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IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 17(10) 4831–5282 (2026)

Cover
See Bowen Ke, Xianggen Liu *et al.*, pp. 4928–4941.
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Inside cover
See Kiyosei Takasu *et al.*, pp. 4942–4947.
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PERSPECTIVE

4846

Innovative chemical design and regulation strategies for overcoming lead toxicity in perovskite-based optoelectronics: a new perspective

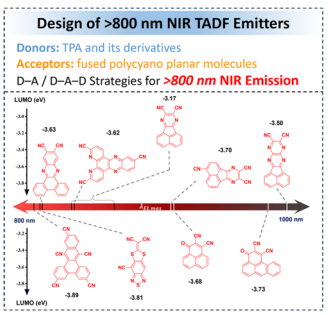
Gengling Liu, Guo Yang, Wenhuai Feng and Wu-Qiang Wu*

REVIEWS

4863

Beyond 800 nm: recent progress in high-performance near-infrared thermally activated delayed fluorescence based OLEDs

Shuo Li, Xiangyu Zhou, Lingjie Xu, Chao Yu, Junteng Liu,* Shouke Yan and Zhongjie Ren*



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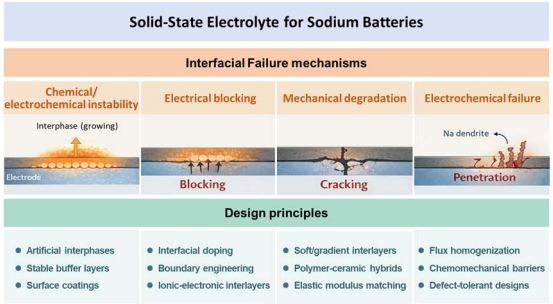
REVIEWS

4881

Interfacial failure mechanisms and design principles in solid-state sodium batteries

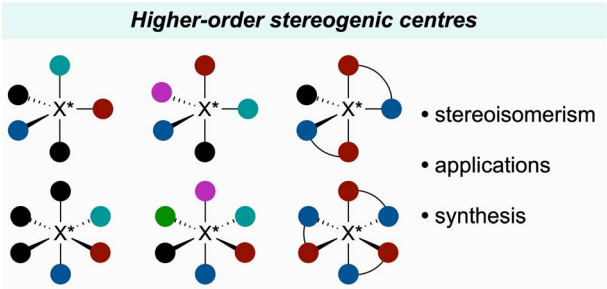
Mingyue Wang,* Qing Zhong, Yue Wang, Xu Liu, Dongyang Zhang* and Shujiang Ding*



4908

Control over stereogenic centres beyond tetracoordination

Anton Budeev and Christof Sparr*

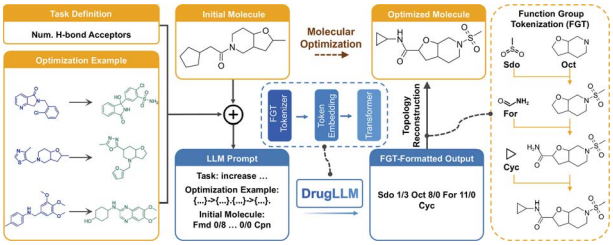


EDGE ARTICLES

4928

Few-shot molecular property optimization *via* a domain-specialized large language model

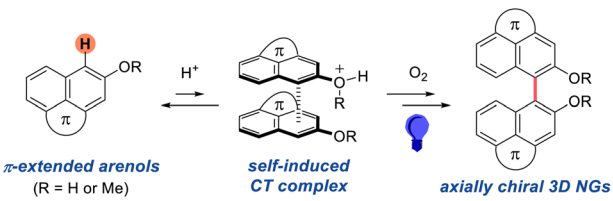
Yan Guo, Menglan Luo, Wenbo Zhang, Peidong Liu, Jin Liu, Shudong Huang, Jiancheng Lv, Bowen Ke* and Xianggen Liu*



4942

Self-induced charge transfer activation enables metal-free C–H coupling of polycyclic aromatic hydrocarbons under photo irradiation

Kazuma Kurokawa, Aki Kohyama, Yusuke Kuroda, Keisuke Tao-Kakuyama, Hiroshi Takikawa and Kiyosei Takasu*



