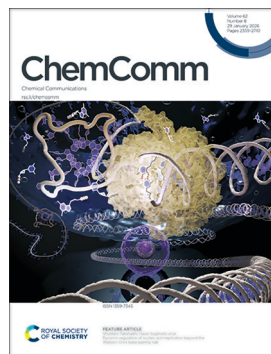


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Cover

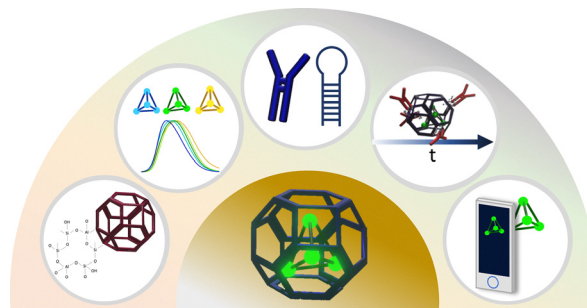
See Shuntaro Takahashi,
Naoki Sugimoto *et al.*,
pp. 2397–2413.
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HIGHLIGHTS

2374

Silver clusters embedded within zeolites for innovative (bio)sensing platforms

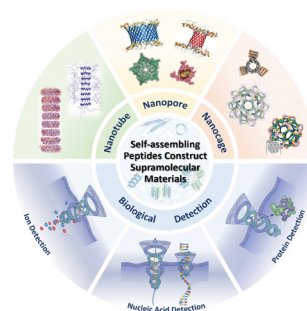
Cecilia García-Guzmán, Stefano Cinti,*
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Self-assembling peptides construct supramolecular materials

Li-Ying Wang, Jian-Xiao Liang, Jingyao Wang, Min Han,*
Hong-Wei An* and Hao Wang*



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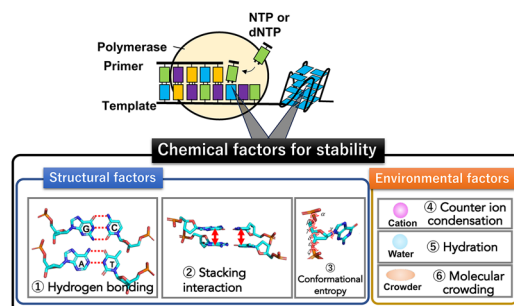


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2397

Dynamic regulation of nucleic acid replication beyond the Watson–Crick base-pairing rule

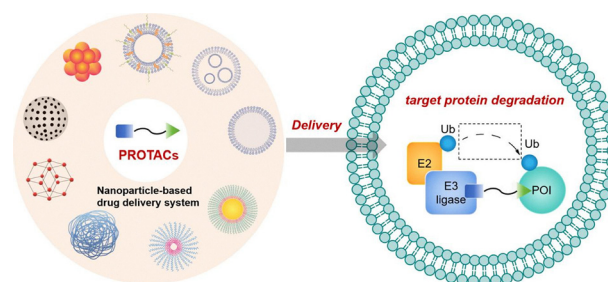
Shuntaro Takahashi,* Lutan Liu and Naoki Sugimoto*



2414

Programmable PROTAC delivery for precise and spatiotemporal protein degradation

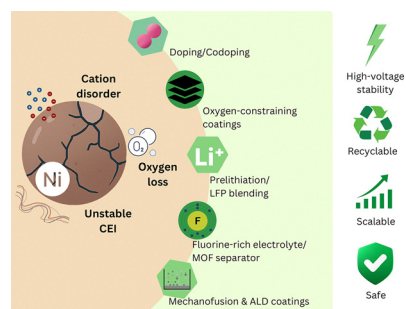
Jinhan Sheng, Tianyu Ma, Yu Wu* and Ming Wang*



2428

Interfacial and structural transformations in Ni-rich cathodes: a roadmap toward chemical stability

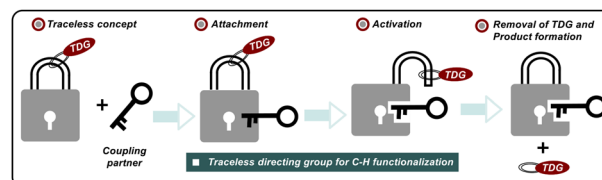
Surasak Kaenket, Techin Mamiamuang, Nattanon Joraleechanchai, Jirawat Limphrasittisak, Purin Krapong, Worapol Tejangkura and Montree Sawangphruk*



