

ChemComm

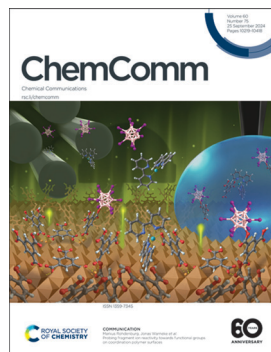
Chemical Communications

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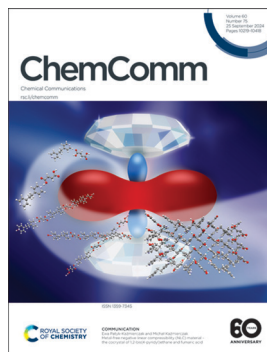
IN THIS ISSUE

ISSN 1359–7345 CODEN CHCOFS 60(75) 10219–10418 (2024)



Cover

See Markus Rohdenburg, Jonas Warneke *et al.*, pp. 10306–10309. Image reproduced by permission of Markus Rohdenburg from *Chem. Commun.*, 2024, 60, 10306.



Inside cover

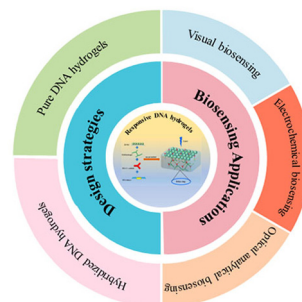
See Ewa Patyk-Kaźmierczak and Michał Kaźmierczak, pp. 10310–10313. Image reproduced by permission of Ewa Patyk-Kaźmierczak from *Chem. Commun.*, 2024, 60, 10310.

HIGHLIGHTS

10231

Responsive DNA hydrogels: design strategies and prospects for biosensing

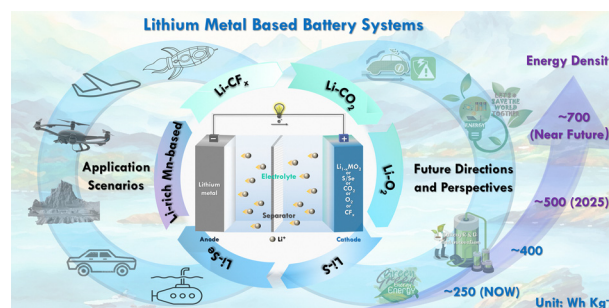
Fenglian Qi, Hanwen Li, Yonghao Wang and Caifeng Ding*



10245

Lithium metal based battery systems with ultra-high energy density beyond 500 W h kg⁻¹

Chenyu Yang, Zhan Jiang, Xiangyue Chen, Wei Luo, Tengfei Zhou* and Jianping Yang*



Environmental Science: Atmospheres

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Fundamental questions
Elemental answers

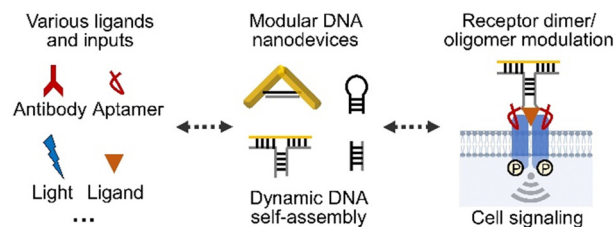


FEATURE ARTICLES

10265

DNA-modulated dimerization and oligomerization of cell membrane receptors

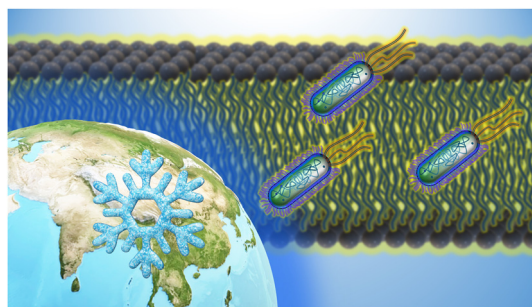
Ahsan Ausaf Ali and Mingxu You*



10280

Extreme makeover: the incredible cell membrane adaptations of extremophiles to harsh environments

