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### IN THIS ISSUE

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### Cover

See Norio Shibata et al., pp. 4248-4256. Image reproduced by permission of Mami Shibata from Chem. Sci., 2023, 14, 4248. Artwork: 'Scenery with Windmills' by Miss Mami Shibata.



### Inside cover

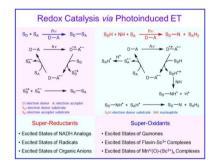
See John McCracken, Selvan Demir, Aaron L. Odom et al., pp. 4257-4264. Image reproduced by permission of Aaron L. Odom from Chem. Sci., 2023, 14, 4257.

### **PERSPECTIVES**

4205

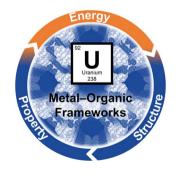
### Redox catalysis via photoinduced electron transfer

Yong-Min Lee,\* Wonwoo Nam\* and Shunichi Fukuzumi\*



### Energy-structure-property relationships in uranium metal-organic frameworks

Sylvia L. Hanna and Omar K. Farha\*



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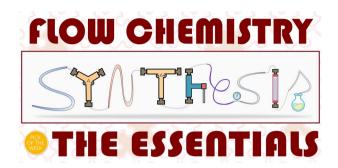


### **REVIEW**

### 4230

### A field guide to flow chemistry for synthetic organic chemists

Luca Capaldo, Zhenghui Wen and Timothy Noël\*



### **EDGE ARTICLES**

### 4248

### Synthesis of triarylmethanes by silyl radicalmediated cross-coupling of aryl fluorides and arylmethanes

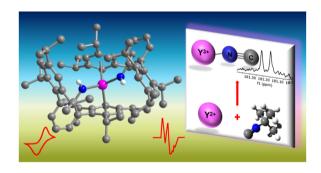
Jun Zhou, Zhengyu Zhao, Bingyao Jiang, Katsuhiro Yamamoto, Yuji Sumii and Norio Shibata\*



### 4257

### A rare isocyanide derived from an unprecedented neutral yttrium(II) bis(amide) complex

Rashmi Jena, Florian Benner, Francis Delano, IV, Daniel Holmes, John McCracken,\* Selvan Demir\* and Aaron L. Odom\*



### 4265

### Structure-guided semi-rational design of an imine reductase for enantio-complementary synthesis of pyrrolidinamine

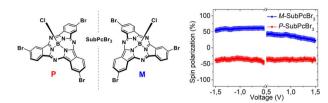
Jun Zhang, Yaqing Ma, Fangfang Zhu, Jinping Bao, Qiaqing Wu, Shu-Shan Gao\* and Chengsen Cui\*

### Semi-Rational Design



13 different amines, up to 99% ee and conversion

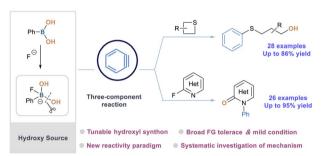
### 4273



# Easily processable spin filters: exploring the chiral induced spin selectivity of bowl-shaped chiral subphthalocyanines

Jorge Labella, Deb Kumar Bhowmick, Anil Kumar, Ron Naaman\* and Tomás Torres\*

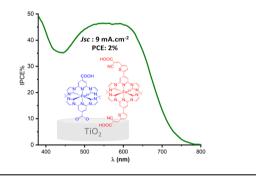
### 4278



### Empowering boronic acids as hydroxyl synthons for aryne induced three-component coupling reactions

Rong Fan, Shihan Liu, Qiang Yan, Yun Wei, Jingwen Wang, Yu Lan\* and Jiajing Tan\*

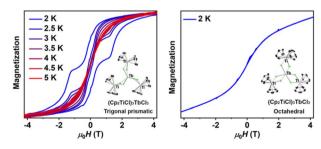
### 4288



# Panchromatic light harvesting and record power conversion efficiency for carboxylic/cyanoacrylic Fe(II) NHC co-sensitized FeSSCs

