

Dalton Transactions

An international journal of inorganic chemistry incorporating Acta Chemica Scandinavica
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(47) 17349–17676 (2025)



Cover
See Tian Wen, Zhiqiang Jiang
et al., pp. 17414–17417.

Image reproduced by
permission of Tian Wen from
Dalton Trans., 2025, **54**,
17414.



Inside cover
See Kalyanjyoti Deori *et al.*,
pp. 17444–17457.

Image reproduced by
permission of Diganta Sarma
from *Dalton Trans.*, 2025, **54**,
17444.

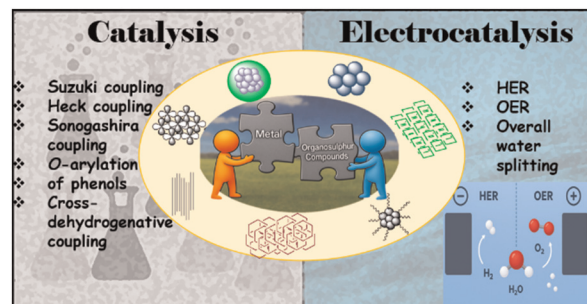
Acknowledgement:
The background of the
cover image was generated
in Gemini AI.

PERSPECTIVES

17360

Development of nanosized materials using organosulphur compounds as building blocks for applications in catalysis and electrocatalysis

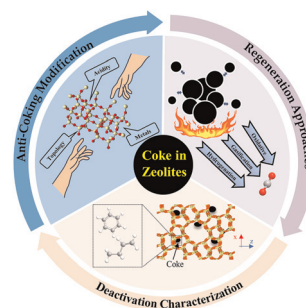
Anupma Tyagi, Suraj Purohit, Nivedita Kunwar,
Anurag Bahuguna, Kamal K. Pant and Arun Kumar*



17383

Coke-induced deactivation in zeolite catalysts: mechanisms, anti-coking modifications, and regeneration approaches

Mengdi Zhang, Jing Huang, Fanshuo Meng,
Chundong Zhang and Zunmin Zhang*



**GOLD
OPEN
ACCESS**

EES Batteries

**Exceptional research on
batteries and energy storage**

Part of the EES family

**Join
in**

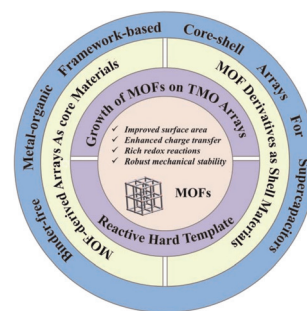
Publish with us

rsc.li/EESBatteries

17400

Binder-free metal–organic framework-based core–shell arrays for supercapacitors

Liuliu Zhang, Fujuan Luo, Cui Yang,* Hongbo Yu* and Kai Tao*

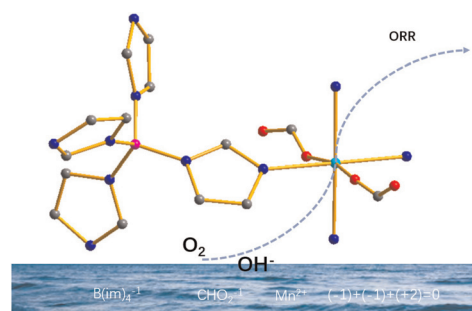


COMMUNICATIONS

17414

A neutral Mn(II)-BIF for electrocatalytic oxygen reduction reaction

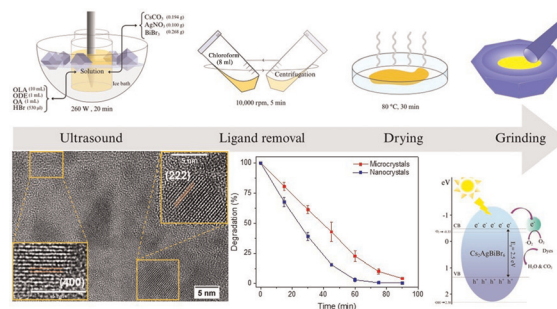
Minhong Li, Jingran Zhong, Chengjie Liao, Wenjuan Fan, Jin Lu, Dexiang Zhang, Tian Wen* and Zhiqiang Jiang*



