

IN THIS ISSUE

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Cover
See Eric Masson, Jiří Kaleta *et al.*, pp. 14081–14087. Image reproduced by permission of Tomáš Belloň from *Chem. Sci.*, 2025, 16, 14081.



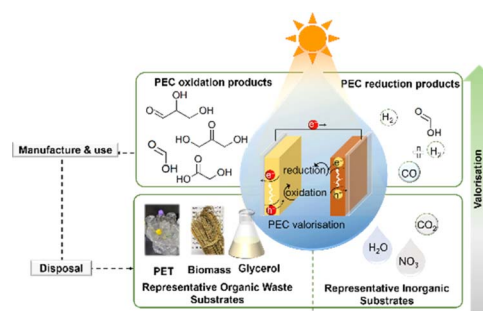
Inside cover
See Yosuke Kageshima, Hiromasa Nishikiori *et al.*, pp. 14088–14097. Image reproduced by permission of Yosuke Kageshima and Hiromasa Nishikiori from *Chem. Sci.*, 2025, 16, 14088.

PERSPECTIVES

13966

Photoelectrochemical valorisation of organic waste for the cogeneration of solar fuels and value-added chemicals

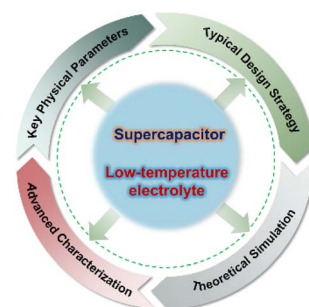
Fitri Nur Indah Sari, Ping-Chang Chuang, Shih-Ching Huang, Chia-Yu Lin* and Yi-Hsuan Lai*



13997

Current status and future perspectives of low-temperature electrolytes for supercapacitors

Changde Ma, Prattek Das, Xiaoyu Shi, Feng Zhou and Zhong-Shuai Wu*



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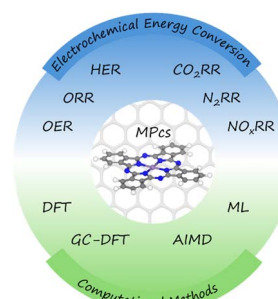
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REVIEWS

14019

A mechanism review of metal phthalocyanines as single-atomic catalysts in electrochemical energy conversion

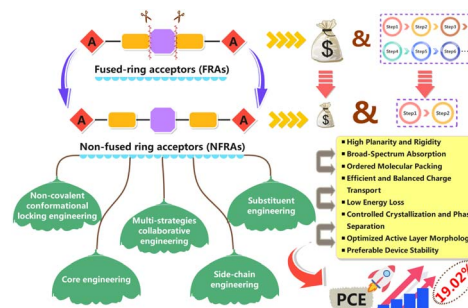
Zikang Li, Ziqi Zhou, Mingzi Sun, Tong Wu, Qiuyang Lu, Lu Lu, Baian Chen, Cheuk Hei Chan, Hon Ho Wong and Bolong Huang*



14038

Strategic molecular engineering of non-fused non-fullerene acceptors: efficiency advances and mechanistic insight

Minmin Chen, Yong Zhang,* Jinglin Liu, Qungui Wang, Peng Song and Yuanzuo Li*

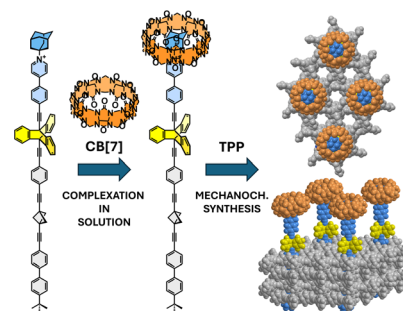


EDGE ARTICLES

14081

Surface inclusion and dynamics of cucurbit[7]uril-based supramolecular complexes

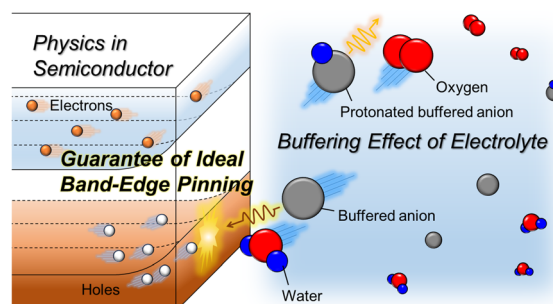
Carina Santos Hurtado, Guillaume Bastien, Doroteja Lončarić, Martin Dračinský, Ivana Císařová, Eric Masson* and Jiří Kaleta*



