

# ChemComm

Chemical Communications

[rsc.li/chemcomm](https://rsc.li/chemcomm)

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS 60(24) 3207-3344 (2024)



### Cover

See Holger Braunschweig et al., pp. 3259–3262. Image reproduced by permission of Felipe Fantuzzi from *Chem. Commun.*, 2024, 60, 3259.



### Inside cover

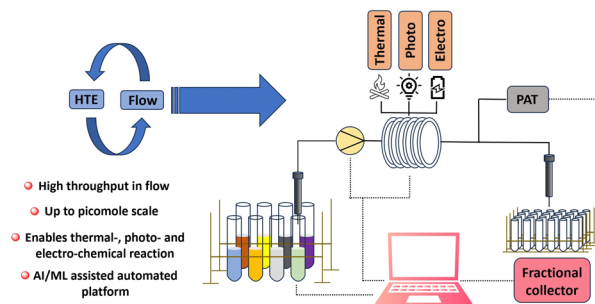
See Junhong Lü et al., pp. 3263–3266. Image reproduced by permission of Junhong Lü from *Chem. Commun.*, 2024, 60, 3263.

## HIGHLIGHT

3217

### Recent advances and applications in high-throughput continuous flow

Jiaping Yu, Jiaying Liu, Chaoyi Li, Junrong Huang, Yuxiang Zhu\* and Hengzhi You\*

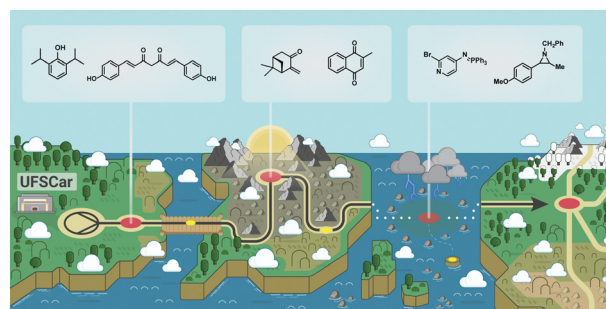


## FEATURE ARTICLES

3226

### Continuous flow reactions in the preparation of active pharmaceutical ingredients and fine chemicals

Guilherme M. Martins, Felipe C. Braga, Pedro P. de Castro, Timothy J. Brocksom and Kleber T. de Oliveira\*



# RSC Applied Interfaces

GOLD  
OPEN  
ACCESS

## Interfacial and surface research with an applied focus

### Interdisciplinary and open access



[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)

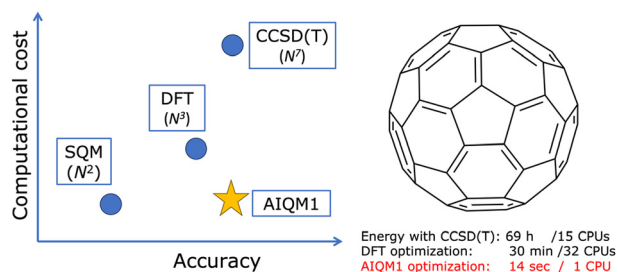
Fundamental questions  
Elemental answers

## FEATURE ARTICLES

3240

## AI in computational chemistry through the lens of a decade-long journey

Pavlo O. Dral

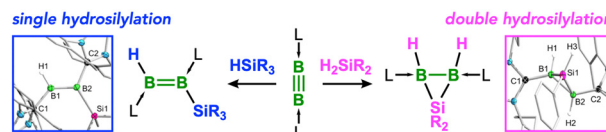


## COMMUNICATIONS

3259

Hydrosilylation of  $B \equiv B$  triple bonds: catalyst- and reductant-free construction of  $B-Si$  bonds and  $B_2Si$  heterocycles

Tobias Brückner, Dario Duwe, Felipe Fantuzzi, Merlin Heß, Rian D. Dewhurst, Krzysztof Radacki and Holger Braunschweig\*

