

## IN THIS ISSUE

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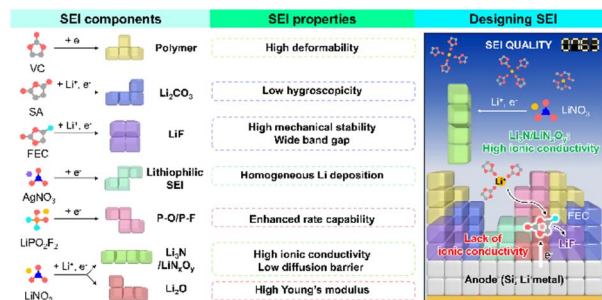
**Inside cover**  
See Yujiro Hayashi *et al.*, pp. 10081–10086. Image reproduced by permission of Miho Iwabuchi from *Chem. Sci.*, 2023, **14**, 10081.

## REVIEWS

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### Liquid electrolyte chemistries for solid electrolyte interphase construction on silicon and lithium-metal anodes

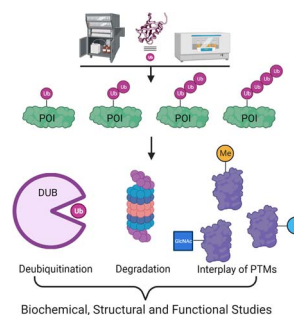
Sewon Park, Saehun Kim, Jeong-A. Lee, Makoto Ue and Nam-Soon Choi\*



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### Synthesis of ubiquitinated proteins for biochemical and functional analysis

Julia Kriegesmann and Ashraf Brik\*



# Chemical Science

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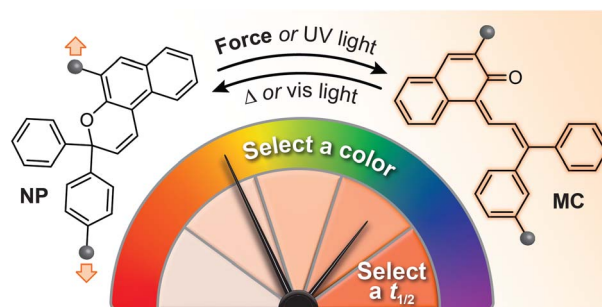


## PERSPECTIVE

10041

## Naphthopyran molecular switches and their emergent mechanochemical reactivity

Molly E. McFadden, Ross W. Barber, Anna C. Overholts and Maxwell J. Robb\*

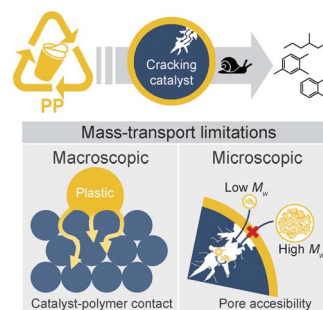


## EDGE ARTICLES

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## Transport limitations in polyolefin cracking at the single catalyst particle level

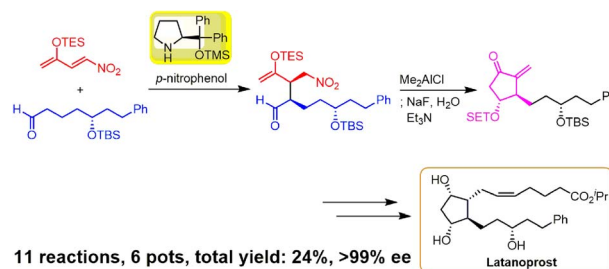
Sebastian Rejman, Ina Vollmer,\* Maximilian J. Werny, Eelco T. C. Vogt, Florian Meirer and Bert M. Weckhuysen\*



10081

## Organocatalyst-mediated, pot-economical total synthesis of latanoprost

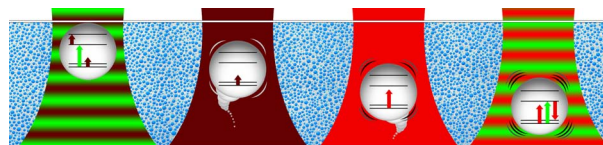
Genki Kawauchi, Yurina Suga, Shunsuke Toda and Yujiro Hayashi\*



