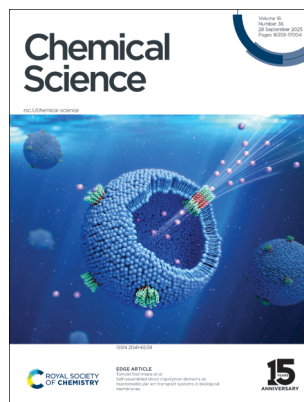


IN THIS ISSUE

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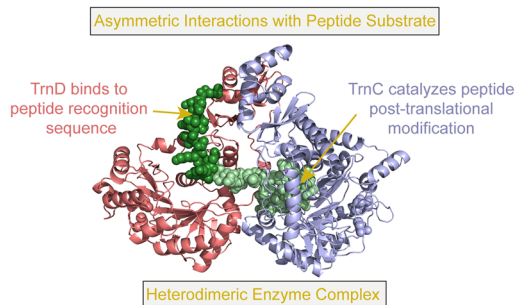
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COMMENTARY

16377

A focus on unexpected surprises in RiPP natural product biosynthesis

Christopher J. Thibodeaux

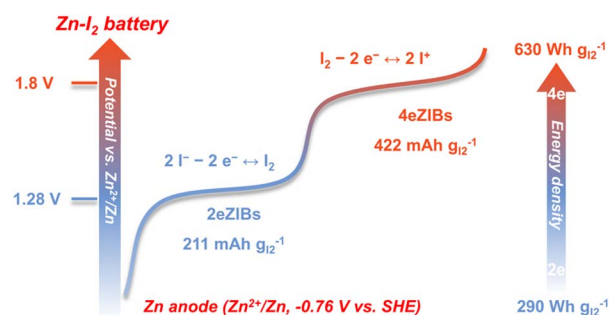


PERSPECTIVES

16381

I⁺/I₂/I⁻ conversion toward energy-dense aqueous Zn–I₂ batteries: progress and perspective

Yangyang Liu, Kuan Zhou, Rui Wang, Quanwei Ma, Peng Xiong, Longhai Zhang* and Chaofeng Zhang*



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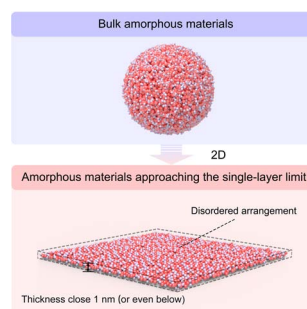
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PERSPECTIVES

16392

The emergence of amorphous materials approaching the single-layer limit

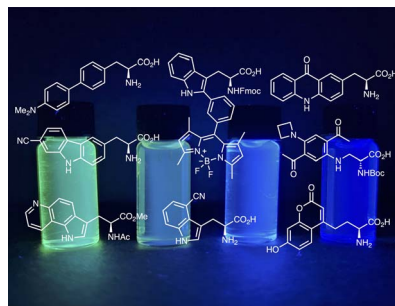
Zude Shi, Haowei Ge and Yongmin He*



16414

Expanding the fluorescence toolkit: molecular design, synthesis and biological application of unnatural amino acids

Olivia Marshall and Andrew Sutherland*

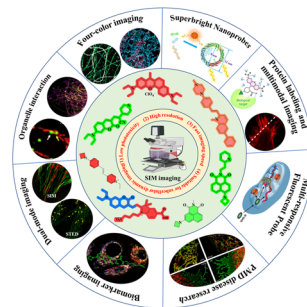


REVIEWS

16433

Advancements and perspectives on organelle-targeted fluorescent probes for super-resolution SIM imaging

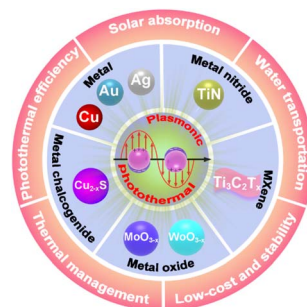
Guofang Li, Enxiang Ge, Hua Zheng and Weiyang Lin*



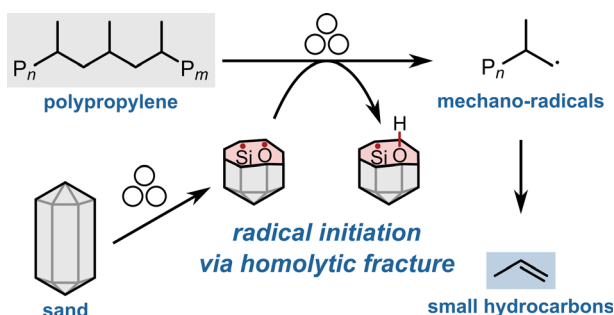
16483

Plasmonic photothermal nanomaterials for solar steam generation

Yong Wang, Guozhu Chen, Mohamed Chaker and Dongling Ma*



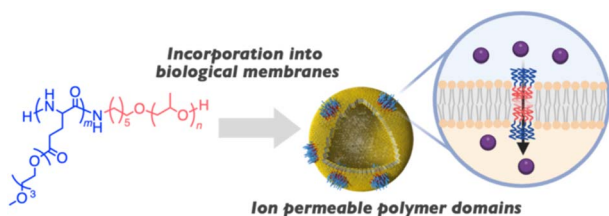
16511



Homolytic fracture of inorganic crystalline materials enhances the mechano-chemical degradation of polypropylene