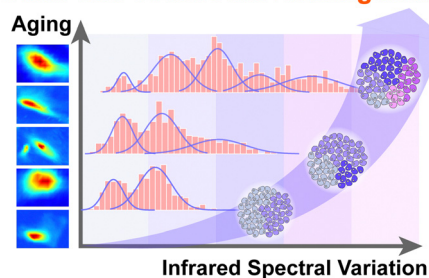


3263

## Vibrational phenomics decoding of the stem cell stepwise aging process at single-cell resolution

Yue Wang, Yadi Wang, Xueling Li and Junhong Lü\*

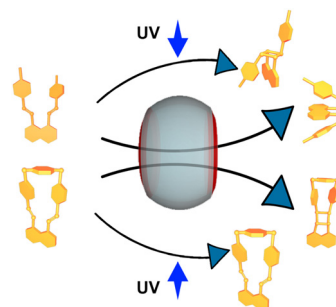
## Stem Cell Senescent Heterogeneity



3267

## Reversing the stereoselectivity of intramolecular [2+2] photocycloaddition utilizing cucurbit[8]uril as a molecular flask

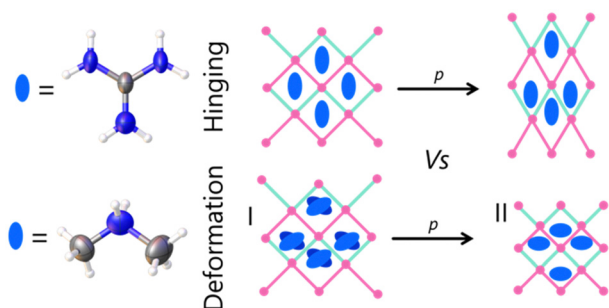
Xujun Qiu, Jasmin Seibert, Olaf Fuhr, Frank Biedermann\* and Stefan Bräse\*





## COMMUNICATIONS

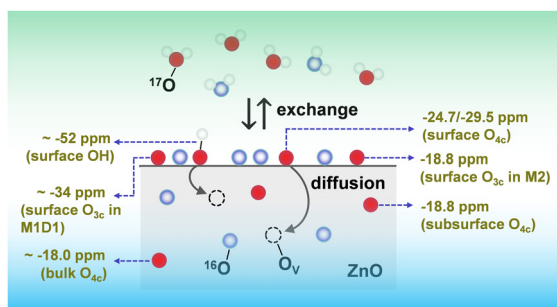
3271



### Negative linear compressibility exhibited by the hybrid perovskite $[(\text{NH}_2)_3\text{C}]\text{Er}(\text{HCO}_2)_2(\text{C}_2\text{O}_4)$

Thomas J. Hitchings, Rebecca Scatena, David R. Allan, Andrew B. Cairns and Paul J. Saines\*

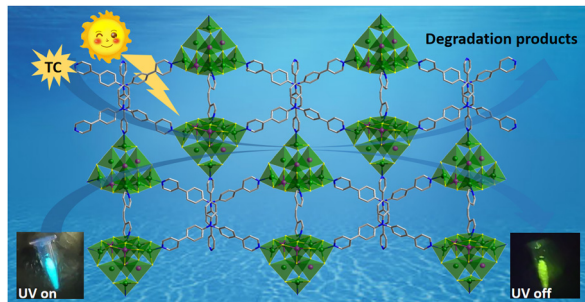
3275



### Oxygen dynamic exchange and diffusion characteristics of ZnO nanorods from $^{17}\text{O}$ MAS NMR

Benteng Song, Yuhong Li,\* Fang Wang, Yang Wang, Xiaokang Ke and Luming Peng\*

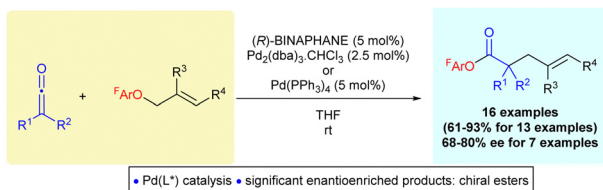
3279



### Ligand engineering to achieve synergistic properties in a 2D bilayer supertetrahedral chalcogenide cluster-based assembled material

