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Cover
See Yan Qin, Xiao-Gang Chen *et al.*, pp. 9109–9116.
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Inside cover
See Kenichiro Itami, Hideto Ito *et al.*, pp. 9117–9124.
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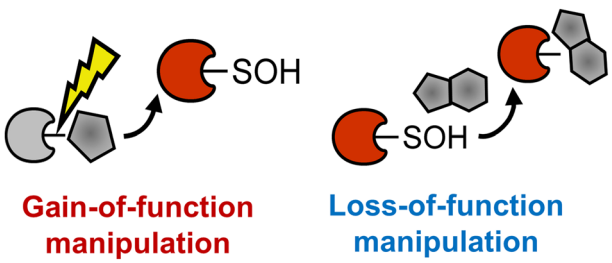
PERSPECTIVES

9049

Towards site-specific manipulation in cysteine-mediated redox signaling

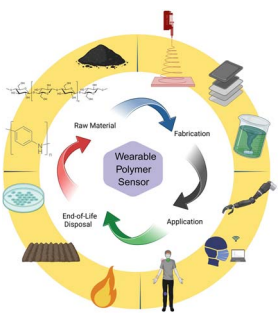
Jing Yang*



9056

From the synthesis of wearable polymer sensors to their potential for reuse and ultimate fate

Arya Ajeev, Theodore Warfle, Sara Maslaczynska-Salome, Saeideh Alipoori, Colton Duprey* and Evan K. Wujcik*



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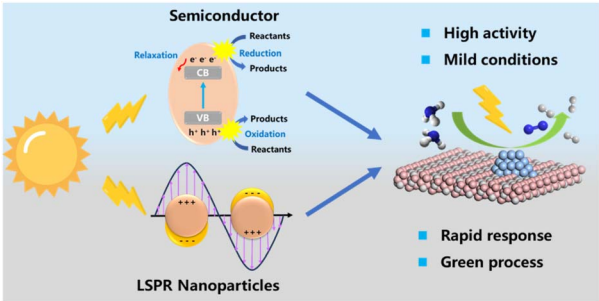
REVIEWS

9076

Hydrogen production *via* photocatalytic ammonia decomposition

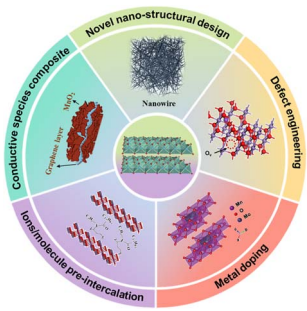
Qijun Pei, Yongyu Wang, Khai Chen Tan, Jianping Guo, Teng He* and Ping Chen



9092

Advances in layer manganese dioxide for energy conversion and storage: mechanisms, strategies and prospects

Ya-Di Zhang,* Hongkun Xu, Manal S. Ebaid, Xin-Jie Zhang, Kaixin Jiang, Xuehua Zhang, Zhanhu Guo* and Ben Bin Xu*

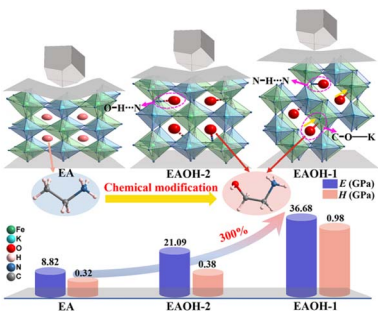


EDGE ARTICLES

9109

Giant mechanical tunability by a coordination bond strategy in a 3D hybrid cyanide double perovskite ferroelastic with reconstructive phase transition

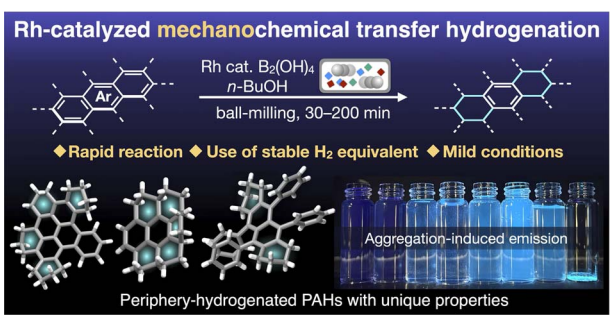
Hui-Peng Lv, Sheng-Qian Hu, Yong-Ju Bai, Jun-Si Zhou, Luan-Ying Ji, Zhong-Xia Wang, Yong Ai, Yan Qin* and Xiao-Gang Chen*



9117

Rh-catalyzed mechanochemical transfer hydrogenation for the synthesis of periphery-hydrogenated polycyclic aromatic compounds

Yoshifumi Toyama, Takumu Nakamura, Yushin Horikawa, Yuta Morinaka, Yohei Ono, Akiko Yagi, Kenichiro Itami* and Hideto Ito*