Adrian H. Hergesell, Stephan Popp, Raghavendra Meena, Viviana M. Ospina Guarin, Claire L. Seitzinger, Carsten Sievers, Guanna Li and Ina Vollmer*

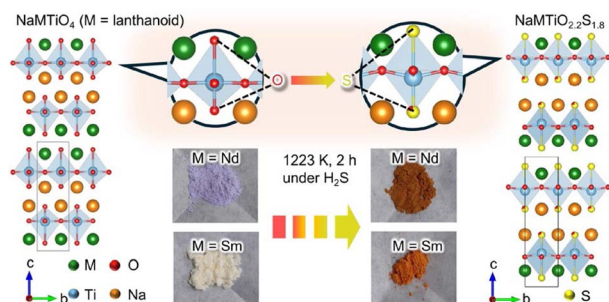
16522



Self-assembled block copolymer domains as macromolecular ion transport systems in biological membranes

Shunji Kosaka, Jokichi Fukushima, Nanami Takeuchi, Noriko Miyamoto, Liliana de Campo, Ryuji Kawano and Tomoki Nishimura*

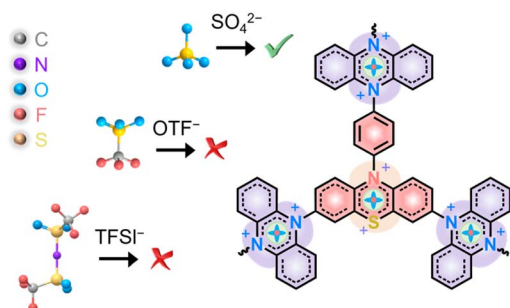
16534



Interlayer-active layered oxysulfides NaMTiO_{2.2}S_{1.8} (M = Nd, Sm) with an n = 1 Ruddlesden-Popper structure acting as photocatalysts for visible light water splitting

Yusuke Ishii, Hajime Suzuki,* Daichi Kato, Osamu Tomita, Akinobu Nakada and Ryu Abe*

16542



Unlocking the potential of a multi-electron p-type polyheterocycle cathode: when it meets a small-size and high-charge anion

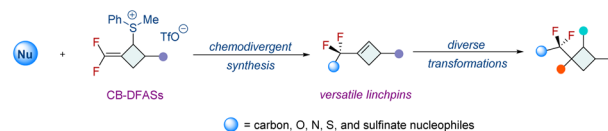
Ziyang Song, Wenbo Liu, Qi Huang, Yaokang Lv, Lihua Gan and Mingxian Liu*



16552

Difluoromethylene cyclobutyl sulfonium salts: versatile reagents for chemodivergent synthesis of difluoroalkylated cyclobutenes and cyclobutanes

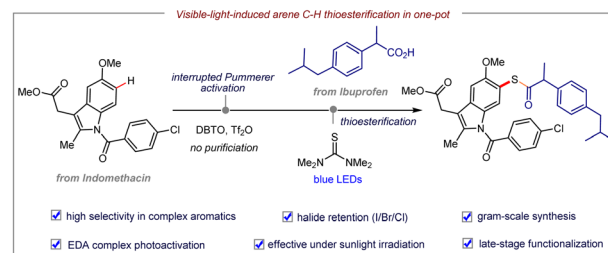
Xiao-Tian Feng, Qiao-Qiao Min, Song-Yu Zhang, Hai-Yang Zhao and Xingang Zhang*



16559

Thiol-free arene C–H thioesterification enabled by a photoactive electron donor–acceptor complex

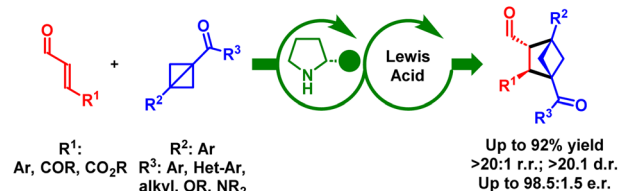
Yan-Qiu Jiang, Ang Gao and Ming-Chen Fu*



16567

Aminocatalytic enantioselective [2 + 2] cycloaddition of Bicyclo[1.1.0]butanes and α,β -unsaturated aldehydes

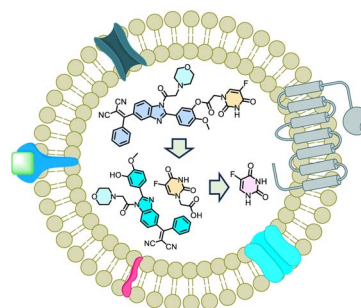
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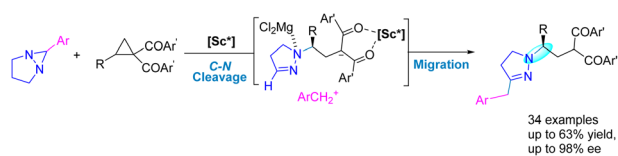
16573

Esterase-induced release of a theranostic prodrug in lysosomes for improved therapeutic efficacy and lower systemic toxicity

Sourav Dutta, Sanchita Tripathy, Somnath Bej, Sabana Parvin, Batakrisna Jana,* Chitta Ranjan Patra* and Amitava Das*



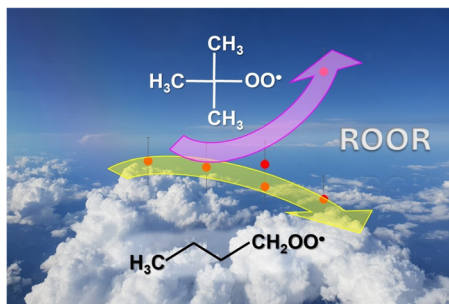
16584



Unveiling the migration reactivity of bicyclic diaziridines: enantioselective synthesis of chiral pyrazolines

