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ISSN 1477-9226 CODEN DTARAF 52(15) 4619–4986 (2023)



**Cover**  
See Toshiharu Ishizaki and Tomoji Ozeki, pp. 4678–4683.

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**Inside cover**  
See Cristián Cuerva, Rainer Schmidt *et al.*, pp. 4684–4691.

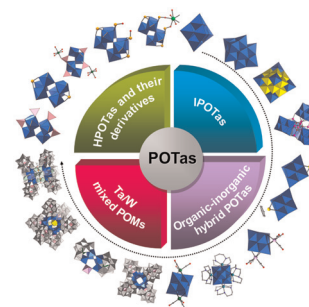
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Zongfei Yang, Jing Li, Jingyang Niu\* and Jingping Wang\*

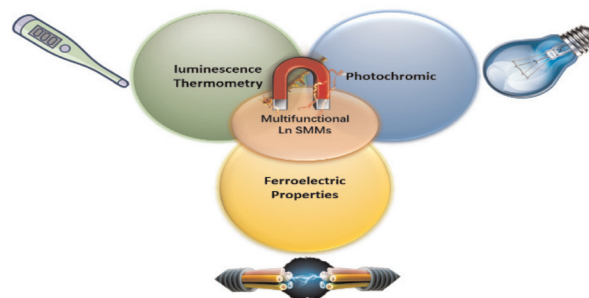


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### Multifunctional lanthanide-based single-molecule magnets exhibiting luminescence thermometry and photochromic and ferroelectric properties

Ji-Tun Chen, Teng-Da Zhou and Wen-Bin Sun\*



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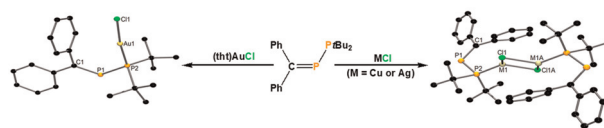


## COMMUNICATIONS

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### Group 11 complexes with a phosphanylphosphaalkene ligand: preparation and stability study

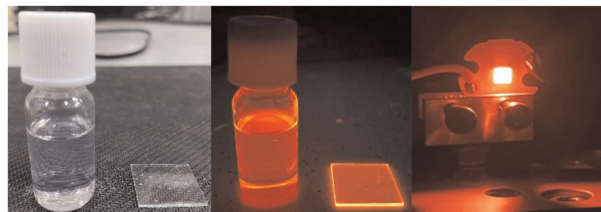
A. Ziótkowska, N. Szykiewicz, J. Ryl and Ł. Ponikiewski\*



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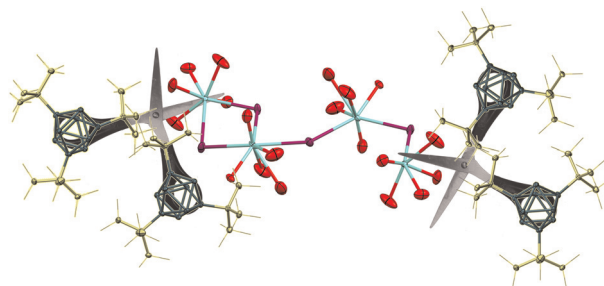
Qiulin Cao, Mengxin Liu, Xinan Shi, Zhan Ni, Bo Li, Chengzeng Lu and Daocheng Pan\*



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### Metalloid germanium cluster shears for lanthanide diiodides

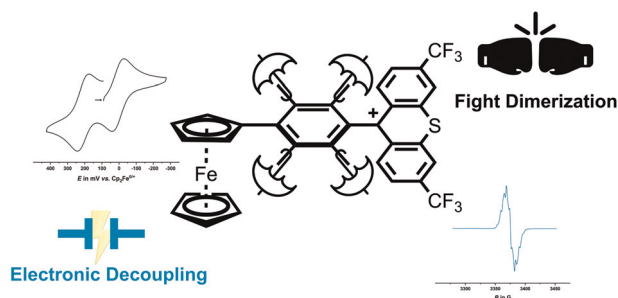
Svetlana V. Klementyeva,\* Claudio Schrenk, Minghui Zhang and Marat M. Khusniyarov