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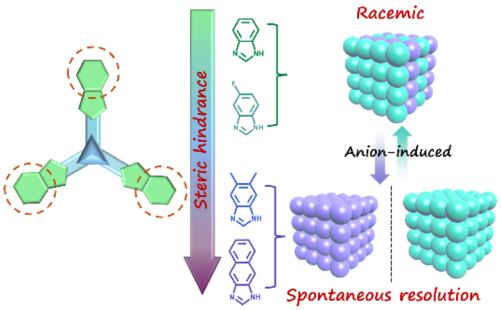
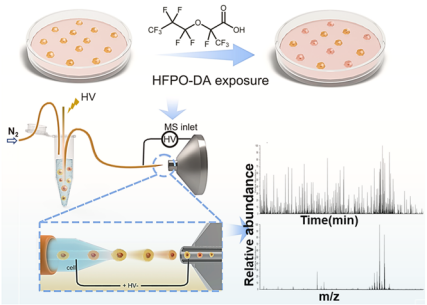


Unlocking spontaneous chiral resolution in silver clusters through steric and anionic control

Jin Liu, Zi-Ang Nan,* Qing Li, Chuan-Qi Shen, Zuo-Bei Wang, Fu-Lin Lin, Ting Chen, Lu-Yao Liu, Zhuo-Zhou Xie, Zhu Zhuo, Wei Wang and You-Gui Huang*

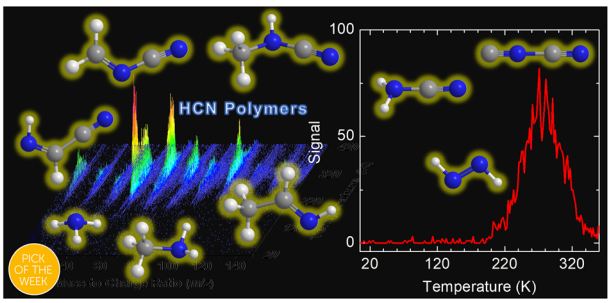
4955



Exposure single-cell metabolomics mass spectrometry reveals HFPO-DA toxicity mechanisms

Yuanxing Liu, Wenmei Zhang, Hanyu Yuan, Tong Pei, Tian Chen, Ke Gao, Denghui Guo, Xianfa Yang, Naihe Jing,* Guangsheng Guo and Xiayan Wang*

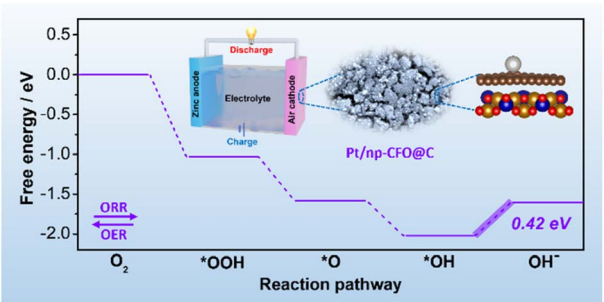
4966



Abiotic formation of nitrile precursors to amino acids and nucleobases in interstellar ice analogues

Jia Wang, Shiori Inada, Chaojiang Zhang, Joshua H. Marks, Zesen Wang, Alexandre Bergantini, Mason McAnally, André K. Eckhardt* and Ralf I. Kaiser*

4978



Highly stable linking of platinum and porous spinel *via* carbon bridge engineering towards a long-lifespan rechargeable zinc–air battery

Mei Wang,* Hao Du, Yong Nian, Guanshui Ma, Jinfang Zhang, Xiaoguang Wang* and Xiaofeng Li*

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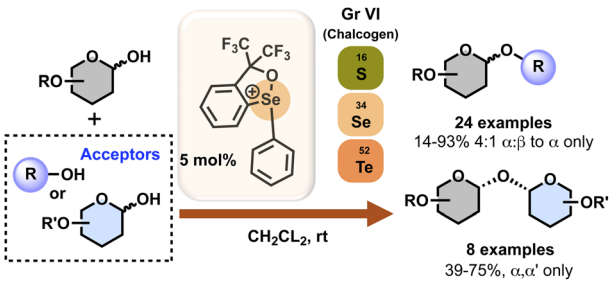
4991

Hypervalent chalcogenonium organocatalysis for the direct stereoselective synthesis of deoxyglycosides from hemiacetals

