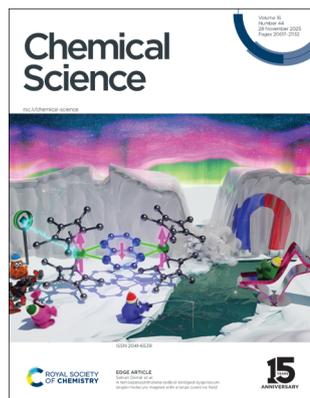


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ISSN 2041-6539 CODEN CSHCBM 16(44) 20617–21132 (2025)



**Cover**  
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**Inside cover**  
See Vinamr Jain, Michael T. Bergman, Carol K. Hall and Fengqi You, pp. 20823–20832. Image reproduced by permission of Fengqi You from *Chem. Sci.*, 2025, **16**, 20823.

## PERSPECTIVES

20631

### From electron spin to relaxivity: a multidisciplinary perspective on first-row transition metal-based MRI probes

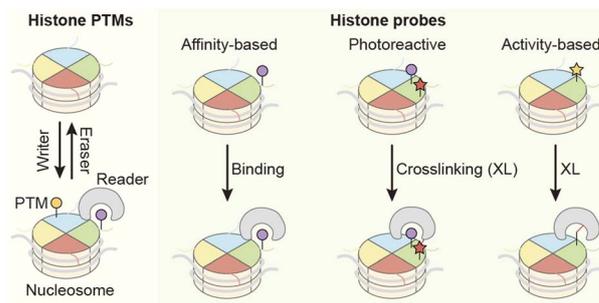
Enrico Salvadori, Valeria Lagostina, Marco Ricci, Fabio Carniato, Mauro Botta,\* Carlos Platas-Iglesias\* and Mario Chiesa\*



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### Histone probes for reader and eraser investigations

Jinyu Yang and Mingxuan Wu\*



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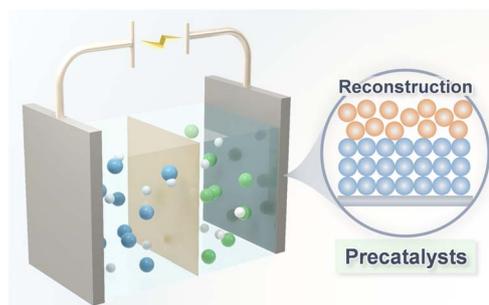
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## REVIEWS

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**Reconstruction chemistry of electrocatalysts under working conditions**

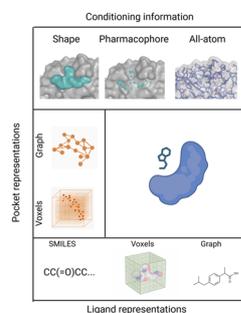
Hui Chen, Lina Wang, Muhan Na and Xiaoxin Zou\*



20677

**Incorporating targeted protein structure in deep learning methods for molecule generation in computational drug design**

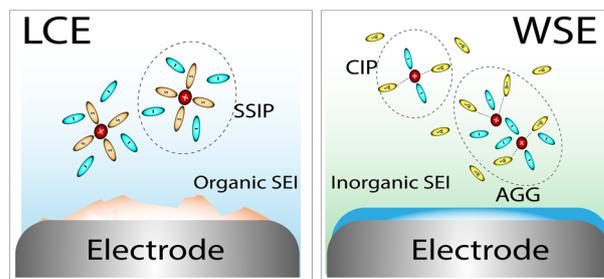
Lucy Vost, Yael Ziv and Charlotte M. Deane\*



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**Weakly solvating electrolytes: a solvation-centric paradigm for rechargeable metal batteries**

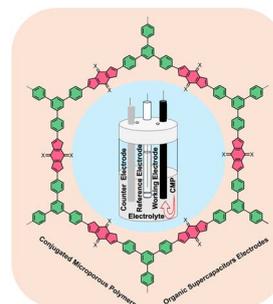
Mehdi Karbak, Kyungmin Yim, Ying Shirley Meng, Yuyan Shao and Wu Xu\*



