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PERSPECTIVES

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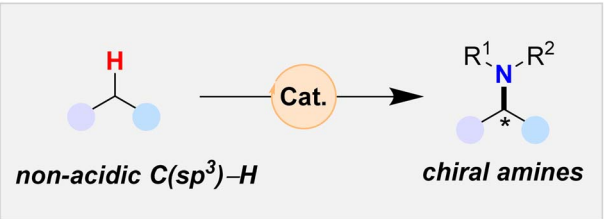
Recent developments for intermolecular enantioselective amination of non-acidic C(sp^3)–H bonds

Heng-Hui Li, Xuemeng Chen and Søren Kramer*



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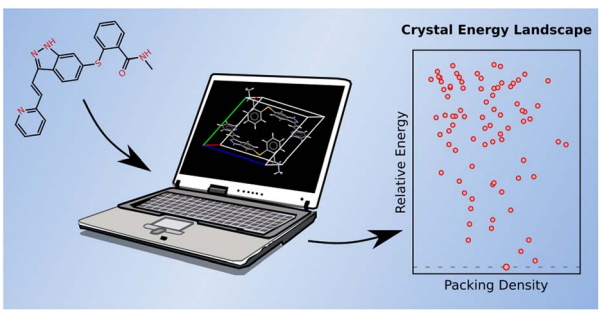
Frontiers of molecular crystal structure prediction for pharmaceuticals and functional organic materials

Gregory J. O. Beran



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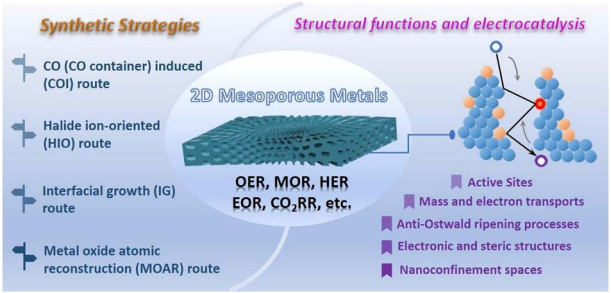
Two-dimensional mesoporous metals: a new era for designing functional electrocatalysts

Hao Lv and Ben Liu*



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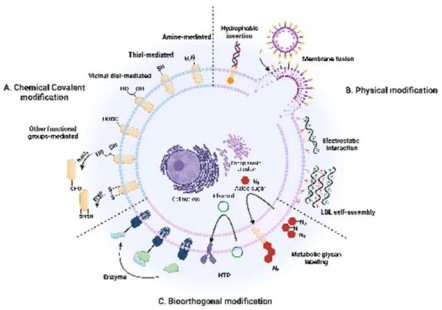
Advancing cell surface modification in mammalian cells with synthetic molecules

He Yang, Lihua Yao, Yichen Wang, Gaojian Chen* and Hong Chen*



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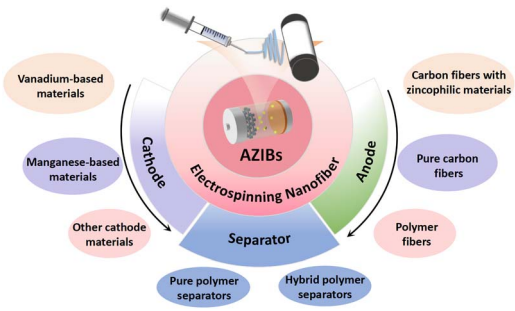
Recent advances in electrospinning nanofiber materials for aqueous zinc ion batteries

Sinian Yang, Shunshun Zhao and Shimou Chen*



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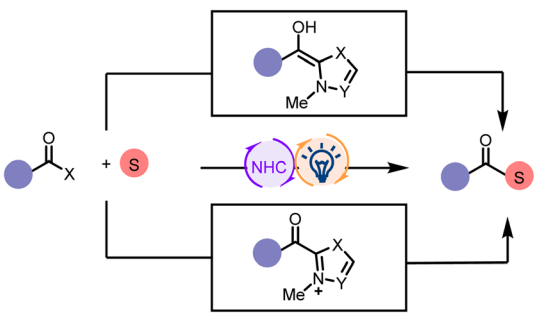
Recent advances in combining photo- and N-heterocyclic carbene catalysis

