

## IN THIS ISSUE

ISSN 1359–7345 CODEN CHCOFS 60(13) 1653–1800 (2024)



### Cover

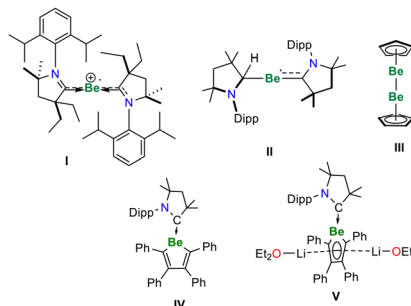
See T. Gamze Ulusoy  
Ghobadi, Salih Ozcubukcu,  
Ferdî Karadaş *et al.*,  
pp. 1707–1710.  
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*Chem. Commun.*,  
2024, 60, 1707.

## HIGHLIGHT

1663

### Recent progress in beryllium organometallic chemistry

Darakshan Parveen, Rahul Kumar Yadav and  
Dipak Kumar Roy\*

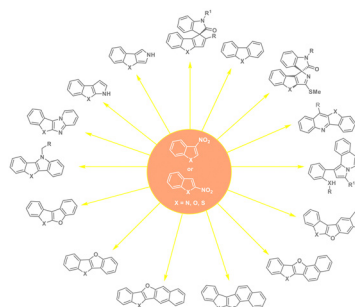


## FEATURE ARTICLES

1674

### Annulation reactions of electrophilic benzannulated heterocycles towards heteroacenes

Sheba Ann Babu, Jijy E.\* and Jubi John\*



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Fundamental questions  
Elemental answers

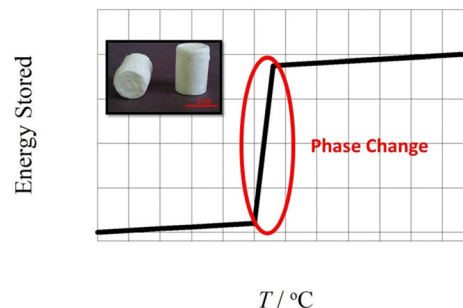


## FEATURE ARTICLES

1690

**Recent advances in phase change materials for thermal energy storage**

Mary Anne White,\* Samer Kahwaji and John A. Noël

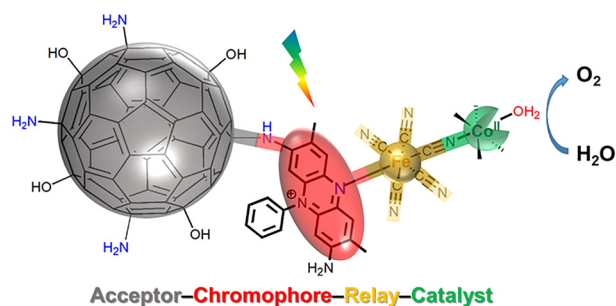


## COMMUNICATIONS

1707

**Rational design of an acceptor–chromophore–relay–catalyst tetrad assembly for water oxidation**

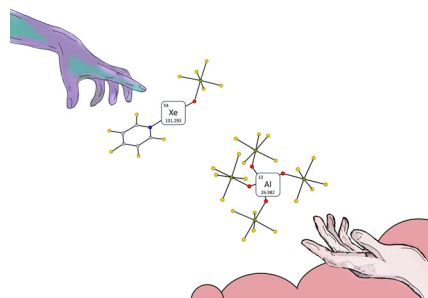
Ramadan Chalil Oglou, T. Gamze Ulusoy Ghobadi,\* Aytul Saylam, Damla Bese, Cagri Bese, Halime Gul Yaglioglu, Salih Ozcubukcu,\* Ekmel Ozbay and Ferdi Karadaş\*



1711

**[Xe(OTeF<sub>5</sub>)(py<sup>F</sup>)]<sup>+</sup>: a strong oxidizing xenonium(II) teflate cation with N-donor bases**

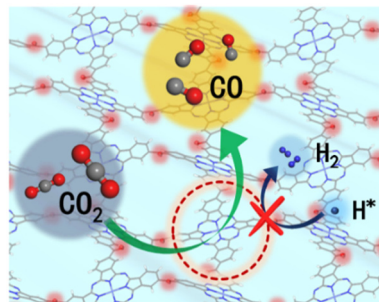
Ahmet N. Toraman, Lukas Fischer, Alberto Pérez-Bitrián,\* Anja Wiesner, Kurt F. Hoffmann and Sebastian Riedel\*