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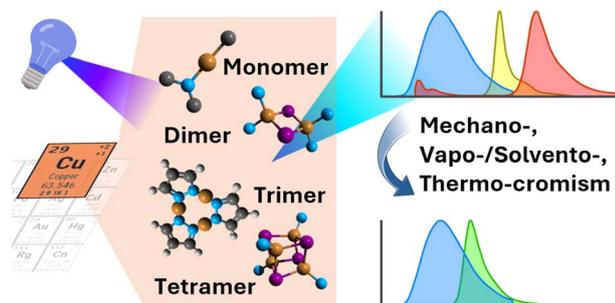
**Conjugated microporous polymer electrodes for supercapacitors: recent progress, key challenges, and future directions**

Mohammed G. Kotp, Mohamed Gamal Mohamed and Shiao-Wei Kuo\*



## REVIEWS

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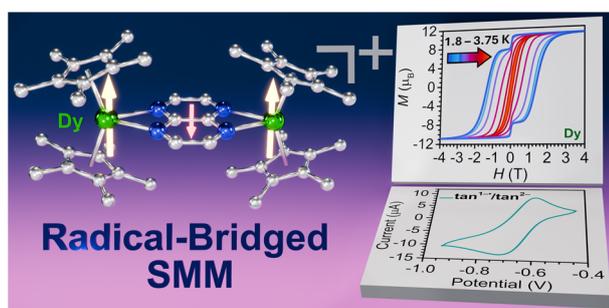


### Recent advances in mono- and multi-nuclear photoluminescent Cu(I) complexes with nitrogen containing ligands and their stimuli responsiveness

Alessandra Forni, Daniele Malpicci,\* Elena Lucenti, Luca Zecchinello, Alessia Colombo and Elena Cariati\*

## EDGE ARTICLES

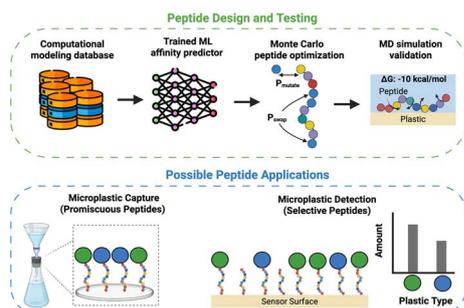
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### A tetraazanaphthalene radical-bridged dysprosium single-molecule magnet with a large coercive field

Florian Benner, Saroshan Deshapriya and Selvan Demir\*

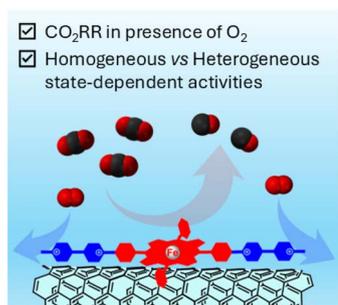
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### AI-driven rational design of promiscuous and selective plastic-binding peptides

Vinamr Jain, Michael T. Bergman, Carol K. Hall and Fengqi You\*

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### Iron porphyrin flanked by viologen redox units for persistent carbon dioxide reduction in the presence of oxygen

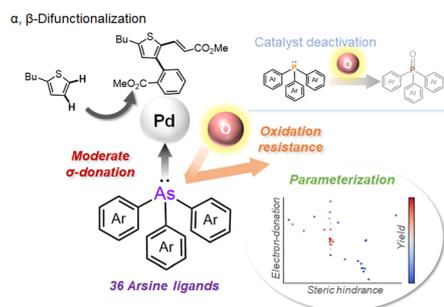
Haroon Rashid, Diana Drago, Atanu Rana, Serena DeBeer, Philipp Gotico,\* Winfried Leibl and Ally Aukauloo\*



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### Structural effects of arsine ligands on C–H difunctionalization of thiophene

Akifumi Sumida, Kaisei Yamamoto, Takahiro Iwamoto, Kensuke Naka and Hiroaki Imoto\*



20851

### Crystallization-driven two-dimensional assemblies from a phenothiazine-conjugated poly(L-lactide): redox-responsive tunable emission, white-light harvesting and surface-enabled nanoparticle decoration

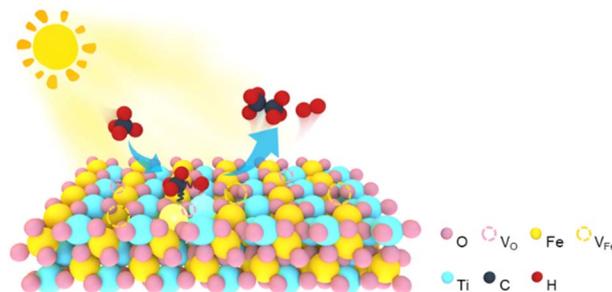
Chhandita Chakraborty and Anindita Das\*