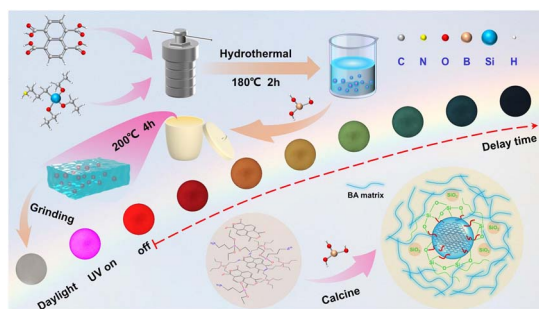
14088

Neutral buffered electrolytes guarantee ideal band-edge pinning for semiconductor photoanodes

Yosuke Kageshima,* Hiromu Kumagai, Katsuya Teshima, Kazunari Domen and Hiromasa Nishikiori*



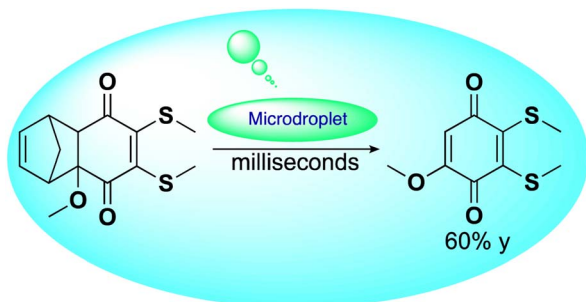
14098



Ultra-wide time-dependent phosphorescence color of carbon dots via a synergistic strategy of dual confinement structures constructing multiple luminescent centers

Shiwei Zhang, Chenglong Shen, Jiurong Li, Junfei Liao, Peng Miao,* Xiujian Zhao and Xiao Gong*

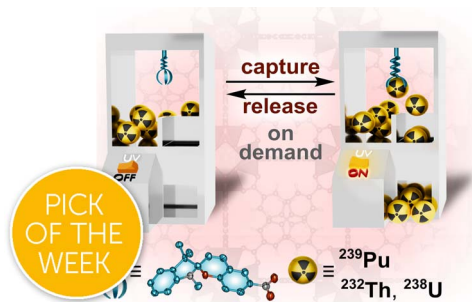
14109



Synthesis of benzoquinone compounds by a microdroplet-accelerated retro-Diels–Alder reaction

Nishkant Malkoti, Yifan Meng, Richard N. Zare* and Elumalai Gnanamani*

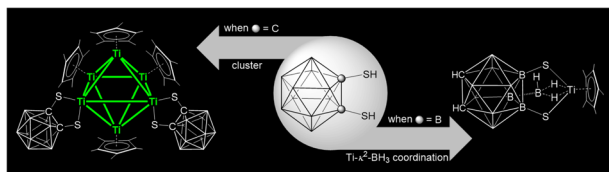
14115



Stimuli-responsive photoswitch–actinide binding: a match made in MOFs

Kyoung Chul Park, Jaewoong Lim, Grace C. Thaggard, Buddhima K. P. Maldeni Kankanamalage, Ingrid Lehman-Andino, Yuan Liu, Jennii M. Burrell, Corey R. Martin, An T. Ta, Andrew B. Greytak, Jake W. Amoroso, David D. DiPrete, Mark D. Smith, Simon R. Phillpot and Natalia B. Shustova*

14127



Cluster versus coordination: the chemistry of cyclopentadienyl titanium and vanadium complexes with B- and C-functionalized carborane-thiols, $[C_2B_{10}H_{12-n}(SH)_n]$ ($n = 2$ or 3)