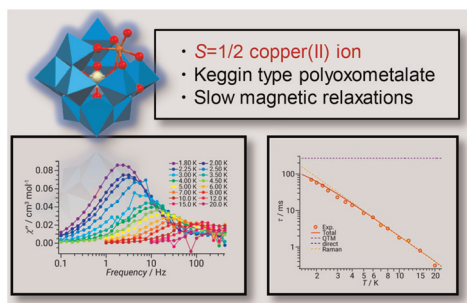
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Moritz Nau, Larissa A. Casper, Gernot Haug, Michael Linseis, Serhiy Demeshko and Rainer F. Winter\*



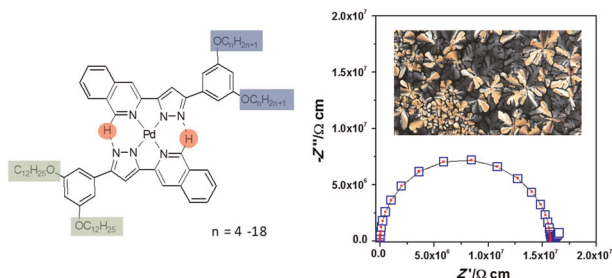
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### Slow magnetic relaxation of a $S = 1/2$ copper(II)-substituted Keggin-type silicotungstate

Toshiharu Ishizaki\* and Tomoji Ozeki\*

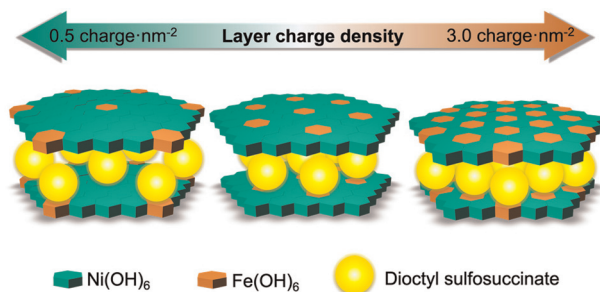
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### Improving the mesomorphism in bispyrazolate Pd(II) metallomesogens: an efficient platform for ionic conduction

Cristián Cuerva,\* Mercedes Cano and Rainer Schmidt\*

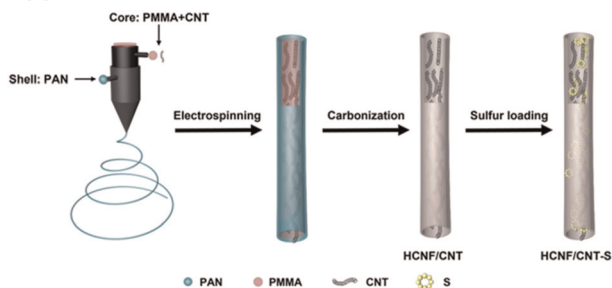
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Rattanawadee Ploy Wijitwongwan, Taya Ko Saothayanun and Makoto Ogawa\*

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Chenshan Lv, Hailiang Cao,\* Wei Deng, Min Zhao, Yanqin Miao,\* Chunli Guo, Peizhi Liu and Yucheng Wu\*

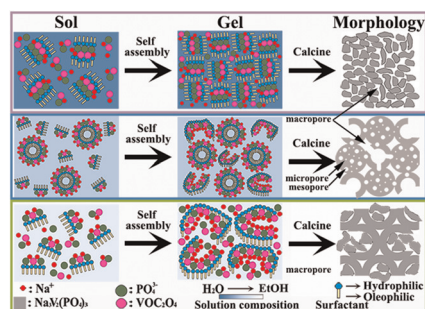


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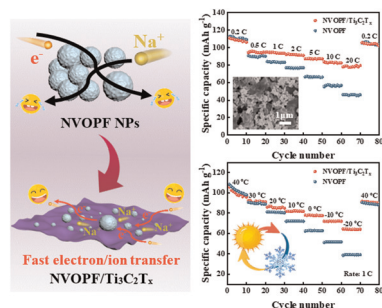
Zhaoyang Wang,\* Jiaxuan Han, Dong Wang, Lingyang Liu, Wenjing Shi, Fangyu Xiong\* and Haizheng Tao\*



