

# Dalton Transactions

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## IN THIS ISSUE

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**Cover**  
See Hidehiro Uekusa *et al.*,  
pp. 5668–5674.

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2025, **54**, 5668.

## EDITORIAL

5612

### Main group element compounds in materials and catalysis

Selvarajan Nagendran,\* Ramaswamy Murugavel\* and  
Eric Rivard\*

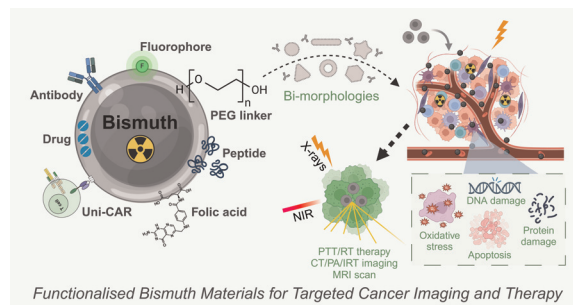


## PERSPECTIVE

5614

### Targeted bismuth-based materials for cancer

Amna Batool, Ina Kopp, Manja Kubeil,  
Michael Bachmann,\* Philip C. Andrews\* and  
Holger Stephan\*



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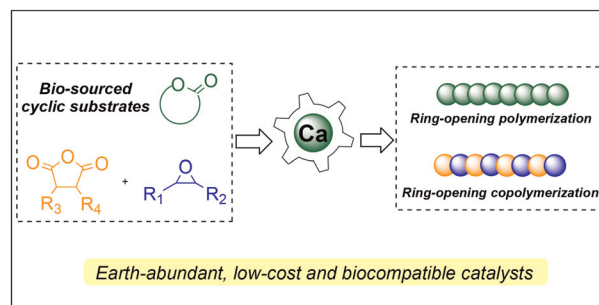
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5640

### Recent progress in calcium-catalyzed polyester synthesis

Jesús Naranjo, José A. Castro-Osma, Felipe de la Cruz-Martínez\* and Agustín Lara-Sánchez\*

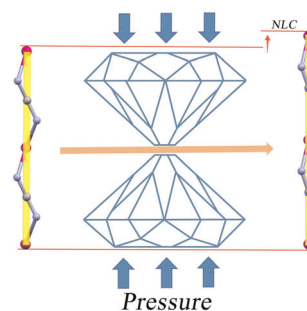


## COMMUNICATIONS

5650

### Negative linear compressibility from helix in zinc carbodiimide

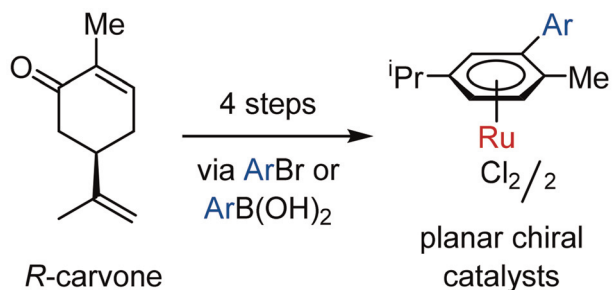
Chengxi Li, Qiulin Chen, Guohao Zhang, Gaofeng Zhang, Qingxin Zeng,\* Jian Hao and Yinwei Li\*



5655

### Planar chiral arene ruthenium complexes derived from *R*-carvone

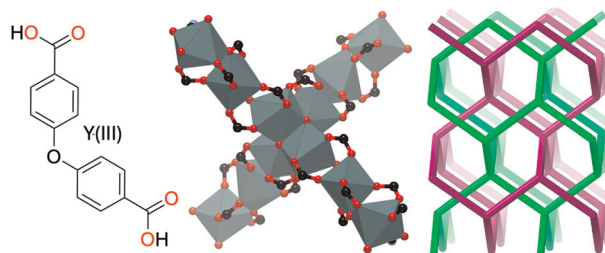
Mikhail A. Boym, Roman A. Pototskiy, Evgeniya S. Podyacheva, Dmitry V. Muratov, Yulia V. Nelyubina and Dmitry S. Perekalin\*



