

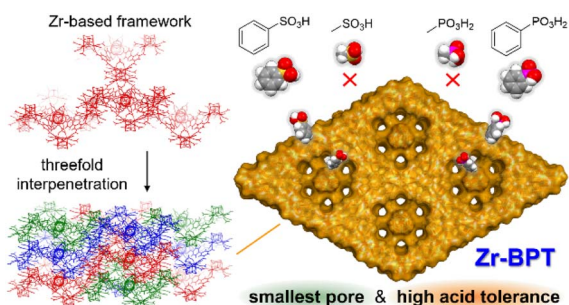
1431

## Computational design of an imine reductase: mechanism-guided stereoselectivity reversion and interface stabilization

Kai Wu, Jinrong Yan, Qinde Liu, Xiaojing Wang, Piaoru Wu, Yiyang Cao, Xiuhong Lu, Yixin Xu, Junhai Huang\* and Lei Shao\*



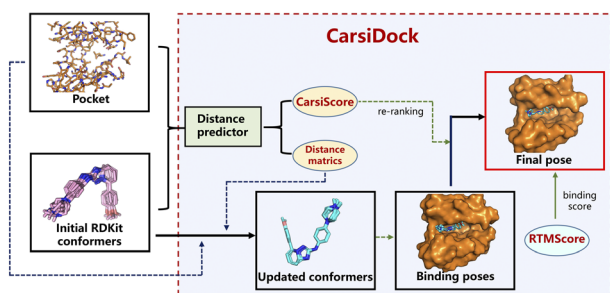
1441



### A novel threefold interpenetrated zirconium metal-organic framework exhibiting separation ability for strong acids

Kyoko Shiraishi, Kazuya Otsubo, Kenichi Kato and Masaaki Sadakiyo\*

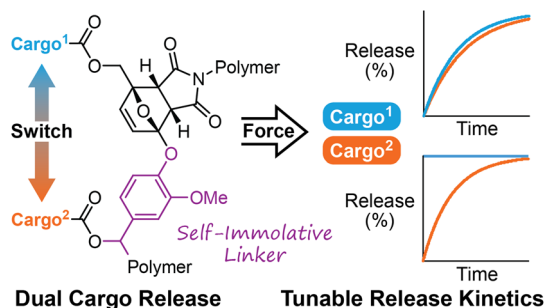
1449



### CarsiDock: a deep learning paradigm for accurate protein-ligand docking and screening based on large-scale pre-training

Heng Cai, Chao Shen, Tianye Jian, Xujun Zhang, Tong Chen, Xiaoqi Han, Zhuo Yang, Wei Dang, Chang-Yu Hsieh, Yu Kang, Peichen Pan, Xiangyang Ji, Jianfei Song,\* Tingjun Hou\* and Yafeng Deng\*

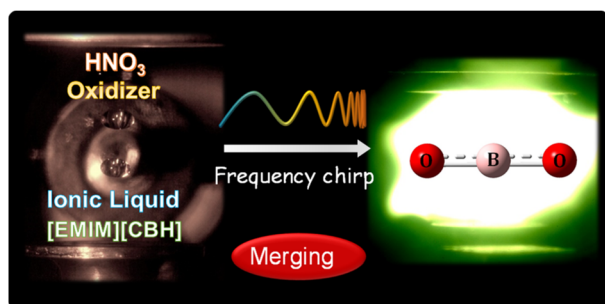
1472



### Incorporation of a self-immolative spacer enables mechanically triggered dual payload release

Yu-Ling Tseng, Tian Zeng and Maxwell J. Robb\*

1480



### Hypergolic ionic liquids: to be or not to be?

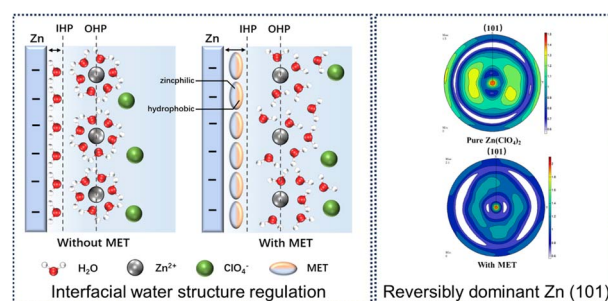
Souvick Biswas, Kazuomi Fujioka, Ivan Antonov, Grace L. Rizzo, Steven D. Chambreau, Stefan Schneider, Rui Sun\* and Ralf I. Kaiser\*



1488

## Janus interface enables reversible Zn-ion battery by regulating interfacial water structure and crystal-orientation

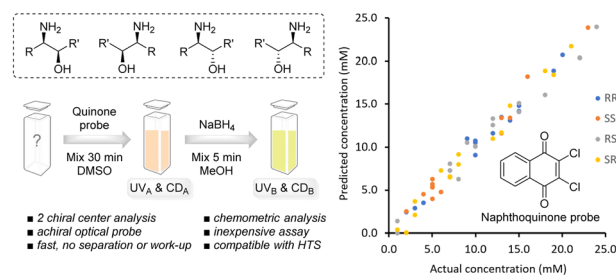
Yuxuan Liang, Meijia Qiu, Peng Sun\* and Wenjie Mai\*



1498

## Chemometric sensing of stereoisomeric compound mixtures with a redox-responsive optical probe

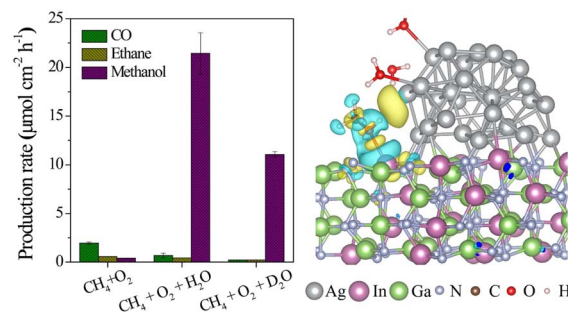
Jeffrey S. S. K. Formen, Diandra S. Hassan and Christian Wolf\*



1505

## Water-promoted selective photocatalytic methane oxidation for methanol production

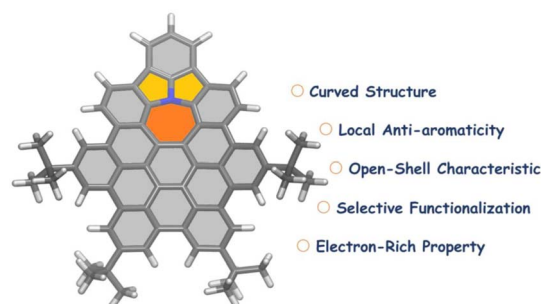
Peng Zhou, Songtao Tang, Zhengwei Ye, Ishtiaque Ahmed Navid, Yixin Xiao, Kai Sun and Zetian Mi\*



1511

## Cycl[2,2,4]azine-embedded non-alternant nanographenes containing fused antiaromatic azepine ring

Lan Ruan, Wanhua Luo, Haifan Zhang, Peng Liu, Yong Shi and Peng An\*



## CORRECTION

1520

**Correction: A high affinity pan-PI3K binding module supports selective targeted protein degradation of PI3K $\alpha$** 

Werner Theodor Jauslin, Matthias Schild, Thorsten Schaefer, Chiara Borsari, Clara Orbegozo, Lukas Bissegger, Saule Zhanybekova, Danilo Ritz, Alexander Schmidt, Matthias Wymann\* and Dennis Gillingham\*