Xiaochen Wang, Senhui Wu, Rongxin Yang, Hongjian Song, Yuxiu Liu and Qingmin Wang*



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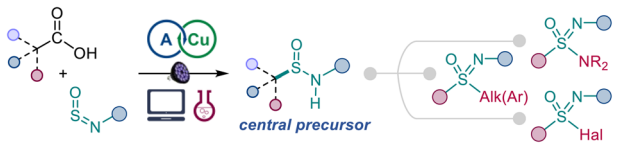

Kinetically-driven reactivity of sulfinylamines enables direct conversion of carboxylic acids to sulfinamides

Hang T. Dang, Arka Porey, Sachchida Nand, Ramon Trevino, Patrick Manning-Lorino, William B. Hughes, Seth O. Fremin, William T. Thompson, Shree Krishna Dhakal, Hadi D. Arman and Oleg V. Larionov*

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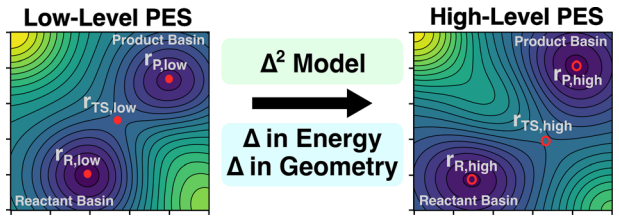

Δ^2 machine learning for reaction property prediction

Qiyuan Zhao, Dylan M. Anstine, Olexandr Isayev* and Brett M. Savoie*

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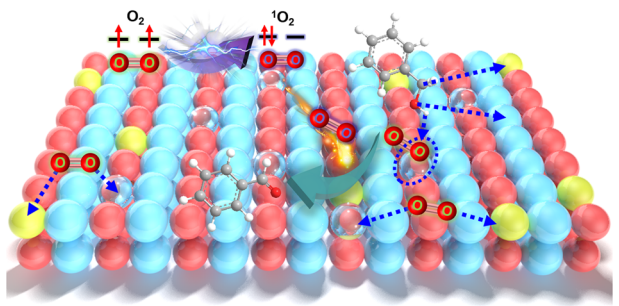

Spontaneous generation of singlet oxygen on microemulsion-derived manganese oxides with rich oxygen vacancies for efficient aerobic oxidation

Jun Tang, Junbao Chen, Zhanyu Zhang, Qincheng Ma, Xiaolong Hu, Peng Li, Zhiqiang Liu, Peixin Cui, Chao Wan,* Qingping Ke,* Lei Fu, Jeonghun Kim, Takashi Hamada, Yunqing Kang* and Yusuke Yamauchi*

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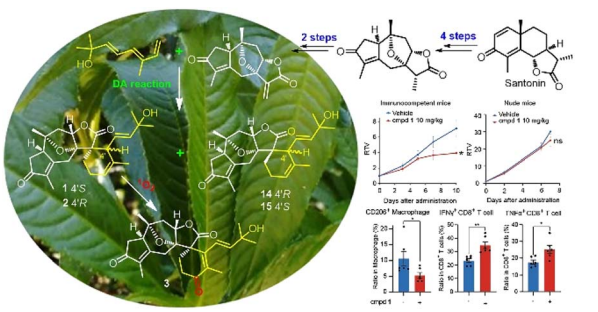

Unprecedented sesterterpenoids, orientanoids A–C: discovery, bioinspired total synthesis and antitumor immunity

Cheng-Yu Zheng, Jin-Xin Zhao, Chang-Hao Yuan, Xia Peng, Meiyu Geng, Jing Ai,* Yao-Yue Fan* and Jian-Min Yue*

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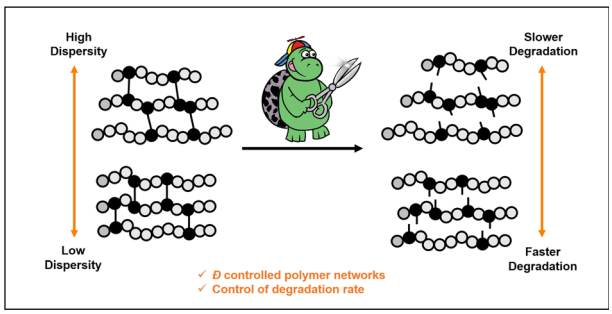
Controlling primary chain dispersity in network polymers: elucidating the effect of dispersity on degradation

