

# Chemical Science

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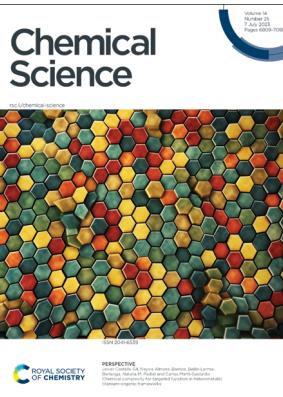
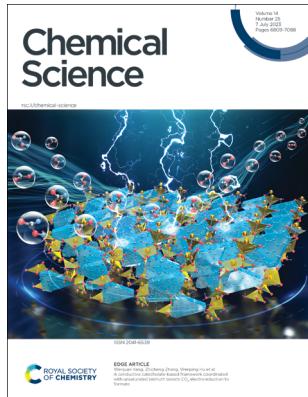
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ISSN 2041-6539 CODEN CSHCBM 14(25) 6809–7088 (2023)

### Cover

See Wenjuan Yang, Zhicheng Zhang, Wenping Hu *et al.*, pp. 6860–6866.  
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### Inside cover

See Carlos Martí-Gastaldo *et al.*, pp. 6826–6840.  
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## EDITORIAL

6820

### Addressing the sustainability challenges for polymers in liquid formulations

Caroline Louise Kelly

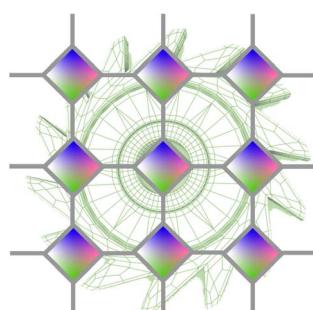


## PERSPECTIVES

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### Chemical complexity for targeted function in heterometallic titanium–organic frameworks

Javier Castells-Gil, Neyvis Almora-Barrios, Belén Lerma-Berlanga, Natalia M. Padial and Carlos Martí-Gastaldo\*



# Chemical Science

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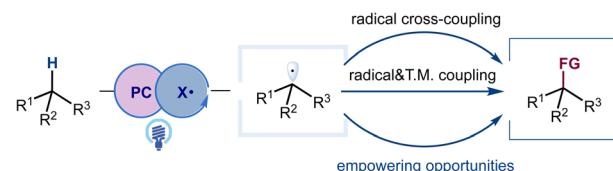
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## PERSPECTIVES

6841

## Resurgence and advancement of photochemical hydrogen atom transfer processes in selective alkane functionalizations

Liang Chang, Shun Wang, Qing An, Linxuan Liu, Hexiang Wang, Yubo Li, Kaixuan Feng and Zhiwei Zuo\*

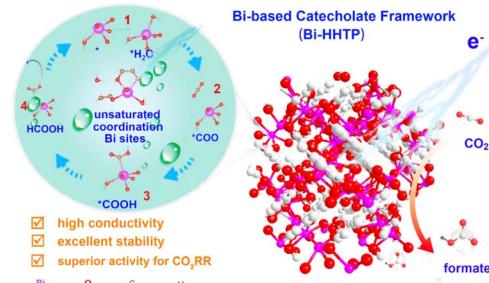


## EDGE ARTICLES

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## A conductive catecholate-based framework coordinated with unsaturated bismuth boosts CO<sub>2</sub> electroreduction to formate

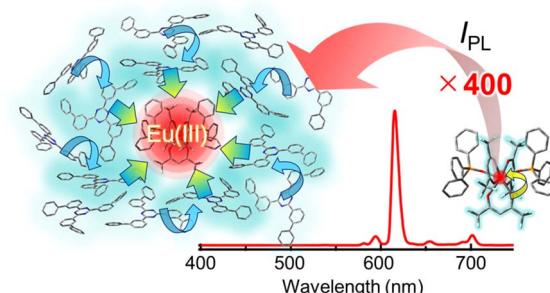
Zengqiang Gao, Man Hou, Yongxia Shi, Li Li, Qisheng Sun, Shuyuan Yang, Zhiqiang Jiang, Wenjuan Yang,\* Zhicheng Zhang\* and Wenping Hu\*



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## Highly efficient light harvesting of a Eu(III) complex in a host–guest film by triplet sensitization

