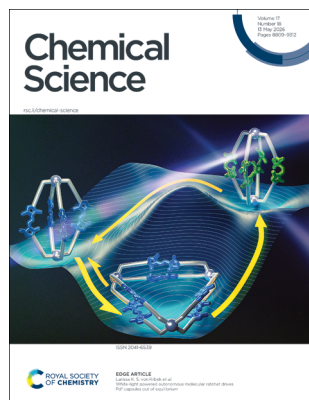


## IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 17(18) 8809–9312 (2026)



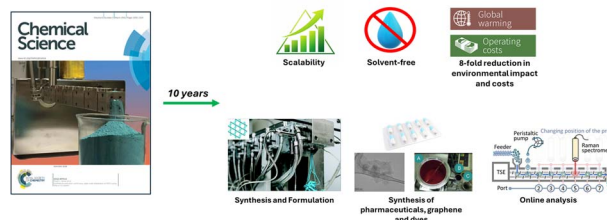
**Cover**  
See Larissa K. S. von Krbek *et al.*, pp. 8959–8967. Image reproduced by permission of Larissa von Krbek from *Chem. Sci.*, 2026, 17, 8959. Image created by Jo Richers Studio.

## COMMENTARY

8823

### A reflection on synthesis by extrusion ten years on: achievements, challenges and opportunities for solvent-free, sustainable, continuous chemical manufacturing

Deborah E. Crawford\* and Stuart L. James\*

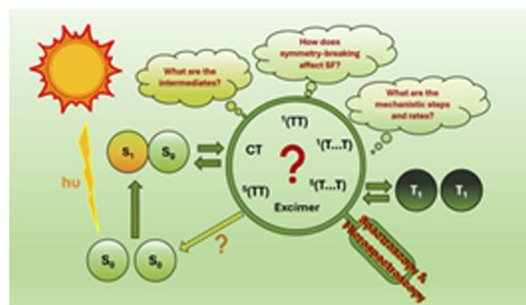


## PERSPECTIVE

8835

### An experimental perspective on symmetry breaking and the singlet fission mechanism in solid-state materials

Xinyue Xu, Christopher R. Hall and Trevor A. Smith\*



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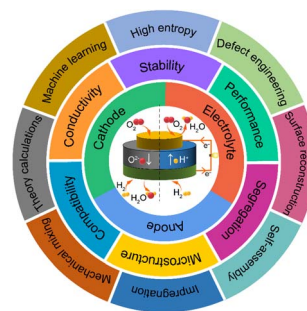
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## REVIEWS

8852

**Recent advances in low-temperature ceramic fuel cells: material design and applications**

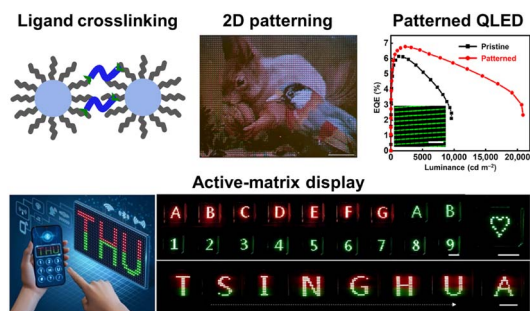
Ying Zhang, Rui Guo, Yu Shen\* and Tianmin He\*



8913

**Photocrosslinking chemistry for direct photopatterning of colloidal nanocrystals: toward pixelated light emitting diodes and beyond**