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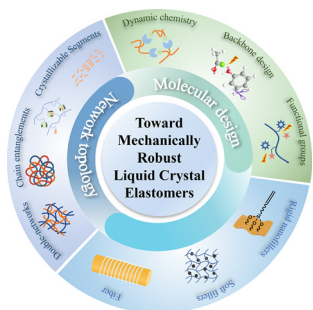
Invisible architects: traceless directing group strategy towards late-stage functionalization and synthesis of drug derivatives

Purushotam, Tarun, Shuvojit Haldar, Sarvaya Mayur Manubhai and Debasis Banerjee*



FEATURE ARTICLES

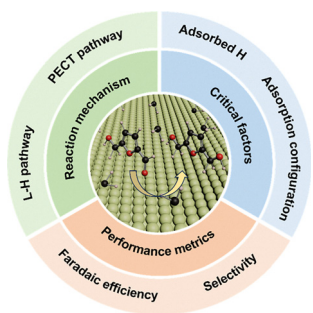
2475



Toward mechanically robust liquid crystal elastomers: multiscale strategies from molecular engineering to hierarchical integration

Xiaofei Chen, Xiang Huang, Jun Hu, Shuai Huang, Zhiyang Liu, Meng Wang* and Hong Yang*

2492

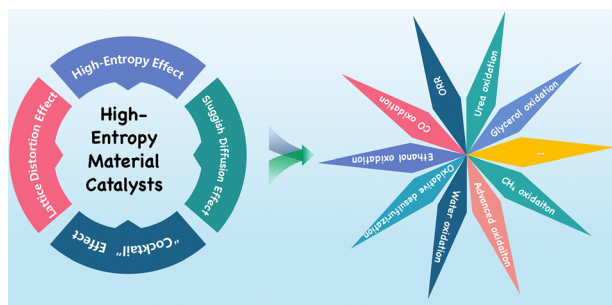


Materials designs for selective electrocatalytic HMF reduction to BHMF and perspectives

Qiaoyi Peng, Wenhan Fang, Danlei Li* and Heechae Choi*

REVIEWS

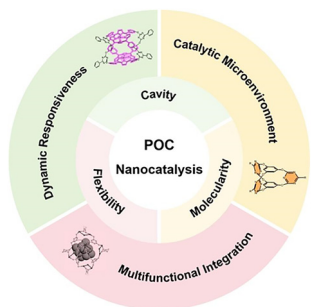
2511



Expanding the frontiers of oxidation catalysis with high-entropy material catalysts

Kailong Yu, Chang Deng,* Xiang Liu, Wenshuai Zhu* and Peiwen Wu*

2536



Porous organic cages: a unified platform for homogeneous and heterogeneous nanocatalysis

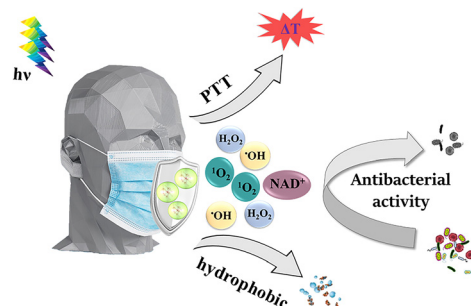
Ming Shi, Hangkong Yuan and Wei David Wang*



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Novel Ru(II)-photo-antibiotics for the development of infection-resistant mask coatings

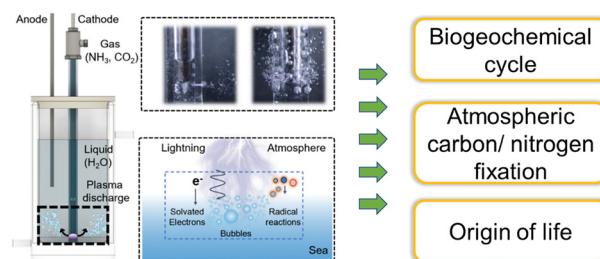
Arif Ali Mandal, Saurav Kumar, Srijan Singh, Apurba Mandal, Samya Banerjee* and Prodyut Dhar*



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Lightning-driven plasma bubbles provide prebiotic synthesis and biogeochemical cycling

