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Chemical Communications

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## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 60(80) 11179-11372 (2024)



### Cover

See Naoyuki Shimada *et al.*, pp. 11202–11222. Image reproduced by permission of Naoyuki Shimada from *Chem. Commun.*, 2024, 60, 11202.



### Inside cover

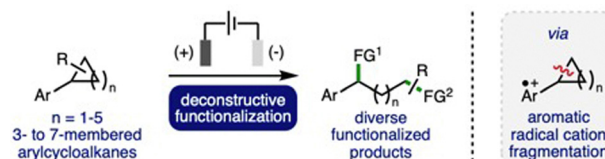
See Jianhui Wang *et al.*, pp. 11275–11278. Image reproduced by permission of Jianhui Wang from *Chem. Commun.*, 2024, 60, 11275.

## HIGHLIGHT

11190

### Electrochemical deconstructive functionalization of arylcycloalkanes *via* fragmentation of anodically generated aromatic radical cations

Hussain A. Maashi, Abdulrahman H. Husayni, James Harnedy and Louis C. Morrill\*

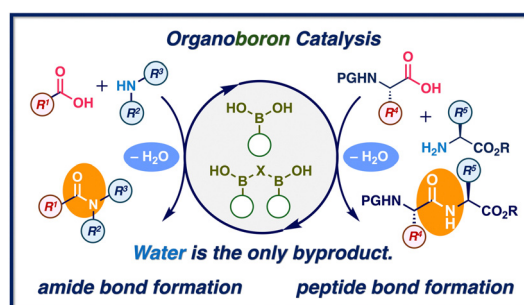


## FEATURE ARTICLES

11202

### Organoboron catalysis for direct amide/peptide bond formation

Masayoshi Koshizuka, Naoya Takahashi and Naoyuki Shimada\*



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with outstanding  
preliminary research

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every step of scientific progress

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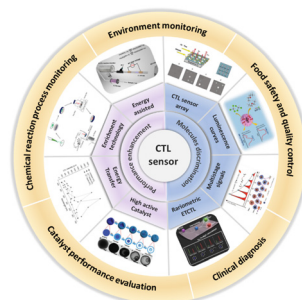
Fundamental questions  
Elemental answers

## FEATURE ARTICLES

11223

**Recent progress of cataluminescence sensing based on gas–solid interfaces**

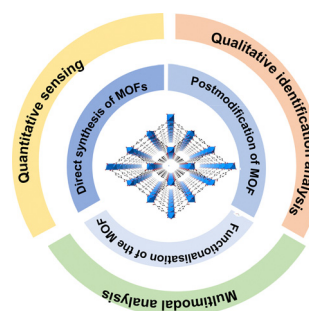
Jiayi Hu, Hongjie Song, Lichun Zhang and Yi Lv\*



11237

**The design, synthesis and application of metal–organic framework-based fluorescence sensors**

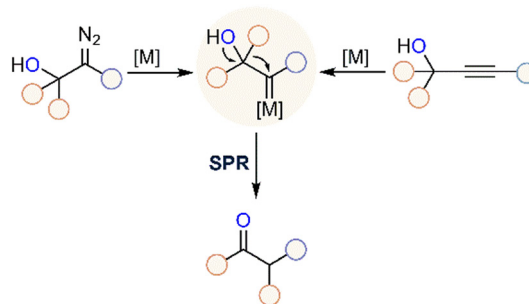
Juan He, Guijiao Wen, Qianqian Peng and Xiandeng Hou\*



