

# Chemical Science

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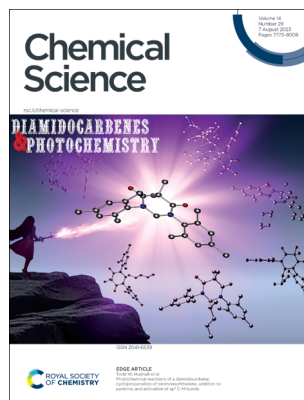
## IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 14(29) 7773–8008 (2023)



### Cover

See Arnab Mukherjee, Rituparna Sinha Roy *et al.*, pp. 7842–7866.  
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### Inside cover

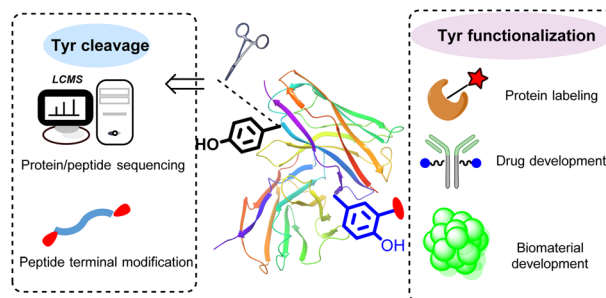
See Todd W. Hudnall *et al.*, pp. 7867–7874.  
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The background image, including the human figure, was created via the AI software NightCafe.

## REVIEW

7782

### Recent developments in the cleavage, functionalization, and conjugation of proteins and peptides at tyrosine residues

Shengping Zhang, Luis M. De Leon Rodriguez, Freda F. Li and Margaret A. Brimble\*

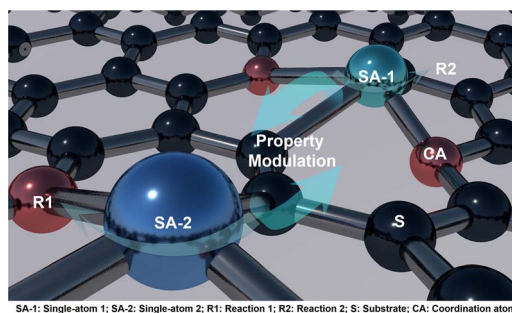


## PERSPECTIVES

7818

### Diatomic catalysts for Fenton and Fenton-like reactions: a promising platform for designing/regulating reaction pathways

Fan Mo, Qixing Zhou,\* Chenghao Li, Zongxin Tao, Zelin Hou, Tong Zheng, Qi Wang, Shaohu Ouyang and Sihui Zhan



SA-1: Single-atom 1; SA-2: Single-atom 2; R1: Reaction 1; R2: Reaction 2; S: Substrate; CA: Coordination atom

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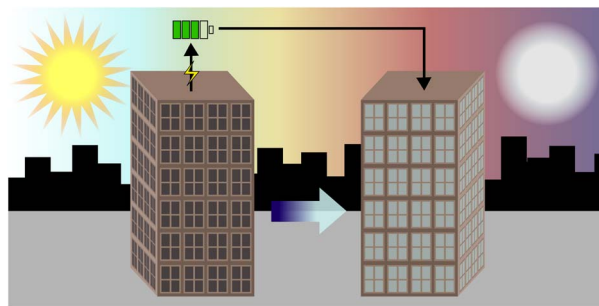


## PERSPECTIVES

7828

## Can we make color switchable photovoltaic windows?

Josephine L. Surel and Jeffrey A. Christians\*

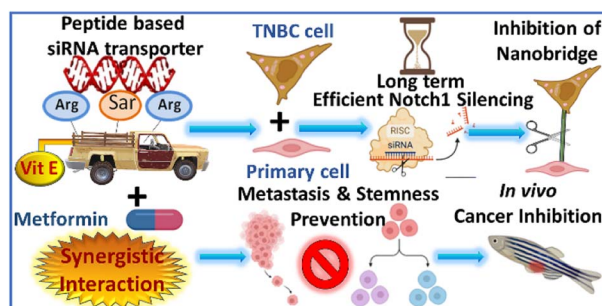


## EDGE ARTICLES

7842

## Engineered vitamin E-tethered non-immunogenic facial lipopeptide for developing improved siRNA based combination therapy against metastatic breast cancer