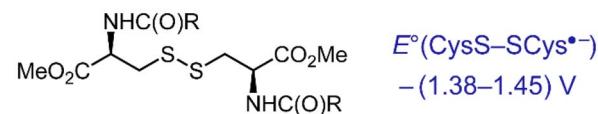
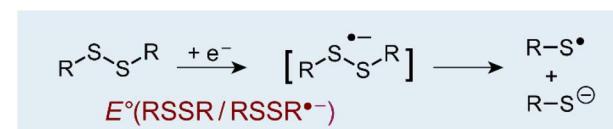
Shiori Miyazaki, Kenichi Goushi, Yuichi Kitagawa, Yasuchika Hasegawa, Chihaya Adachi, Kiyoshi Miyata\* and Ken Onda\*



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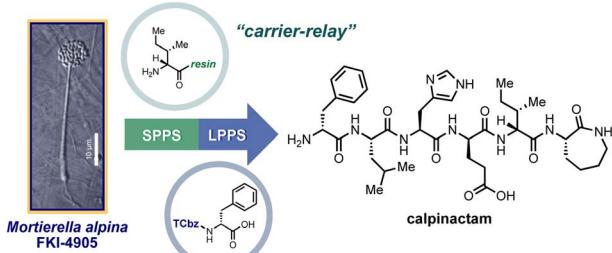
## Disulfide radical anion as a super-reductant in biology and photoredox chemistry

Qilei Zhu,\* Cyrille Costentin, JoAnne Stubbe and Daniel G. Nocera\*



## EDGE ARTICLES

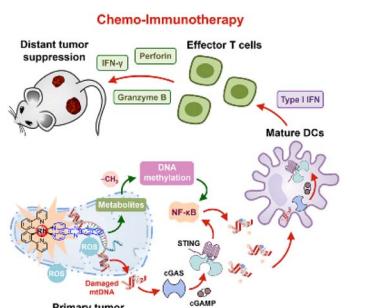
6882



### Development of a nitrogen-bound hydrophobic auxiliary: application to solid/hydrophobic-tag relay synthesis of calpinactam

Hiroki Nakahara, Goh Sennari, Yoshihiko Noguchi, Tomoyasu Hirose\* and Toshiaki Sunazuka\*

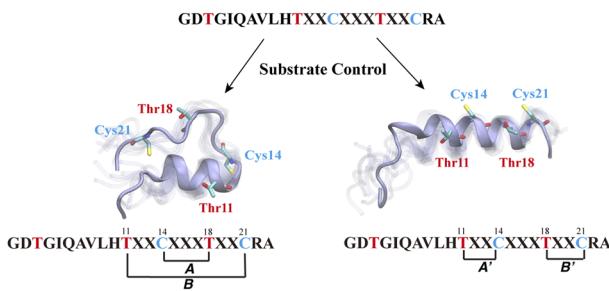
6890



### Activation of the cGAS-STING pathway by a mitochondrial DNA-targeted emissive rhodium(III) metallointercalator

Yue Zheng, Xiao-Xiao Chen, Dong-Yang Zhang, Wen-Jin Wang, Kun Peng, Zhi-Yuan Li, Zong-Wan Mao\* and Cai-Ping Tan\*

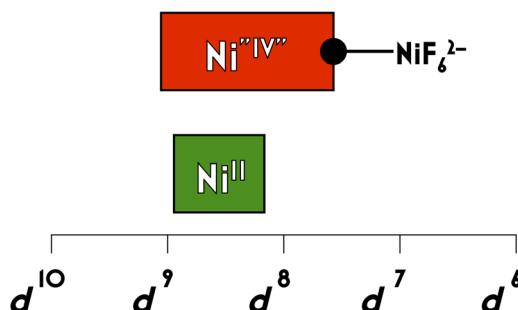
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### Sequence controlled secondary structure is important for the site-selectivity of lanthipeptide cyclization

Xuenan Mi, Emily K. Desormeaux, Tung T. Le, Wilfred A. van der Donk\* and Diwakar Shukla\*

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### Scrutinizing formally Ni<sup>IV</sup> centers through the lenses of core spectroscopy, molecular orbital theory, and valence bond theory

Ida M. DiMucci, Charles J. Titus, Dennis Nordlund, James R. Bour, Eugene Chong, Dylan P. Grigas, Chi-Herng Hu, Mikhail D. Kosobokov, Caleb D. Martin, Liviu M. Mirica, Noel Nebra, David A. Vicic, Lydia L. Yorks, Sam Yruegas, Samantha N. MacMillan,\* Jason Shearer\* and Kyle M. Lancaster\*