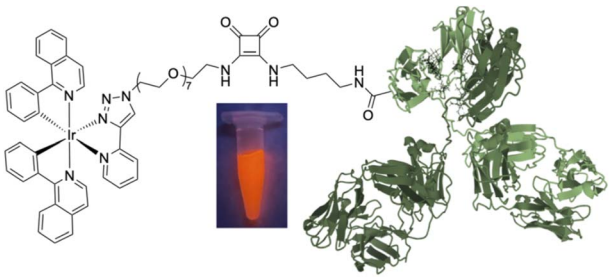
Jennifer Johns, Mukul Mahanti,* Thomas Hansen* and M. Carmen Galan*



4998

Toward photodynamic detection and photodynamic therapy of tumours over-expressing carbonic anhydrase IX with a phosphorescent organometallic iridium(III) antibody conjugate

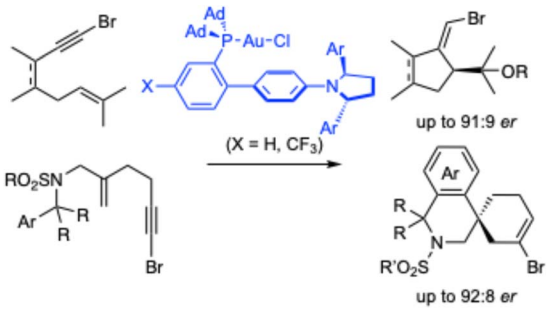
Emily R. McGowan, Stacey E. Rudd, Katherine A. Morgan, Trevor A. Smith and Paul S. Donnelly*



5005

Enantioselective cyclization of bromoenynes: mechanistic understanding of gold(I)-catalyzed alkoxycyclizations

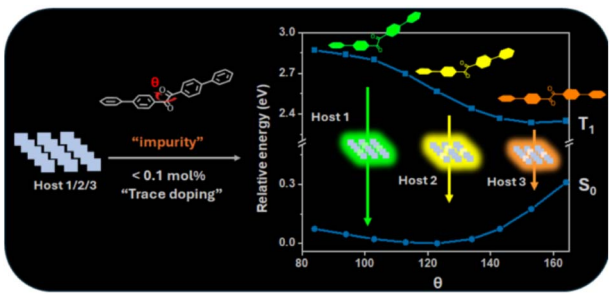
Andrea Cataffo, Eduardo García-Padilla, Imma Escofet, Nicolás Fincias, Anna Arnanz, Giuseppe Zuccarello, Guilong Tian, Luyu Cai, Fereshteh Khorasanidarehdor, Feliu Maseras and Antonio M. Echavarren*



5016

"Impurity"-driven tunable organic room temperature phosphorescence *via* conformational regulation in multi host/guest systems

Arnab Dutta, Utkarsh Singh, Swapan K. Pati* and Uday Maitra*



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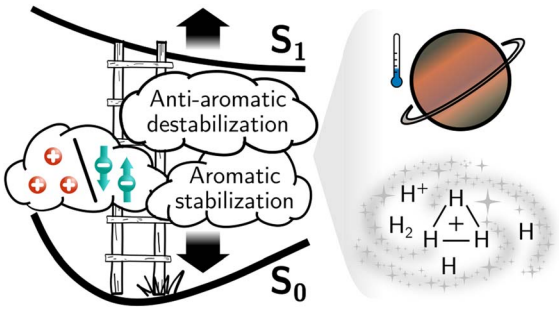
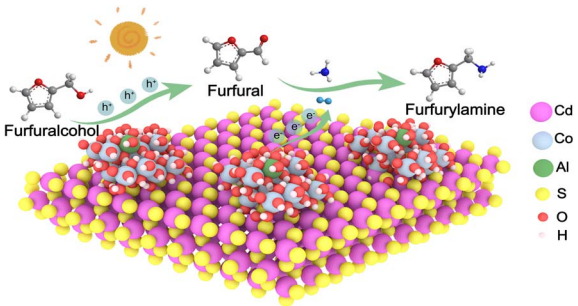


Deciphering the molecular origin of the 19.3 eV electronic excitation energy of H_3^+

Josene M. Toldo, Jakob K. Staab, Eduard Matito, Cina Foroutan-Nejad and Henrik Ottosson*

