

# ChemComm

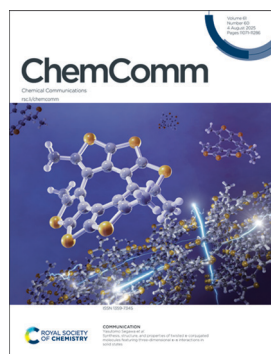
Chemical Communications

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## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 61(60) 11071-11286 (2025)



### Cover

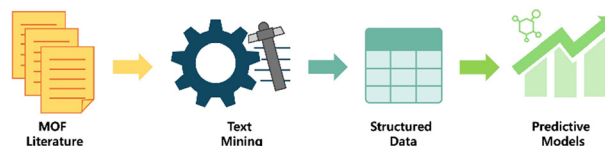
See Yasutomo Segawa *et al.*, pp. 11187–11190. Image reproduced by permission of Yasutomo Segawa from *Chem. Commun.*, 2025, **61**, 11187. Cover image designed by Masaya Matsukawa (YAP Co., Ltd.)

## HIGHLIGHTS

11083

### Text mining in MOF research: from manual curation to large language model-based automation

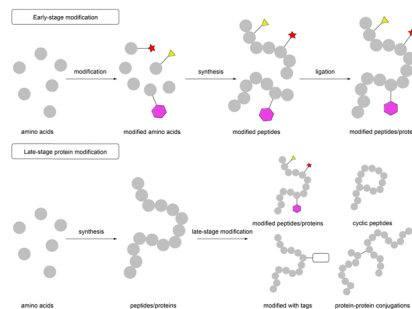
Suyeon Bae, Mingyu Jeon\* and Hoi Ri Moon\*



11095

### Recent developments in late-stage protein modification

Geng-Hui Feng, Tian-Yang Wang and Yan-Mei Li\*



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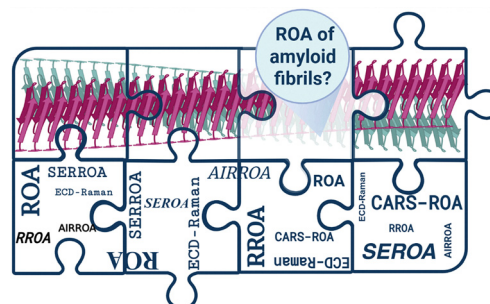


## FEATURE ARTICLES

11118

### Raman optical activity of amyloid fibrils: a distinctive chiroptical phenomenon beyond resonance

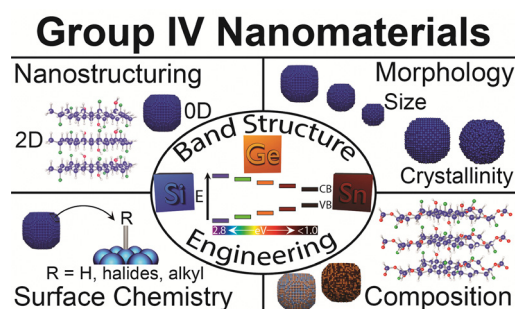
Aleksandra Kołodziejczyk, Aleksandra Wajda\* and Agnieszka Kaczor\*



11131

### Structure–property relationships of Group IV (Si–Ge–Sn) semiconductor nanocrystals and nanosheets – current understanding and status

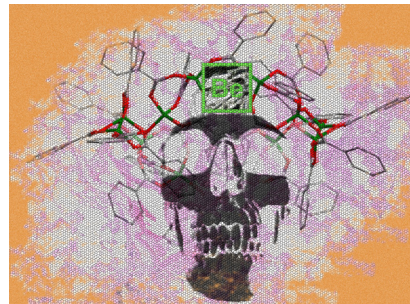
Jeremy B. Essner, Maharram Jabrayilov, Andrew D. Tan, Abhishek S. Chaudhari, Abhijit Bera, Brodrick J. Severt and Matthew G. Panthani\*



11146

### Advances in the understanding of molecular beryllium element bonding

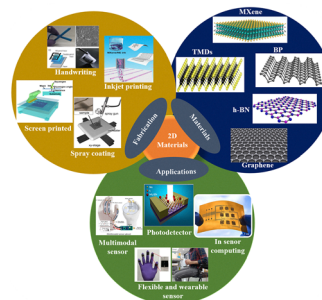
Magnus R. Buchner



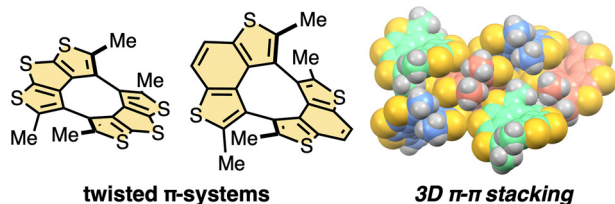
11158

### Current trends and emerging opportunities for 2D materials in flexible and wearable sensors

Nongthombam Joychandra Singh, Isha Basumatary, Chandra Sekhar Reddy Kolli and Parikshit Sahatiya\*