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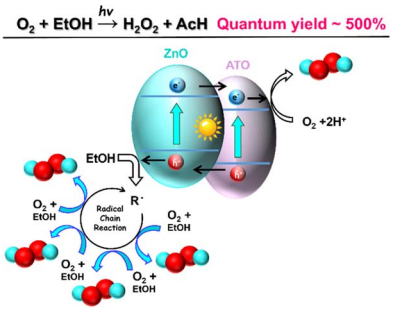
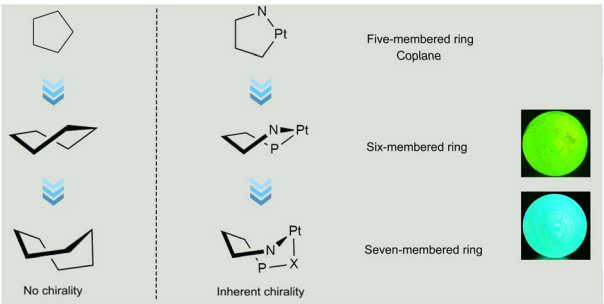


Photocatalytic hydrogen peroxide production with an external quantum yield of almost 500%

Yaozong Yan, Shin-ichi Naya,* Hisashi Sugime, Hiroaki Tada* and Tetsuro Soejima*

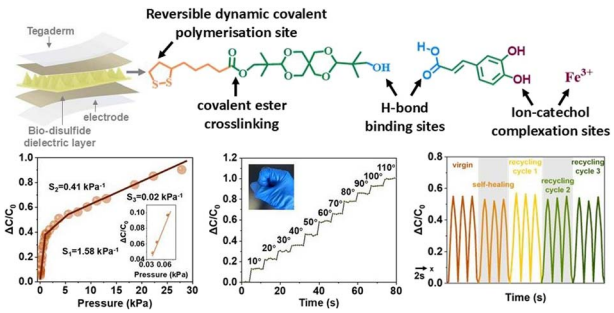
9135



Building metal-induced inherent chirality: chiral stability/phosphorescence enhancement *via* a ring expansion strategy of Pt(II) complexes

Yingshuang Shi, Ke Tang, Jincheng Zhang, Ping Hu, Bi-Qin Wang, Ke-Qing Zhao, Yuqiao Zhou, Haifeng Xiang* and Jintong Song*

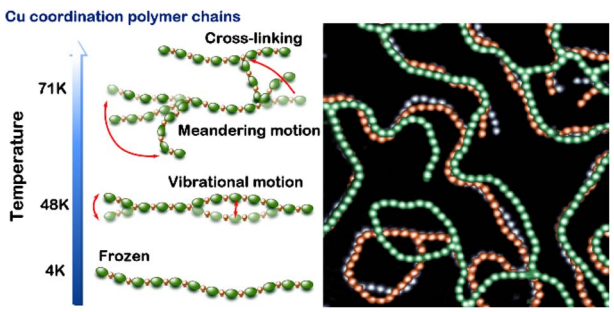
9143



An intrinsic self-healable supramolecular dynamic covalent elastomer for sustainable high-performance tactile sensing

Ding Yang, Jiahui Zhao, Fang-Yu Liu, Meng Chen* and Da-Hui Qu*

9156



Structural flexibility and mobility of coordination polymers on Cu(111)

Waka Nakanishi,* Masayuki Takeuchi and Keisuke Sagisaka*

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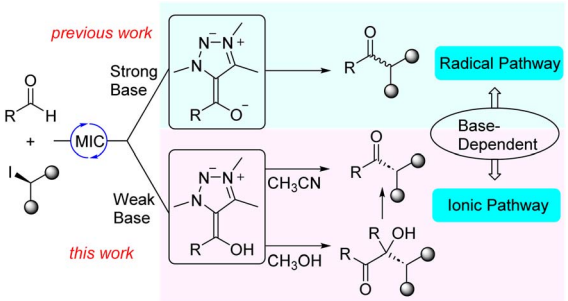
9163

Switching mesoionic carbene-organocatalysis from radical to ionic pathway through base-controlled formation of Breslow intermediates *versus* Breslow enolates

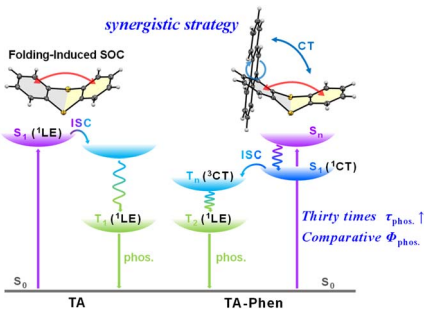
Jie Jiao, Zengyu Zhang, Guangyin Lu, Shiqing Huang, Yajing Bian, Fan Gao, Guy Bertrand* and Xiaoyu Yan*



9169

Tuning intramolecular charge transfer and suppressing rotations in thianthrene derivatives for enhancement of room-temperature phosphorescence

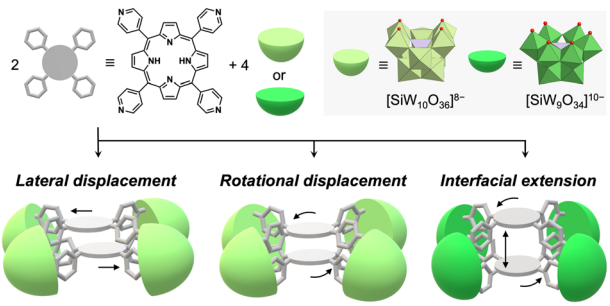
Huiwen Zeng, Hualiu Li, Peng Zhen, Jiadong Zhou,* Bingjia Xu,* Guang Shi, Yujian Zhang, Zhenguo Chi and Cong Liu*