1715

**Carbonyl-linked cobalt polyphthalocyanines as high-selectivity catalyst for electrochemical CO<sub>2</sub> reduction**

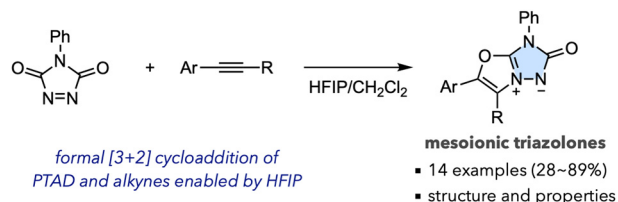
Haisen Jin, Yajing Di, Yueang Gu, Yu Chen, Meiling Dou, Zhengping Zhang\* and Feng Wang\*





## COMMUNICATIONS

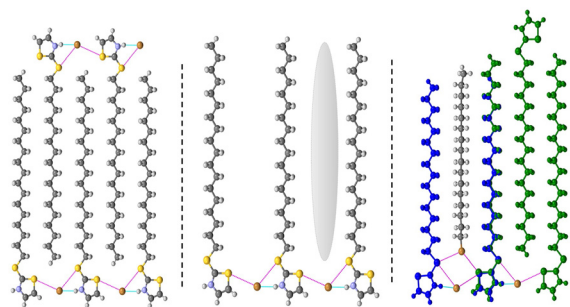
1719



### Synthesis of mesoionic triazolones *via* a formal [3+2] cycloaddition between 4-phenyl-1,2,4-triazoline-3,5-dione and alkynes

Yusuke Kuroda,\* Maya Krell, Kazuma Kurokawa and Kiyosei Takasu\*

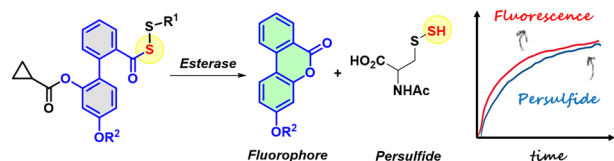
1723



### Alkyl-templated cocrystallization of long-chain 1-bromoalkanes by lipid-like ionic liquids

Muhammadiqboli Musozoda, Joseph E. Muller II, Grace I. Anderson, Mairead Boucher, Matthias Zeller, Casey C. Raymond, Patrick C. Hillesheim\* and Arsalan Mirjafari\*

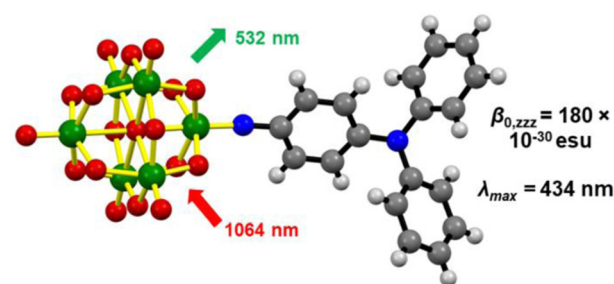
1727



### An esterase-cleavable persulfide donor with no electrophilic byproducts and a fluorescence reporter

Bharat S. Choudhary, T. Anand Kumar, Akshi Vashishtha, Sushma Tejasri, Amal S. Kumar, Rachit Agarwal and Harinath Chakrapani\*

1731



### Bridge improvement work: maximising non-linear optical performance in polyoxometalate derivatives

Claire F. Jones, Bethany R. Hood, Yovan de Coene, Ivan Lopez-Poves, Benoît Champagne,\* Koen Clays\* and John Fielden\*