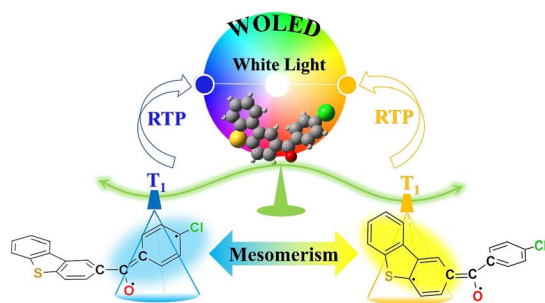
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## Gaining control on optical force by the stimulated-emission resonance effect

Tetsuhiro Kudo,\* Boris Louis, Hikaru Sotome, Jui-Kai Chen, Syoji Ito,\* Hiroshi Miyasaka, Hiroshi Masuhara,\* Johan Hofkens\* and Roger Bresolí-Obach\*



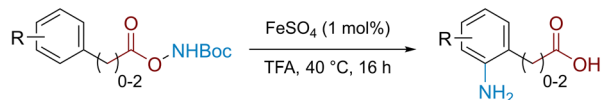
10096



### Mesomerism induced temperature-dependent multicomponent phosphorescence emissions in CIBDBT

Zexing Qu,<sup>\*</sup> Yujie Guo, Jilong Zhang<sup>\*</sup> and Zhongjun Zhou<sup>\*</sup>

10103

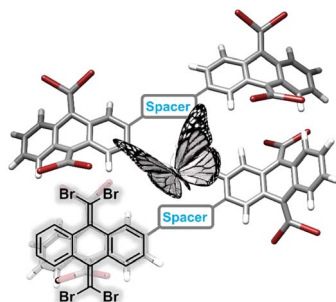


- Simple and practical conditions leading to unprotected anthranilic acids
  - Highly *ortho*-selective
- No precious metal catalysts or bespoke directing groups
  - Effective on various chain lengths
  - Detailed mechanistic studies performed

### *Ortho*-Selective amination of arene carboxylic acids via rearrangement of acyl *O*-hydroxylamines

James E. Gillespie, Nelson Y. S. Lam and Robert J. Phipps<sup>\*</sup>

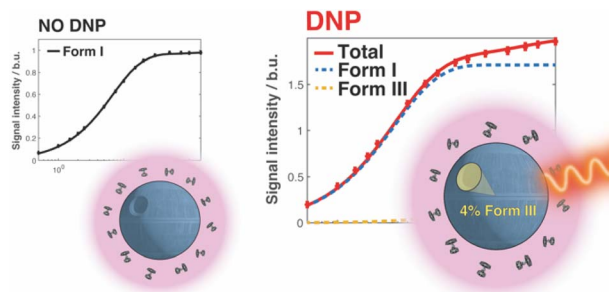
10112



### Dimeric tetrabromo-*p*-quinodimethanes: synthesis and structural/electronic properties

Diego J. Vicent, Manuel Pérez-Escribano, Abel Cárdenas-Valdivia, Ana Barragán, Joaquín Calbo, José I. Urgel, David Écija,<sup>\*</sup> José Santos,<sup>\*</sup> Juan Casado,<sup>\*</sup> Enrique Orti<sup>\*</sup> and Nazario Martín<sup>\*</sup>

10121



### Exploiting solid-state dynamic nuclear polarization NMR spectroscopy to establish the spatial distribution of polymorphic phases in a solid material

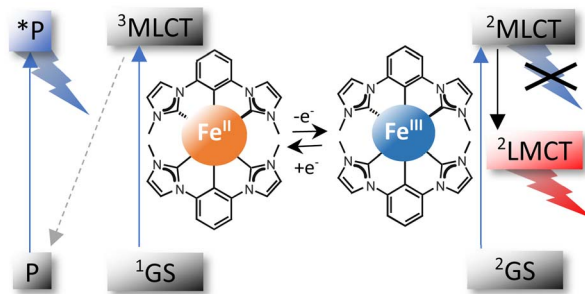
Samuel F. Cousin, Colan E. Hughes, Fabio Ziarelli, Stéphane Viel, Giulia Mollica,<sup>\*</sup> Kenneth D. M. Harris,<sup>\*</sup> Arthur C. Pinon<sup>\*</sup> and Pierre Thureau<sup>\*</sup>