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### Conductive $\text{Ti}_3\text{C}_2\text{T}_x$ networks to optimize $\text{Na}_3\text{V}_2\text{O}_2(\text{PO}_4)_2\text{F}$ cathodes for improved rate capability and low-temperature operation

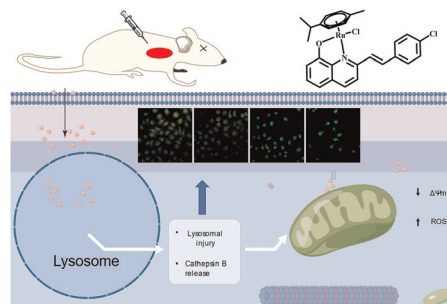
Lufeng Yue, Jie Wang, Minxi Li, Jinwen Qin\* and Minhua Cao\*



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### *In vitro* and *in vivo* antitumor activity of novel half-sandwich ruthenium complexes containing quinoline derivative ligands

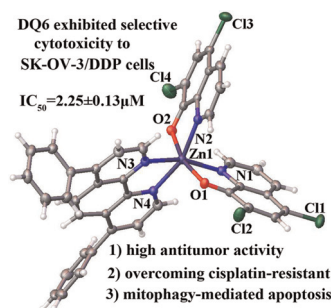
Xiangdong He, Jun Chen, Martha Kandawa-Shultz, Guoqiang Shao\* and Yihong Wang\*



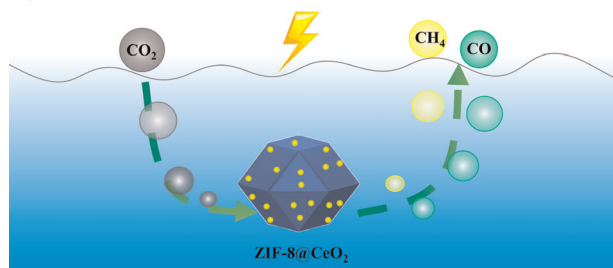
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Ling-Qi Du, Tian-Yu Zhang, Xiao-Mei Huang, Yue Xu, Ming-Xiong Tan,\* Yan Huang, Yuan Chen\* and Qi-Pin Qin\*



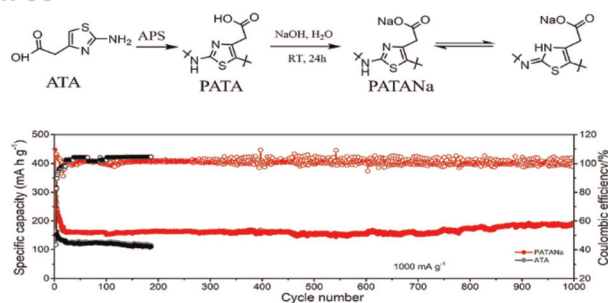
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### Assembling CeO<sub>2</sub> nanoparticles on ZIF-8 via the hydrothermal method to promote the CO<sub>2</sub> photoreduction performance

Yuxin Zhang, Feifan Lang,\* Yujie Zhao and Hongwei Hou\*

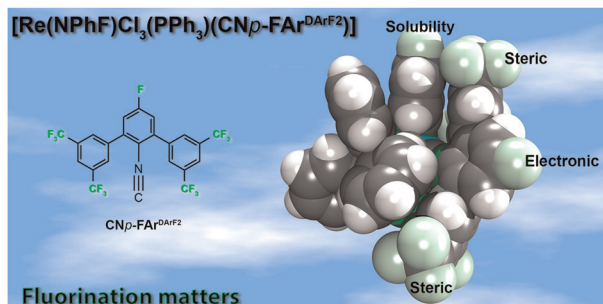
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Hongwei Kang, Yanrui Pang, Quanwei Ma, Rencheng Jin, Jing Li,\* Hongbao Li, Longhai Zhang,\* Yuhuan Dong, Jixiang Yue and Chaofeng Zhang\*