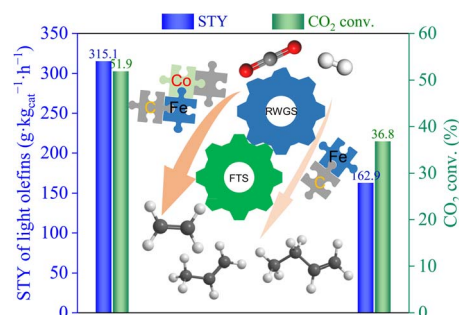
Subhash Bairagi, Deepak Kumar Patel, Debipada Chatterjee, Monika Kučeráková, Jan Macháček, Tomas Base,* Thalappil Pradeep* and Sundargopal Ghosh*



14140

Unveiling the role of cobalt in the product regulation for CO₂ hydrogenation to light olefins over alumina-supported Co–Fe catalysts

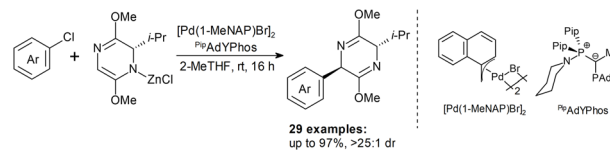
Zhihao Liu, Wenlong Song, Peipei Zhang, Jiaming Liang,* Chengwei Wang, Chufeng Liu, Hanyao Song, Baojian Chen, Kangzhou Wang,* Guangbo Liu, Xiaoyu Guo, Yingluo He, Xinhua Gao, Jianli Zhang, Guohui Yang and Noritatsu Tsubaki*



14152

Diastereoselective arylation of bis-lactim ethers catalyzed by *N*-coordinating ylide-functionalized phosphine (NYPhos)

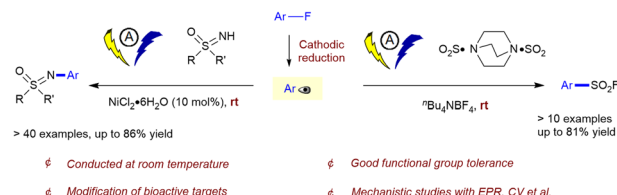
Daniel Sowa Prendes, Julian Löffler, Ivan Martins Barreto, Nagesh Sankaran, Henning Remm, Ronaldo Nascimento de Oliveira, Viktoria H. Gessner* and Lukas J. Gooßen*



14161

Electrochemically promoted defluorinative sulfoximination and fluorosulfonylation of non-activated aryl fluorides at room temperature

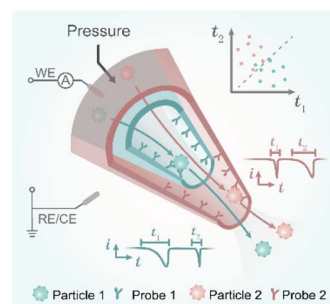
Xianqiang Kong,* Yiyi Chen, Shuangquan Zhang, Kun Feng, Xiaohui Chen, Lin-Hui Dong, Meng-Hua Li, Yuan-Qing Xu and Zhong-Yan Cao*



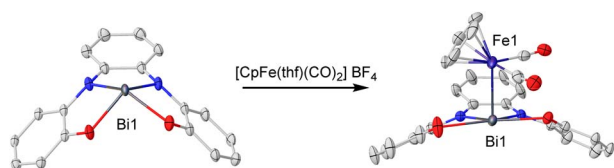
14170

Multi-dimensional analysis of single particles with sequential dual-nanopipette sensors

Rui-Xue Gao, Si-Yu Tian, Ying Chen, Yu-Ting Qi, Limin Xiang, Wei-Hua Huang and Xin-Wei Zhang*



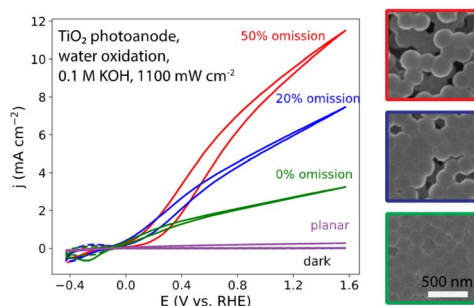
14178



Bis(amidophenolate)-supported pnictoranydes: Lewis acid-induced electromerism in a bismuth complex

