

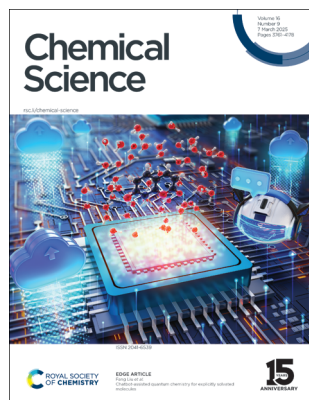
Chemical Science

rsc.li/chemical-science

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 16(9) 3761–4178 (2025)



Cover
See Fang Liu *et al.*,
pp. 3852–3864. Image
reproduced by permission of
Fang Liu from *Chem. Sci.*,
2025, **16**, 3852.



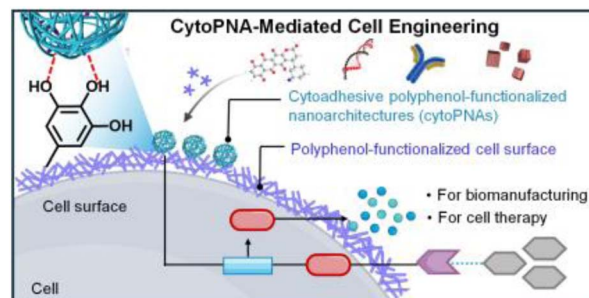
Inside cover
See Masahiro Terada *et al.*,
pp. 3865–3871. Image
reproduced by permission of
Masahiro Terada from *Chem.
Sci.*, 2025, **16**, 3865. Image
created by Mai Tachibana.

PERSPECTIVE

3774

Engineering live cell surfaces with polyphenol-functionalized nanoarchitectures

Yunxiang He, Qinling Liu, Yuanmeng He, Siqi Deng and Junling Guo*

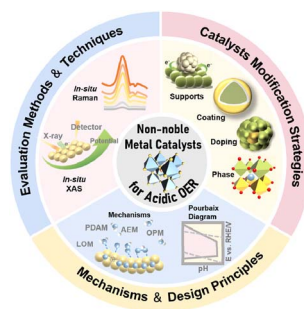


REVIEWS

3788

Noble-metal-free catalysts for the oxygen evolution reaction in acids

Junwei Han, Qian Liu, Yue Yang and Hao Bin Wu*



RSC Advances

**At the heart of open access for
the global chemistry community**

Editor-in-chief

Russell J Cox

Leibniz Universität Hannover, Germany

We stand for:



Breadth We publish work in all areas of chemistry and reach a global readership



Quality Research to advance the chemical sciences undergoes rigorous peer review for a trusted, society-run journal



Affordability Low APCs, discounts and waivers make publishing open access achievable and sustainable



Community Led by active researchers, we publish quality work from scientists at every career stage, and all countries

Submit your work now

rsc.li/rsc-advances

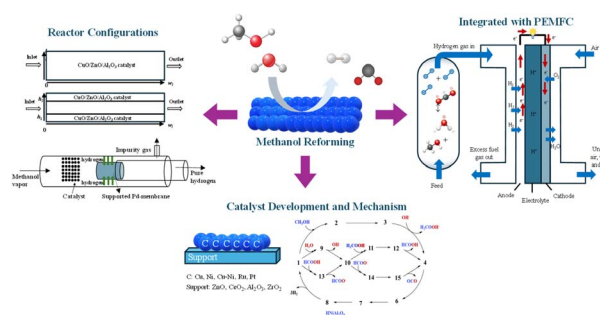
[@RSC_Adv](#)

REVIEWS

3810

Advances in catalyst and reactor design for methanol steam reforming and PEMFC applications

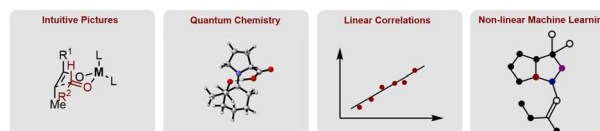
Eleana Harkou, Hui Wang, George Manos, Achilleas Constantinou* and Junwang Tang*



3832

Connecting the complexity of stereoselective synthesis to the evolution of predictive tools