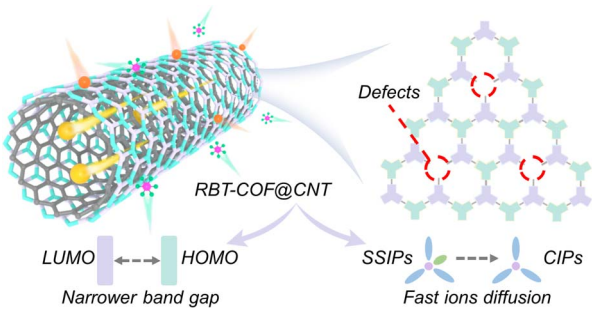
5038



Interface reconstruction strategy enabling the efficient light-driven amination of furfuryl alcohol

Yaorong He, Xiao Wang, Shanshan Ou, Lin Zhu, Tong Su, Rongfang Zhang, Wei Zhao, Hui Huang, Zhiqiang Wang, Peiyao Du* and Xiaoquan Lu*

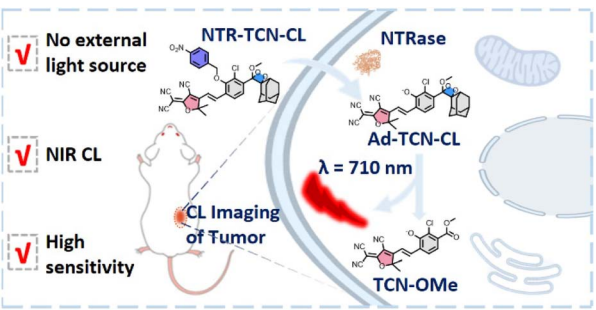
5046



Curvature defect engineering towards a high-performance COF-based cathode in lithium-ion batteries

Ju Duan, Haojie Zhou, Wenxiao Bi, Jiawei Liu, Linchu Xu, Weisi He, Xinyuan Sun, Huawei Hu, Wei Lyu* and Yaozu Liao*

5056



Near-infrared chemiluminescent probe for real-time monitoring of nitroreductase in tumors

Pan Zhu, Yu Tang, Yuanyu Tang, Shaojing Zhao,* Fei Long, Chaoyi Yao, Benhua Wang, Xiangzhi Song, Yi Zhang,* Chaochao Tan* and Minhuan Lan*

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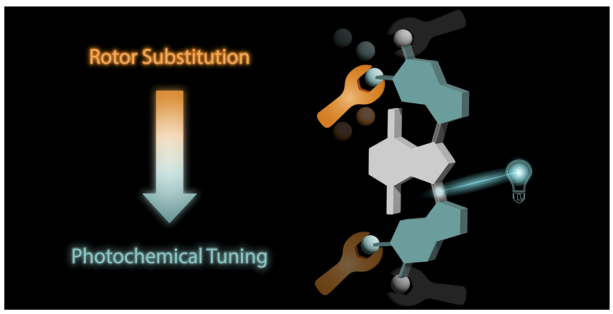
5063

Unlocking photochemical tunability in functionalised bridged-isoindigo molecular motors

Carlijn L. F. van Beek, Ainoa Guinart, Yusuf Qutbuddin and Ben L. Feringa*



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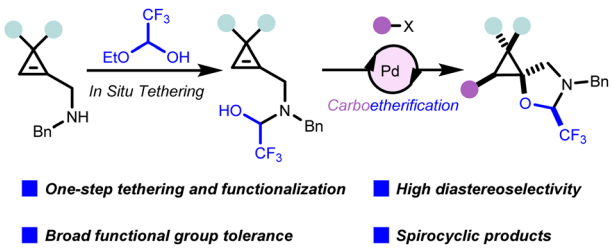
Stereoselective palladium-catalyzed carboetherification of cyclopropenes *via* a tethering strategy

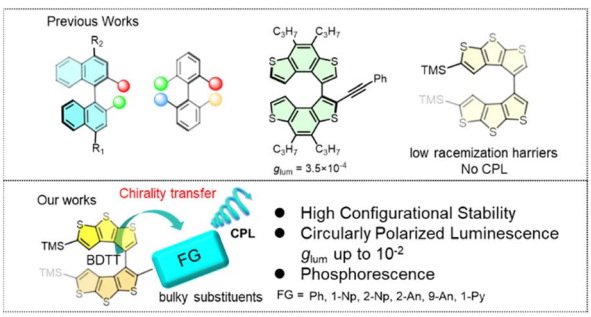
Duncan K. Brownsey, Alexandre A. Schoepfer and Jerome Waser*