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### Cooperative Fe–Ti dual-metal sites for highly efficient photocatalytic non-oxidative methane conversion

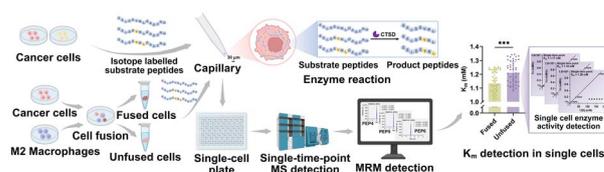
Qingyun Zhan, Xiaowei Mu,\* Yuxiang Kong, Zhenlu Li, Le Liu, Yumeng Qian, Shuyan Song\* and Lu Li\*



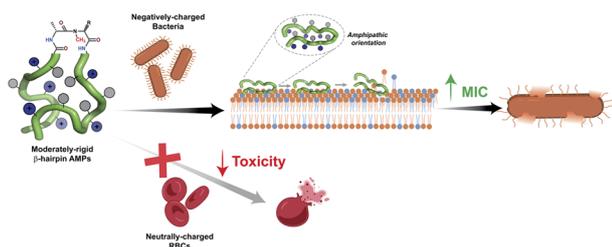
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### Detection of single-cell enzyme activity by single-time-point stable isotope probing-mass spectrometry

Xianzhe Wu, Qingxi Ma, Haoran Chen, Chuhao Cheng, Jiapu Li, Feifei Xu\* and Yun Chen\*



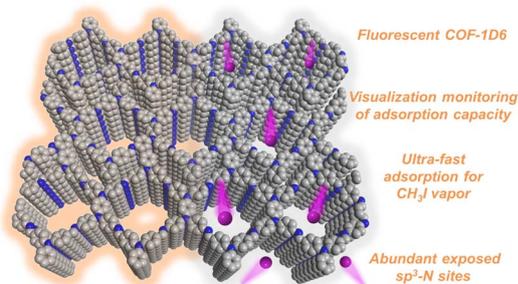
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### Turn-engineering tunes the conformational rigidity of $\beta$ -hairpin AMPs in achieving membrane selectivity and killing drug-resistant ESKAPE pathogens

Priyanka Lahiri, Swati Priyadarshini, Mahak Saini, Muskan Agrawal, Sk Abdul Mohid, Raju S. Rajmani, Vishnu S. M. Ammineni, Pritam Biswas, Aparna Asok, Amit K. Baidya, Anirban Bhunia, Govardhan Reddy, Ranjana Pathania and Jayanta Chatterjee\*

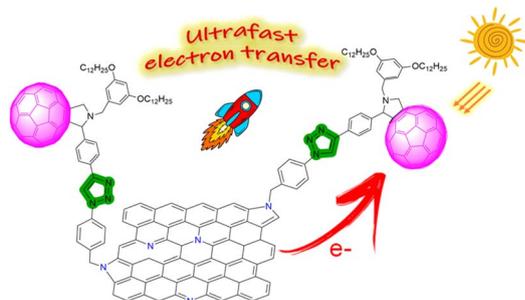
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### One-dimensional fluorescent covalent organic frameworks rich in exposed $\text{sp}^3\text{-N}$ sites for ultra-fast iodine capture and visual monitoring

Ke Li and Bing Yan\*

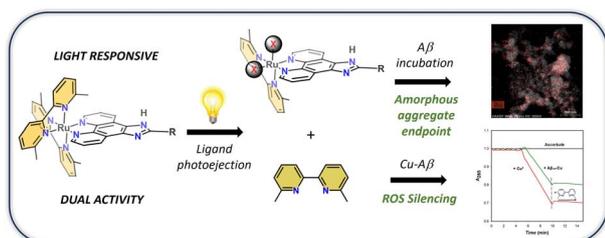
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### Click-assembled N-graphene- $\text{C}_{60}$ hybrids for ultrafast electron transfer

Luis M. Arellano, Habtom B. Gobeze, Youngwoo Jang, María J. Gómez-Escalonilla,\* Paul A. Karr, Francis D'Souza\* and Fernando Langa\*

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### Photoactivatable Ru(II) polypyridyl complexes as dual action modulators of amyloid-beta peptide aggregation and Cu redox cycling