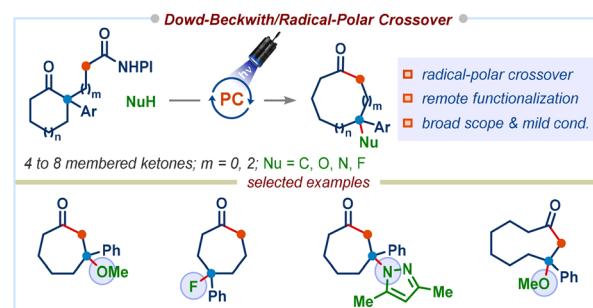


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**Photocatalyzed Dowd–Beckwith radical-polar crossover reaction for the synthesis of medium-sized carbocyclic compounds**

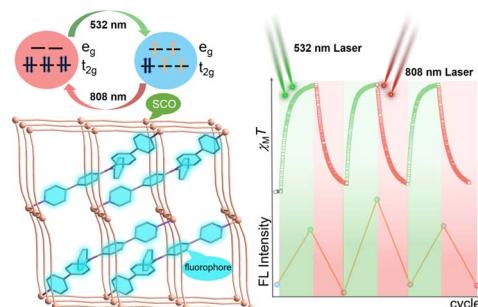
Tushar Singha, Ganesh Arjun Kadam and Durga Prasad Hari\*



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**Manipulating fluorescence by photo-switched spin-state conversions in an iron(II)-based SCO-MOF**

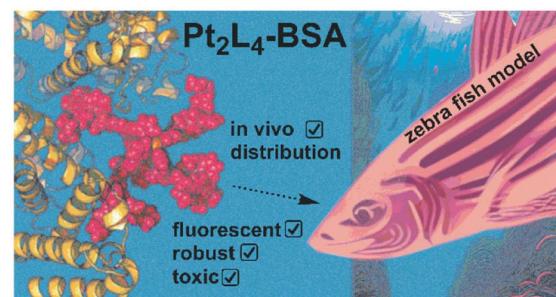
Fei-Fei Yan, Wen-Jing Jiang, Nian-Tao Yao, Pan-Dong Mao, Liang Zhao, Hui-Ying Sun, Yin-Shan Meng and Tao Liu\*



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**In vivo biodistribution of kinetically stable  $\text{Pt}_2\text{L}_4$  nanospheres that show anti-cancer activity**

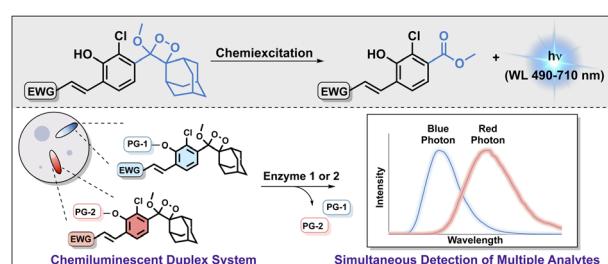
Eduard O. Bobylev, Renzo A. Knol, Simon Mathew, David A. Poole, III, Ioli Kotsogianni, Nathaniel I. Martin, Bas de Bruin, Alexander Kros\* and Joost N. H. Reek\*



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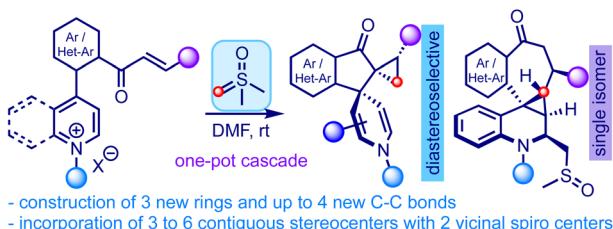
**Chemiluminescent duplex analysis using phenoxy-1,2-dioxetane luminophores with color modulation**

Sara Gutkin, Rozan Tannous, Qais Jaber, Micha Fridman and Doron Shabat\*



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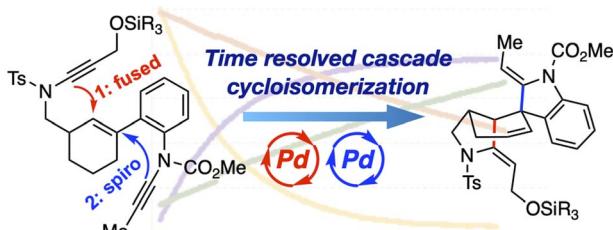
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**An interrupted Corey–Chaykovsky reaction of designed azaarenium salts: synthesis of complex polycyclic spiro- and fused cyclopropanoids**

