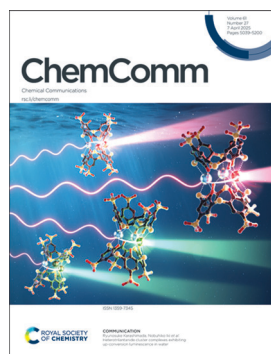


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Cover

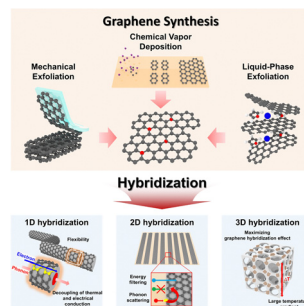
See Ryunosuke Karashimada, Nobuhiko Iki *et al.*, pp. 5110–5113. Image reproduced by permission of Ryunosuke Karashimada from *Chem. Commun.*, 2025, 61, 5110.

HIGHLIGHT

5050

Graphene-based thermoelectric materials: toward sustainable energy-harvesting systems

Jewook Kim, Hwanseok Chang, Gwangmin Bae, Myungwoo Choi* and Seokwoo Jeon*



FEATURE ARTICLES

5064

Bio-inspired anti-fouling strategies for membrane-based separations

Adriana Filipe Bernardes, Zheyi Meng, Luiza Cintra Campos and Marc-Olivier Coppens*



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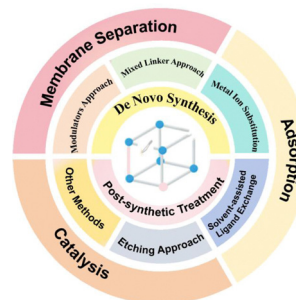
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FEATURE ARTICLES

5072

Design, synthesis, and applications of defective metal–organic frameworks in water treatment

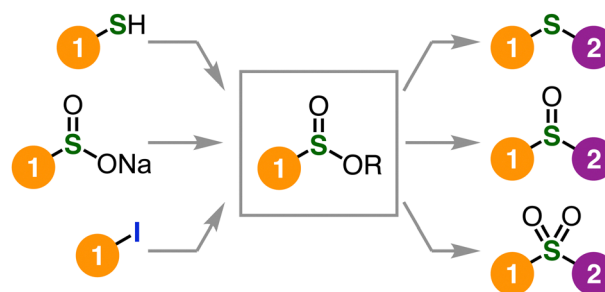
Miaolu He,* Suo Shi, Ze Liu, Yina Wu and Lei Wang*



5084

Recent advances in the synthesis and transformations of sulfinic acid esters

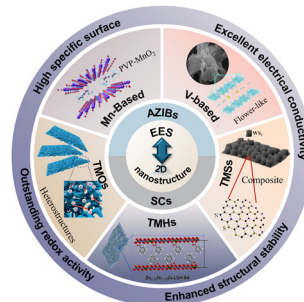
Suguru Yoshida*



5094

Two-dimensional nanostructures of transition metal-based materials towards aqueous electrochemical energy storage

Tianrui Liu, Shile Liu, Yanxin Liao, Linghao Sun, Jie Bai and Lingyun Chen*

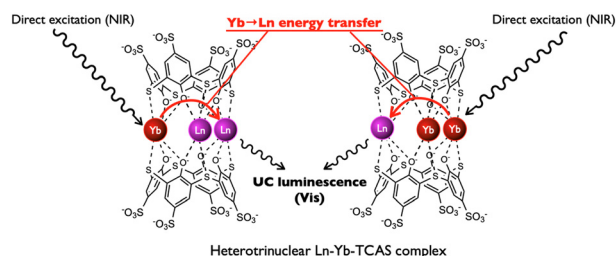


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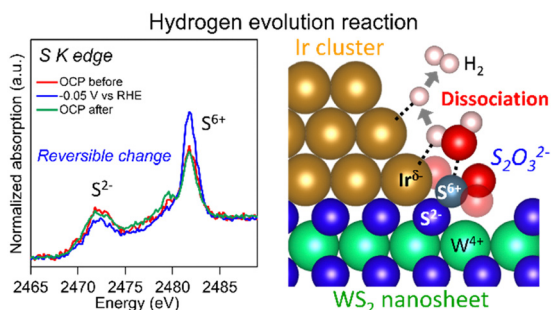
5110

