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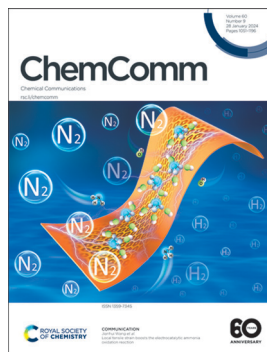
IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 60(9) 1051-1196 (2024)



Cover

See Jin Zhou, Yangang Wang, Hong Huang *et al.*, pp. 1100–1103. Image reproduced by permission of Hong Huang from *Chem. Commun.*, 2024, 60, 1100.



Inside cover

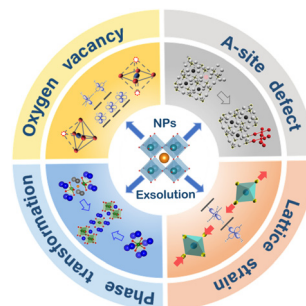
See Jianhui Wang *et al.*, pp. 1104–1107. Image reproduced by permission of Jianhui Wang from *Chem. Commun.*, 2024, 60, 1104.

HIGHLIGHTS

1062

Metal exsolution from perovskite-based anodes in solid oxide fuel cells

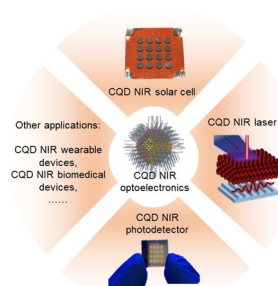
Shasha Zhu, Junde Fan, Zongbao Li, Jun Wu, Mengqin Xiao, Pengxuan Du, Xin Wang* and Lichao Jia



1072

Colloidal quantum dot materials for next-generation near-infrared optoelectronics

Lingju Meng, Qiwei Xu, Jiangwen Zhang and Xihua Wang*



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**Fundamental questions
Elemental answers**

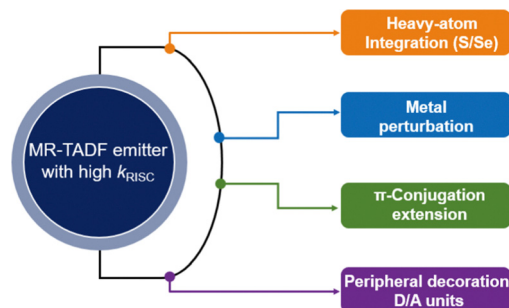


FEATURE ARTICLE

1089

Recent progress in multi-resonance thermally activated delayed fluorescence emitters with an efficient reverse intersystem crossing process

Xu-Feng Luo, Xunwen Xiao* and You-Xuan Zheng*

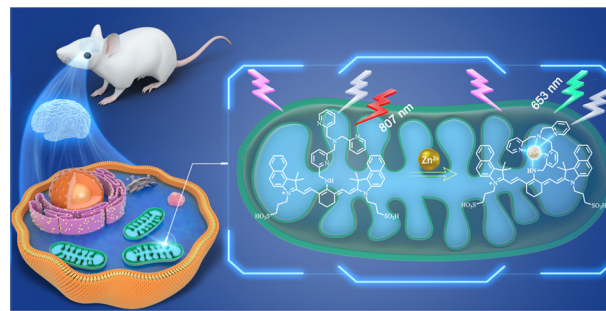


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1100

Revealing the elevation of Zn^{2+} in the brain of depressed mice by a ratiometric fluorescent probe with dual near-infrared emissions

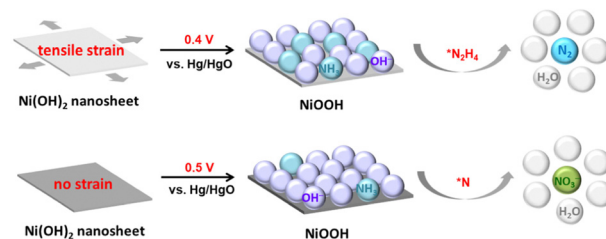
Haobin Jin, Can Ju, Chenxu Duan, Ningwen Zhang, Yongyong Cao, Qineng Xia, Jin Zhou,* Shumei Gao, Yangang Wang* and Hong Huang*