5079

Axially chiral thiophene scaffolds: configurational stability and circularly polarized luminescence

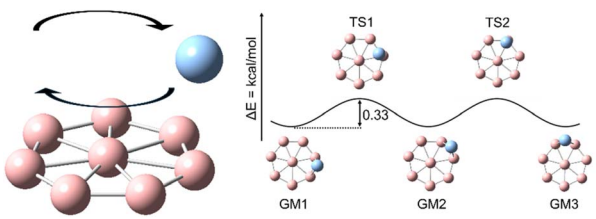
Xingyang Li, Shuai Qiu, Wan Xu,* Jia Tang, Zhiying Ma and Hua Wang*



5084

Probing the weak interaction between silver and boron

Hyun Wook Choi, Deniz Kahraman, Wei-Jia Chen and Lai-Sheng Wang*



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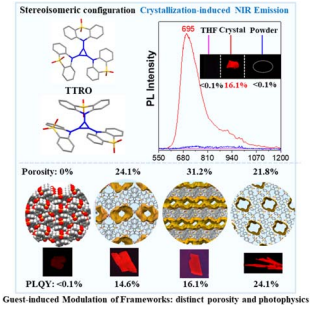
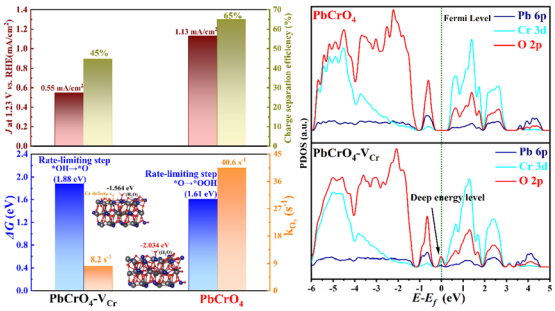


Sulfone-functionalized stereoisomeric [3]radialene displays guest induced modulation of porous frameworks and critical crystallization-induced near-infrared emission

Gaoqiang Xu, Ying Zhao, Sheng Xie,* Zhibiao Zhou, Ziyu Luo, Haohao Liu, Yang Zhang, Zijie Qiu, Anlian Pan,* Zebing Zeng* and Ben Zhong Tang*

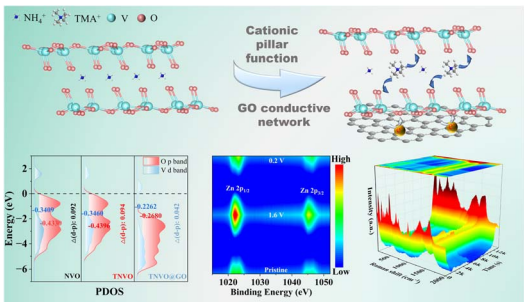
5103



The relevance of Cr defects and photoelectrochemical water oxidation activity of monoclinic $PbCrO_4$ films

Jiahe Li, Gaili Ke, Minji Yang, Guoliang Lv, Lanyi Cao, Wenjun Li, Tao Han, Wenrong Wang, Yong Zhou and Huichao He*

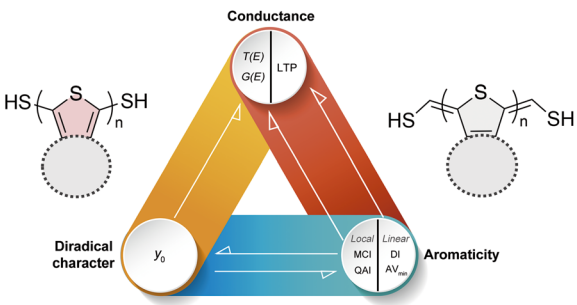
5115



Dual-functional nanoengineering *via* molecular pillaring and conductive hybridization for high-performance aqueous zinc-ion batteries

Yajiang Wang, Xiudong Chen,* Jin-Hang Liu, Dongmei Qi, Hai-Yan Hu, Huixiong Jiang, Yan Huang,* Ping Yan and Yao Xiao*

5125



Interplay between diradical character, aromaticity and conductance in oligothiophenes

Louis Van Nyvel, Irene Casademont-Reig, Jochen Eeckhoudt, Sergio Moles Quintero, Frank De Proft, Paul Geerlings and Mercedes Alonso*