Wenyue Qing and Hao Zhang\*



8934

**Ammonia monooxygenase: a work in progress**

Thomas C. Arndt, Alexander L. Laughlin and Kyle M. Lancaster\*

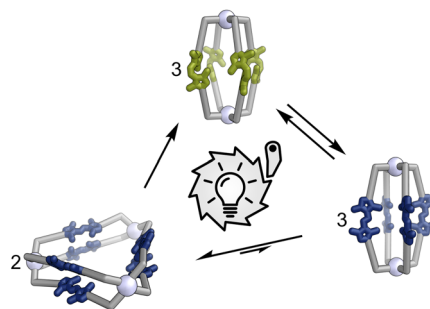


## EDGE ARTICLES

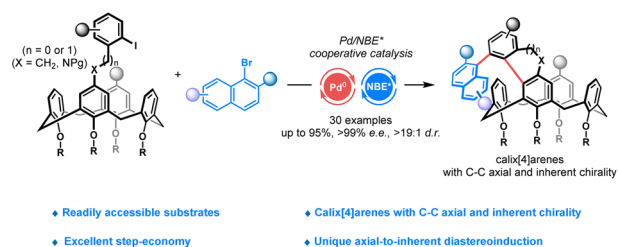
8959

**White-light powered autonomous molecular ratchet drives Pd<sup>II</sup> capsules out of equilibrium**

Lidón Pruñonosa Lara, Benedikt Bädorf, Maximilian J. Notheis, Gregor Schnakenburg, Stefan Grimme and Larissa K. S. von Krbek\*



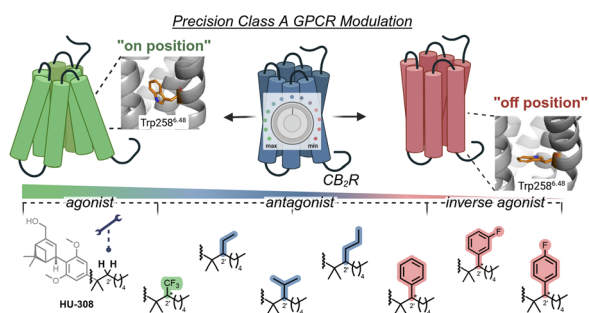
8968



### Enantioselective synthesis of calix[4]arenes with C–C axial and inherent chirality via palladium/chiral norbornene cooperative catalysis

Yiming You, Hongwei Cheng, Xiao Huang, Peng Wang, Hengjiang Cong, Hong-Gang Cheng\* and Qianghui Zhou\*

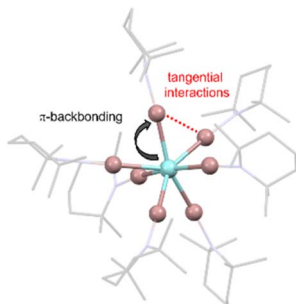
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### Single-position ligand modifications tune CB<sub>2</sub>R activity by targeting the toggle switch

Rudolf L. Z. Ganzoni, Miroslav Kosar, Yongqi Han, Rosa Maria Vitale, Pietro Amodeo, Xiaoting Li, Zhonghua Zha, Kacper J. Patej, Bilal Kicin, Taddäus E. N. Strunden, Lisa Reichert, Uxía Gómez-Bouzó, Themiya P. Perera, Kenneth Atz, Wolfgang Guba, Christian Bartelmus, Raphael Bigler, Paolo Tosatti, Stephan Bachmann, Tian Hua, David A. Sykes\*, Dmitry B. Veprintsev\*, Uwe Grether\* and Erick M. Carreira\*

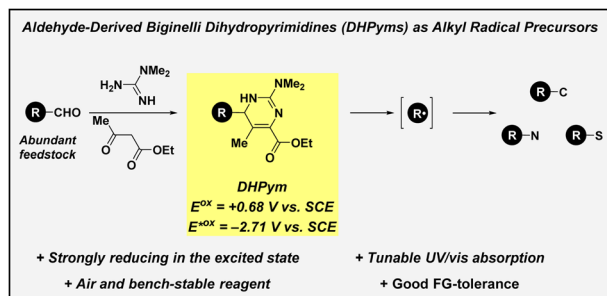
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### Homoleptic seven-coordinate Ti(0) and Zr(0) through a new stabilization mode

Ivan Antsiburov, Raphael Bühler, Johannes Stephan, Maxim Erdyakov, Christian Gemel, Samia Kahlal, Olivier Cador, Thierry Guizouarn, Jean-Yves Saillard\*, Karsten Meyer and Roland A. Fischer\*

