

# Chemical Science

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## IN THIS ISSUE

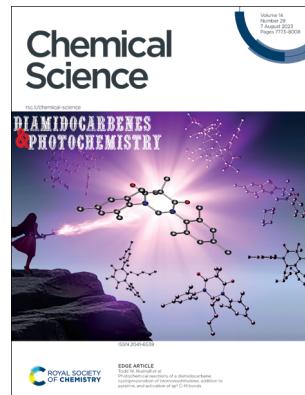
ISSN 2041-6539 CODEN CSHCBM 14(29) 7773–8008 (2023)



### 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.

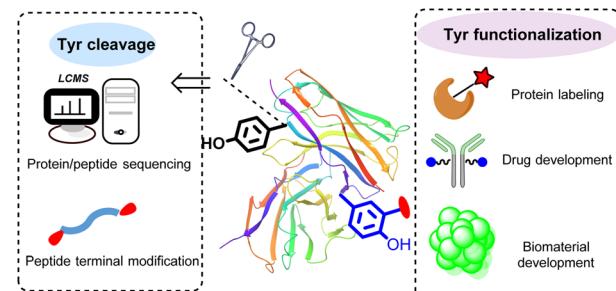
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## REVIEW

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\*

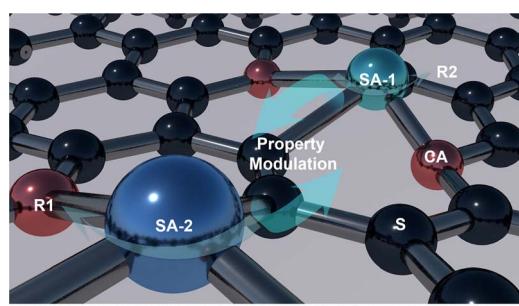


## PERSPECTIVES

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



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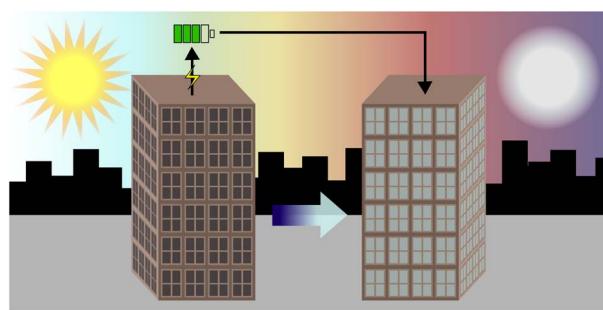
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## PERSPECTIVES

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## Can we make color switchable photovoltaic windows?

Josephine L. Surel and Jeffrey A. Christians\*

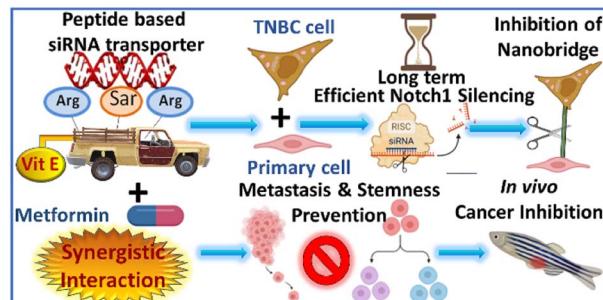


## EDGE ARTICLES

7842

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

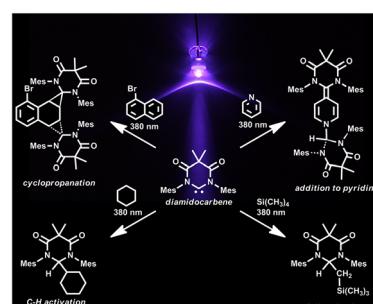
Argha Mario Mallick, Abhijit Biswas, Sukumar Mishra, Sonali Jadhav, Kasturee Chakraborty, Archana Tripathi, Arnab Mukherjee\* and Rituparna Sinha Roy\*



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

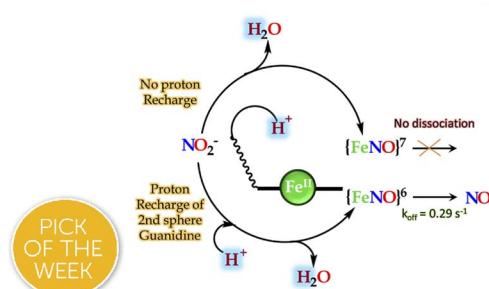
Tharushi A. Perera, William V. Taylor, M. Brenton Gildner, Eric W. Reinheimer, Sho Ito, Anna Nelson, Shane R. Yost and Todd W. Hudnall\*



