

# Dalton Transactions

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## IN THIS ISSUE

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**Cover**  
See Yuji Mikata *et al.*,  
pp. 7411–7420.

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**Inside cover**  
See Wolfgang Weigand *et al.*,  
pp. 7421–7428.

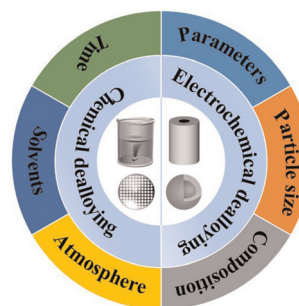
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## PERSPECTIVES

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### Progress and prospects of dealloying methods for energy-conversion electrocatalysis

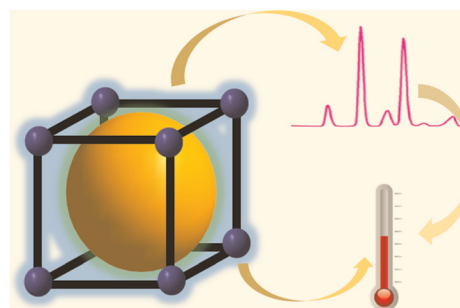
Yuanda Chen, Zehao Tan, Enping Wang, Jiewei Yin, Liuxuan Luo,\* Shuiyun Shen\* and Junliang Zhang



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### Engineering of metal–organic frameworks (MOFs) for thermometry

Dashrathbhai B. Kanzariya, Meetkumar Y. Chaudhary and Tapan K. Pal\*



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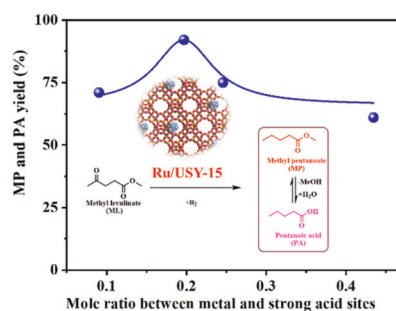


## COMMUNICATION

7405

## Efficient hydrodeoxygenation of methyl levulinate into pentanoic biofuels over Ru/USY catalysts

Shaohua Wang, Wenhao Cui, Caixia Miao, Nanfang Tang, Lu Lin, Zhijie Wu, Qingda An,\* Peng Tian, Jifeng Pang\* and Wenhao Luo\*

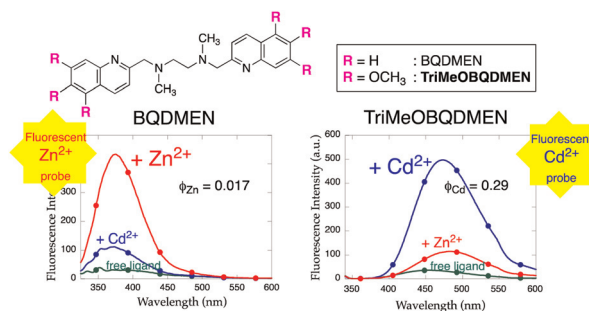


## PAPERS

7411

Effect of methoxy substituents on fluorescent Zn<sup>2+</sup>/Cd<sup>2+</sup> selectivity of bisquinoline derivatives with a N,N'-dimethylalkanediamine skeleton

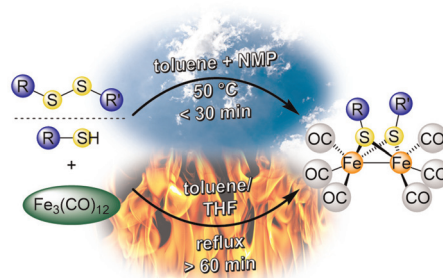
Yuji Mikata,\* Marin Tanaka, Saori Yasuda, Aya Tsuruta, Taeka Hagiwara, Hideo Konno and Takashi Matsuo