Jiajing Li and Jolene P. Reid*

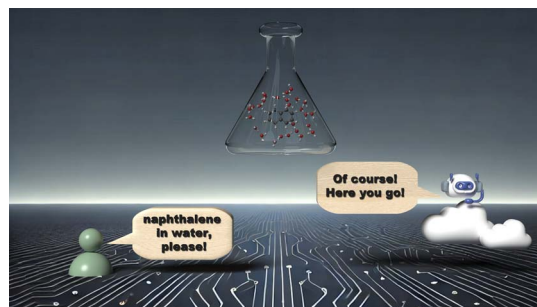


EDGE ARTICLES

3852

Chatbot-assisted quantum chemistry for explicitly solvated molecules

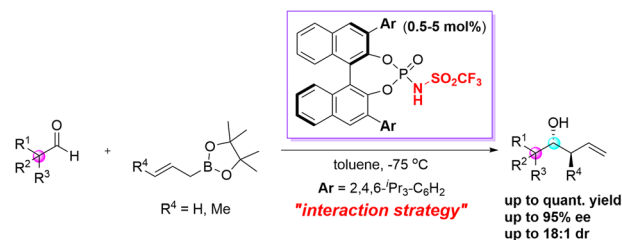
Rohit S. K. Gadde, Sreelaya Devaguptam, Fangning Ren, Rajat Mittal, Lechen Dong, Yao Wang and Fang Liu*



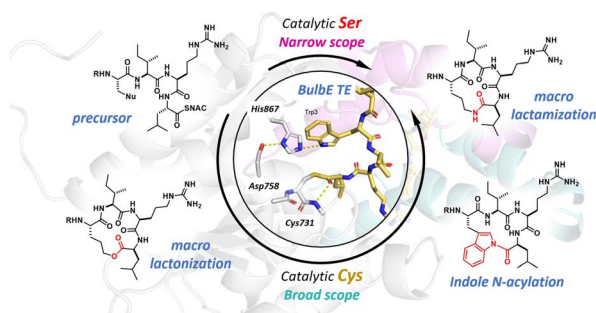
3865

Chiral Brønsted acid-catalysed enantioselective allylboration of sterically hindered aldehydes enabled by multiple hydrogen bonding interactions

Shigenobu Umemiya, Sotaro Osaka, Naoya Shinagawa, Takumi Hirata and Masahiro Terada*



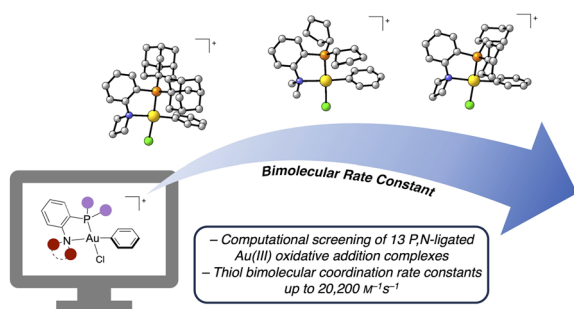
3872



Enzymatic peptide macrocyclization via indole-N-acylation

Hiroto Maruyama, Yuito Yamada, Yasuhiro Igarashi, Kenichi Matsuda* and Toshiyuki Wakimoto*

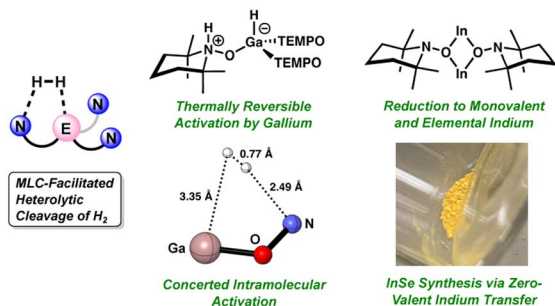
3878



In silico screening of *P,N*-ligands facilitates optimization of Au(III)-mediated *S*-arylation

Joseph W. Treacy, James A. R. Tilden, Elaine Y. Chao, Zihuan Fu, Alexander M. Spokoyny,* K. N. Houk* and Heather D. Maynard*

3888

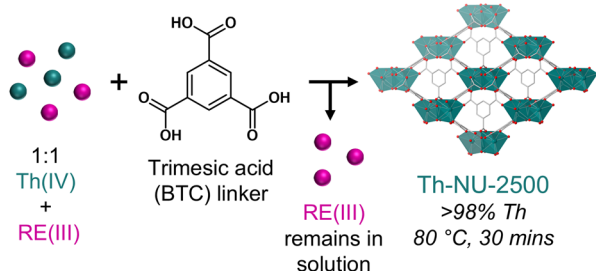


Metal–ligand cooperativity enables zero-valent metal transfer

Martin-Louis Y. Riu, Jing-Ran Shan, K. N. Houk* and Matthew Nava*

3895

Selective crystallization of Th-MOF from mixture



Thorium metal–organic framework crystallization for efficient recovery from rare earth element mixtures