5659

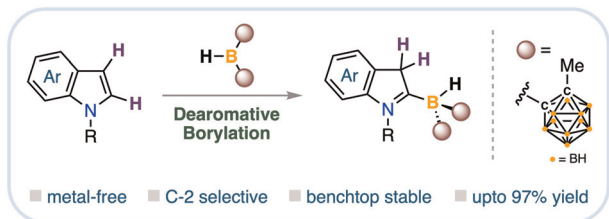
### How metal ions link in metal–organic frameworks: dots, rods, sheets, and 3D secondary building units exemplified by a Y(III) 4,4'-oxydibenzoate

Cyrielle L. F. Dazem, Niklas Ruser, Erik Svensson Grape, A. Ken Inge, Davide M. Proserpio, Norbert Stock\* and Lars Öhrström\*



## COMMUNICATIONS

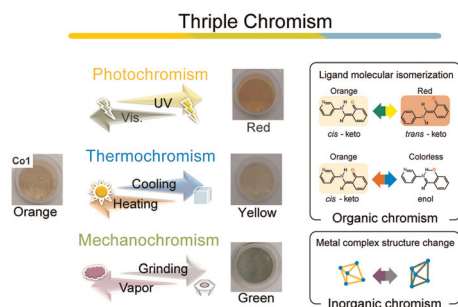
5664

**Dearomative C2-borylation of indoles**

Ayesha Begum, Manjur O. Akram and Caleb D. Martin\*

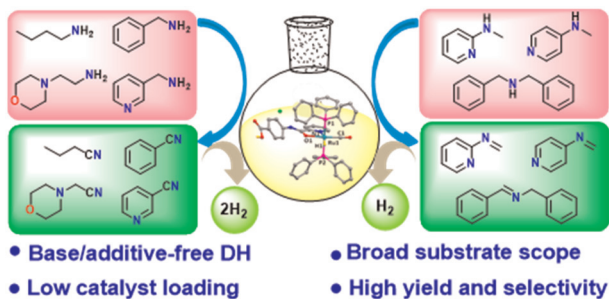
## PAPERS

5668

**Triple-chromic (photo-, thermo-, and mechano-chromic) metal complexes containing *N*-salicylideneaminopyridine ligands**

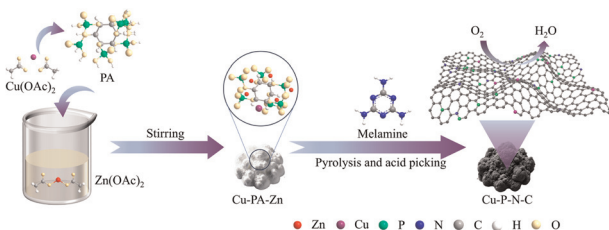
Haruki Sugiyama, Atsuko Arita, Akiko Sekine and Hidehiro Uekusa\*

5675

**Acceptorless oxidant-free dehydrogenation of amines catalyzed by Ru-hydride complexes of amide-acid/ester ligands**

Samanta Yadav and Rajeev Gupta\*

5685

**Cu- and P-co-doped nitrogen-doped hierarchical carbon for enhanced oxygen reduction reaction in zinc-air batteries**

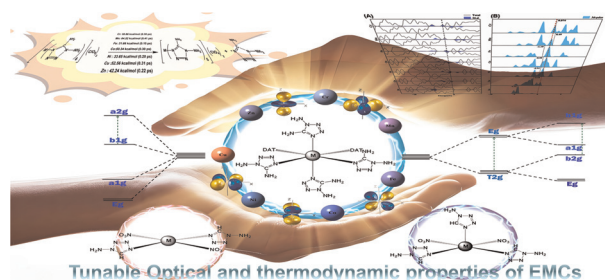
Zhongyuan Rong, Mengwei Li, Yijie Deng\* and Haibo Tang\*