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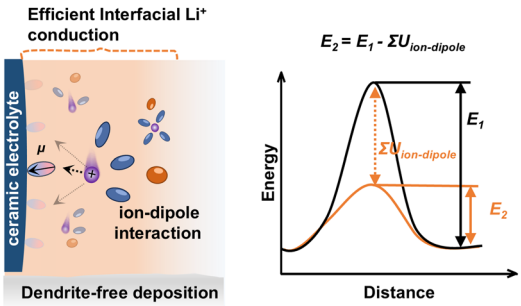
5145

Dipole-mediated interfacial solvation for efficient Li-ion transport in dendrite-free Li metal batteries

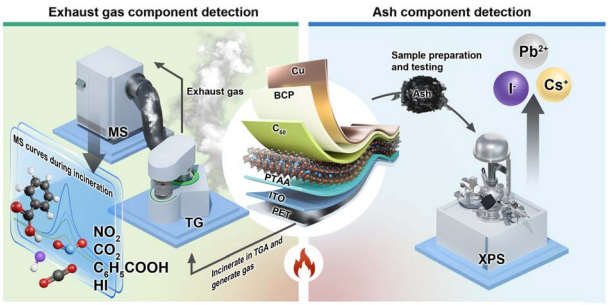
Wenlong Zhao, Kui Xu, Yanyan Zhang,* Qingyu Dong, Ningyuan Zhang, Huihui Wang, Ruowei Yi,* Yuxin Tang, Yanbin Shen* and Liwei Chen



5154

Thermal decomposition behavior and sustainable recycling of flexible perovskite solar modules

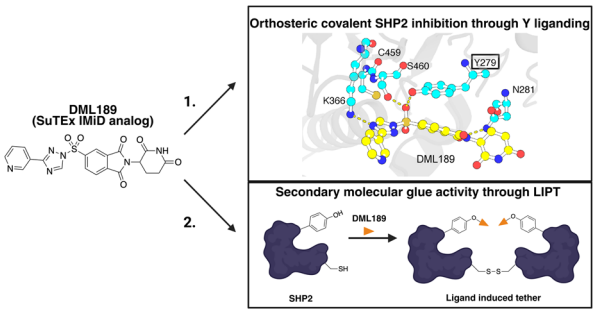
Xiaoyu Shi, Yangyang Liu, Tianxiao Liu, Siwei Luo, Feifei Wang and Shangshang Chen*



5163

Protein tyrosine phosphatase inactivation by electrophilic tyrosine modification

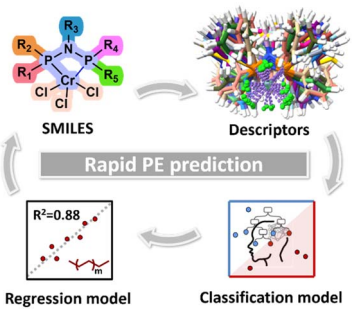
Madeleine L. Ware, David M. Leace, Zihan Qu, Quentin Schaefer, Sagar D. Vaidya, Mikayla L. Horvath, Zhihong Li, Yunpeng Bai, Zhong-Yin Zhang* and Ku-Lung Hsu*



5172

Decoding polyethylene formation in Cr/PNP catalyzed ethylene oligomerization *via* experimentally guided machine learning

Youcai Zhu, Yue Mu, Xiaoke Shi, Long Chen, Shu Yang, Li Sun and Zhen Liu*



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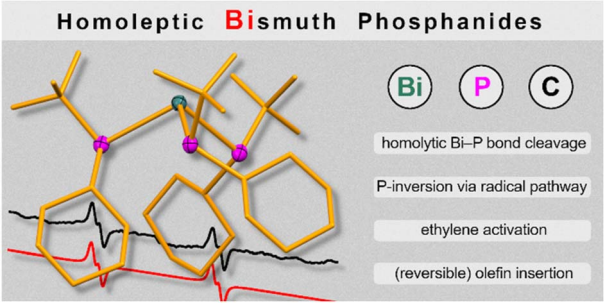
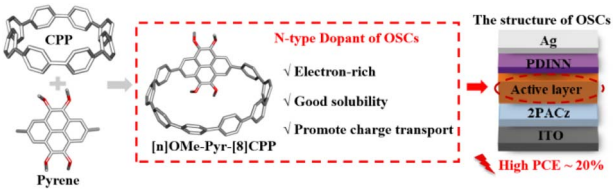