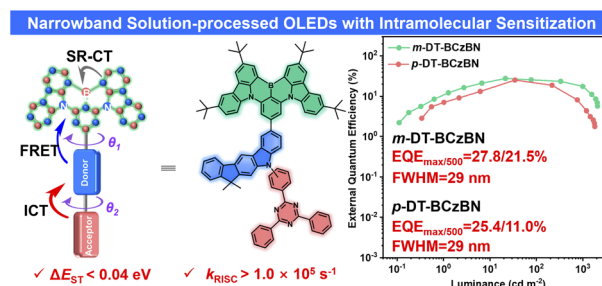
Madeleine A. Gaidimas, Courtney S. Smoljan, Zi-Ming Ye, Charlotte L. Stern, Christos D. Malliakas, Kent O. Kirlikovali and Omar K. Farha*



3904

Intramolecular charge transfer assisted multi-resonance thermally activated delayed fluorescence emitters for high-performance solution-processed narrowband OLEDs

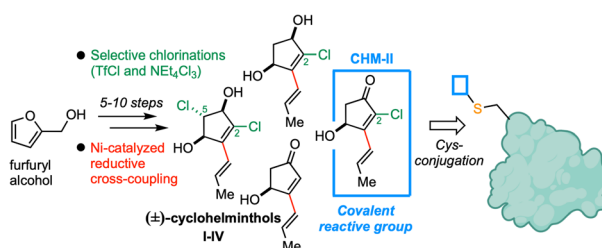
Zhi Yang, Shengyu Li, Lei Hua, Shian Ying, Yuchao Liu,* Zhongjie Ren* and Shouke Yan*



3916

Total syntheses of cyclohelminthol I–IV reveal a new cysteine-selective covalent reactive group

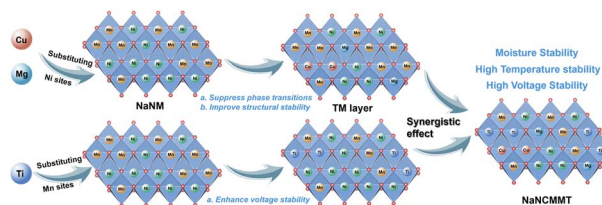
Thomas T. Paulsen, Anders E. Kiib, Gustav J. Wørmer, Stephan M. Hacker and Thomas B. Poulsen*



3928

Periodic law-guided design of highly stable O3-type layered oxide cathodes for practical sodium-ion batteries

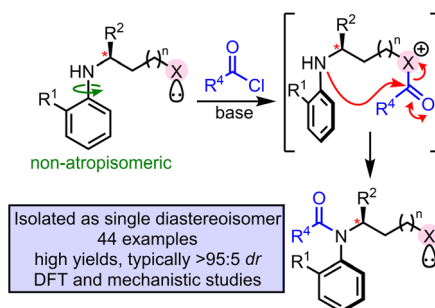
Yuan-Bo Wu, Hai-Yan Hu,* Jia-Yang Li, Hang-Hang Dong, Yan-Fang Zhu,* Shuang-Qiang Chen, Na-Na Wang, Jia-Zhao Wang and Yao Xiao*



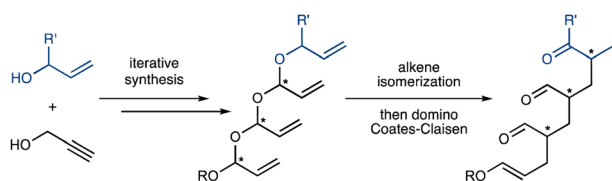
3938

Stereoselective synthesis of atropisomeric amides enabled by intramolecular acyl transfer

Jack M. Wootton, Natalie J. Roper, Catrin E. Morris, Victoria E. Maguire, Lee C. Duff, Paul G. Waddell, Adrian C. Whitwood, Richard J. Gammons, Afjal H. Miah, Jason M. Lynam, Roly J. Armstrong* and William P. Unsworth*