7421

## NMP makes the difference – facilitated synthesis of [FeFe] hydrogenase mimics

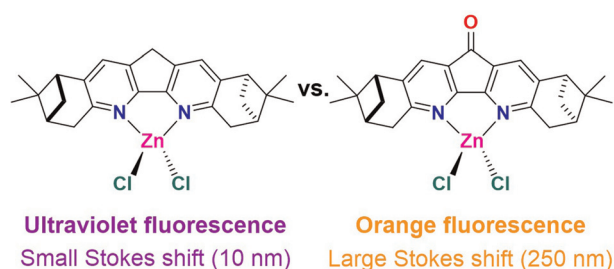
Stefan Benndorf, Philipp Buday, Benedikt Callies, Helmar Görls, Stephan Kupfer and Wolfgang Weigand\*



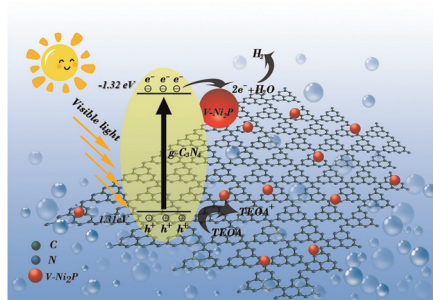
7429

## Efficient emission of Zn(II) and Cd(II) complexes with nopinane-annulated 4,5-diazafluorene and 4,5-diazafluorene-9-one ligands: how slight structural modification alters fluorescence mechanism

Tatyana E. Kokina,\* Nikita A. Shekhovtsov,\* Eugene S. Vasilyev, Ludmila A. Glinskaya, Aleksandr V. Mikheyliis, Victor F. Plyusnin,\* Alexey V. Tkachev\* and Mark B. Bushuev\*



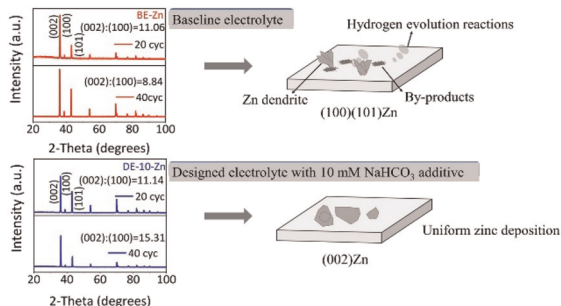
7447



### V-doped Ni<sub>2</sub>P nanoparticle grafted g-C<sub>3</sub>N<sub>4</sub> nanosheets for enhanced photocatalytic hydrogen evolution performance under visible light

Qian Chen, Jianfeng Huang,\* Ting Xiao, Liyun Cao,\* Dinghan Liu, Xiaoyi Li, Mengfan Niu, Guoting Xu, Koji Kajiyoshi and Liangliang Feng\*

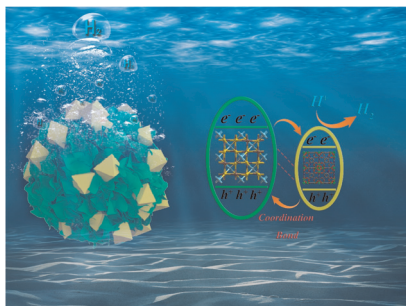
7457



### Dendrite-free zinc metal anodes enabled by electrolyte additive for high-performing aqueous zinc-ion batteries

Wenjng Feng, Zengteng Liang, Wei Zhou, Xingpeng Li, Wenbo Wang, Yonglei Chi, Weidong Liu, Duojie Gengzang, Guoheng Zhang, Qiong Chen, Peiyu Wang, Wanjun Chen\* and Shengguo Zhang

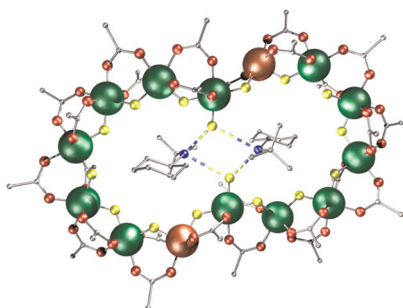
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### Heterojunction construction by a coordination bond between metal–organic frameworks and CdIn<sub>2</sub>S<sub>4</sub> for improved photocatalytic performance