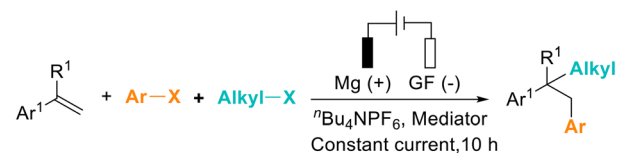
Dingwei Gan, Longfei Hong, Xiaofan Guo, Haoxuan Jiang, Santu Luo, Tianqi Zhang,* Jianxi Ying,* Rusen Zhou, Dingxin Liu, H. James Cleaves, Yufen Zhao and Renwu Zhou*



2563

Organomediator enabled electrochemically regioselective 1,2-aryalkylation of alkenes with aryl and alkyl halides

Qian Su, Yulin Peng, Sheng Li, Jing Lei, Linhai Jing and Pan Han*

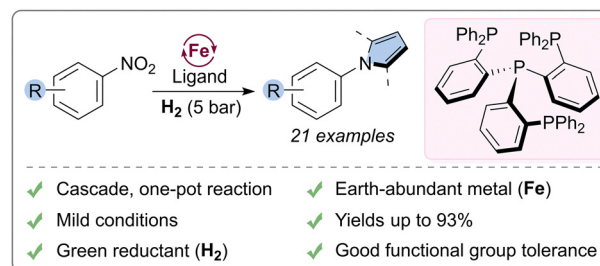


- Aryl and alkyl group derived from aryl iodides and alkyl bromides
- Highly regioselective 1,2-aryalkylation
- Broad substrate scope
- Electricity as a green reductant
- Noble-metal free process

2568

Atom-efficient iron-catalyzed cascade synthesis of pyrroles from nitroarenes under low-pressure conditions

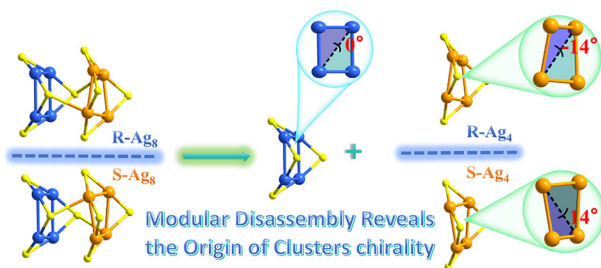
Germán López Robledo, Johannes Fessler, Kathrin Junge* and Matthias Beller*



- ✓ Cascade, one-pot reaction
- ✓ Earth-abundant metal (Fe)
- ✓ Mild conditions
- ✓ Yields up to 93%
- ✓ Green reductant (H₂)
- ✓ Good functional group tolerance



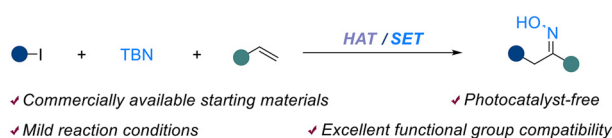
2572



Exploring the origin of chirality in Ag₈ clusters based on modular disassembly

Jingbin Hao, Shenao Wu, Jiayun Cao, Qinzhen Li, Jinsong Chai, Guiqi Gao,* Lin Xiong,* Sha Yang* and Manzhou Zhu

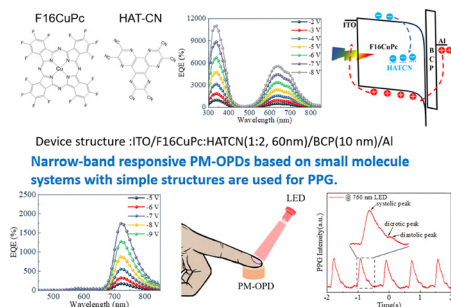
2576



Photocatalyst-free access to α -arylethanone oximes enabled by sequential HAT/SET of aryl iodides with TBN and alkenes

Dabo Guo, Yibo Shi, Ningning Gong, Xiaobing Liu, Qiyue Zhu, Wenguang Li, Yongqi Yu, Weiguang Kong, Heyun Sheng* and Ting Li*

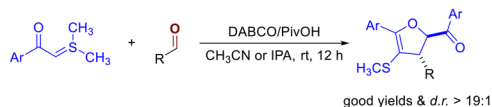
2581



Simple-structured high-performance narrow-band responsive PM-OPDs enabled by deep trap charge capturing

Ji Li, Dechao Guo, Dezhi Yang* and Dongge Ma*

2585



- Enals and alkyl/aryl aldehydes as substrate
- Late-stage functionalization of natural products
- Excellent functional group compatibility
- Potentially biologically active 2,3-dihydrofuran products