8998



### Biginelli dihydropyrimidines: a tunable class of alkyl radical precursors

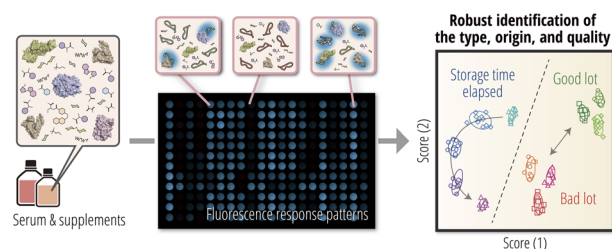
Shahilan Ratnam, Shreya Unone, Nabeel Alia, Enyu Denny Hafenegger and Daniel Janssen-Müller\*



9006

## A fingerprint-based polymeric sensing platform for comprehensive quality assessment of complex culture media in cell manufacturing

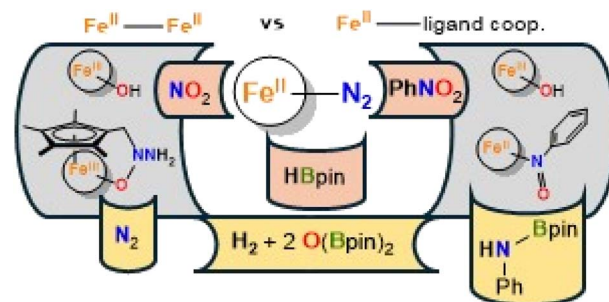
Shunsuke Tomita,\* Kumi Morikawa, Naoshi Kojima, Sayaka Ishihara, Hiroyuki Kusada, Hideyuki Tamaki and Ryoji Kurita



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## Metal–metal vs. metal–ligand cooperation in iron-mediated activation and catalytic reduction of nitrous oxide and nitrobenzene

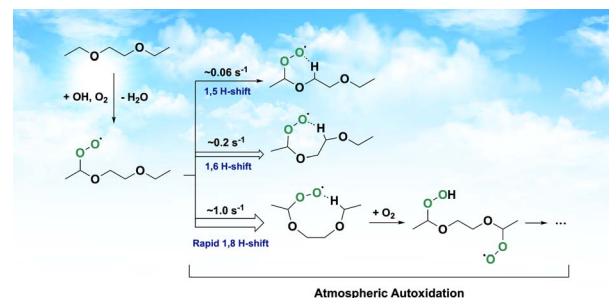
Nadir Jori, Helena Corona, Enrique Soto, Israel Fernández\* and Jesús Campos\*



9027

## Stealing from a distant neighbor: an unexpectedly fast long-span peroxy radical hydrogen-shift reaction in a long-chain diether

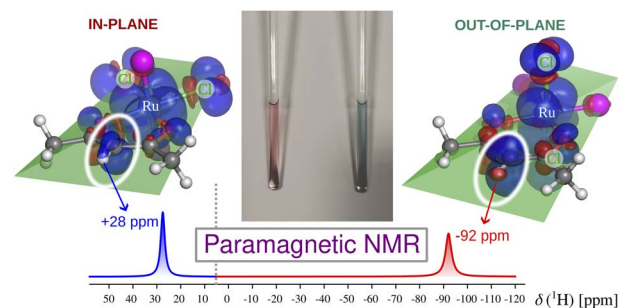
Hongmin Yu, Thomas Golin Almeida, Samir P. Rezgui, Vili-Taneli Salo, John D. Crounse, Brian M. Stoltz, Henrik G. Kjaergaard and Paul O. Wennberg\*



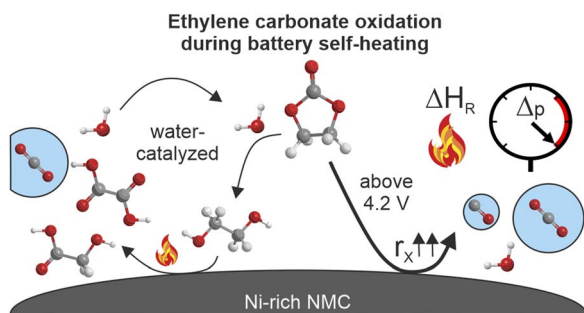
9042

## Unraveling the coordination isomerism by ligand hyperfine NMR shifts

Dora Cidlinská, Jan Chyba, Markéta Munzarová, Yevgen Yurenko, Jan Novotný\* and Radek Marek\*



