

# Dalton Transactions

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## IN THIS ISSUE

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**Cover**  
See Briana R. Schrage *et al.*,  
pp. 586–593.

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**Inside cover**  
See Lígia C. Gomes-da-Silva, Andreia Valente *et al.*,  
pp. 594–610.

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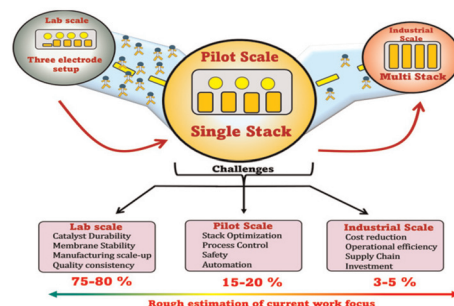
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Cell membrane generated with AI.

## PERSPECTIVES

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### Recent advances in non-precious metal catalysts for anion exchange membrane water electrolysis

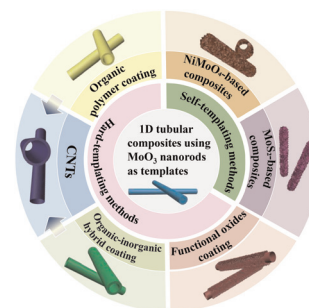
Suprobhat Singha Roy, Sreenivasan Nagappan, Prasita Mazumder, Fajar Dhanish C P, Vishesh Vishesh and Subrata Kundu\*



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### Recent advances in one-dimensional tubular composites with MoO<sub>3</sub>-based micro/nanorods as templates

Xiaohong Xu, Min Zhang,\* Jingli Xu and Xue-Bo Yin\*



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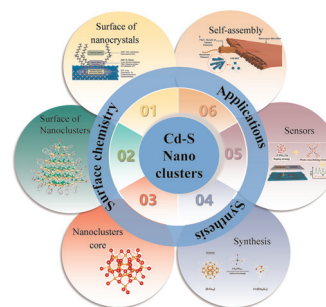
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## Ligand evolution in cadmium sulfide nanoclusters: tailoring surface coordination for atomic precision

Yan-Xiang Ling, Ju-Suo Zhong, Xin-Yu Tong, Zhan-Guo Jiang\* and Cai-Hong Zhan\*

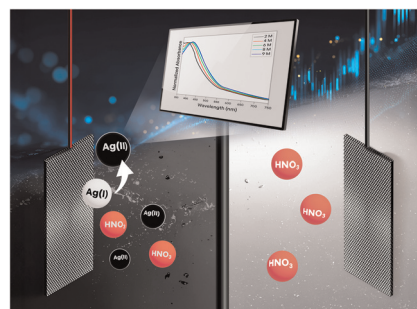


## PAPERS

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## Optimization and quantification of silver(II) for mediated electrochemical oxidation applications

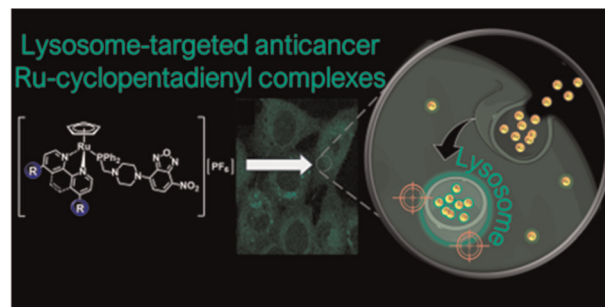
Briana R. Schrage,\* Joshua E. Leach, Ethan Villarreal, Jisue Braatz and Kristian G. Myhre



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## Lysosome-targeted Ru(II)-cyclopentadienyl organometallic anticancer complexes