Facile synthesis of multisubstituted 2,3-dihydrofurans via intermolecular cyclization of enals or alkyl/aryl aldehydes with acyl-stabilized sulfur ylides

Yin Su, Ziyi Sun, Quansheng Zhao* and Liang Fu*

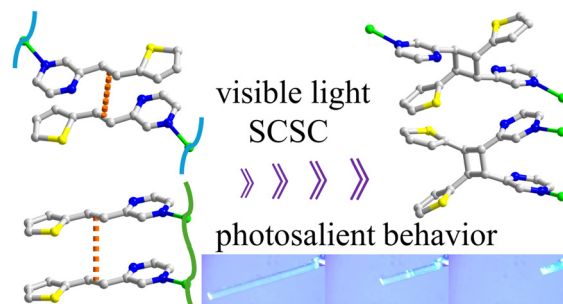


COMMUNICATIONS

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Photosalient Cd(II) complexes by visible-light-driven single-crystal-to-single-crystal [2+2] stereoselective cycloaddition

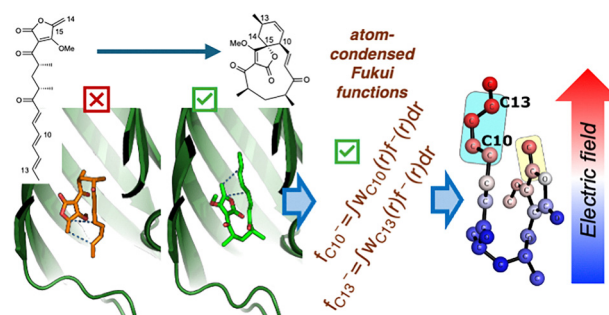
Wei-Chao Song,* Zi-Yi Niu, Bo Ding, Xiu-Guang Wang and En-Cui Yang*



2594

Electric fields enhance Diels–Alderase catalysis in abyssomicin C biosynthesis

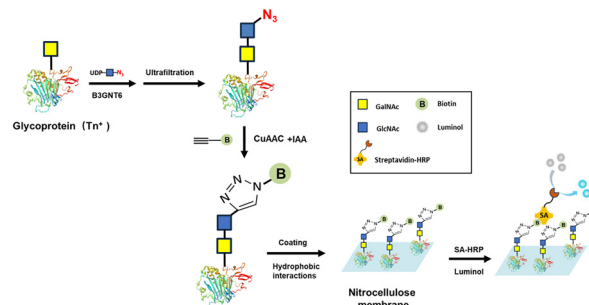
Rodrigo Recabarren, Sam T. Johns, H. Adrian Bunzel, Esteban Vöhringer-Martinez* and Marc W. van der Kamp*



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A novel method for Tn antigen detection based on chemoenzymatic targeted labelling and CuAAC click chemistry

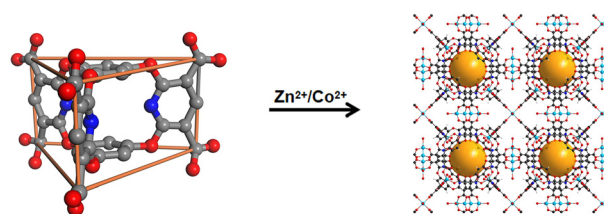
Hongxia Duan, Lei Liu, Xin Guo, Zhongyu Wang, Zheng Fang, Huizhen Huang, Hui Zhang, Yanan Li, Yan Wang, Mingliang Ye, Lingyun Jia and Mingming Dong*



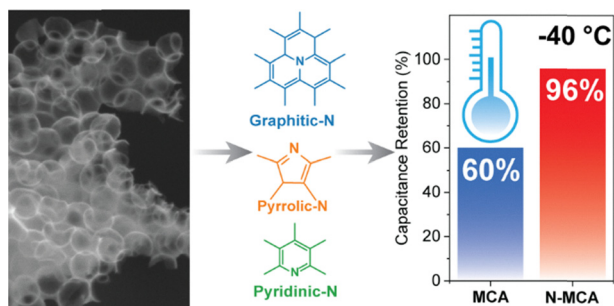
2603

A reticular chemistry approach to constructing metal–organic frameworks with hmc topology using organic cage building blocks

