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ISSN 2041-6539 CODEN CSHCBM 15(21) 7797–8252 (2024)

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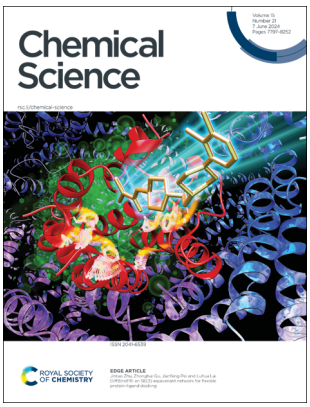


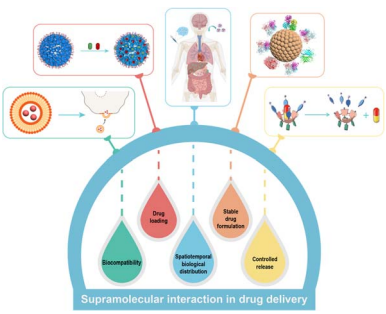
Inside cover
See Jintao Zhu, Zhonghui Gu, Jianfeng Pei and Luhua Lai, pp. 7926–7942. Image reproduced by permission of Jintao Zhu, Zhonghui Gu, Jianfeng Pei and Luhua Lai from *Chem. Sci.*, 2024, **15**, 7926.

PERSPECTIVES

7811

Supramolecular interaction in the action of drug delivery systems

Wen-Chao Geng, Ze-Tao Jiang, Shi-Lin Chen and Dong-Sheng Guo*



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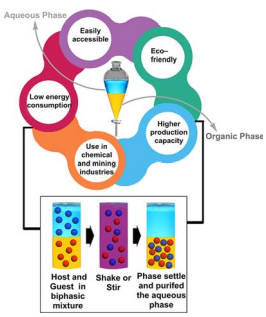
Supramolecular chemistry of liquid–liquid extraction

Sourav Pramanik, Abu S. M. Islam, Iti Ghosh and Pradyut Ghosh*



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REVIEWS

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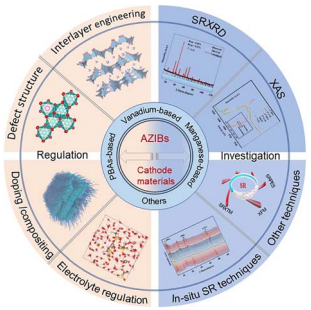
Structure regulation and synchrotron radiation investigation of cathode materials for aqueous Zn-ion batteries

Shiqiang Wei, Yixiu Wang, Shuangming Chen* and Li Song



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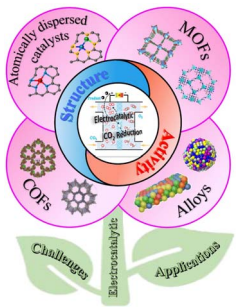
Advances and challenges in the electrochemical reduction of carbon dioxide

Jingyi Han, Xue Bai, Xiaoqin Xu, Xue Bai, Anaer Husile, Siying Zhang, Luoluo Qi and Jingqi Guan*



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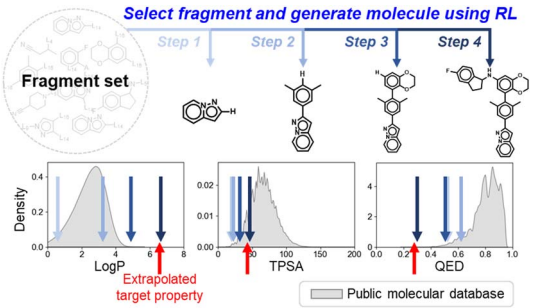
7908

Materials discovery with extreme properties *via* reinforcement learning-guided combinatorial chemistry