9178

Engineering cofacial porphyrin dimers using lacunary polyoxotungstates

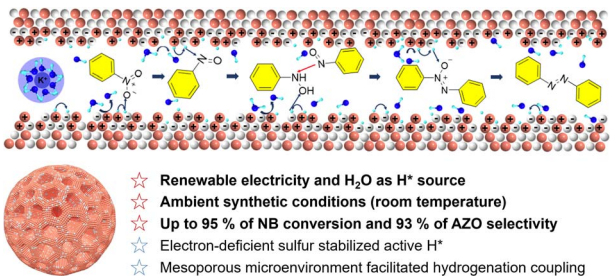
Masahiro Yamaguchi, Kentaro Yonesato, Kaito Shioya, Chifeng Li, Kei Murata, Kazuyuki Ishii,* Kazuya Yamaguchi* and Kosuke Suzuki*



9186

Electrochemical hydrogenative coupling of nitrobenzene into azobenzene over a mesoporous palladium–sulfur cathode

Jie Xiao, Yanzhi Wang, Bo Xiao* and Ben Liu*



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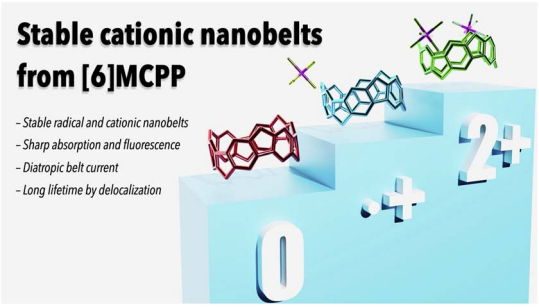
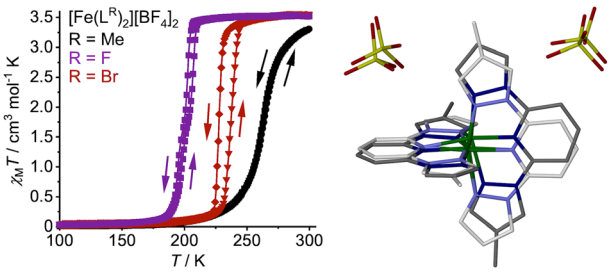


Stable cationic nanobelts synthesized by chemical oxidation of methylene-bridged [6] cycloparaphenylene

Nobushige Kai, Hideya Kono, Timo Stünkel, Daiki Imoto, Riccardo Zanasi,* Guglielmo Monaco, Francesco F. Summa, Lawrence T. Scott, Akiko Yagi* and Kenichiro Itami*

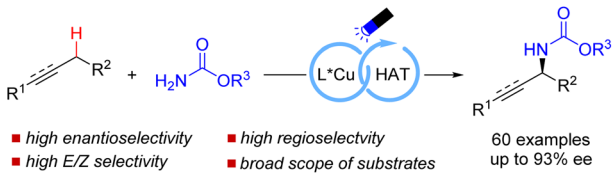
9203



The impact of whole-molecule disorder on spin-crossover in a family of isomorphous molecular crystals

Holly E. Sephton, Rhiannon L. Watson, Namrah Shahid, Hari Babu Vasili, Daniel L. Baker, Dipankar Saha, Izar Capel Berdiell, Christopher M. Pask, Oscar Cespedes and Malcolm A. Halcrow*

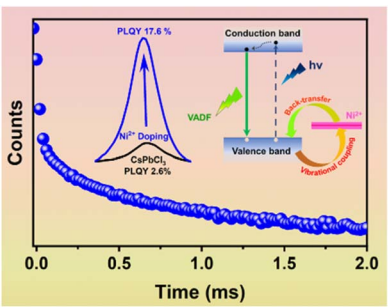
9213



Photoinduced copper-catalysed enantioselective amination of allylic and propargylic C–H bonds

Ling Dai, Ying-Ying Chen, Jing-Jun Wang, Jun-Jia Chen and Qi-Lin Zhou*

9220



Ni doping in $CsPbCl_3$ nanocrystals: the key to enhanced photoluminescence

Soumya Panja, Prasenjit Mandal, Subhashri Mannar, Arpan Das, Shobhana Narasimhan and Ranjani Viswanatha*

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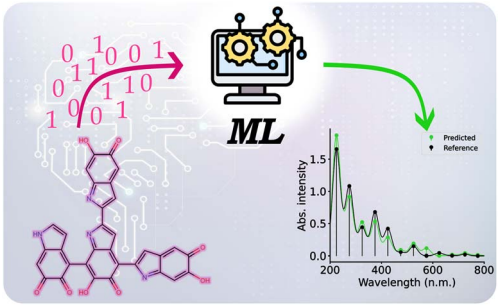
Machine learning modeling of electronic spectra and thermodynamic stability for a comprehensive chemical space of melanin