Zhili Liu, Lichao Ning, Bingqian Yang, Kaixuan Wang, Lili Lin* and Xiaoming Feng*

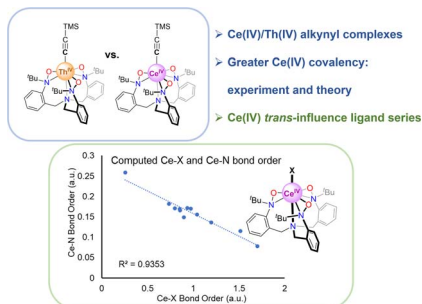
16590



Trends in organic peroxide (ROOR) formation in the reactions of C1–C4 alkyl peroxy radicals (RO₂) in gas

Barbara Nozière

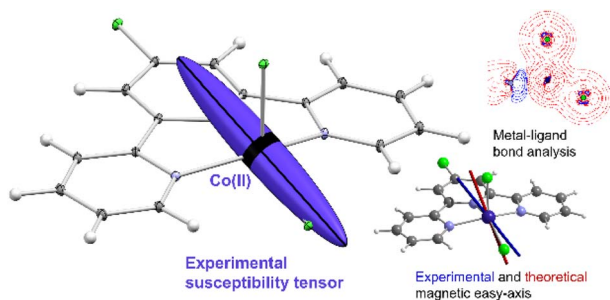
16597



Comparison of Ce(IV)/Th(IV)-alkynyl complexes and observation of a *trans*-influence ligand series for Ce(IV)

Qiaomu Yang, Xiaojuan Yu, Ekaterina Lapsheva, Pragati Pandey, Patrick W. Smith, Himanshu Gupta, Michael R. Gau, Patrick J. Carroll, Stefan G. Minasian, Jochen Autschbach* and Eric J. Schelter*

16610



Experimental determination of the magnetic anisotropy in five-coordinated Co(II) field-induced single molecule magnets

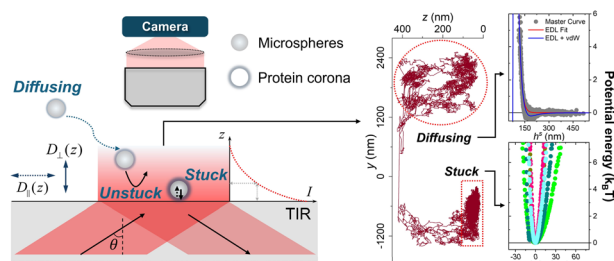
Hannah H. Slavensky, Vijay S. Parmar,* Sofie S. Leiszner, Andreas M. Thiel, Helene Lassen, Stuart Calder, Iurii Kibalin and Bo B. Iversen*



16625

Exploring the protein corona-mediated near-wall confined motion of micro-carriers via total internal reflection microscopy

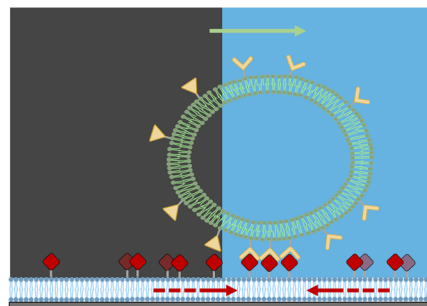
Wei Liu, Zuwei Zhao, Jinwei Zhong, Pui Wo Felix Yeung, Jiahao Wu, Yinan Li, Hang Jiang, Yuwei Zhu* and To Ngai*



16638

Design rules for adhesion-driven synthetic cell motility on dynamic membranes

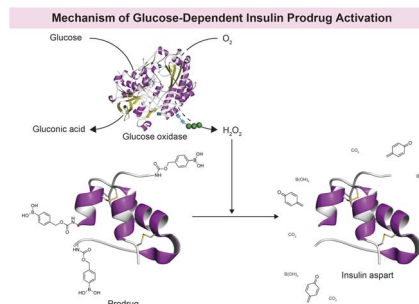
Daniele Di Iorio,* Ali Heidari and Seraphine V. Wegner*



16645

Fully dissolved glucose-responsive insulin delivery system based on a self-immolative insulin prodrug and glucose oxidase

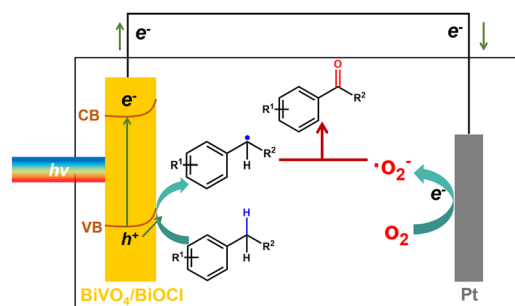
Satoshi Kitaoka, Minori Kojima, Miho Koita, Hiroki Koyama, Chisato Mori, Mako Okabe, Ryusei Ando, Kaede Kobayashi, Ryo Watanabe, Yuki Takano, Tony D. James and Yuya Egawa*