Hyunseung Kim, Haeyeon Choi, Dongju Kang, Won Bo Lee* and Jonggeol Na*



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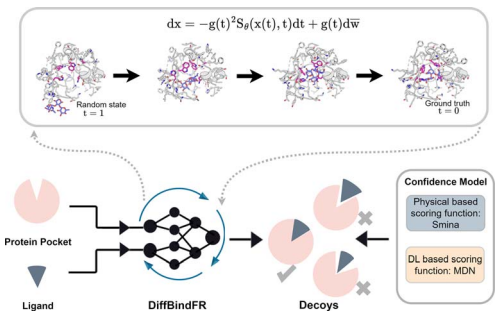
DiffBindFR: an SE(3) equivariant network for flexible protein–ligand docking

Jintao Zhu, Zhonghui Gu, Jianfeng Pei* and Luhua Lai*



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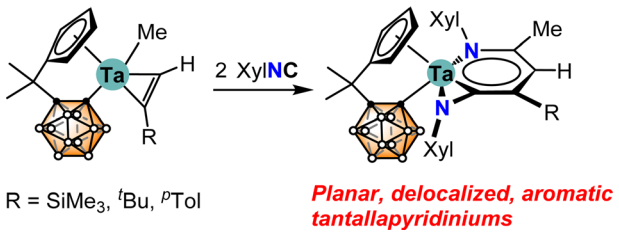

Metallaaromaticity involving a d^0 early transition metal centre: synthesis, structure, and aromaticity of tantallapyridinazirine complexes

Jingting Yang, Xin Xu, Zhenyang Lin* and Zuowei Xie*

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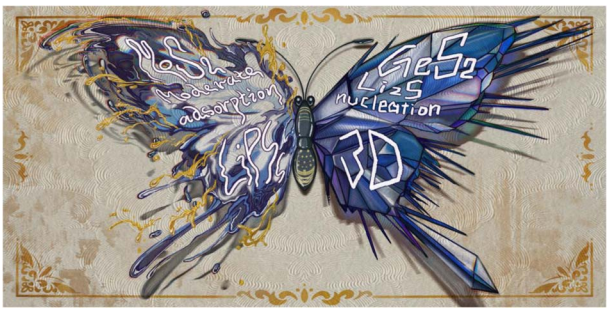
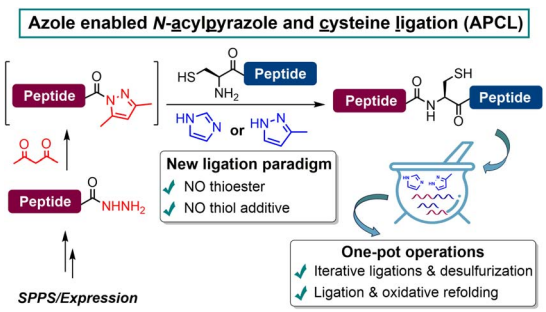


Toward robust lithium–sulfur batteries *via* advancing Li_2S deposition

Xun Jiao, Xiaoxia Tang, Jinrui Li, Yujiao Xiang, Cunpu Li,* Cheng Tong,* Minhua Shao and Zidong Wei*

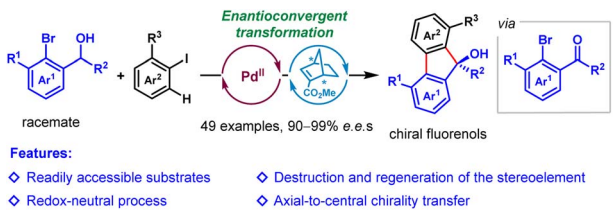
7965



Azole reagents enabled ligation of peptide acyl pyrazoles for chemical protein synthesis

Peisi Liao and Chunmao He*

7975



Enantioconvergent synthesis of chiral fluorenols from racemic secondary alcohols *via* Pd(II)/chiral norbornene cooperative catalysis

Bo Ding, Qilin Xue, Han Wei, Jiangwei Chen, Ze-Shui Liu, Hong-Gang Cheng, Hengjiang Cong, Jianting Tang and Qianghui Zhou*