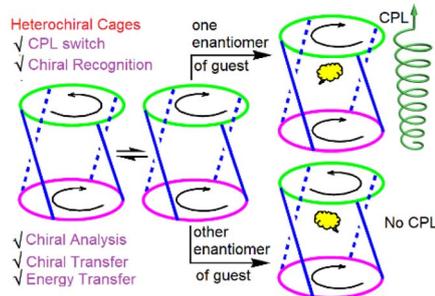
Grace Leech, Alfredo Lopez Acosta, Samyadeb Mahato, Patrick C. Barrett, Rachel O. Hodges, Sherri A. McFarland\* and Tim Storr\*



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### CPL on/off switching by enantiomer encapsulation in TPE heterochiral molecular cages

Wei Yu, Ming Hu,\* Xin Wen, Zhi-Rong Xu, Minghua Liu and Yan-Song Zheng\*



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### Unusual "mesoionic" N<sup>Δ</sup>S biscyclometallated iridium(III) polypyridine complexes as photosensitizers for photodynamic therapy and type II immunogenic cell death inducers

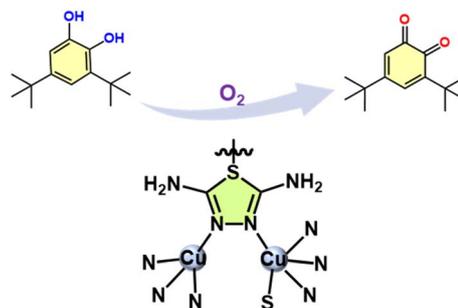
Justin Shum, Peter Kam-Keung Leung, Lili Huang, Lawrence Cho-Cheung Lee, Maryana Yarshova, Lin Cheng, Yi Pan, Michael Wai-Lun Chiang, Ken Shek-Man Yiu, Kai-Chung Lau, Ben Zhong Tang and Kenneth Kam-Wing Lo\*



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### Ligand-mediated asymmetric dicopper sites for robust catecholase-mimicking catalysis and selective sensing

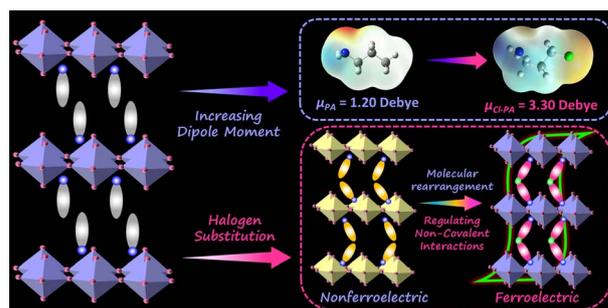
Bojin Li, Meng Yuan, Nannan Xia, Xun Hu\* and Fei He\*



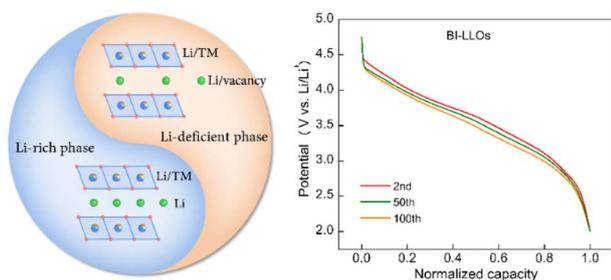
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### Constructing a photoferroelectric semiconductor by regulating non-covalent interactions through halogen substitution

Yueyue He, Shufang Wu, Xiaofei Li, Qi Wang, Ruifang Zhao, Lin Pan, Chengbing Qin, Xian-Ming Zhang\* and Dongying Fu\*



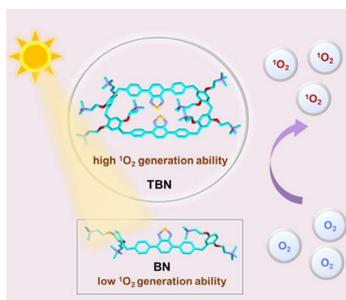
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### Stabilizing the oxygen anionic redox chemistry using a Li-deficient and Li-rich biphasic structure for high-energy Li-ion batteries

Feng Li, Jiacheng Li, Peiyu Hou,\* Zezhou Lin, Mohan Dong, Lin-Hui Wang,\* Hongzhou Zhang\* and Xijin Xu\*