17418

Facile ultrasound-assisted synthesis of Cs₂AgBiBr₆ nanocrystals for enhanced visible-light photocatalysis

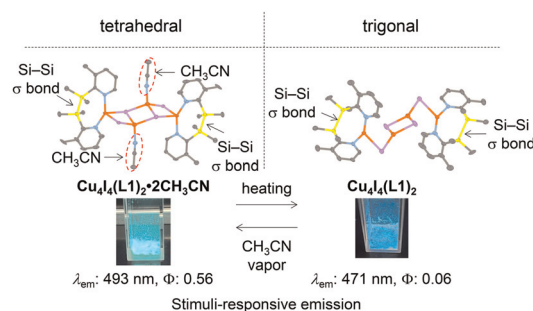
Emmanuel Godínez, Jennyfer Moreno, Sergio Chang, Victor Hugo Guzman, Yesenia A. García-Jomoso, Herlinda Montiel, Nora S. Portillo-Vélez* and Hugo A. Lara-García*



17425

A disilane-bonded bis(methylpyridine) Cu(I) complex exhibiting reversible trigonal–tetrahedral switch with stimuli-responsive luminescence

Yoshinori Yamanoi,* Yongjin Zhao, Toyotaka Nakae, Kaito Segawa, Masaki Yoshida, Masako Kato, Kazuma Kikuchi, Hiroaki Imoto, Kensuke Naka, Showa Kitajima, Hitoshi Kasai, Kouki Oka and Suguru Ito*



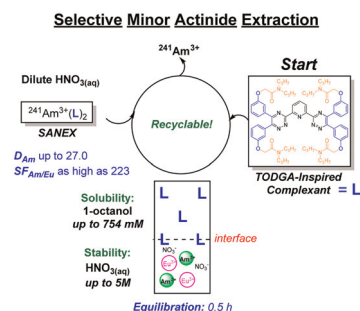
COMMUNICATIONS

17430

Nickel-catalyzed 1,2-dialkenylation of *o*-carboranes with alkenyl bromides

Qihang Zhuo, Jie Zhang* and Zuwei Xie*

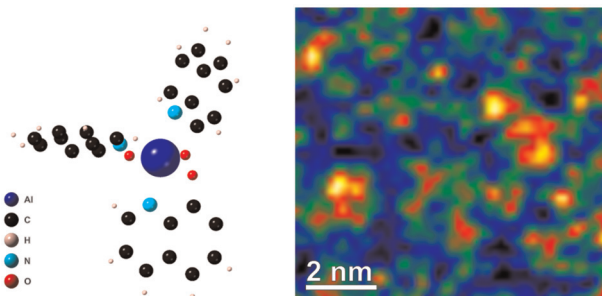
17434



TODGA-inspired complexant for minor actinide extraction

Krishna P. Gnyawali and Jesse D. Carrick*

17439

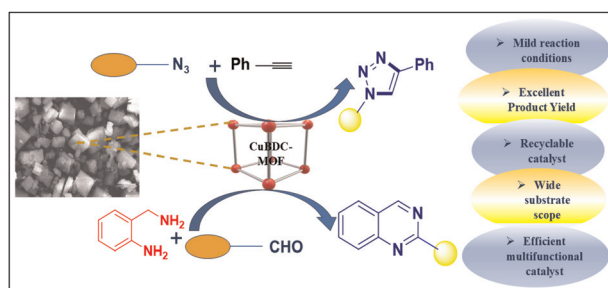


Structures of aggregated metal-centered organic molecules revealed by transmission electron microscopy

