

## IN THIS ISSUE

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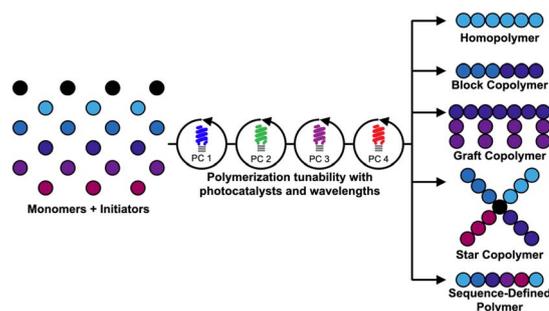
**Inside cover**  
See Chris Ritchie *et al.*, pp. 15320–15332. Image reproduced by permission of Chris Ritchie from *Chem. Sci.*, 2025, **16**, 15320.

## PERSPECTIVE

15298

### Leveraging reactivity to gain precise control over macromolecular structures with photocatalysis in reversible-deactivation radical polymerizations

Jared G. Baker, Joey Gloriod and C. Adrian Figg\*

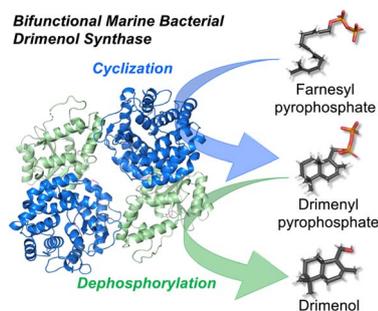


## EDGE ARTICLES

15310

### Structural insights into a bacterial terpene cyclase fused with haloacid Dehalogenase-like phosphatase

Keisuke Fujiyama, Hiroshi Takagi, Nhu Ngoc Quynh Vo, Naoko Morita, Toshihiko Nogawa and Shunji Takahashi\*



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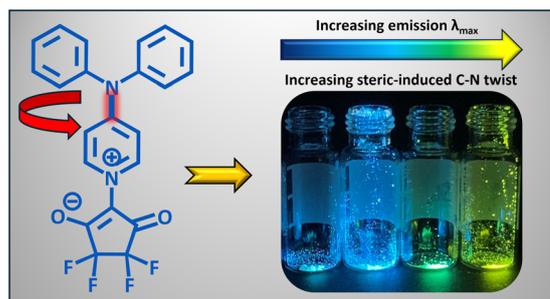


**SAVE  
10%**

15320

## Planarisation or a twist? Using steric engineering to unlock the origin of mechanofluorochromic red-shifts

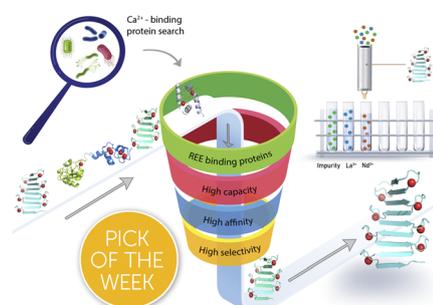
Peter W. McDonald, Lars Goerigk and Chris Ritchie\*



15333

## Mining peptides for mining solutions: evaluation of calcium-binding peptides for rare earth element separations

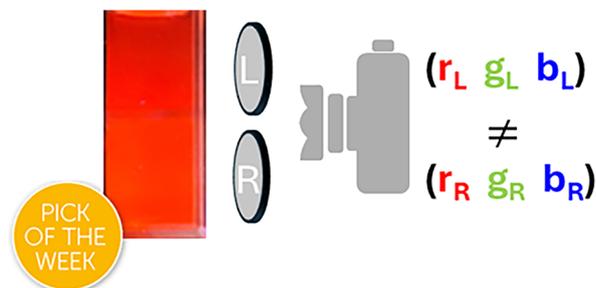
Farid F. Khoury, Bradley S. Heater, Daniel R. Marzolf, Sameera Abeyrathna, Jonathan W. Picking, Piyush Kumar, Steven A. Higgins, Randy Jones, Alan T. Lewis, Jr, Katarzyna H. Kucharzyk\* and Scott Banta\*