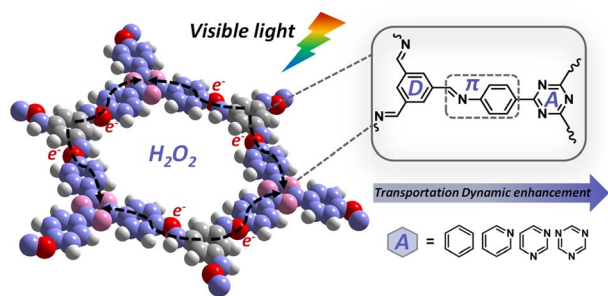
16659

BiVO₄/BiOCl heterostructure photoanodes for highly selective photoelectrochemical oxidation of benzylic C(sp³)-H bonds

Haiwen Shi, Qingjie Wang, Youai Qiu and Jingshan Luo*



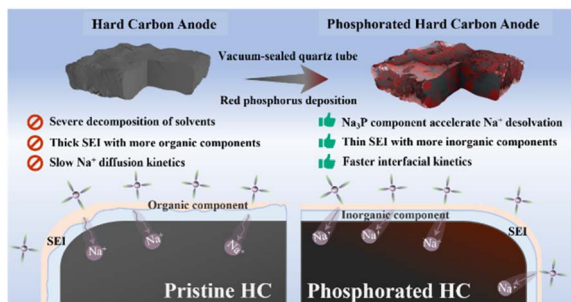
16668



Regulation of charge carrier transportation in D- π -A type covalent organic frameworks for promoting photocatalytic H₂O₂ production

Hailing Ma, Yangpeng Zhang, You Wu, Qianfeng Gu, Zhonghua Li* and Qichun Zhang*

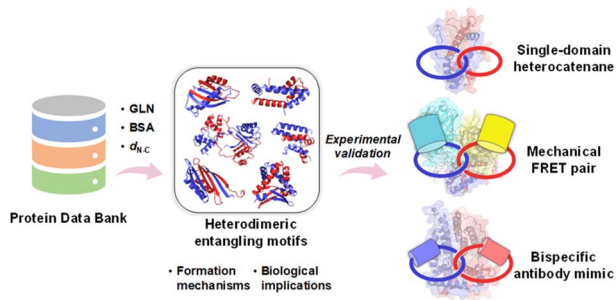
16678



Rational phosphating layer design in biomass-derived hard carbons toward fast charging capability of sodium ion battery anodes

Haihan Zhang, Zhenxin Huang, Siyuan Lin, Jiawu Cui, Qianyu Zhang,* Xiansheng Luo, Rui Wang, Chaofeng Zhang,* Chengyong Shu and Wei Tang*

16690

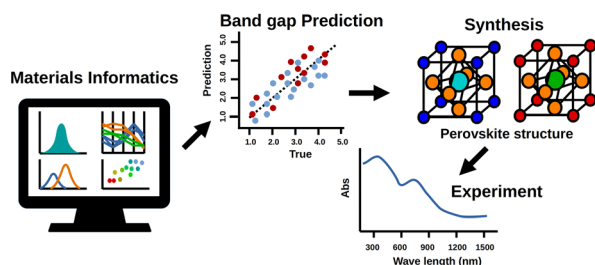


Heterodimeric protein entangling motifs: systematic discovery, feature analysis, and topology engineering

Lianjie Xu, Xibao Tian and Wen-Bin Zhang*

16703

Data Driven Synthesis of Perovskite



Designing and synthesizing perovskites with targeted bandgaps via tailored descriptors

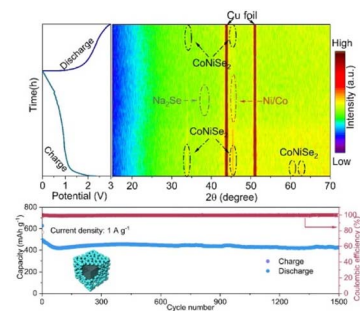
Kenshin Shibata, Fernando Garcia-Escobar,* Tomoya Tashiro, Lauren Takahashi and Keisuke Takahashi*



16712

Designing mesostructured bimetallic selenide derived from room-temperature prepared metal-organic frameworks as a sodium-ion battery anode with high performance and fast reaction kinetics

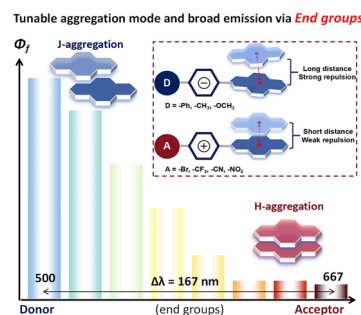
Huizi Songtian, Ting Zhou, Fan Zhou, Yajun Zhu, Xulai Yang,* Tianli Han,* Jinjin Li* and Jinyun Liu*



16719

Achieving controllable packing mode and broad colour-tunable emission via the end group effect in pyrene-based aggregation-induced emission luminogens

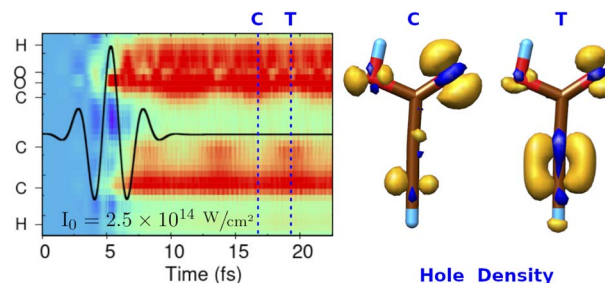
Chongyang Zeng, Shan Liang, Jieyu Lin, Wei Liu, Zhixin Xie, Wenxuan Cai, Carl Redshaw, Xing Feng* and Ben Zhong Tang*