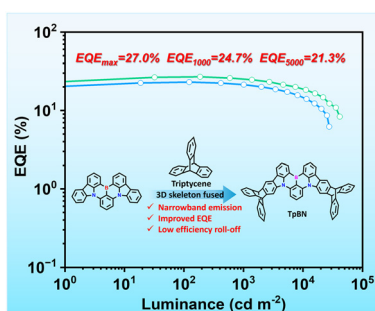
11187



### Synthesis, structure, and properties of twisted $\pi$ -conjugated molecules featuring three-dimensional $\pi$ - $\pi$ interactions in solid states

Mai Nagase, Ryu Yoshida, Sachiko Nakano, Takashi Hirose and Yasutomo Segawa\*

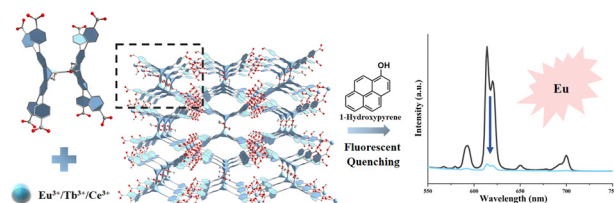
11191



### Triptycene-fused multi-resonance TADF material endows high-efficiency electroluminescence and low efficiency roll-off

Ke-Ke Tan, Meng Li\* and Chuan-Feng Chen\*

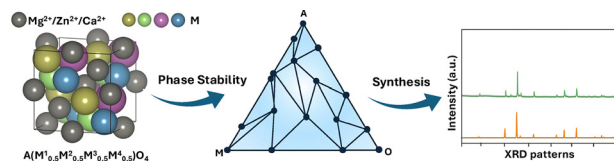
11195



### Rare-earth-pentacene-octacarboxylate frameworks for highly efficient urinary 1-HP fluorescence sensing

Jinli Zhang, Xiao-Juan Xi, Lin Xu, Feifan Lang, Yan Yang\* and Jiandong Pang\*

11199



### High throughput screening of high entropy spinel electrolytes for multivalent batteries

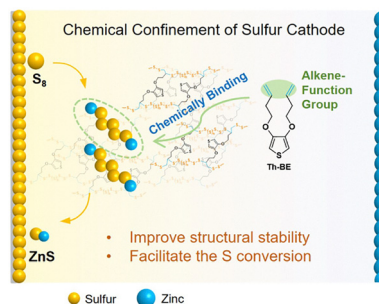
Mahesh J. Dheerasinghe, Yi Gan, Lin Wang, Yufang He, Zhengda He, Gui-Liang Xu, Yang Zhao\* and Bin Ouyang\*



11203

### Sulfur confinement via C–S bonding for stable sulfur conversion in aqueous Zn–S batteries

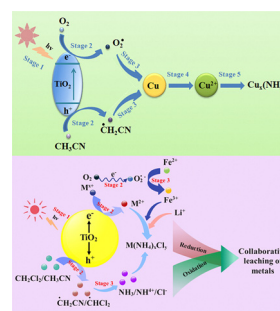
Jiaoyi Ning,\* Yunyan Chen, Yunxiang Wen, Mingjun Wang, Tie Shu, Xiao Li, Liang Li, Yuxing Zhang and Ke Xin Yao\*



11207

### Acid-free photocatalytic recovery of valuable metals from spent ternary lithium battery cathode materials using acetonitrile and dichloromethane

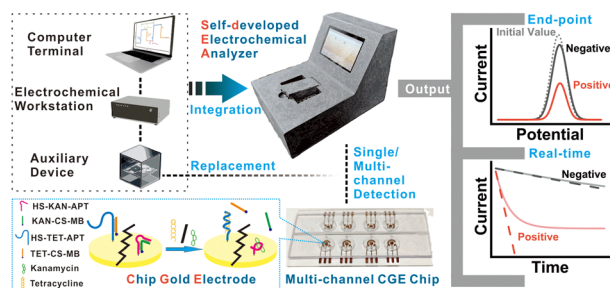
Shiqin Zheng, Jiangyi Chen, Shiwei Yang, Bowen Qi, Wen Deng, Li Wan,\* Alexey Charevan, Quanbing Zou, Dominik Eder and Shimin Wang