15347

## CPL photscopy: circularly polarized luminescence detected by chromaticity differences

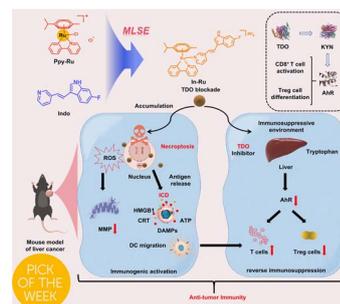
Matteo Cei and Francesco Zinna\*



15355

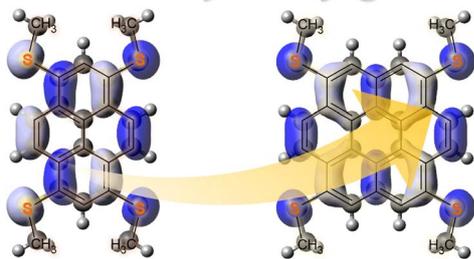
## Novel tryptophan 2,3-dioxygenase-targeted ruthenium(II)-indole complex activates immunotherapy *in vitro* and *in vivo*

Zheng-Qi Shen, Binglian Guo, Xiangyu Dai, Hanxue Liu, Meng Ren, Peisen Wang, Yating Zhang, Yinuo Xu, Zhi Su, Xuling Xue\* and Hong-Ke Liu\*



15368

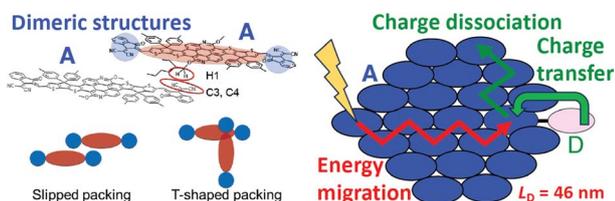
### Extension of $\pi$ -conjugation



### Extension of the $\pi$ -conjugated core of methylchalcogenolated polycyclic aromatic hydrocarbons: synthesis and characterization of 1,4,7,10-tetrakis(methylthio)- and tetramethoxy-coronene

Prasanta Pal, Kirill Bulgarevich, Ryota Hanaki, Kohsuke Kawabata and Kazuo Takimiya\*

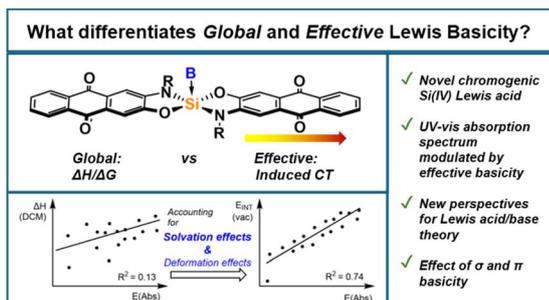
15378



### Energy migration, charge transfer, and charge dissociation in self-assembling nonfullerene acceptor aggregates with zincporphyrin-nonfullerene acceptor dyads

Yasunari Tamai,\* Midori Akiyama, Lorenzo Vallan, Daiki Sasada, Katsuaki Suzuki, Hironori Kaji,\* Takumi Urakami, Hirofumi Sato, Masahiro Higashi,\* Seiichiro Izawa, Motohisa Kubota, Tomokazu Umeyama and Hiroshi Imahori\*

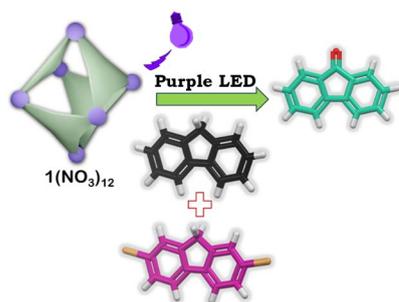
15387



### What distinguishes the strength and the effect of a Lewis base: insights with a strong chromogenic silicon Lewis acid

Lennart Stoess and Lutz Greb\*

15396



### Host-guest interaction-induced selective oxidation of a substrate inside an aqueous $\text{Pd}_6\text{L}_4$ cage

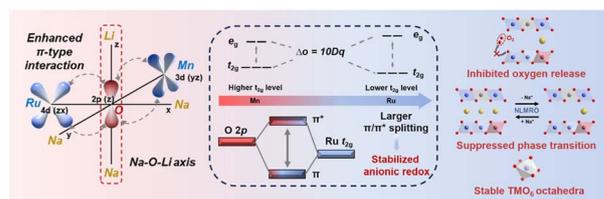
Shamsad Ali, Debsena Chakraborty and Partha Sarathi Mukherjee\*



15404

### Strengthened $\pi$ -type interaction in layered oxide cathodes with reversible anionic redox for sodium-ion batteries

Zheng Zhou, Chen Cheng, Shuyuan Chen, Tong Chen, Lei Wang, Tianran Yan, Weidong Xu, Shiqi Shen, Jianrong Zeng\* and Liang Zhang\*