Haijun Hu, Xiaodong Sun,\* Kailai Zhang, Yang Chen, Hui Li, Hongwei Huang, Yali Ma\* and Tianyi Ma\*

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### Synthesis and characterization of heterometallic rings templated through alkylammonium or imidazolium cations

Rajeh Alotaibi, Amy Booth, Edmund Little, Adam Brookfield, Amritroop Achari, Selena J. Lockyer, Grigore A. Timco, George F. S. Whitehead, Iñigo J. Vitórica-Yrezábal, Nicholas F. Chilton, Rahul R. Nair, David Collison\* and Richard E. P. Winpenny\*

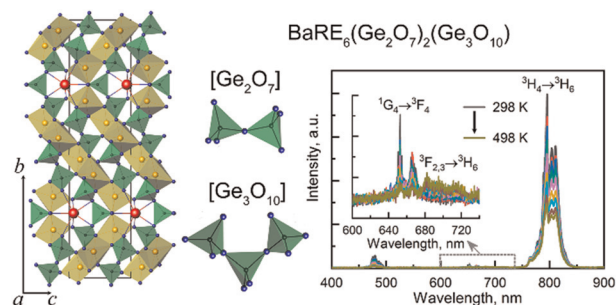




7482

**Structural, electronic and optical properties of  $\text{BaRE}_6(\text{Ge}_2\text{O}_7)_2(\text{Ge}_3\text{O}_{10})$  (RE = Tm, Yb, Lu) compounds and  $\text{BaYb}_6(\text{Ge}_2\text{O}_7)_2(\text{Ge}_3\text{O}_{10}):\text{Tm}^{3+}$  and  $\text{BaLu}_6(\text{Ge}_2\text{O}_7)_2(\text{Ge}_3\text{O}_{10}):\text{Yb}^{3+}, \text{Tm}^{3+}$  phosphors: potential applications in temperature sensing**

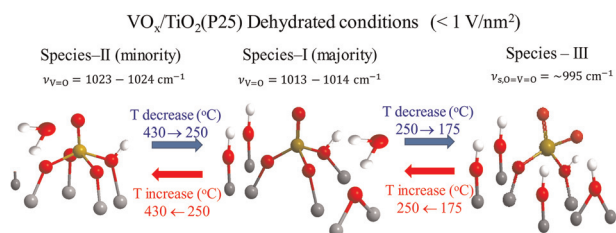
Olga A. Lipina,\* Ludmila L. Surat, Alexander Yu. Chufarov, Inna V. Baklanova, Andrey N. Enyashin, Marina A. Melkozerova, Alexander P. Tyutyunnik and Vladimir G. Zubkov



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**Heterogeneity of the vanadia phase dispersed on titania. Co-existence of distinct mono-oxo  $\text{VO}_x$  sites**

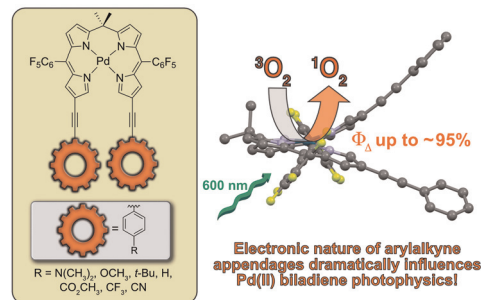
Theocharis Kentri, Athanasios Tsevis and Soghomon Boghosian\*



7512

**Mapping the influence of ligand electronics on the spectroscopic and  $^1\text{O}_2$  sensitization characteristics of Pd(II) biladiene complexes bearing phenyl-alkynyl groups at the 2- and 18-positions**