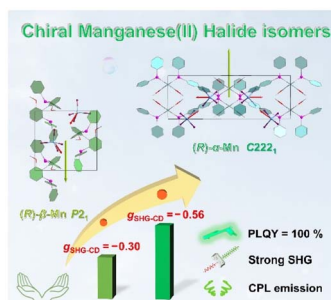
9049



### High-temperature chemical oxidation pathways in lithium-ion batteries: mechanistic insights into ethylene carbonate decomposition

Leon Schmidt, Kie Hankins, Jorge Valenzuela, Rene Windiks, Adrian Lindner, Ruth Witzel, Yuchen Qiu, Edwin Knobbe and Ulrike Krewer\*

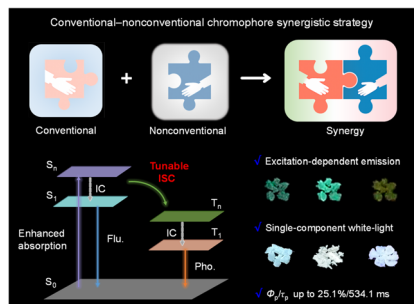
9061



### Chiral manganese halide isomers: decoding the spatial stacking effect on second-harmonic generation circular dichroism

Jing Li, Jianwu Wei, Qiulian Luo, Wei Pang, Hongming Liu, Peican Chen, Liya Zhou, Jin Zhong Zhang, Binbin Luo\* and Qi Pang\*

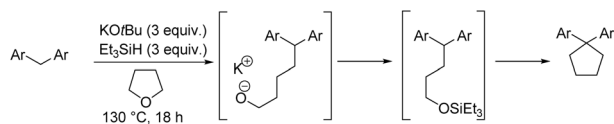
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### Site-selective bromination of anthracene–maleimide Diels–Alder crystals for tunable afterglow and white light emission

Guangxin Yang, Tianwen Zhu, Xiang Chen, Junhao Duan, Zhipeng Zhao and Wang Zhang Yuan\*

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### Formation of cyclopentanes and cyclopropanes through alkylation of benzylic anions using ethers, thioethers and alcohols as substrates under Grubbs–Stoltz (Et<sub>3</sub>SiH/KOtBu) conditions

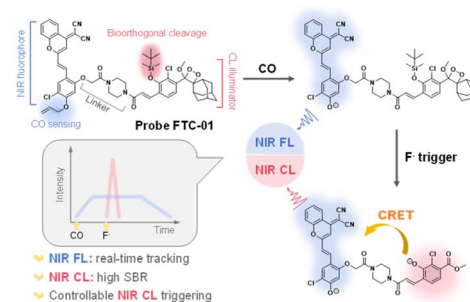
Alexander J. Stewart, Daniela Dimitrova, Scott T. M. Logan, Cassie Pratley, Jonathan D. Bell, Katy McGonigal, Anna Lauer, Sabine Fenner, Simon M. Nicolle, Stuart G. Leach and John A. Murphy\*



9088

## Dual-locked strategy for fluorescence/chemiluminescence dual-modal imaging reprogramming

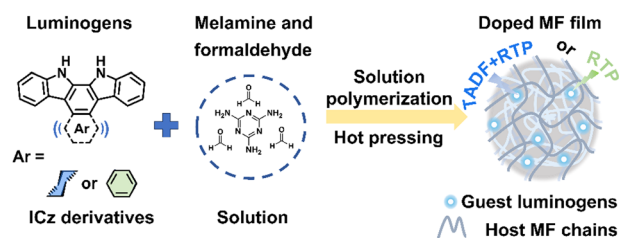
Qi Wang, Zhao-Yao Song, Zhe Song, Guangji Wang\* and Le Zhen\*



9098

## Efficient persistent afterglow modulation using extended Indolo[2,3-a]carbazoles with six-membered rings in a polymer matrix