The bismuth phosphanides $Bi(PR_2)_3$: sources of phosphanyl radicals, P-inversion, and reversible olefin insertion

Sascha Reith, Kai Oberdorf, Sebstián Martínez, Jann B. Landgraf, Alena Ahrens, Felix Jakobi, Xiulan Xie and Crispin Lichtenberg*

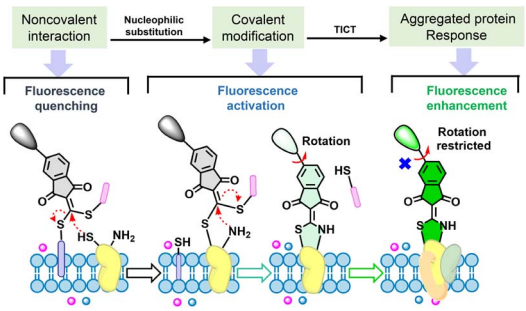
5192



Pyrene-embedded nanohoops: synthesis and dopant engineering for organic solar cells with an enhanced efficiency of 19.96%

Jing He, Wenlong Liu, Siwei Wu, Qi Xie, Zhe Lian, Xiaonan Li, Shengzhu Guo, Ying Wang,* Xinjun Xu* and Hua Jiang*

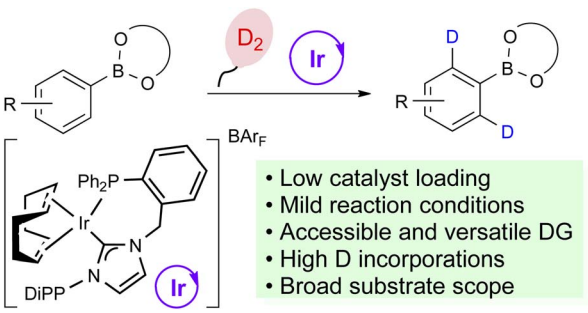
5201



Reactive fluorescent probe for covalent membrane-anchoring: enabling real-time imaging of protein aggregation dynamics in live cells

Hongbei Wei, Liren Xu, Ke Wei, Wenhai Bian, Yifan Wen, Wanyi Yu, Hui Zhang,* Haiqiao Huang, Tony D. James* and Xiaolong Sun*

5213



Widely-used boronic esters as synthetically-versatile directing groups for C–H activation and hydrogen isotope exchange

J. Conor Townsley, Connor Smith, David M. Lindsay, Gemma M. Liwicki, Nicholas D. Measom, Laura C. Paterson and William J. Kerr*

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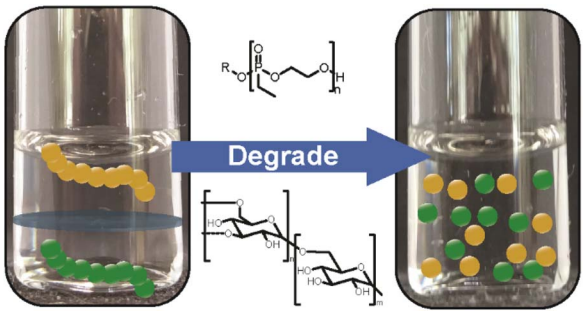
5220

Degradable polyphosphoester-based aqueous two-phase systems and water-in-water emulsions

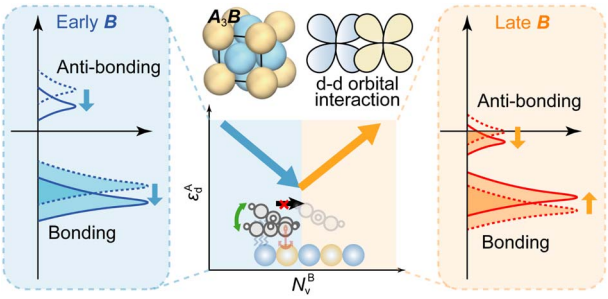
Jordan A. J. McCone, Ramon ten Elshof, Niamh Bayliss, Frederik R. Wurm* and Bernhard V. K. J. Schmidt*



5229

A predictive descriptor for the d-band center in intermetallic alloys accelerates the design of robust molecular switches