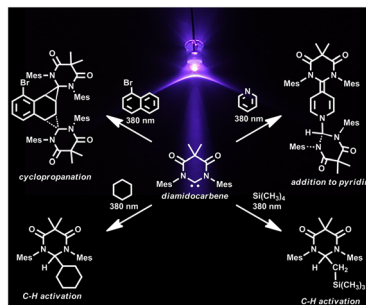
Argha Mario Mallick, Abhijit Biswas, Sukumar Mishra, Sonali Jadhav, Kasturee Chakraborty, Archana Tripathi, Arnab Mukherjee\* and Rituparna Sinha Roy\*



7867

Photochemical reactions of a diamidocarbene: cyclopropanation of bromonaphthalene, addition to pyridine, and activation of  $sp^3$  C–H bonds

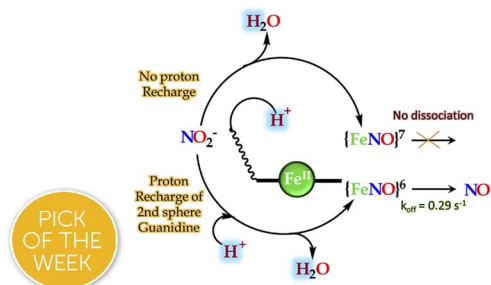
Tharushi A. Perera, William V. Taylor, M. Brenton Gildner, Eric W. Reinheimer, Sho Ito, Anna Nelson, Shane R. Yost and Todd W. Hudnall\*



7875

## Role of distal arginine residue in the mechanism of heme nitrite reductases

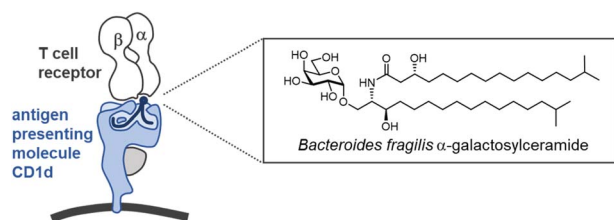
Ankita Sarkar, Snehadri Bhakta, Samir Chattopadhyay and Abhishek Dey\*



PICK OF THE WEEK



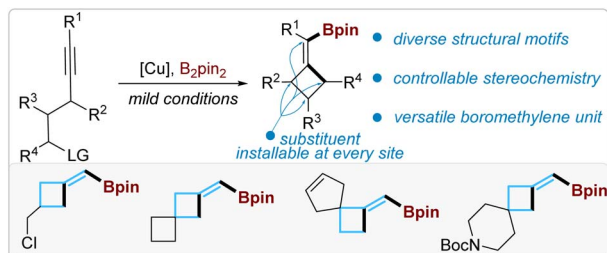
7887



### Glycolipids from the gut symbiont *Bacteroides fragilis* are agonists for natural killer T cells and induce their regulatory differentiation

Garth Cameron, Tram Nguyen, Marcin Ciula, Spencer J. Williams\* and Dale I. Godfrey\*

