

# Dalton Transactions

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## IN THIS ISSUE

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**Cover**  
See Suguru Iwasaki, Masaya Fujioka *et al.*, pp. 4772–4779.

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**Inside cover**  
See Prashurya Pritam Mudoi *et al.*, pp. 4780–4791.

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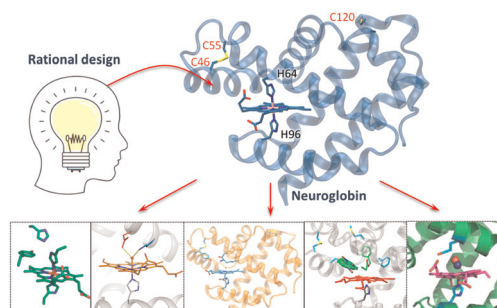
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## PERSPECTIVE

4763

### Rational design and applications of artificial metalloenzymes based on neuroglobin

Li-Juan Sun and Ying-Wu Lin\*

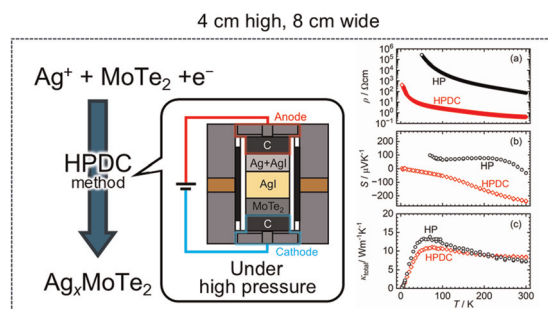


## PAPERS

4772

### Introduction of Ag ions into 2H-MoTe<sub>2</sub> via the high-pressure diffusion control method

Suguru Iwasaki,\* Melbert Jeem, Akitoshi Nakano and Masaya Fujioka\*



# EES Catalysis

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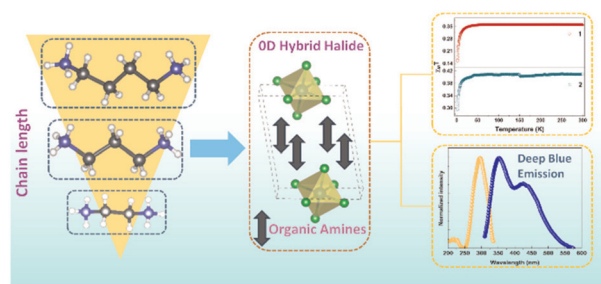
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Fundamental questions  
Elemental answers

4780

### Deciphering cation-driven structure–property correlations in 0D hybrid ruthenium halide perovskites

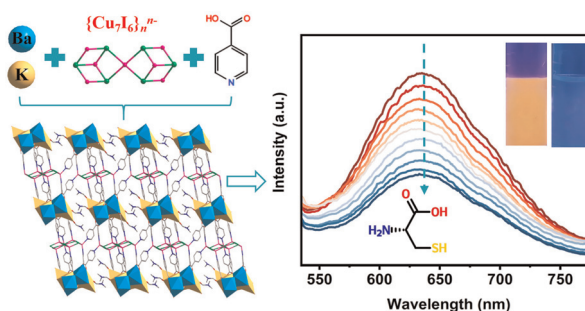
Himangshu Pratim Saikia, Ankita Likson, Khyati Anand, Bidyut Das, Abinash Tiwari, Sandeep Kumar Dey, Beatriz Gil-Hernández and Prashurya Pritam Mudoi\*



4792

### A series of CuX (X = Br and I) units bearing Ba-MOFs: structures, fluorescence and sensing properties

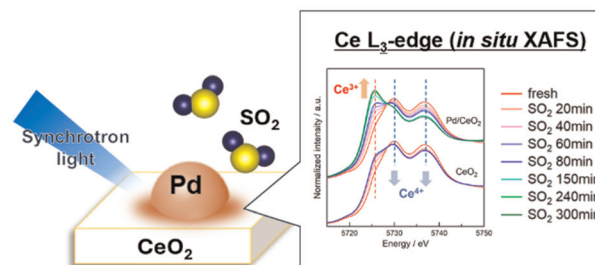
Can Peng, Sheng-Mao Zhang, Jin-Mei Liu, Nian-Hao Wang, Lin-Xu Tian, Xue-Hao Ping, Jia-Jing Zhao, Zhao-Feng Wu\* and Xiao-Ying Huang\*



