

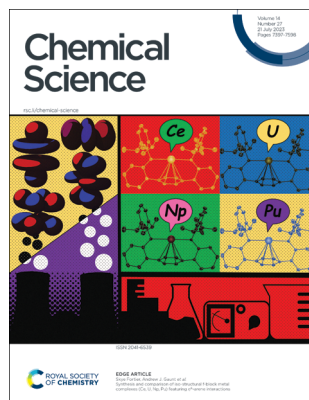
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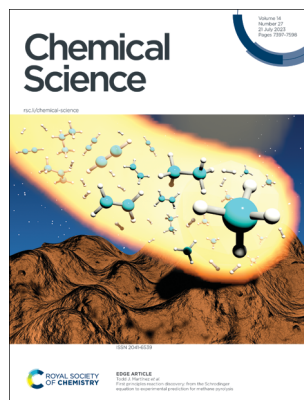
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## IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 14(27) 7397–7598 (2023)



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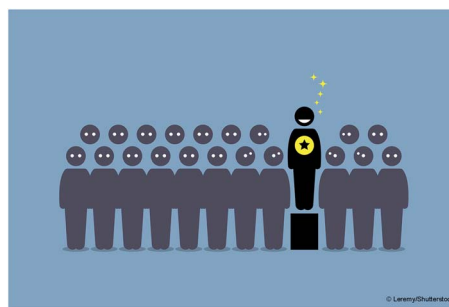


**Inside cover**  
See Todd J. Martinez *et al.*, pp. 7447–7464.  
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## EDITORIAL

7406

### Outstanding Reviewers for *Chemical Science* in 2022

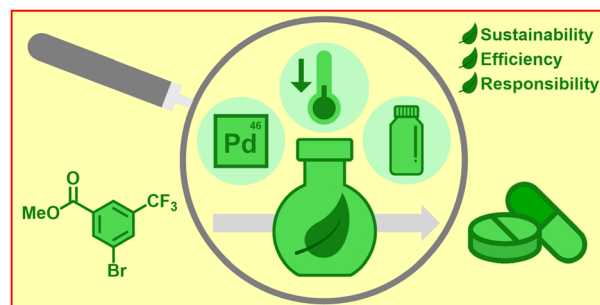


## COMMENTARY

7408

### A focus on sustainable method development for greener synthesis

Jasper L. Tyler, Felix Katzenburg and Frank Glorius\*



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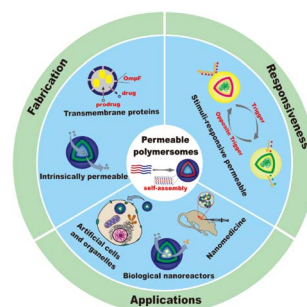


## REVIEW

7411

**Recent advances in permeable polymersomes: fabrication, responsiveness, and applications**

Yanyan Zhu, Shoupeng Cao, Meng Huo,\* Jan C. M. van Hest\* and Hailong Che\*

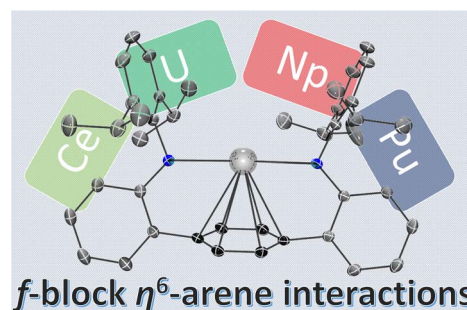


## EDGE ARTICLES

7438

**Synthesis and comparison of iso-structural f-block metal complexes (Ce, U, Np, Pu) featuring  $\eta^6$ -arene interactions**

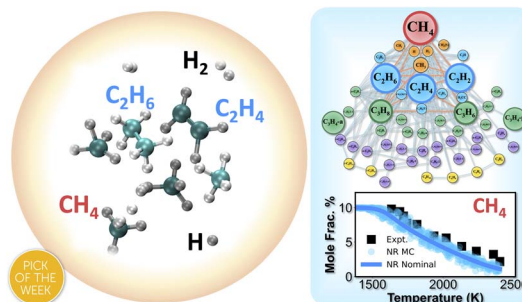
Jesse Murillo, Conrad A. P. Goodwin, Lauren Stevens, Skye Fortier,\* Andrew J. Gaunt\* and Brian L. Scott