10129

### Ferrous and ferric complexes with cyclometalating N-heterocyclic carbene ligands: a case of dual emission revisited

Catherine Ellen Johnson, Jesper Schwarz, Mawuli Deegbey, Om Prakash, Kumkum Sharma, Ping Huang, Tore Ericsson, Lennart Häggström, Jesper Bendix, Arvind Kumar Gupta, Elena Jakubikova,\* Kenneth Wärnmark\* and Reiner Lomoth\*

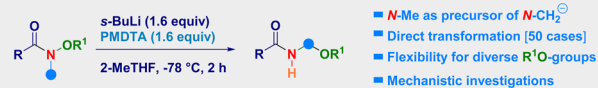


10140

### Base-mediated homologative rearrangement of nitrogen–oxygen bonds of N-methyl-N-oxyamides

Monika Malik, Raffaele Senatore, Thierry Langer, Wolfgang Holzer and Vittorio Pace\*

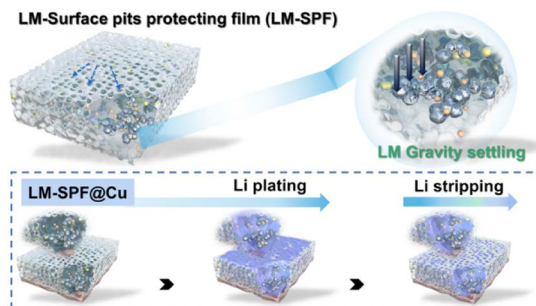
Direct homologation of N–O bond without an external C1-source



10147

### A liquid metal-fluoropolymer artificial protective film enables robust lithium metal batteries at sub-zero temperatures

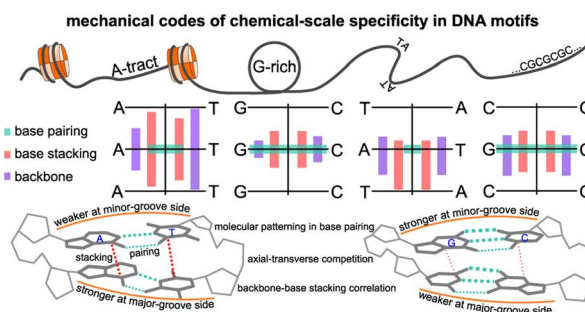
Hongbao Li, Rong Hua, Yang Xu, Da Ke, Chenyu Yang, Quanwei Ma, Longhai Zhang, Tengfei Zhou\* and Chaofeng Zhang\*



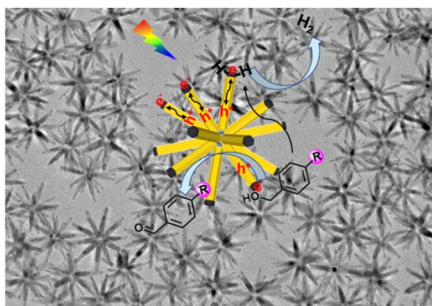
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### Mechanical codes of chemical-scale specificity in DNA motifs

Yi-Tsao Chen, Haw Yang and Jih-Wei Chu\*



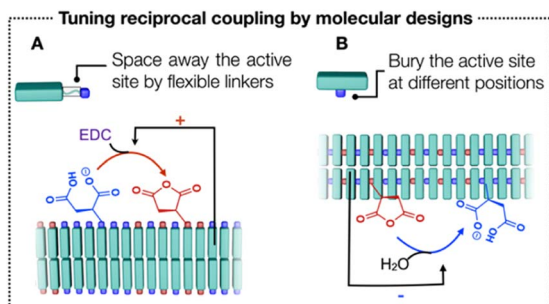
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### Versatile synthesis of nano-icosapods via cation exchange for effective photocatalytic conversion of biomass-relevant alcohols