Lifeng Zhang, Yuxin Qiu, Shuang Li, Ronghua Cui, Xing Chen and Langli Luo*

PAPERS

17444



Interplay of morphology and particle size in CuBDC MOFs governing catalytic selectivity for the efficient synthesis of 1,4-disubstituted 1,2,3-triazoles and 2-substituted quinazolines

Masshuda Madni Khatun, Priyanka Gogoi, Nilakshi Dutta, Puja Pokhrel, Diganta Sarma* and Kalyanjyoti Deori*

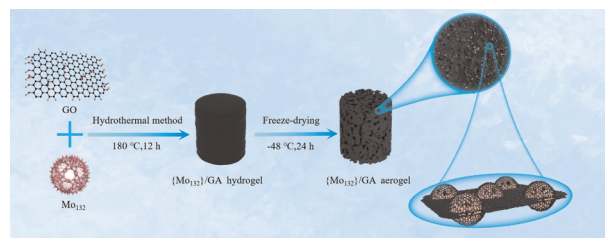


PAPERS

17458

Researching advancements in the electrochemical performance of molybdenum-based spherical polyoxometalate/reduced graphene oxide aerogel composites as electrode materials for supercapacitors

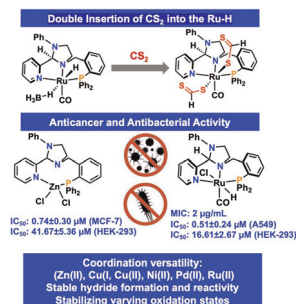
Renyou Huang, Jihua Wang,* Junwang Liu, Xiaoyan Cai, Lige Gong and Limin Dong



17471

Hemiparetic koneramine NNP ligand comprising strategic hard and soft donors: transition metal complexes, CS₂ activation and therapeutic potential

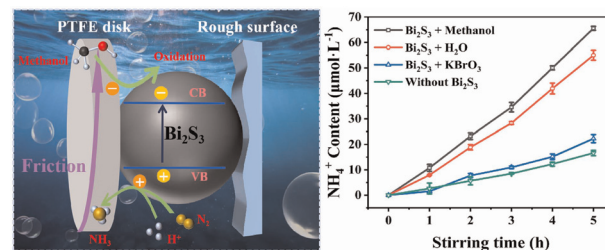
Archana Yadav, Sayari Dewan, Kajal Chaudhary, Ray J. Butcher, Ritika Gautam Singh and Raja Angamuthu*



17479

Highly efficient tribocatalytic nitrogen fixation of hydrothermally-synthesized Bi₂S₃ driven by mechanical friction

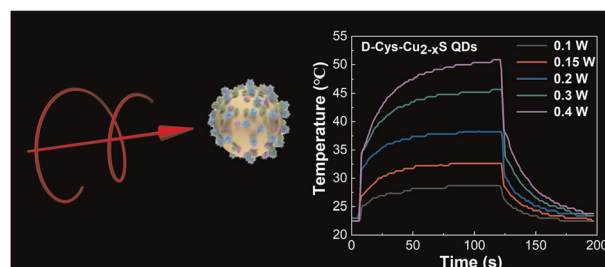
Ziqi Zhu, Zheng Wu,* Jiajia Kang, Yuanfang Wang, Ruyu Yan, Changchun Hao, Gangqiang Zhu and Yanmin Jia*



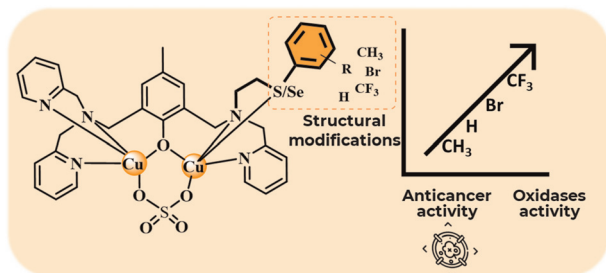
17489

Chiral Cu_{2-x}S quantum dots and their near-infrared photothermal conversion properties