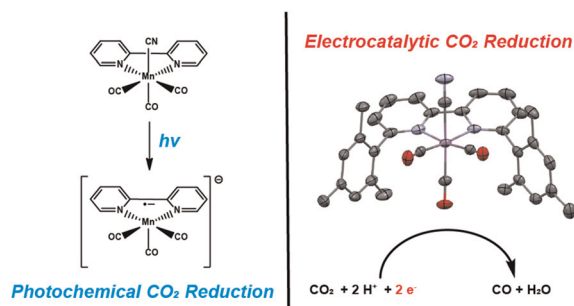
Maxwell I. Martin, Trong-Nhan Pham, Kaytlin N. Ward, Anthony T. Rice, Phoebe R. Hertler, Glenn P. A. Yap, Philip H. Gilmartin and Joel Rosenthal\*



7524

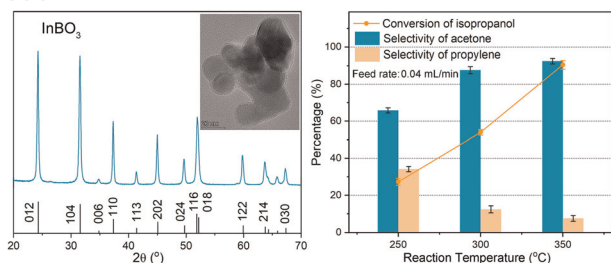
**Mechanistic insights into  $\text{CO}_2$  conversion to CO using cyano manganese complexes**

Kailyn Y. Cohen, Delaan G. Nedd, Rebecca Evans and Andrew B. Bocarsly\*



## PAPERS

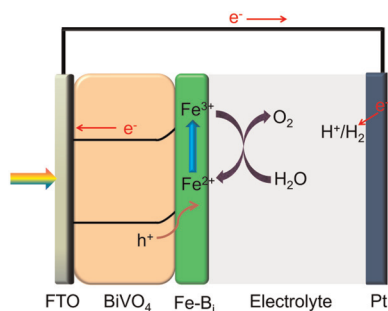
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### A Lewis acid–base paired InBO<sub>3</sub> catalyst: synthesis and high selectivity for isopropanol dehydrogenation

Yurong Sun, Wenliang Gao\* and Tao Yang\*

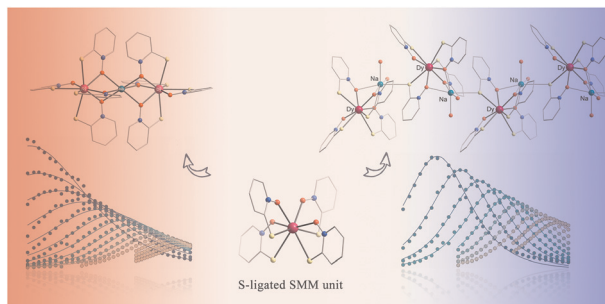
7544



### The impact of iron–boron electrocatalysts on the charge transport and oxygen evolution reaction of bismuth vanadate photoanodes

Yingfei Hu, Qingyuan Hu, Yujia Qi, Wenyang Zhang, Chao Liu, Yuanyuan Wang,\* Hangmin Guan\* and Lingyun Hao

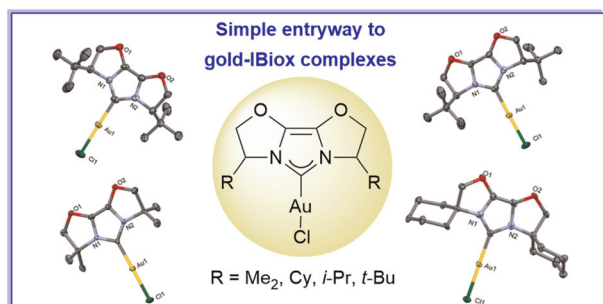
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### Modulation of the magnetic dynamics in two air-stable sulfur-ligated dysprosium complexes via polymerization

Tian Han,\* Xiao-Qin Wang, Tong Guo, Hong-Sheng Cao, Wei-Peng Chen and Ling He

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### Simple synthetic access to [Au(IBiox)Cl] complexes