5693

### Tunable optical and thermodynamic properties: the ignition of energetic metal complexes with different crystal fields

Kun Wang,\* Xiaoqi Yang, Peipei Zhang, Shu Bu, Longjiu Cheng and Jianguo Zhang



5708

### Luminescence enhancement by mixing carboxylate benzoate–pentafluorobenzoate ligands in polynuclear $\{Eu_2Zn_2\}$ and $\{Tb_2Zn_2\}$ complexes

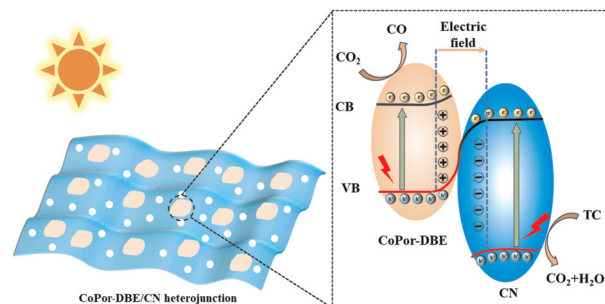
Alena E. Bolot'ko,\* Maxim A. Shmelev, Alexandr S. Chistyakov, Julia K. Voronina, Evgeniya A. Varaksina, Natalia V. Gogoleva, Ilya V. Taydakov, Alexey A. Sidorov and Igor L. Eremenko



5721

### A bi-functional S-scheme cobalt-porphyrin conjugated polymer/ $C_3N_4$ heterojunction for cooperative $CO_2$ reduction and tetracycline degradation

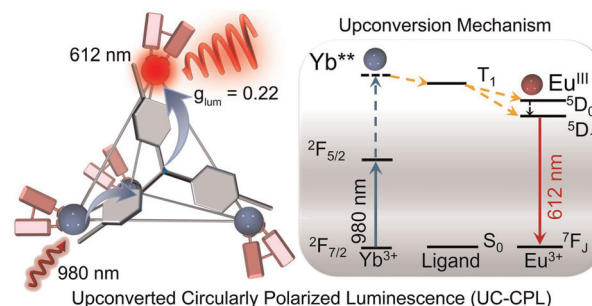
Chao Xu, Shien Guo,\* Jiaxin Wang, Yiqing Jiang, Xiaomin Wu, Dandan Lin and Yuting Xiao\*



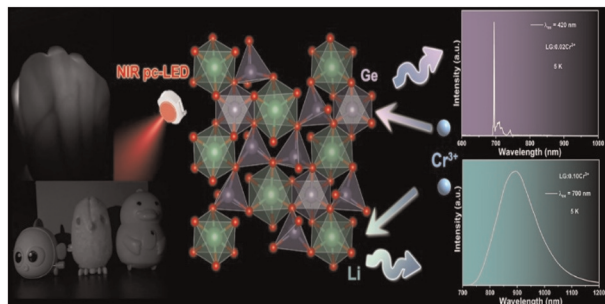
5731

### Strong upconverted circularly polarized emission from a chiral tetrahedral Yb/Eu cage

Zhiwei Yao, Ting Gao, Pengfei Yan, Yanyan Zhou\* and Hongfeng Li\*



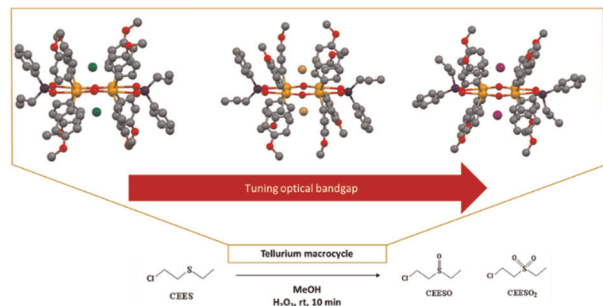
5739



### Dual center luminescence characteristics and multifunctional applications of $\text{Li}_2\text{Ge}_7\text{O}_{15}:\text{Cr}^{3+}$ near-infrared phosphors