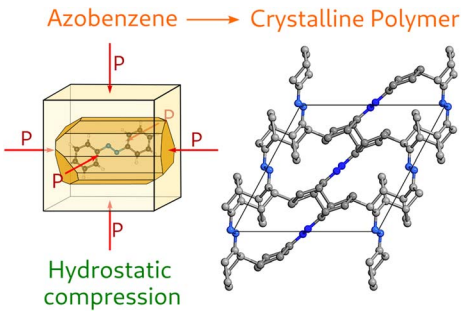
Arpan Choudhury* and Debashree Ghosh*



9240

Insights into topochemical *versus* stress-induced high-pressure reactivity of azobenzene by single crystal X-ray diffraction

Milo Agati, Sebastiano Romi,* Samuele Fanetti, Krzysztof Radacki, Michael Hanfland, Holger Braunschweig, Todd B. Marder, Stewart J. Clark, Alexandra Friedrich* and Roberto Bini



9255

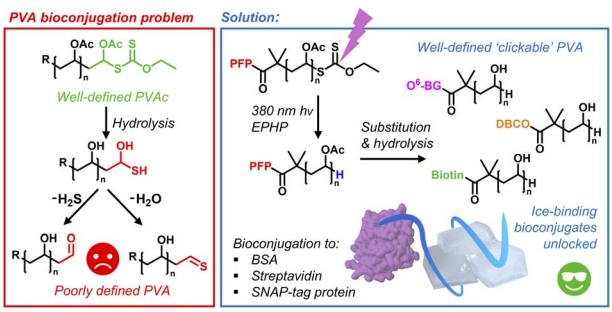
Ligand non-innocence and an unusual σ-bond metathesis step enables catalytic borylation using 9-borabicyclo-[3.3.1]-nonane

Milan Kumar Bisai, Justyna Łosiewicz, Gary S. Nichol, Andrew P. Dominey, Stephen P. Thomas, Stuart A. Macgregor* and Michael J. Ingleson*

9264

PVAylation: precision end-functionalized poly(vinyl alcohol) for site-selective bioconjugation

Douglas E. Soutar, Ho Fung Mack, Melissa Ligorio, Akalabya Bissoyi, Alexander N. Baker and Matthew I. Gibson*



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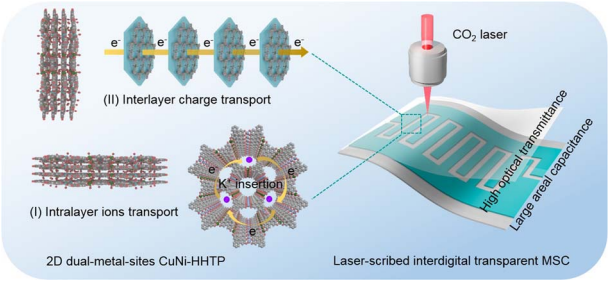
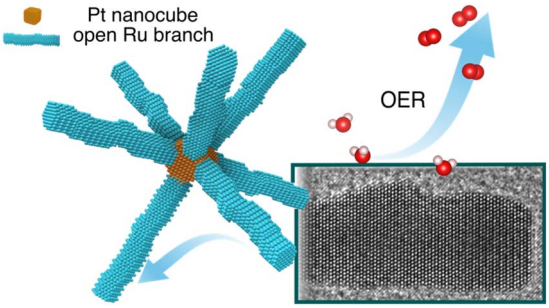


Dual-metal sites enable conductive metal–organic frameworks with extraordinary high capacitance for transparent energy storage devices

Cui-e Zhao, Shuaikang Wang, Shaoqiang Chen, Bin Han, Shouhao Wan, Qijia Bai, Mingao Hu, Fangyuan Kang, Ruiqing Liu,* Jiahui Li,* Yanwen Ma* and Qichun Zhang*

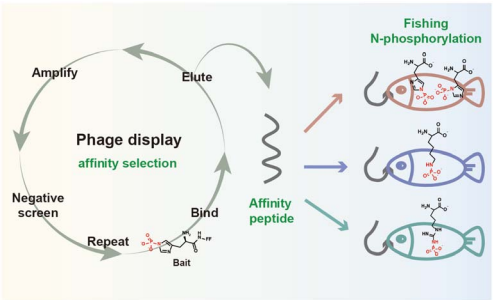
9284



Formation of open ruthenium branched structures with highly exposed active sites for oxygen evolution reaction electrocatalysis

Sa Xiao, Yuhan Xie, Agus R. Poerwoprajitno, Lucy Gloag, Qinyu Li, Soshan Cheong, Zeno R. Ramadhan, Ingemar Persson, Yoshiki Soda, Dale L. Huber, Liming Dai, J. Justin Gooding* and Richard D. Tilley*

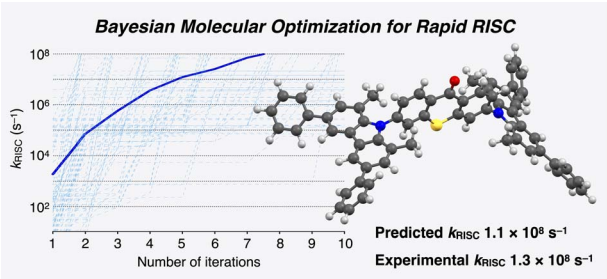
9290



Affinity peptide ligands: new tools for chasing non-canonical *N*-phosphoproteome