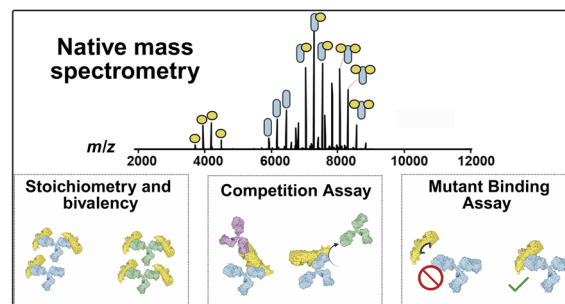
Yu Lang, Jiahui Sun, Mengyao Jiang, Qingyun Jiang, Yongkang Du, Feng Wang, Jiadong Zhou,\* Guang Shi,\* Bingjia Xu and Cong Liu\*



9108

## Screening pertactin-specific antibodies and evaluating competitive epitope recognition by native mass spectrometry

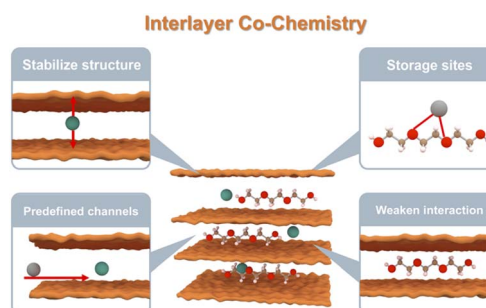
Mohamed I. Gadallah, Kate A. McConnell, Kelli M. Hager, Virginia K. James, Annalee W. Nguyen, Jennifer A. Maynard and Jennifer S. Brodbelt\*



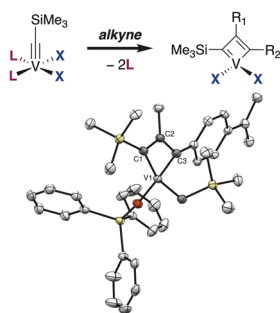
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## Interlayer co-chemistry of a homologous ion stabilizer and microenvironmental molecular regulator for high-performance zinc-ion storage

Keyi Chen, Quan Zong,\* Yuqing Ji, Helixin Jiao, Qiaoling Kang, Qilong Zhang, Shuang Zhou, Qianqian Wang, Guoying Wei, Zhihao Lou and Anqiang Pan\*



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### Toward vanadium-mediated alkyne metathesis

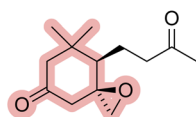
Shirley Hernandez, Vasilisa Krivovicheva, Adenilson Sousa-Silva, Xavier Solans-Monfort and Konstantin V. Bukhryakov\*

9138

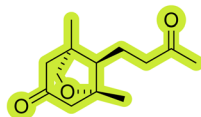
## DP5q

quick calculation of confidence in structural assignment

structure + spectrum = score!



DP5q analysis points out low-confidence regions

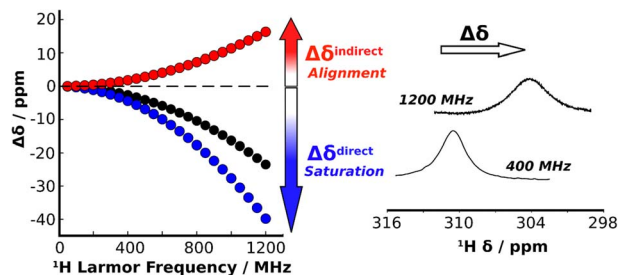


Correct structures have high DP5q scores

### DP5 without DFT: uncertainty-calibrated graph neural net accelerates structure confirmation via NMR

Ruslan Kotlyarov,\* Alexander Howarth and Jonathan M. Goodman\*

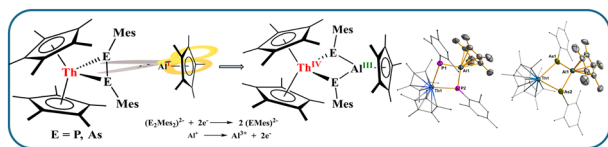
9148



### The fine effects of high magnetic fields on hyperfine shifts

Letizia Fiorucci,\* Lucas Lang,\* David L. Tierney, Mauro Botta, Giacomo Parigi, Claudio Luchinat and Enrico Ravera\*