Heterotrivalent lanthanide cluster complexes exhibiting up-conversion luminescence in water

Ryunosuke Karashimada,* Koki Musha and Nobuhiko Iki*



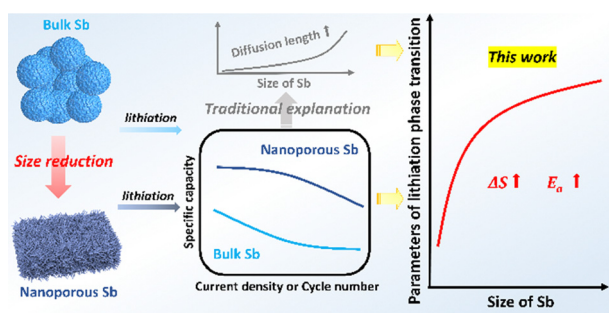
5114



Thiosulfate species promoting hydrogen evolution reaction at the heterointerface of Ir clusters-loaded WS₂ nanosheets

Sho Kitano,* Reiko Tagusari, Takeharu Sugiyama, Yuta Nagasaka, Naoto Wakabayashi, Rioto Wada, Tomoya Nagao, Mana Iwai, Koji Fushimi, Yoshitaka Aoki and Hiroki Habazaki*

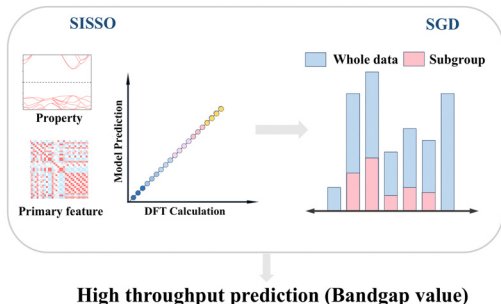
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Thermodynamics and kinetics of lithiation-induced phase transitions in nanoporous antimony

Shichen Wang, Zeyu Jin, Chaojie Yang, Jie Lu, Yao Gao, Hua-Jun Qiu* and Kaikai Li*

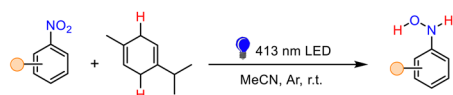
5122



Unveiling the physical mechanisms underpinning bandgap variations in chalcopyrite crystals (ABX₂) using interpretable artificial intelligence

Xiaolan Fu, Jiaqian Wang, Xiaojuan Hu,* Wenwu Xu,* Sergey V. Levchenko and Zhong-Kang Han*

5126



- ✓ Catalyst-free photochemical reduction
- ✓ Efficient strategy with green hydrogen source
- ✓ Broad scope of substrates with good yields and selectivity
- ✓ Great tolerance of functional groups

Selective photochemical reduction of nitroarenes to *N*-arylhydroxylamines with γ -terpinene

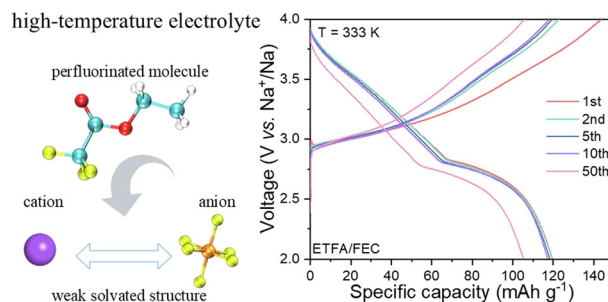
Xinxin Huang and Chun Cai*



5130

Weakly solvated perfluorinated electrolyte for high-temperature sodium-layered oxide cathodes

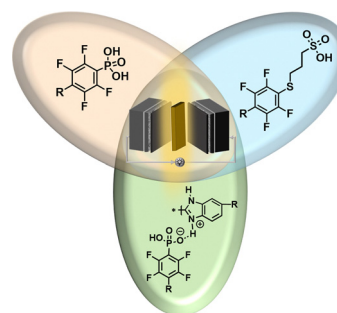
Junpeng Xie, Zheng Hu, Zhibin Li, Hang Lei, Jinliang Li, Zhixin Tai,* Yajie Liu* and Wenjie Mai*