He Wang, Xiaoyu Zhang, Dongdong Wang, Qianqian Jiang, Yue Sun, Baofeng Zhao, Zhen Liang, Guangyan Qing,* Bo Jiang,* Lihua Zhang and Yukui Zhang

9303



Bayesian molecular optimization for accelerating reverse intersystem crossing

Taehyun Won, Naoya Aizawa,* Yu Harabuchi,* Reo Kurihara, Mitsuharu Suzuki, Satoshi Maeda, Yong-Jin Pu and Ken-ichi Nakayama

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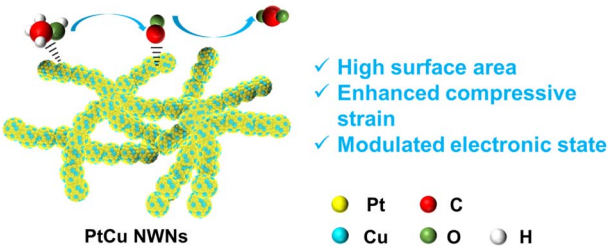
Platinum–copper nanowire networks with enhanced CO tolerance toward methanol oxidation electrocatalysis

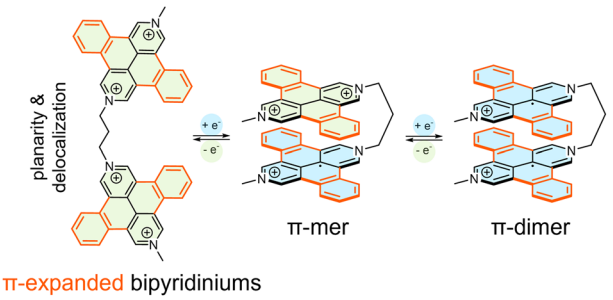
Shiyue Xing, Zhongliang Liu, Yingfang Jiang, Pinghui Tang, Jian Zhang, Jiatang Chen, Huihui Li* and Chunzhong Li*



9320

π-Expansion as gateway to viologen-based pimers

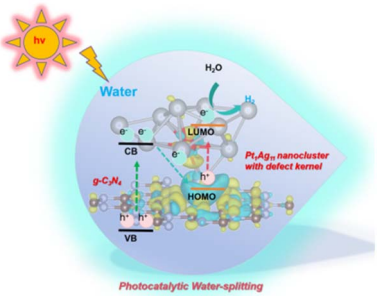
Geoffrey Groslambert, Vivien Andrieux, Malo Duquesnoy, Raphaël Rullan, Lhoussain Khrouz, Sandrine Denis-Quanquin, Stephan N. Steinmann, Tangui Le Bahers,* Floris Chevallier,* Denis Frath* and Christophe Bucher*



9326

Icosahedron kernel defect in Pt_1Ag_x series of bimetallic nanoclusters enhances photocatalytic hydrogen evolution

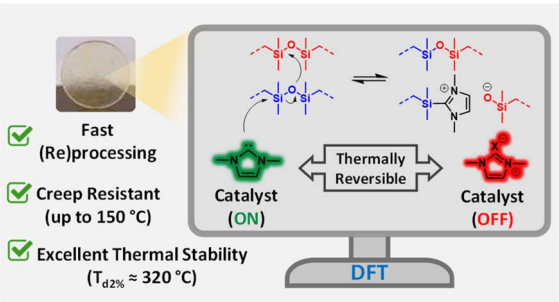
Dong Tan, Tengfei Ding, Kaidong Shen, Chang Xu, Shan Jin, Daqiao Hu,* Song Sun* and Manzhou Zhu*



9337

Eliminating creep in vitrimers using temperature-resilient siloxane exchange chemistry and N-heterocyclic carbenes

Tapas Debsharma, Loc Tan Nguyen, Benon P. Maliszewski, Susanne M. Fischer, Vincent Scholiers, Johan M. Winne,* Steven P. Nolan* and Filip E. Du Prez*



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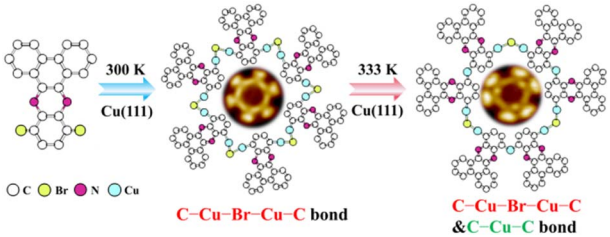
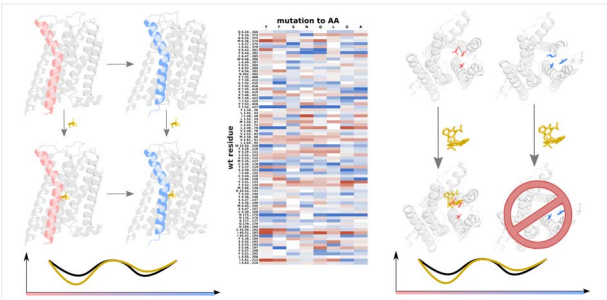