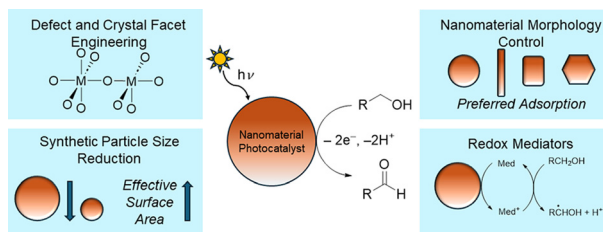
Archita Maiti, Shakkira Erimban and Snehasis Daschakraborty*



10295

Strategies in photochemical alcohol oxidation on noble-metal free nanomaterials as heterogeneous catalysts

Siqi Li, Katherine H. Morrissey and Bart M. Bartlett*

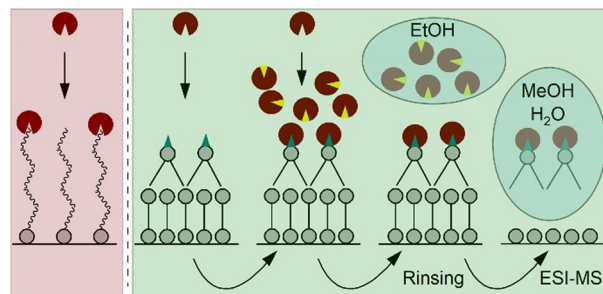


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10306

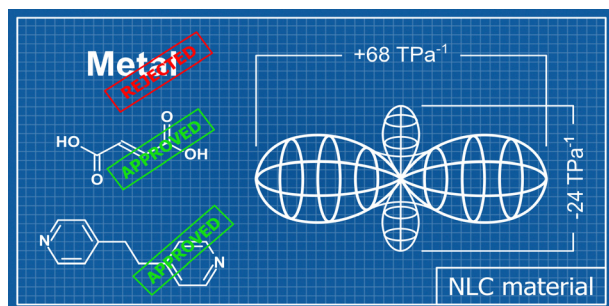
Probing fragment ion reactivity towards functional groups on coordination polymer surfaces

Markus Rohdenburg,* Sebastian Kawa, Maegan Ha-Shan, Manuela Reichelt, Harald Knorke, Reinhard Denecke and Jonas Warneke*



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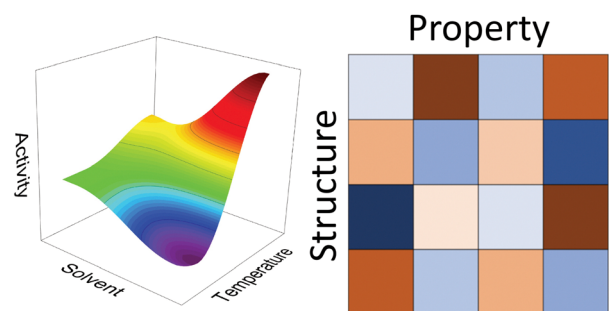
10310



Metal-free negative linear compressibility (NLC) material – the cocrystal of 1,2-bis(4-pyridyl)ethane and fumaric acid

Ewa Patyk-Kaźmierczak* and Michał Kaźmierczak

10314

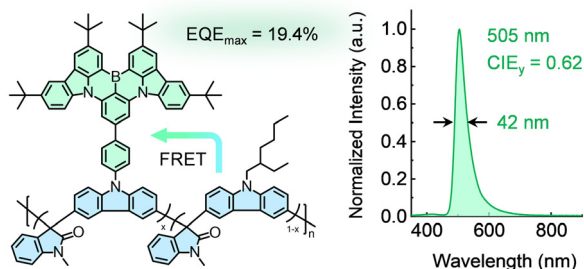


Rationalising catalytic performance using a unique correlation matrix

Maciej G. Walerowski, Stylianos Kyrimis, Victoria A. Hewitt, Lindsay-Marie Armstrong and Robert Raja*

10318

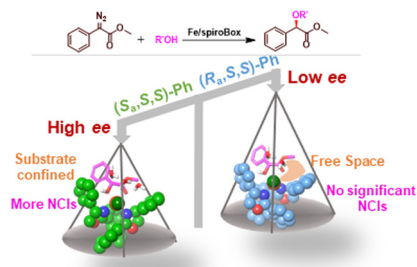
Pure green MR-TADF polymer by Friedel-Crafts polymerization:



Multi-resonance thermally activated delayed fluorescence polymers for high-efficiency and narrowband solution-processed green OLEDs

Ke Xu, Nengquan Li, Hong Lin, Zeyuan Ye, Pengcheng Jiang, Jingsheng Miao, Xiaosong Cao* and Chuluo Yang

10322



Unveiling the importance of catalyst framework and non covalent interactions in an asymmetric Fe-catalyzed O–H insertion: insights from computational tools

Reena Balhara and Garima Jindal*

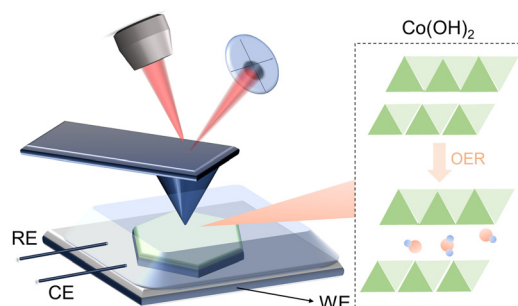


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10326

Probing the structural evolution of cobalt hydroxide in electrochemical water splitting

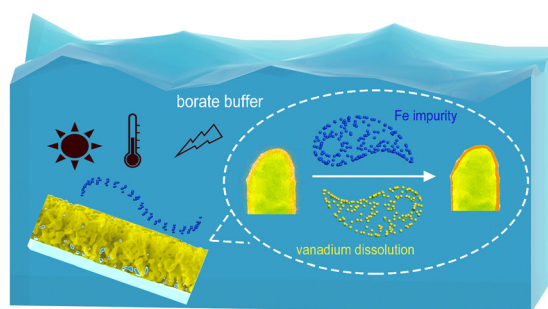
Chunlei Yang, Tingyu Lu and Liming Zhang*



10330

Boosting the photoelectrochemical performance of BiVO₄ by borate buffer activation: the role of trace iron impurities

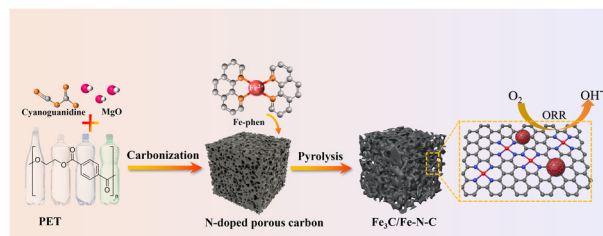
Xiaohu Cao, Xuemeng Yu, Xihan Chen* and Ruquan Ye*



10334

Fe–N_x sites coupled with Fe₃C on porous carbon from plastic wastes for oxygen reduction reaction

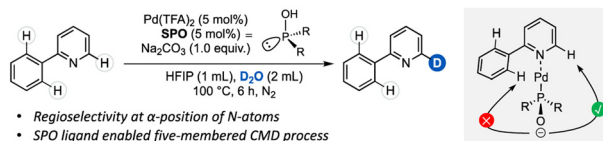
Xiaole Jiang, Rui Zhang, Qingqing Liao, Hanjun Zhang, Yaoyue Yang and Fan Zhang*



10338

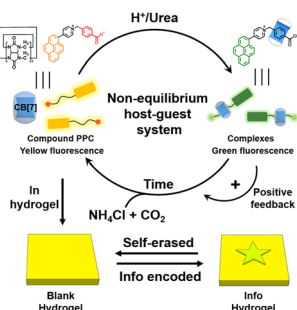
Geometric constraints regulated regioselectivity: Pd-catalyzed α -deuteration of pyridines with secondary phosphine oxide

Chenxu Zheng, Jiben Xue, Zhi-Jiang Jiang,* Jiawei Han, Jiaxin Wang, Jian-Fei Bai, Jia Chen and Zhanghua Gao*