Simon B. H. Karnbrock, Jan F. Köster, Isabelle Becker, Christopher Golz, Franc Meyer, Martí Gimferrer and Manuel Alcarazo*

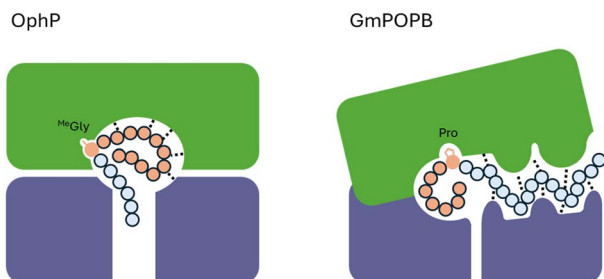
14186



Harnessing emergent multiple scattering resonances in a photonic glass structure for photoelectrochemical energy conversion

Ashlyn G. DesCarpentrie and Robert H. Coridan*

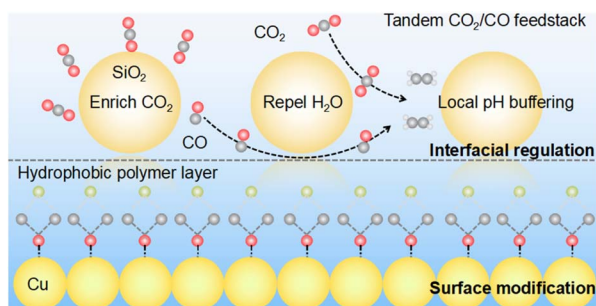
14196



Macrocyclization of backbone *N*-methylated peptides by a prolyl oligopeptidase with a distinctive substrate recognition mechanism

Emmanuel Matabaro, Haigang Song, Lukas Sonderegger, Fabio Gherlone, Andrew M. Giltrap, Sam Liver, Alvar D. Gossert, Markus Künzler* and James H. Naismith*

14207



Tailoring dual-hydrophobic microenvironment for tandem CO₂/CO feedstock to enhance CO₂ electroreduction on Cu-based catalysts

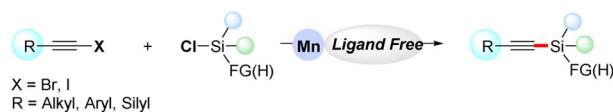
Tete Zhao, Ziyao Zhou, Xiao Wang, Kuiming Liu, Jialei Chen, Kang Liu, Yue Li, Meng Yu,* Yan Xu,* Zhenhua Yan, Lifang Jiao and Fangyi Cheng*



14216

Manganese-mediated C(sp)–Si cross-electrophile coupling of alkynyl halides with chlorosilanes

Quan Lin, Liping Lin, Jingjing Wang, Daohong Yu,*
Zhengwang Chen* and Zhong-Xia Wang*

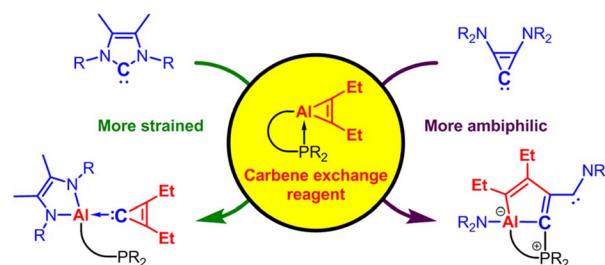


> 50 examples, up to 99 yield, excellent chemoselectivity ✓
Unreported C(sp)–Si cross-electrophile coupling ✓

14225

Aluminacyclopropene–phosphine complex: a carbene-exchange reagent

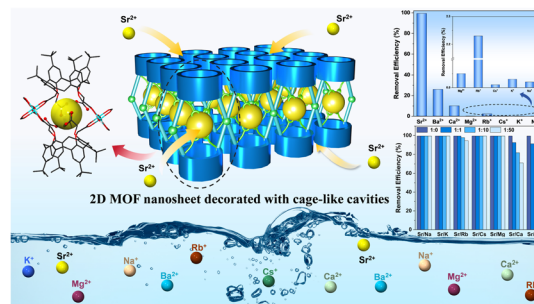
Huihui Xu, José Miguel León Baeza, Antoine Baceiredo,
René Segundo Rojas Guerrero,* Nathalie Saffon-Merceron,
Vicenç Branchadell and Tsuyoshi Kato*