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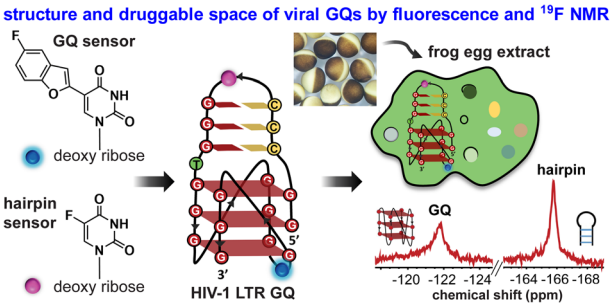
Structural elucidation of HIV-1 G-quadruplexes in a cellular environment and their ligand binding using responsive ^{19}F-labeled nucleoside probes

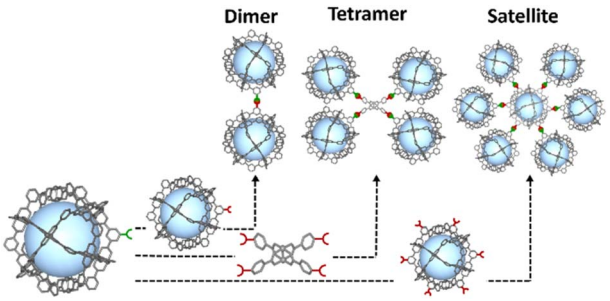
Sarupa Roy, Priyasha Majee, Sruthi Sudhakar, Satyajit Mishra, Jeet Kalia, P. I. Pradeepkumar* and Seergazhi G. Srivatsan*



7992

Giant oligomeric porous cage-based molecules

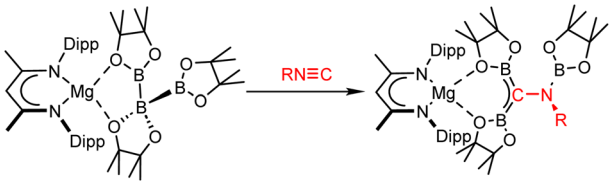
Alba Cortés-Martínez, Cornelia von Baeckmann, Laura Hernández-López, Arnau Carné-Sánchez* and Daniel Maspoch*



7999

The borylamino-diborata-allyl anion

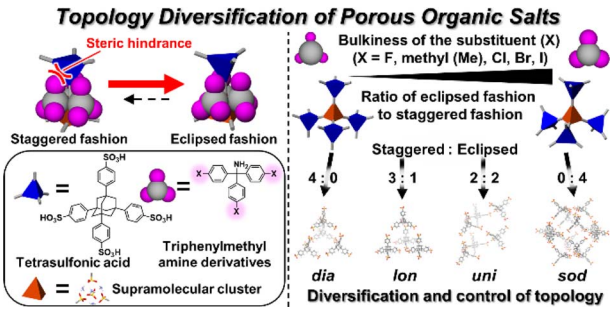
Henry T. W. Shere, Han-Ying Liu, Samuel E. Neale, Michael S. Hill,* Mary F. Mahon and Claire L. McMullin*



8008

Network topology diversification of porous organic salts

Hiroi Sei, Kouki Oka, Yuta Hori, Yasuteru Shigeta and Norimitsu Tohnai*



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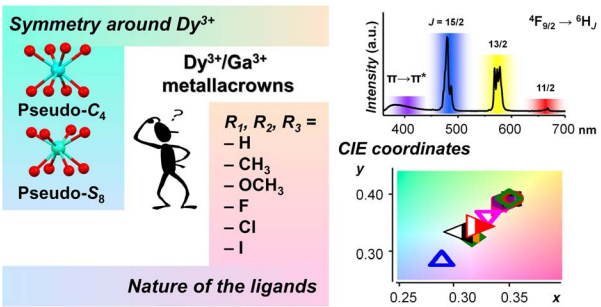
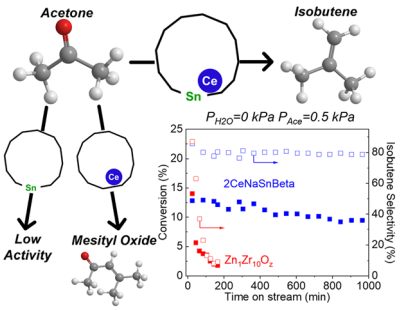


Tuning white light emission using single-component tetrachroic Dy^{3+} metallacrowns: the role of chromophoric building blocks