5134

Towards high-temperature fuel cells using sulfonated-phosphonated poly(pentafluorostyrene)

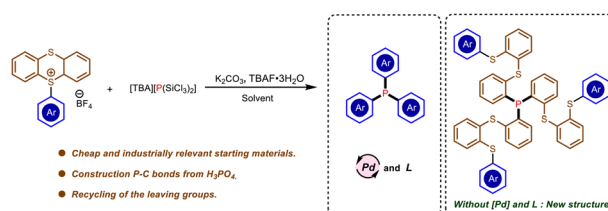
Theresa Stigler,* Sebastian Auffarth, Maximilian Wagner, Andreas Hutzler, Simon Thiele and Jochen Kerres*



5138

Palladium-catalyzed coupling of aryl sulfonium salts with [TBA][P(SiCl₃)₂] for the construction of tertiary phosphines

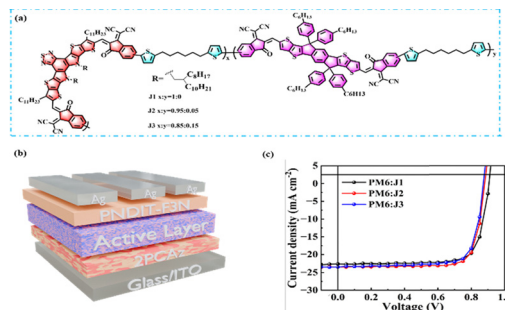
Yao Chai, Ya-Ling Tian, Jin-Hong Jia, Xi-Cun Wang* and Zheng-Jun Quan*



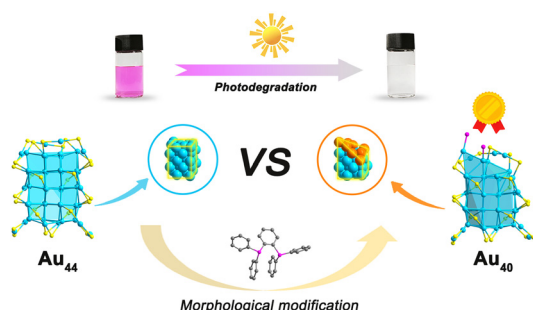
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Rational design of terpolymer acceptors for high-efficiency all-polymer solar cells

Jiawei Huang, Xintong Shi, Xiaoping Wang, Haokun Zheng, Yu Fang, Yujun Cheng,* Sang Young Jeong, Han Young Woo, Qiao Zong and Bin Huang*



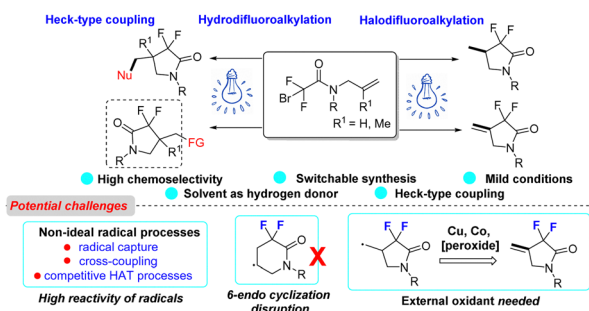
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Diphosphine-induced morphological modification in Au nanoclusters and its implications for catalytic activity regulation

Jialing Li, Zhewei Wang, Jiansheng Ye, Qinzhen Li,*
Sha Yang, Jinsong Chai and Manzhou Zhu*

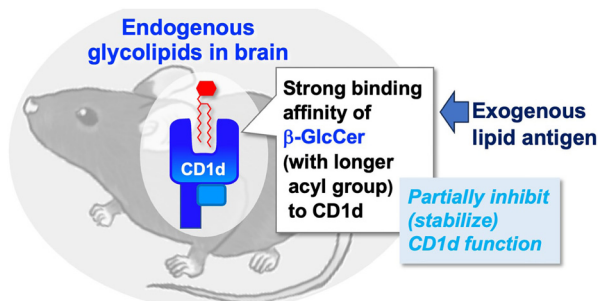
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Photocatalytically switchable chemoselective difluoramidation of olefins for the synthesis of diversified difluoro- γ -lactams