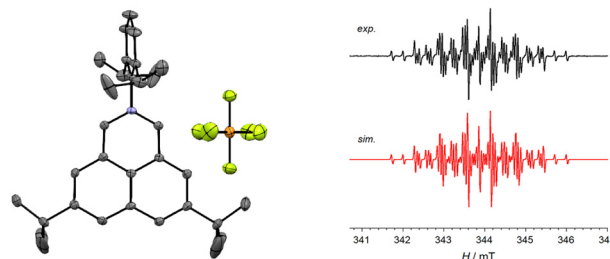


## COMMUNICATIONS

1735

**N-2,6-Di(isopropyl)phenyl-2-azaphenalenyl radical cations**

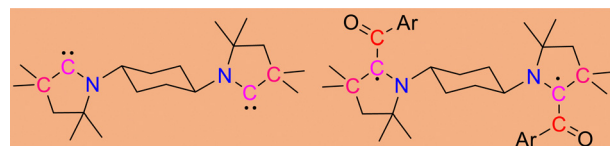
Takeru Inoue, Yuuka Matsuura, Koki Horii, Akihito Konishi,\*  
Jun-ichi Nishida, Makoto Yasuda\* and Takeshi Kawase\*



1739

**Bis-[cyclic(alkyl)(amino)carbene]-derived diradicals**

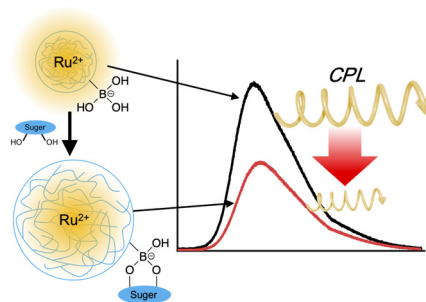
Mithilesh Kumar Nayak, Benedict J. Elvers, Sakshi Mehta,  
Ivo Krummenacher, Abhishake Mondal,\*  
Holger Braunschweig,\* Carola Schulzke,\*  
Prince Ravat\* and Anukul Jana\*



1743

**Modulation of circularly polarized luminescence by swelling of microgels functionalized with enantiopure  $[\text{Ru}(\text{bpy})_3]^{2+}$  luminophores**

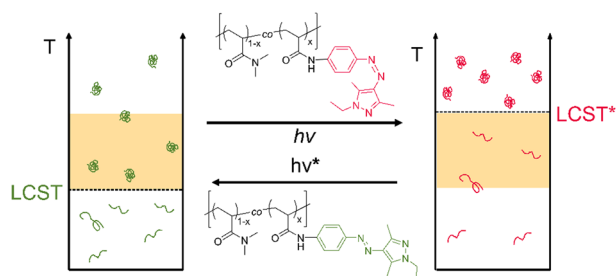
Kyohei Yoshida, Maino Kajiwar, Yutaka Okazaki,  
Lapeyre Véronique, Francesco Zinna, Neso Sojic,  
Laurent Bouffier, Jérôme Lacour, Valérie Ravaine\* and  
Reiko Oda\*



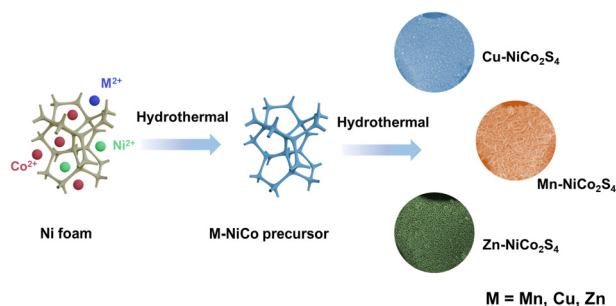
1747

**Boosting the photo-switchability of double-responsive water-soluble polymers by incorporating arylazopyrazole dyes**

René Steinbrecher, Peiran Zhang, Christine M. Papadakis,  
Peter Müller-Buschbaum, Andreas Taubert and  
André Laschewsky\*



