

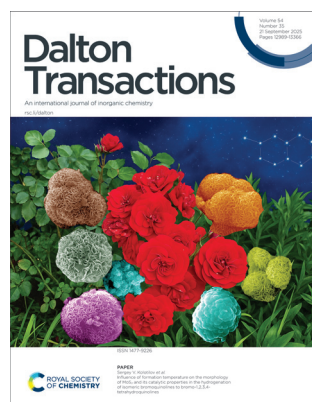
# Dalton Transactions

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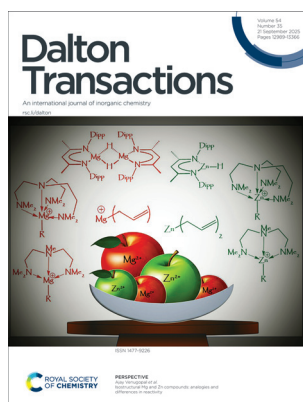
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ISSN 1477-9226 CODEN DTARAF 54(35) 12989–13366 (2025)



**Cover**  
See Sergey V. Kolotilov et al.,  
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**Inside cover**  
See Ajay Venugopal et al.,  
pp. 13005–13019.

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### Third themed collection on Nitrogen Ligands

Gabriel Canard\* and Olivier Siri\*



## PERSPECTIVE

13005

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Kriti Pathak, Suban Kundu, Sheetal Kathayat Bisht and  
Ajay Venugopal\*



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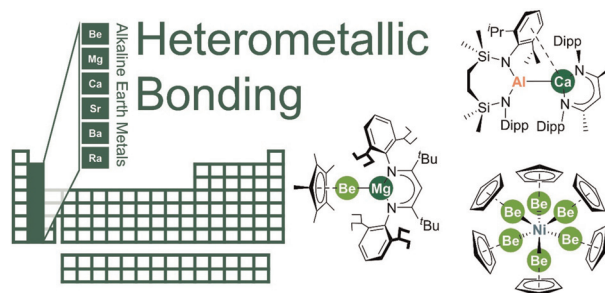
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13020

**Alkaline earth metals: heterometallic bonding**

Liam P. Griffin\* and Josef T. Boronski\*

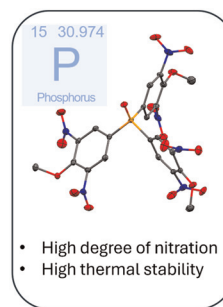


## COMMUNICATIONS

13030

**Nitrated triarylphosphine oxides: accessible triarylphosphoryl molecules with up to six nitro groups**

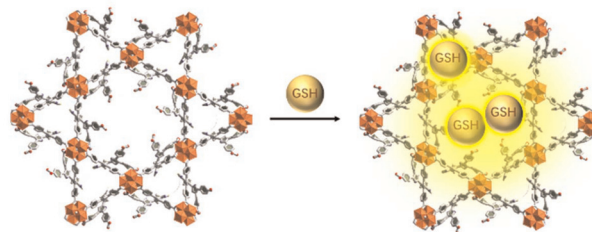
Rafael Pérez, Houari Dahmani and Guillaume Bélanger-Chabot\*



13035

**A hexatopic-carboxylate-based csq type luminescent zirconium-organic framework for the detection of glutathione**

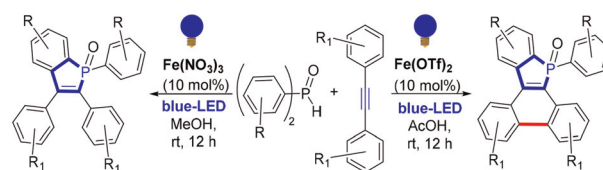
Jin-Peng Chu, Zhen-Sha Ma, Jun Xia, Kang Zhou,\* Zhi-Qiang Zhang\* and Xiao-Yuan Liu\*



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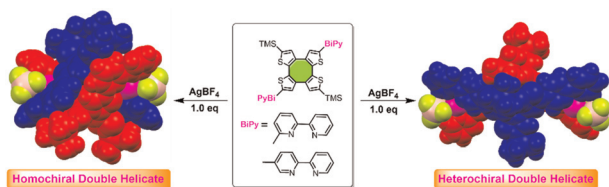
**Using blue-light driven iron-catalysis to afford molecular diversity in phosphindole oxide derivatives**