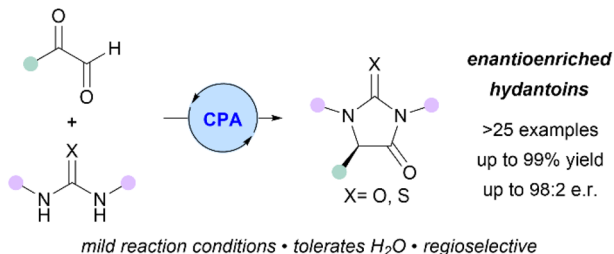
7897



### A general catalytic synthetic strategy for highly strained methylenecyclobutanes and spiromethylenecyclobutanes

Haotian Zhao, Yu Lin, Mingyu Jiang and Bo Su\*

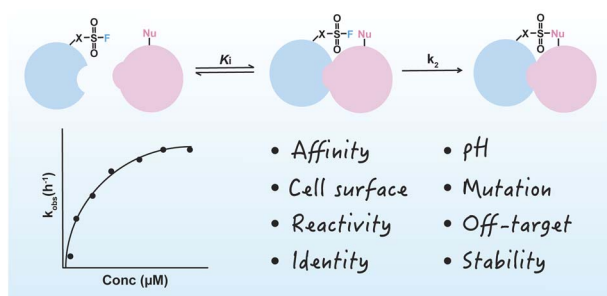
7905



### Enantioselective synthesis of hydantoins by chiral acid-catalysed condensation of glyoxals and ureas

Sushant Aryal, Christopher A. Hone, Matthew I. J. Polson and Daniel J. Foley\*

7913



### The proximity-enabled sulfur fluoride exchange reaction in the protein context

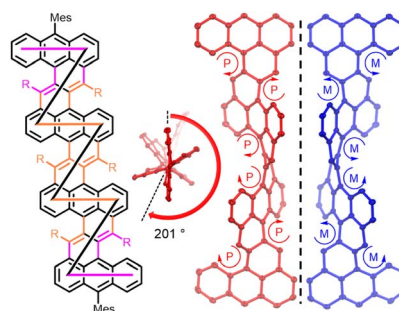
Bingchen Yu, Li Cao, Shanshan Li, Paul C. Klauser and Lei Wang\*



7922

### Helical fused 1,2:8,9-dibenzozethrene oligomers with up to 201° end-to-end twist: "one-pot" synthesis and chiral resolution

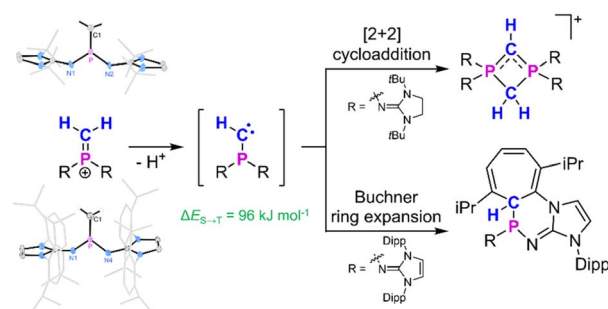
Zhitao Sun, Wei Fan, Yi Han, Wei Yuan, Yong Ni, Jinyi Wang, Haipeng Wei, Yanli Zhao, Zhe Sun\* and Jishan Wu\*



7928

### Terminal methylene phosphonium ions: precursors for transient monosubstituted phosphinocarbenes

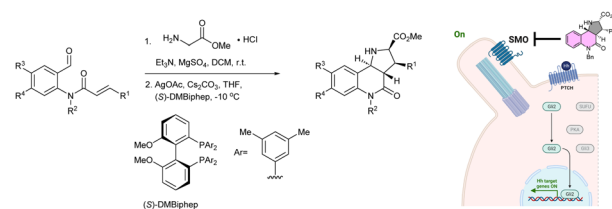
Pawel Löwe, Marius A. Wünsche, Felix R. S. Purtscher, Jakob Gamper, Thomas S. Hofer, Lukas F. B. Wilm, Maike B. Röthel and Fabian Dielmann\*



7936

### A highly enantioselective intramolecular 1,3-dipolar cycloaddition yields novel pseudo-natural product inhibitors of the Hedgehog signalling pathway

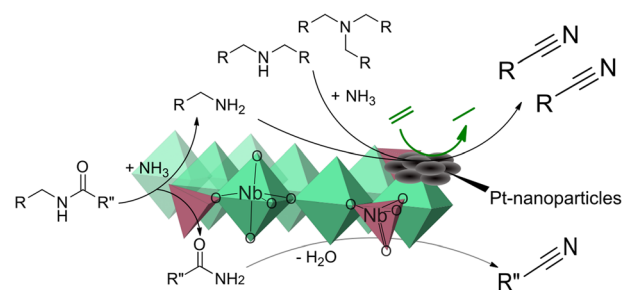
Jie Liu, Ruirui Zhang, Shubhadip Mallick, Sohan Patil, Chantal Wientjens, Jana Flegel, Anna Krupp, Carsten Strohmann, Corentin Grassin, Christian Merten, Axel Pahl, Michael Grigalunas and Herbert Waldmann\*



7944

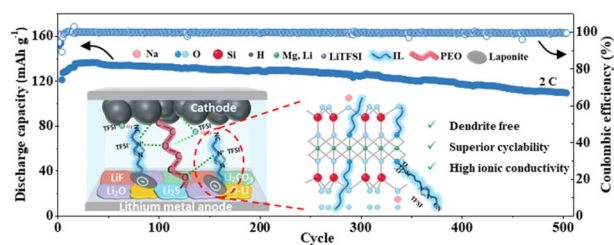
### Ammonolytic transfer dehydrogenation of amines and amides: a versatile method to valorize nitrogen compounds to nitriles