14231

Highly efficient and selective Sr²⁺ capture using robust two-dimensional MOF nanosheets decorated with cage-like cavities

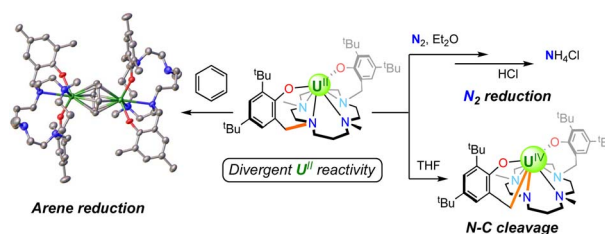
Xiao-Ran Jia, Zi-Xuan Gao, Hai-Ming Fei, Li-Juan Lan,
Cai-Xia Yu,* Yong Qian* and Lei-Lei Liu*



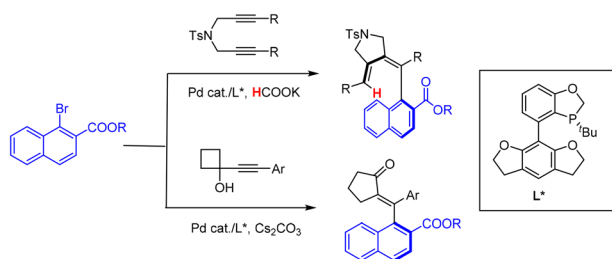
14242

Facile N–C bond cleavage and arene reduction by a transient uranium(II) complex

R. A. Keerthi Shivaram, Leonor Maria,
Thayalan Rajeshkumar, Rosario Scopelliti, Ivica Živković,
Andrzej Sienkiewicz, Laurent Maron
and Marinella Mazzanti*



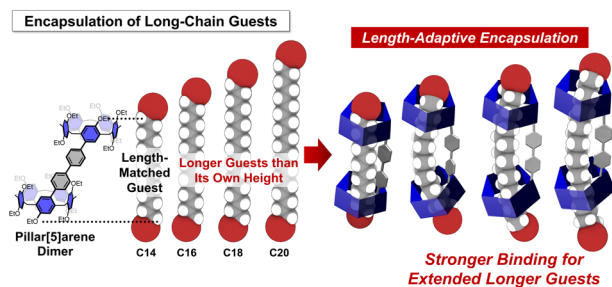
14252



Palladium-catalyzed redox diversified entry to axially chiral styrenes *via* asymmetric olefination with alkynes

Ziwei Lin, Yuqing Jiang, Fen Wang,* Genping Huang,* Jessica Li and Xingwei Li*

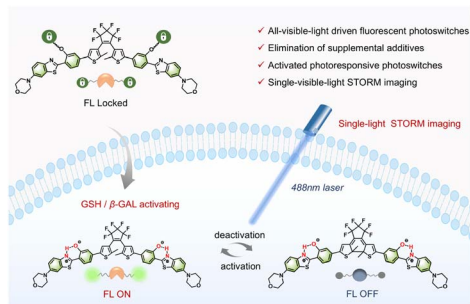
14262



Dimerization of pillar[5]arene: length-adaptive encapsulation of long-chain guests

Shunsuke Ohtani,* Keigo Nakagawa, Shigehisa Akine, Kenichi Kato and Tomoki Ogoshi*

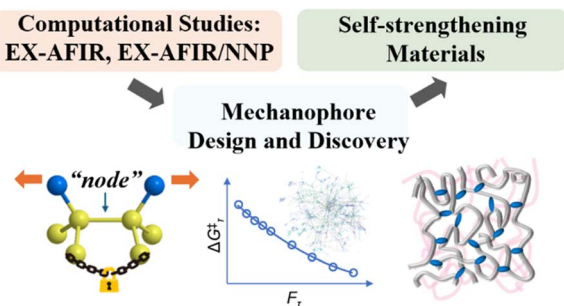
14270



Single-visible-light performed STORM imaging with activatable photoswitches

Fanghui Li, Mengqi Li, Yiqi Shi, Xinyun Bian, Ning Lv, Shaomeng Guo, Ying Wang, Weijun Zhao* and Wei-Hong Zhu*