16729

Correlation-driven charge migration triggered by infrared multi-photon ionization

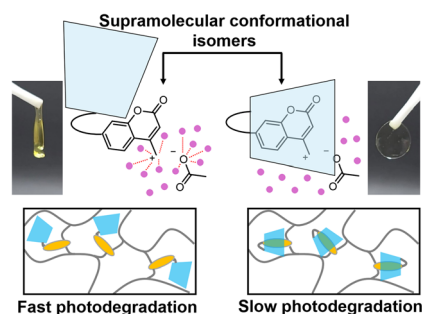
Clément Guiot du Doignon, Rajarshi Sinha-Roy,* Franck Rabilloud and Victor Despré*



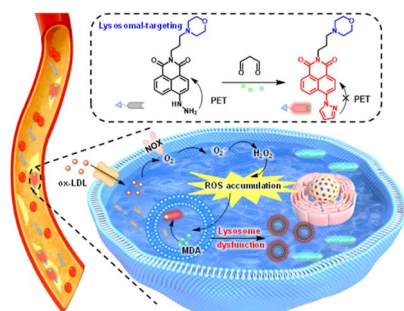
16737

Supramolecular conformational control of photolability in polymer networks crosslinked with a kinetically stable pseudo[1]rotaxane based on a coumarinylmethyl ester

Hiroshi Masai,* Naoki Niikura, Go M. Russell, Yutaro Kawano, Susumu Tsuda, Tomohiro Iwai and Jun Terao*



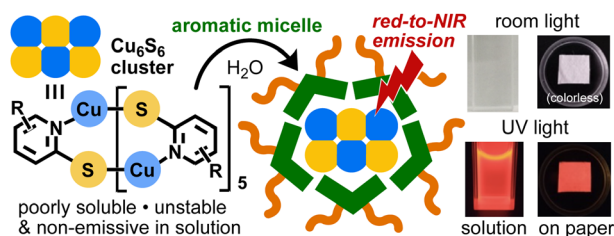
16744



A malondialdehyde-activated fluorescent probe reveals lysosomal dysfunction in atherosclerosis

Xia Zhang, Guocheng Li, Yanhua Li,* Na Li,* Wei Pan* and Bo Tang

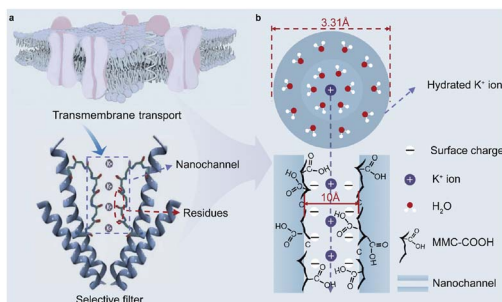
16751



Multinuclear Cu_nS_m clusters encapsulated by aromatic micelles as aqueous red-to-NIR phosphorescent ink

Kazuki Toyama, Yuya Tanaka* and Michito Yoshizawa*

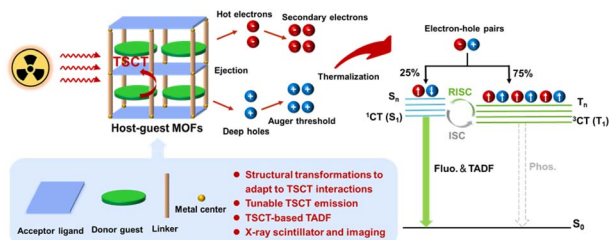
16757



Bio-inspired ion channels for suppressing interfacial parasitic reactions and enabling low-energy ion desolvation in aqueous supercapacitors

Yuting He, Jiangbin Deng, Kaixin Wang, Qianzhi Gou, Haoran Luo, Ziga Luogu, Zhaoyu Chen, Ke Wen, Yujie Zheng* and Meng Li*

16770



Regulating through-space charge transfer interactions in donor-acceptor MOFs for thermally activated delayed fluorescence and X-ray scintillators

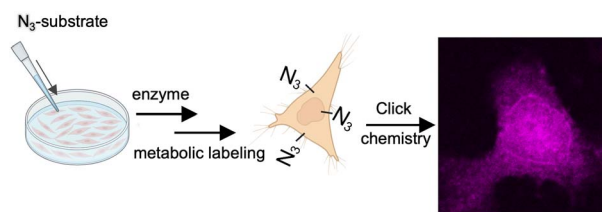
Xinyue Yan, Shi-Yu Song, Shicong Liang, Kai-Kai Liu, Xiao-Ting Liu* and Chao Lu*



16780

Detecting ALDH2 activity in live cells via conditional metabolic labeling

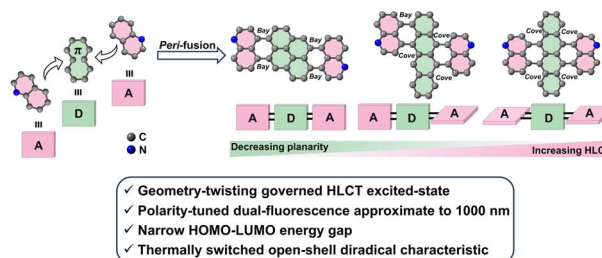
Weisong Lv, Zheng Wang, Can Zhang, Taorui Yang, Tao Liu, Jia Li, Xiaohui Fan* and Xin Li*



16792

Dual-channel deep-NIR-emissive N-embedded PAHs with hybridized local and charge-transfer excited-state