7447

**First principles reaction discovery: from the Schrodinger equation to experimental prediction for methane pyrolysis**

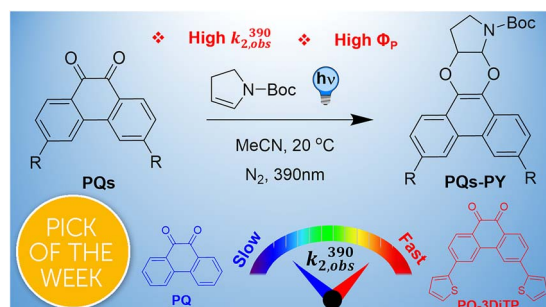
Rui Xu, Jan Meisner, Alexander M. Chang, Keiran C. Thompson and Todd J. Martínez\*



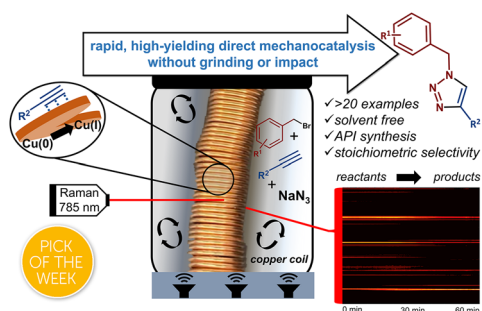
7465

**Establishing PQ-ERA photoclick reactions with unprecedented efficiency by engineering of the nature of the phenanthraquinone triplet state**

Youxin Fu, Georgios Alachouzos, Nadja A. Simeth, Mariangela Di Donato, Michiel F. Hilbers, Wybren Jan Buma,\* Wiktor Szymanski\* and Ben L. Feringa\*



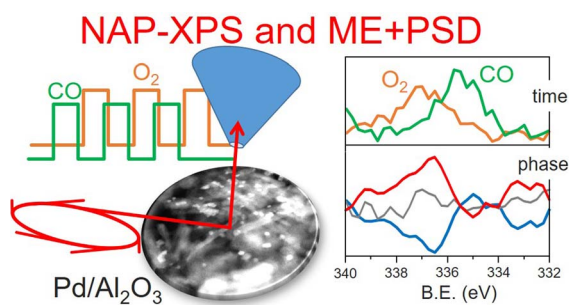
7475



### Direct mechanocatalysis by resonant acoustic mixing (RAM)

Cameron B. Lennox, Tristan H. Borchers, Lori Gonnet, Christopher J. Barrett, Stefan G. Koenig,\* Karthik Nagapudi\* and Tomislav Friščić\*

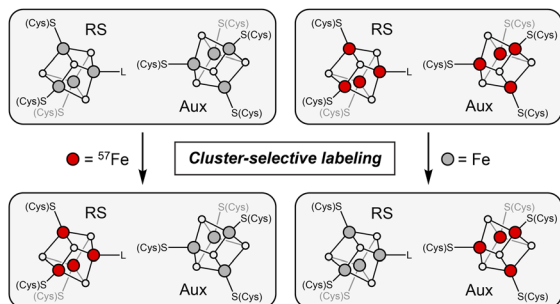
7482



### Improving time-resolution and sensitivity of *in situ* X-ray photoelectron spectroscopy of a powder catalyst by modulated excitation