Takanori Shimizu, Richard Whitfield,* Glen R. Jones, Ibrahim O. Raji, Dominik Konkolewicz, Nghia P. Truong and Athina Anastasaki*



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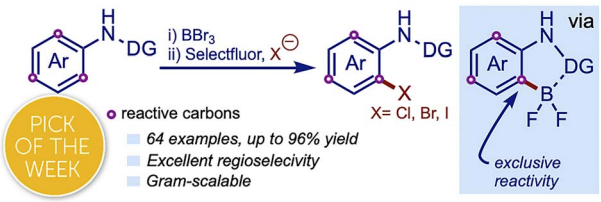
Regioselective *ortho* halogenation of *N*-aryl amides and ureas *via* oxidative halodeboronation: harnessing boron reactivity for efficient C–halogen bond installation

Ganesh H. Shinde, Ganesh S. Ghotekar, Francoise M. Amombo Noa, Lars Öhrström, Per-Ola Norrby and Henrik Sundén*



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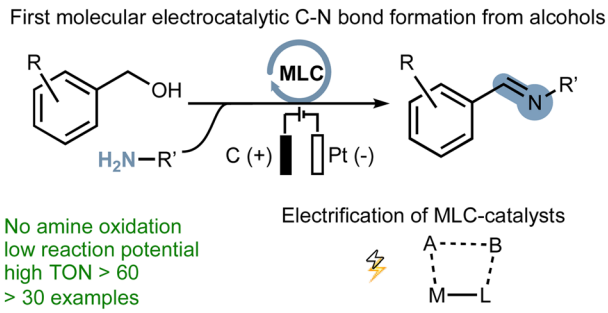
Merging electrocatalytic alcohol oxidation with C–N bond formation by electrifying metal–ligand cooperative catalysts

Sitthichok Kasemthaveechok, Patrice Gérardo and Niklas von Wolff*



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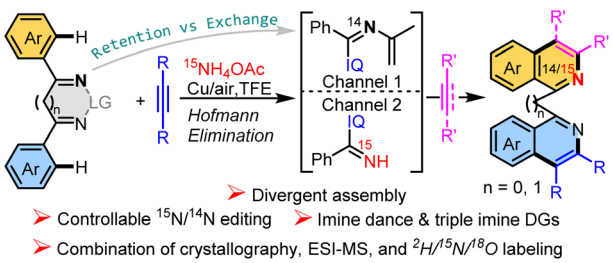
Mechanistic insights into an NH_4OAc-promoted imine dance in Rh-catalysed multicomponent double C–H annulations through an N-retention/exchange dual channel

Shiqing Li,* Shihai Lv, Yanyan Yang, Peiyan Zhu, Dongbing Zhao* and Ming-Hua Zeng*



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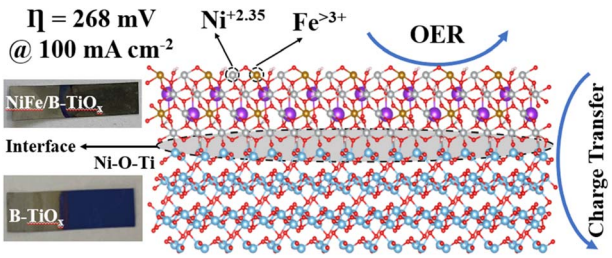

Defective blue titanium oxide induces high valence of NiFe-(oxy)hydroxides over heterogeneous interfaces towards high OER catalytic activity

Tingxi Zhou, Yifei Yang, Yike Jing, Yuling Hu, Fei Yang, Wei Sun* and LeiLei He*

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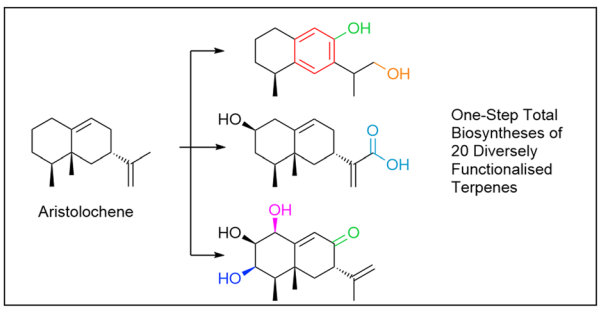