Elvin V. Salerno, Svetlana V. Eliseeva,* Stéphane Petoud* and Vincent L. Pecoraro*

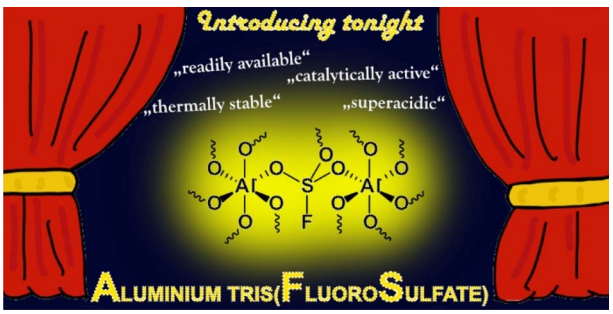
8031



Confined dual Lewis acid centers for selective cascade C–C coupling and deoxygenation

Houqian Li, Jifeng Pang, Wenda Hu,* Vannessa Caballero, Junming Sun,* Mingwu Tan, Jian Zhi Hu, Yelin Ni and Yong Wang*

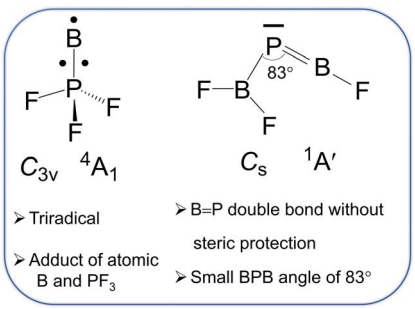
8038



Introducing AFS ($[Al(SO_3F)_3]_x$) – a thermally stable, readily available, and catalytically active solid Lewis superacid

Johanna Schlögl, Ole Goldammer, Julia Bader, Franziska Emmerling and Sebastian Riedel*

8045



B═P double bonds relieved from steric encumbrance: matrix-isolation infrared spectroscopy of the phosphaborene $F_2B–P═BF$ and the triradical $B═PF_3$

Mei Wen, Robert Medel, Pavel V. Zasimov, Carsten Müller and Sebastian Riedel*

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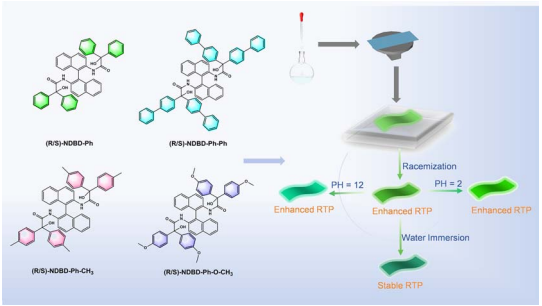
Employing racemization strategies to simultaneously enhance the quantum yield, lifetime, and water stability of room-temperature phosphorescent materials

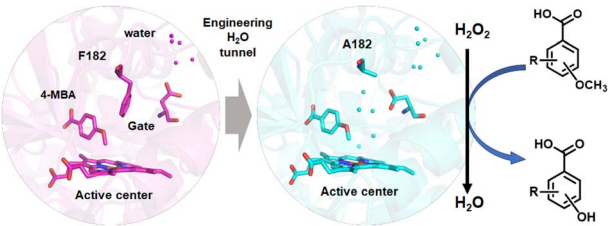
Zenggang Lin, Peng Zhang, Fuqiang Song, Yuzhu Yang, Xuan Miao and Weisheng Liu*



8062

Crucial gating residues govern the enhancement of peroxygenase activity in an engineered cytochrome P450 *O*-demethylase

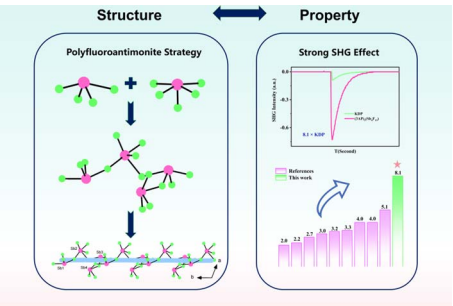
Panxia Zhao, Yiping Jiang, Qian Wang, Jie Chen, Fuquan Yao and Zhiqi Cong*