9158



### Unusual bonding situations in Th(IV) and U(IV)-Al(III) pnictogen complexes

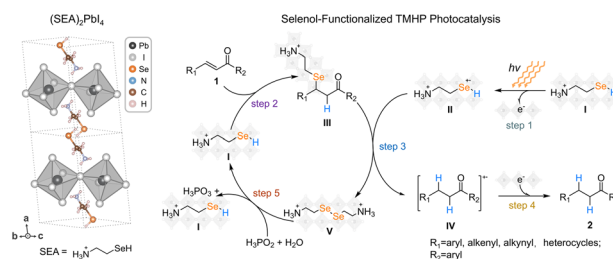
Pritam Mahawar, Ganping Wang, Robert J. Ward, Steven P. Kelley, Laurent Maron\* and Justin R. Walensky\*



9168

## Selenol-containing two-dimensional perovskite promotes visible-light-driven selective reduction of unsaturated ketones

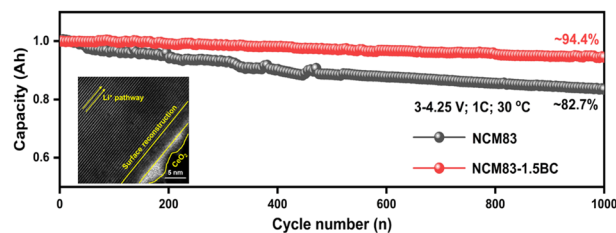
Wenxuan Li, Lihao Liao, Guoying Yao, Jialong Liu, Yilan Zhang, Jingpeng Li, Wangzhen Qiu, Tao Zeng,\* Xiaodan Zhao\* and Zhenyu Yang\*



9178

## Holistic bulk-to-surface tailoring of Ni-rich cathodes for unlocking superior electrochemical stability

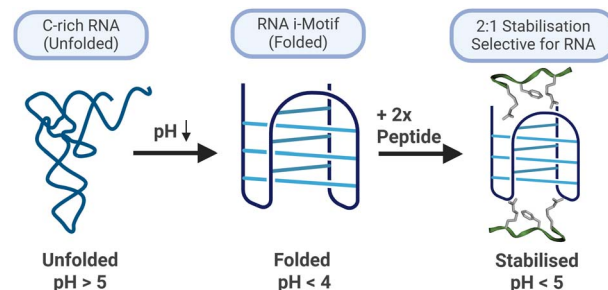
Yang Li, Zhixuan Liu, Haoji Wang,\* Jun Chen,\* Zebo Gu, Junyong Deng, Guorong Liu, Kun Huang, Siyao Zhang, Hao Feng, Hao Chen, Hongxin He, Fuliang Zhu, Lina Hu, Hongshuai Hou\* and Xiaobo Ji\*



9188

## Peptide-directed folding of the elusive RNA i-motif

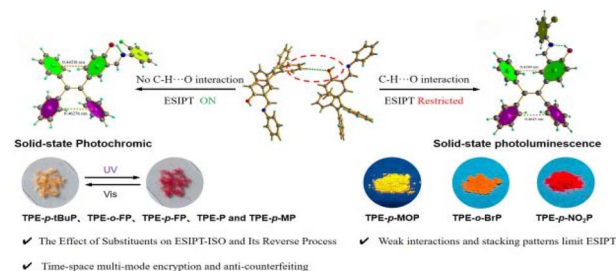
Lachlan B. Cox, Pall Thordarson\* and Felix J. Rizzuto\*



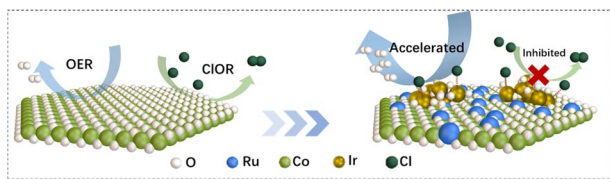
9193

## Switching between photochromism and photoluminescence in Schiff base derivatives by molecular design of end groups

Qilong Zhang,\* Xu Zhou, Xiaofeng Shan, Fa He, Yuwei Bao, Hong Xu, Chun Zhu\* and Bixue Zhu\*



