

# Dalton Transactions

An international journal of inorganic chemistry incorporating Acta Chemica Scandinavica  
[rsc.li/dalton](http://rsc.li/dalton)

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 1477-9226 CODEN DTARAF 54(22) 8715-9100 (2025)



**Cover**  
See Ramasamy Mayilmurugan  
*et al.*, pp. 8788–8799.

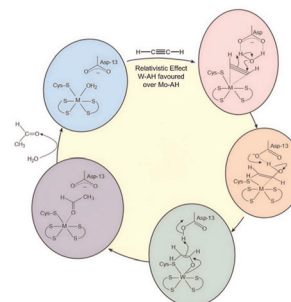
Image reproduced  
by permission of  
Ramasamy Mayilmurugan  
from *Dalton Trans.*,  
2025, **54**, 8788.

## PERSPECTIVES

8728

### Relativistic effect behind the molybdenum vs. tungsten selectivity in enzymes

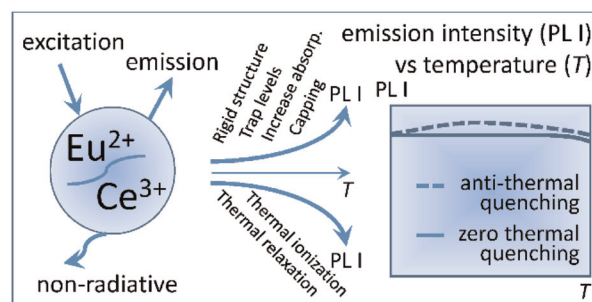
Udita Das, Ankita Das\* and Asim K. Das\*



8745

### Research progress on the design and regulation of $\text{Eu}^{2+}/\text{Ce}^{3+}$ -activated anti-/zero thermal quenching phosphors

Shujuan Zhao, Yue Han, Shixun Lian and Jilin Zhang\*



**GOLD  
OPEN  
ACCESS**

# EES Solar

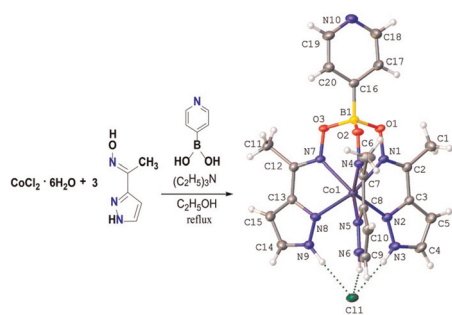
**Exceptional research on solar  
energy and photovoltaics**

Part of the EES family

**Join  
in** | Publish with us  
[rsc.li/EESolar](https://rsc.li/EESolar)



8783

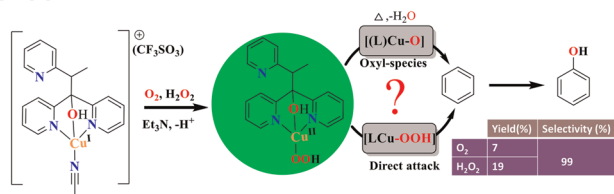


### First pyridyl-terminated trigonal-prismatic cobalt(II) cage-like complex as prospective N-donor highly paramagnetic three-dimensional ligand and probe

Svetlana A. Belova, Alexander S. Belov, Margarita G. Bugaenko, Anastasia A. Danshina, Alexey I. Dmitriev, Mikhail V. Zhidkov, Denis V. Korchagin and Yan Z. Voloshin\*

## PAPERS

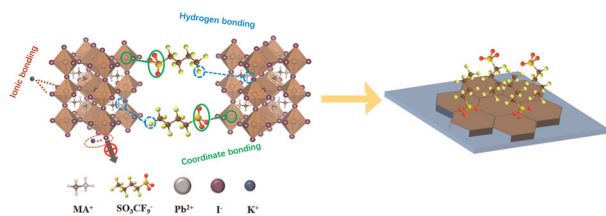
8788



### A bioinspired model for copper monooxygenase: direct aromatic hydroxylation using O<sub>2</sub>

Ramamoorthy Ramasubramanian, Karunanithi Anandababu, Mukesh Kumar and Ramasamy Mayilmurugan\*

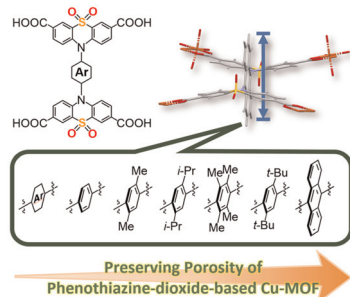
8800



### Rationally tailored passivator with multisite surface-anchors for suppressing ion migration toward air-stable perovskite solar cells