11211

### Rapid detection of antibiotics using self-developed electrochemical analyzer and sensor chip

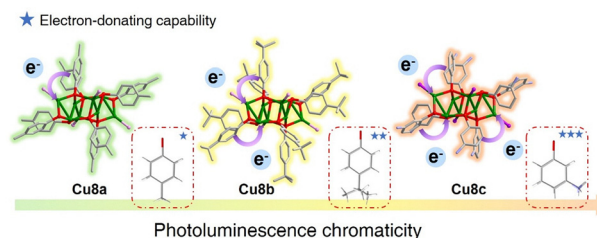
Yin Bao, Yulin Li, Kaiwei Cai, Yichen Liu\* and Bingling Li\*



11215

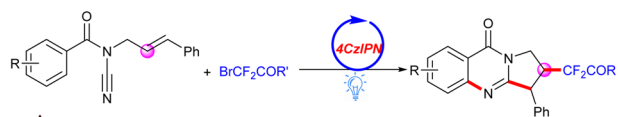
### Controlling the photoluminescence chromaticity of emissive copper nanoclusters via ligand engineering

Mengfan Chang, Ying Xu, Ying Lv, Haizhu Yu, Hao Li,\* Xi Kang\* and Manzhou Zhu



## COMMUNICATIONS

11219

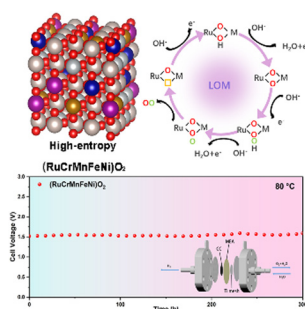


- ★ formation of C2-difluoroalkylated pyrroloquinazolines
- ★ broad substrate scope    ★ 43 examples, up to 88% yield
- ★ 10 examples for modification of pharmaceutical and natural molecules

### Photocatalytic difluoroalkylation/cyclization of *N*-cinnamyl-*N*-cyanobenzamides with difluoroalkyl bromides toward C2-difluoroalkylated pyrroloquinazolines

Yanmei Gong, Chengli Xiang, Changduo Pan\* and Jin-Tao Yu\*

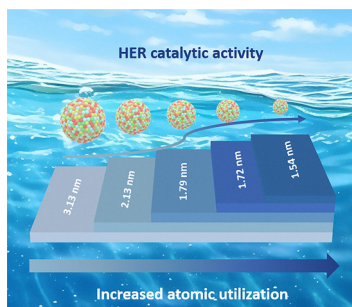
11223



### Iridium-free high-entropy ruthenium-based oxides with activated lattice oxygen towards high efficient and durable acidic water oxidation

Suoqing Yu, Lei Li, Chong Ma, Xin Zhang, Maolin Li, Aobing Wang,\* Limin Liang and Hui Liu\*

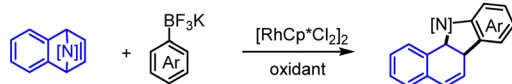
11227



### Carbon dot-mediated sub-2 nm high-entropy alloys for enhancing hydrogen evolution reaction performance

Huan Zhuo, Qijun Song, Chan Wang\* and Han Zhu\*

11231



- Transmetalation-promoted C-H activation
- Excellent diastereoselectivity
- Directing group-free
- Broad substrate scope

### Rhodium(III)-catalyzed oxidative [3+2] annulation of arylboron reagents and 7-azabenzonornbornadienes via transmetalation-initiated C-H activation

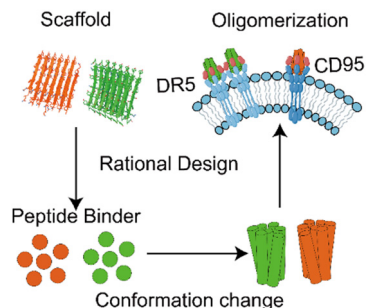
Xuejing Yao, Shunle Hu, Lijuan Jv, Ruijie Mi\* and Xingwei Li\*