Yumeng Yuan, Lingfeng Zhao, Marie Cordier, Thierry Roisnel, Anne Pensel, Muriel Hissler, Pierre-Antoine Bouit\* and Christophe Darcel\*



## COMMUNICATIONS

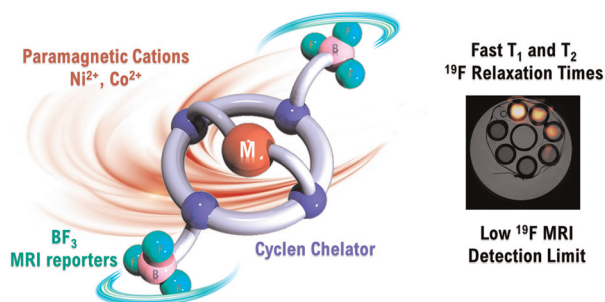
13048



### Ag-induced homochiral versus heterochiral double helicites based on cyclooctatethiophene-bipyridine

Chenglong Wang, Jie Yang, Guanfeng Miao, Zhiying Ma, Guangxia Wang\* and Hua Wang\*

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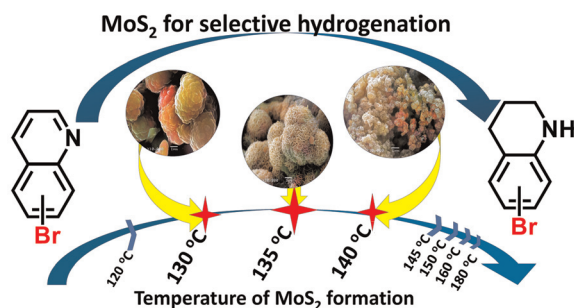


### Trifluoroborate-appended cyclen complexes of paramagnetic transition metals ( $Ni^{2+}$ , $Co^{2+}$ ) as fast-relaxing $^{19}F$ MRI probes

Charline Sire, Francesca Garello, Noémie Lalaoui, Nathalie Saffon-Merceron, Nicolas Le Poul, Raphaël Tripier, Lorenzo Tei\* and Thibault Troadec\*

## PAPERS

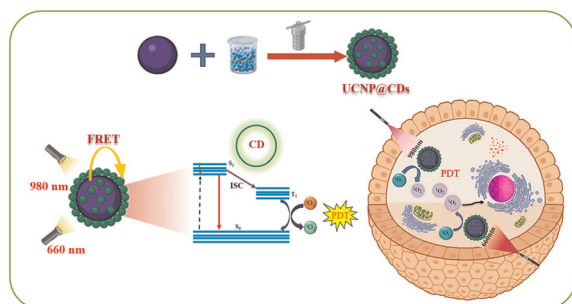
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### Influence of formation temperature on the morphology of MoS<sub>2</sub> and its catalytic properties in the hydrogenation of isomeric bromoquinolines to bromo-1,2,3,4-tetrahydroquinolines

Anastasia V. Terebilenko, Maryna V. Olenchuk, Denys O. Mazur, Andrii S. Nikolenko, Vadym I. Popenko, Galyna I. Dovbeshko, Oleksii Bezkravnyi, Tomash Sabov, Boris M. Romanyuk, Volodymir N. Poroshin, Serhiy V. Ryabukhin, Dmytro M. Volochnyuk and Sergey V. Kolotilov\*

13071



### Amplification of luminescence intensity by ytterbium(III) dopant in upconversion nanoparticles integrated with carbon dots for NIR-responsive targeted photodynamic therapy

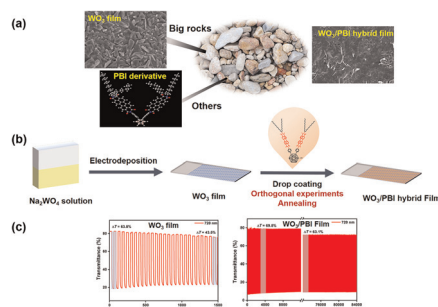
Bijay Saha, Antara Ghosh, Archana Singh and Sumanta Kumar Sahu\*