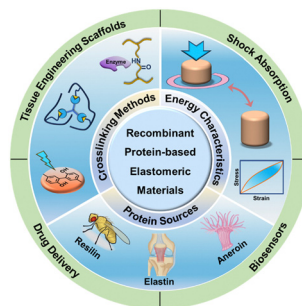
11253

**Recent advances in metal carbene-induced semipinacol rearrangements**

Yang Chen and Shifa Zhu\*

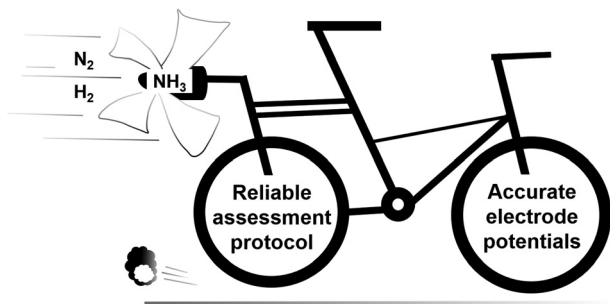


11267

**Engineered protein elastomeric materials**Zhongcheng Liu, Haopeng Li, Jingjing Li,\*  
Jing Yu\* and Kai Liu\*

## COMMUNICATIONS

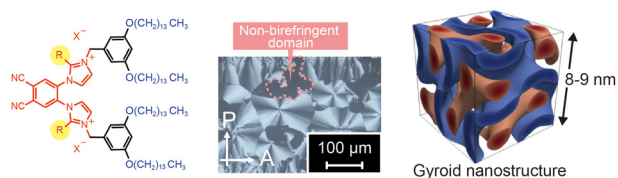
11275



### Improvements in the evaluation of electrocatalytic ammonia oxidation reactions

Ting Zhang, Yongzhen Jin, Yang Liu, Runze Chen and Jianhui Wang\*

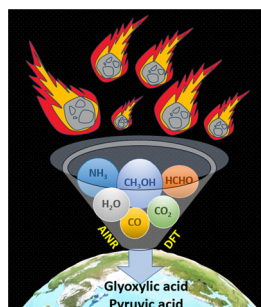
11279



### Design of V-shaped ionic liquid crystals: atropisomerisation ability and formation of double-gyroid molecular assemblies

Takahiro Ichikawa,\* Soki Obara, Saori Yamaguchi, Yumin Tang, Toshiyo Kato and Xiangbing Zeng

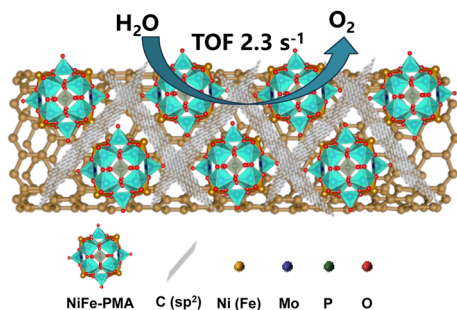
11283



### Unravelling the prebiotic origins of the simplest $\alpha$ -ketoacids in cometary ices: a computational investigation

Soumya Ranjan Dash, Rinu Pandya, Geetika Singh, Himanshu Sharma, Tamal Das, Hritwik Haldar, Srinivas Hotha\* and Kumar Vanka\*

11287



### Polyoxometalate-incorporated NiFe-based oxyhydroxides for enhanced oxygen evolution reaction in alkaline media

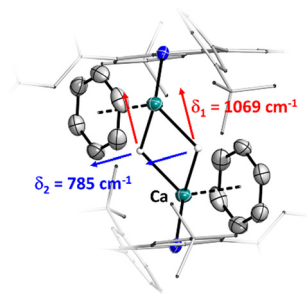
Yuyan Qiao, Yanqiu Pan, Wenjun Fan,\* Guifa Long\* and Fuxiang Zhang\*



11291

### CO reduction by calcium and ytterbium hydride complexes with a bulky monodentate carbazolyl ligand

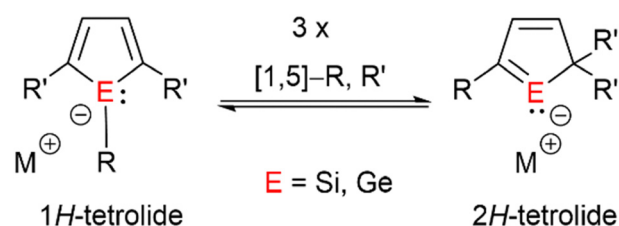
Alexander Hinz,\* Lucas Winkler and Xiaofei Sun



11295

### Metal ion-driven formation of 2*H*-silolides and -germolides

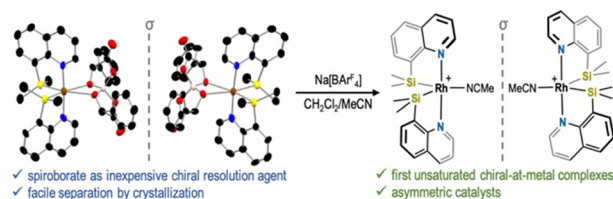
Chenghuan Liu, Marc Schmidtman and Thomas Müller\*