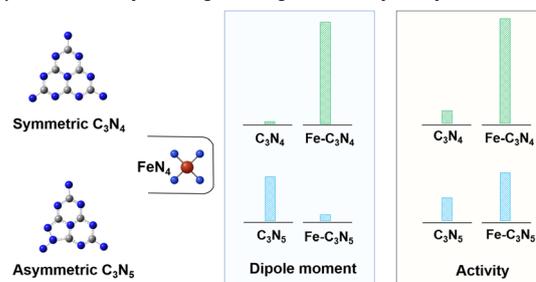


15417

### Dipole induction by structural engineering of supports for Fe single-atom photocatalysts toward excellent photocatalytic ozonation

Jing Wang, Haoxin Mai, Jiakai Qiu, Yanjun Xu, Zhuan Wang, Shenning Liu, Yuxian Wang, Yongbing Xie,\* Rachel A. Caruso and Hongbin Cao

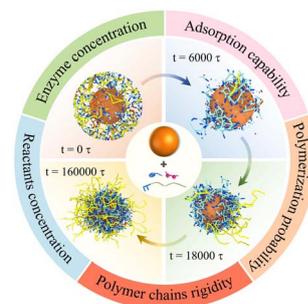
Dipole-driven activity switching of Fe single atoms on symmetry-tuned carbon nitride



15427

### Understanding polymer encapsulation of enzymes: a dissipative particle dynamics simulation study on the regulation of structural characteristics of polymer nanocapsules

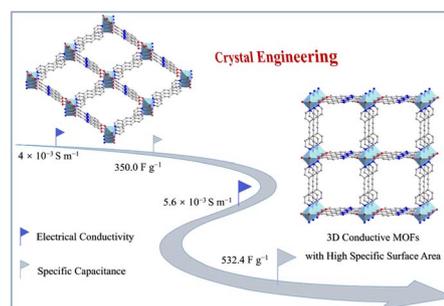
Bin Li, Bin Xu,\* Huimin Gao\* and Zhong-Yuan Lu\*



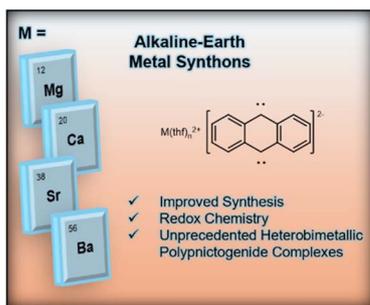
15438

### Rational crystal engineering of conductive metal-organic frameworks for promising electrochemical energy storage

Hongbo Tai, Xuan Zhang, Yang Rong and Zhiliang Liu\*



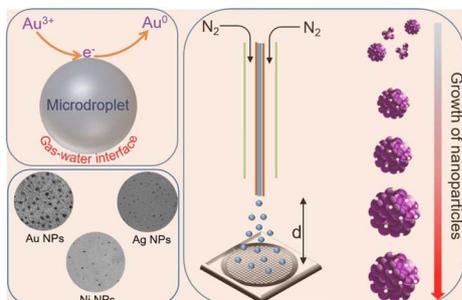
15446



### A simple synthesis of group 2 anthracenides and their use as reducing agents for polypnictogen ligand complexes

Lukas Adlbert, Martin Weber, Christoph Riesinger, Michael Seidl and Manfred Scheer\*

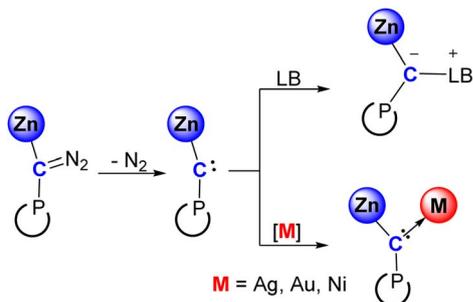
15455



### Electric field-driven interfacial reduction of metal ions in microdroplets: gold, silver, and nickel

Sandeep Bose and Richard N. Zare\*

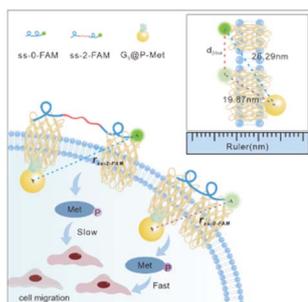
15462



### Zinc substituted carbenes: synthesis, structure, and ambiphilic reactivity

Shengjie Jiang, Ganping Wang, Yanping Cai, Laurent Maron\* and Xin Xu\*

15469



### Transmembrane nanogold energy transfer ruler enables *in situ* synchronized projecting of receptor dimerization–phosphorylation signaling