13085

### Synergistic WO<sub>3</sub>-PBI hybrid electrochromic materials with an enhanced diffusion coefficient and cycling reversibility inspired by the "Big Rocks" theory

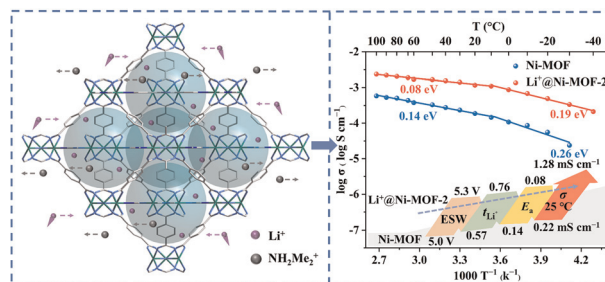
Chunxia Hua, Huanyu Tan, Shujin Ma, Jiaxue Hou, Ming Gong, Jia Chu, Xiaoqin Wang and Shanxin Xiong\*



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### Significant electrochemical performance improvement of an anion MOF-based solid-state electrolyte across a wide temperature range via an ion exchange strategy

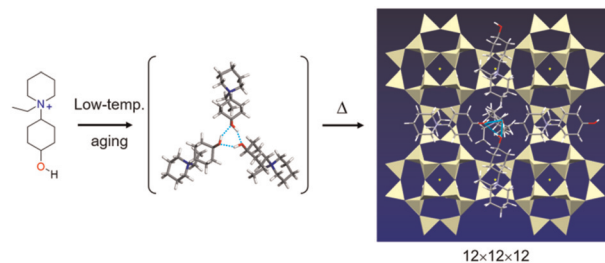
Changqi Gu, Wenyu Ding, Sheng Jin, Xinyu Tang, Xin Zhang, Li Fan, Zhiliang Liu and Xiaomin Kang\*



13103

### Synthesis of a high-silica intersecting-large-pore zeolite using hydrogen-bond-assisted structure-directing agents

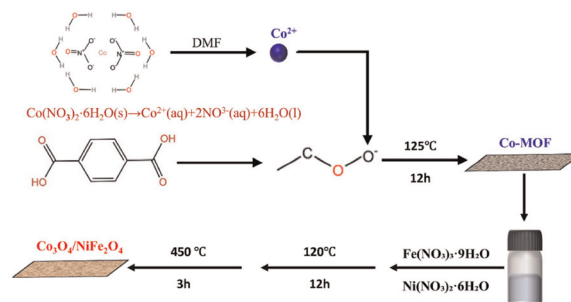
Hao Li, Zhengnan Zhang, Yanan Xu, Shiyue Zhang, Pengliang Gu, Qing Hu, Yu Zhang, Wenkai Wang, Zhan Shi, Xinyi Fu, Jian Li\* and Hongbin Du\*



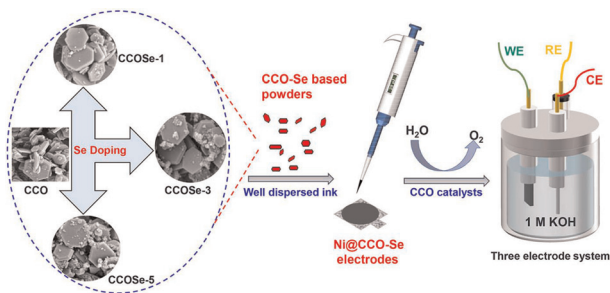
13110

### Self-supporting Co<sub>3</sub>O<sub>4</sub>/NiFe<sub>2</sub>O<sub>4</sub> nanoflowers for efficient oxygen evolution reaction