Dandan Luo, Dingyu Xia, Fei Wang,\* Chong Jia, Qiang Zhao, Xinhua Li and Yiqing Chen\*

8813



### Phenothiazine-dioxide-based Cu-MOFs: preserving porosity through the incorporation of substituents into organic linkers

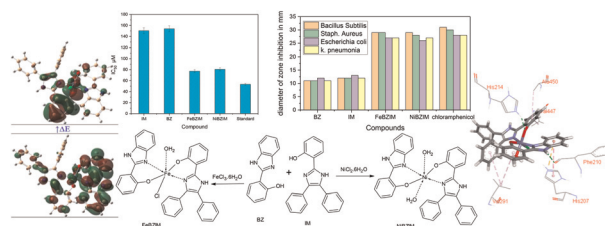
Koh Sugamata,\* Riko Furukawa, Natsuki Amanokura and Mao Minoura\*



8819

### Fe(III) and Ni(II) imidazole-benzimidazole mixed-ligand complexes: synthesis, structural characterization, molecular docking, DFT studies, and evaluation of antimicrobial and anti-inflammatory activities

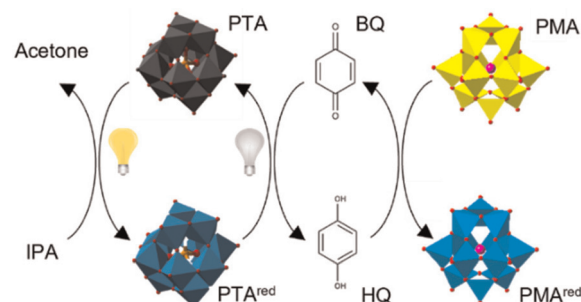
Nourah Almulhim, Hany M. Abd El-Lateef,\*  
Mohamed Gouda, Mai M. Khalaf and Aly Abdou\*



8834

### Photoinduced electron transfer cascade between Mo- and W-based polyoxometalates

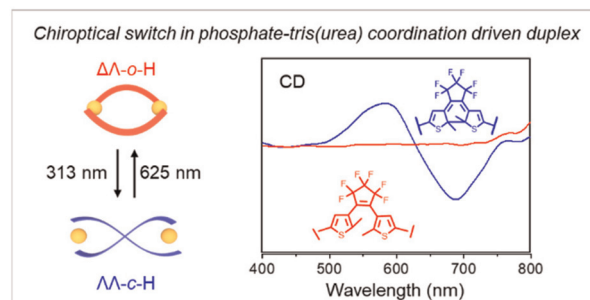
Manu Sánchez, Ana González, Emma Guerrero-Ortega,  
Vipul Bansal\* and Jose M. Dominguez-Vera\*



8841

### Dithienylethene-based supramolecular chiroptical switch in phosphate-coordination-driven 2 : 2 duplexes

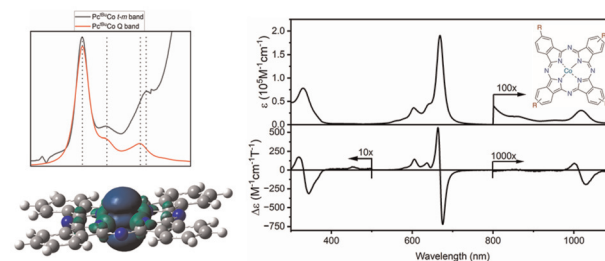
Mengxue Lu, Xiao-Wen Sun, Ji Wang, Wei Zhao,\*  
Hongwei Ma,\* Xiao-Juan Yang and Biao Wu\*



8846

### Identifying charge-transfer and trip-multiplet states in Co(I), Co(II), and Co(III) phthalocyanines using (magneto)optical spectroscopy and (TD)DFT calculations

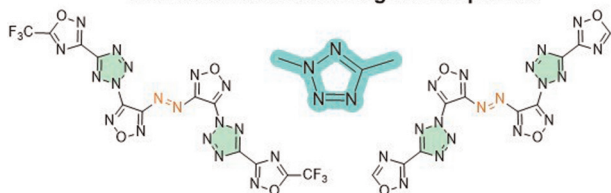
Breanna E. Muldowney, Dustin E. Nevoen,  
Towhidi Illius Jeaydi, Christopher J. Ziegler,\*  
Brendon J. McNicholas\* and Victor N. Nemykin\*