Yan-Ling Li,\* Yu-Dong Liu, Wei-Li Li, Fu-An Li, Yun-Xiao Feng, Xiao-Qiang Luo and Yong-Jun Han\*

3283



### Asymmetric synthesis of enantioenriched $\alpha$ -allyl esters through Pd(BINAPHANE)-catalysed allylation of disubstituted ketenes

Ahmad A. Ibrahim, Stephen C. J. O'Reilly, Margot Bottarel and Nessim J. Kerrigan\*

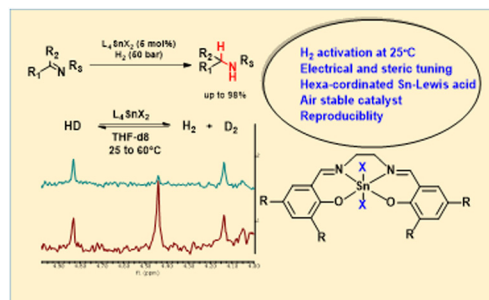


## COMMUNICATIONS

3287

**Hexacoordinated tin complexes catalyse imine hydrogenation with H<sub>2</sub>**

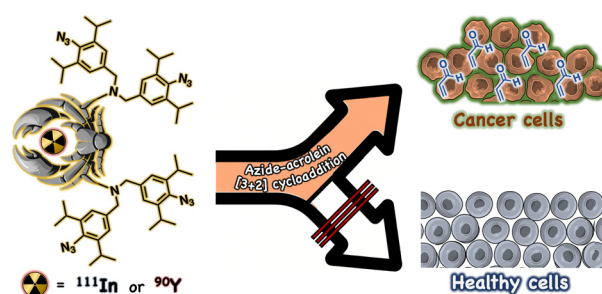
Andrea Žáková, Pritha Saha, Alexandros Paparakis, Martin Záborský, Gabriela Gastelu, Jaroslav Kukla, Jorge G. Uranga and Martin Hulla\*



3291

**Metallic radionuclide-labeled tetrameric 2,6-diisopropylphenyl azides for cancer treatment**

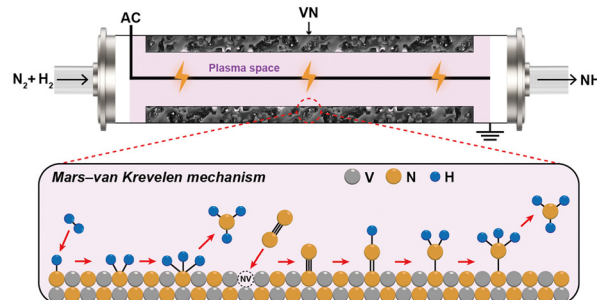
Yudai Ode, Ambara R. Pradipta,\* Akihiro Ishiwata, Akihiro Nambu, Kazunobu Ohnuki, Hiroshi Mizuma, Hiromitsu Haba and Katsunori Tanaka\*



3295

**Plasma-induced nitrogen vacancy-mediated ammonia synthesis over a VN catalyst**

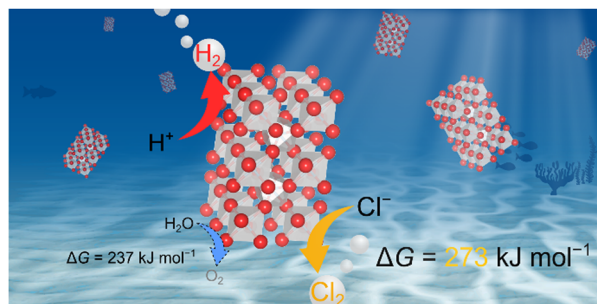
Shijian Luo, Yongduo Liu, Yang Song, Yuran Yang, Fadong Chen, Siguo Chen\* and Zidong Wei