Lin Lin, Zihao Wang, Xinhui Zhao, Dalal Alezi and Jiangtao Jia*



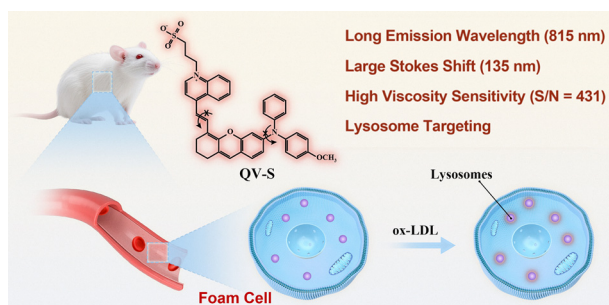
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Nitrogen doping-enabled low-temperature capacitance retention in carbon materials

Anica B. Pinongcos, Xinzhe Xue, Megan C. Freyman, Seongkoo Cho, Swetha Chandrasekaran, Qiu Ren, Nathan Delaney, Emma Coester, Marissa Wood, Marcus A. Worsley* and Yat Li*

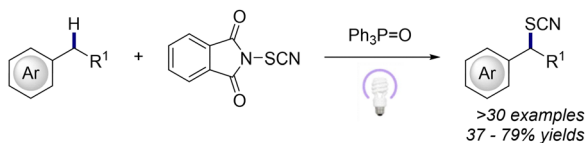
2611



Visualizing lysosomal viscosity in atherosclerosis with a long-wavelength and large Stokes shift fluorescent probe

Xue Wu, Junjie Kou, Ruixin Zhang, Xiaoxuan Shi, Ying Li,* Fanpeng Kong,* Chang Xu* and Bo Tang

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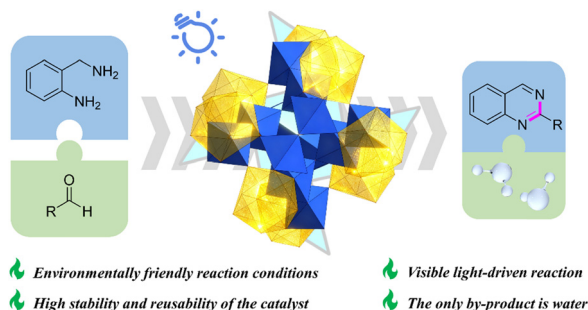


- metal- and photocatalyst-free
- electron donor-acceptor (EDA) complex
- high site- and chem-selectivity
- operational simplicity, mild condition
- late-stage modification of bioactive molecules

Photoinduced benzylic C–H thiocyanation enabled by triphenylphosphine oxide and N-thiocyanophthalimide

Zhongmei Wang, Jiazhen Li, Xingyu Liu, Zhihe Zhang, Wen Gu, Zhengying You, Fan Luo* and Shihui Liu*

2619



Self-assembly of a tellurotungstate skeleton inlaid with Ce(III) for efficient photocatalytic synthesis of quinazolines

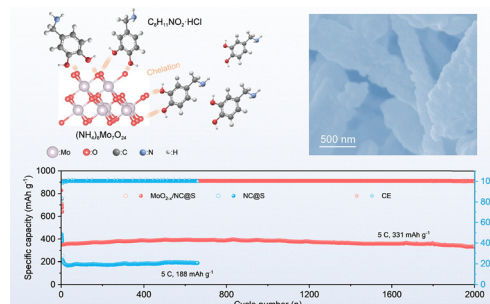
Xiao-Ling Lin, Jia-Wei Cao, Shi-Xiong Li,* Yu-Feng Liu* and Guo-Ping Yang*



2624

Defect-rich molybdenum dioxide cluster coupled hierarchical carbon toward advanced Na–S batteries

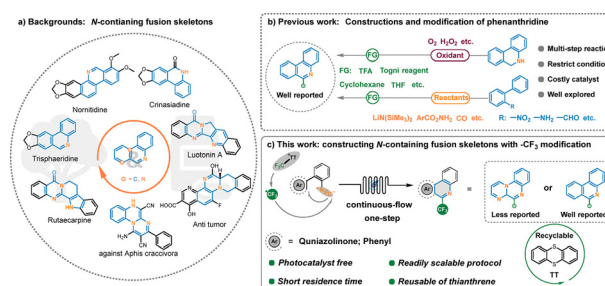
Haonan Wang, Guangming Cao, Junquan Cheng, Bin Chen, Xin Xia, Youcun Bai,* Zhichao Ye, Baoxue Wang, Feng Liu* and Heng Zhang*