M. Roger, L. Artiglia,\* A. Boucly, F. Buttignol, M. Agote-Arán, J. A. van Bokhoven, O. Kröcher and D. Ferri\*

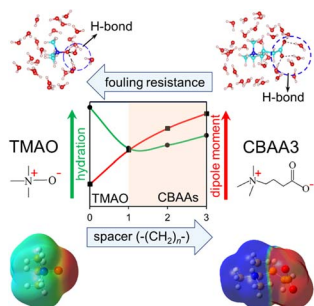
7492



### Cluster-selective <sup>57</sup>Fe labeling of a Twitch-domain-containing radical SAM enzyme

Gil Namkoong and Daniel L. M. Suesse\*

7500



### Hydration behaviors of nonfouling zwitterionic materials

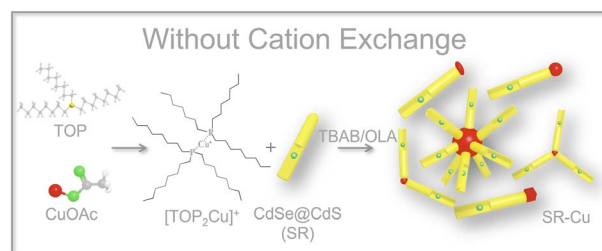
Pranab Sarker, Tieyi Lu, Di Liu, Guangyao Wu, Hanning Chen, Md Symon Jahan Sajib, Shaoyi Jiang,\* Zhan Chen\* and Tao Wei\*



7512

## Shape tunability of copper nanocrystals deposited on nanorods

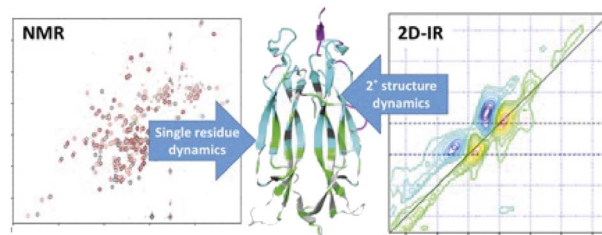
Yuexing Chen and Lilac Amirav\*



7524

## Modulation of IL-17 backbone dynamics reduces receptor affinity and reveals a new inhibitory mechanism

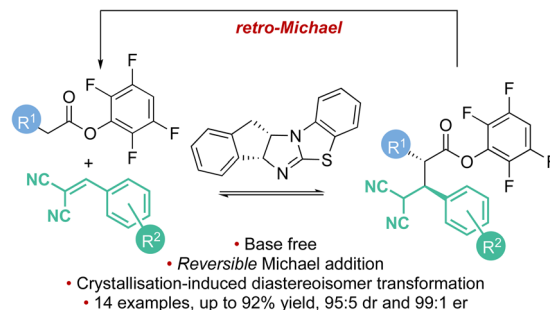
Daniel J. Shaw, Lorna C. Waters, Sarah L. Strong, Monika-Sarah E. D. Schulze, Gregory M. Greetham, Mike Towrie, Anthony W. Parker, Christine E. Prosser, Alistair J. Henry, Alastair D. G. Lawson, Mark. D. Carr, Richard J. Taylor, Neil T. Hunt\* and Frederick W. Musket\*



7537

## Enantioselective isothiurea-catalysed reversible Michael addition of aryl esters to 2-benzylidene malonitriles

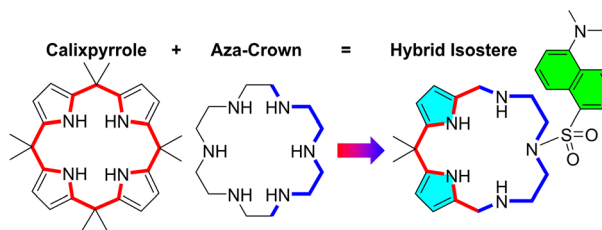
Alastair J. Nimmo, Jacqueline Bitai, Claire M. Young, Calum McLaughlin, Alexandra M. Z. Slawin, David B. Cordes and Andrew D. Smith\*



7545

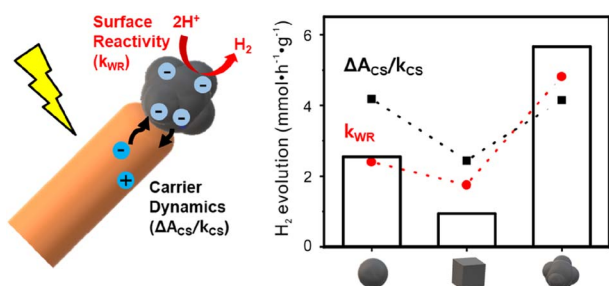
## Azacrown-calixpyrrole isosteres: receptors and sensors for anions