Guangmin Li,* Xinyu Jin, Jiayun Zheng, Shuang Li, Hongfei Liu, Anning Guo, Zhibo Chen, Xiongze Fan, Hongbin Zhao, Jiajia Kang, Guozhi Jia,* Jiafeng Li and Gaoling Yang*



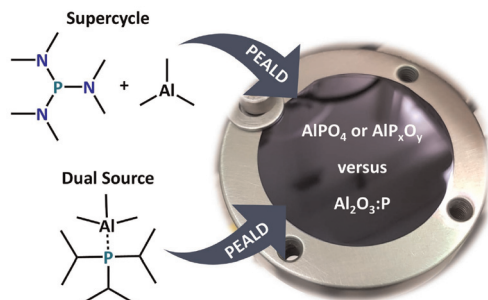
17495



Structural influences on the oxidation and anticancer activities of dicopper(II) complexes containing different selenium and sulfur ligands

Daniele C. Durigon,* Ronny R. Ribeiro, Olivia Espindola-Moreno, Ignacio E. León, Giordano Poneti, Adalton J. Bortoluzzi and Rosely A. Peralta*

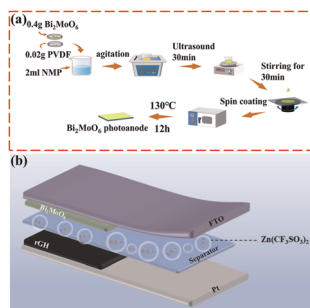
17507



Plasma-enhanced atomic layer deposition of $\text{AlPO}_4/\text{AlP}_x\text{O}_y$: comparing dual source and supercycle approaches for composition control

Florian Preischel, David Zanders, Jean-Pierre Glauber, Karl Rönby, Detlef Rogalla, Thomas Gemming, Peter Dement, Michal Nolan and Anjana Devi*

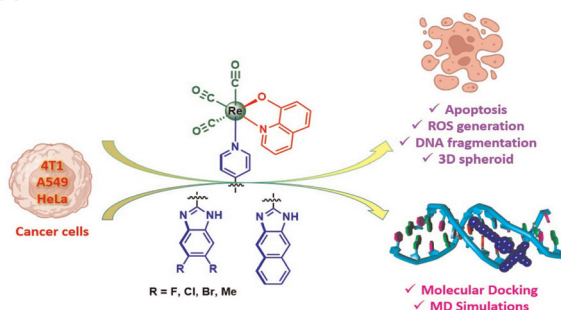
17521



Development of an aqueous zinc ion rGH// Bi_2MoO_6 photo-assisted charging supercapacitor

Wenlong Zhang, Chengbin Zheng, Jiake Li,* Hedong Jiang, Xin Liu, Pingchun Guo, Xueguo Zhao, Hua Zhu and Yanxiang Wang

17531



Re(I)-quinolinate-pyridyl complexes with disubstituted benzimidazole pharmacophores as anticancer agents

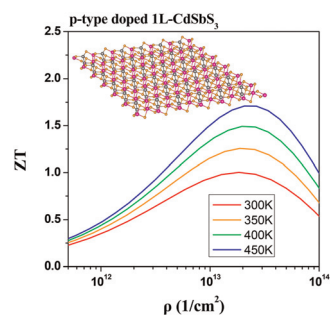
Reema L. Borkar,* Chandra Lekha Putta, Merlin Platto, Nitisha Beniwal, Bharathi Banoth, Abhishesh Kumar Mehata, Shanmugam Ramasamy* and Aravind Kumar Rengan*



17546

High p-type thermoelectric performance driven by a nearly flat band in single-layer CdSbS₃

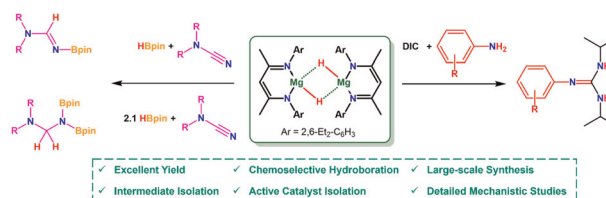
Won Seok Yun, June-Seo Kim* and Myoung-Jae Lee*