On-surface synthesis of organometallic nanorings linked by unconventional intermediates of the Ullmann reaction

Xiaoyang Zhao, Liqian Liu, Zhipeng Zhang, Tianchen Qin, Jun Hu, Lei Ying, Junfa Zhu, Tao Wang* and Xinrui Miao*

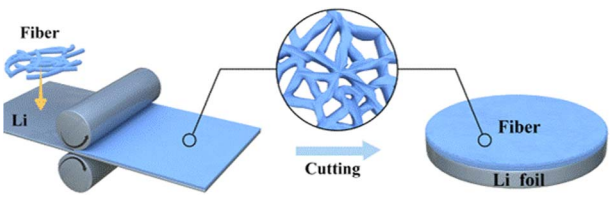
9357



Identification of allosteric sites and ligand-induced modulation in the dopamine receptor through large-scale alchemical mutation scan

Lisa Schmidt* and Bert L. de Groot

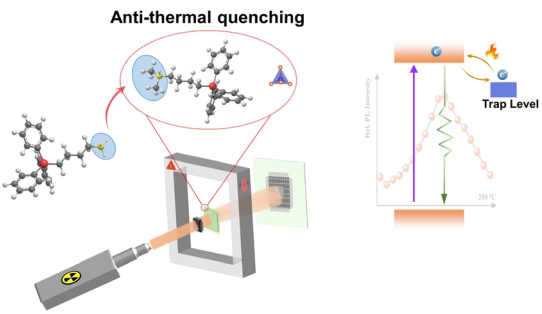
9366



Three-dimensional nanostructured composite lithium soap fibers for constructing high-performance lithium metal anode interfacial layers

Ying Luo, Shaozhen Huang, Jiahua Liao, Zhibin Wu* and Libao Chen*

9375



An anti-thermal-quenching organic–inorganic hybrid manganese-based single-crystal scintillator for high-temperature X-ray imaging

Jing-Hua Chen, Jian-Bin Luo, Zi-Lin He, Qing-Peng Peng, Jun-Hua Wei,* Zhi-Zhong Zhang, Xiu-Xian Guo and Dai-Bin Kuang*

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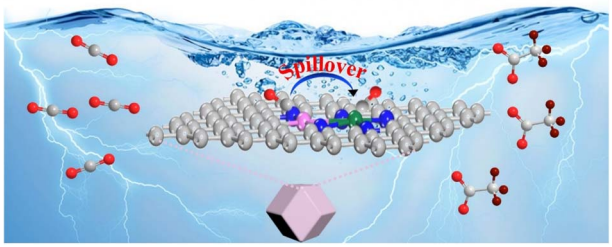
Dual-atomic Cu–Ag pairs boosting selective electroreduction of CO_2 to acetate

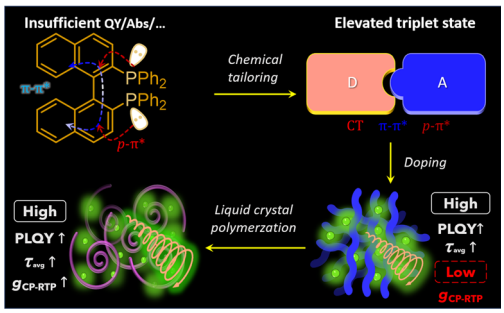
Zemin Feng, Chenghong Hu, Huangcong Tang, Kui Shen, Liyu Chen* and Yingwei Li*



9393

Customizing circularly polarized afterglow by stepwise chiral amplification in BINAPs/BINAPOs

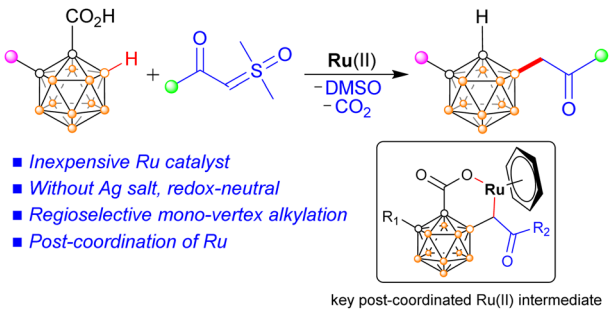
Bo Yang, Suqiong Yan, Shirong Ban, Hui Ma, Yuan Zhang, Fanda Feng and Wei Huang*



9406

Post-coordination of Ru(II) controlled regioselective B(4)–H acylmethylation of *o*-carboranes with sulfoxonium ylides

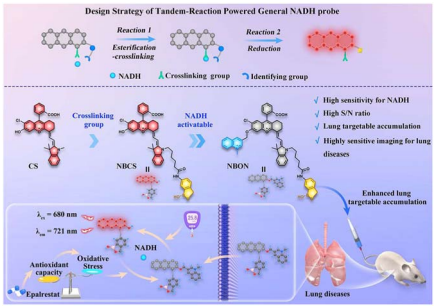
Hou-Ji Cao,* Jia-Xin Li, Jia-Hui Yan, Miao-Xin Liu, Qianyi Zhao, Jie Zhang, Ju Zhang* and Hong Yan*