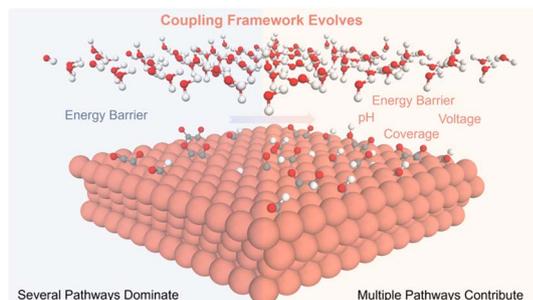
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### Macrocycle formation-mediated augmentation in reactive oxygen species production

Ao Liu, Youtao Xin, Yong-Kang Zhu, Yuan-Hang Jin, Yue Yang, Hongzhu Chen, Meng-Hao Li, Xin-Yue Lou, Xin Wang,\* Hui Gao\* and Ying-Wei Yang\*

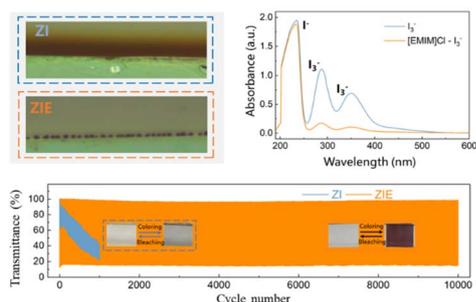
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### Voltage- and pH-driven evolution of multi-pathway C–C coupling in CO<sub>2</sub> electroreduction on copper

Chengyi Zhang and Ziyun Wang\*

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### Ultra-stable aqueous electrochromism based on [EMIM]<sup>+</sup>/I<sub>3</sub><sup>-</sup> coordination

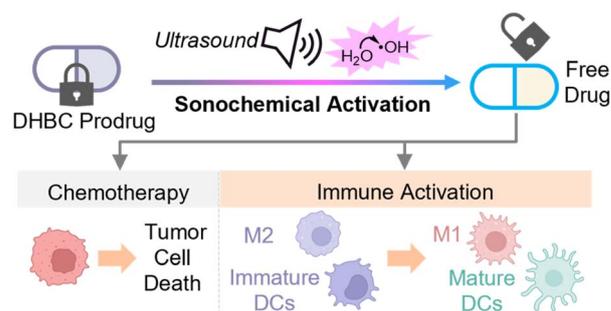
Fengjiao Meng, Junsen Zhong, Xiaoqian Tan, Jianbo Cheng, Bo Xiao,\* Shengliang Zhang, Fuyi Jiang,\* Wenbao Liu, Wei Liu and Litao Kang\*



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### Ultrasound-triggered prodrug activation via sonochemically induced cleavage of a 3,5-dihydroxybenzyl carbamate scaffold

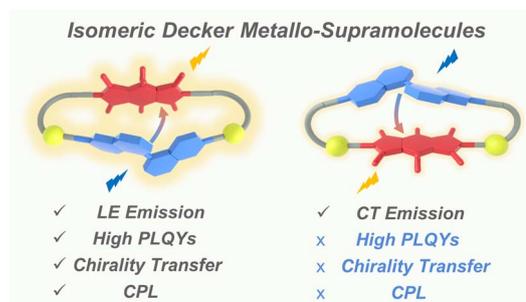
Xuancheng Fu, Bowen Xu, Hirusha Liyanage, Cijun Zhang, Warren F. Kincaid, Amber L. Ford, Luke G. Westbrook, Seth D. Brown, Tatum DeMarco, James L. Houglan, John M. Franck and Xiaoran Hu\*



21010

### Isomeric decker metallo-supramolecules with tunable luminescence and chiroptical properties

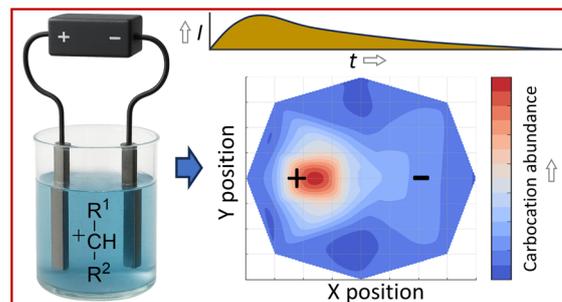
Ningxu Han, Jianjun Ma, Hao Yu, Junjuan Shi, Manman Dai, Ziteng Guo, Zinuo Gao, Houyu Zhang\* and Ming Wang\*



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### Seeing the unseen: spatio-temporal visualization of reactive carbocation intermediates in electrolytic cells