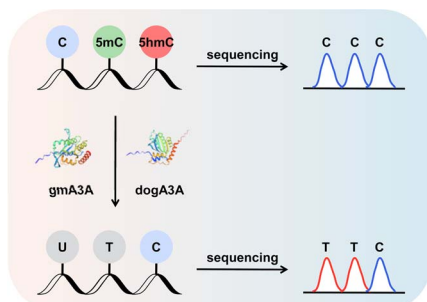
3946



Iterative synthesis of stereodefined polyacetals and their domino-Coates-Claisen rearrangement

Itai Massad* and Ilan Marek

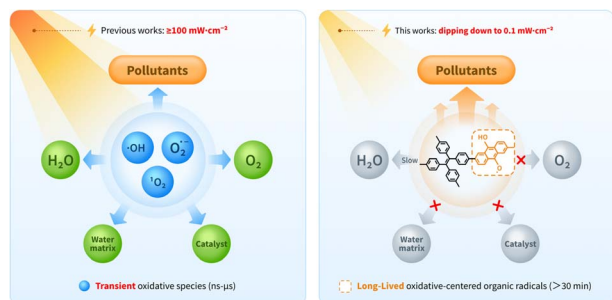
3953



Orthologous mammalian A3A-mediated single-nucleotide resolution sequencing of DNA epigenetic modification 5-hydroxymethylcytosine

Xia Guo, Jianyuan Wu, Tong-Tong Ji, Min Wang, Shan Zhang, Jun Xiong, Fang-Yin Gang, Wei Liu, Yao-Hua Gu, Yu Liu,* Neng-Bin Xie* and Bi-Feng Yuan*

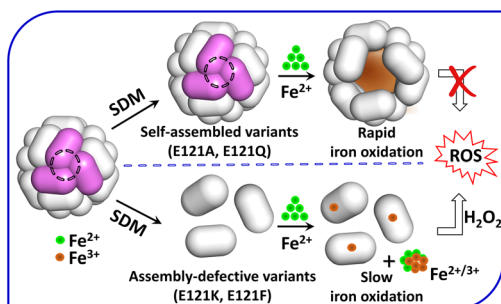
3964



Initiating photocatalytic degradation of organic pollutants under ultra-low light intensity via oxygen-centered organic radicals

Yingge He, Yuyan Huang, Yu-Xin Ye,* Yanchun Deng, Xin Yang* and Gangfeng Ouyang*

3978



Rational pore engineering reveals the relative contribution of enzymatic sites and self-assembly towards rapid ferroxidase activity and mineralization: impact of electrostatic guiding and cage-confinement in bacterioferritin

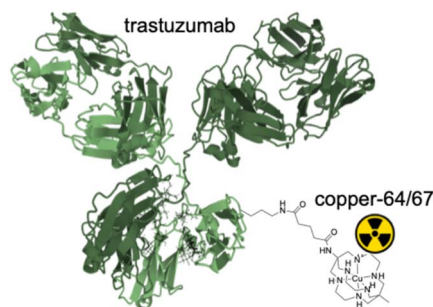
Akankshika Parida, Gargee Bhattacharyya, Swagatika Mallik and Rabindra K. Behera*



3998

Potential theranostics of breast cancer with copper-64/67 sarcophagine-trastuzumab

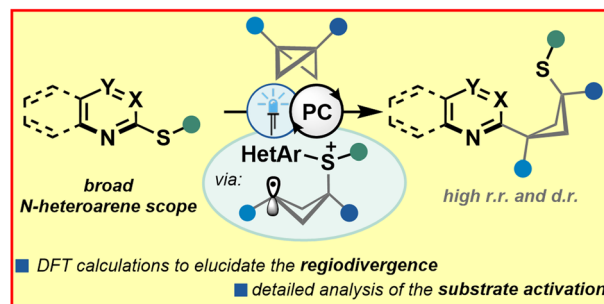
Stacey E. Rudd,* Jessica Van Zuylekom, Carleen Cullinane, Benjamin J. Blyth and Paul S. Donnelly*



4006

Mechanistic insights into the regiodivergent insertion of bicyclo[1.1.0]butanes towards carbocycle-tethered N-heteroarenes