Anil Reddy-Marri, Edoardo Marchini, Valentin Diez Cabanes, Roberto Argazzi, Mariachiara Pastore,\* Stefano Caramori\* and Philippe C. Gros\*

### 4302



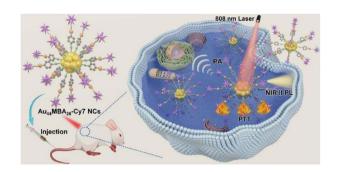
# Tuning symmetry and magnetic blocking of an exchange-coupled lanthanide ion in isomeric, tetrametallic complexes: [LnCl<sub>6</sub>(TiCp<sub>2</sub>)<sub>3</sub>]

Ningxin Jiang, Daria D. Nakritskaia, Jiaze Xie, Arun Ramanathan, Sergey A. Varganov and Henry S. La Pierre\*

### 4308

### Ligand engineering of Au<sub>44</sub> nanoclusters for NIR-II luminescent and photoacoustic imaging-guided cancer photothermal therapy

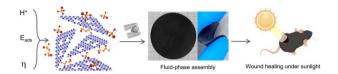
Ge Yang, Xueluer Mu, Xinxin Pan, Ying Tang, Qiaofeng Yao, Yaru Wang, Fuyi Jiang, Fanglin Du, Jianping Xie,\* Xianfeng Zhou\* and Xun Yuan\*



### 4319

### Molecular assembly of carbon nitride-based composite membranes for photocatalytic sterilization and wound healing

Xiaoxiao Peng, Jin Ma, Zhixin Zhou, Hong Yang, Jingjing Chen, Ran Chen, Kaiqing Wu, Guangcheng Xi, Songqin Liu, Yanfei Shen\* and Yuanjian Zhang\*



### 4328

### Designing P-type bi-stable overcrowded alkenebased chiroptical photoswitches

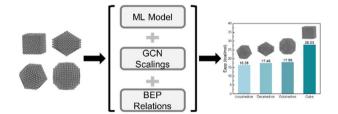
Jinyu Sheng, Wojciech Danowski,\* Stefano Crespi, Ainoa Guinart, Xiaobing Chen, Cosima Stähler and Ben L. Feringa\*



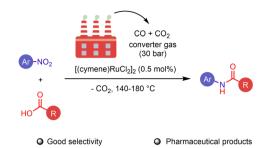
### 4337

### Reconciling experimental catalytic data stemming from structure sensitivity

Xue Zong and Dionisios G. Vlachos\*



### 4346

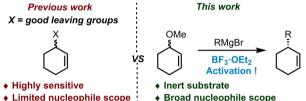


Using waste as reductant

### Catalytic utilization of converter gas - an industrial waste for the synthesis of pharmaceuticals

Sofiya A. Runikhina, Oleg I. Afanasyev, Ekaterina A. Kuchuk, Dmitry S. Perekalin, Rajenahally V. Jagadeesh,\* Matthias Beller\* and Denis Chusov\*

### 4351



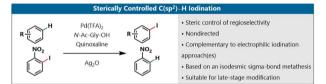
- Copper-catalyzed asymmetric allylic alkylation of racemic inert cyclic allylic ethers under batch and flow conditions
- Jun Li, Xiao Song, Yan Wang, Junrong Huang,\* Hengzhi You\* and Fen-Er Chen\*

- ♦ Limited nucleophile scope
- ◆ Long addition time
- Unsuitable for flow
- 1 min addition time under batch

High efficiency

◆ 3.6 s residence time under flow

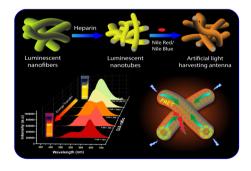
### 4357



### Sterically controlled isodesmic late-stage C-H iodination of arenes

Mirxan Farizyan, Rita de Jesus, Jyotirmoy Dey and Manuel van Gemmeren\*

### 4363



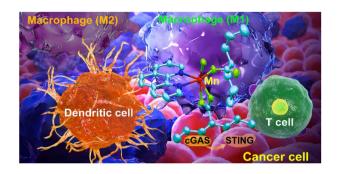
### Efficient light harvesting in self-assembled organic luminescent nanotubes