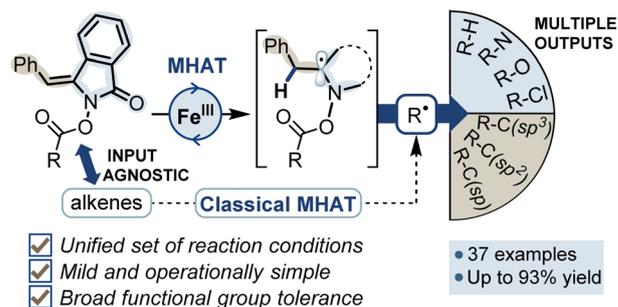
Xingru Fang, Xurui Cao, Xiaotong Zhang, Qi Li, Wenwen Huang, Yu Zhang\* and Honglin Liu\*



15478

## Merging carboxylic acids with metal-catalyzed hydrogen atom transfer (MHAT) chemistry via alkene-functionalized redox-active esters

Laura G. Rodríguez, Aina Serra, Josep Bonjoch and Ben Bradshaw\*

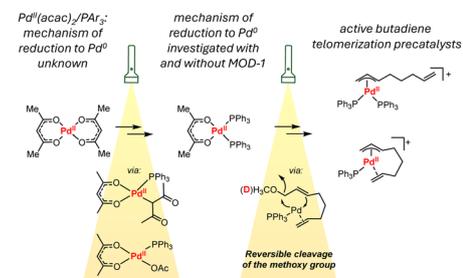


15486

## Insights into the mechanism of active catalyst generation for the Pd<sup>II</sup>(acac)<sub>2</sub>/PPh<sub>3</sub> system in the context of telomerization of 1,3-butadiene

Bailey S. Bouley, Dae Young Bae, Sagnik Chakrabarti, Mari Rosen, Robert D. Kennedy and Liviu M. Mirica\*

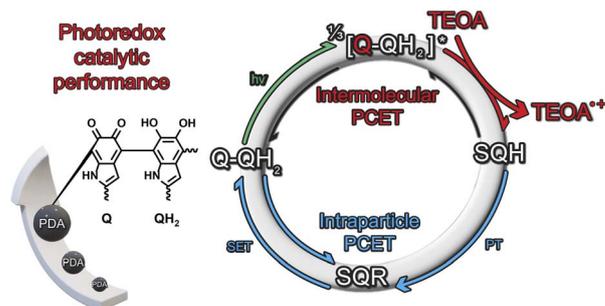
### Mechanism of active catalyst generation in butadiene telomerization



15499

## Visible-light photoredox catalysis of polydopamine with triethanolamine in water

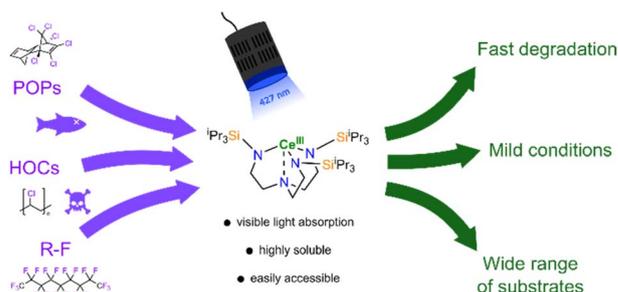
Hoyun Kim, Dokyeong Lee, Young Jae Jung, Sung Ho Yang, Hye Jin Lee, Hong-In Lee\* and Jungkyu K. Lee\*



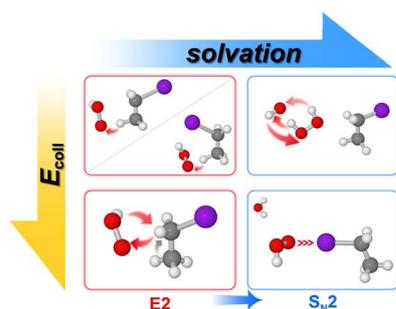
15510

## Visible light activation of C–Cl and C–F bonds in persistent organic pollutants using cerium(III) triamidoamine complex

Adrien Combourieu, Stella Christodoulou, Laurent Maron\*, Eachann Assendjee, Nicolas Casaretto, Bich Tuyen Phung, Akos Banyasz, Olivier Maury, Matthew Gregson, Ashley J. Wooles, Stephen T. Liddle, Cédric Tard, Grégory Nocton\* and Grégory Danoun\*