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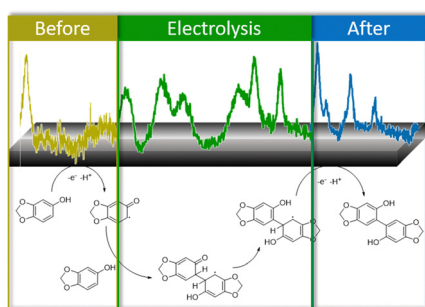
10342



Transient cucurbit[7]uril-mediated host–guest complexes for time-dependent fluorescence and information-self-erasing hydrogel

Qian Wang, Zhen Qi, Hanren Xu, Xianghao Li, Yifan Lei and Da-Hui Qu*

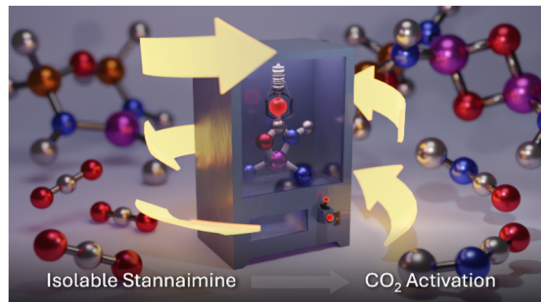
10346



Solvent-dependent reaction mechanisms in the electrooxidative coupling of phenols: insights by *operando* Raman spectroelectrochemistry

Christian Krumbiegel, Hoang Khoa Ly and Inez M. Weidinger*

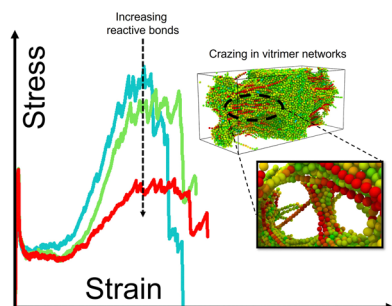
10350



An isolable stannamine and its cycloaddition/ metathesis reactions with carbon dioxide

Matthew J. Evans, Joseph M. Parr, Dat T. Nguyen and Cameron Jones*

10354



Effect of dynamic bond concentration on the mechanical properties of vitrimers

Harsh Pandya and Fardin Khabaz*

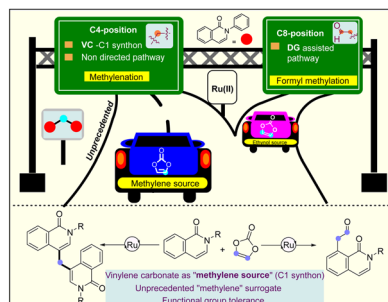


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10358

Engaging vinylene carbonate in ruthenium-catalyzed regioselective C-4 methylenation and C-8 formylmethylation of isoquinolinones

Dolly David Thalakkottukara and Thirumanavelan Gandhi*



10362

Construction of binary metal–organic cage-based materials via a “covalently linked plus cage encapsulated” strategy

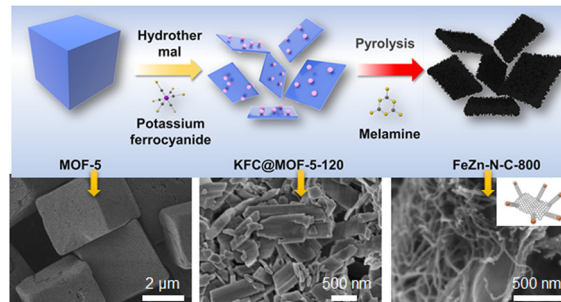
Pei Lai, Jia-Xuan Wu, Liang-Hua Wu, Lai-Yi Li, Song-Liang Cai and Sheng-Run Zheng*



10366

In situ green architecture of the 3D FeZn–N–C based electrocatalyst for efficient oxygen reduction

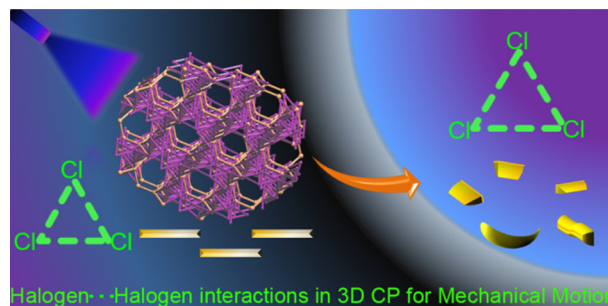
Kui Fu, Biao Ma, Jianling Liu, Meng Zhou, Yihai Xing, Xiangfeng Wei, Fancheng Meng and Jiehua Liu*