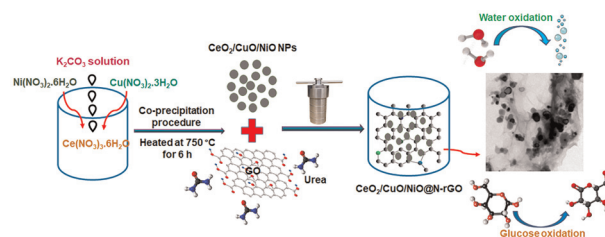
Ekaterina A. Martynova, Marco Zuccarello, Domenic Kronenberg, Marek Beliš, Agnieszka Czapik, Ziyun Zhang, Kristof Van Hecke, Marcin Kwit, Olivier Baudoin,\* Luigi Cavallo\* and Steven P. Nolan\*



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### CeO<sub>2</sub>/CuO/NiO hybrid nanostructures loaded on N-doped reduced graphene oxide nanosheets as an efficient electrocatalyst for water oxidation and non-enzymatic glucose detection

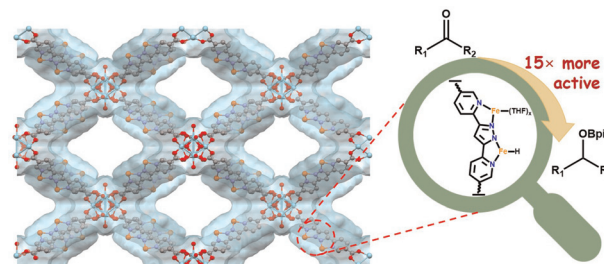
Sahar Jafari and Zohreh Shaghghi\*



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### A metal–organic framework-supported dinuclear iron catalyst for hydroboration of carbonyl compounds

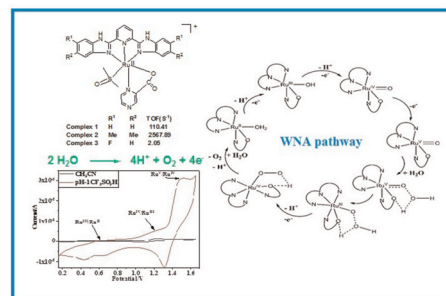
Yi-Jie Zhu, Jun-Jie Wang, Jun-Yu Li and Teng Zhang\*



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### Electrocatalytic water oxidation by heteroleptic ruthenium complexes of 2,6-bis(benzimidazolyl)pyridine Scaffold: a mechanistic investigation

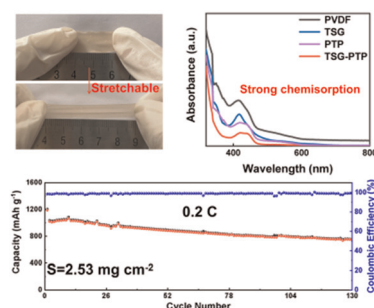
Sahanwaj Khan, Swaraj Sengupta, Md. Adnan Khan, Md. Palashuddin Sk and Subhendu Naskar\*



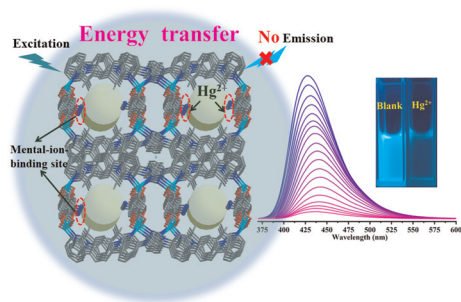
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### A ductile and strong-affinity network binder coupling inorganic oligomers and biopolymers for high-loading lithium–sulfur batteries

Mingxiu Hou, Jie Liu,\* Fengli Yu and Lei Wang\*



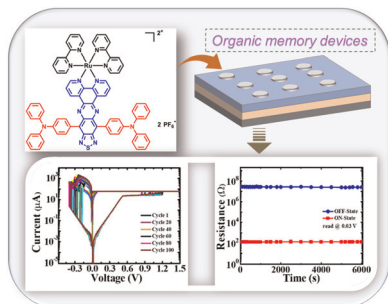
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### A water stable and highly fluorescent Zn(II) based metal–organic framework for fast detection of Hg<sup>2+</sup>, Cr<sup>VI</sup>, and antibiotics