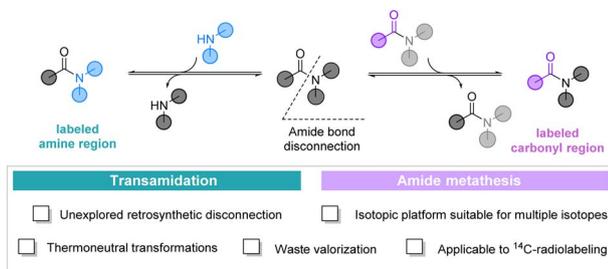
15518



### Single solvent molecule effect over $S_N2$ and E2 competition in the hydroperoxide anion reaction with ethyl-iodide

Xiangyu Wu, Chongqin Zhu, Joseph S. Francisco\* and Jing Xie\*

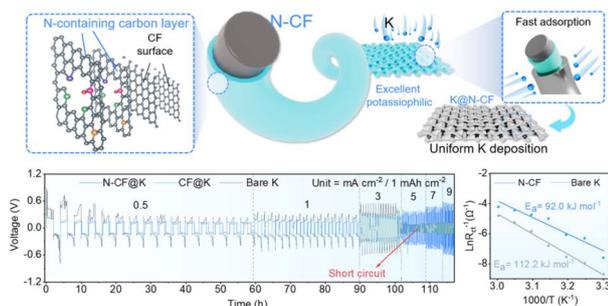
15528



### Base-promoted dynamic amide exchange: efficient access to isotopically enriched tertiary amides

Quentin Lemesre, Rémi Blicck, Antoine Sallustrau, Timothée D'Anfray, Frédéric Taran and Davide Audisio\*

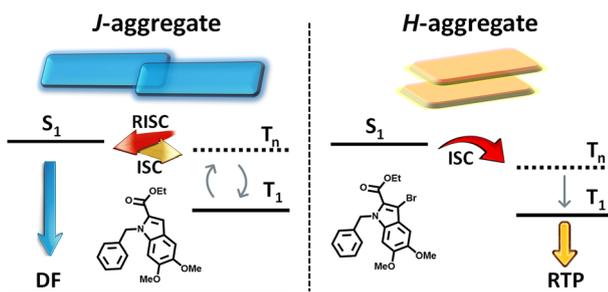
15537



### Ultrathin potassiophilic carbon skin design achieving ultra-stable potassium metal anodes

Zhibin Li, Zheng Hu, Miaoran Deng, Liang Ma,\* Jinliang Li\* and Wenjie Mai\*

15546



### Aggregation-assisted energy gap modulation controls delayed emission in hybrid charge-transfer emitters

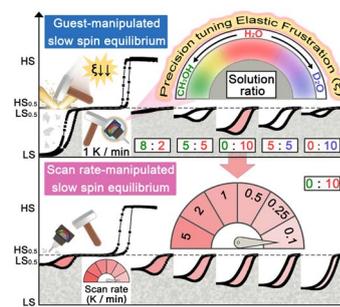
Kavya Vinod, Najuma Noushad, Hidetoshi Tanaka, Nitha Mohan, Yuya Kokado, Daiki Tomiya, Yasuhiro Kobori and Mahesh Hariharan\*



15555

## Entanglement of spin transition and structural adaptability: manipulating the slow spin equilibrium by the guest-mediated fine-tuning of elastic frustration

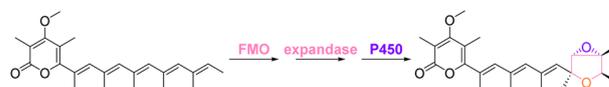
Yuqiao Chai, Yu-Ting Yang and Jin-Peng Xue\*



15564

## A unique three-enzyme cascade mediates efficient regioselective and stereospecific epoxytetrahydrofuran ring formation in deoxyverrucosidin biosynthesis

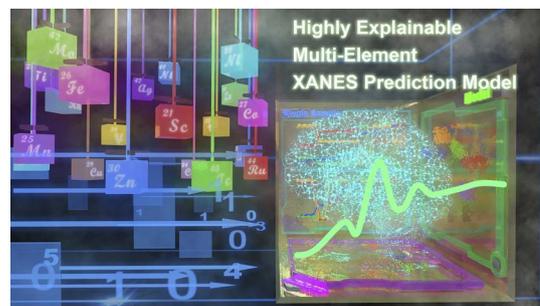
Hui-Ling Wei, Xiao-Ling Chen, Yu Dai, Li Yang and Shu-Ming Li\*