Ying Wang, Yanghanqi Li, Jun Yu and Yukou Du\*



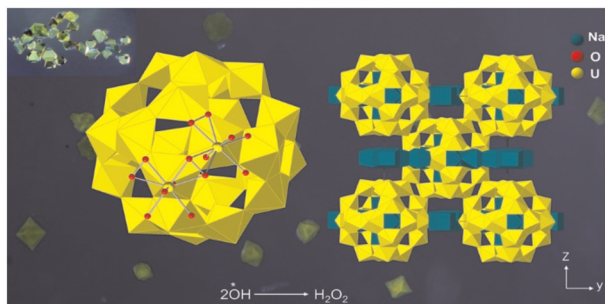
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### Preparation of selenium doped $\text{CuCoO}_2$ nanosheets as an efficient electrocatalyst for the oxygen evolution reaction

Qingyang Shen, Lihong Zhao, Jilin Bai,\* Chao Jiang, Yue Mi, Wei Liao and Dehua Xiong\*

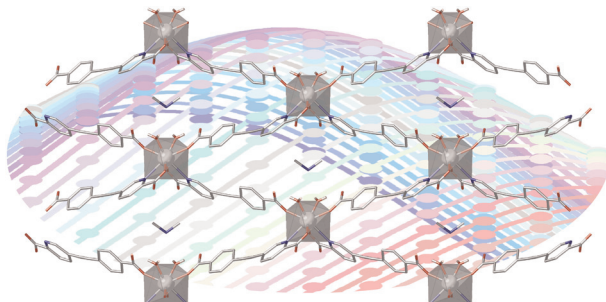
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### Formation of $\text{U}(\text{VI})$ peroxide nanoclusters from cascade reactions with a persulfate radical initiator

Vidumini S. Samarasiri, Harindu Rajapaksha, Sarah McGee, Sara E. Mason and Tori Z. Forbes\*

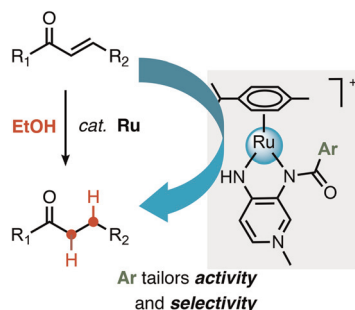
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### Synthesis, structure and slow magnetic relaxation of lanthanoid coordination polymers based on ethynyl-bridged picolinate ligands

Verónica Jornet-Mollá, Carlos J. Gómez-García,\* Miquel J. Dolz-Lozano, Carlos Giménez-Saiz and Francisco M. Romero\*

13155



### Ligand modification for the tuning of activity and selectivity in the chemoselective transfer hydrogenation of $\alpha,\beta$ -unsaturated carbonyls using EtOH as a hydrogen source

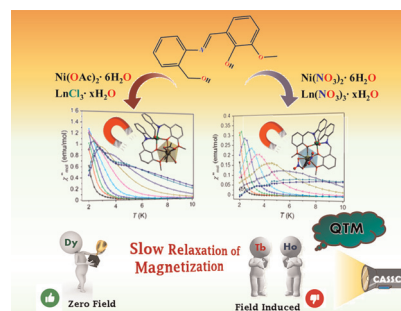
Alicia Beaufils, Nicole Elia, Sabela Reuge and Martin Albrecht\*



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### Varying anion coordination in new families of dinuclear $\text{Ni}^{\text{II}}\text{Ln}^{\text{III}}$ complexes: zero-field slow relaxation of magnetization and theoretical validations

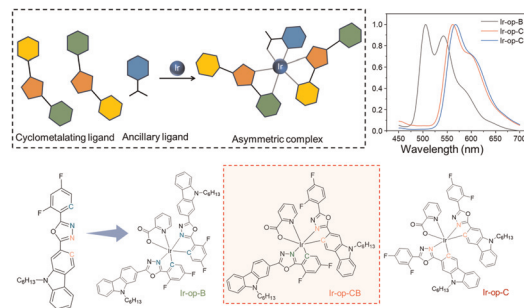
Biswarup Dutta, Ibtesham Tarannum, Zvonko Jagličić, Saurabh Kumar Singh and Debashis Ray\*



13184

### Strategic fluorine atom positioning in carbazolyl oxadiazole derivatives: constructing asymmetric $\text{Ir}^{\text{III}}$ complexes for enhanced electroluminescence performance