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Metal- and photocatalyst-free CF₃-modification of N-containing fusion skeletons in photo-flow chemistry

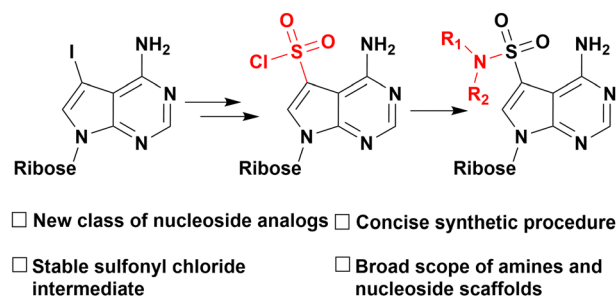
Ting Lv, Chenxi Gu, Yuchen Zhu, Yali He, Wen Lin, Wenjian Wang, Xingyi Zhu* and Jianjun Li*



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C7-Sulfonamide functionalization of 7-deazaadenosines: sangivamycin analogues with Haspin inhibitory activity

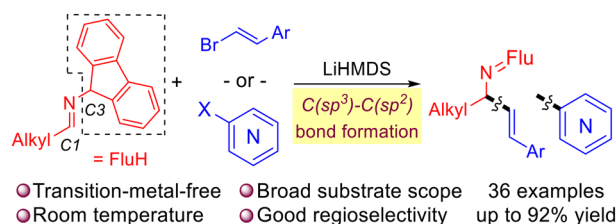
Milan Štefek, Milan Dejmek, Michal Šála and Radim Nencka*



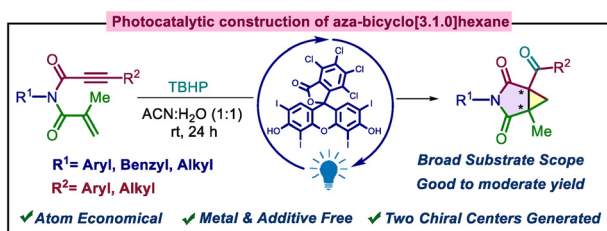
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Directed C(sp³)-H vinylation and arylation of alkylamines for the synthesis of branched allylamines and azaarylmethylamines

Yujin Zi, Lingyu Yang, Ya Du, Xiang Yang, Sina Liu, Jiahui Xu, Xue Zhao, Hongbin Zhang* and Shengzu Duan*



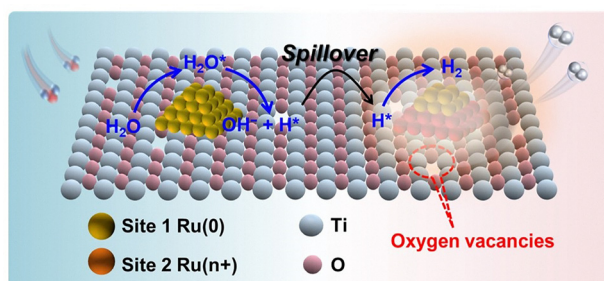
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Photocatalytic oxidative cyclopropanation of aza-1,6-enynes: construction of 3-aza-bicyclo[3.1.0]hexane derivatives

Shivam A. Meena, Deepika Thakur, Surya P. Tripathi, Rahul Ranjan and Akhilesh K. Verma*

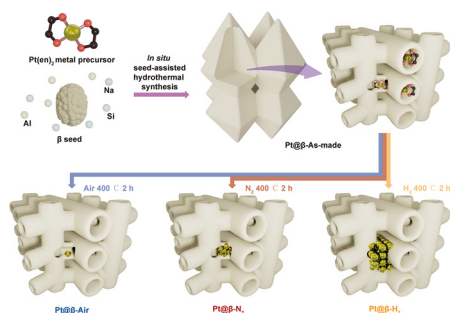
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Enhancing the hydrogen evolution reaction on Ru/KTN through an RuCl_x intermediate strategy