4802

### Structural transformation and redox chemistry of Pd/CeO<sub>2</sub> during SO<sub>2</sub>-induced sulfurization: an *in situ* XAFS study

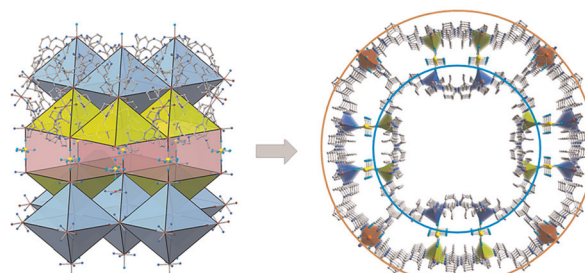
Saki Shigenobu, Takeharu Sugiyama, Hajime Hojo and Hisahiro Einaga\*



4813

### Formation and tuning of a pillar porous-layered framework into a pillar double-channelled framework

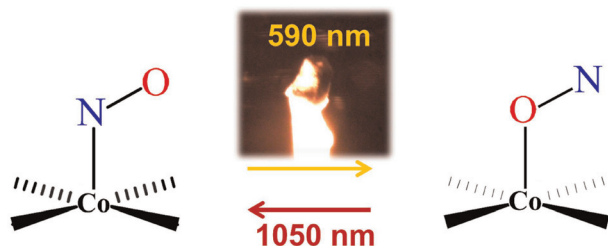
Shuang Liu, Chunze Yu, Sidan Geng and Jingui Duan\*



Evolution of a pillar porous-layered framework into a pillar double-channelled framework



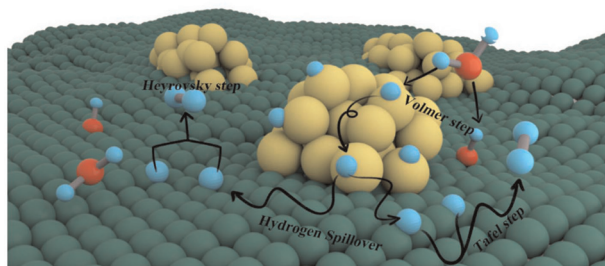
4821



### NO photoswitches: a single photoinduced linkage isomer in diamagnetic $\{MNO\}^8$ complexes

Artem A. Mikhailov, Axel Gansmüller, Asma Hasil, Sébastien Pillet, Gennadiy Kostin, Guillaume Chastanet, Theo Woike and Dominik Schaniel\*

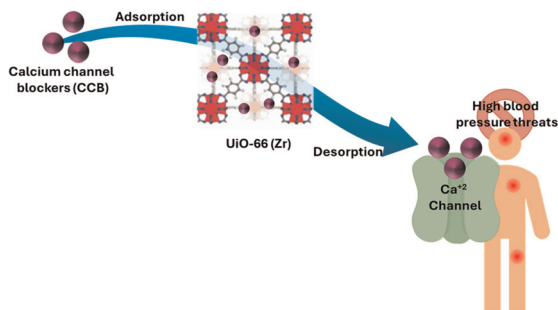
4832



### Developing $Ni_3N/NiO$ heterostructure catalysts to enhance the hydrogen evolution reaction in an alkaline medium via a surface-dependent mechanism

Fangfang Liu, Shan Ji,\* Yongwei Li, Zhihao Fang, Vladimir Linkov, Yucheng Dong\* and Hui Wang\*