17553

Magnesium catalyzed hydroamination of carbodiimides and hydroboration of cyanamides

Anubhab Das, Sayantan Mukhopadhyay, Sagrika Rajput and Sharanappa Nembenna*

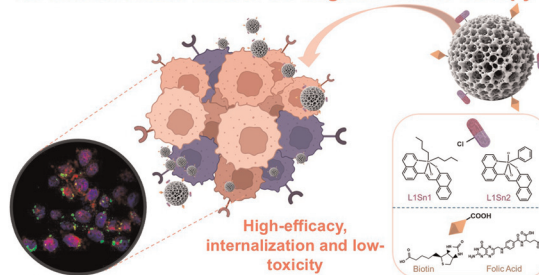


17564

Engineered mesoporous silica nanosystems with organotin(IV) complexes containing 1-(quinolin-8-yliminomethyl)naphthalen-2-ol ligand for cancer cell targeting

Diana Díaz-García, Robin Vinck, Javier Álvarez-Conde, Victoria García-Almodóvar, Sanjiv Prashar, Gilles Gasser* and Santiago Gómez-Ruiz*

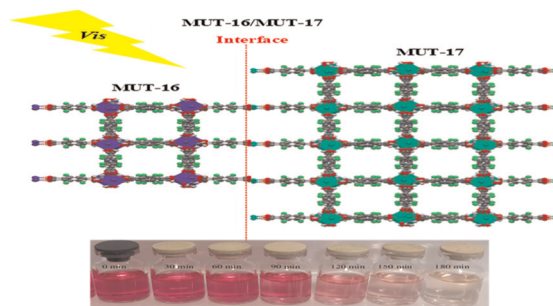
Tin-functionalized sMSNs for targeted cancer therapy



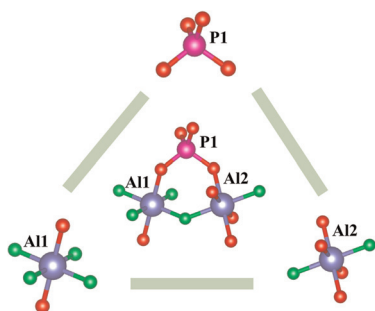
17578

Design and synthesis of a homostructured MUT-16/MUT-17 nanocomposite via the epitaxial growth method as a photocatalyst for the degradation of Acid Red 33 under visible light

Roghayyeh Ghasemzadeh and Kamran Akhbari*



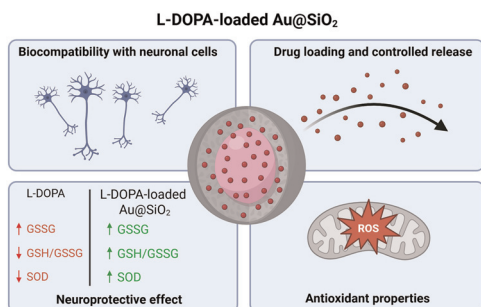
17591



BaAlPO₄F₂: structure and properties of the first barium fluoroaluminophosphate with the mixed anion group [Al₂PO₈F₅]

Yanhui Zhang, Jijia Li, Yaqing Ding, Kaitong Liu* and Xiaofeng Gu*

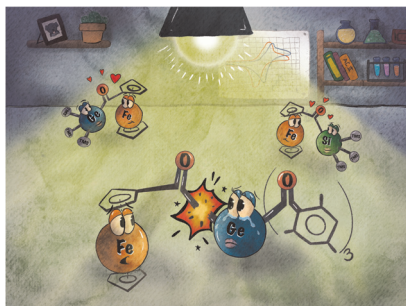
17597



Nanostructures based on gold and silica as a delivery platform for enhanced L-DOPA therapy in neurodegenerative disease