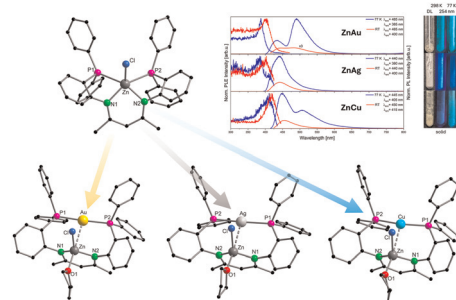
Jia-Wei Liu, Xue-Cheng Wang, Li-Jing Wen, Hao-Yu Chen, Jin-Xia Ren, Jie Li, Chang Liu, Yong-Hua Li,\* Bo Chen,\* Shi Wang and Kenneth Yin Zhang\*



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### Luminescent ionic heterobimetallic diphosphine- $\beta$ -diketiminato complexes

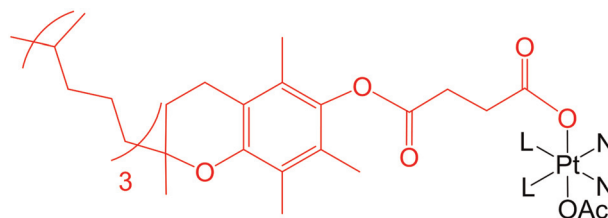
Steven Kebernik, Frederic Krätschmer, Xiaofei Sun and Peter W. Roesky\*



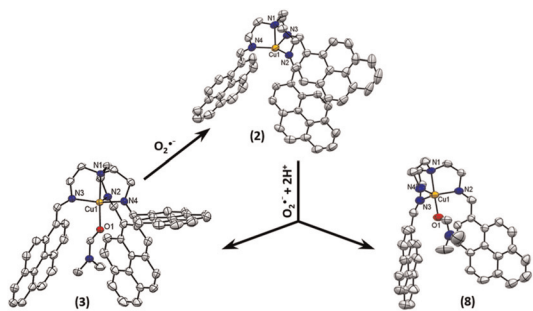
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### Redefining platinum(IV) chemotherapy: $\alpha$ -tocopherol succinate functionalization and nanoparticle encapsulation to improve cisplatin- and oxaliplatin-based therapies

Carlo Marotta, Damiano Cirri, Maria Chiara Maimone, Chiara Giacomelli, Maria Letizia Trincavelli, Luca Salassa, Chiara Gabbiani\* and Alessandro Pratesi\*



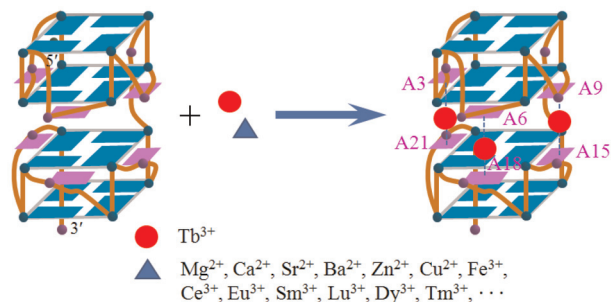
13215



### Ligand-driven redox transformations and catalytic activities of mononuclear copper complexes: structural and spectroscopic insights

Soumen Rakshit, Jyotirmoy Mitra, Rajat Saha\* and Ram Chandra Maji\*

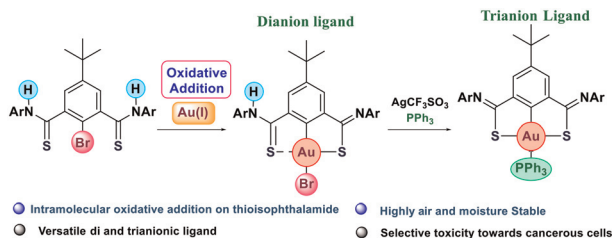
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### Adenine/adenine contacts defined in the G-quadruplex for highly selective Tb<sup>3+</sup> binding

Yulu Ru, Jiahui Chen, Qinxin Li, Qiyao Chen, Sihui Huang, Jiahuan Zhou, Dandan Wang,\* Xiaoshun Zhou and Yong Shao\*