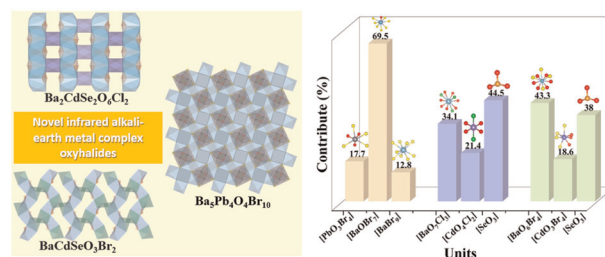
Ricardo G. Teixeira, Livia Stenico, Xavier Fontrodona, Isabel Romero, Radostaw Starosta, Maria João Moreno, Ana Isabel Tomaz, Lígia C. Gomes-da-Silva\* and Andreia Valente\*



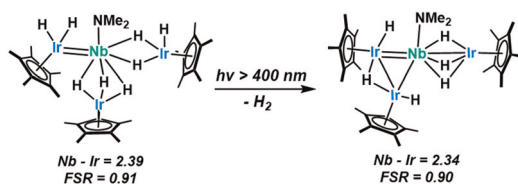
611

## Tuning birefringence in alkaline-earth metal oxyhalides through diverse mixed-cation coordination architectures

Shenghong Zeng, Mayinuer Maimaiti, Jinche Wu, Tingwen Han, Hui Chai,\* Fangfang Zhang\* and Min Zhang\*

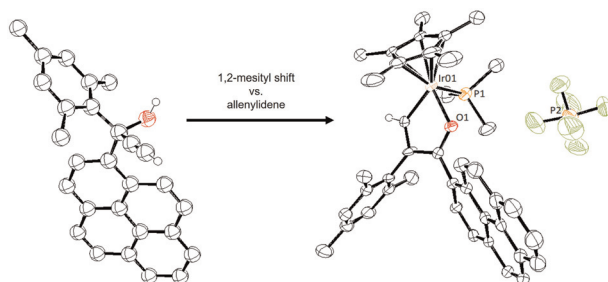


620

**Niobium Heterobimetallic Multiple Bonding***Inert to substitution**Reactive***Photolytic H<sub>2</sub> Elimination Opens Reactivity****Visible-light driven H<sub>2</sub> reductive elimination unlocks reactivity in polyhydrido niobium iridium clusters**

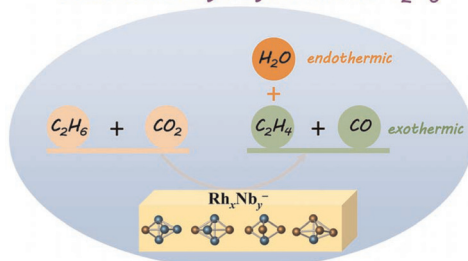
Zachary Dubrawski, Samy Aïssiou, Erwann Jeanneau, Chloé Thieuleux and Clément Camp\*

630

**Unprecedented 1,2-mesityl shift for the synthesis of iridafurans**

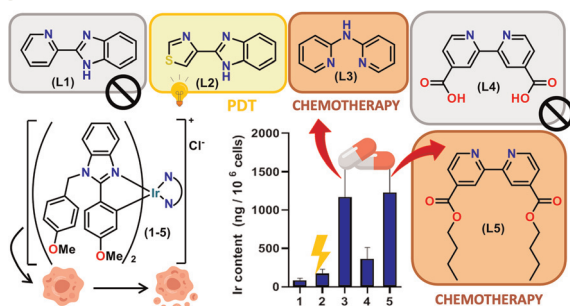
Maria Talavera,\* Antonio Gómez, Nicolás Otero, Ángeles Peña-Gallego and Sandra Bolaño\*

635

**Oxidative Dehydrogenation of C<sub>2</sub>H<sub>6</sub>****Oxidative dehydrogenation of C<sub>2</sub>H<sub>6</sub> and CO<sub>2</sub> mediated by Rh<sub>x</sub>Nb<sub>y</sub><sup>-</sup> (x + y = 5) clusters**

Hai Zhu, Xin-Yue Sun and Xiao-Na Li\*

643

**Structure–activity insights into benzimidazole-based Ir(III) cyclometallated complexes for cancer therapy**

Eva Morales-Pioz, Mónica Martínez, Andrea Benedi, María Tejera-Ruiz, Isabel Marzo, M. Concepción Gimeno, Ezequiel M. Vázquez-López, Soledad García-Fontán\* and Vanesa Fernández-Moreira\*