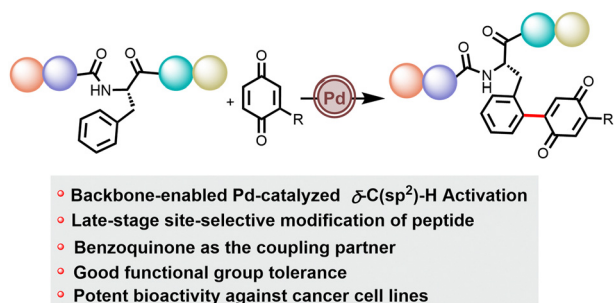
1751



### A NiCo<sub>2</sub>S<sub>4</sub> octahedral configuration doped by Mn, Zn and Cu for the oxygen evolution reaction

Yiting Chen, Hongyan Wu, Ning Tang, Yong Zhang\* and Yuqiao Wang\*

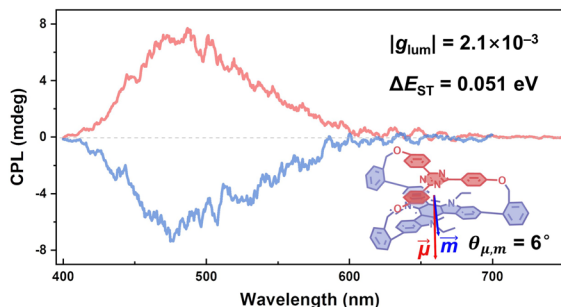
1754



### Backbone-enabled modification of peptides with benzoquinone via palladium-catalyzed $\delta\text{-C}(\text{sp}^2)\text{-H}$ functionalization

Fengjie Lu, Yi Sun, Ya-ning Liu, Yujie Geng, Ensheng Zhang and Jian Tang\*

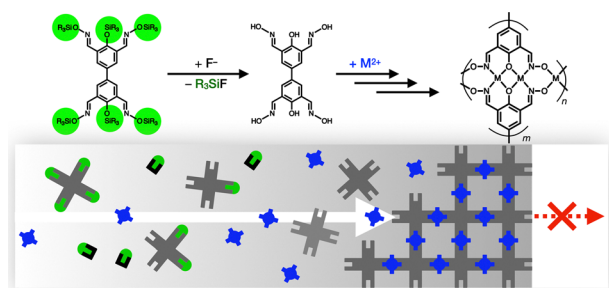
1758



### A donor–acceptor cage for circularly polarized TADF emission

Lihua Chen, Chenfei Li, Zheng-Fei Liu, Yoshiaki Kuboi, Enguang Fu, Lydia Sosa Vargas, Chihaya Adachi,\* Fabrice Mathevet\* and Shaodong Zhang\*

1762



### Fluoride-triggered phase transition of metallogels for on-demand *in situ* containment of fluids

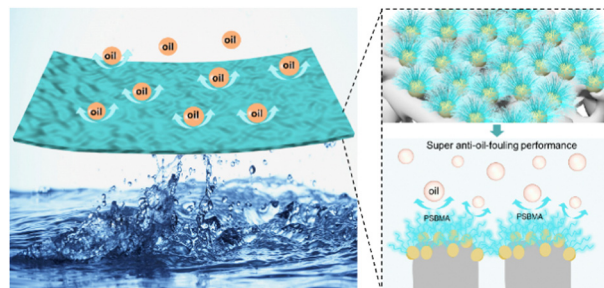
Junghwan Kim, Chungryeol Kim and Dongwhan Lee\*



1766

### Facilely and efficiently constructing anti-oil-fouling zwitterionic coatings on membranes for oil-in-water emulsion separation

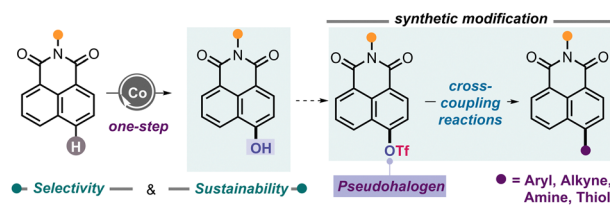
Jinxuan Meng, Tong Sheng, Xue Zhou, Qiong Huang, Fang He, Yuexiang Li\* and Zhenxing Wang\*



1770

### Cobalt(II)-catalyzed *peri*-C(sp<sup>2</sup>)-H selective hydroxylation of naphthalene monoimides

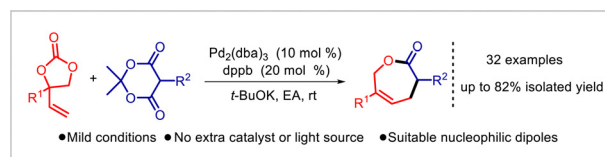
Tapasi Chand, Princi Gupta, Nehali Oza and Manmohan Kapur\*



1774

### Palladium-catalyzed ring-opening [5+2] annulation of vinyl ethylene carbonates (VECs) and C5-substituted Meldrum's acids: rapid synthesis of 7-membered lactones