8071

$[(C_5H_6N_2)_2H](Sb_4F_{13})$: a polyfluoroantimonite with a strong second harmonic generation effect

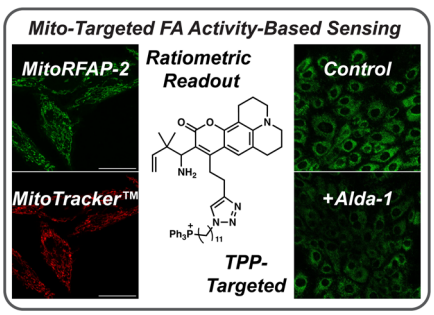
Jia-Hang Wu, Chun-Li Hu, Ya-Feng Li, Jiang-Gao Mao and Fang Kong*



8080

A mitochondrial-targeted activity-based sensing probe for ratiometric imaging of formaldehyde reveals key regulators of the mitochondrial one-carbon pool

Logan Tenney, Vanha N. Pham, Thomas F. Brewer and Christopher J. Chang*



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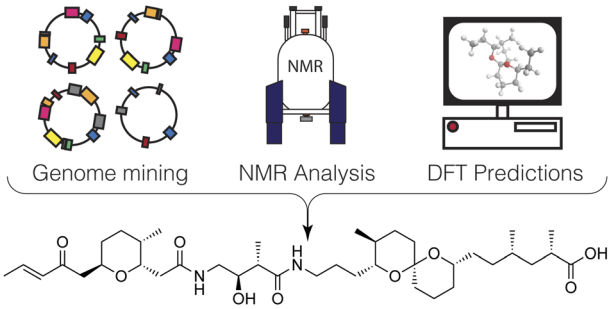
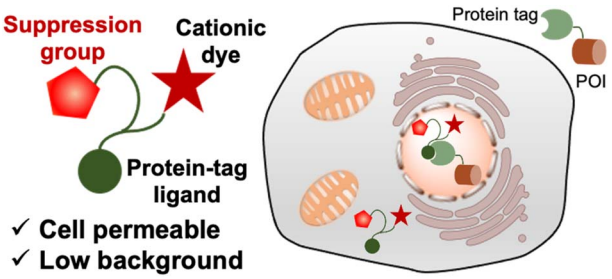


Discovery of a lagriamide polyketide by integrated genome mining, isotopic labeling, and untargeted metabolomics

Claire H. Fergusson, Julia Saulog, Bruno S. Paulo, Darryl M. Wilson, Dennis Y. Liu, Nicholas J. Morehouse, Samantha Waterworth, John Barkei, Christopher A. Gray, Jason C. Kwan, Alessandra S. Eustaquio* and Roger G. Linington*

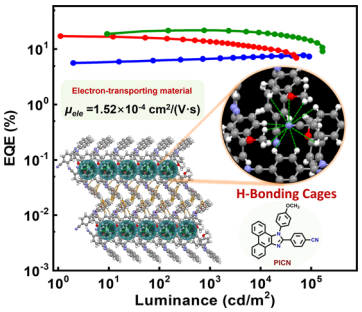
8097



Bioisostere-conjugated fluorescent probes for live-cell protein imaging without non-specific organelle accumulation

Takuya Kamikawa, Akari Hashimoto, Nozomi Yamazaki, Junya Adachi, Ayami Matsushima, Kazuya Kikuchi* and Yuichiro Hori*

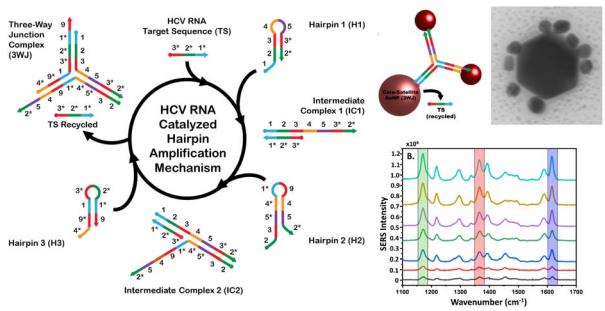
8106



Improving electron transportation and operational lifetime of full color organic light emitting diodes through a "weak hydrogen bonding cage" structure