Austin R. Sartori, Aco Radujević, Sandra M. George and Pavel Anzenbacher, Jr\*





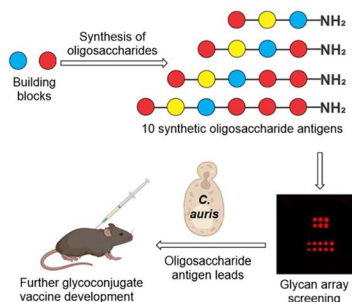
7553



### Pt cocatalyst morphology on semiconductor nanorod photocatalysts enhances charge trapping and water reduction

Bumjin Park, Won-Woo Park, Ji Yong Choi, Woong Choi, Young Mo Sung, Soohwan Sul,\* Oh-Hoon Kwon\* and Hyunjoon Song\*

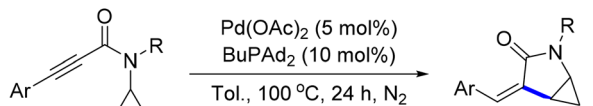
7559



### Synthesis of oligosaccharides to identify an immunologically active epitope against *Candida auris* infection

Rajat Kumar Singh, Emelie E. Reuber, Mariolina Bruno, Mihai G. Netea and Peter H. Seeberger\*

7564

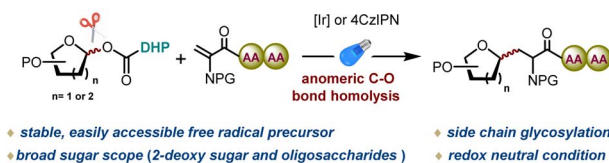


### Palladium-catalyzed intramolecular asymmetric hydrocyclopropanylation of alkynes: synthesis of cyclopropane-fused $\gamma$ -lactams

Han-Ze Lin, Zhuang Qi, Qi-Min Wu, Yong-Yu Jiang and Jin-Bao Peng\*

- ♥ mild conditions
  - ♦ cyclopropane-fused  $\gamma$ -lactams
  - ♣ 100% atom economy
  - ♠  $sp^3$  C-H bond activation
- 21 examples  
up to 96% yield  
up to 91% ee

7569



### Stereoselective alkyl C-glycosylation of glycosyl esters via anomeric C–O bond homolysis: efficient access to C-glycosyl amino acids and C-glycosyl peptides

Anrong Chen, Shiyin Zhao, Yang Han, Zhenghong Zhou, Bo Yang, Lan-Gui Xie,\* Maciej A. Walczak\* and Feng Zhu\*

- ♦ stable, easily accessible free radical precursor
- ♦ side chain glycosylation
- ♦ broad sugar scope (2-deoxy sugar and oligosaccharides)
- ♦ redox neutral condition

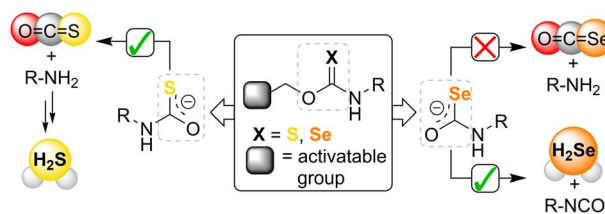


## EDGE ARTICLES

7581

**Direct hydrogen selenide ( $\text{H}_2\text{Se}$ ) release from activatable selenocarbamates**

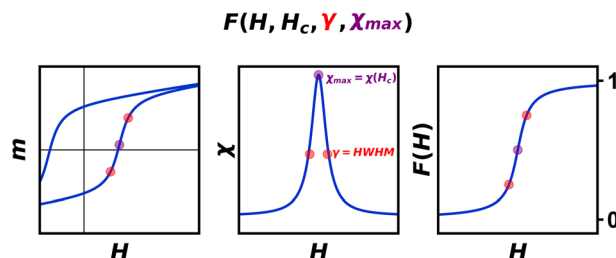
Turner D. Newton, Keyan Li, Jyoti Sharma, Pier Alexandre Champagne\* and Michael D. Pluth\*



7589

**Quantifying superparamagnetic signatures in nanoparticle magnetite: a generalized approach for physically meaningful statistics and synthesis diagnostics**

Kyle M. Kirkpatrick, Benjamin H. Zhou, Philip C. Bunting and Jeffrey D. Rinehart\*



## CORRECTION

7595

**Correction: Abiotic microcompartments form when neighbouring droplets fuse: an electrochemiluminescence investigation**

Silvia Voci, Thomas B. Clarke and Jeffrey E. Dick\*