## PAPERS

8870

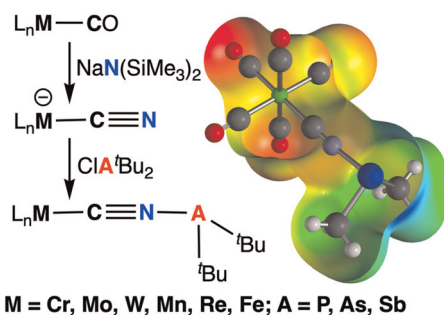
## New tetrazole-based energetic compounds



## Exploring the energetic potential of 2,5-disubstituted tetrazoles: a case of 2,5-bis(oxadiazolyl)tetrazoles

Vera A. Sereda, Ekaterina V. Dubasova, Ivan V. Ananyev, Ekaterina K. Kosareva and Leonid L. Fershtat\*

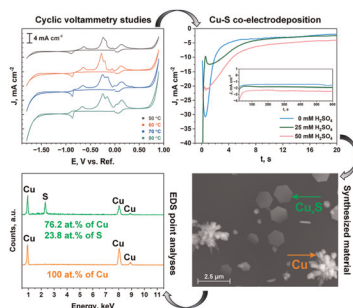
8881



## Pnictogen-functionalised isocyanide ligands

Ryan M. Kirk and Anthony F. Hill\*

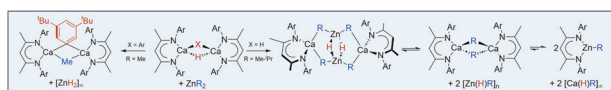
8888



## A study of simultaneous electrodeposition of Cu and S in choline chloride-ethylene glycol deep eutectic solvents: a pathway to the synthesis of copper sulfide hexagons

Mateusz Szczerba,\* Joanna Kapusta-Kołodziej, Mateusz M. Marzec, Krystian Sokotowski and Agnieszka Brzózka\*

8903



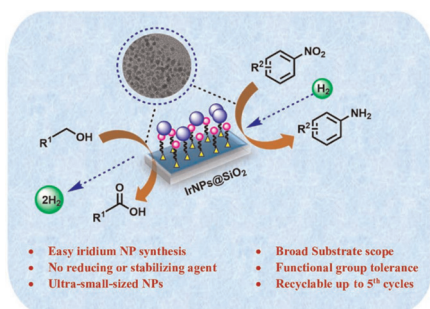
## Alkylzinc-mediated transmetalation of a calcium hydride

Kyle G. Pearce,\* Mary F. Mahon and Michael S. Hill





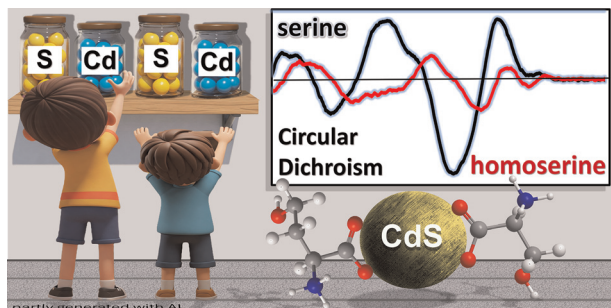
8956



### Phosphine-assisted synthesis of a nanostructured iridium catalyst for acceptorless dehydrogenation of alcohols and chemoselective hydrogenation of nitroarenes

Jyotishma Baruah and Pankaj Das\*

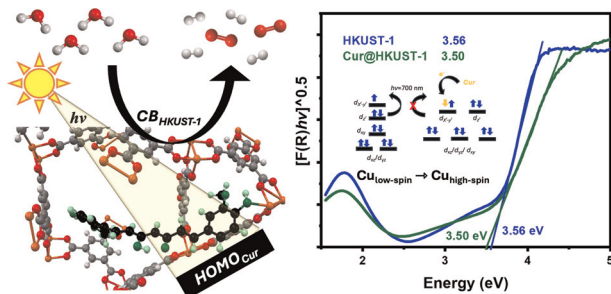
8972



### Cadmium sulfide quantum dots functionalized with serine, proline, and aspartic acid homologs to study the influence of ligand size on the induced circular dichroism

Milan Balaz,\* Yoonbin A. Joh and Krisztina Varga\*

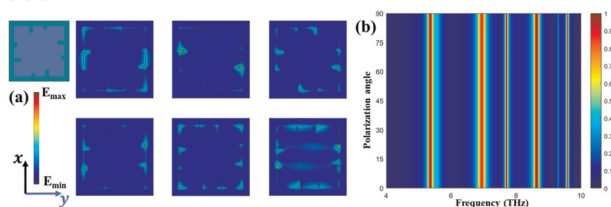
8979



### Novel curcumin@HKUST-1 composite with enhanced visible light harvesting capacities for photocatalytic applications

Luis A. Alfonso-Herrera, Jesús S. Rodríguez-Girón, J. Edgar Carrera-Crespo, Francisco Tzompantzi, Daniel Sánchez-Martínez, Alejandra M. Navarrete-López\* and Hiram I. Beltrán\*