Guangzhen Zhao, Chengzhi Xiao, Tongzhou Hong, Guoliang Gao* and Guang Zhu*

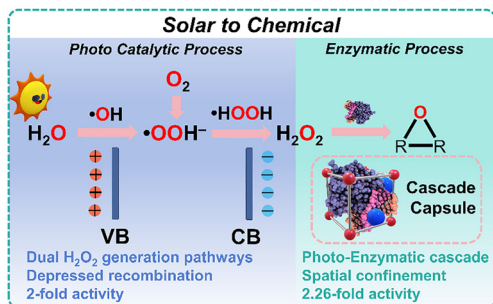
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Dinitroaromatic hydrogenation over a Pt@Beta zeolite catalyst with ammonia borane

Zijian Niu, Chen Wang, Zhuangzhuang Ren, Zhuoya Dong, Risheng Bai* and Feijian Chen*

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Highly efficient solar to chemical conversion by an anthraquinone and *Candida antarctica* lipase B-based photocatalytic–enzymatic cascade

Yuting Li, Jie Cheng, Yinghuan Xu, Jiacan Zhu, Xiahui Huang, Pengcheng Zhang, Hongzhang Wu, Zhenjiang Cao,* Jianbo Zhao* and Kaipeng Cheng*



2659

A facile strategy for π -extended BOPYINs: transformation into six-membered BODiPY analogues and their optical properties

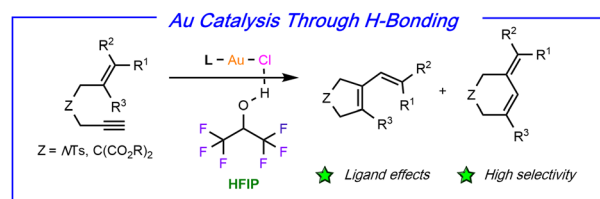
Ziyi Zhang, Xi Li, Yilin Feng, Xin Gao, Yong Qi,*
Jiaying Yan* and Nuonuo Zhang*



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Hydrogen bonding-enabled gold catalysis: ligand effects in gold-catalyzed cycloisomerization of 1,6-enynes in hexafluoroisopropanol (HFIP)

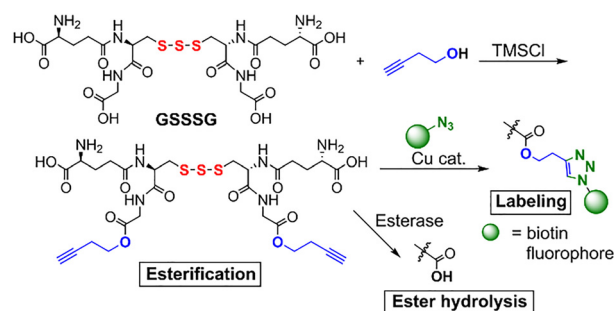
Yuan Zhao, Xinyuan Ma, Junying Wang,
Vladislav A. Voloshkin and Steven P. Nolan*



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Acid-catalyzed esterification and biotin/fluorescent labeling of glutathione polysulfides based on stability under heating and pH change

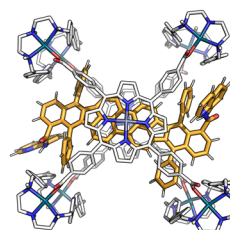
Masana Yazaki, Yaozhuo Zhang, Lin Zhou, Ryo Morise,
Takaaki Akaike and Mieko Arisawa*



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Interphasic separation of *cis/trans* perylene-based nanographene isomers driven by selective encapsulation in a supramolecular cage

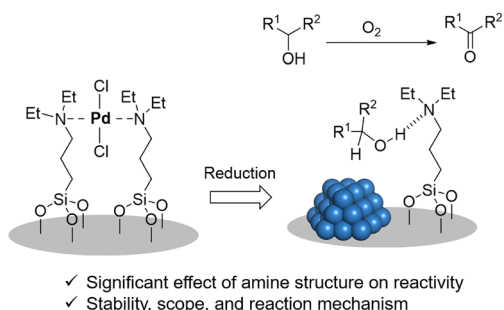
Carles Fuertes-Espinosa,* Clara Sabrià, Judith Sala,
Lorena Capdevila, Ferran Feixas and Xavi Ribas*



- ✓ Interphasic Separation of *cis/trans* Nanographene Isomers
- ✓ Host-guest interactions operating at the liquid-liquid biphasic interface
- ✓ No requirement for cage migration or external manipulation