11299

### Unsaturated chiral-only-at-metal rhodium(III) complexes bearing SiN-type ligands

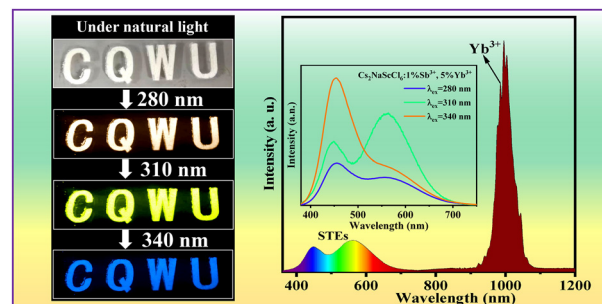
Unai Prieto-Pascual, Itxaso Bustos, Pablo Salcedo-Abraira, Iñigo J. Vitorica-Yrezabal, Aitor Landa, Zoraida Freixa\* and Miguel A. Huertos\*



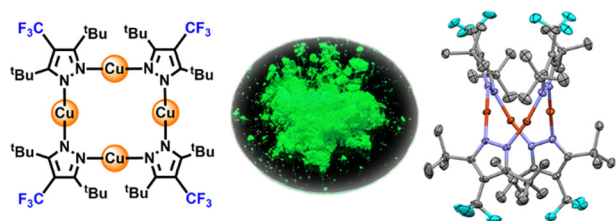
11303

### Excitation-dependent emission and highly efficient near-infrared luminescence in Cs<sub>2</sub>NaScCl<sub>6</sub> double perovskite via Sb<sup>3+</sup>-Yb<sup>3+</sup> alloying for multifunctional photoelectric applications

Mingsheng Cai, Junyang Chen, Tianchun Lang,\* Xiaolong Jing, Gaoxunyu Guan, Jun Wang, Qinpeng Qiang, Wenbo Chen, Tao Han and Bitao Liu\*



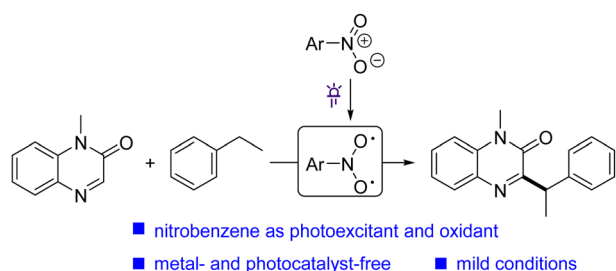
11307



### Rigidochromism of tetranuclear Cu(I)-pyrazolate macrocycles: steric crowding with trifluoromethyl groups

Shinaj K. Rajagopal, Matthias Zeller, Sergei Savikhin, Lyudmila V. Slipchenko and Alexander Wei\*

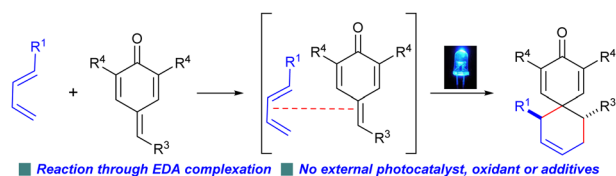
11311



### Photoexcited nitroarenes for alkylation of quinoxalin-2(1H)-ones

Lingang Wu,\* Zhaoxue Wang, Yanling Qiao, Lei Xie\* and Qingmin Wang\*

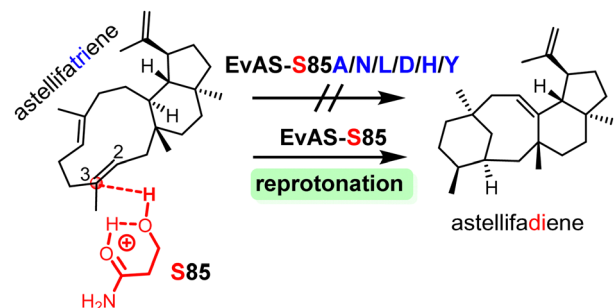
11315



### Photoinduced [4+2] cycloaddition of dienes and quinonemethides

Jobsy Jose, Arun Yadav and Chandra Bhushan Tripathi\*

11319



### Serine 85 functions as a catalytic acid in the reprotonation process during EvAS-catalyzed astellifadiene biosynthesis