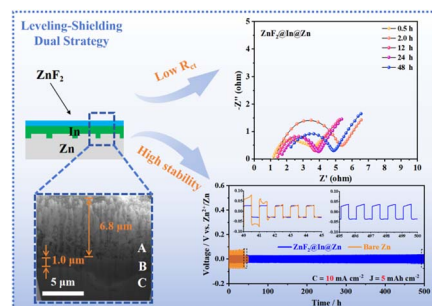
Zuhao Li, Zhiruo Zhou, Kun Yang,* Yifan Yao, Yaxin Zhai, Dong Wang* and Zebing Zeng*



16801

A leveling–shielding dual strategy enabling stable zinc anodes to exhibit ultra-low interfacial impedance

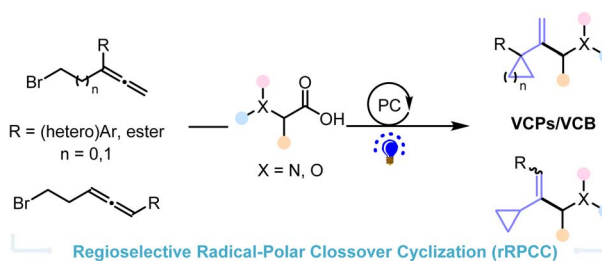
Qing Wen, Taixu Hao, Tian Chen, Dinghao Le, Pei Yang, Hezhang Chen, Linbo Tang, Qing Wu, Xiahui Zhang* and Junchao Zheng*



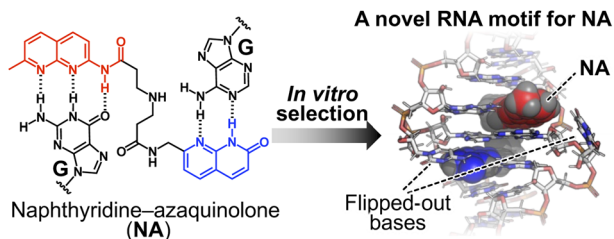
16813

Photoredox-catalyzed cyclopropanation of allenes towards vinyl-cyclopropanes

Hui Xie, Yan Zhang and Bernhard Breit*



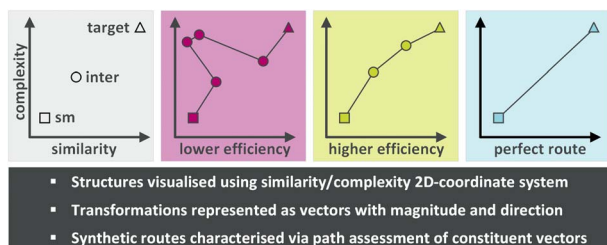
16819



Identification and structural insights into RNA motifs targeted by a CAG repeat DNA-binding small molecule

Qingwen Chen, Aina Fujiwara, Kazuhiko Nakatani, Gota Kawai and Asako Murata*

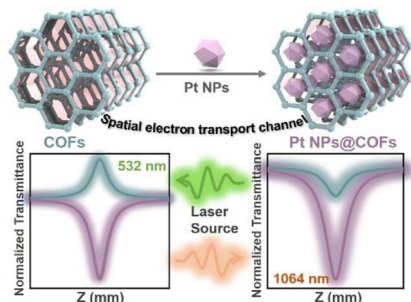
16829



Measuring the efficiency of synthetic routes and transformations using vectors derived from similarity and complexity

Samuel Genheden and Gareth P. Howell*

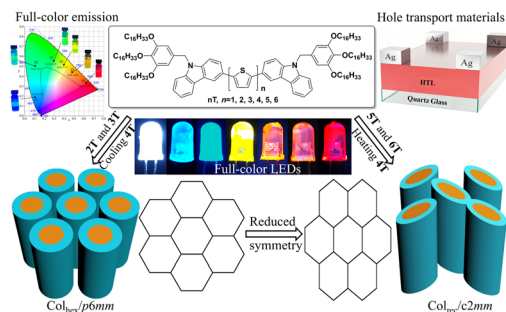
16841



Improving the optical nonlinearity of covalent organic frameworks through spatial electron transport channels within the pore environment

Kangshuai Geng, Yi Wei, Yupei Sun, Jing Huang, Jie Wu* and Hongwei Hou*

16851



Tilted vs. parallel assembly caused birefringent reversal in columnar phases of oligothiophene as well as applications for LEDs and hole transport materials

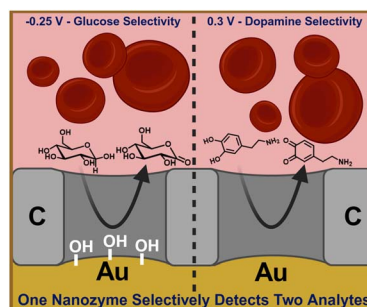
Shibo Chen, Xuyang Du, Qingqing Han, Jingjing Luo, Fen Wang, Jiaming Liu, Yang Yu and Xiaohong Cheng*



16867

A nanozyme that can go beyond an enzyme: the selective detection of two species in the same whole blood sample