Agata Kowalska,* Elzbieta Adamska, Katarzyna Zima, Paulina Nowicka, Anna Wcisto, Mariusz Makowski and Beata Grobelna*

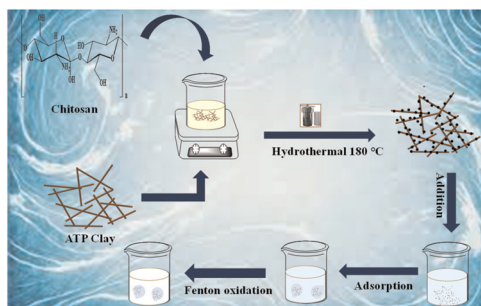
17611



Synthesis, structure, photochemical and electrochemical properties of α -germyl ferrocenyl ketones

Madeleine Heurix, Petr Harmach, Ana Torvisco, Roland C. Fischer, Mathias Wiech, Ivana Císařová, Georg Gescheidt, Petr Štěpnička* and Michael Haas*

17621



Synergistic adsorption–Fenton degradation of 2,4-dichlorophenol using chitosan-modified attapulgite for sustainable water remediation

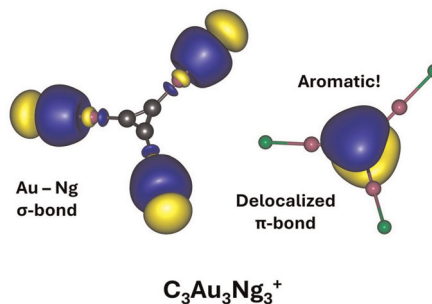
Nazish Shahab, Wei Han, Saeed Ahmed, Weiliang Tian, Chao Jiang, Huiyu Li* and Yongjun Feng*



17631

Noble gas binding and bonding with gold-substituted cyclopropenyl cation

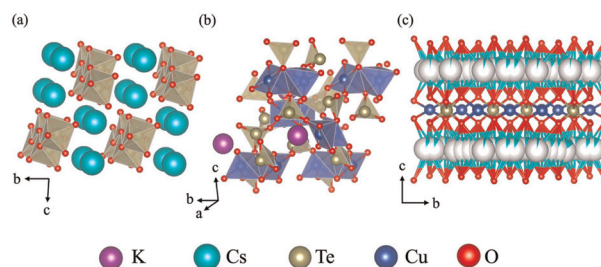
Leonardo Reyes-Fernández and Ricardo Pino-Ríos*



17638

Hydroflux crystal growth of alkali tellurate oxide-hydroxides

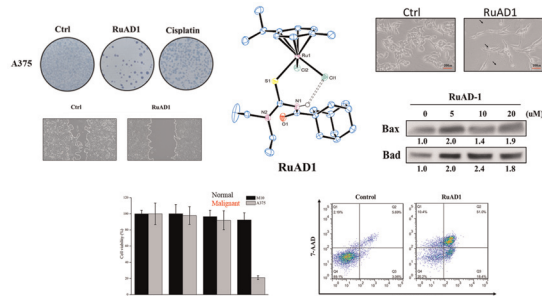
Madalyn R. Gragg, Allana G. Iwanicki,* Maxime A. Siegler and Tyrel M. McQueen



17646

Organoruthenium(II) complexes with adamantane-thiourea ligands: structural and biological insights

Chi-Xin Guo, Rahime Eshaghi Malekshah, Tzu-Yu Chen, Amir Karim, Yu-Ting Chu, En-De Shu, Chien-Chih Chiu, Ching-Ming Chien* and Sodio C. N. Hsu*



17662

Tuning the electronic properties of Fe(II)-NHC sensitizers with thienyl π -extended ligands

Nour Shalhoub, Edoardo Marchini,* Federico Coppola, Roberto Argazzi, Stefano Caramori, Mariachiara Pastore,* Philippe Pierrat and Philippe C. Gros*