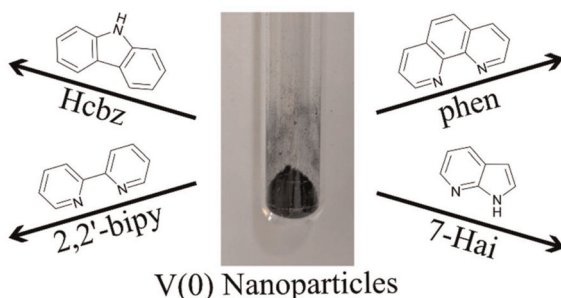
4841



### Rational development of a drug-delivery device based on MOF UiO-66 for calcium-channel-blocker drugs

Javier Salazar-Muñoz,\* Yoan Hidalgo-Rosa, Pia C. Burboa, Cesar Pazo, Yazmin Arellano, Camila Le-Roy, Jaime Llanos, Yi-nan Wu, Néstor Escalona, Ximena Zarate and Eduardo Schott\*

4856



### Homoleptic complexes of vanadium and N-heterocycles made via oxidation of vanadium nanoparticles

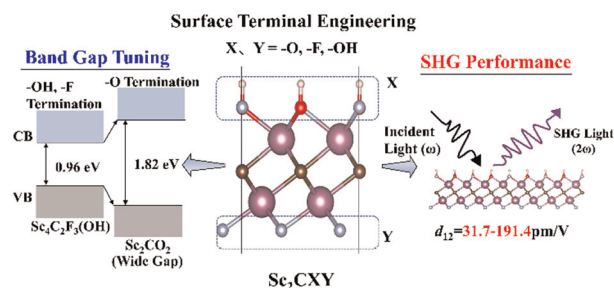
Lena Baumgärtner and Claus Feldmann\*



4867

### Tailoring linear and nonlinear optical properties of 2D $\text{Sc}_2\text{C}$ MXenes via surface termination modulation

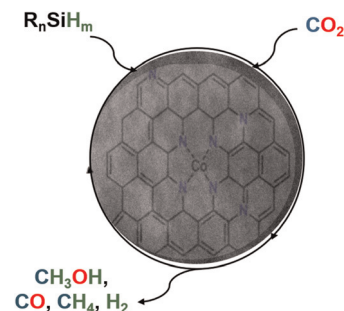
Zehui Fang, Yantong Lu, Ling Ren, Hua Lin,\* Rongjian Sa and Zuju Ma\*



4876

### Carbon dioxide hydrogenation with cobalt catalysts (Co–N–C) using organosilanes as hydrogen sources

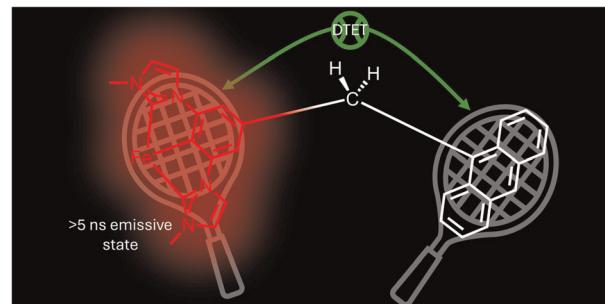
Yanin Álvarez-Briseño, Marco García-Corral, Hugo Carcaño-Morales, Paola Aguillón-Rodríguez, Lázaro Huerta and Carmen Ortiz-Cervantes\*



4885

### Reservoir effect in bichromophoric $\text{Fe}^{\text{III}}$ complexes with a methylene bridge

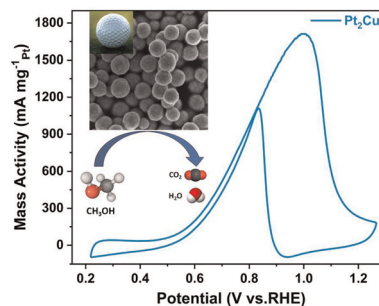
Lennart Schmitz, Samira Dabelstein, Miguel A. Argüello Cordero, Lorena Fritsch, Bastian Bracht, Roland Schoch, Hans Egold, Jakob Steube, Felix Fischer, Stefan Lochbrunner and Matthias Bauer\*