Weiyang Zhang, Kaitong Peng, Keying Lan, Kangwei Xu, Ruibo Wu, Tom Hsiang, Shaoping Nie, Lixin Zhang, Xinye Wang\* and Xueting Liu\*

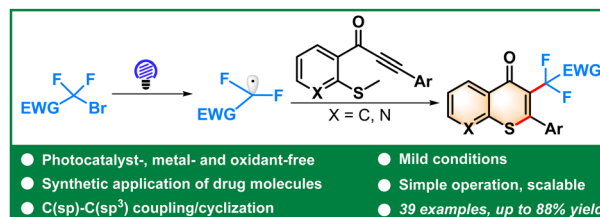


## COMMUNICATIONS

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### Photo-induced difluoroalkylation/cyclization of alkyne ketones: a novel strategy to access difluoroalkyl thiofavones

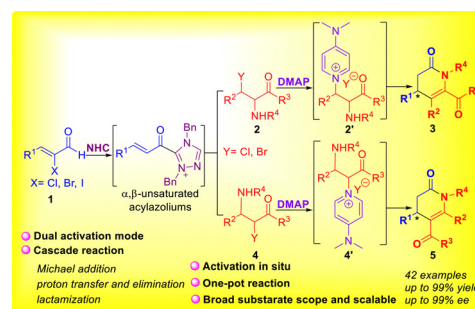
Shengjie Song, Can Luo, Guan Wang, Jingjing Guo, Zhi Chen and Jianjun Li\*



11327

### One-pot synthesis of functionalized dihydropyridin-2-ones via carbene-catalyzed base-controlled [3+3] annulation reaction

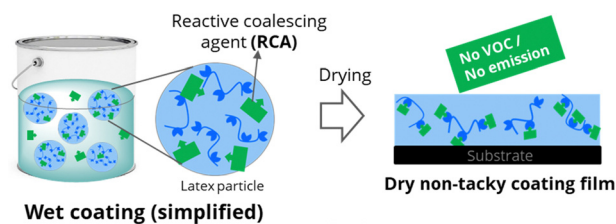
Zhan-Yong Wang, Guoyang Ma, Yaoyao Xu, Qingqing Wang, Mengru Zhang, Xueji Ma, Chenyang Ma, Aili Sun, Ran Xia\* and Hongxin Liu\*



11331

### Amine functional reactive coalescing agents (RCA) for emission-free waterborne paints and coatings

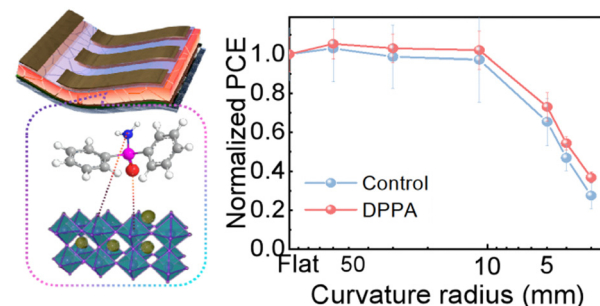
Ranganathan Krishnan, Jagjit Kaur, Balamurugan Ramalingam\* and Satyasankar Jana\*



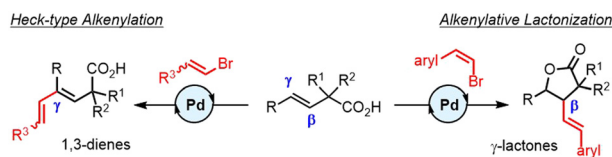
11335

### A multifunctional phenylphosphinamide additive for stable flexible inverted perovskite solar cells

Feihu Liu, Jidong Geng, Wei Zhang, Jie Dou,\* Qiyao Guo, Jialong Duan and Qunwei Tang\*



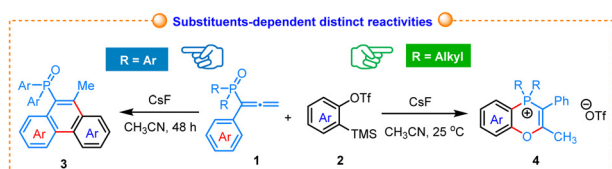
11339



### Substrate-directed regioselective alkene functionalizations of (*E*)- $\beta,\gamma$ -unsaturated carboxylic acids

Chi-Hao Chang, Chao-Ting Yen, Théo P. Goncalves, Yu-Sheng Lin, Yu-Chun Wang, R. Sidick Basha, Bo-Yan Chen, Cheng-Hao Fu, Liang-Wei Chen, Meng-Li Jhou, Kuo-Wei Huang and Chih-Ming Chou\*