Chaoxing Li, Xuancheng Sun, Xianggao Meng,\*  
Dunjia Wang and Chunyang Zheng\*

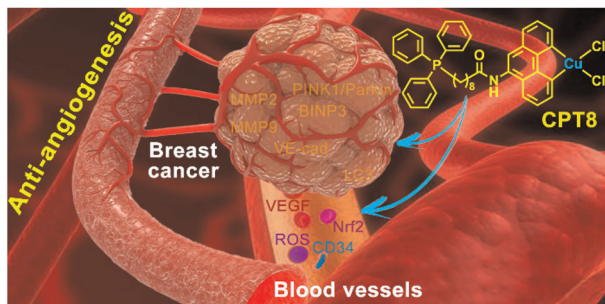
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### Rational design of a Ru(II) complex with a donor–acceptor–donor structure for organic resistive memory devices

Mengzhu Wang, Nan He, Runze Tang, Feiyang Li,  
Shujuan Liu, Feng Xu, Jian Zhao,\* Yi Tong\* and  
Qiang Zhao\*

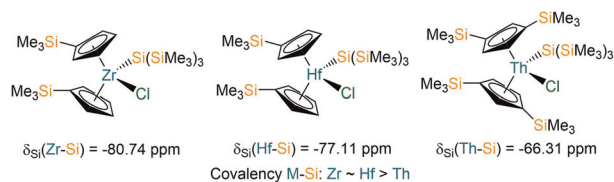
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### A copper complex that combats triple negative breast cancer by restraining angiogenesis

Huixian Zheng, Chaoyi Hu, Yunyun Quan, Xiaoxia Ye,\*  
Xiangchao Shi,\* Zijian Guo and Xiaoyong Wang\*

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### Comparison of group 4 and thorium M(IV) substituted cyclopentadienyl silanide complexes

Benjamin L. L. Réant, Dukula De Alwis Jayasinghe,  
Ashley J. Wooles, Stephen T. Liddle\* and David P. Mills\*



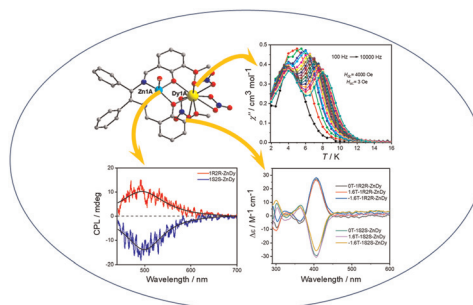


## PAPERS

7646

## Circularly polarized luminescence and magneto-optic effects from chiral Dy(III) single molecule magnets

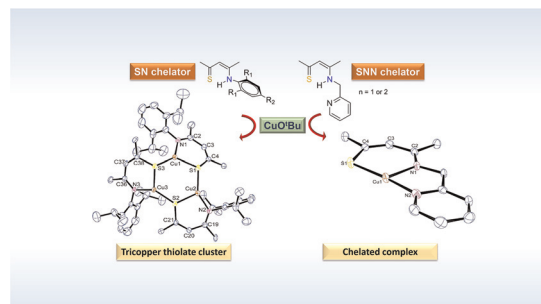
Hong Huang, Rong Sun, Xiao-Fan Wu, Youchao Liu, Jun-Zheng Zhan, Bing-Wu Wang\* and Song Gao\*



7652

Denticity governs the formation of  $\beta$ -thiokeiminato tri-copper(I) and mono-copper(I) complexes

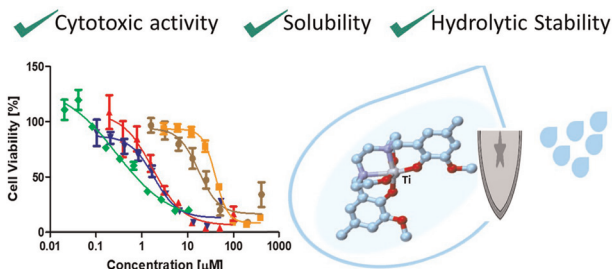
Venkata Sai Sashankh Penki, Yu-Lun Chang, Hsing-Yin Chen, Yu-Ting Chu, Yu-Ting Kuo, Dorothy Priyanka Dorairaj, Sri Sudewi, Shang-Wu Ding and Sodio C. N. Hsu\*