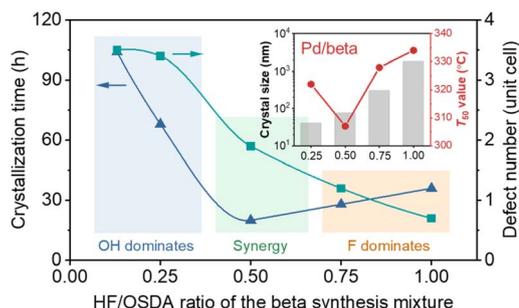
Abhijit Nandy, Barsha Pathak, Bikash Ranjan Isaac, Vijayamohanan Pillai\* and Shibdas Banerjee\*



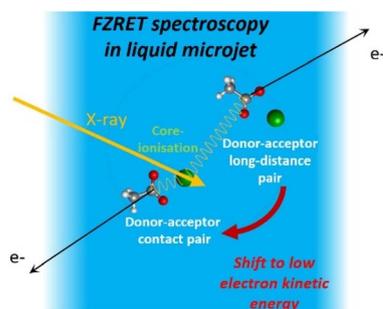
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### Synergistic zeolite synthesis via a fluoride-deficient mixed approach

Xuechao Tan, Miguel A. Cambor and Suk Bong Hong\*



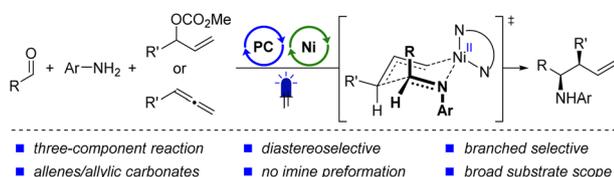
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### Probing supramolecular structures in solution by resonant energy transfer in the X-ray range

Viola C. D'mello, Venkateswara Rao Mundlapati, Jeremy Donon, Valérie Brenner, Michel Mons, Denis Céolin\* and Eric Gloaguen\*

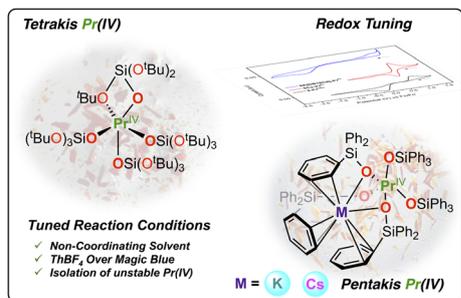
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### Photocatalytic synthesis of homoallylic amines via nucleophilic addition of nickel allyl complexes to imines

Christoph Nopper, Niclas Müller, Beloslava Goycheva, Felix Himmelsbach, Felix Bauer and Bernhard Breit\*

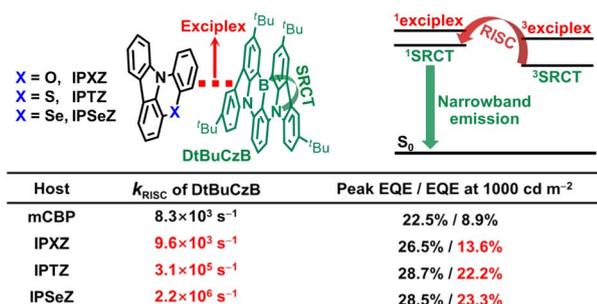
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### Accessing homoleptic neutral and anionic five-coordinate Pr(IV) siloxide complexes

Pragati Pandey, Megan Keener, Thayalan Rajeshkumar, Rosario Scopelliti, Andrzej Sienkiewicz, Ivica Zivkovic, Laurent Maron\* and Marinella Mazzanti\*

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### Over 260-fold enhancement of reverse intersystem crossing by a host-guest exciplex for a multiple resonance emitter toward efficient narrowband electroluminescence

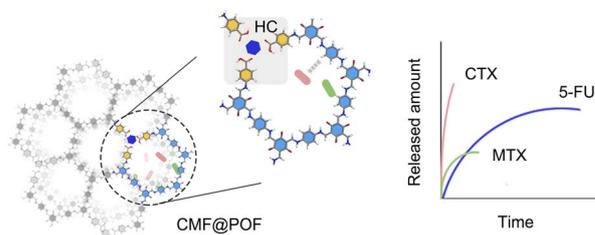
Zetian Wang, Ting Li, Yongjun Song, Dajun Zhuang, Sen Yang and Lei He\*