Dan Xu, Li Zhai, Zhangyan Mu, Chen-Lei Tao, Feiyue Ge, Han Zhang, Mengning Ding, Fang Cheng\* and Xue-Jun Wu\*

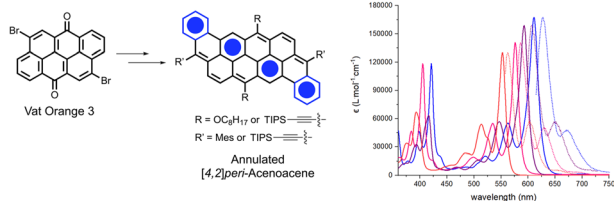
10176



### Design rules for reciprocal coupling in chemically fueled assembly

Xiaoyao Chen, Brigitte A. K. Kriebisch, Alexander M. Bergmann and Job Boekhoven\*

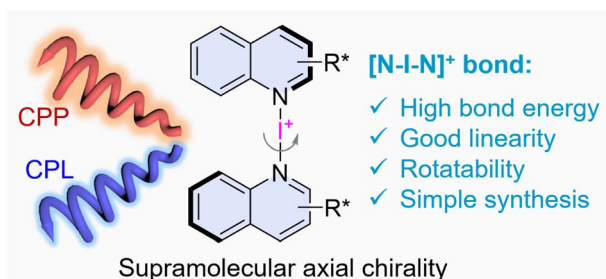
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### Dibenzannulated *peri*-acenoacenes from anthanthrene derivatives

Frédéric Lirette, Ali Darvish, Zheng Zhou, Zheng Wei, Lukas Renn, Marina A. Petrukhina, R. Thomas Weitz and Jean-François Morin\*

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### Supramolecular axial chirality in [N-I-N]<sup>+</sup>-type halogen bonded dimers

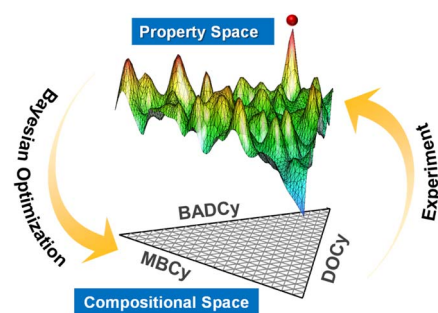
Shuguo An, Aiyu Hao and Pengyao Xing\*



10203

## Efficient exploration of compositional space for high-performance copolymers via Bayesian optimization

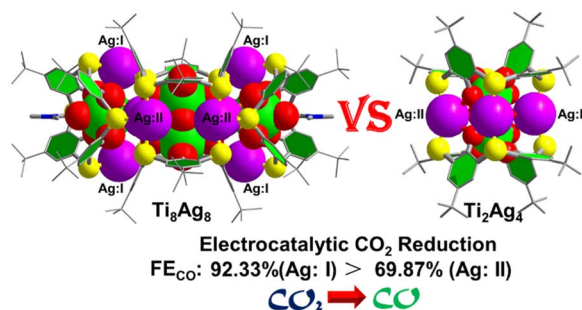
Xinyao Xu, Wenlin Zhao, Liquan Wang,\* Jiaping Lin\* and Lei Du



10212

## Stepwise assembly of thiacalix[4]arene-protected Ag/Ti bimetallic nanoclusters: accurate identification of catalytic Ag sites in CO<sub>2</sub> electroreduction

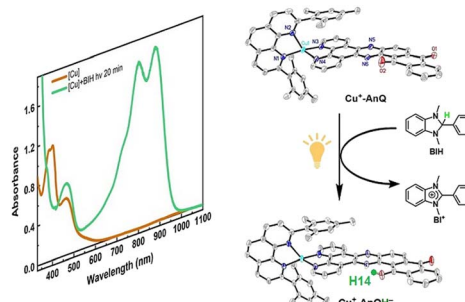
Yi-Qi Tian, Wen-Lei Mu, Lin-Lin Wu,\* Xiao-Yi Yi, Jun Yan\* and Chao Liu\*