11235

### Design of TNFR peptide agonists for inducing receptor oligomerization and cell apoptosis

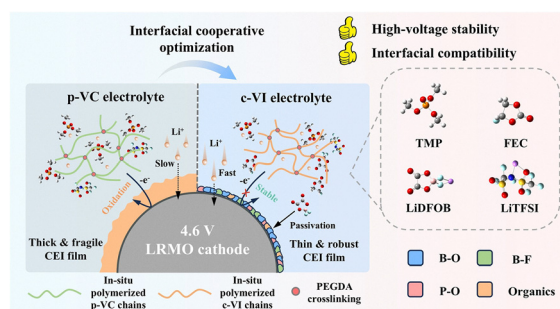
Yi-xuan Liu and Hao Wang\*



11239

### Dual-component modulation strategy for enhancing interfacial compatibility in 4.6 V LRMO-based solid-state lithium metal batteries

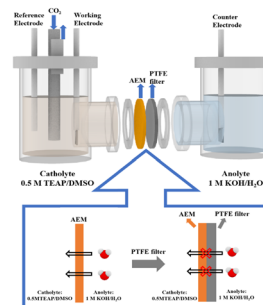
Mengya Wang, Linghong Xu, Jilin Tang, Hangjun Ying,\* Gaorong Han and Yong Shi\*



11243

### Engineering hydrophobicity on anion exchange membranes for stable CO<sub>2</sub> electrochemical reduction in nonaqueous electrolytes

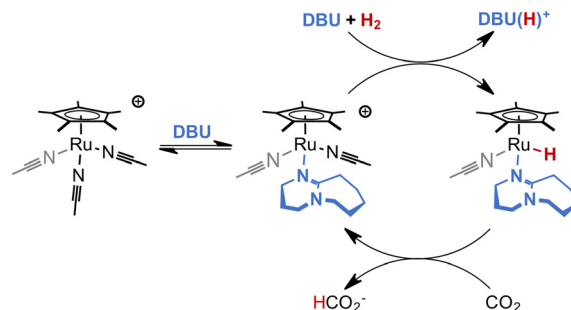
Junjie Zhou, Moxing Cheng, Liang Chen and Yichao Lin\*



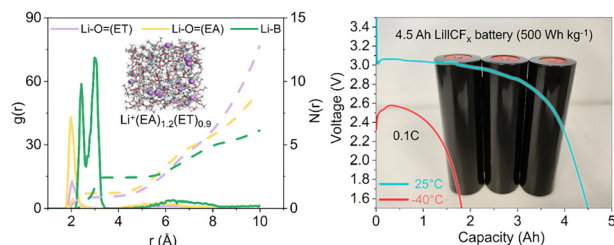
11247

### DBU as base and ligand in phosphine-free ruthenium complexes for hydrogenation of CO<sub>2</sub>

Andrew Z. Preston, Alexander S. Phearman, Manuel Quiroz, Sarah E. Flowers, Nilakshi Devi, Christopher M. Zall, Eric S. Wiedner,\* Aaron M. Appel and John C. Linehan\*



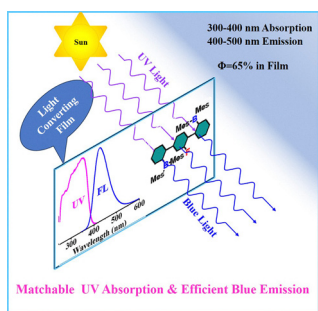
11251



### Electrolyte engineering enables high-energy Li||CF<sub>x</sub> battery operation at ultralow temperatures

Weijing Yang, Xuyang Chen, Baoyu Sun,\* Bin Zhang, Shangde Ma, Yang Dai,\* Quansheng Zhang, Junliang Zhang\* and Jingying Xie\*

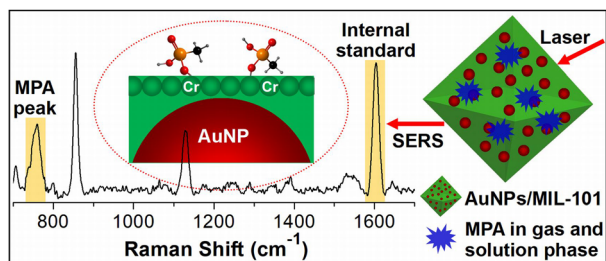
11255



### Efficient UV-matchable light-converting agent based on a space-conjugated di-triarylboron structure

Zhen Wang, Yuxuan Yang, Luohan Fang, Yangbin Xie, Wenming Ma, Yahui Zhang, Chun-Lin Sun,\* Baoxin Zhang,\* Xiaoxiang Zhang\* and Xiaobo Pan\*