Luhui Zhou, Dashuai Sun,\* Zeyu Lyu, Pengcheng Luo, Zheng Lu, Xiaowei Zhang, Shuai Wei and Hongpeng You\*

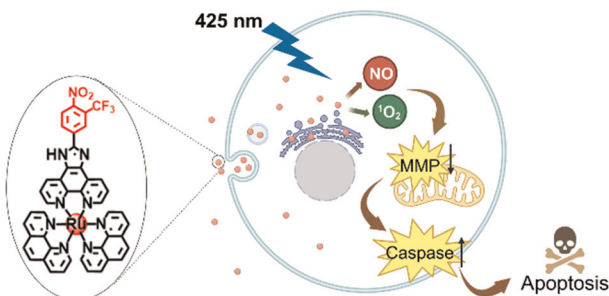
5747



### Functionalized organotellurium macrocycles: tuning their optical bandgap and investigation of their catalytic activity

Calvin Samuel, Velpula Pramod, Swandhana V. S., Alexander Steiner\* and Viswanathan Baskar\*

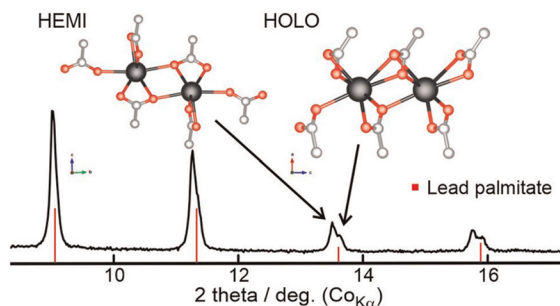
5753



### Phototherapeutic activity of polypyridyl ruthenium(II) complexes through synergistic action of nitric oxide and singlet oxygen

Jia-Hao Dong, Bai-Hua Chen, Shan Jiang, Xiao-Yin Wu, Wen-Wen Feng, Jin-Hao Li, Zheng-Yin Pan,\* Yingju Liu and Liang He\*

5764



### High temperature interactions of lead palmitate with linseed oil

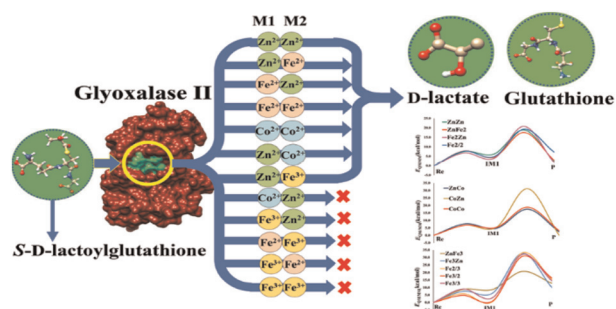
Ruslan Barannikov, Joen Hermans, Jiří Plocek, Petr Bezdička, Anna Vykydalová, Andrii Mahun, Libor Kobera and Silvie Švarcová\*



5779

### Metal preference of glyoxalase II, a quantum mechanics/molecular mechanics study

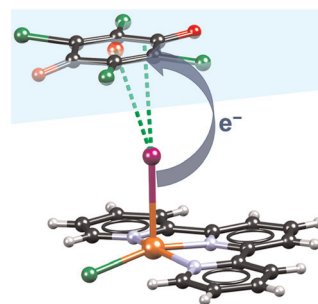
Javad Shirazi, Sonia Jafari, Ulf Ryde and Mehdi Irani\*



5796

### Charge transfer between a metal-bound halide and a quinone through $\pi$ -hole interactions leads to bulk conductivity