Rapid discovery of terpene tailoring enzymes for total biosynthesis

Yunlong Sun, Jennifer Gerke, Kevin Becker, Eric Kuhnert, Bart Verwaaijen, Daniel Wibberg, Jörn Kalinowski, Marc Stadler and Russell J. Cox*

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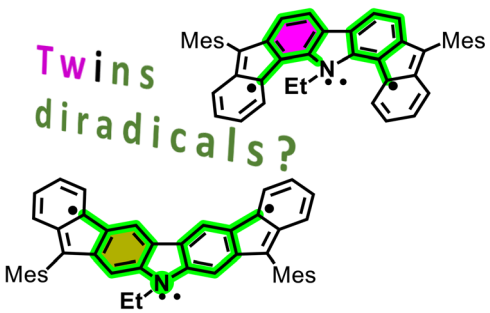

Isomerism tunes the diradical character of difluorenopyrroles at constant Hückel-level anti-aromaticity

Ryotaro Moriyasu, Sergio Moles Quintero, Carlos J. Gómez-García, Kazumasa Suzuki, Chitoshi Kitamura, Michihisa Murata, Mercedes Alonso, Juan Casado* and Shin-ichiro Kato*

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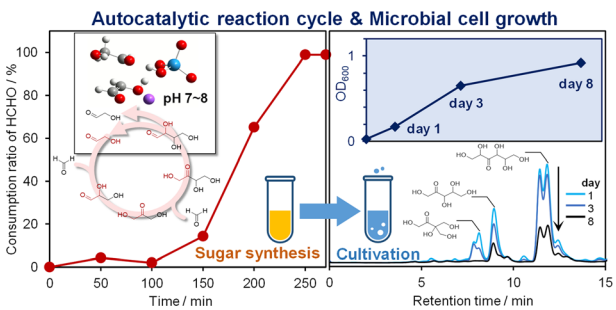

Construction of an autocatalytic reaction cycle in neutral medium for synthesis of life-sustaining sugars

Hiro Tabata, Genta Chikatani, Hiroaki Nishijima, Takashi Harada, Rika Miyake, Souichiro Kato, Kensuke Igarashi, Yoshiharu Mukouyama, Soichi Shirai, Minoru Waki, Yoko Hase* and Shuji Nakanishi*

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Dinitrogen cleavage by a dinuclear uranium(III) complex

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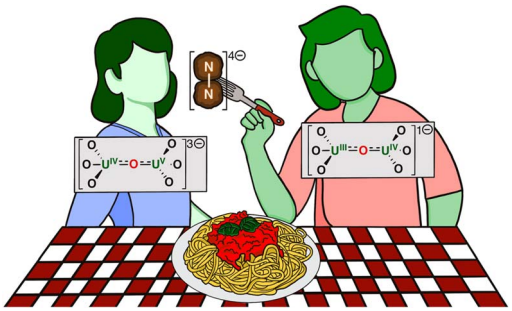

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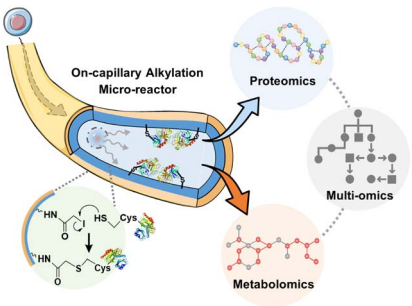
On-capillary alkylation micro-reactor: a facile strategy for proteo-metabolome profiling in the same single cells

Yingyun He, Huiming Yuan,* Yu Liang, Xinxin Liu, Xiaozhe Zhang, Yahui Ji, Baofeng Zhao, Kaiguang Yang, Jue Zhang, Shen Zhang, Yukui Zhang and Lihua Zhang*



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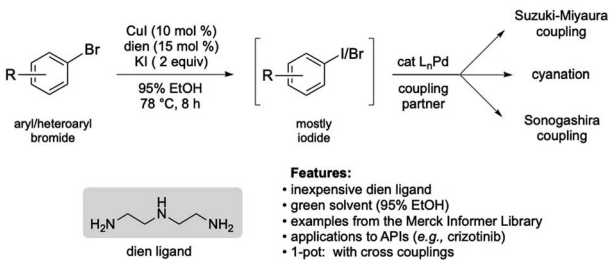
Challenging cross couplings, in water, aided by *in situ* iodination of (hetero)aromatic bromides