14278



“Node” facilitated thermostable mechanophores for rapid self-strengthening in double network materials

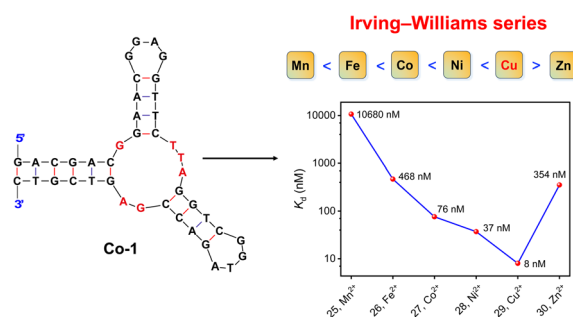
Julong Jiang, Zhi Jian Wang, Ruben Staub, Yu Harabuchi, Alexandre Varnek, Jian Ping Gong* and Satoshi Maeda*



14286

A general transition metal binding aptamer following the Irving–Williams series

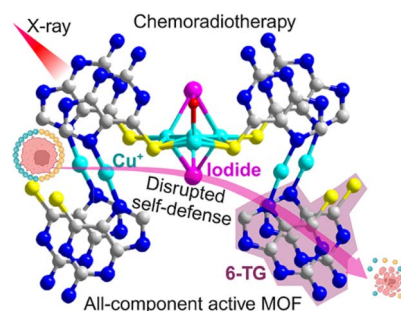
Jin Wang, Yunus A. Kaiyum, Sihan Wang, Xiangmei Li, Hongtao Lei, Philip E. Johnson and Juewen Liu*



14295

All-component-active metal–organic frameworks for tailored chemoradiotherapy of self-defensive tumors

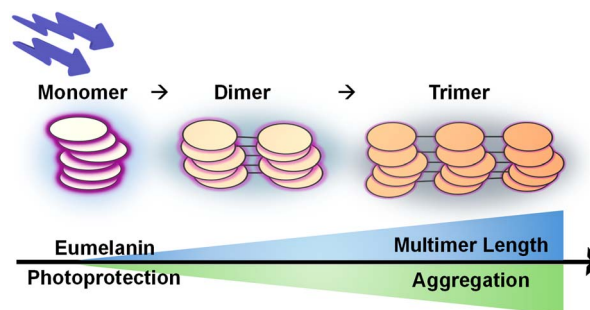
Xiang Xu, Zhou Yang, Songsong Bao, Zhiyuan Xu, Tianrui Liu, Lina Wu* and Jianping Lei*



14304

Structural disorder as a key to photoprotection in eumelanin multimers

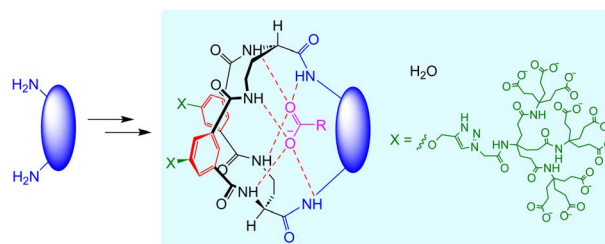
Kavya Vinod, Diana Thomas and Mahesh Hariharan*



14314

Bicyclic anionic receptors for carboxylates in water

Xudong Ren and Anthony P. Davis*



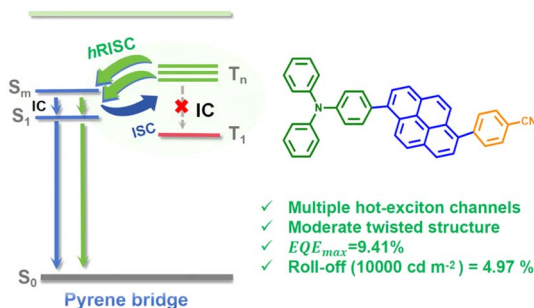
14323



Degradable water-soluble polymer prodrugs for subcutaneous delivery of irritant anticancer drugs