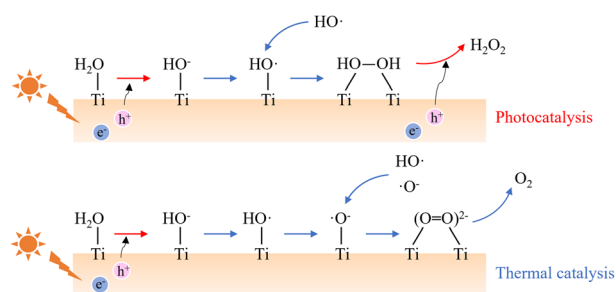
Samuel V. Somerville, Tania M. Benedetti, Zeno R. Ramadhan, Yin Yao, Richard D. Tilley* and J. Justin Gooding*



16876

Revealing the photocatalytic dissociation of water molecules on rutile TiO_2 surface *via* hybrid functional based linear response time-dependent density functional theory

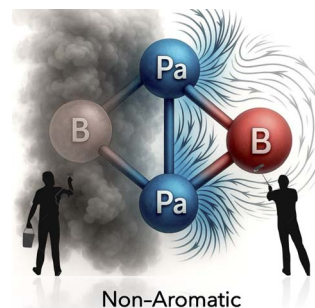
Lei Wang, Xiaofeng Liu,* Qunxiang Li,* Jinlong Yang and Wei Hu*



16885

Revisiting aromaticity and stability in the diboron actinide compound Pa_2B_2

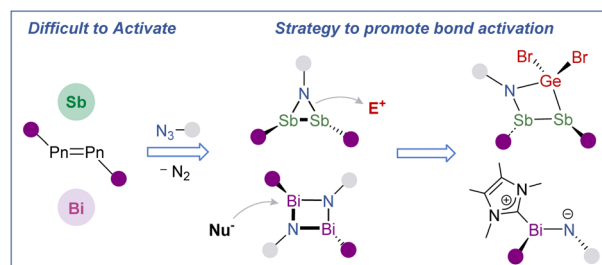
Chengxiang Ding, Lina Ruiz, Alejandro Vásquez-Espinal, Ricardo Pino-Rios, Dayán Páez-Hernández, Sudip Pan,* Luis Leyva-Parra,* Luis Alvarez-Thon* and William Tiznado*



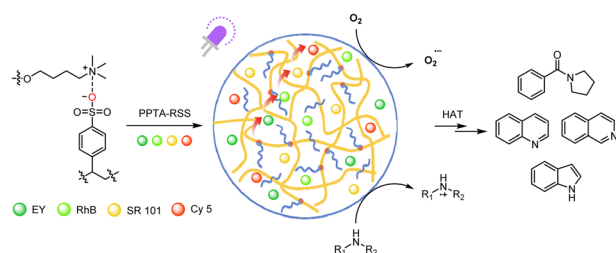
16894

Azadistibiridines and stabilised-iminobismuthane: reactivity of small inorganic rings in heavy main group chemistry

Prasenjit Palui, Matthias Bollenbeck, Daniel Meleschko, Philipp Brehm, Rosa M. Gomila, Gregor Schnakenburg, Antonio Frontera and Alessandro Bismuto*



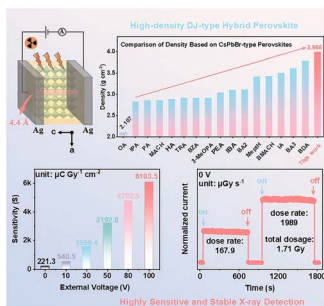
16904



A biomimetic supramolecular platform enables sequential four-step energy transfer and reactive oxygen species modulation for selective photocatalytic oxidations

Yu-Song Bi, Wen-Qiang Liu,* Hui Liu and Ling-Bao Xing*

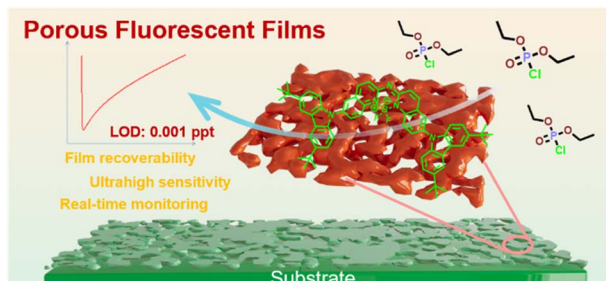
16915



Stable and highly sensitive self-powered X-ray detection *via* high-density CsPbBr-type Dion–Jacobson trilayer hybrid perovskites

Huawei Yang, Hang Li, Jianbo Wu, Zeng-Kui Zhu,* Guirong Chen, Guanghui Li, Panpan Yu, Ying Zeng, Yueying Wang, Wenhui Wu and Junhua Luo*

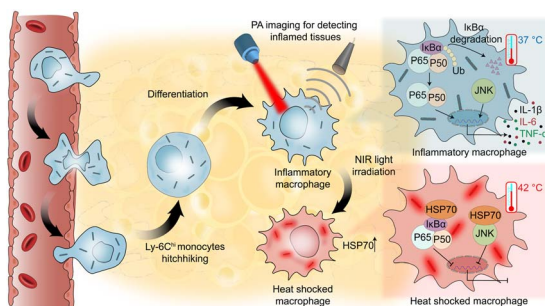
16924



Steric hindrance-engineered porous fluorescent films for ultrafast and ultrasensitive detection of nerve agent simulants

Yuxuan Liu, Min Qiao, Jiali Liu, Gege Wang, Siyue Wang, Ruijuan Wen, Yaxin Zhai,* Liping Ding,* Xiaolin Zhu* and Yu Fang

16936



Single-walled carbon nanotubes hitchhike on Ly-6C^{hi} monocytes for photoacoustic image-guided photothermal shock therapy of metabolic inflammation