Rohan M. Thomas, David B. Obbard and Bruce H. Lipshutz*



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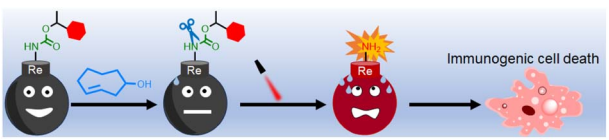
Bioorthogonal dissociative rhenium(I) photosensitisers for controlled immunogenic cell death induction

Guang-Xi Xu, Lawrence Cho-Cheung Lee, Peter Kam-Keung Leung, Eunice Chiu-Lam Mak, Justin Shum, Kenneth Yin Zhang, Qiang Zhao and Kenneth Kam-Wing Lo*



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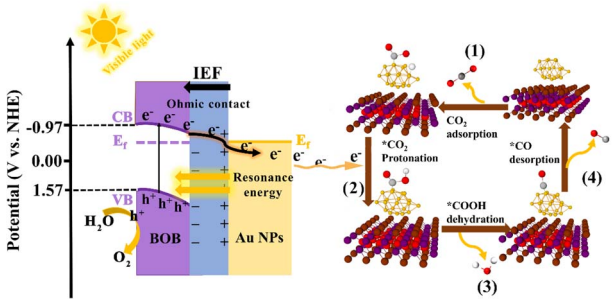
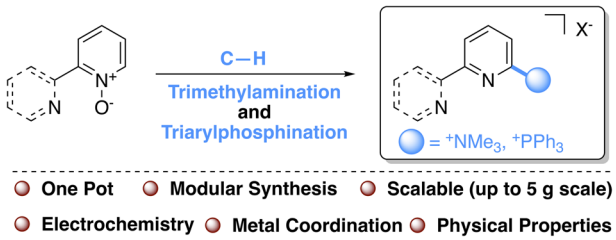


Synergistic coupling of interface ohmic contact and LSPR effects over Au/$Bi_{24}O_{31}Br_{10}$ nanosheets for visible-light-driven photocatalytic CO_2 reduction to CO

Jie Liu, Yu Xie,* Yiqiao Wang, Kai Yang, Shuping Su, Yun Ling and Pinghua Chen

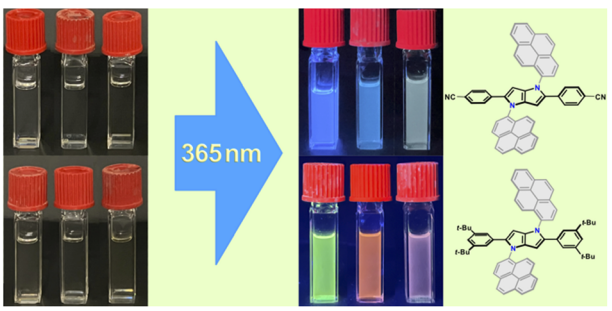
13530



Modular preparation of cationic bipyridines and azaarenes *via* C–H activation

Ryan P. King and Jenny Y. Yang*

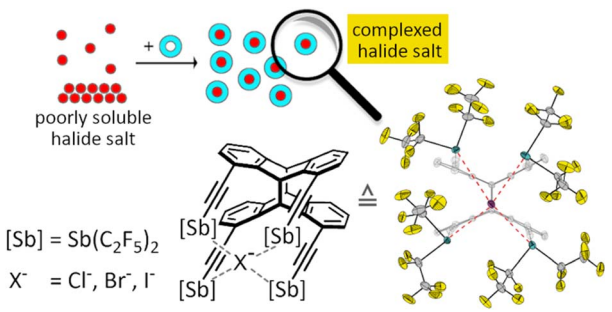
13537



The magic of biaryl linkers: the electronic coupling through them defines the propensity for excited-state symmetry breaking in quadrupolar acceptor–donor–acceptor fluorophores