15571

## An explainable "family bucket" model for simultaneous prediction of K-edge XANES for multiple light transition metals

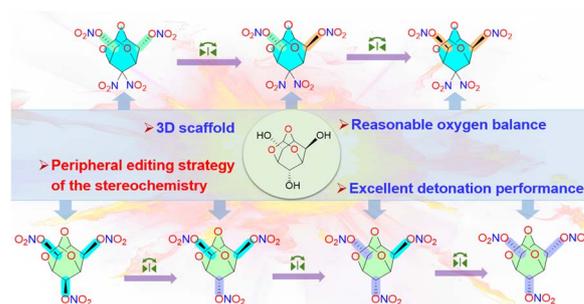
Chenyu Huang, Yunjiang Zhang, Shuyuan Li, Huimin Wang, Yaxin Wang, Shihao Wei and Shaorui Sun\*



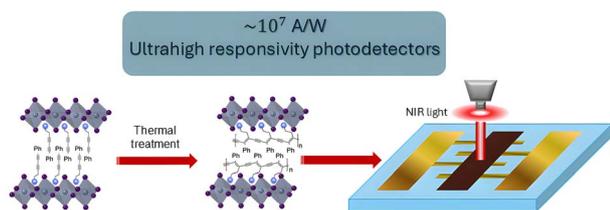
15587

## Impact of stereochemistry in 3D energetic materials science: a case based on peripheral editing of the 2,4,10-trioxadamantane backbone

Huan Li, Qi Zhou, Tianjiao Hou, Zhenxin Yi, Guixiang Wang, Long Zhu, Yuan Gao, Yu Zhang\* and Jun Luo\*



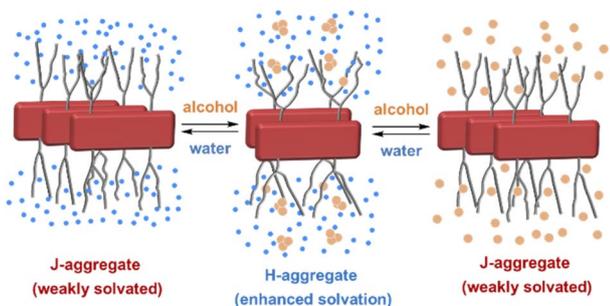
15597



### Air-processed, ultraresponsive NIR photodetectors using 2D perovskite hybrids

Dulce Zugasti-Fernández, Priscila I. Román-Román, Mara Gutierrez-Avila, A. Paulina Gómora-Figueroa, Juan Hernández-Cordero, Vojtech Jancik, Norberto Hernández-Como and Diego Solís-Ibarra\*

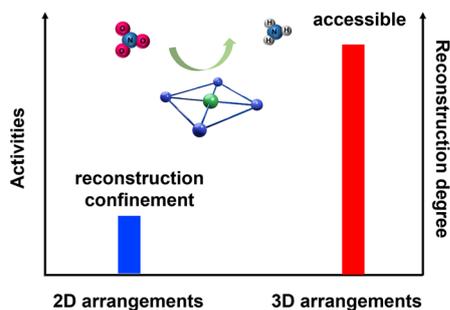
15602



### Special solvation effects of mixed water and alcohols revealed by molecular aggregation

Linghao Meng, Rong Wei, Zhaoxin Xie, Di Zhang,\* Xiaohan Wan, Han Han, Wenjing Shi, Ziqi Zhu, Xiao Xiao, Yi Qin Gao\* and Dahui Zhao\*

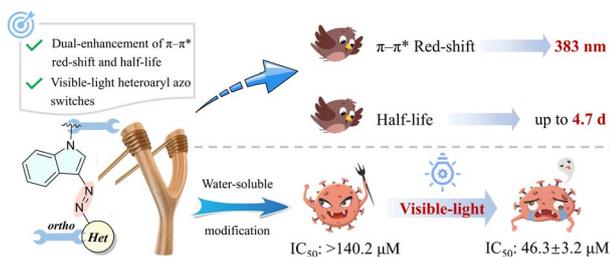
15611



### Modulating the direction of catalytic glyoximate sites of covalent organic frameworks towards electrocatalytic nitrate reduction

Shuai Yang, Shuai Bi, Lipeng Zhai\* and Qing Xu\*

15620



### Visible-light-responsive indoleazopyrazole photoswitches: dual enhancement of redshift and half-life by ester modification at the *ortho* position