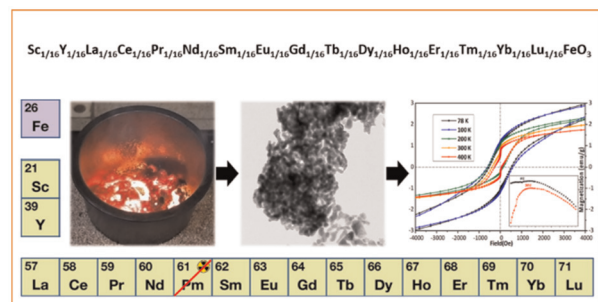
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Guilhem Claude, Erika Kulitzki, Adelheid Hagenbach, Maximilian Roca Jungfer, Joshua S. Figueroa\* and Ulrich Abram\*

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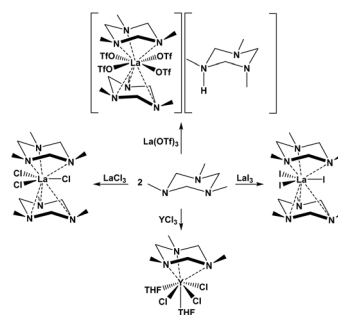


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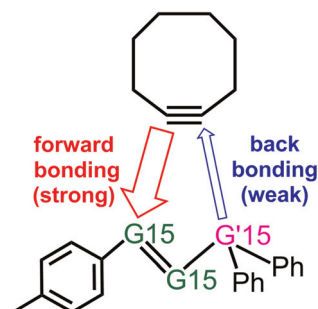
Justin C. Wedal, Joseph W. Ziller and William J. Evans\*



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## Influence of Group 15 elements on the [3 + 2] cycloaddition reactivity of G15 = G15–G15-based 1,3-dipoles with cyclooctyne

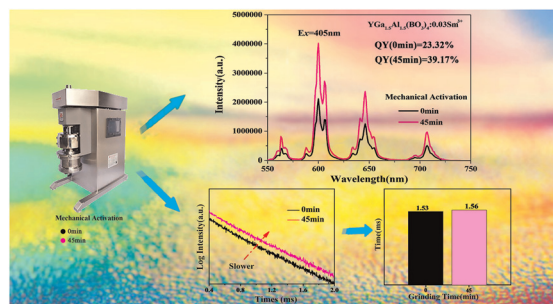
Zheng-Feng Zhang and Ming-Der Su\*



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Synthesis of a Sm<sup>3+</sup>-doped YGa<sub>1.5</sub>Al<sub>1.5</sub>(BO<sub>3</sub>)<sub>4</sub> phosphor via a mechanical activation-assisted solid-state reaction

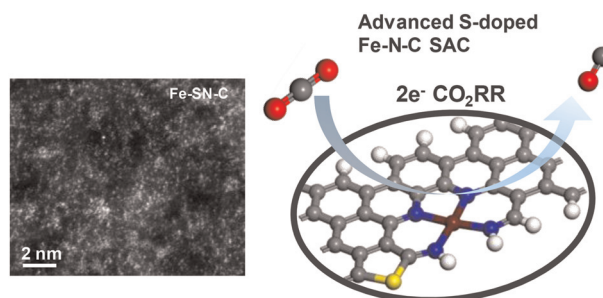
Xiujian Zhao, Yanmin Wang,\* Zhidong Pan, Youjun Lu, Junhao Li\* and Mingmei Wu