Tian-Zheng Cao, Cai-Jian Nie, Jing Li, Ming-Dong Liu,
Zi-Tong Wang, Yi-Fei Kong, Xin Wang,* Yuan-Yuan Sun,*
Jin-Heng Li* and Yan-Ping Zhu*

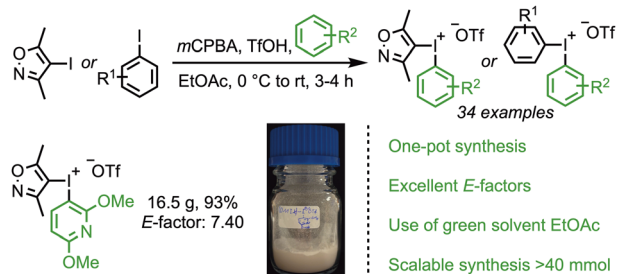
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Lipid structure-dependent CD1d functional stabilization and immunomodulation of endogenous glucosylceramides

Kazunari Ueki, Risa Nozawa, Takanori Matsumaru,
Sho Yamasaki and Yukari Fujimoto*

5158



Sustainable and scalable one-pot synthesis of diaryliodonium salts

Sayad Doobary,* Leonard Kersting, Piret Villo,
Marufa Akter and Berit Olofsson*

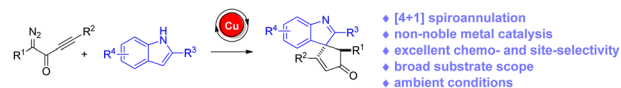


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Copper-catalyzed chemoselective C–H functionalization/dearomatization sequence: direct access to indole-based spirocyclic scaffolds

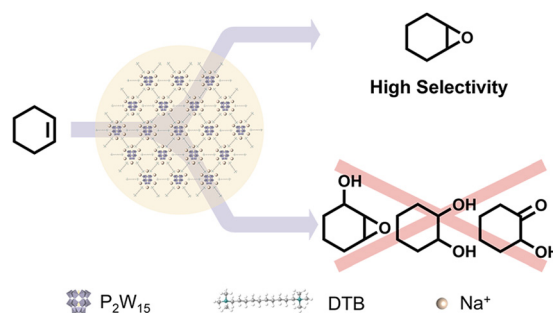
Yuting Zhao, Xin Ji, Yuanjing Xiao,* Xingxing Wu* and Lu Liu*



5166

Coverage of surfactants on polyoxometalate tunes the selectivity of alkene epoxidation

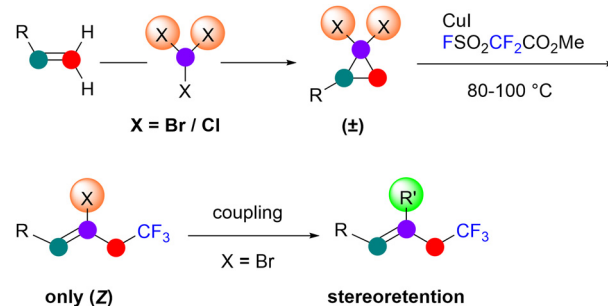
Yali Zhao, Xinjie Huang, Ziru Wang* and Peilei He*



5170

Building trisubstituted ethylenes from terminal alkenes via debrominative ring-opening trifluoromethylations of geminal dibromocyclopropanes

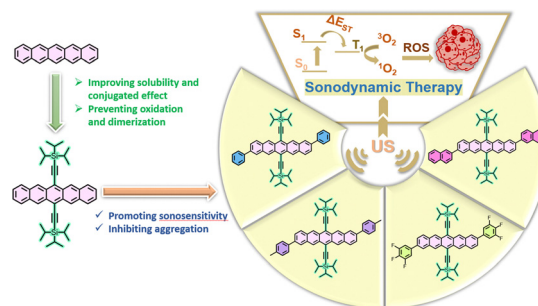
Lidong Liu, Yawen Guo, Lin Shi, Yihan Wang, Xingyu Lei and Peng Jiao*