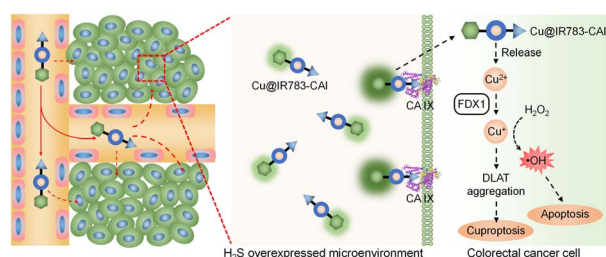
Ruixi Peng, Mengyun He, Yi Yuan, Li-Juan Tang, Jianhui Jiang and Xia Chu*



16947

Cascade-activatable NIR-II fluorescent carbonic anhydrase inhibitors for imaging-guided cuproptosis/chemodynamic combination therapy of colorectal cancer

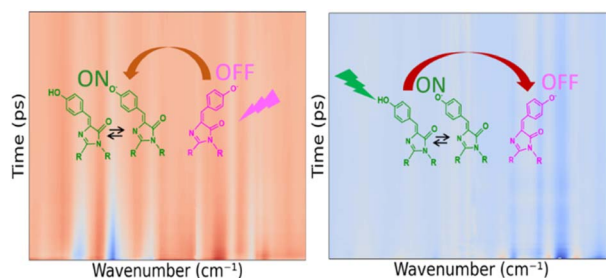
Pu Xu, Yuxin Huang, Gaoyuan Liu, Xuxuan Gu, Xupeng Sun, Yingna Bi, Wen Zhou,* Chen Xie* and Quli Fan*



16955

Ultrafast photophysics of a positive reversibly switchable fluorescent protein

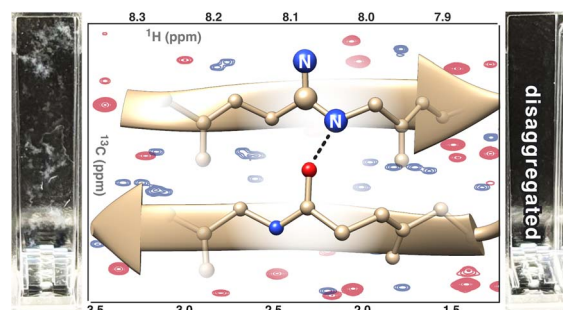
Anam Fatima, YongLe He, James N. Iuliano, Gregory M. Greetham, Partha Malakar, Christopher Hall, Helena A. Woroniecka, Brian C. Richardson, Jarrod B. French, Andras Lukacs,* Peter J. Tonge* and Stephen R. Meech*



16970

The 'ins' and 'outs' of amidines in β -sheet folding and fibril disaggregation

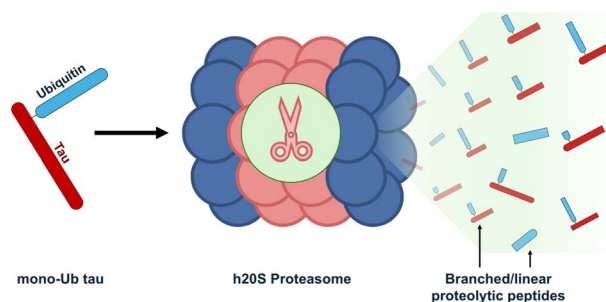
Emily A. O'Brien, Mohaddeseh Abbasi, Jeffrey A. Purslow and Brett VanVeller*



16979

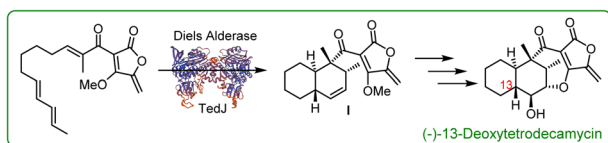
SpectraSage unveils specific proteolytic patterns of 20S on mono-ubiquitylated Tau proteoforms involved in neurodegeneration

Gabriele Antonio Zingale,* Irene Pandino, Daniele Trivellato, Dario Cavaterra, Francesca Munari, Giuseppe Grasso, Peter A. Bell, Francesco Oddone, Alessio Bocedi, Massimiliano Coletta, Michael Assfalg, Mariapina D'Onofrio, Grazia Raffaella Tundo and Diego Sbardella*



EDGE ARTICLES

16993



Chemoenzymatic total synthesis of the antibiotic (-)-13-deoxytetradecamycin using the Diels–Alderase TedJ

S. Joe Russell, Catherine R. Back, Christopher Perry, Kaiman A. Cheung, Laurence Maschio, Sacha N. Charlton, Nicholas R. Lees, Monserrat Manzo-Ruiz, Martin A. Hayes, Marc W. van der Kamp, Paul R. Race* and Christine L. Willis*

CORRECTIONS

17000

Correction: Esterase-induced release of a theranostic prodrug in lysosomes for improved therapeutic efficacy and lower systemic toxicity

Sourav Dutta, Sanchita Tripathy, Somnath Bej, Sabana Parvin, Batakrisna Jana,* Chitta Ranjan Patra* and Amitava Das*

17001

Correction: Cationic pillar[6]arene/ATP host–guest recognition: selectivity, inhibition of ATP hydrolysis, and application in multidrug resistance treatment

Guocan Yu, Jiong Zhou, Jie Shen, Guping Tang and Feihe Huang*