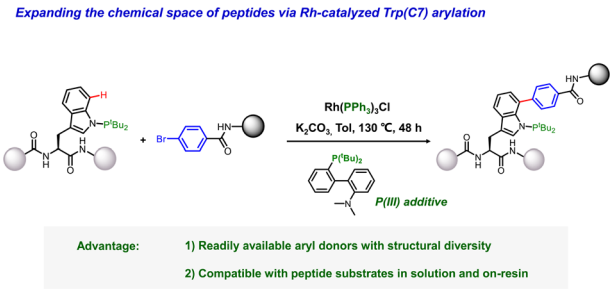
Sha Yang,* Junjun Zhou, Yirong Zhang, Guolin Cao, Ji-Chang Ren and Wei Liu*



5240

Expanding the chemical space of peptides *via* biocompatible tryptophan C7-arylation

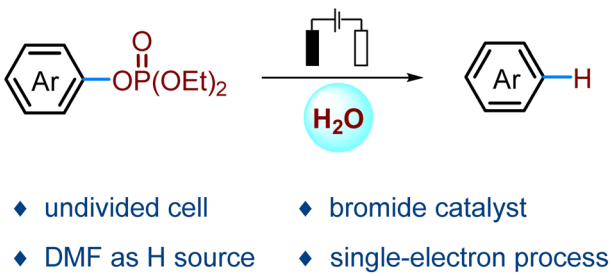
Lei Liu, Yanyang Zhao, Yiming Su, Boning Wang, Yue Xiong, Tianhang Wang, Xiude Hua, Yonghao Ye,* Zhuangzhi Shi* and Huan Wang*



5249

Water-enhanced electrochemical hydrogenolysis of aryl C–O bonds

Yingying Pan, Jing Chen, Jie Li and Xuefeng Tan*



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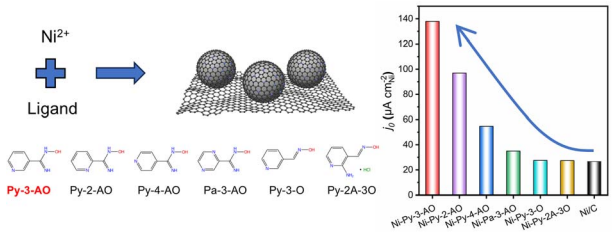
EDGE ARTICLES

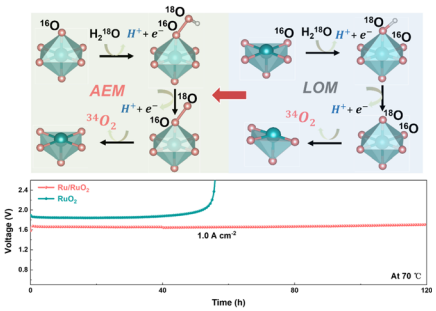
5256



Ligand-engineered synthesis of carbon encapsulated Ni nanoparticles for efficient alkaline hydrogen oxidation reaction

Yanan Chen, Aiqing Cao, Yongsheng Wang, Jiaxin Wang, Hao Wang, Qingqing Lv, Shuxin Zhang, Chengjin Chen, Yaping Li, Wei Zhu* and Zhongbin Zhuang*

5264



Dopant-free stabilization of ruthenium oxide *via* metallic Ru-induced d-orbital modulation for acidic water electrolysis

Lei Tan, Meharban Faiza, Jin Tian, Lingzhi Zhu, Tiantian Su, Xiaotong Wu, Yujie Song, Qiuju Zhang, Jingsan Xu, Chao Lin,* Xiaopeng Li* and Wei Luo

CORRECTIONS

5276

Correction: Structure-based design of an aromatic helical foldamer–protein interface

Lingfei Wang, Céline Douat, Johannes Sigl, Post Sai Reddy, Lucile Fischer, Béatrice Langlois d'Estaintot, Zhiwei Liu, Vojislava Pophristic, Yuwei Yang, Yingkai Zhang and Ivan Huc*

5277

Correction: Deciphering the molecular origin of the 19.3 eV electronic excitation energy of H_3^+

Josene M. Toldo, Jakob K. Staab, Eduard Matito, Cina Foroutan-Nejad and Henrik Ottosson*

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RETRACTION

5279

Retraction: Photo-generated radical mediated molecular luminescence enhancement

Jinming Song, Fengling Zhang, Zhenyi He, Lei Zhou, Jingyu Cao, Tao Li and Xiang Ma*

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