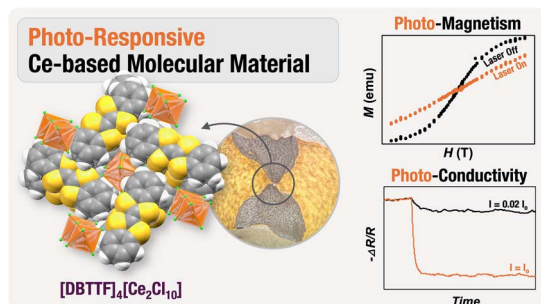
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### Chloride-induced easier phase transformation and catalytic synergy for enhanced seawater splitting

Haibin Ma, Yuxiang Jin, Xiaoyan Zhou, Yujie Cui, Yang Zhao, Chia-Yu Chang, Min-Hsin Yeh, Wei-Hsiang Huang,\* Erhong Song,\* Jiwei Ma\* and Hongfei Cheng\*

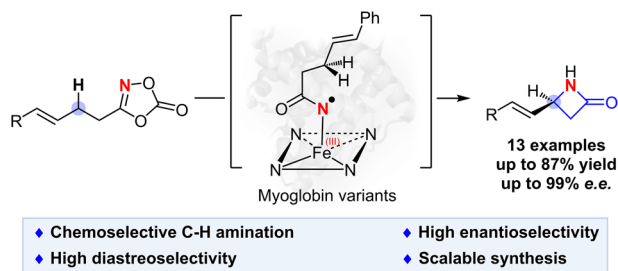
9215



### Leveraging the redox activities of cerium and dibenzotetrafulvalene to discover a photo-responsive magnetic material

Himanshu Gupta, Ethan P. Shapera, Xiaojuan Yu, Xiaoyu Wang, Patrick W. Smith, Pragati Pandey, Michael R. Gau, Stefan G. Minasian,\* Eva Zurek,\* Jochen Autschbach,\* James M. Kikkawa\* and Eric J. Schelter\*

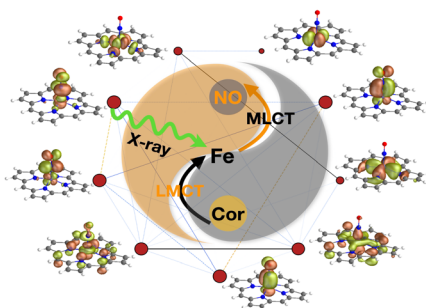
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### Highly stereoselective synthesis of allylic $\beta$ -lactams via enzymatic C(sp<sup>3</sup>)-H amidation

Nawal Zahra Jafari, Zheyuan Wang, Anwita Chattopadhyay, Satyajit Roy and Rudi Fasan\*

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### Metal-centered X-ray absorption and emission spectroscopy of iron corroles: implications for ligand non-innocence

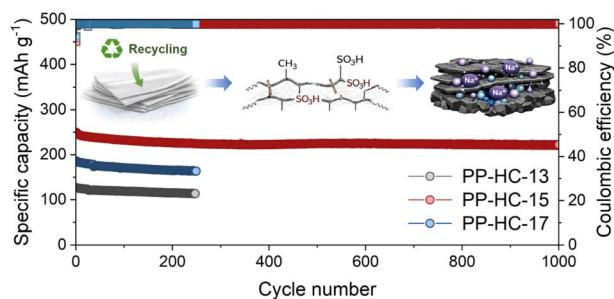
Meiyuan Guo,\* Abraham B. Alemayehu, Augustin Braun, Sang-Jun Lee, Dimosthenis Sokaras, Edward I. Solomon,\* Abhik Ghosh\* and Thomas Kroll\*



9246

## Chemical regulation of carbonization enables structure-tailored hard carbon anodes from recycled polypropylene separators