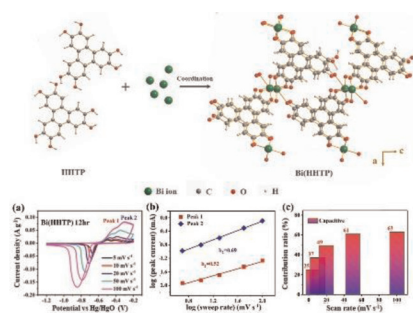
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Regulating the d-band electrons of the Fe–N–C single-atom catalyst for high-efficiency CO<sub>2</sub> electroreduction by electron-donating S-doping

Yiqun Chen, Qinghua Gong, Xuefeng Sun, Guochang Li\* and Guowei Zhou\*



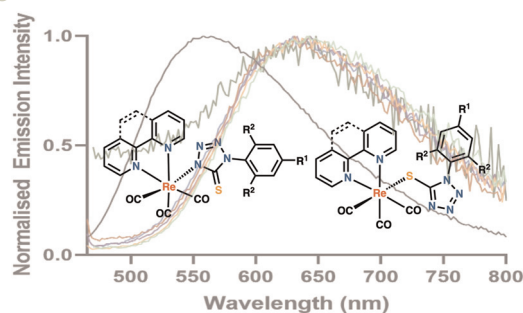
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Si Chen, Haoliang Zhang, Xu Li, Yong Liu, Mingyi Zhang, Xiangyang Gao, Xin Chang, Xiangjun Pu and Chunqing He\*

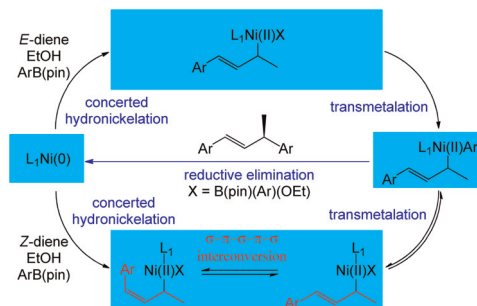
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Liam J. Stephens, Elena Dallerba, Jenisi T. A. Kelderman, Aviva Levina, Melissa V. Werrett, Peter A. Lay, Massimiliano Massi\* and Philip C. Andrews\*

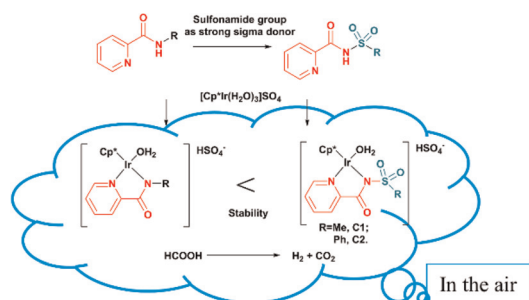
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### Understanding the mechanism and origins of stereoconvergence in nickel-catalyzed hydroarylation of 1,3-dienes with aryl boronates

Keke Wang, Hui Xu and Yanfeng Dang\*

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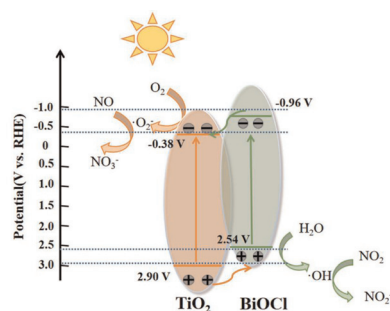
Jian Guo, Maoliang Li, Chengkai Yin, Xiaobin Li, Yilin Wang, Jingcheng Yuan and Tianguai Qi\*



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### Construction of a TiO<sub>2</sub>/BiOCl heterojunction for enhanced solar photocatalytic oxidation of nitric oxide