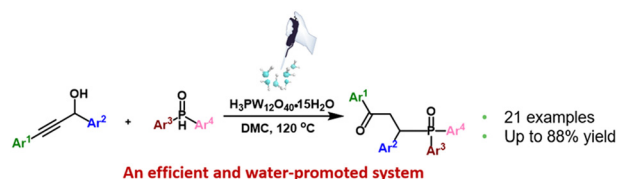
10370

Impact of halogen···halogen interaction on the mechanical motion of a 3D Pb(II) coordination polymer of elusive topology

Samim Khan, Sanobar Naaz, Shamim Ahmad, Rosa M. Gomila, Anjana Chanthapally, Antonio Frontera* and Mohammad Hedayetullah Mir*



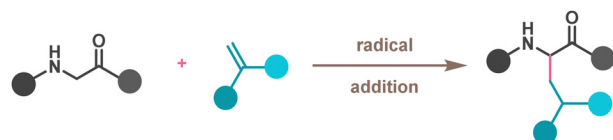
10374



Keggin structure heteropolyacid-catalyzed phosphinylation of secondary propargyl alcohols with phosphine oxides to γ -ketophosphine oxides

Yang Yang, Shuyan Liang, Hongfeng Zhuang, Feng Han,*
Wenxuan Zhang and Chengxia Miao*

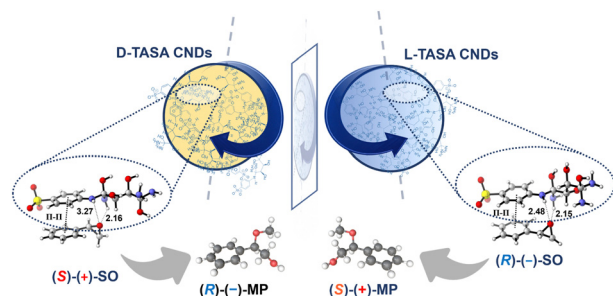
10378



Radical-polar crossover reaction of glycine derivatives

Youwan Ye, Xin Zhang, Peng Kong, Yong Yuan,
Xiaolong Zhao and Congde Huo*

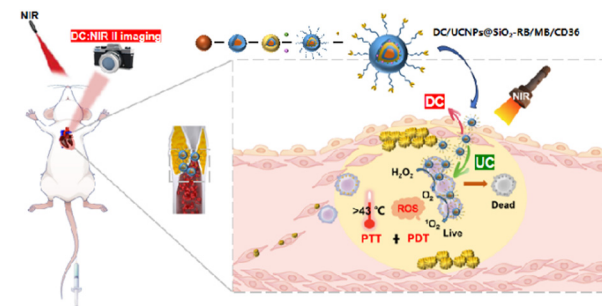
10382



Tartaric acid-derived chiral carbon nanodots for catalytic enantioselective ring-opening reactions of styrene oxide

Xinyi Zhao, Yana Reva, Bikash Jana, Daniel Langford,
Marina Kinzelmann, Zhipeng Zhang, Qi Liu,*
Thomas Drewello, Dirk M. Guldi* and Xiaoqing Chen*

10386



Multi-effective nanoplatform with down/upconversion dual-mode emissions for NIR-II imaging and PDT/PTT synergistic therapy of early atherosclerosis

Wen Gao, Lijun Lv, Guanghan Li, Hongxiu Zhao, Jia Zhou,*
Yuan Cheng* and Bo Tang*