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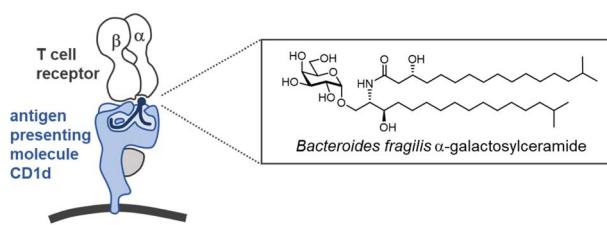
## Role of distal arginine residue in the mechanism of heme nitrite reductases

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



## EDGE ARTICLES

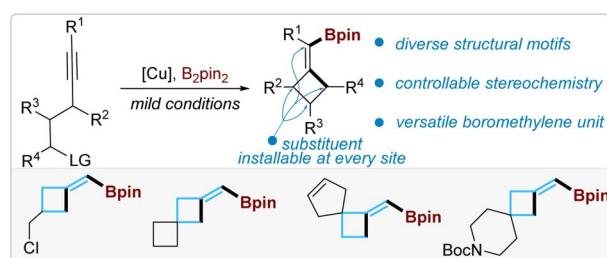
7887



**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\*

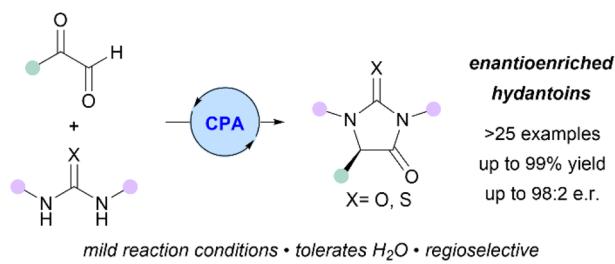
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**A general catalytic synthetic strategy for highly strained methylenecyclobutanes and spiro methylenecyclobutanes**

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

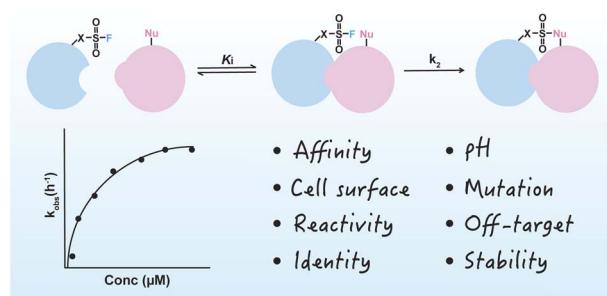
7905



**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\*

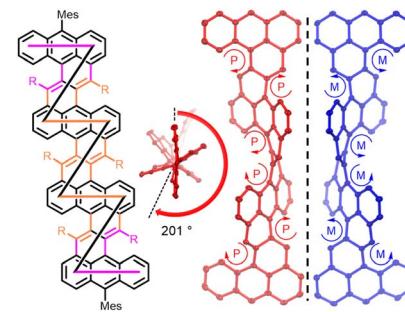


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**Helical fused 1,2:8,9-dibenzozethrene oligomers with up to 201° end-to-end twist: “one-pot” synthesis and chiral resolution**

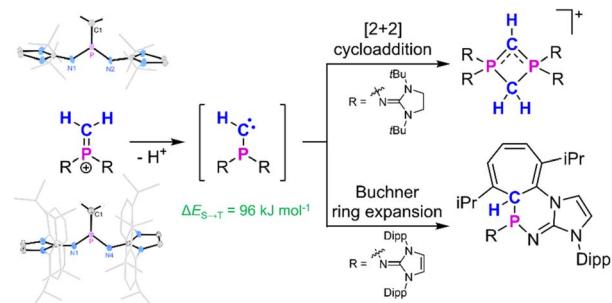
Zhitao Sun, Wei Fan, Yi Han, Wei Yuan, Yong Ni, Jinyi Wang, Haipeng Wei, Yanli Zhao, Zhe Sun\* and Jishan Wu\*



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

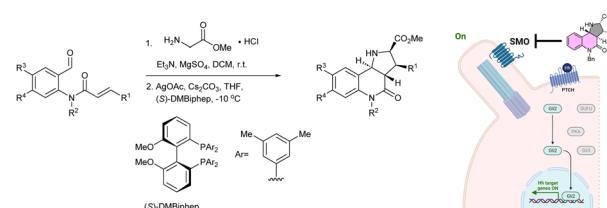
Pawel Löwe, Marius A. Wünsche, Felix R. S. Purtscher, Jakob Gamper, Thomas S. Hofer, Lukas F. B. Wilm, Maike B. Röthel and Fabian Dielmann\*