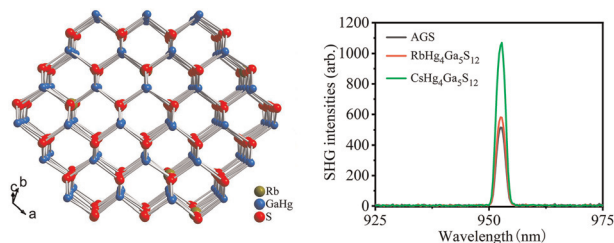
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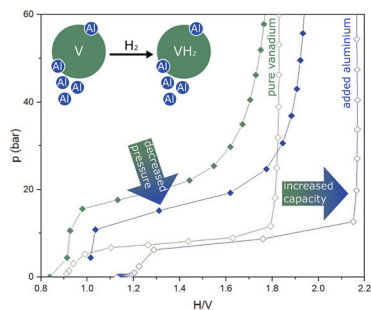
Xiao-Yu Lou, Yu Zhou, Wen-Fa Chen, Xiao-Ming Jiang, Bin-Wen Liu\* and Guo-Cong Guo\*



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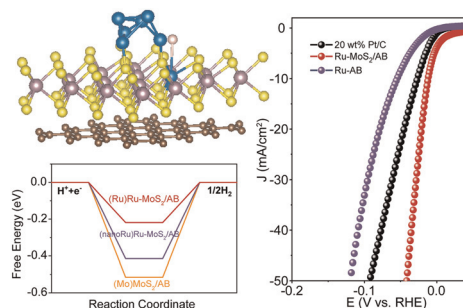
Franziska Habermann, Konrad Burkmann, Bastian Hansel, Bianca Störr, Christian Schimpf, Jürgen Seidel, Martin Bertau and Florian Mertens\*



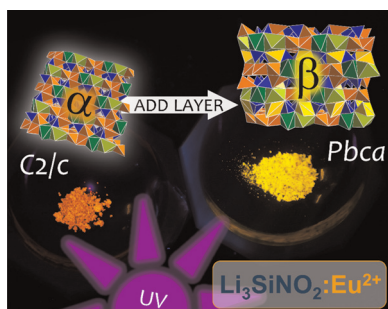
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### Ruthenium doping in the MoS<sub>2</sub>/AB heterostructure for the hydrogen evolution reaction in acidic media

Haowen Ren, Shihong Chen, Chong Chen, Yang Qiu, Chunhui Luo, Qiang Zhao\* and Wei Yang\*



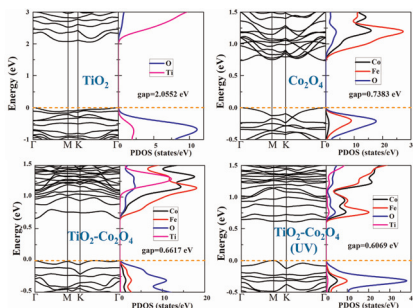
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### Polymorphism and polymorph-dependent luminescence properties of the first lithium oxonitridolithosilicate $\text{Li}_3\text{SiNO}_2:\text{Eu}^{2+}$

Kilian M. Rießbeck, Daniel S. Wimmer, Markus Seibald, Dominik Baumann, Klaus Wurst, Gunter Heymann and Hubert Huppertz\*

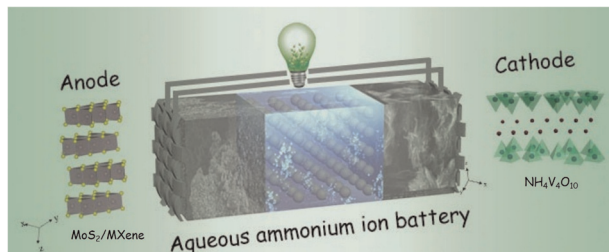
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### Experimental and density functional study of the light-assisted gas-sensing performance of a $\text{TiO}_2\text{-CoFe}_2\text{O}_4$ heterojunction