10219

## Photochemical charge accumulation in a heteroleptic copper(I)-anthraquinone molecular dyad via proton-coupled electron transfer

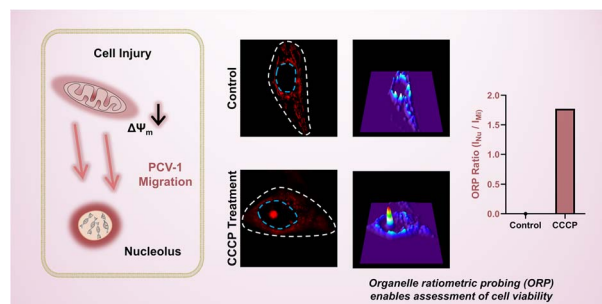
Zhu-Lin Xie, Nikita Gupta, Jens Niklas, Oleg G. Poluektov, Vincent M. Lynch, Ksenija D. Glusac and Karen L. Mulfort\*



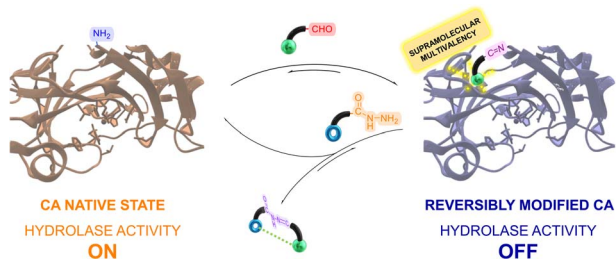
10236

## Quantifying cell viability through organelle ratiometric probing

Rui Chen, Kangqiang Qiu, Guanqun Han, Bidyut Kumar Kundu, Guodong Ding, Yujie Sun\* and Jiajie Diao\*



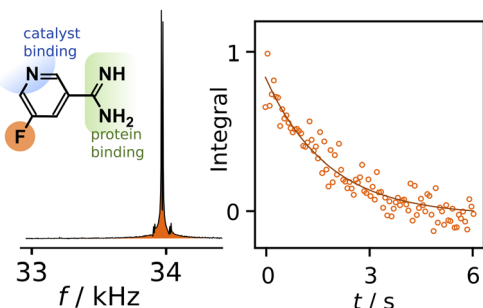
10249



### Supramolecular multivalency effects enhance imine formation in aqueous medium allowing for dynamic modification of enzymatic activity

Ferran Esteve,\* Fidan Rahmatova and Jean-Marie Lehn\*

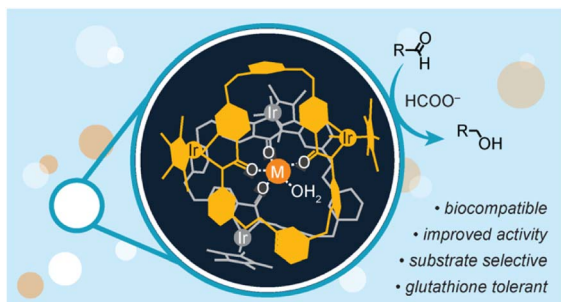
10258



### Biomolecular interactions studied by low-field NMR using SABRE hyperpolarization

Pierce Pham and Christian Hilty\*

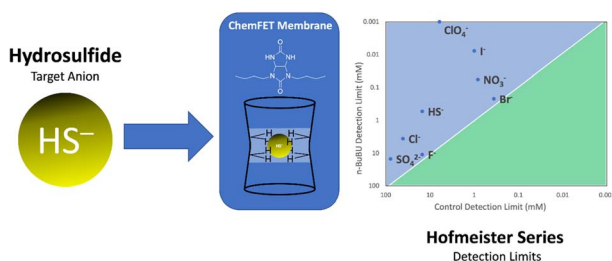
10264



### Lewis acid-driven self-assembly of diiridium macrocyclic catalysts imparts substrate selectivity and glutathione tolerance

Hieu D. Nguyen, Rahul D. Jana, Dylan T. Campbell, Thi V. Tran and Loi H. Do\*

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### Benchmarking the placement of hydrosulfide in the Hofmeister series using a bambus[6]uril-based ChemFET sensor