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

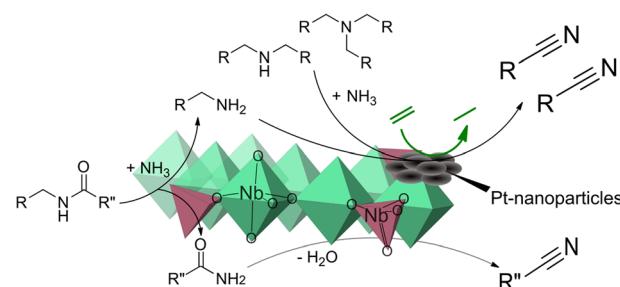
Jie Liu, Ruirui Zhang, Shubhadip Mallick, Sohan Patil, Chantal Wientjens, Jana Flegel, Anna Krupp, Carsten Strohmann, Corentin Grassin, Christian Merten, Axel Pahl, Michael Grigalunas and Herbert Waldmann\*



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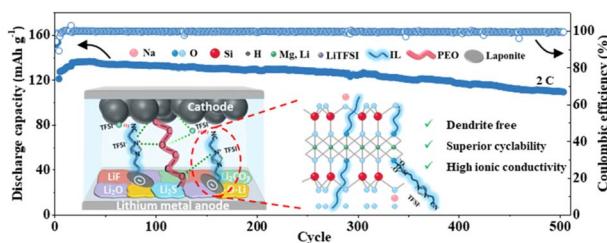
**Ammonolytic transfer dehydrogenation of amines and amides: a versatile method to valorize nitrogen compounds to nitriles**

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



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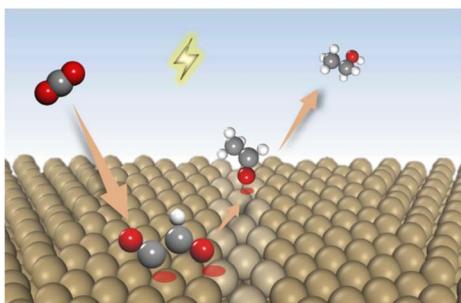
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### Composite polymer electrolytes with ionic liquid grafted-Laponite for dendrite-free all-solid-state lithium metal batteries

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

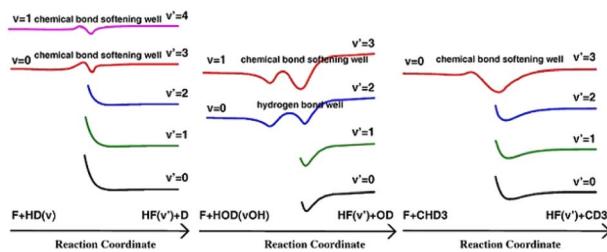
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### Guiding catalytic CO<sub>2</sub> reduction to ethanol with copper grain boundaries

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

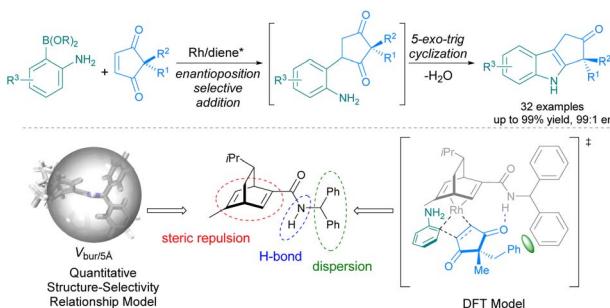
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### Feshbach resonances in the F + CHD<sub>3</sub> → HF + CD<sub>3</sub> reaction

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

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

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

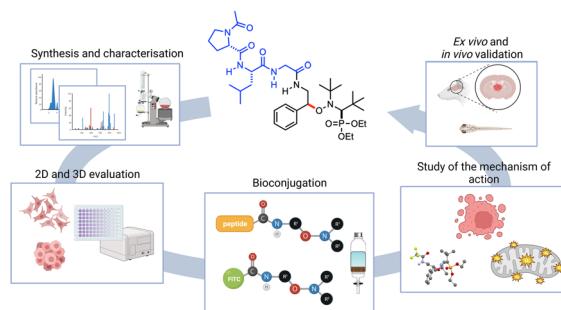


## EDGE ARTICLES

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**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, Maëlys 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\*



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**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\*