Robin Coeck, Margot Houbrechts and Dirk E. De Vos\*





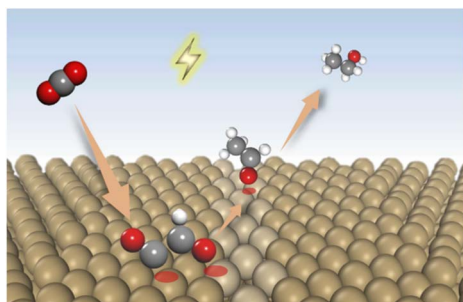
7956



### Composite polymer electrolytes with ionic liquid grafted-Laponite for dendrite-free all-solid-state lithium metal batteries

BiYu Jin, Dongyun Wang, Yuan He, Jianjiang Mao, Yunqing Kang, Chao Wan,\* Wei Xia,\* Jeonghun Kim, MiHaru Eguchi and Yusuke Yamauchi\*

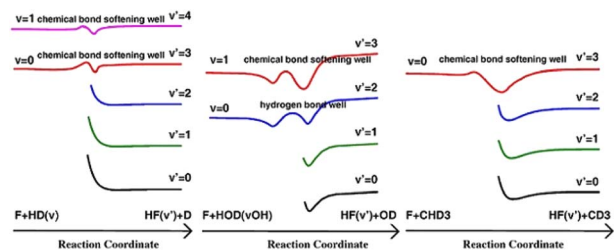
7966



### Guiding catalytic CO<sub>2</sub> reduction to ethanol with copper grain boundaries

Dongfang Cheng, Gong Zhang, Lulu Li, Xiangcheng Shi, Shiyu Zhen, Zhi-Jian Zhao\* and Jinlong Gong\*

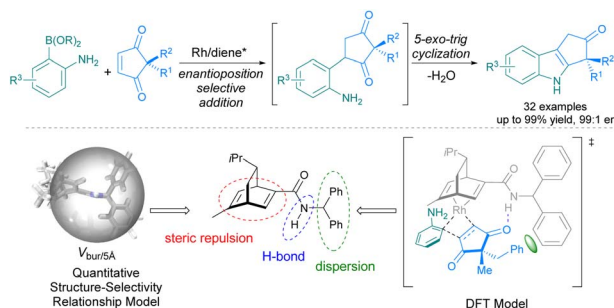
7973



### Feshbach resonances in the F + CHD<sub>3</sub> → HF + CD<sub>3</sub> reaction

Shu Liu,\* Jun Chen, Xiaoren Zhang and Dong H. Zhang\*

7980



### Catalytic asymmetric indolization by a desymmetrizing [3 + 2] annulation strategy

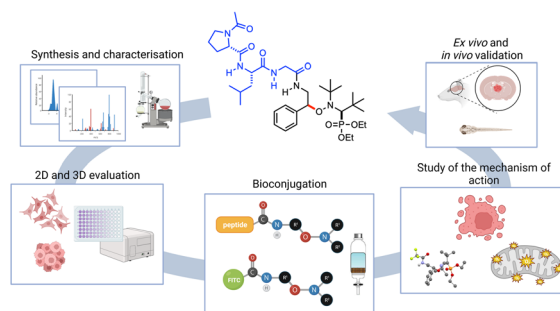
Changhui Wu, Zhiqian Chang, Chuanyong Peng, Chen Bai, Junhao Xing and Xiaowei Dou\*



7988

### Conditional generation of free radicals by selective activation of alkoxyamines: towards more effective and less toxic targeting of brain tumors

Patricia Piris, Duje Buric, Toshihide Yamasaki, Paul Huchedé, Mailys Rossi, Mélanie Matteudi, Marie-Pierre Montero, Anne Rodallec, Romain Appay, Christine Roux, Sébastien Combes, Eddy Pasquier, Marie Castets, Nicolas André, Paul Brémond\* and Manon Carré\*



7999

### Rhodium-catalyzed atroposelective access to trisubstituted olefins via C–H bond olefination of diverse arenes

Xiaohan Zhu, Ruijie Mi, Jie Yin, Fen Wang\* and Xingwei Li\*