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### Integrating a hydrogen-bonded complex as a secondary building unit to construct a multivariate framework for programmable drug delivery

Xujiao Ma, Zhong Zhang, Xianghui Ruan, Jiarui Cao, Ye Yuan,\* Yajie Yang,\* Nan Gao\* and Guangshan Zhu\*

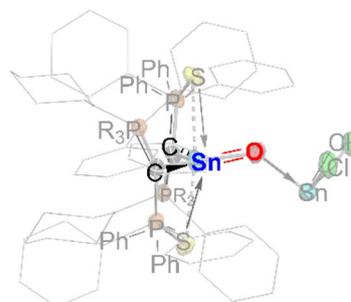


Multivariate Framework for Programmable Drug Delivery

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### Isolation of a Lewis acid-base stabilized stannanone

Mike Jörges, Daniel Knyszczek, Manoj Kumar, Varre S. V. S. N. Swamy and Viktoria H. Gessner\*

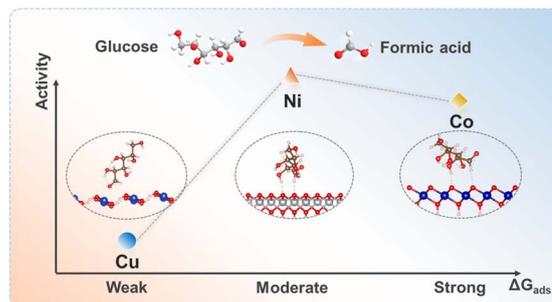


An isolable tin analogue of a ketone

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### Adsorption-mediated efficient glucose electrooxidation on transition metal aerogels for biomass upgradation

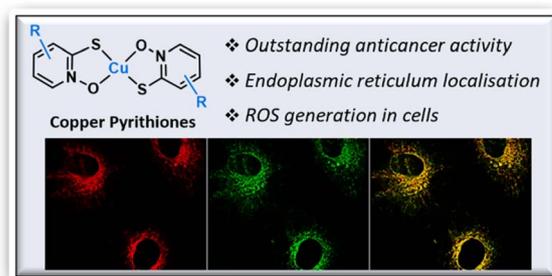
Haoxin Fan, Xiuming Bu, Ziqi Wan, Shougang Sun, Hengwei Lou, Xuemei Zhou, Jie Gao, JiaoJiao Miao, Jian Zhang, Wei Gao\* and Dan Wen\*



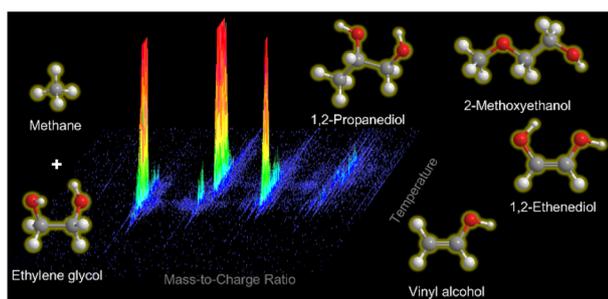
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### Copper pyrithione complexes with endoplasmic reticulum localisation showing anticancer activity via ROS generation

Atreyee Mishra, Dominic J. Black, Thomas S. Bradford, Karrera Y. Djoko, Benjamin J. Hofmann, Jamie J. Hunter, Rianne M. Lord, Robert Pal, Harvey J. Smart, Tameryn Stringer and James W. Walton\*



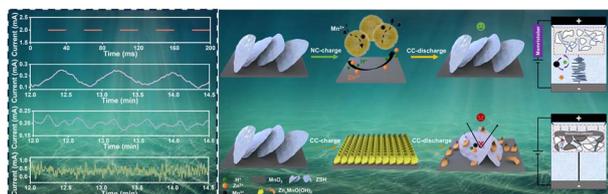
21111



### Interstellar formation of 1,2-propanediol ( $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{OH}$ ) and 1,2-ethenediol ( $\text{HOCHCHOH}$ )—key precursors to sugars and sugar derivatives

Jia Wang, Chaojiang Zhang, André K. Eckhardt\* and Ralf I. Kaiser\*

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### Nonlinear current stimulation unlocks high-performance Zn–Mn batteries via reversible phase transformation

Yang Song, Haidong Zhong, Tingting Hu, Jun Du, Changyuan Tao\* and Qian Zhang\*