9413

Tandem reaction-powered near-infrared fluorescent molecular reporter for real-time imaging of lung diseases

Yan Hu, Hongshuai Zhang, Yiteng Ding, Weirui Chen, Changqie Pan,* Longwei He,* Dan Cheng* and Lin Yuan



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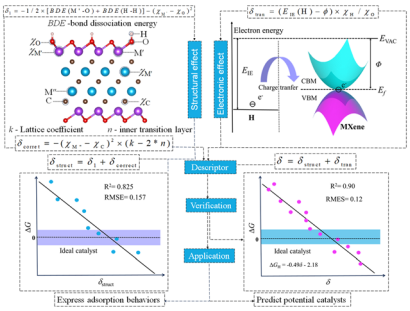
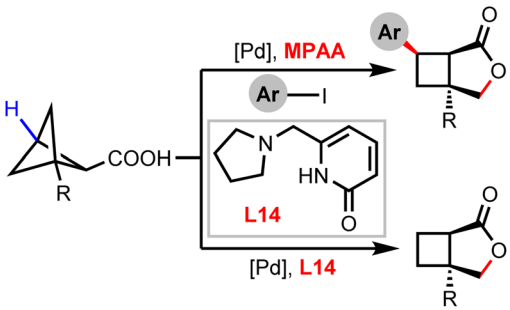
9424



A mechanism-guided descriptor for the hydrogen evolution reaction in 2D ordered double transition-metal carbide MXenes

Junmei Du, Yifan Yan, Xiumei Li, Jiao Chen, Chunsheng Guo, Yuanzheng Chen* and Hongyan Wang*

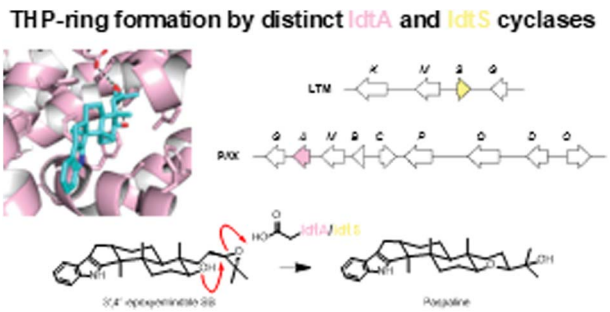
9436



Synthesis of bicyclo[3.2.0]heptane lactones *via* a ligand-enabled Pd-catalyzed C(sp^3)–H activation cascade

Zhoulong Fan, Xinpei Cai, Tao Sheng and Jin-Quan Yu*

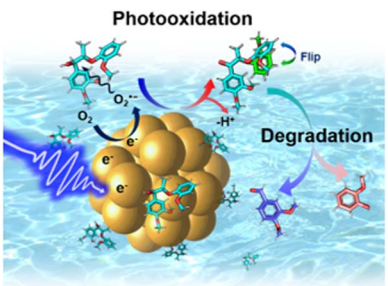
9441



An overlooked cyclase plays a central role in the biosynthesis of indole diterpenes

Rosannah C. Cameron, Daniel Berry, Alistair T. Richardson, Luke J. Stevenson, Yonathan Lukito, Kelly A. Styles, Natasha S. L. Nipper, Rose M. McLellan and Emily J. Parker*

9447



Water-accelerated photooxidation and degradation of lignin linkages mediated by plasmonic catalysts

Juhee Ha, Jiwon Kang, Suk Hyun Lim, Dae Won Cho, Kwang-Im Oh* and Youngsoo Kim*

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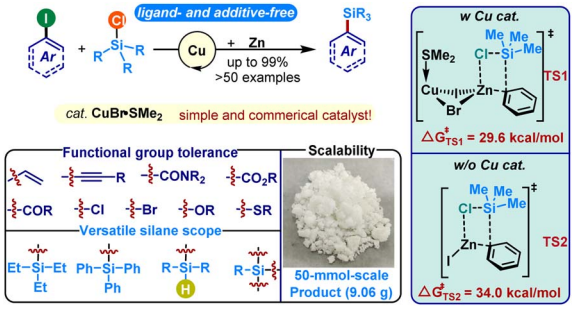
EDGE ARTICLES

9454

A general copper catalytic system for cross-coupling of aryl iodides with chlorosilanes under reductive conditions

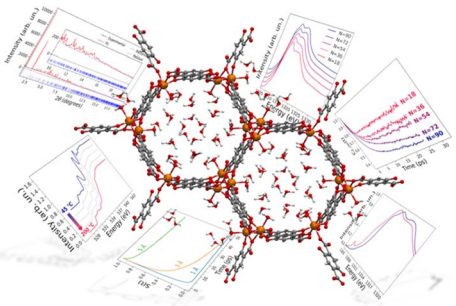
Liping Qiu, Yiqi Liu, Han Chen, Lijuan Song and Weilong Xie*



9462

A combined soft X-ray and theoretical investigation discloses the water harvesting behaviour of Mg-MOF-74 at the crystal surface