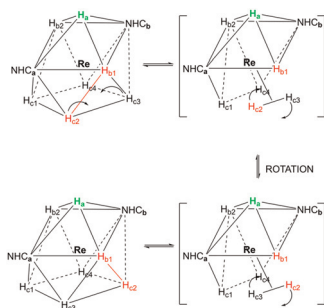
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### Thio-iso-phthalamide pincer ligand-driven oxidative addition of a C–Br bond to gold(I): synthesis and studies of SCS–gold(III) pincer complexes

Saravanan Raju, Sanhati Sharangi, Harkesh B. Singh, R. S. Prabhuraj, Rohit Srivastava, Ray J. Butcher and Sangit Kumar\*

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### Dynamic processes of the first NHC-substituted rhenium heptahydrides [ReH<sub>7</sub>(NHC)<sub>2</sub>]

G. Grieco,\* A. Pierini and M. Pierini

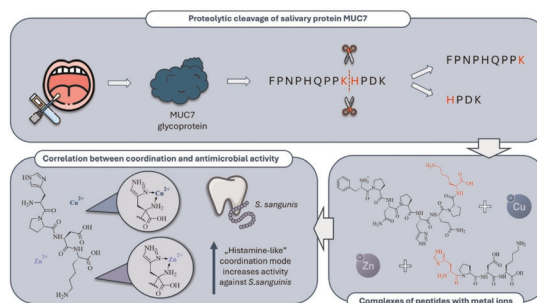


## PAPERS

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### Short but promising – how nature modulates the antimicrobial activity of proline-rich fragment of salivary MUC-7

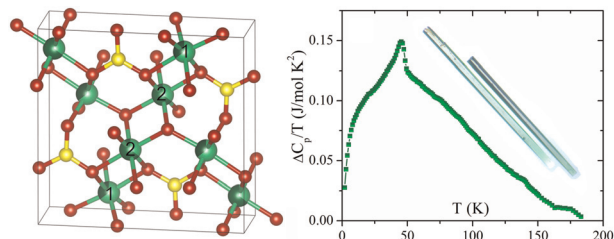
Jakub Gawłowski, Anna Ślusarczyk, Klaudia Szarszoń, Fabio Zobi, Tomasz Janek and Joanna Wąty\*



13271

### Magnetic order in disordered NiCr(BO<sub>3</sub>)O

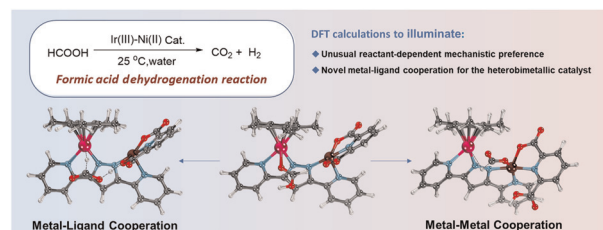
Yulia S. Gokhfeld,\* Natalia V. Kazak,\* Anastasia S. Tarasova, Aleksandr S. Sukhikh, Dmitry A. Velikanov, Evgeniy V. Eremin, Oleg A. Kondratev, Anna O. Belyaeva, Sergey Yu. Gavrilkin, Alexander D. Vasiliev and Sergey G. Ovchinnikov



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### Deciphering the mechanistic landscape of formic acid dehydrogenation with the heterobimetallic Ir(III)–Ni(II) catalyst

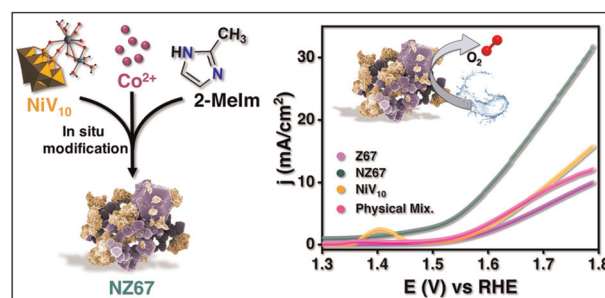
Lan-Yu Li, Hui-Qi Mo, Pan Chen, Jianju Zheng and Cheng Hou\*