Grace M. Kuhl, Douglas H. Banning, Hazel A. Fargher, Willow A. Davis, Madeline M. Howell, Lev N. Zakharov, Michael D. Pluth\* and Darren W. Johnson\*

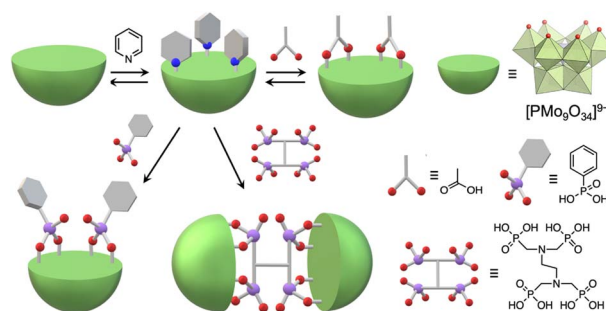




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### Molecular hybrids of trivacant lacunary polyoxomolybdate and multidentate organic ligands

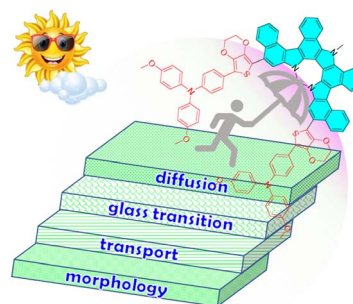
Atsuhiko Jimbo, Chifeng Li, Kentaro Yonesato, Tomoki Ushiyama, Kazuya Yamaguchi and Kosuke Suzuki\*



10285

### Molecular engineering of nitrogen-rich helicene based organic semiconductors for stable perovskite solar cells

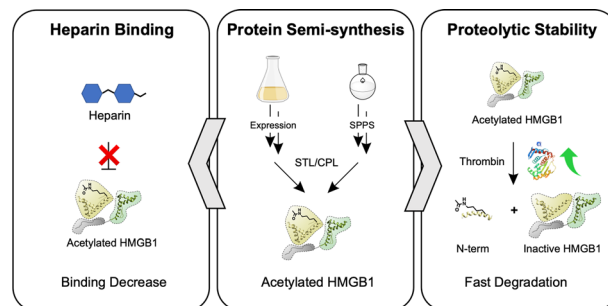
Yuefang Wei, Yaohang Cai, Lifei He, Yuyan Zhang, Yi Yuan,\* Jing Zhang and Peng Wang\*



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### Revealing the extracellular function of HMGB1 N-terminal region acetylation assisted by a protein semi-synthesis approach

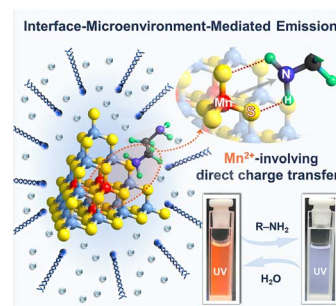
Tongyao Wei, Jiamei Liu, Can Li, Yi Tan, Ruohan Wei, Jinzheng Wang, Hongxiang Wu, Qingrong Li, Heng Liu, Yubo Tang and Xuechen Li\*



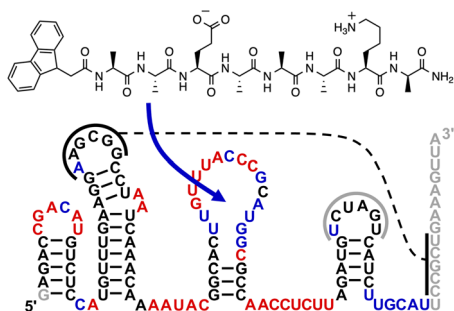
10308

### The interface microenvironment mediates the emission of a semiconductor nanocluster via surface-dopant-involving direct charge transfer

Zhiqiang Wang, Hao Ma, Jiayu Zhang, Yingjia Lan, Jia-Xing Liu, Shang-Fu Yuan, Xiao-Ping Zhou, Xiaohong Li, Chaochao Qin, Dong-Sheng Li and Tao Wu\*