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### Chemically bonded Bi@C in porous carbon bundles for ultrafast and stable sodium storage

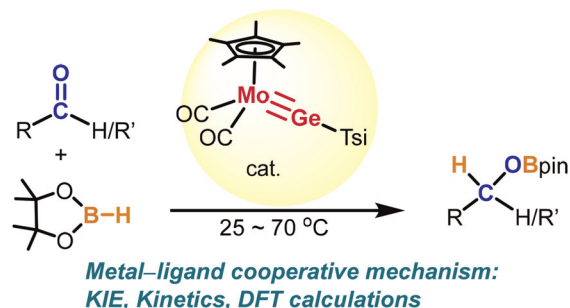
Hui Qi,\* Bin Gao, Siqin Zheng, Jianghui Song, Hongwei Yuan, Weipeng Luo, Ze Zhang, Haoyu Liu, Xiaojing Yuan\* and Wenfeng Wu



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### Hydroboration of carbonyl compounds catalysed by a molybdenum germylyne complex: metal–ligand cooperative mechanism

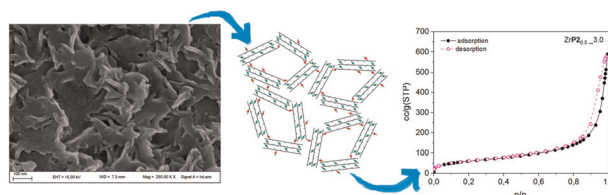
Christof Fontanilla, Yuto Shimizu, Koichi Nagata, Sakura Iwatsuki, Aoi Tanamura, Seiji Mori,\* Tara Prasad Dhungana and Hisako Hashimoto\*



671

### Adsorption properties of $\alpha$ -type layered and pillared zirconium phosphite phosphonates with high specific surface areas and porosities

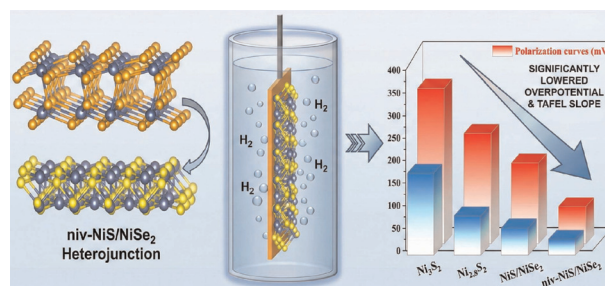
Monica Pica,\* Elena De Paolis, Emmanuele Cillo, Giorgio Gatti, Geo Paul, Elisa Calà, Fabrizio Olivito, Anna Santaniello and Giovanni Golemme



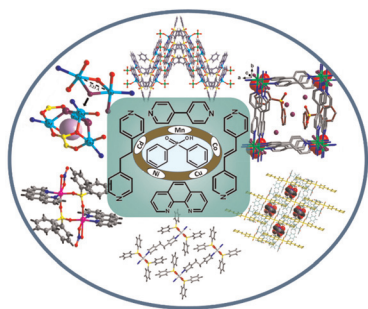
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### Formation of $\text{Ni}_{2.8}\text{S}_2$ -based heterojunctions with dual non-interfacial metal vacancies for enhanced hydrogen evolution performance

Zongpeng Wang, Longfei Ding, Xiang Li, Yuanmo Lin, Ting Jiang, Zhiping Lin\* and Shougang Chen\*



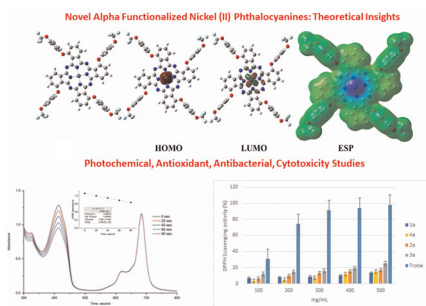
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### From discrete to polymeric assemblies: exploring supramolecular structural diversity in transition metal phosphinates with N-donor ligands