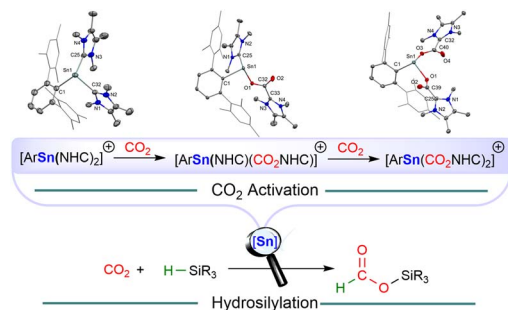
Johannes E. Erchinger, Madina Lenz, Poulami Mukherjee, Yan-Bo Li, Adhya Suresh, Constantin G. Daniliuc, Osvaldo Gutierrez* and Frank Glorius*



4014

CO₂ hydrosilylation catalyzed by an N-heterocyclic carbene (NHC)-stabilized stannylumidene

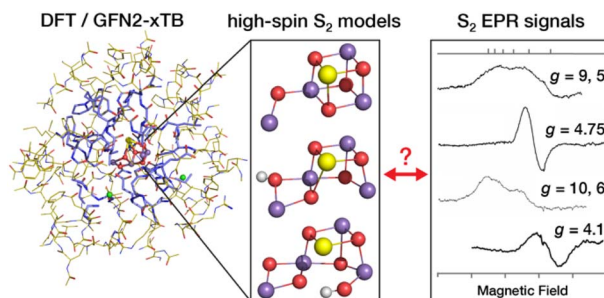
Dechuang Niu, Arseni Kostenko, John A. Kelly, Debotra Sarkar, Huihui Xu and Shigeyoshi Inoue*



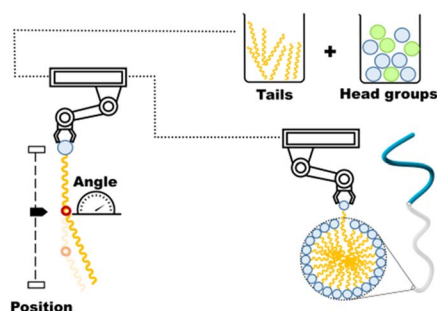
4023

On the nature of high-spin forms in the S₂ state of the oxygen-evolving complex

Markella Aliki Mermigki, Maria Drosou and Dimitrios A. Pantazis*



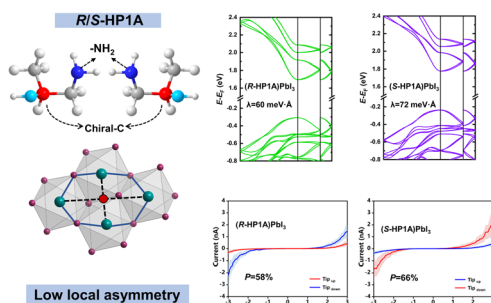
4048



Exploiting spatial isomerism to modulate the assembled phase and rheological response of compositionally identical sugar-based surfactants

Jia-Fei Poon, Alfonso Cabezón, Alessandro Gulotta, Najet Mahmoudi, Stefan Ulvenlund, Rebeca Garcia-Fandiño and Adrian Sanchez-Fernandez*

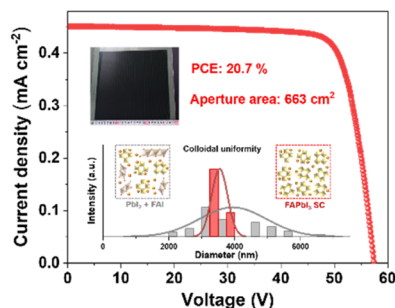
4057



Chiral perovskites with a unique 1D chain structure: impact of chiral ligand geometry on local inversion asymmetry and chiral-induced spin selectivity

Hongxu Li, Rui Cao, Min Tao, Jiawei Jiang* and Yin Xiao*

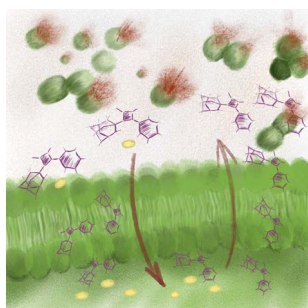
4066



Colloidally uniform single-crystal precursors enable uniform FAPbI₃ films for efficient perovskite submodules

Yugang Liang, Yingping Fan, Zhixiao Qin, Lei Lu, Haifei Wang, Meng Ren, Fang Liu, Yanfeng Miao, Yuetian Chen* and Yixin Zhao*

4075



Uncovering the potent antimicrobial activity of squaramide based anionophores – chloride transport and membrane disruption