1104

Local tensile strain boosts the electrocatalytic ammonia oxidation reaction

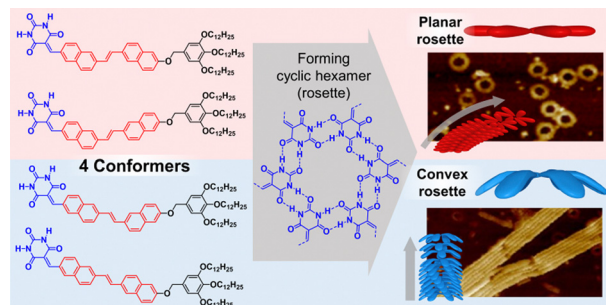
Yongzhen Jin, Yang Liu, Ruyan Wu and Jianhui Wang*



1108

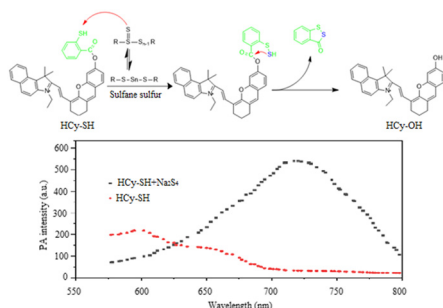
Toroid-rod supramolecular polymorphism derived from conformational isomerism of a π -conjugated system

Chie Otsuka, Saki Imai, Takahiro Ohkubo and Shiki Yagai*



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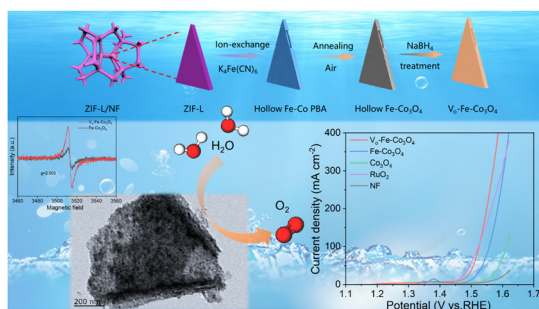
1112



Visualization diagnosis of acute cerebral ischemia via sulfane sulfur-activated photoacoustic imaging

Cheng Song, Lejuan Liao, Yidong Bin, Zongyi He, Jing Hua, Shulin Zhao* and Hong Liang*

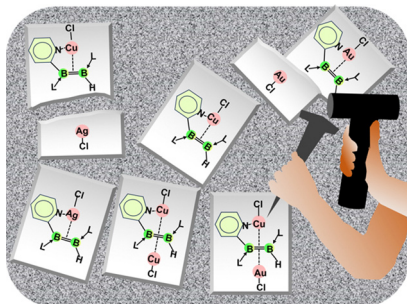
1116



Oxygen vacancy modulated Fe-doped Co_3O_4 hollow nanosheet arrays for efficient oxygen evolution reaction

Qianyun He, Lei Han and Kai Tao*

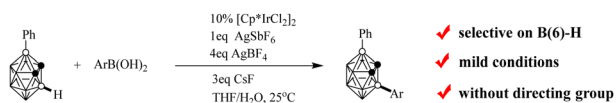
1120



Stepwise and selective synthesis of chelating, multimetallic and mixed-metal π -diborene complexes

Dario Duwe, Koushik Saha, Lukas Endres, Tobias Brückner, Rian D. Dewhurst, Maximilian Dietz, Krzysztof Radacki, Felipe Fantuzzi and Holger Braunschweig*

1124



Iridium-catalyzed selective arylation of B(6)-H of 3-aryl-o-carboranes with arylboronic acid via direct B-H activation

Han-Bo Yang, Yan Guo, Ke Cao,* Qi-Jia Jiang, Chao-Chao Teng, Dao-Yong Zhu and Shao-Hua Wang