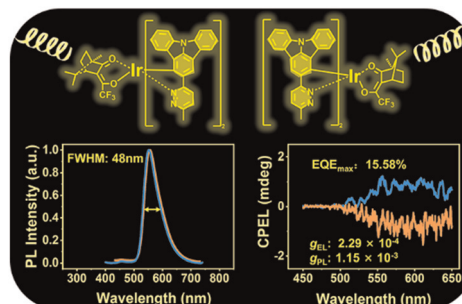
Lidija Molčanov, Anna Krawczuk,\* Luka Pavić, Marijana Jurić, Lidija Androš Dubraja and Krešimir Molčanov\*



5805

### Circularly polarized narrowband phosphorescent organic light-emitting diodes

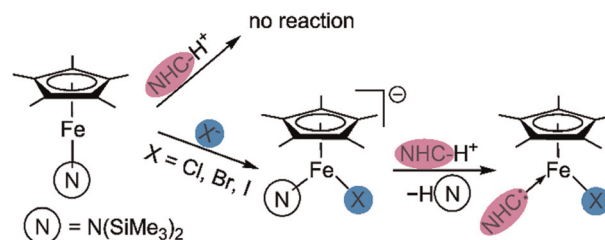
Shaohua Wu, Ping Chen, Xiaoyang Xia, Wenya Wang, Qifei Xie, Yanyu Qi,\* Huabo Han,\* Liang Zhou\* and Guangzhao Lu\*



5812

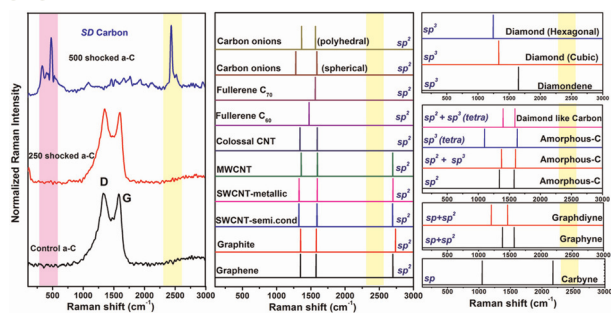
### The “pogo stick” complex [FeCp\*{N(SiMe<sub>3</sub>)<sub>2</sub>}]<sup>+</sup>: spin state properties, adduct formation with Lewis bases, and reactivity towards weakly Brønsted acidic protonated NHCs

Julian Zinke, Clemens Bruhn, Serhiy Demeshko and Ulrich Siemeling\*



## PAPERS

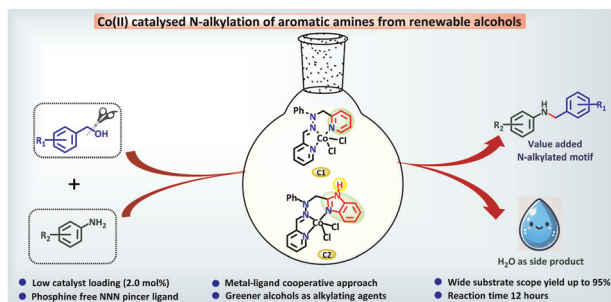
5829



### Acoustic shock wave-induced formation of an undefined high-pressure carbon allotrope

Sivakumar Aswathappa, Lidong Dai,\* Sahaya Jude Dhas Sathiyadhas and Raju Suresh Kumar

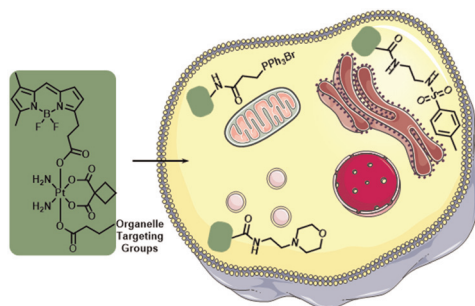
5838



### A well-defined phosphine-free metal–ligand cooperative route for N-alkylation of aromatic amines via activation of renewable alcohols catalyzed by NNN pincer cobalt(II) complexes

Rahul Saini, Prashant Kukreti, Rahul Chauhan, Abhishek Panwar and Kaushik Ghosh\*