Bara Singh, Arshad J. Ansari, Nirmal Malik and S. S. V. Ramasastri\*

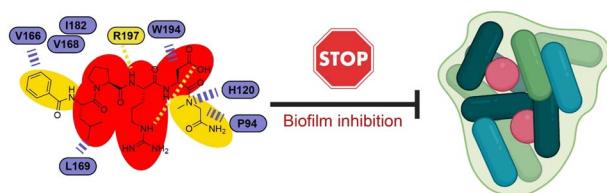
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**Sequencing palladium-catalyzed cycloisomerization cascades in a synthesis of the gelsemine core**

Guoduan Liang and Edward A. Anderson\*

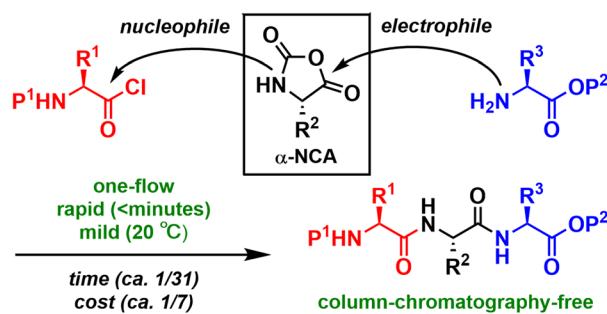
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**Substrate-derived Sortase A inhibitors: targeting an essential virulence factor of Gram-positive pathogenic bacteria**

Halal AbuJubara, Jordi C. J. Hintzen, Shadi Rahimi, Ivan Mijakovic, Daniel Tietze and Alesia A. Tietze\*

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**Rapid and column-chromatography-free peptide chain elongation *via* a one-flow, three-component coupling approach**

Naoto Sugisawa, Akira Ando and Shinichiro Fuse\*

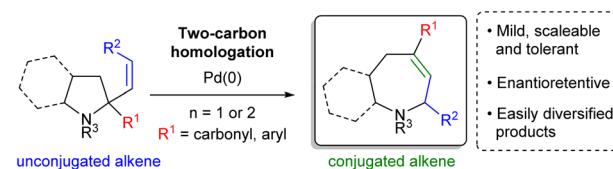


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**Stereoselective two-carbon ring expansion of allylic amines *via* electronic control of palladium-promoted equilibria**

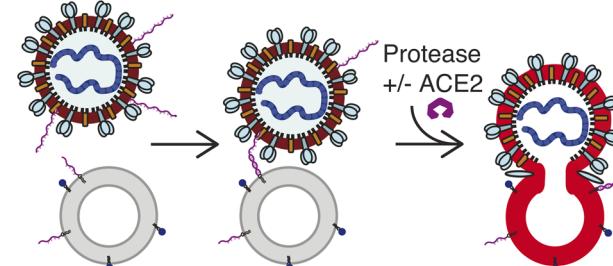
Charles P. Mikan, Aidan Matthews, Daniel Harris, Charlotte E. McIvor, Paul G. Waddell, Mark T. Sims and Jonathan P. Knowles\*



6997

**The ACE2 receptor accelerates but is not biochemically required for SARS-CoV-2 membrane fusion**

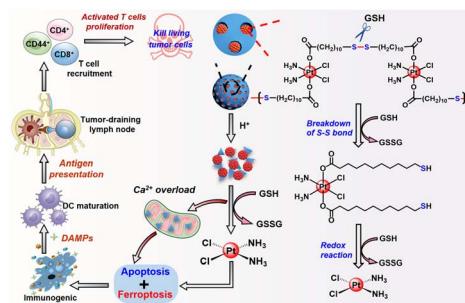
Marcos Cervantes, Tobin Hess, Giorgio G. Morbioli, Anjali Sengar and Peter M. Kasson\*



7005

***In situ* oxidative polymerization of platinum(IV) prodrugs in pore-confined spaces of  $\text{CaCO}_3$  nanoparticles for cancer chemoimmunotherapy**

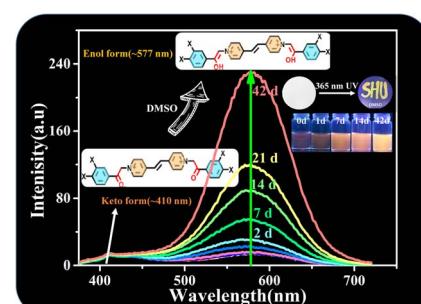
Fangmian Wei, Libing Ke, Siyuan Gao, Johannes Karges, Jinquan Wang, Yu Chen, Liangnian Ji and Hui Chao\*



7016

**Isomerization-induced fluorescence enhancement of two new viologen derivatives: mechanism insight and DFT calculations**