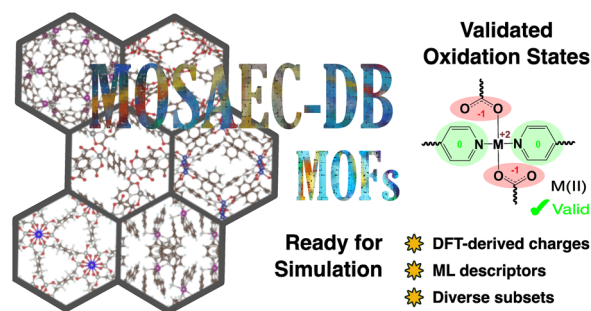
Luke E. Brennan, Xuanyang Luo, Farhad Ali Mohammed, Kevin Kavanagh and Robert B. P. Elmes*



4085

MOSAEC-DB: a comprehensive database of experimental metal–organic frameworks with verified chemical accuracy suitable for molecular simulations

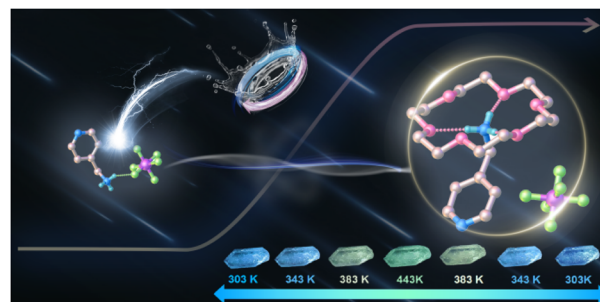
Marco Gibaldi, Anna Kapeliukha, Andrew White, Jun Luo, Robert Alex Mayo, Jake Burner and Tom K. Woo*



4101

Thermal-responsive luminescence/dielectric responses with reversibly shifted light emissions

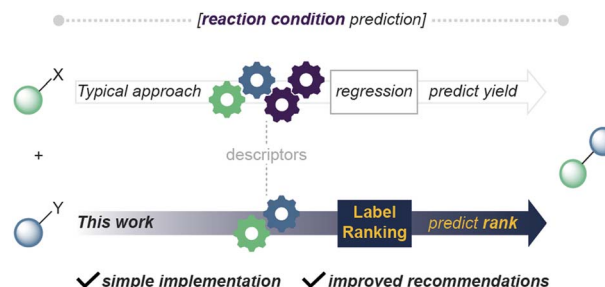
Ming Zhu, Pei-Zhi Huang, Lin-Mei Li, Yi-Xuan Yang, Lei Pan, Zhi-Jie Wang, Hao-Fei Ni, Feng-Wen Zhang, Gele Teri, Zhi-Xu Zhang, Zunqi Liu,* Da-Wei Fu* and Yi Zhang*



4109

Recommending reaction conditions with label ranking

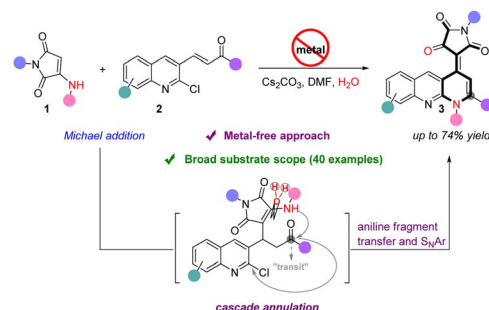
Eunjae Shim, Ambuj Tewari, Tim Cernak and Paul M. Zimmerman*



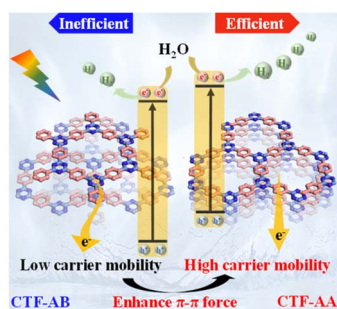
4119

Discovery of intermolecular cascade annulation for dihydrobenzo[*b*][1,8]naphthyridine-ylidene-pyrrolidinetriones

Wenjun Luo,* Xinghua Zheng, Hehua Lin, Li Fu, Lipeng Long, Daohong Yu, Zhengwang Chen, Min Yang* and Zhong-Xia Wang*



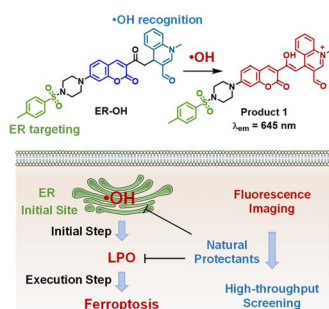
4127



Phase engineering of covalent triazine frameworks to enhance photocatalytic hydrogen evolution performance