Huayi Zhou, Tengyue Li, Mingliang Xie, Yannan Zhou, Qikun Sun, Shi-Tong Zhang,* Yujian Zhang,* Wenjun Yang and Shanfeng Xue*

8112



DNA-directed formation of plasmonic core–satellite nanostructures for quantification of hepatitis C viral RNA

Siddhant Jaitpal, Ka Wai Ng, Angela Michelle San Juan, Cecilia Martinez, Christian Phillips, Sayantan Tripathy and Samuel Mabbott*

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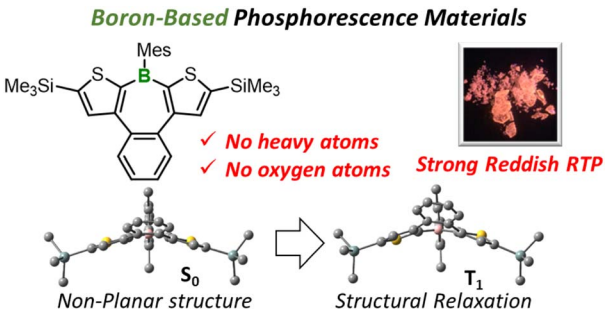
Insights into mechanistic interpretation of crystalline-state reddish phosphorescence of non-planar π-conjugated organoboron compounds

Yohei Adachi,* Maho Kurihara, Kohei Yamada, Fuka Arai, Yuto Hattori, Keita Yamana, Riku Kawasaki and Joji Ohshita*



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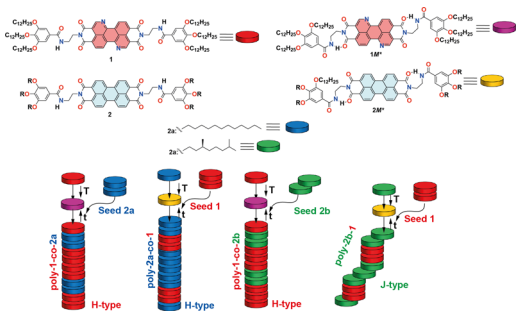
Electronically and geometrically complementary perylenediimides for kinetically controlled supramolecular copolymers

Alfonso J. Schwalb, Fátima García and Luis Sánchez*



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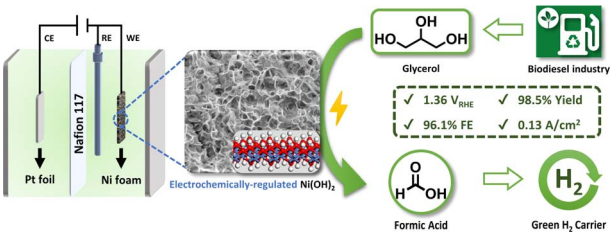
Redox regulation of Ni hydroxides with controllable phase composition towards biomass-derived polyol electro-refinery

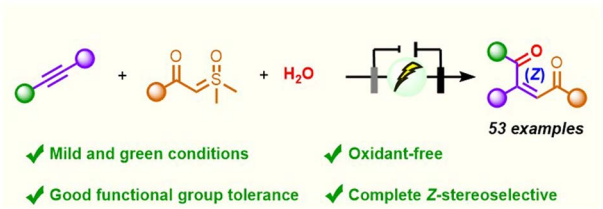
Zhuxin Gui, Yingshuai Jia, Xianping Liao, Tianlan Yan, Boxu Gao, Wenbiao Zhang, Li Chen, Qingsheng Gao,* Yahong Zhang and Yi Tang*



8156

Electrochemical stereoselective synthesis of polysubstituted 1,4-dicarbonyl *Z*-alkenes *via* three-component coupling of sulfoxonium ylides and alkynes with water

Hao-Ran Li, Yi-An Ran, Yu-Yi Zhu, Weisi Guo, Shao-Fei Ni,* Li-Rong Wen, Ming Li and Lin-Bao Zhang*