John A. Clark, Damian Kusy, Olena Vakuliuk, Maciej Krzeszewski, Krzysztof J. Kochanowski, Beata Koszarna, Omar O'Mari, Denis Jacquemin,* Daniel T. Gryko* and Valentine I. Vullev*

13551



Poly-pnictogen bonding: trapping halide ions by a tetradentate antimony(III) Lewis acid

J. Louis Beckmann, Jonas Krieft, Yury V. Vishnevskiy, Beate Neumann, Hans-Georg Stammler and Norbert W. Mitzel*

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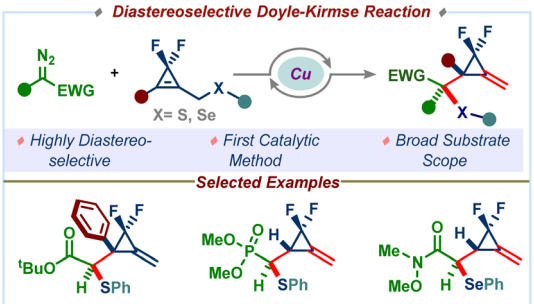
EDGE ARTICLES

13560

A highly diastereoselective strain-release Doyle–Kirmse reaction: access to functionalized difluoro(methylene)cyclopropanes

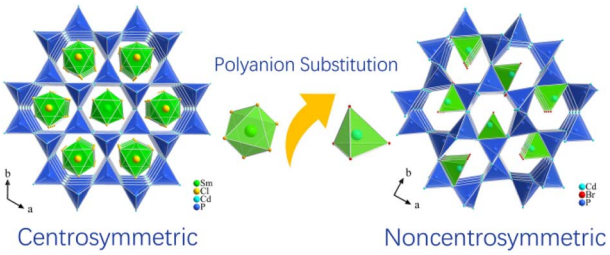
Suparnak Midya and Durga Prasad Hari*



13568

The first polyanion-substitution-driven centrosymmetric-to-noncentrosymmetric structural transformation realizing an excellent nonlinear optical supramolecule $[Cd_4P_2][CdBr_4]$

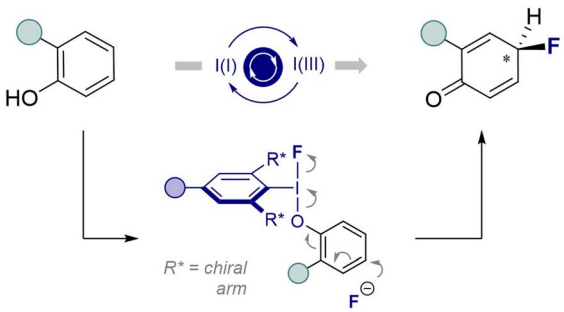
Zhi-Xin Qiu, Zhe-Xiong Zheng, Xiao-Ming Jiang, Bin-Wen Liu* and Guo-Cong Guo*



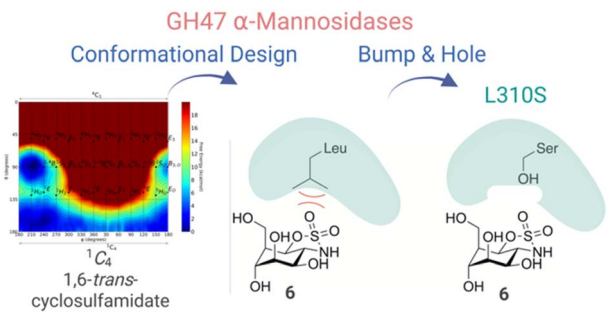
13574

***para*-Selective dearomatization of phenols by I(I)/I(III) catalysis-based fluorination**

Timo Stünkel, Kathrin Siebold, Daichi Okumatsu, Kazuki Murata, Louise Ruyet, Constantin G. Daniliuc and Ryan Gilmour*



13581

***Trans*-cyclosulfamidate mannose-configured cyclitol allows isoform-dependent inhibition of GH47 α-D-mannosidases through a bump–hole strategy**

Alexandra Males, Ken Kok, Alba Nin-Hill, Nicky de Koster, Sija van den Beukel, Thomas J. M. Beenakker, Gijsbert A. van der Marel, Jeroen D. C. Codée, Johannes M. F. G. Aerts, Herman S. Overkleeft, Carme Rovira,* Gideon J. Davies* and Marta Artola*