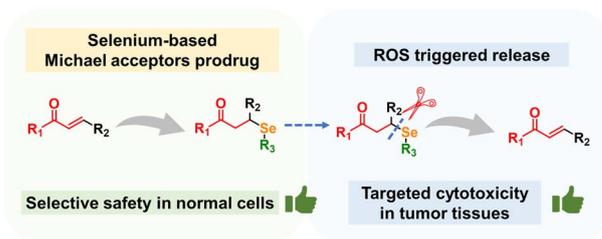
Xuanchi Yu, Chenyu Zhang, Dongfang Dong, Bing Liu, Dali Wang\* and Tao Li\*



15628

### Selectively triggered: ROS-activated Michael acceptor prodrug strategy to enhance tumor targeting efficacy

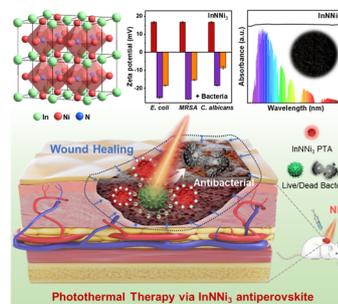
Dazhi Feng, Xinnan Li, Junkai Liu, Xiao Shao, Lihua Liu, Yuning Shi, Yunyue Wang, Minghui Yu, Shuangtian Tang, Li Deng, Yongjie Zhang, Shaowen Xie, Jinyi Xu,\* Shengtao Xu\* and Hong Yao\*



15638

### Photothermal therapy for bacteria-infected wound healing via a cation–anion inverted antiperovskite with full-spectrum solar absorption

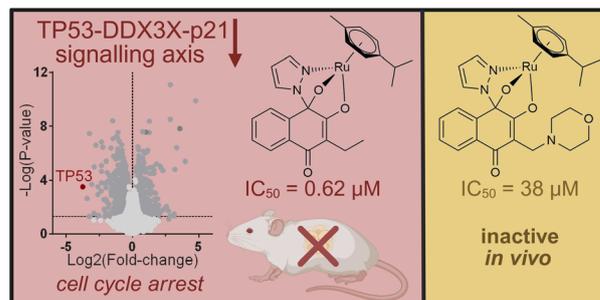
Xuejiao Wang, Lianbo He, Qiyang Cai, Zhi Su, Zhengjun Huang, Hao Sun, Yuhui Lai, Zheyang Chen, Jianbin Ye, Yan Yu, Zhigang Zou, Hanlin Huang\* and Hu Zhu\*



15652

### Selectivity for TP53 signalling drives the mode of action of a highly potent *N,O,O*-tridentate naphthoquinone-based organo-ruthenium anticancer drug candidate

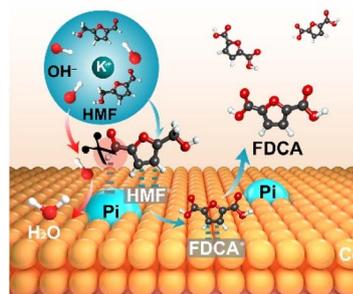
Alexander Rosner, Lukas Skos, Theresa Mendrina, Dina Baier, Michaela Hejl, Yasmin Borutzki, Mathias Gradl, Heiko Geisler, Thomas Mohr, Anton Legin, Michael A. Jakupec, Andrea Bileck, Christopher Gerner, Gunda Koellensperger, Petra Heffeter, Walter Berger, Bernhard K. Keppler, Wolfgang Kandoller\* and Samuel M. Meier-Menches\*



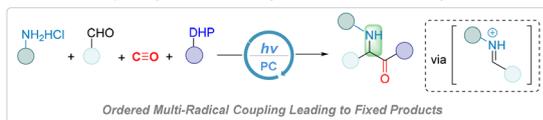
15666

### Brønsted bases promote interfacial proton transfer for enhanced biomass electrocatalysis

Jia Wu, Jianlong Zhang, Zhixiang Zhai, Zelong Sun, Zhangyue Zheng, Junxin Chen, Zihui Ning, Huan Wen\* and Shibin Yin\*



15676

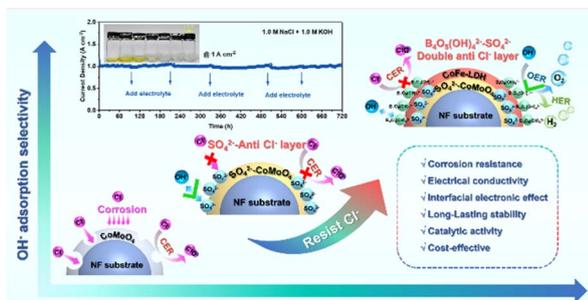
Photocatalytic Regioselective Carbonylation for  $\alpha$ -Aminoketones Synthesis