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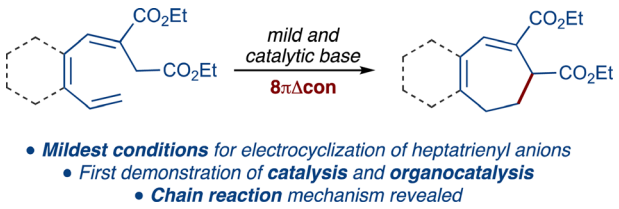
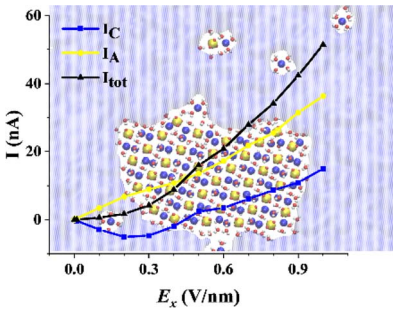


Mild and catalytic electrocyclizations of heptatrienyl anions

Faizan Rasheed, Andrei Nikolaev, Anmol Dhesi, Tao Zeng, You Xuan Guo, Yarkali Krishna, Samira Komijani and Arturo Orellana*

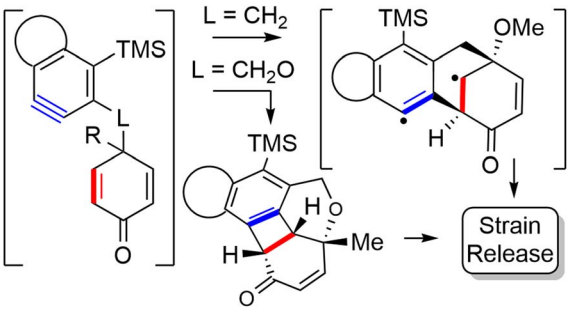
8170



Formation of compounds with diverse polyelectrolyte morphologies and nonlinear ion conductance in a two-dimensional nanofluidic channel

Xiaoying Liang, Yanan Zhou, Weiduo Zhu, Wen Wu Xu, Joseph S. Francisco,* Xiao Cheng Zeng* and Wenhui Zhao*

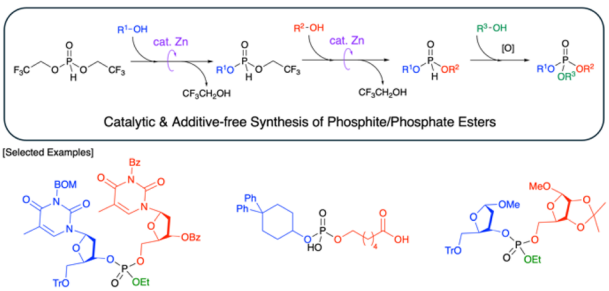
8181



Cascade reactions of HDDA-benzynes with tethered cyclohexadienones: strain-driven events originating from *ortho*-annulated benzocyclobutenes

Bhavani Shankar Chinta, Dorian S. Sneddon and Thomas R. Hoye*

8190



A highly efficient catalytic method for the synthesis of phosphite diesters

Yuki Saito, Soo Min Cho, Luca Alessandro Danieli, Akira Matsunaga and Shū Kobayashi*

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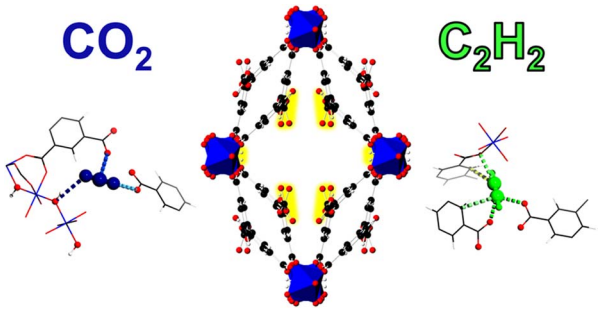
EDGE ARTICLES

8197

Binding of carbon dioxide and acetylene to free carboxylic acid sites in a metal–organic framework