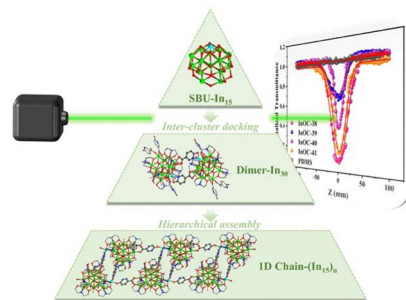
Mingyue Wang,\* Yue Wang, Na Li, Qing Zhong, Min Zhu, Dongyang Zhang and Shujiang Ding\*



9256

## Record-large indium-oxo clusters: synthesis, hierarchical assembly, and efficient optical limiting

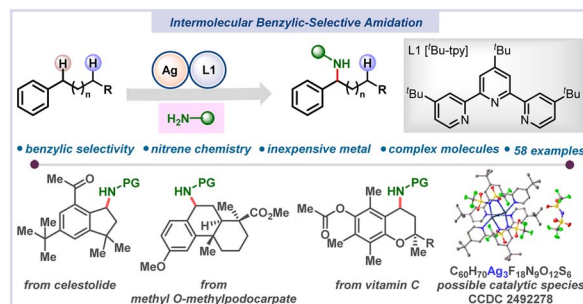
Xiuzhen Wang, Yi-An Chen, Xiaofeng Yi,\* Shumei Chen\* and Jian Zhang



9264

## Silver-catalysed intermolecular benzylic-selective C–H amidation via nitrene transfer

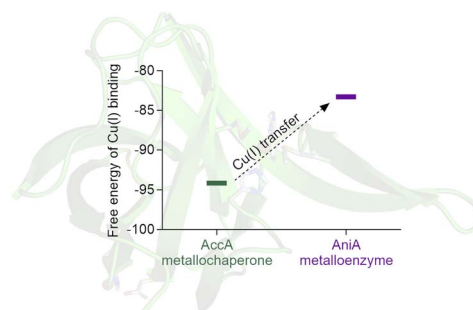
Subir Panja, Tuan Anh Trinh, Ethan M. Warrington, Derek B. Hu, Leah C. Garman, Ilia A. Guzei and Jennifer M. Schomaker\*



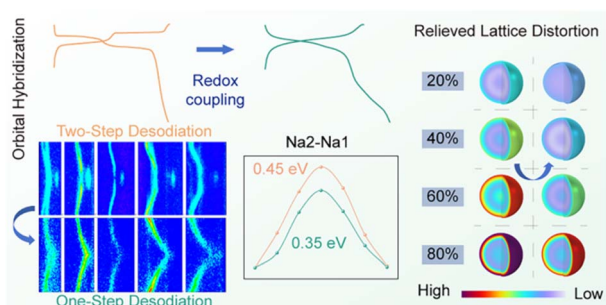
9270

## AccA from *Neisseria gonorrhoeae* provides a new framework for understanding periplasmic copper metallochaperones

Samantha Firth,\* William Earl, Denis Thaqi, YoungJin Hong, Charlotte O'Hern, Gemma Luscombe, Dalton Heng Yong Ngu, Zhenyao Luo, Chacko Jobichen, Bostjan Kobe, Alastair McEwan and Karrera Djoko\*



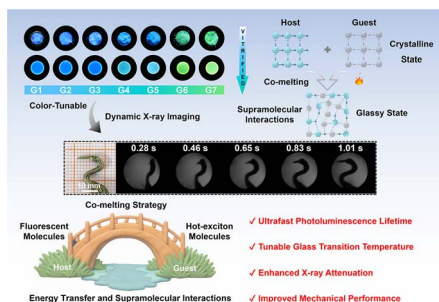
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### Orbital hybridization-mediated synergistic multi-electron redox in a NASICON cathode unlocking solid-solution reactions for ultrafast and durable sodium storage

Yi-Fei Liu, Jin-Ling Liu, Xiao-Tong Wang, Yan Zhuang, Jin-Zhi Guo, Heng Zhang, Denglong Chen,\* Zhen-Yi Gu\* and Xing-Long Wu\*

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### Color-tunable hot-exciton organic glassy supramolecular scintillators enabled by host-guest co-melting

Yuan-Ji Ye, Xiang-Long Wei, Xi Yang, Yu-Dong Chen, Ming-Cen Weng, Hong-Ming Chen\* and Mei-Jin Lin\*