3299

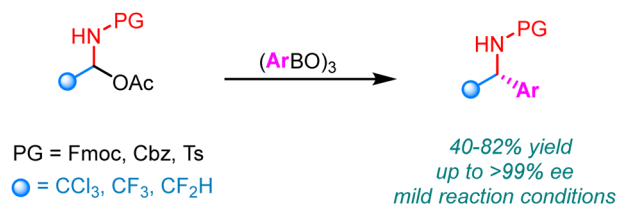
**Simultaneous production of hydrogen and chlorine through overall brine splitting with a particulate photocatalyst**

Takumi Okada, Masanori Kodera,\* Yugo Miseki, Hitoshi Kusama, Takahiro Gunji and Kazuhiro Sayama\*



## COMMUNICATIONS

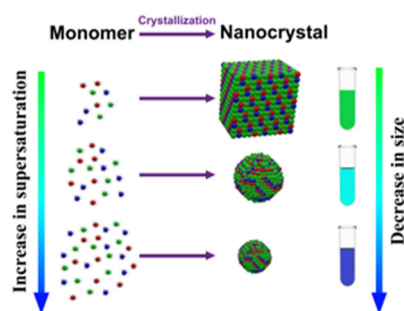
3303



### Palladium-catalyzed enantioselective arylation of trichloro- or tri-/difluoroacetaldimine precursors

Jian Wei, Zhongjian Du, Xu Wang, Chenlei Ji, Longji Li and Yang'en You\*

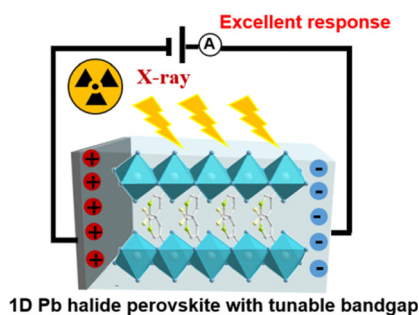
3307



### The more the merrier: optimizing monomer concentration for supersaturation controlled synthesis of stable ultra-small CsPbBr<sub>3</sub> nanocrystals for blue emission

Vikash Kumar Ravi,\* Zheng Li, Shlok Joseph Paul and Ayaskanta Sahu\*

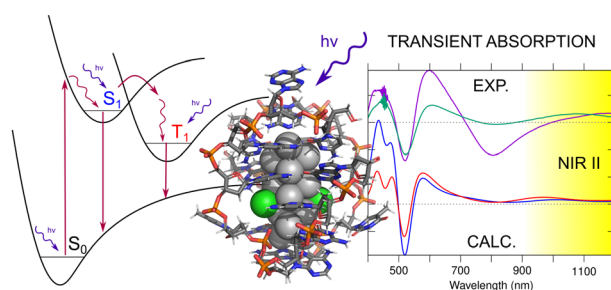
3311



### 1D Pb halide perovskite-like materials for high performance X-ray detection

Jing Wang, Jin-Hai Yang, Jie Chen, Shuai-Hua Wang,\* Yong-Jun Chen\* and Gang Xu

3315



### On transient absorption and dual emission of the atomically precise, DNA-stabilized silver nanocluster Ag<sub>16</sub>Cl<sub>2</sub>