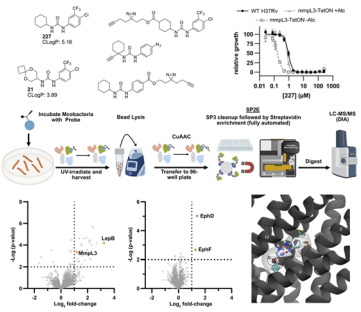
Francesco Tavani, Alessandro Tofoni, Marco Vandone, Matteo Busato, Luca Braglia, Piero Torelli, Maximillian G. Stanzione, Anthony R. Armstrong, Russell E. Morris, Valentina Colombo* and Paola D'Angelo*



9472

Tailored phenyl ureas eradicate drug-resistant *Mycobacterium tuberculosis* by targeting mycolic acid cell wall assembly

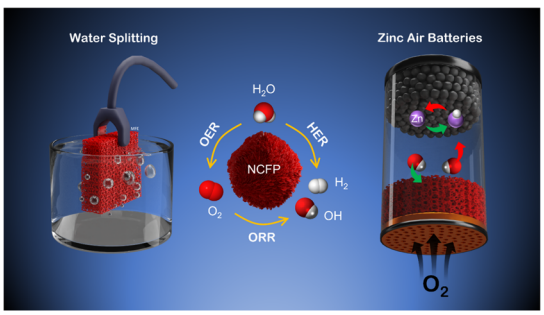
Dietrich Mostert, Josef Braun, Matthew D. Zimmerman, Curtis A. Engelhart, Sara Berndl, Patrick K. Quoika, Andreas M. Kany, Julianna Proietto, Suyapa Penalva-Lopez, Joshua B. Wallach, Anna K. H. Hirsch, Martin Zacharias, Dirk Schnappinger, Véronique Dartois and Stephan A. Sieber*



9484

Nanostructured amorphous Ni–Co–Fe phosphide as a versatile electrocatalyst towards seawater splitting and aqueous zinc–air batteries

Masumeh Moloudi, Abolhassan Noori,* Mohammad S. Rahmanifar, Maher F. El-Kady, Ebrahim Mousali, Nahla B. Mohamed, Xinhui Xia, Yongqi Zhang, Ajayan Vinu, Mewin Vincent, Damian Kowalski, Richard B. Kaner* and Mir F. Mousavi*



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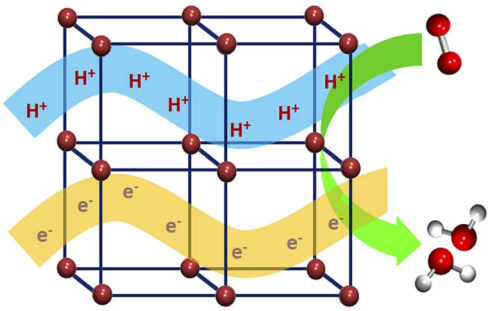
EDGE ARTICLES

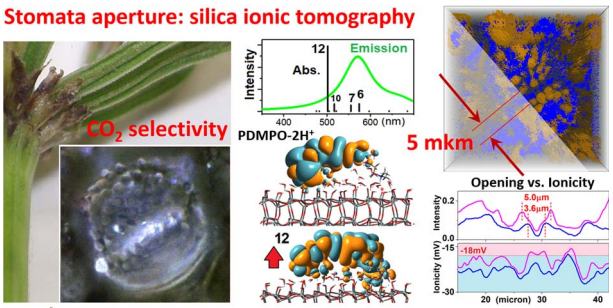
9501



Simultaneous electron and proton conduction in a stable metal organic material with highly selective electrocatalytic oxygen reduction reaction to water

Rajat Saha,* Amitosh Sharma, Anjila I. Siddiqui, Samia Benmansour, Joaquín Ortega-Castro, Antonio Frontera, Biswajit Mondal,* Myoung Soo Lah* and Carlos J. Gómez García*

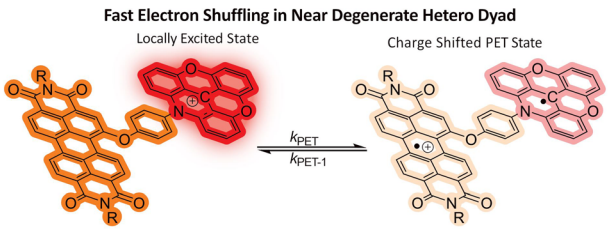
9509



Stomata biosilica and *Equisetum* photosynthesis: ionic tomography insight using a PDMPO silicaphilic probe

Victor V. Volkov, Graham J. Hickman and Carole C. Perry*

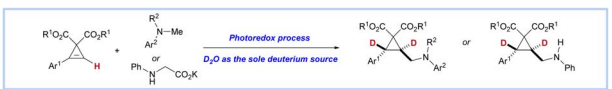
9525



Reversible excited state electron transfer in an acceptor–acceptor hetero dyad

Jesper Dahl Jensen, Shayan Louie, Yanmei He, Junsheng Chen, Colin Nuckolls* and Bo W. Laursen*

9535



Towards *trans*-dual deuterated cyclopropanes *via* photoredox synergistic deuteration with D_2O

Yuanqing Wu, Chuxiong Peng, Qichen Zhan, Xudong Lou, Shijie Liu, Xiaofeng Lin, Yulin Han,* Peng Cao* and Tao Cao*

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