8993



### Highly tunable rotationally symmetric multi-band terahertz absorber with enhanced sensing capabilities

Baowei Zhang, Mengsi Liu,\* Yifei Huang, Yiping Xu and Zao Yi\*

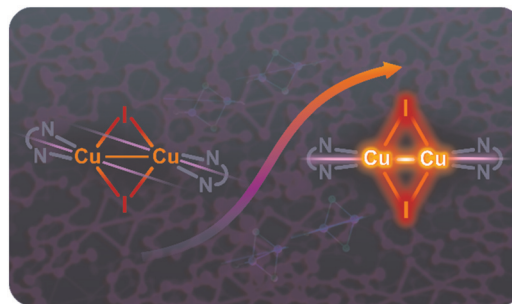


## PAPERS

9000

### Interplay of the Cu...Cu distance and coordination geometry as a factor affecting the quantum efficiency in dimeric copper(i) halide complexes with derivatives of 4-pyrazolylpyrimidine-2-thiol

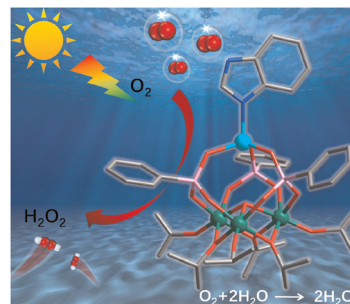
Sofia V. Skvortsova,\* Fyodor K. Verkhov,  
Elena B. Nikolaenkova, Marianna I. Rakhmanova,  
Tatiana E. Kokina, Taisiya S. Sukhikh,  
Nikita A. Shekhovtsov\* and Mark B. Bushuev\*



9016

### Precisely tailoring Lewis pairs in polyoxotitanium clusters for efficient photocatalytic production of hydrogen peroxide

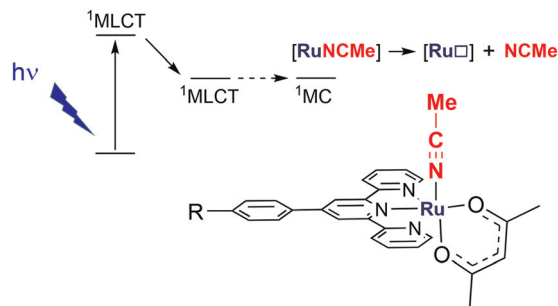
Mengke Gao, Shiming Zhang, Yayu Yan, Zehao Qian,  
Liyang Qin, Xiaoyu Liu, Qing-Rong Ding, Qiaohong Li,  
Xin Wu\* and Jian Zhang\*



9021

### Photo-release of acetonitrile in ruthenium(II) complexes with various substituted terpyridine ligands

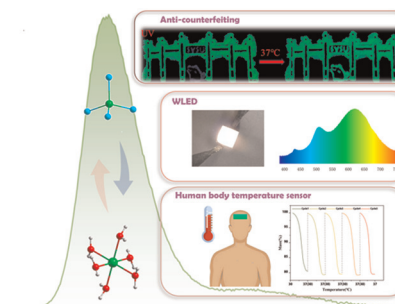
Vladyslav Mudrak, Pascal G. Lacroix,\* Pablo Labra-  
Vázquez, Marine Tassé, Sonia Mallet-Ladeira and  
Isabelle Malfant\*



9032

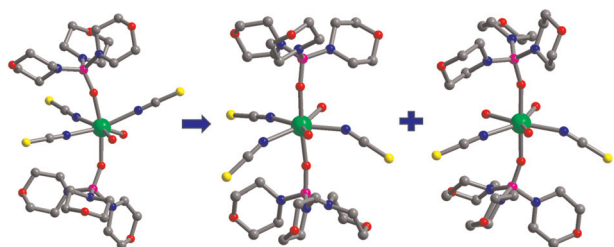
### Adaptive hydrogen-bonding strategy driven 0D manganese-based metal halides with multifunctional fluorescent applications

Jiamin Liu, Yuntao Ruan, Qiaoqi Qin, Yong Shen,  
Zhengliang Wang, Daibin Kuang and Long Jiang\*