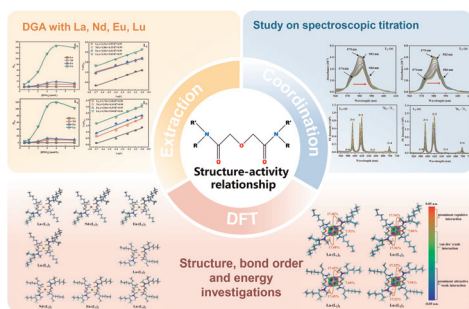
4896

### Facile synthesis of golf ball-like Pt–Cu nanospheres as an electrocatalyst for high-efficiency methanol oxidation

Chao Zhang, Kunhui Lin, Jiangbin Guo,\* Jing Xu,\* Jun Fang, Shuiyuan Luo, Junqiu Zhu and Yanqun Shao\*



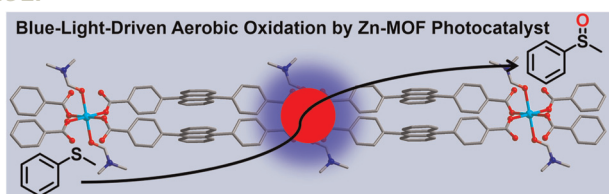
4904



### Interplay of steric hindrance and electronic effects in asymmetric diglycolamides revealed through their Ln(III) coordination and extraction behavior

Chuang Zhao, Jiale Song, Yaoyang Liu, Yu Zhou, Tingting Liu, Meng Zhang, Caishan Jiao, Yang Gao,\* Qunyan Wu and Weifang Zheng\*

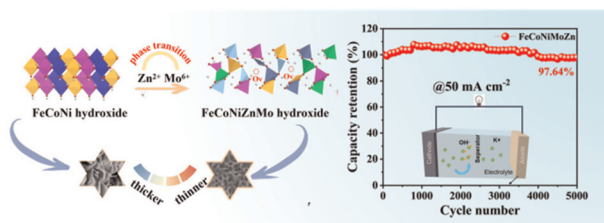
4917



### Blue-light-driven aerobic oxidation via a superoxide radical-generating zinc(II)-organic framework photocatalyst

Jing Zhu, Yumeng Zhang, Juanle Zhang, Changchun Liu, Xiaoxing Ma and Junan Ma\*

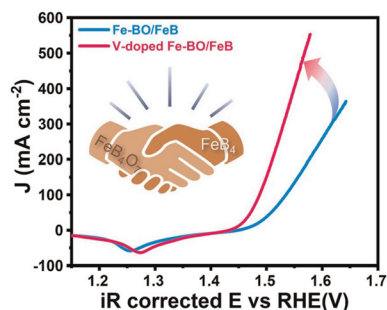
4924



### Zn<sup>2+</sup>/Mo<sup>6+</sup> modulated phase structure and morphology of FeCoNi high-entropy hydroxide for boosted supercapacitor electrode performance

Bing Wu, Yunchan Zhou, Zhongning Shi, Hongbin Sun and Junli Xu\*

4932



### Amorphous vanadium-doped iron borate/tetraboride hybrid as an efficient electrocatalyst for the oxygen evolution reaction

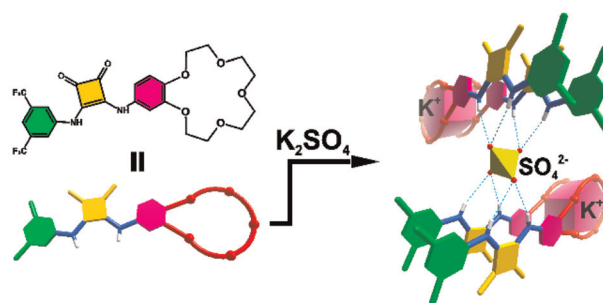
Tanbir Ahmed, Santanu Pal, Nibedita Sinha, Chandni Das and Poulomi Roy\*



4941

### Competing but coexisting: sulfate- and potassium-induced supramolecular motifs in squaramide-based receptor complexes

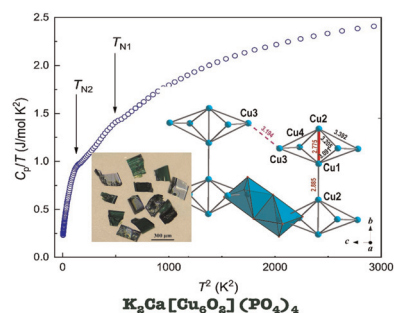
Damian Jaglenieć, Marcin Wilczek, Łukasz Dobrzycki, Tomasz Marmur, Kamil Marcisz and Jan Romański\*