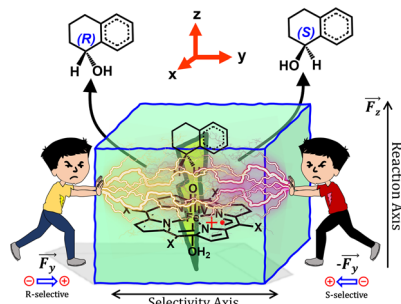
10318



### Peptide conjugates with polyaromatic hydrocarbons can benefit the activity of catalytic RNAs

Kevin J. Sweeney, Tommy Le, Micaella Z. Jorge, Joan G. Schellinger, Luke J. Lemman and Ulrich F. Müller\*

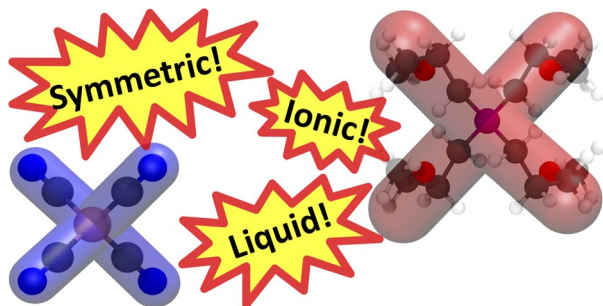
10329



### A porphyrin-based molecular cage guided by designed local-electric field is highly selective and efficient

Shakir Ali Siddiqui, Sason Shaik,\* Surajit Kalita and Kshatresh Dutta Dubey\*

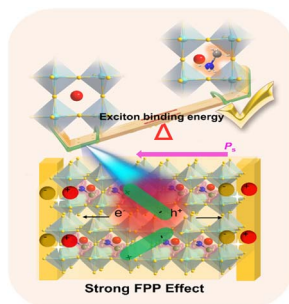
10340



### Room temperature ionic liquids with two symmetric ions

Daniel Rauber,\* Frederik Philippi,\* Daniel Schroeder, Bernd Morgenstern, Andrew J. P. White, Marlon Jochum, Tom Welton and Christopher W. M. Kay\*

10347



### Mixing cage cations in 2D metal-halide ferroelectrics enhances the ferro-pyro-phototronic effect for self-driven photopyroelectric detection

Yu Ma, Wenjing Li, Yi Liu, Wuqian Guo, Haojie Xu, Shiguo Han, Liwei Tang, Qingshun Fan, Junhua Luo and Zhihua Sun\*

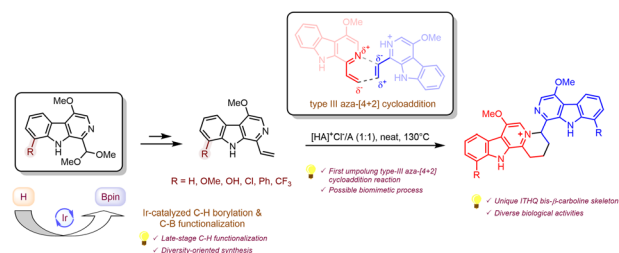


## EDGE ARTICLES

10353

### Divergent total syntheses of ITHQ-type bis- $\beta$ -carboline alkaloids by regio-selective formal aza-[4 + 2] cycloaddition and late-stage C–H functionalization

Qixuan Wang, Fusheng Guo, Jin Wang and Xiaoguang Lei\*



## CORRECTIONS

10360

### Further correction: Expanding medicinal chemistry into 3D space: metallofragments as 3D scaffolds for fragment-based drug discovery

Christine N. Morrison, Kathleen E. Prosser, Ryjul W. Stokes, Anna Cordes, Nils Metzler-Nolte and Seth M. Cohen\*

10363

### Correction: Self-quenched ferrocenyl diketopyrrolopyrrole organic nanoparticles with amplifying photothermal effect for cancer therapy

Pingping Liang, Qianyun Tang, Yu Cai, Gongyuan Liu, Weili Si, Jinjun Shao, Wei Huang,\* Qi Zhang\* and Xiaochen Dong\*