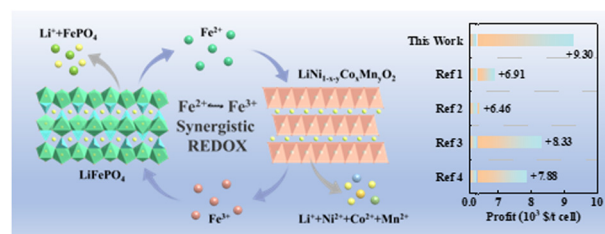
Fei Li, Xin Chen, Ben-Qing Huang, Hua-Dong Xu, Chi-Fan Zhu\* and Mei-Hua Shen\*



1778

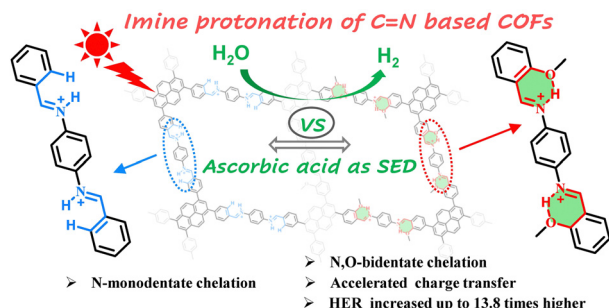
### All-element recovery and regeneration of mixed LiNi<sub>x</sub>Co<sub>y</sub>Mn<sub>1-x-y</sub>O<sub>2</sub>/LiFePO<sub>4</sub> cathode materials by synergistic redox processes

Jingtian Zou, Dezhaoh Peng, Wenyang Hu, Shilin Su, Xiaowei Wang,\* Zaowen Zhao,\* Shubin Wang, Di He, Pengfei Li and Jiafeng Zhang\*



## COMMUNICATIONS

1782

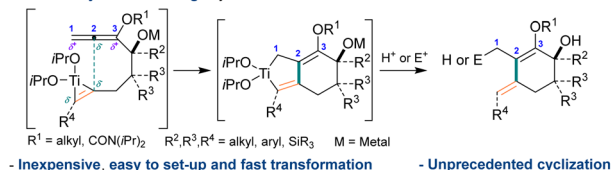


### Enhanced protonation ability of covalent organic frameworks via N,O-bidentate chelation for photocatalytic H<sub>2</sub> evolution

Xing Li, Huaji Pang, Yanqiu Zhu, Yonggang Xiang, Jianxiang Hu\* and Dekang Huang\*

1786

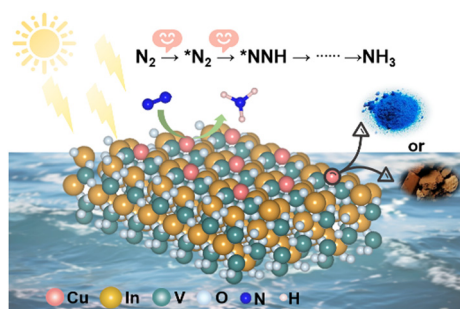
Low-valent titanium(II) mediated intramolecular cyclization of *alkoxyallene-ynes* for an access to various *cyclohexene rings* by reaction between *two electron-rich carbones*



### Low-valent titanium(II) mediated intramolecular and regioselective alkyne/alkoxyallene reductive coupling reactions

Florent Bodinier, Marie-Isabelle Lannou\* and Geoffroy Sorin\*

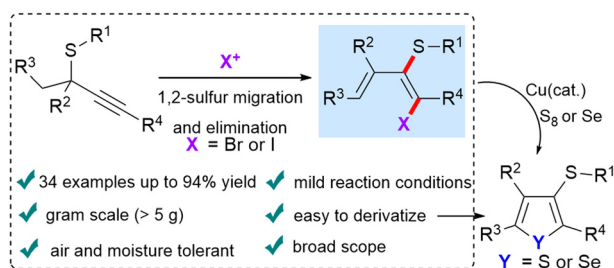
1790



### Cu-modified InVO<sub>4</sub> photocatalysts for enhanced N<sub>2</sub> fixation using chemical reagents and electroplating sludge as the Cu source

Shan Yao, Jiahui Lin, Kai Yi, Weizhen Liu and Mengye Wang\*

1794



### Synthesis of highly substituted 1,3-dienes through halonium promoted 1,2-sulfur migration of propargylic thioethers

Clara Martínez-Núñez, Noelia Velasco, Roberto Sanz and Samuel Suárez-Pantiga\*