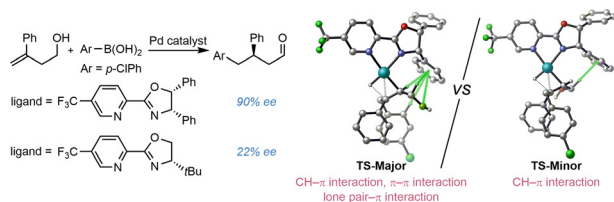
5174

2,9-Diaryl-6,13-bis(triisopropylsilyl)ethynyl)pentacene derivatives: synthesis and application in cancer sonodynamic therapy

Nan Han, Chunyuan Hou, Zhuofei Duan, Jun Gu, Yu Zhang* and Jun Luo*



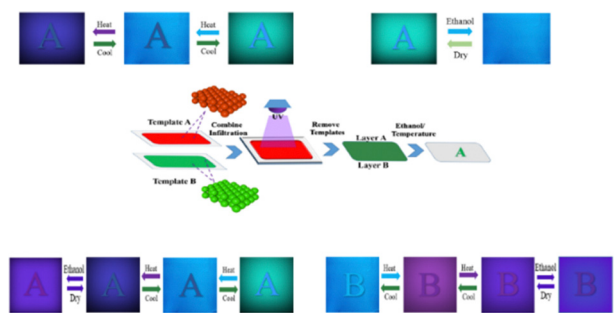
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Mechanistic insights into the stereocontrolling non-covalent π interactions in Pd-catalyzed redox-relay Heck arylation reaction

Xiaoxiao Hu, Boming Shen, Jin Zhang and Peiyuan Yu*

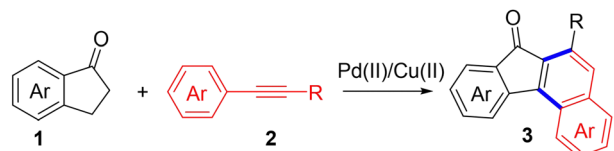
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Solvent/temperature dual-responsive photonic crystal structural-color films through double inverse opal structure

Shaorui He, Linmao Jia, Jiaxin Wang, Chaoran Xiao, Qian Yang and Zhaopeng Xu*

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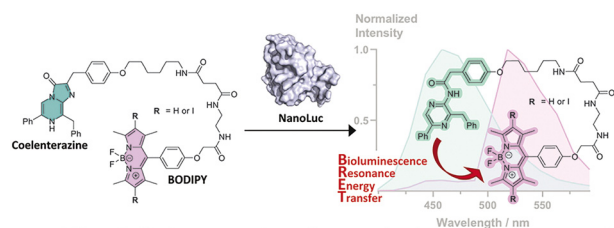


- ✓ dehydrogenative [4+2] reaction
- ✓ using alkyne as a diene
- ✓ good to moderate regioselectivity
- ✓ gram-scale synthesis

Palladium-catalyzed oxidative cycloaddition of 1-indanones and internal aryl alkynes toward benzo[*c*]fluorenone derivatives

Xu Zhang,* Tongtong Ni, Mengfan Chang, Wenguang Li and Xuefeng Xu

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BODIPY-coelenterazine conjugates as self-illuminating substrates for NanoLuc

Valeska Viereckt, Frank Abendroth, Alexander Schauerte, Marina Gerhard, Crispin Lichtenberg, Dmitri Kosenkov and Olalla Vázquez*



5194

Fused terthiophene end-capped with barbituric acid as non-fullerene n-type small molecule for an organic photo-detector

Xavier Bulliard, Gae Hwang Lee,* Tadao Yagi, Rie Sakurai, Dong-Seok Leem, Hyesung Choi, Kwang-Hee Lee, Sungyoung Yun, Jung-Hwa Kim, Daeun Yu, Youn Hee Lim and Yeong Suk Choi