- Regioselective Multi-radical Carbonylation Coupling
- Protonated Amines and Alkyl Aldehydes are Compatible in Imine Reaction Systems
- Readily Available Feedstocks
- Gentle Formation of Two C-C Bonds, One C-N Bond and Introduction of One Carbonyl Group

Photocatalytic regioselective four-component radical relay carbonylation for  $\alpha$ -aminoketones synthesis

Mao-Lin Yang and Xiao-Feng Wu\*

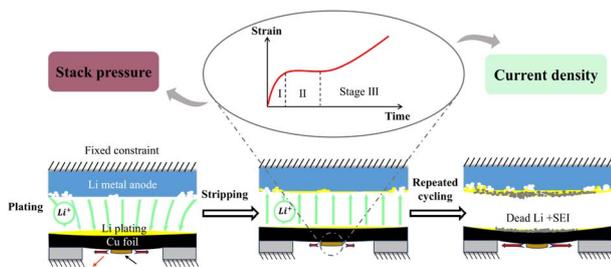
15684



## Dual-anion regulation engineering enhances chloridion corrosion resistance for long-lasting industrial-scale seawater splitting

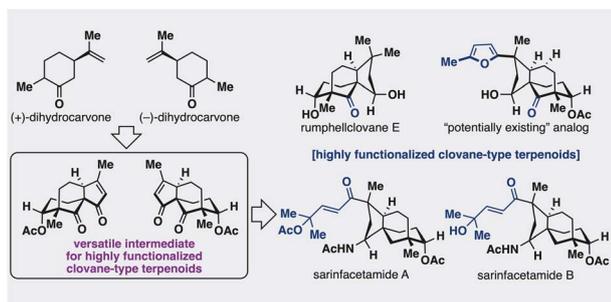
Tianqi Gao, Wenzhe Wang, Zenong Zhang, Wanyu Li, Huanhuan Gao, Jiawei Liu,\* Xiaojun Zhao,\* Zhihong Liu\* and Yu Chen\*

15697

Unraveling plating/stripping-induced strain evolution *via* embedded sensors for predictive failure mitigation in solid-state Li metal batteries

Hongye Zhang, Zhipeng Chen, Xinren Zhang, Ziyi Shen, Fei Xu\* and Fenghui Wang\*

15707



## A unified approach to highly functionalized clovane-type terpenoids: enantiocontrolled total synthesis of rumphecllovane E and sarinacetamides A and B

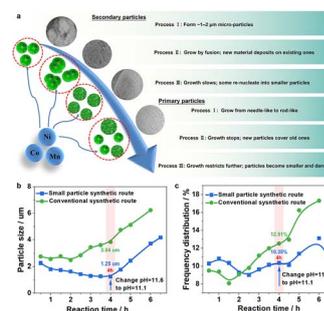
Daigo Ninomiya, Shota Nagasawa\* and Yoshiharu Iwabuchi\*



15714

## Synthetic control guided by growth mechanism insights enable tailored precursors for layered oxide cathodes

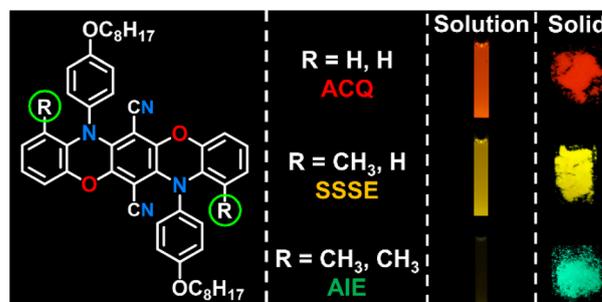
Hai-Yan Hu, Yong-Chun Li,\* Yan-Fang Zhu,\* Haidong Liu, Wei Xiang,\* Jia-Zhao Wang and Yao Xiao\*



15723

## Steric pressure in heteropentacenes modulates the photophysical properties – a molecular design strategy for functional materials

Alexander Huber, Tobias Thiele, Tobias Rex, Constantin Daniliuc, Christoph Wölper, Rick Y. Lorberg, Lea Höfmann, Cristian A. Strassert, Michael Giese\* and Jens Voskuhl\*



15734

## Reversible transformation of single-crystal two-dimensional polymer framework for photo/thermal reversible photolithography

Hui Wang, Chuanqi Sun, Xu Jia, Hui Liu,\* Cheng Li\* and Yingjie Zhao\*