4951

### Crystal structure and physical properties of shchurovskyite-related $K_2CaCu_6O_2(PO_4)_4$

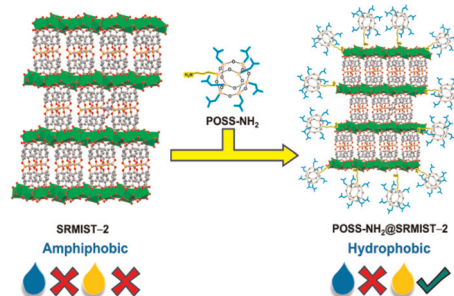
G. V. Kiriukhina,\* O. V. Yakubovich, L. V. Shvanskaya and A. N. Vasiliev



4961

### Surface engineering of SRMIST–2 using amine-functionalized polyhedral oligomeric silsesquioxane for tunable wettability and sustainable oil–water separation

Sankar Sathish, Arunkumar Chinnusamy, Kesavan Muthu and Swaminathan Shanmugan\*



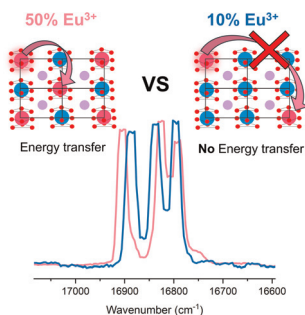
4977

### Amidines: a deeper look at the archetypal pro-ligand

Matthew de Vere-Tucker, Imogen Squire, Michelangelo Tritto, Rohil Anandkar, Tayyibah Syeda, Divia Uthayan, Gabrielle Aguila, Lygia Silva de Moraes and Clare Bakewell\*



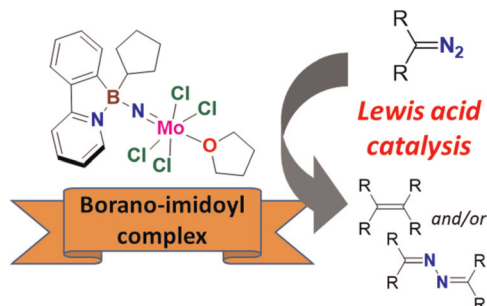
4988



### Eu<sup>3+</sup> doped Y<sup>3+</sup> dipicolinate crystals: differences in the luminescence spectra and concentration quenching of Eu<sup>3+</sup> luminescence

Sabina Svava Mortensen\* and Thomas Just Sørensen

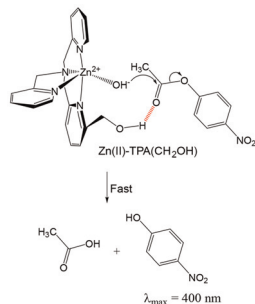
4997



### Molybdenum(vi) borano-imido complexes and their application as Lewis acid catalysts in homocoupling of diazo compounds

Karel Škoch,\* Michaela Buziková, Michal Jakubczyk, Krishna Pattanamcheril Anilkumar, Jan Demel and Miroslava Litecká