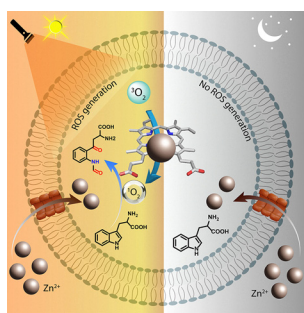
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Effect of immobilized amine structure on the formation and catalysis of Pd nanoparticles for oxidation of alcohols

Shingo Hasegawa, Runa Kobayashi, Mariko Honda, Shinji Tanaka and Ken Motokura*

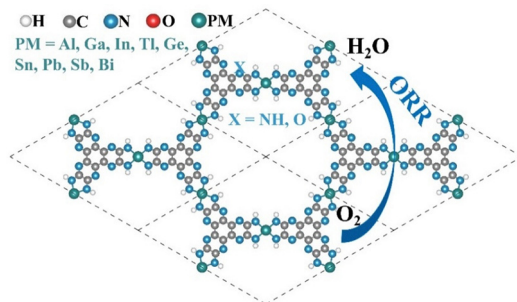
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Molecular communication system using Zn²⁺ selective supramolecular nanochannel to induce photoregulated catalysis

Soumya Srimayee, Biswa Mohan Prusty, Mrinal Kanti Kar, Mathias Winterhalter* and Debasis Manna*

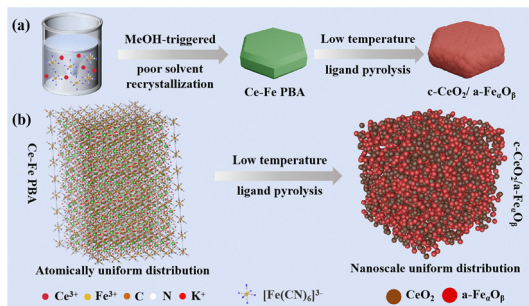
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p-Block main-group metal-based two-dimensional metal-organic frameworks as efficient electrocatalysts for the oxygen reduction reaction

Yanan Zhou, Xiaoping Gao* and Wenhua Zhang*

2691



Harnessing 4f–3d synergy in Ce–Fe heterostructure: a PBA-derived oxygen reservoir for stable high-capacity lithium storage

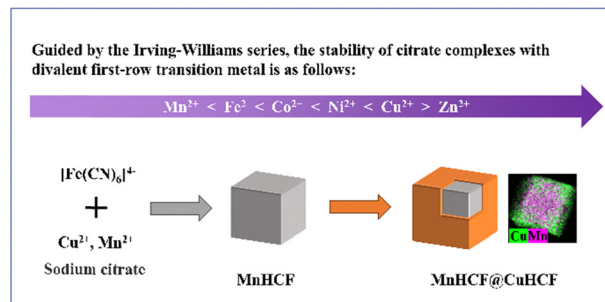
Shengfa Li, Jianzhi Wang, Hang Li, Feng Gao* and Qingyi Lu*



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Irving–Williams series guided construction of a stable core–shell MnHCF@CuHCF cathode

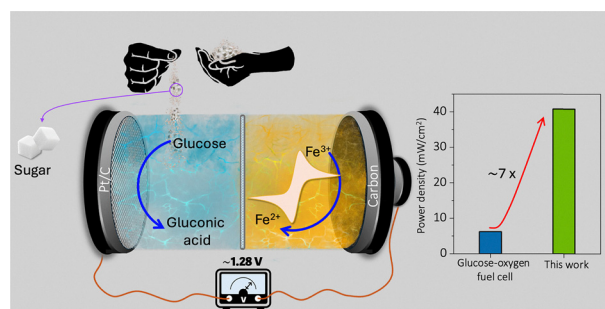
Shumin Sun,* Haibo Lei, Yunpeng Ma, Yonghui Zhang, Xia Cao* and Peiyuan Wang*



2700

A bio-inspired sustainable sugar battery integrated with a reversible coordination complex

Bhojkumar Nayak, Abdul Raafik Arattu Thodika, Vinay Pandey, Mruthyunjayachari Chattanahalli Devendrachi, Neethu Christudas Dargily, Rohit Srivastava,* Ahmad Umar* and Musthafa Ottakam Thotiyil*



2704

Heteropoly acid-mediated electrochemically efficient removal of oxygen

Peilin Sun, Peng Wang, Zhaoxi Chen, An Pei, Qiqi Wu, Gaige Zhang, Sijia Ji, Daoru Liu, Haohang Qin and Guangxu Chen*