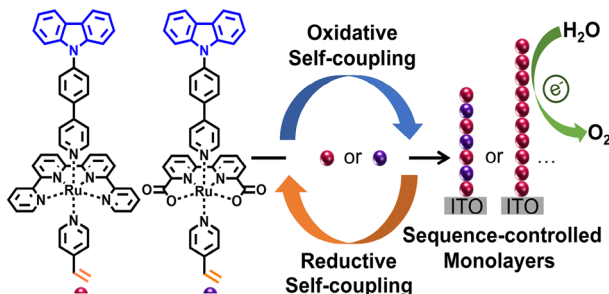
11259



### A coordination-driven SERS platform for trace detection of a nerve agent hydrolysis product using a plasmonic metal-organic framework

Renyong Liu,\* Peng Sun, Ziyang Zheng, Wang Song, Xinle Zhang, Yehan Yan, Tao Xie, Kui Zhang\* and Lijuan Chen\*

11263



### Enhancing the performance of interfacial electrocatalysts by engineering the monomer composition and sequence of metallo-oligomer monolayers

Jing Li, Chang Wei, Lingyun Shen, Yongfang Li, Xuan Pang and Mao Li\*

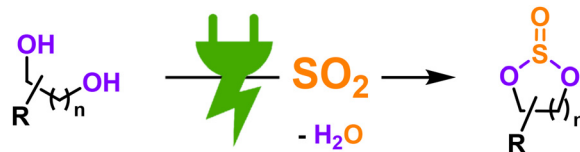


## COMMUNICATIONS

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## Electrochemical synthesis of cyclic sulfites using diols and sulfur dioxide

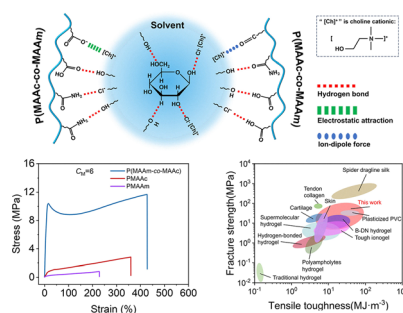
Christian Krumbiegel, Florian A. Breitschaft and Siegfried R. Waldvogel\*

20 examples  
up to 87%

11271

## An ultra-stiff and tough glassy eutectogel

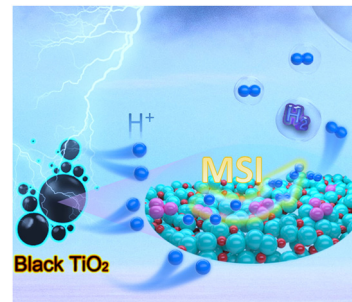
Han Shen, Yufan Wang, Biaolong Ma, Shan Zhou, Jiqiang Wang and Zhenchuan Yu\*



11275

Vacancy engineering of TiO<sub>2</sub> with low Pt content for efficient hydrogen generation

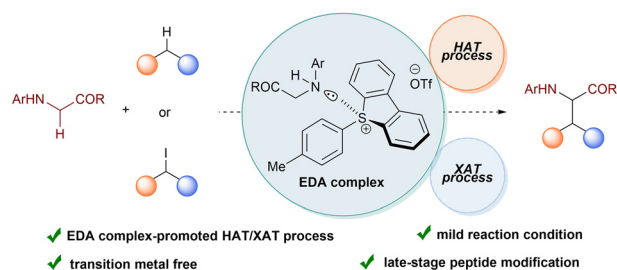
Jiayang Gao, Yuanzong Shen, Jinxiao Gao, Liantao Xin, Weiping Xiao, Guangrui Xu, Dehong Chen, Lei Wang, Fusheng Liu\* and Zexing Wu\*



11279

Electron donor–acceptor complex of aryl sulfonium salt enabling hydrogen/halogen atom transfer: C(sp<sup>3</sup>)–H alkylation of glycine derivatives and late-stage modification of peptides

Xiaobo Dang, Chenyang Zhang, Jinlong Shang, Xinyu Song, Chunlin Wang, Rupeng Qi, Zhaoqing Xu,\* Qiao Chen, Mengran Wang and Chao Wang\*



## CORRECTION

11283

**Correction: Spiral Eu(III) coordination polymers with circularly polarized luminescence**

Yasuchika Hasegawa,\* Yui Miura, Yuichi Kitagawa, Satoshi Wada, Takayuki Nakanishi, Koji Fushimi, Tomohiro Seki, Hajime Ito, Takeshi Iwasa, Tetsuya Taketsugu, Masayuki Gon, Kazuo Tanaka, Yoshiki Chujo, Shingo Hattori, Masanobu Karasawa and Kazuyuki Ishii