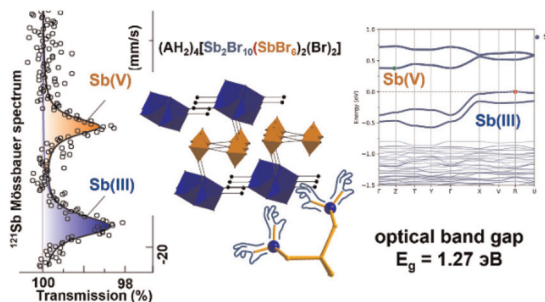
5004



### Single-site hydrogen-bond modulation enhances catalytic ester hydrolysis in a Zn(II)-TPA scaffold

Han Sol Kim and Soo Suk Lee\*

5013



### Tailoring in-gap states for optimizing the band gap in mixed-valent bromometallates, towards lead-free photovoltaics

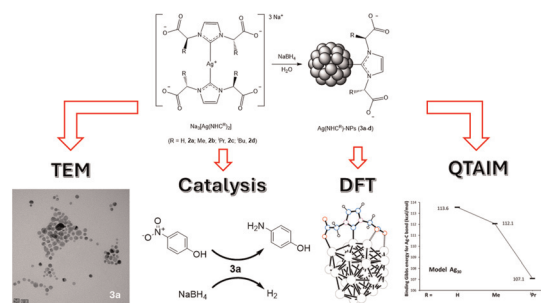
Tatiana A. Shestimerova, Angelina P. Klykova, Alexey V. Medved'ko, Victor N. Khrustalev, Mikhail A. Bykov, Denis A. Pankratov, Igor A. Presniakov, Alexey N. Kuznetsov, Sergey Z. Vatsadze and Andrei V. Shevelkov\*



5027

### Water-soluble silver nanoparticles stabilized by amino acid-derived N-heterocyclic carbenes: synthesis, properties and theoretical study of the nucleation process

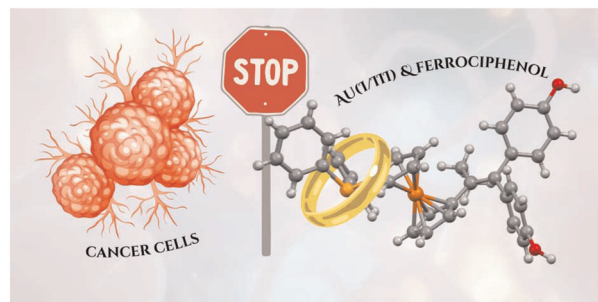
Carlos J. Carrasco, Regla Ayala, Sara Garrido, Francisco Montilla\* and Agustín Galindo



5038

### Combining gold(I/III) complexes and the ferrociphenol scaffold for the generation of bimetallic complexes with anticancer activity

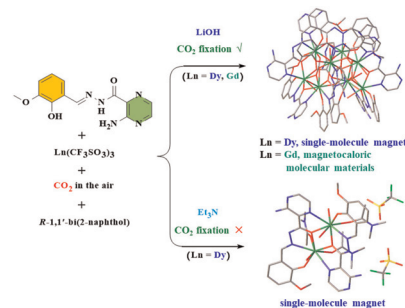
Magda Křelinová, Jérémy Forté, Tom Lacoma, Giulia Annesi, Alessandra Folda, Maria Pia Rigobello, Michèle Salmain, Petr Štěpnička, Jiří Schulz\* and Benoît Bertrand\*



5055

### Fixing CO<sub>2</sub> from the air to assemble Dy<sub>8</sub> zero-field single-molecule magnets and Gd<sub>8</sub> magnetocaloric molecular materials

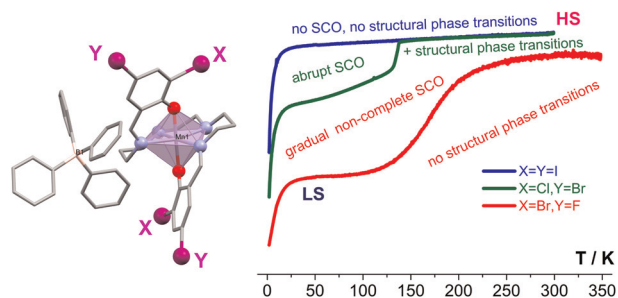
Cai-Ming Liu\* and Xiang Hao



5064

### Dihalogen-substituted [Mn<sup>III</sup>(3,5-diHal-sal<sub>2</sub>323)]BPh<sub>4</sub> salts: so similar but so different

D. V. Korchagin,\* G. V. Shilov, M. V. Zhidkov, A. I. Dmitriev, A. V. Paliy, E. B. Yagubskii and S. M. Aldoshin



## CORRECTION

5075

**Correction: Catalytic degradation of *N*-acyl-homoserine lactone using a copper complex of a TACN derivative: implications for quorum sensing interference**

Denisa Skurková, Hanna Zhukouskaya, Michaela Buziková, Andrii Mahun, Livia Kanizsová, Miroslav Vetrík, Jan Kotek, Martin Hrubý\* and Tomáš Tobrman\*

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