Wenhao Wang, Lu Zhang,\* Yanli Kang, Xiaodong Yang,\* Shenguang Ge and Feng Yu\*

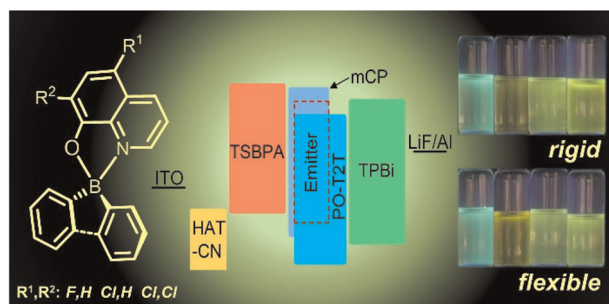
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### Aqueous rechargeable ammonium ion batteries based on $\text{MoS}_2/\text{MXene}$ with a ball-flower morphology as an anode and $\text{NH}_4\text{V}_4\text{O}_{10}$ with a layered structure as a cathode

Xue Bai, Jiahua Yang, Fengying Zhang, Zhuwu Jiang,\* Fengyi Sun, Chuntao Pan, Hongcheng Di, Shining Ru, Dongqi Liao and Hongyu Zhang\*

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Carina B. Fialho, Tiago F. C. Cruz, Ana I. Rodrigues, Maria José Calhorda, Luís F. Vieira Ferreira, Piotr Pander, Fernando B. Dias, Jorge Morgado, António L. Maçanita and Pedro T. Gomes\*

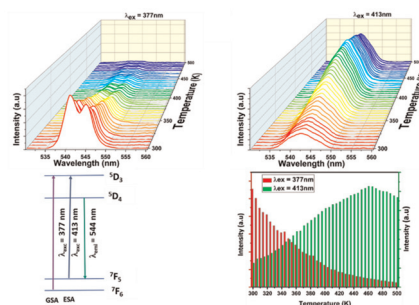


## PAPERS

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### Ultrasensitive optical thermometry using Tb<sup>3+</sup> doped NaSrGd(MoO<sub>4</sub>)<sub>3</sub> based on single band ratiometric luminescence

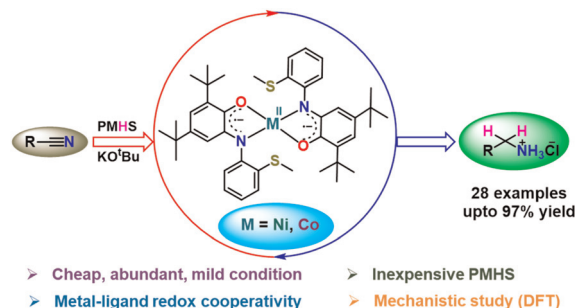
Zein El Abidine Aly Taleb, Kamel Saidi,\*  
Mohamed Dammak, Dominika Przybylska and  
Tomasz Grzyb



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### Ligand–metal cooperativity in quinonoid based nickel(II) and cobalt(II) complexes for catalytic hydrosilylative reduction of nitriles to amines: electron transfer and mechanistic insight

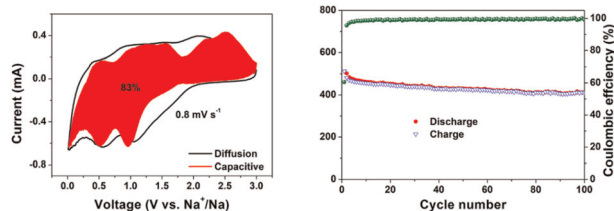
Krishnendu Paramanik, Nilaj Bandopadhyay,  
Gayetri Sarkar, Souvik Chatterjee, Suvojit Roy,  
Subhra Jyoti Panda, Chandra Shekhar Purohit,  
Bhaskar Biswas\* and Hari Sankar Das\*



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### Carbon coated heterojunction CoSe<sub>2</sub>/Sb<sub>2</sub>Se<sub>3</sub> nanospheres for high-efficiency sodium storage

Gongqiang Li, Meng Song, Xiao Zhang,\* Yanfang Sun\*  
and Jinxue Guo\*



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### A 5.3 nm giant metal–organic cage and its supramolecular gel for the formation of dye molecular ionic pairs

Kaixiu Li, Jian Huang, Shi-Cheng Wang, Zhengguang Li,  
Jun Wang, Yiming Li, Mingzhao Chen, Yi-Tsu Chan,  
Die Liu\* and Pingshan Wang\*