## PAPERS

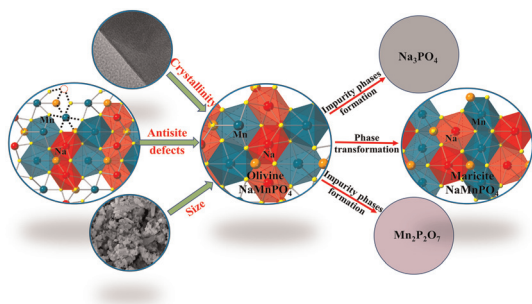
9039



### Synergistic construction of highly symmetrical lanthanide single-ion magnets using neutral phosphoryl and anionic thiocyanate ligands

Bei Liu, Xiao-Yan Dong, Hui-Wen Gong, Zheng Sun, Rong Sun, Wen-Hua Zhu,\* Lei Zhang, Hao-Ling Sun,\* Man-Yun Zhao, Ning-Ning Huang, Qing-Yan Bian and Song Gao\*

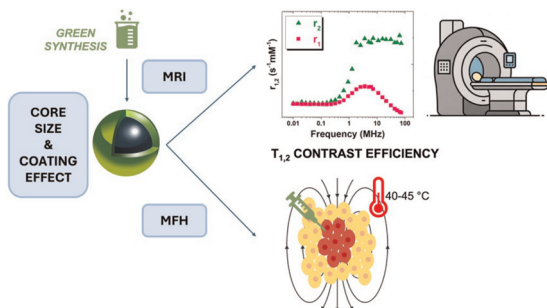
9049



### On the thermal stability of olivine NaMnPO<sub>4</sub>

Han Xiao and Haisheng Fang\*

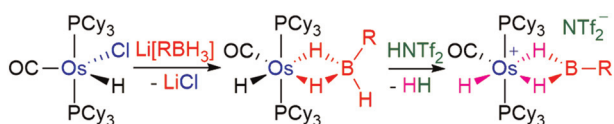
9057



### Iron oxide nanospheres: dual functionality as MRI contrast agents and magnetic fluid hyperthermia therapeutics

Margherita Porru, Francesca Brero,\* Carlos Diaz-Ufano, Manuel Mariani, Francesco Orsini, Paolo Arosio, Maria del Puerto Morales and Alessandro Lascialfari

9069



### Syntheses and structures of cationic osmium bis(σ-B-H) borane complexes

Xiaowen Yang, Minghui Tian, Yongliang Wei, Feifei Han\* and Tongdao Wang\*

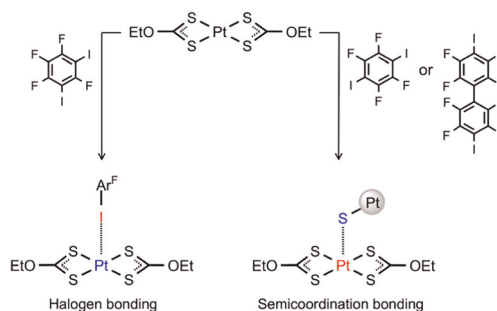


## PAPERS

9076

### Engineering metal site behavior: electrophilic-nucleophilic dualism in square-planar platinum(II) through geometry-controlled switching

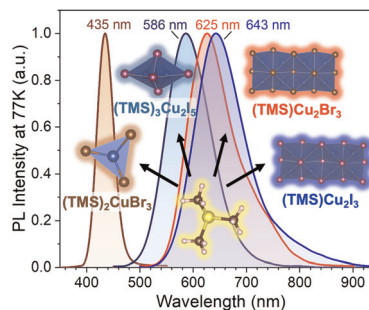
Anastasiya A. Eliseeva,\* Daniil M. Ivanov,  
Anton V. Rozhkov, Vadim Yu. Kukushkin and  
Nadezhda A. Bokach\*



9088

### Crystal structures and luminescence properties of halocuprates with trimethylsulfonium cations

Andrey A. Petrov,\* Luyi Chen, Mingming Li,\*  
Sergey A. Fateev, Andrey V. Petrov, Victor N. Khurstalev  
and Alexey B. Tarasov



## CORRECTIONS

9095

### Correction: Functional biomimetics for copper oxidases: interesting catalytic promiscuity of novel monocopper(II) complexes

Vigneswara Chellam Ravisankar, Balasubramaniam Selvakumaran, Tamilarasan Ajaykamal and Mariappan Murali\*

9097

### Correction: Construction of ternary TiO<sub>2</sub>/CdS/IrO<sub>2</sub> heterostructure photoanodes for efficient glycerol oxidation coupled with hydrogen evolution

Chenfeng Jiang, Yibo Ding, Jiayu Lin, Yi Sun, Wei Zhou, Xiaoyan Zhang,\* Hongbin Zhao, Weimin Cao and Danhong Cheng