Shubhra Kanti Bhaumik, Dibyendu Maity, Ipsita Basu, Suman Chakrabarty\* and Supratim Banerjee\*

### 4375

### Manganese(III) complexes stimulate antitumor immunity via aggravating DNA damage and activating the cGAS-STING pathway

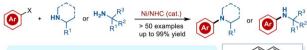
Linxiang Cai, Ying Wang, Yayu Chen, Hanhua Chen, Tao Yang, Shuren Zhang, Zijian Guo and Xiaoyong Wang\*



### 4390

### Unsymmetric N-heterocyclic carbene ligand enabled nickel-catalysed arylation of bulky primary and secondary amines

Zi-Chao Wang, Yan-Yu Li, Shuo-Qing Zhang, Xin Hong\* and Shi-Liang Shi\*



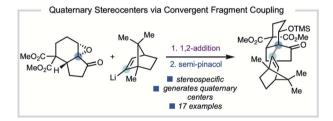
- Rare arylation of bulky 1° amines and  $\alpha$ -branched 2° amines
- Unique effect of unsymmetric, bulky yet flexible NHC
- Broad substrate scope and mild reaction conditions
- Applied in the synthesis of bioactive compounds



### 4397

### A convergent fragment coupling strategy to access quaternary stereogenic centers

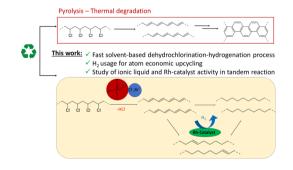
Jeff K. Kerkovius, Alice R. Wong, Victor W. Mak and Sarah E. Reisman\*



### 4401

### Catalytic tandem dehydrochlorinationhydrogenation of PVC towards valorisation of chlorinated plastic waste

Galahad O'Rourke, Tess Hennebel, Maxime Stalpaert, Alina Skorynina, Aram Bugaev, Kwinten Janssens, Lisa Van Emelen, Vincent Lemmens, Rodrigo De Oliveira Silva, Christel Colemonts, Philippe Gabriels, Dimitrios Sakellariou and Dirk De Vos\*



### 4413

# R + HPAr<sub>2</sub> | Cul/chiral ligand | Barton's base, anisole | Barton's base, anisole | C-P bond construcction | Chiral phosphine | Up to 92% ee

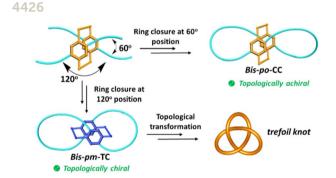
## Enantioselective copper-catalyzed hydrophosphination of alkenyl isoquinolines

Qingjing Yang, Jian Zhou and Jun (Joelle) Wang\*

### 

Functional characterization, structural basis, and regio-selectivity control of a promiscuous flavonoid 7,4'-di-O-glycosyltransferase from Ziziphus jujuba var. spinosa

Zi-Long Wang, Wanqing Wei, Hai-Dong Wang, Jia-Jing Zhou, Hao-Tian Wang, Kuan Chen, Rong-Shen Wang, Fu-Dong Li, Xue Qiao, Huan Zhou,\* Yong Liang\* and Min Ye\*



Lemniscular carbon nanohoops with contiguous conjugation from planar chiral [2.2] paracyclophane: influence of the regioselective synthesis on topological chirality

Jing He, Mo-Han Yu, Zhe Lian, Yan-Qing Fan, Sheng-Zhu Guo, Xiao-Nan Li, Ying Wang, Wen-Guang Wang, Zhi-Yun Cheng and Hua Jiang\*

### CORRECTION

### 4434

Correction: Polymers as advanced antibacterial and antibiofilm agents for direct and combination therapies

Zhangyong Si, Wenbin Zhong, Dicky Prananty, Jianghua Li, Chong Hui Koh, En-Tang Kang, Kevin Pethe and Mary B. Chan-Park\*