Peng Wu, Jijun Lu, Fengshuo Xi, Xiufeng Li, Wenhui Ma, Fangyuan Kang, Shaoyuan Li,* Zhongqiu Tong* and Qichun Zhang*

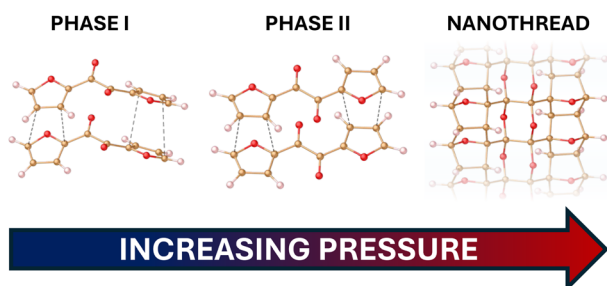
4136



An endoplasmic reticulum-targeting hydroxyl radical fluorescent probe for imaging of ferroptosis and screening of natural protectants

Hongyu Li,* Xue Luo, Yue Jian, Jiajia Lv, Xinmin Li, Jie Gao, Wen Shi, Xiaohua Li, Zeli Yuan* and Huimin Ma*

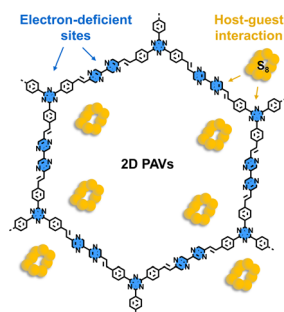
4144



Double-core nanothread formation from α -furil via a pressure-induced planarization pathway

Samuel G. Dunning,* Anirudh Hari, Li Zhu, Bo Chen, George D. Cody, Sebastiano Romi, Dongzhou Zhang and Timothy A. Strobel*

4152



Electron-deficient two-dimensional poly(arylene vinylene) covalent organic frameworks: efficient synthesis and host-guest interaction

Albrecht L. Waentig, Xiaodong Li, Meng Zhao, Sattwick Haldar, Philomene Koko, Silvia Paasch, Alina Mueller, Karen M. Garcia Alvarez, Florian Auras, Eike Brunner, Andreas Schneemann, Jia-Qi Huang, Stefan Kaskel,* Mingchao Wang* and Xinliang Feng*

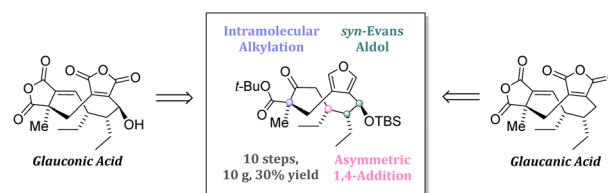


EDGE ARTICLES

4159

Asymmetric total synthesis of glauconic and glaucanic acid

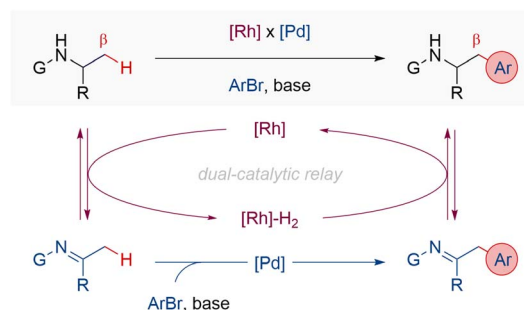
Jan Paciorek, Christian Steinborn, Igor Gordiy, Immanuel Plangger, Dirk Schmutzler, David M. Barber, Klaus Wurst, Sereina Riniker* and Thomas Magauer*



4167

Dual relay Rh-/Pd-catalysis enables β -C(sp³)-H arylation of α -substituted amines

Shuailong Li, Sani Yahaya, Jan Bojanowski, Giulio Ragazzon and Pawet Dydio*



CORRECTION

4175

Correction: Enhancing the antibacterial efficacy of vancomycin analogues: targeting metallo- β -lactamases and cell wall biosynthesis

Paramita Sarkar, Weipan Xu, Melissa Vázquez-Hernández, Geetika Dhanda, Shubhandra Tripathi, Debajyoti Basak, Hexin Xie, Lea Schipp, Pascal Dietze, Julia E. Bandow, Nisanth N. Nair and Jayanta Halder*