Sami Malola and Hannu Häkkinen\*

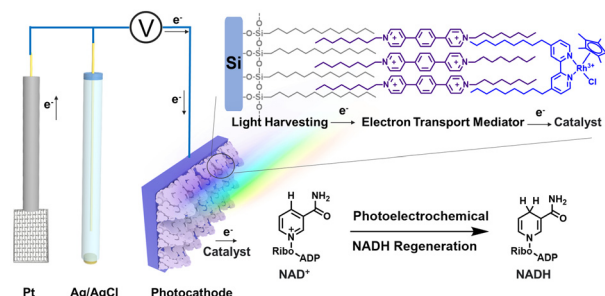


## COMMUNICATIONS

3319

### Bioinspired photoelectrochemical NADH regeneration based on a molecular catalyst-modified photocathode

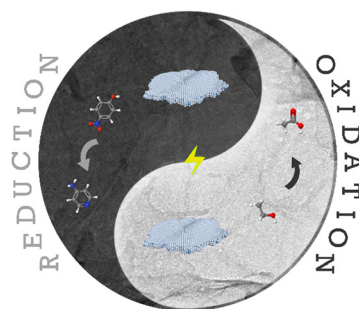
Meng Chen, Fengyu Liu, Yizhou Wu, Yingzheng Li, Chang Liu, Ziqi Zhao, Peili Zhang, Yilong Zhao, Licheng Sun and Fusheng Li\*



3323

### A defect-enriched PdMo bimetallic for ethanol oxidation reaction and 4-nitrophenol reduction

Yi Lu, Yiwei Shi, Yu Wang, Jun Cao,\* Jingjing Wang, Yingying Zheng, Jiaqi Pan,\* Wenwu Zhong and Chaorong Li

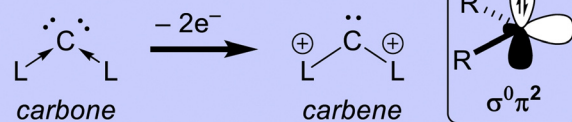


3327

### Designing a $\sigma^0\pi^2$ singlet ground state carbene from dicationic carbones

J. Philipp Wagner

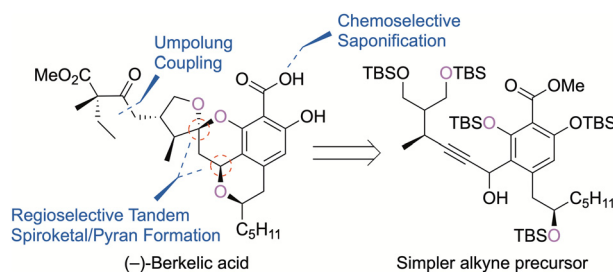
#### Designing a $\sigma^0\pi^2$ carbene



3331

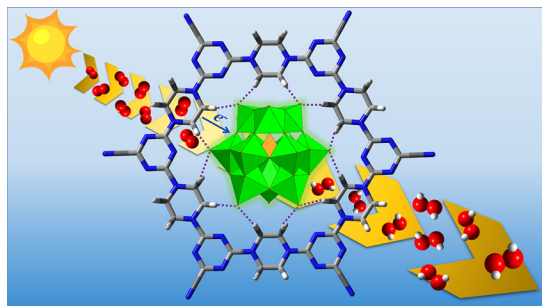
### Concise total synthesis of (–)-berkelic acid via regioselective spiroacetal/pyran formation

Shogo Hanada, Masahito Yoshida\* and Hideo Kigoshi



## COMMUNICATIONS

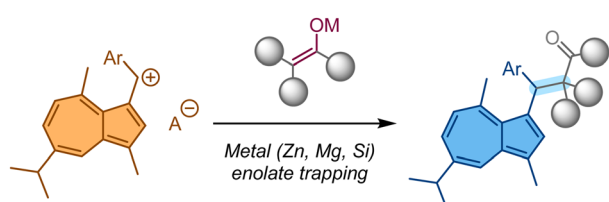
3335



### Construction of a redox pathway through a polyoxometalate and covalent organic framework for H<sub>2</sub>O<sub>2</sub> photosynthesis

Yin Gong, Hongda Ren, Xiaojing Sang,\* Haotian Zhu, Jingzhen Zhang, Sifan Li, Zhongling Lang\* and Jiansheng Li\*

3339



- uncharted reactivity
- source of azulene motif
- Vis-absorption

- 24 derivatives (12-76%)
- 90-99% ee with low dr
- anti-Kasha emission

### Persistent guaiazulene arylmethylium ions as electrophilic traps for metal enolates

Péter Kisszékelyi, Brigita Mudráková, Marek Cigáň and Radovan Šebesta\*