Léa Guerassimoff, Jingming Cao, Michaella Auguste, Amaury Bossion, Chen Zhu, Dao Le, Catherine Cailleau, Safa Mohamed Ismail, Françoise Mercier-Nomé and Julien Nicolas*

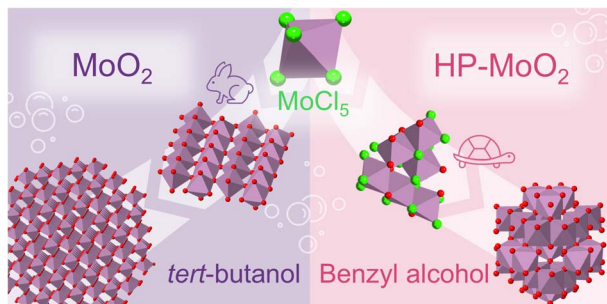
14342



Hybridized local and charge-transfer materials using pyrene as π -bridge towards negligible efficiency roll-off in non-doped OLED

Yuqin Du, Yali Peng, Wenjian Dong, Huixia Xu,* Xinyu Li, Kang Chen, Feng Wang, Yanqin Miao,* Peng Tao,* Hua Wang and Junsheng Yu

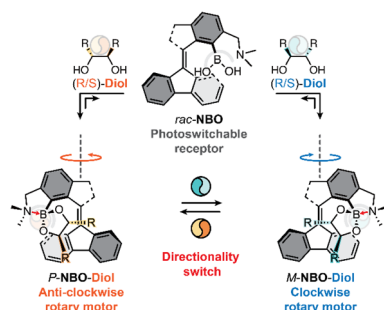
14350



Mechanistic insights into solvent-guided growth and structure of MoO_2 nanoparticles in solvothermal synthesis

Laura G. Graversen, Mikkel Juelsholt, Olivia Aalling-Frederiksen, Ulrik Friis-Jensen, Rebecca K. Pittkowski, Maria S. Thomsen, Andrea Kirsch, Nicolas P. L. Magnard and Kirsten M. Ø. Jensen*

14366



Extrinsic gating of the rotary direction of a light-driven molecular motor by dynamic boronic acid–diol complexation

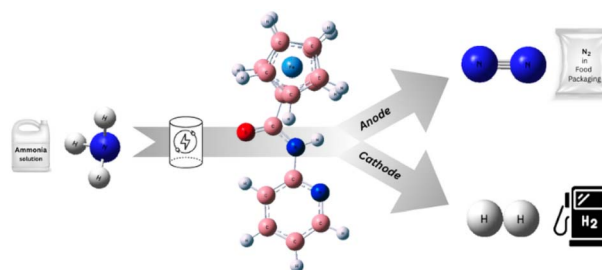
Zi-Jian Chen, Hsiu-Feng Lu, Chun-Wei Chiu, Yi-Hung Liu, Chao-Ping Hsu* and Jye-Shane Yang*



14377

Electrochemical ammonia oxidation with a homogeneous molecular redox mediator

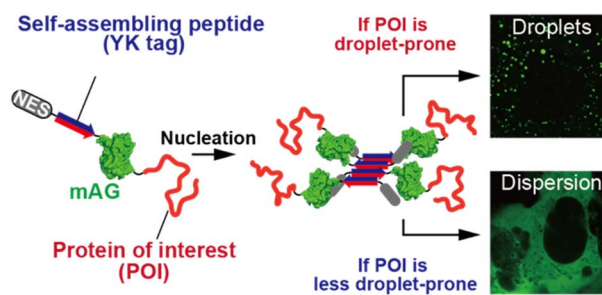
Tarisha Gupta,* Sanyam, Shivani Saraswat, Anirban Mondal* and Biswajit Mondal*



14384

Intracellular evaluation of protein droplet-forming capability using self-assembling peptide tags

Takayuki Miki,* Masahiro Hashimoto, Masatoshi Shimizu, Hiroki Takahashi and Hisakazu Mihara



14392

Unlocking inverted singlet–triplet gap in alternant hydrocarbons with heteroatoms

Atreyee Majumdar, Surajit Das and Raghunathan Ramakrishnan*