7664

## Phenolato Ti(IV) hexacoordinate complexes for anticancer chemotherapy: enhancement of solubility, hydrolytic stability, and cytotoxicity

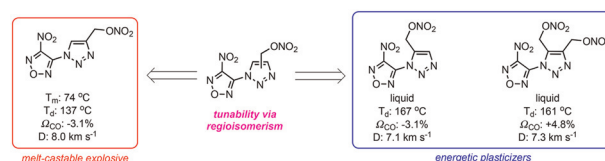
Mohammad Taha and Edit Y. Tshuva\*



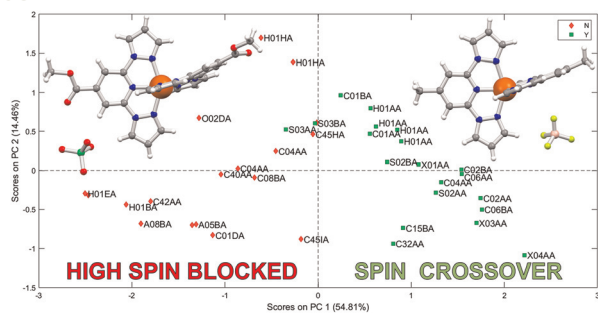
7673

## Impact of regiochemistry in energetic materials science: a case of (nitratomethyl-1,2,3-triazolyl) furazans

Margarita A. Epishina, Alexander S. Kulikov, Ivan V. Ananyev, Aleksei A. Anisimov, Konstantin A. Monogarov and Leonid L. Fershtat\*



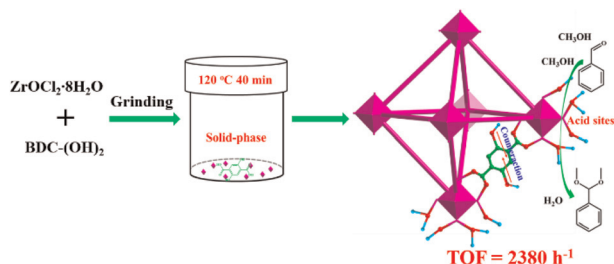
7684



### A proficient multivariate approach for iron(II) spin crossover behaviour modelling in the solid state

Lorenzo Marchi, Simone Fantuzzi, Andrea Cingolani, Alessandro Messori, Rita Mazzoni, Stefano Zacchini, Marina Cocchi and Luca Rigamonti\*

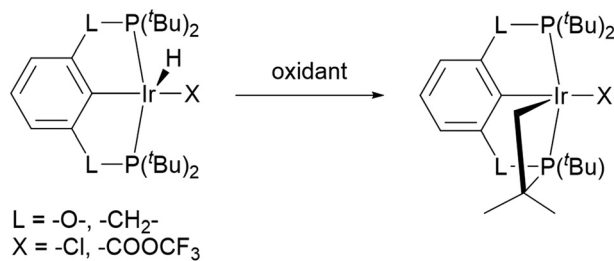
7695



### Solid-phase rapid synthesis of hierarchical UiO-type metal–organic frameworks as excellent solid acid catalysts for acetalization of benzaldehyde with alcohol

Gan Ye,\* Lulu Wan, Jun Zhou, Lei Wu and Qiuli Zhang\*

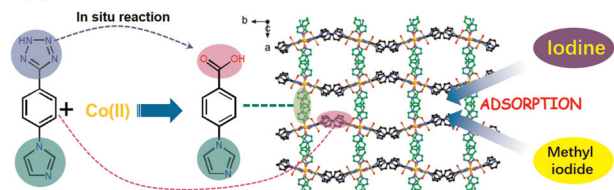
7701



### Oxidation-induced C–H bond activation in iridium pincer complexes

Alexey V. Polukeev\* and Magdalena Tasić

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### A mixed-ligand Co(II) MOF synthesized from a single organic ligand to capture iodine and methyl iodide vapour