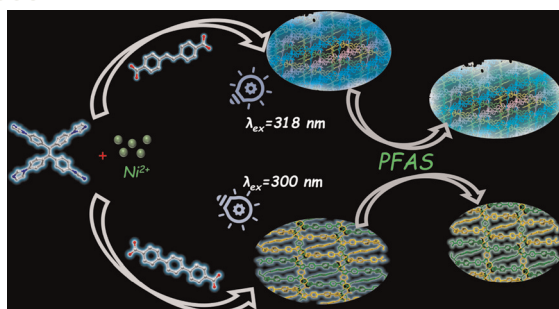
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### An *in situ* dual modification strategy for enhancing the electrocatalytic oxygen evolution performance of ZIF-67

Rajasha Kumar Swain, Aranya Kar, Aditi Halder and Chullikkattil P. Pradeep\*



13308

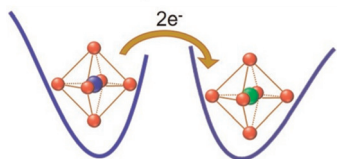


### Water-stable Ni(II)-MOFs as ratiometric fluorescent probes for the detection of perfluorocarboxylic acids

Kai-Yang Zhang, Zhao-Feng Qiu, Fang-Fang Wang, Xiao-Ru Guo, Yue Zhao, Pei-Pei Cui\* and Wei-Yin Sun\*

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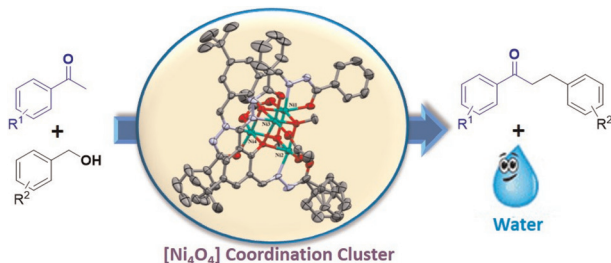
### Correlated Barrier Hopping of Bipolarons in Cs<sub>2</sub>PtI<sub>6</sub> vacancy ordered halide perovskites



### Bipolaron hopping conduction in vacancy-ordered Cs<sub>2</sub>PtI<sub>6</sub> perovskites

Vidya Raj, Abhishek Anand, Manasa Manoj and Aravind Kumar Chandiran\*

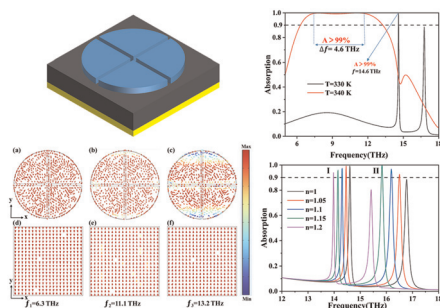
13326



### Coordination clusters with a [Ni<sub>4</sub>O<sub>4</sub>] core as catalysts for $\alpha$ -alkylation of ketones with benzyl alcohols

Kajal, Manish Kumar and Hari Pada Nayek\*

13337



### Ultra-broadband and ultra-narrowband actively tunable VO<sub>2</sub> metamaterial perfect absorber

Hao Tang, Tangyou Sun, Zao Yi,\* Qianju Song and Jianguo Zhang\*

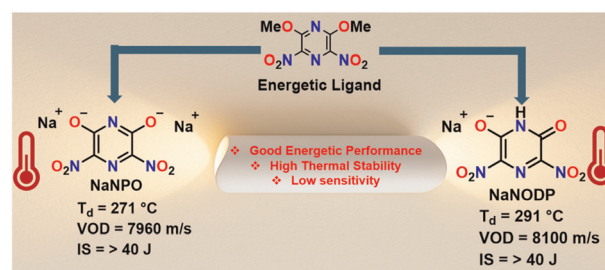


## PAPERS

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### Crystal engineering of dinitropyrazine-based sodium E-MOFs: toward thermally robust and low-sensitivity energetic materials

Manojkumar Jujam, Abhishek Kumar Yadav and Srinivas Dharavath\*



13356

### Temperature-dependent flexible hybrid capacitors based on Ni(OH)<sub>2</sub>@NiS electrode materials

Wei Jia, Qi He, Zhiqiang Guo\* and Xiang Wu\*