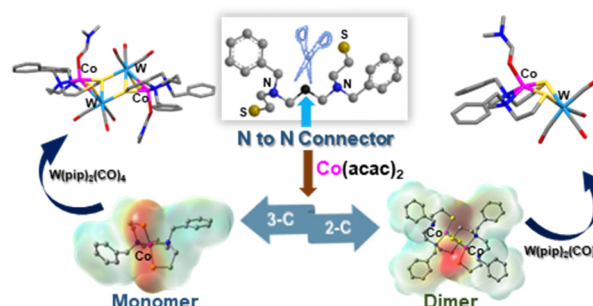


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1128

A single carbon atom controls the geometry and reactivity of $\text{Co}^{\text{II}}(\text{N}_2\text{S}_2)$ complexes

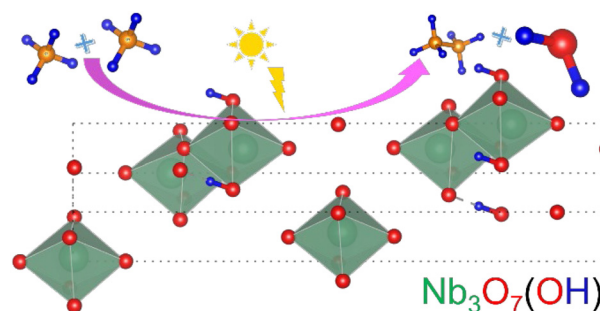
Manish Jana, Manuel Quiroz and Marcetta Y. Darensbourg*



1132

Engineering surface lattice hydroxyl groups toward highly efficient photocatalytic methane coupling

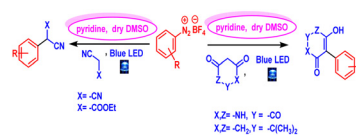
Zili Ma, Yihong Chen, Chao Gao* and Yujie Xiong*



1136

Photo-triggered C-arylation of active-methylene compounds with diazonium salts via an electron donor–acceptor (EDA) complex

Shikha Pandey, Arsala Kamal, Ambuj Kumar Kushwaha, Himanshu Kumar Singh, Suresh Kumar Maury and Sundaram Singh*

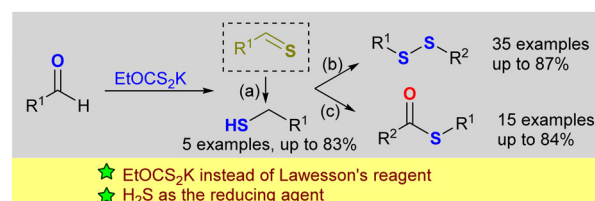


- ✓ Visible-light
- ✓ Diazonium-salt
- ✓ Active-methylene compounds
- ✓ Catalyst-Free
- ✓ Greener approach
- ✓ Electron donor-acceptor (EDA)

1140

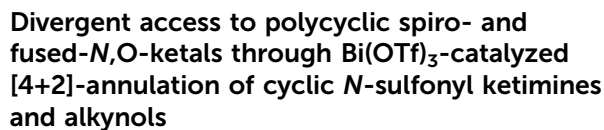
Potassium xanthate-promoted reductive sulfuration reaction: from aldehydes to thiol, disulfide, and thioester derivatives

Yingqi Feng, Jinli Nie, Sijie Xie, Ziqing He, Huanliang Hong, Jian Li, Yubing Huang, Lu Chen and Yibiao Li*



- ★ EtOCS₂K instead of Lawesson's reagent
- ★ H₂S as the reducing agent





Ashwini K. Nakate, Priyanka Kataria, Pooja I. Sambherao,
Gamidi Rama Krishna and Ravindar Kontham*

[illegible]

Synthesis of SiN/SiS-heterocycles *via* the reactions of a bis-silylene with isocyanate/isothiocyanate molecules

Rui Liu, Kartik Chandra Mondal, Chenfeng Wang,
Sonam Suthar, Zijie Fang, Darui Zuo and Yan Li*

The diagram illustrates a regioselective synthesis of 3-substituted indoles. It begins with a starting material, a 2-substituted indole (R² at C2, H at C3 and C5, R¹ at N1), which is a 5-membered heterocycle fused to a benzene ring. Two reaction pathways are shown:

- Top Pathway:** Reaction with $(R^5-Y)_2$ and $CuI/2$ leads to a 3-substituted indole (R^{5Y} at C3, H at C5, R² at C2, R¹ at N1). This step is marked with a red circle containing 'DG' and a red 'X', indicating it is disfavored.
- Bottom Pathway:** Reaction with DDQ and $(R^5-Y)_2$ followed by $CuI/2$ leads to a 5-substituted indole (H at C3, R^{5Y} at C5, R² at C2, R¹ at N1).

The central text reads: **C3 VS C5 position chalcogenation**.

The 5-substituted indole then reacts with HNR^3R^4 to form a 3-substituted indole (R^{5Y} at C3, H at C5, R² at C2, R¹ at N1, R³ and R⁴ at N3). This step is marked with a blue circle containing 'HNR³R⁴' and a blue checkmark, indicating it is favored.

The final products are categorized into two groups:

- 35 examples:** Shown in a purple box, representing the synthesis of pharmaceuticals.
- 33 examples:** Shown in a green box, representing the modification of pharmaceuticals.

An application icon (a red and white pill) is shown between the two product boxes, with the text 'Application' above it.

Iodine-dependent oxidative regioselective aminochalcogenation of indolines

Xiaoxiang Zhang, Chenrui Liu, Wanxing Wei,
Zhuan Zhang and Taoyuan Liang*

$\epsilon \cdot \Phi = 310 \text{ cm}^{-1} \text{ M}^{-1}$

DNA repair

$\epsilon \cdot \Phi = 740 \text{ cm}^{-1} \text{ M}^{-1}$

Fluorescent molecular rotors detect O^6 -methylguanine dynamics and repair in duplex DNA

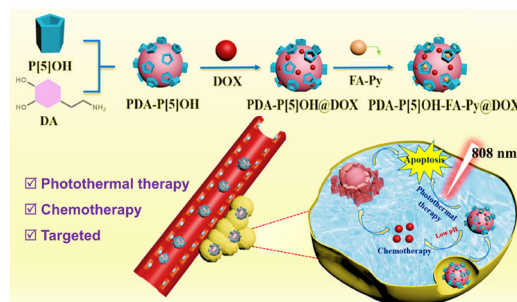
William Copp, Ashkan Karimi, Tianxiao Yang,
Alba Guarné and Nathan W. Luedtke*

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Polydopamine modified by pillar[5]arene *in situ* for targeted chemo-photothermal cancer therapy

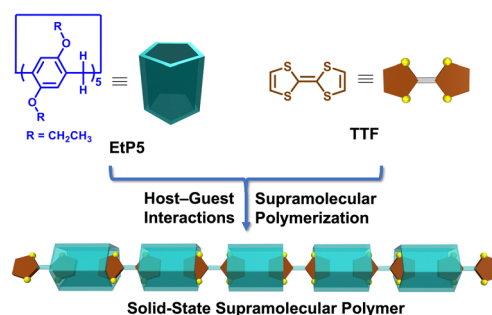
Ruowen Tang, Lei Zhou, Yu Dai, Yang Wang,* Yan Cai, Tingting Chen and Yong Yao*



1164

Constructing a solid-state supramolecular polymer based on host–guest recognition between perethylated pillar[5]arene and tetrathiafulvalene

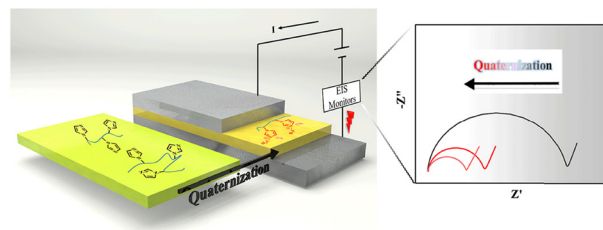
Xueru Zhao, Bin Hua and Li Shao*



1168

On-site portable detection of gaseous methyl iodide using an electrochemical method