Yilong Lin, Panyu Zeng, Die Wang, Tian-Tian Li,\* Liang-Hua Wu and Sheng-Run Zheng\*

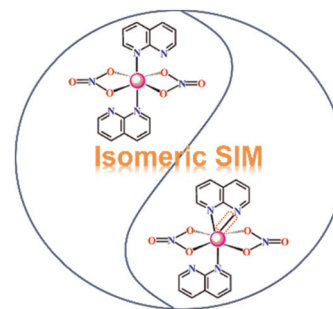


## PAPERS

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## Magnetic properties of two coordination isomeric cobalt(II) single-ion magnets

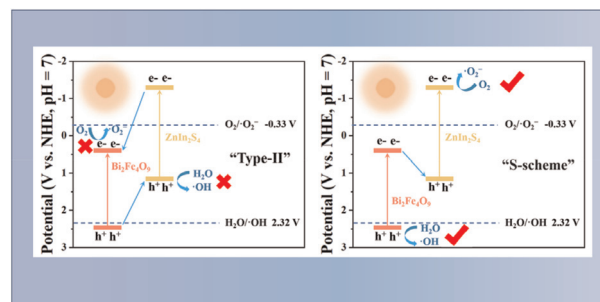
Hui-Hui Cui,\* Hong-Juan Xu, Tengkun Zhang, Shuchang Luo,\* Wei Tong, Miao Wang, Jin Wang, Lei Chen and Yanfeng Tang\*



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Bi<sub>2</sub>Fe<sub>4</sub>O<sub>9</sub>@ZnIn<sub>2</sub>S<sub>4</sub> S-scheme laminated hetero-junction photocatalyst towards optimized photocatalytic performance

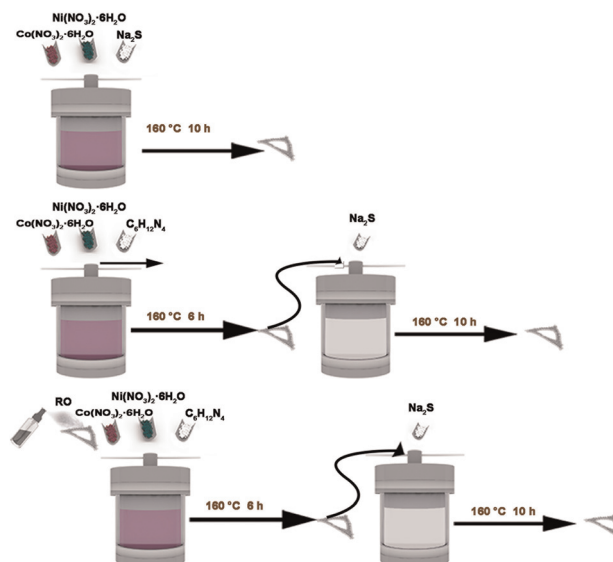
Chunxu Wu, Zipeng Xing,\* Yichao Wang, Hui Peng, Weifeng Kong, Shilin Yang,\* Zhenzi Li and Wei Zhou\*



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A cycle-durable hollow nanoneedle structure with a nanosheet as a conductive substrate CoS<sub>1.097</sub>/Ni<sub>9</sub>S<sub>8</sub>@RGO to enhance supercapacitor performance

Yanmin Wang, Chong Sun, Hu Zhao, Jinlong Cui, Yongqiang Zhang\* and Wenxiu He\*



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## Donor–acceptor bridge 2,5-bis(2-oxido-phenyl)thiazolo-[5,4-d]thiazole derived diruthenium and diosmium systems. Structural and competitive electronic events as a function of metal ion, bridge and ancillary ligand

Suman Dhara, Sarbajeet Chakraborty, Liton Seikh and Goutam Kumar Lahiri\*