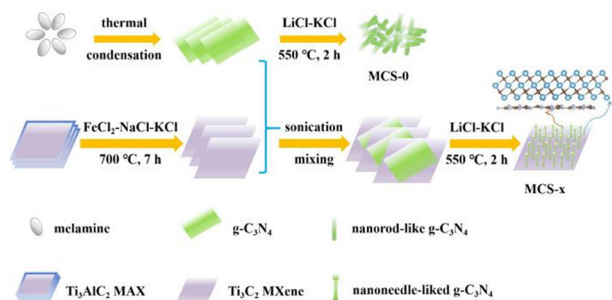
11343



### Substituent-dependent [4+2] or [2+2] cycloadditions of phenylallenyl phosphine oxides with arynes

Yunlong Qin, Jianing Zhang, Congcong Zhang and Qilin Wang\*

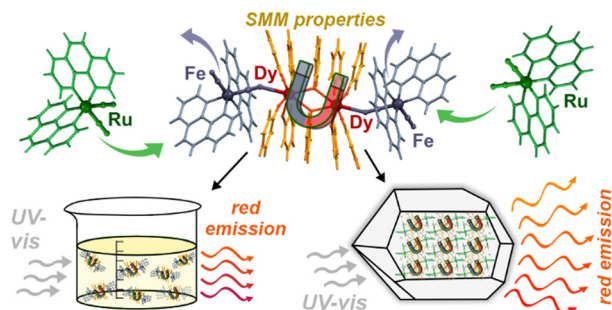
11347



### The synthesis of 3D organic-inorganic hybrid heterojunctions of g-C<sub>3</sub>N<sub>4</sub> nanoneedles@Ti<sub>3</sub>C<sub>2</sub> MXene with superior photocatalytic H<sub>2</sub> evolution

Fang He,\* Yuying Mao, Yan Hu, Jingyang Wu, Enqi Xie, Zhenxing Wang and Yuexiang Li\*

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### Making soluble Dy<sub>2</sub> single-molecule magnets red emissive through their functionalization by ruthenium-cyanido luminophores

Michal Liberka and Szymon Chorazy\*





## COMMUNICATIONS

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From  $\text{Li}_2\text{NiO}_3$  to high-performance  $\text{LiNiO}_2$  cathodes for application in Li-ion and all-solid-state batteries

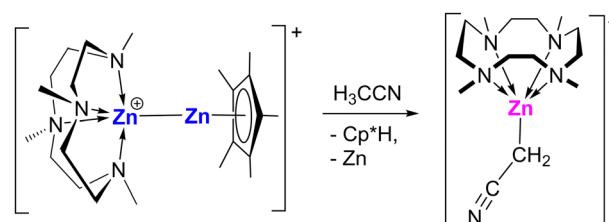
Leonhard Karger, Philip Henkel, Saravanakumar Murugan, Ruizhuo Zhang, Aleksandr Kondrakov\* and Torsten Brezesinski\*



11359

Hypervalent zinc(i) complexes with an *NNNN*-macrocyclic: C–H bond activation across the zinc(i)–zinc(i) bond

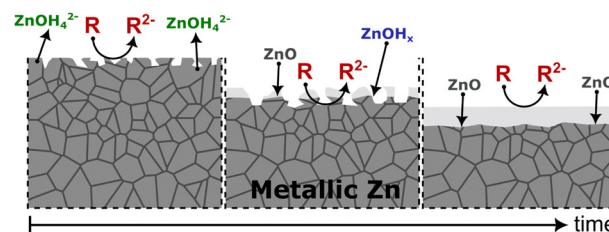
Pritam Mahawar, Thayalan Rajeshkumar, Thomas P. Spaniol, Laurent Maron and Jun Okuda\*



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## Phenomenological observations of quinone-mediated zinc oxidation in an alkaline environment

Christopher T. Mallia and Fikile R. Brushett\*



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## Silane-mediated, facile C–H and N–H methylation using formaldehyde

Jabir Khan, Neha Taneja, Naveen Yadav and Chinmoy Kumar Hazra\*