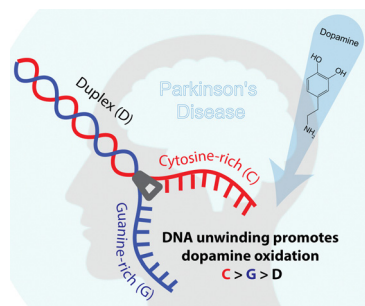
Xiao-Lan Yang, Qiu-Hong Zhu, Guo-Hao Zhang, Jie Fu, Shuang-Long Wang, Lijian Ma, Song Qin, Guo-Hong Tao* and Ling He*



1172

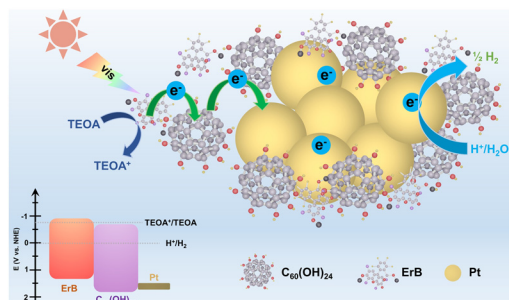
Dopamine oxidation promoted by human telomeric DNA models in the presence of a Cu(II) terpyridine chelate

Yu Bao, Wenqin Zhou, Wenhui Miao, Guoqing Jia* and Can Li*



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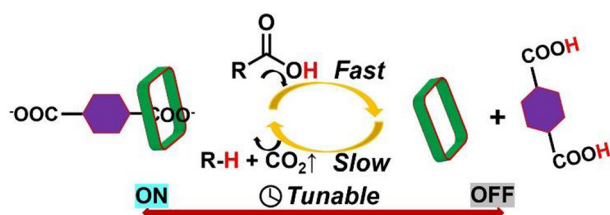
1176



Water-soluble fullerene-mediated electron transfer in molecular systems toward enhanced solar hydrogen production

Tongliang Liu, Fang Wang, Zhengguo Zhang and Shixiong Min*

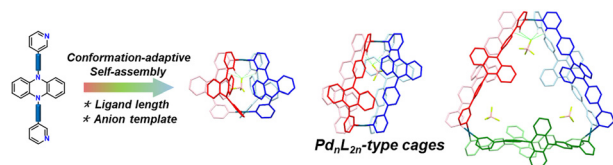
1180



Tunable cyclic operation of dissipative molecular switches based on anion recognition

Xin Zhang,* Lijun Mao, Rongjing He, Yanting Shi, Lingyi Li, Shuo Li, Chenghao Zhu, Yanjing Zhang and Da Ma*

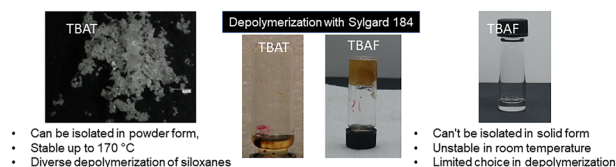
1184



Self-assembly of conformation-adaptive dihydrophenazine-based coordination cages

Meng-Xiang Wu, Qiong-Yan Hong, Minghui Li, Wei-Ling Jiang, Bin Huang, Shuai Lu, Heng Wang, Hai-Bo Yang, Xiao-Li Zhao* and Xueliang Shi*

1188



A robust depolymerization route for polysiloxanes

Matthew J. Warner, Jessica W. Kopatz, David P. Schafer, Jessica Kustas, Patricia S. Sawyer, Anne M. Grillet, Brad H. Jones* and Koushik Ghosh*



CORRECTIONS

1192

Correction: The eutectic point in choline chloride and ethylene glycol mixtures

Hannah J. Hayler and Susan Perkin*

1193

Correction: Critical role of hydrogen bonding between microcrystalline cellulose and g-C₃N₄ enables highly efficient photocatalysis

Zhaoqiang Wang, Guixiang Ding, Juntao Zhang, Xianqing Lv, Peng Wang, Li Shuai, Chunxue Li,* Yonghao Ni* and Guangfu Liao*