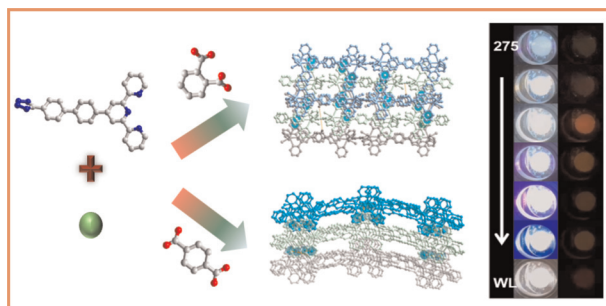
5849



### Organelle-targeted BODIPY-conjugated platinum(IV) anticancer prodrugs for overcoming drug resistance

Yuelun Xu, Fengling Zhang, Miaomiao Li, Huimin Zhang, Yuhong Yuan, Siying Lin, Liuxuan Yao, Shunfang Xu, Tao Yuan\* and Houzong Yao\*

5859



### Broadly excited red long persistent luminescence from hetero-ligand MOFs

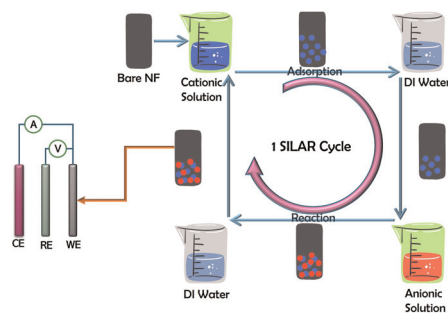
Jun-Ting Mo, Xin-Qi Chen, Su-Hua Wang, Jun-Jie Pan, Meng-Yang Li and Zheng Wang\*



5868

### *In situ* optimization of deposition layers in Ni–Co phosphate electrodes with ML-assisted predictive validation for superior supercapacitor

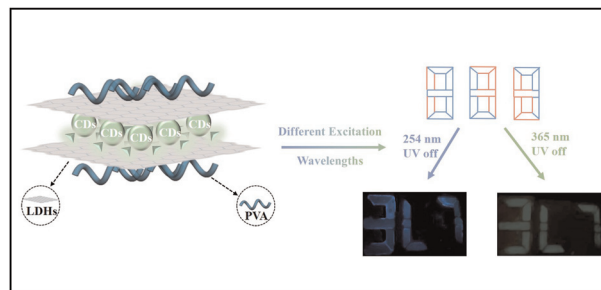
Arpit B. Mendhe, Laxmi Narayan Panigrahi and Himanshu Sekhar Panda\*



5880

### Excitation wavelength-dependent room temperature phosphorescence based on dual confinement of an organic–inorganic matrix for dynamic information encryption

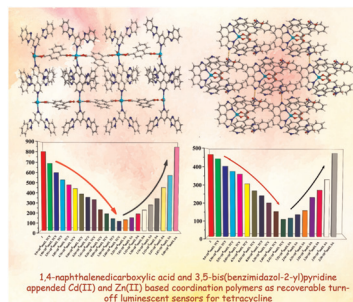
Xianglong Zhao, Shaoyue Shuai, Runze Wang, Feifei Peng, Xianggui Kong and Wenying Shi\*



5888

### New 1,4-naphthalenedicarboxylic acid- and 3,5-bis(benzimidazol-2-yl)pyridine-appended $d^{10}$ -configuration-based coordination polymers as recoverable turn-off luminescent sensors for tetracycline

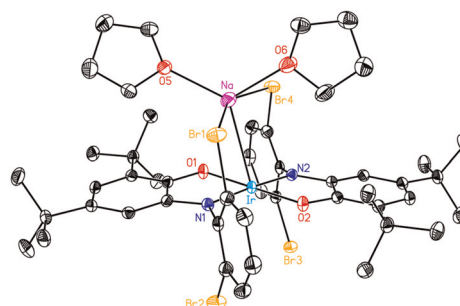
Yao Xiao, Jing Luo, Jun Wang,\* Lu Lu, Om Prakash, Shreya Srivastava, Mohd. Muddassir and Abhinav Kumar\*