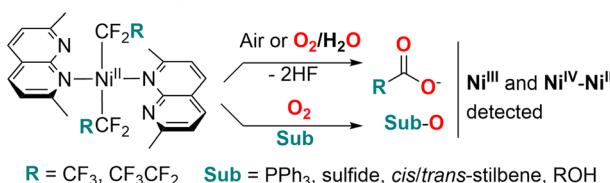
Xiuping Yin, Xinxing Li, Xuyi Li, Małgorzata Biczysko,\* Shourong Zhu, Jiaqiang Xu and Yue-Ling Bai\*



## EDGE ARTICLES

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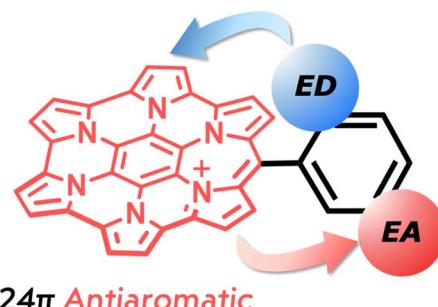
## Oxygenation by $O_2$ via Ni long-chain perfluoroalkyl complexes



# Oxygen transfer reactivity mediated by nickel perfluoroalkyl complexes using molecular oxygen as a terminal oxidant

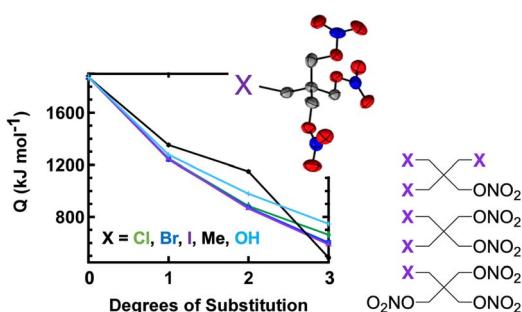
Shubham Deolka, R. Govindarajan, Eugene Khaskin, Serhii Vasylevskyi, Janet Bahri, Robert R. Fayzullin, Michael C. Roy and Julia R. Khusnutdinova\*

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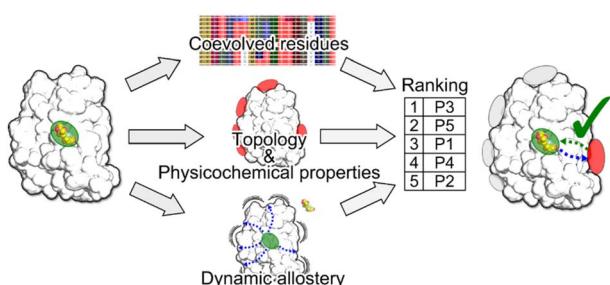


## Substituent effects on paratropicity and diatropicity in $\pi$ -extended hexapyrrolohexaazacoronene

Masayoshi Takase,\* Toranosuke Takata, Kosuke Oki,  
Shigeki Mori and Hidemitsu Uno\*

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7057



## Halogenated PETN derivatives: interplay between physical and chemical factors in explosive sensitivity

Nicholas Lease,\* Kyle D. Spielvogel, Jack V. Davis,  
Jeremy T. Tisdale, Lisa M. Klamborowski, M. J. Cawkwell  
and Virginia W. Manner

6818 | *Chem. Sci.*, 2023, 14, 6811–6819

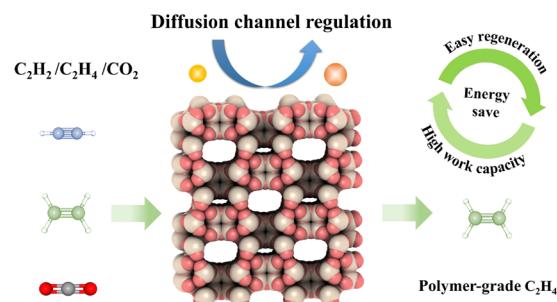
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## EDGE ARTICLES

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**Deep removal of trace  $C_2H_2$  and  $CO_2$  from  $C_2H_4$  by using customized potassium-exchange mordenite**

Hongwei Chen, Binyu Wang, Bin Zhang, Jiahong Chen, Jiabao Gui, Xiufeng Shi, Wenfu Yan, Jinping Li and Libo Li\*



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**Near-infrared AIEgens with high singlet-oxygen yields for mitochondria-specific imaging and antitumor photodynamic therapy**

Shasha Zhang, Wenfang Yang, Xiao Lu, Xinyi Zhang, Zhichao Pan, Da-Hui Qu, Dong Mei,\* Ju Mei\* and He Tian