Archana Kumari Pattnaik\* and Gobinda Chandra Behera

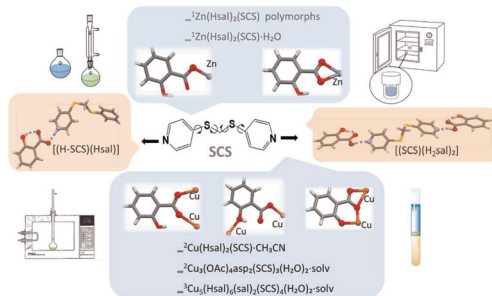
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### Novel alpha-functionalized nickel(II) phthalocyanines: photochemical, antioxidant, antibacterial, cytotoxicity studies and theoretical insights

Mustafa Akin, Ozan Cobanoglu, Neslihan Saki,\* Bilge Karaca, Armağan Günşel, Burak Tüzün, Ahmet T. Bilgiçli, Gulnur Arabaci and M. Nilüfer Yarasir\*

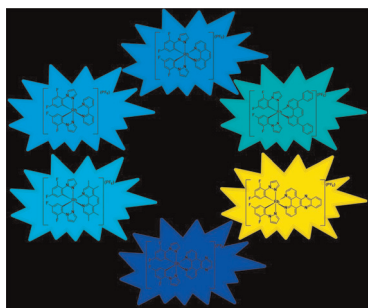
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### Structural diversity in Zn(II)/Cu(II) complexes with salicylic/acetylsalicylic acids and bis(4-pyridylthio) methane: coordination polymers, one organic cocrystal, and one organic salt

Olaya Gómez-Paz, Rosa Carballo,\* Ana B. Lago,\* Ezequiel M. Vázquez-López and Berta Covelo

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### Fluorine-substituted cyclometallated rhodium(III) complexes with $\alpha$ -diimine ancillary ligands: synthesis, structure, and photophysical and DNA-binding properties

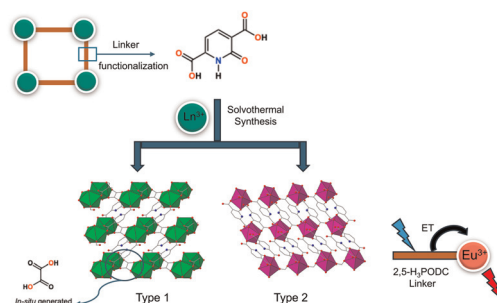
Patryk Wójcik, Camille Latouche,\* Kinga Suwińska, Anna Kamecka,\* Joanna Masternak and Mariusz Urbaniak



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### Combining coordination and chelation moieties to engineer a new linker for lanthanide coordination chemistry

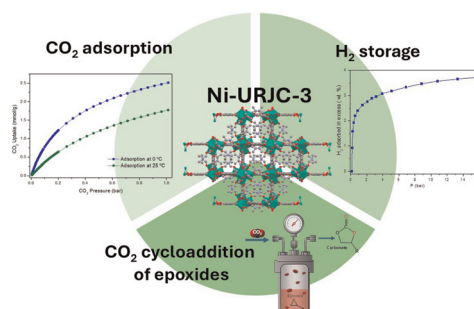
Ashanthi K. Katuwana Arachchige, Brett Lottes, Daniel K. Unruh, Samuel M. Greer, Benjamin W. Stein and Korey P. Carter\*



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### Dual-function Ni-based MOF for hydrogen storage and CO<sub>2</sub> to carbonate cyclic catalysis

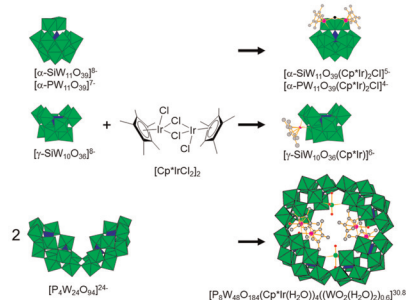
Elena García-Rojas, Helena Montes-Andrés, Jesús Tapiador, Carmen Martos,\* Pablo Salcedo-Abraira, Duane Choquesillo-Lazarte, Gisela Orcajo and Pedro Leo\*