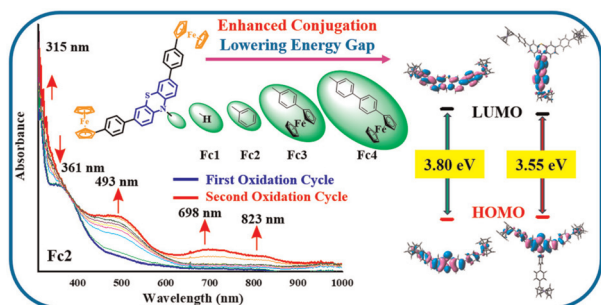
5896

### Bis(iminoxolene)iridium complexes over four oxidation states: from sodium–iridium bonding to ligand-centered radicals

Kahargyan Nugraha, Thomas H. Do and Seth N. Brown\*



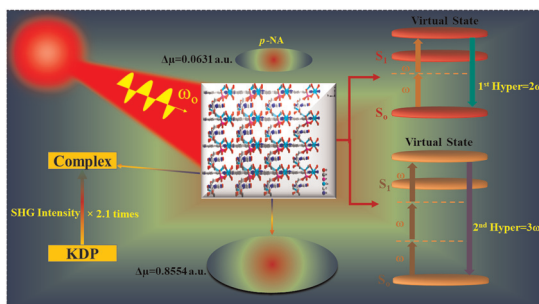
5906



### Design, synthesis, and redox properties of donor- $\pi$ -donor ferrocenyl functionalized phenothiazine derivatives

Deeksha Gupta, Nikhil Ji Tiwari, Prabal Pratap Singh and Rajneesh Misra\*

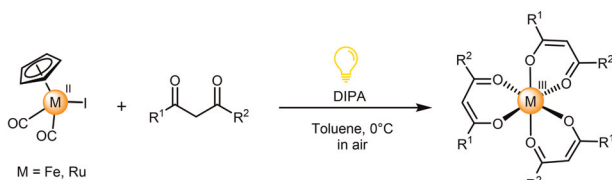
5921



### Enhancements of the first and second hyperpolarizability of a GMP coordination polymer: crystal structure and computational studies

Mubashar Ilyas, Maroof Ahmad Khan, Lin Xiong, Li Zhang, Muhammad Lauqman, Muhammad Abbas, Hafiz Muhammad Zohaib, Nagesh Manurkar and Hui Li\*

5935



### Complete ligand substitution and oxidation of the metal center in the photochemical reaction of $\text{CpM}(\text{CO})_2\text{I}$ ( $\text{M} = \text{Fe}, \text{Ru}$ ) with chelating $\beta$ -diketones

Szymon Jarzyński, Cyprian Doroszko, Daria Jamroz, Kinga Stefanowska-Kątna, Jędrzej Walkowiak, Sławomir Wojtulewski, Janusz Zakrzewski and Bogna Rudolf\*

5944



### A novel type of heteroleptic Cu(I) complexes featuring nitrogen-rich tetrazine ligands: syntheses, crystal structures, spectral properties, cyclic voltammetry, and theoretical calculations

Adam Sztula, Peter Antal, Ivan Nemeč, Martin Kubala and Radovan Herchel\*



## CORRECTIONS

5953

**Correction: Dual role of arsenite in hydrolysis and post-hydrolysis fluorescence sensing of selective pH-dependent probes**

Pushpendra Singh and Kalyan K. Sadhu\*

5954

**Correction: Dicopper(i) complexes of a binucleating, dianionic, naphthyridine bis(amide) ligand**

Laurent Sévery, T. Alexander Wheeler, Amelie Nicolay, Simon J. Teat and T. Don Tilley\*