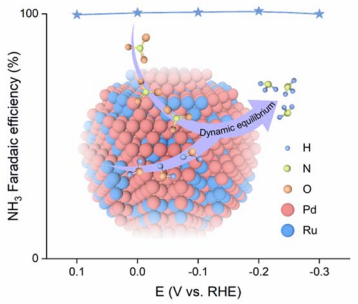
Christopher Marsh, Xue Han, Zhenzhong Lu, Ivan da Silva, Yongqiang Cheng, Luke L. Daemen, Sarah J. Day, Stephen P. Thompson, Anibal J. Ramirez-Cuesta, Sihai Yang* and Martin Schröder*



8204

Alloying Pd with Ru enables electroreduction of nitrate to ammonia with ∼100% faradaic efficiency over a wide potential window

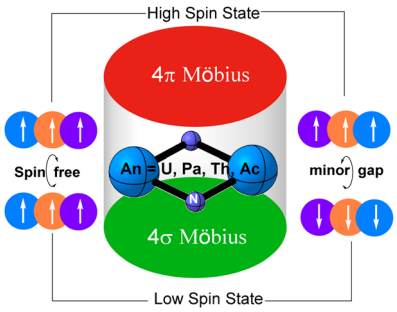
Yue Hu, Jiawei Liu, Wenyu Luo, Jinfeng Dong, Carmen Lee, Nan Zhang, Mengxin Chen, Yifan Xu, Dongshuang Wu, Mingsheng Zhang, Qiang Zhu, Erhai Hu, Dongsheng Geng,* Lixiang Zhong* and Qingyu Yan*



8216

Multiconfigurational actinide nitrides assisted by double Möbius aromaticity

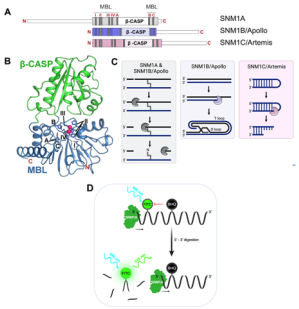
Xuhui Lin,* Xiaoli Lu, Shenghui Tang, Wei Wu* and Yirong Mo*



8227

Cell-active small molecule inhibitors validate the SNM1A DNA repair nuclease as a cancer target

Marcin Bielinski, Lucy R. Henderson, Yuliana Yosaatmadja, Lonnie P. Swift, Hannah T. Baddock, Matthew J. Bowen, Jürgen Brem, Philip S. Jones, Stuart P. McElroy, Angus Morrison, Michael Speake, Stan van Boeckel, Els van Doornmalen, Jan van Groningen, Helma van den Hurk, Opher Gileadi, Joseph A. Newman,* Peter J. McHugh* and Christopher J. Schofield*



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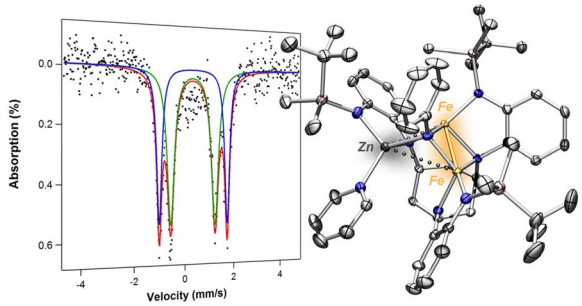
EDGE ARTICLES

8242



Cluster dynamics of heterometallic trinuclear clusters during ligand substitution, redox chemistry, and group transfer processes

Cristin E. Juda, Rex C. Handford, Amymarie K. Bartholomew, Tamara M. Powers, Nina X. Gu, Elisabeth Meyer, Nikolaj Roth, Yu-sheng Chen, Shao-Liang Zheng and Theodore A. Betley*

CORRECTION

8249

Correction: Halogen-bonded charge-transfer co-crystal scintillators for high-resolution X-ray imaging

Yu-Hua Chen, Guo-Zhen Zhang, Fu-Hai Chen, Shu-Quan Zhang, Xin Fang,* Hong-Ming Chen* and Mei-Jin Lin*

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