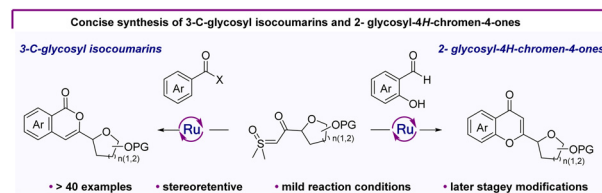


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10390

Concise synthesis of 3-C-glycosyl isocoumarins and 2-glycosyl-4H-chromen-4-ones

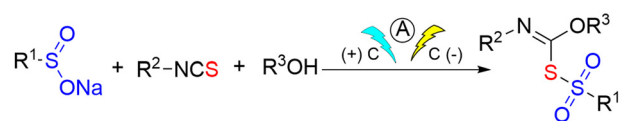
Deng-Yin Liu, Yu-Jun Ruan, Xiao-Li Wang, Xin-Yue Hu, Peng-Fei Wang, Miao-Miao Wen, Cong-Zhen Zhang, Yu-He Xiao and Xu-Ge Liu*



10394

Electrochemical promoted three-component reaction to unsymmetric thiosulfonates

Hong-Min Lin, Sai-Yan Ren, Fei-Hu Cui,* Ying-Ming Pan and Hai-Tao Tang*



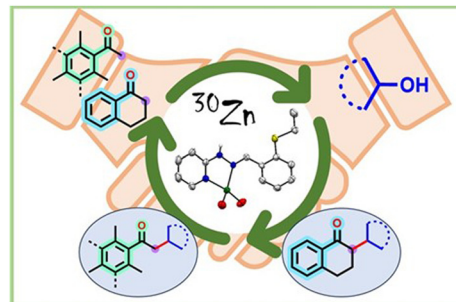
✓ Three-component reaction ✓ Metal-free & Oxidant free

✓ Electrochemical synthesis of unsymmetric thiosulfonates

10398

Redox-enabled cooperative catalysis by activating secondary alcohols using low-valent Zn complexes

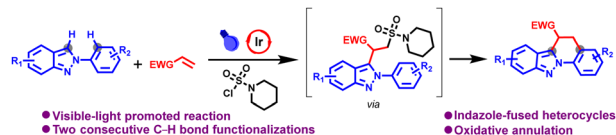
Arup Samanta, Amit Chaubey, Debjyoti Pal, Krishna Majhi and Dipankar Srimani*



10402

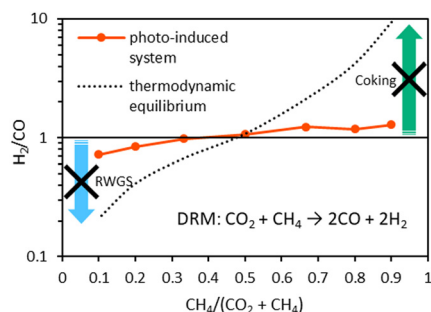
Non-directed oxidative annulation of 2-arylindazoles with electron deficient olefins via visible light photocatalysis

Krishna Kanta Das and Alakananda Hajra*



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10406

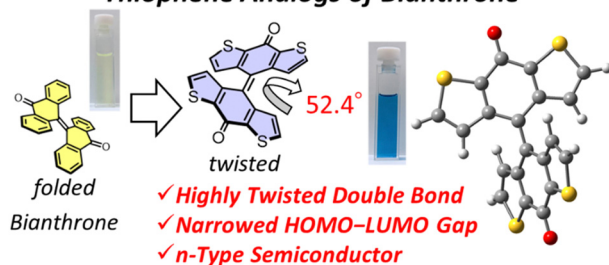


Sustaining syngas production at a near-unity H_2/CO ratio in the photo-induced dry reforming of methane independent of the reactant gas composition

Hiroaki Kaneko, Yohei Cho, Tomotaka Sugimura, Ayako Hashimoto, Akira Yamaguchi and Masahiro Miyauchi*

10410

Thiophene Analogs of Bianthrone



Twisted diphenoquinones fused with thiophene rings: thiophene analogs of bianthrone

Yohei Adachi,* Yuto Hattori, Tsubasa Miki, Itaru Osaka and Joji Ohshita*

CORRECTION

10414

Correction: Thorium amidates function as single-source molecular precursors for thorium dioxide

Mark D. Straub, Erik T. Ouellette, Michael A. Boreen, Jacob A. Branson, Alex Ditter, A. L. David Kilcoyne, Trevor D. Lohrey, Matthew A. Marcus, Maria Paley, José Ramirez, David K. Shuh, Stefan G. Minasian* and John Arnold*