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### Reaction of a Cp\*Ir(III) cation with mono- and di-lacunary Keggin-type heteropolytungstates and a dimer of a hexa-lacunary Dawson-type phosphopolytungstate

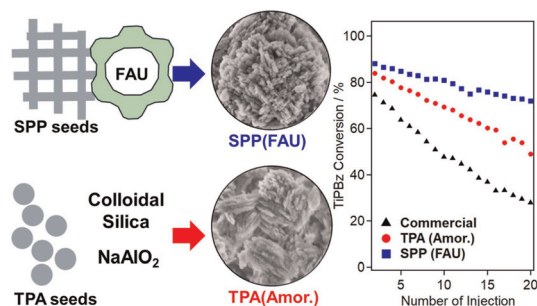
Sugiarto, Jun Shinogi, Sherif E. Ebied, Dachao Hong, Yoshihiro Kon and Masahiro Sadakane\*



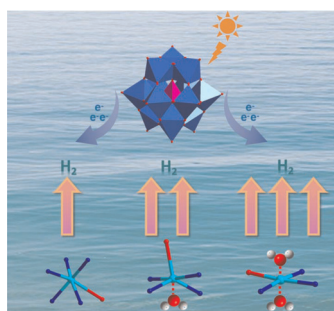
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### Nanosized Al-rich MFI zeolite synthesized by zeolite hydrothermal conversion in the presence of zeolite nanosheet seeds

Tareq W. M. Amen, Tsubasa Kitagawa and Nao Tsunogji\*



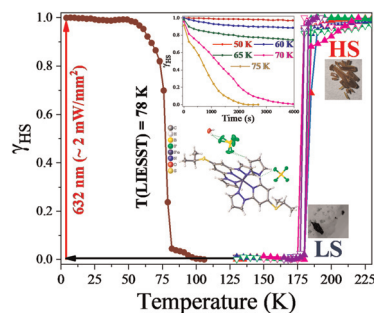
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### Polyoxometalate-based catalysts for visible-light-driven hydrolytic hydrogen production: coordinatively unsaturated Cu-based active sites enhance performance

Quan-Quan Wang, Rong-Xian Ren, Rui-Jie Gong, Shao-Da Zhao, Pin-Fang Yan and Yan Xu\*

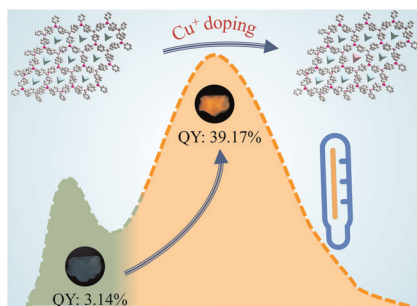
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### Optical signatures of hydration-controlled hysteretic spin-crossover in single crystals of an Fe(II) complex

Chinmoy Das, Malcolm A. Halcrow, Denisa Coltuneac, Laurentiu Stoleriu and Pradip Chakraborty\*

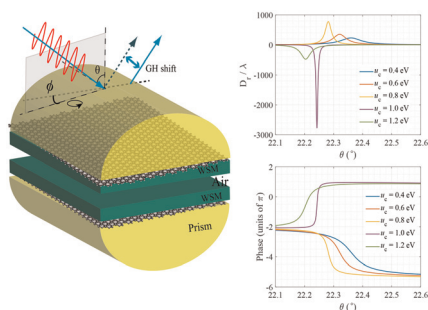
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### A Cu<sup>+</sup>-doped zinc organic halide with temperature-dependent dual-color emission as a thermochromic molecular thermometer

Yu-Fang Wu, Ya-Hui Li, Zhi-Meng Sui, Yu-Kun Wei, Rui-Han Wei, Xiao Chen, Xiao-Hua Yang, Zhi-Wei Chen,\* Zhi-Hong Jing\* and Cheng-Yang Yue\*

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### Giant mid-infrared Goos–Hänchen shifts via resonant optical tunneling in graphene/Weyl-semimetal stacks

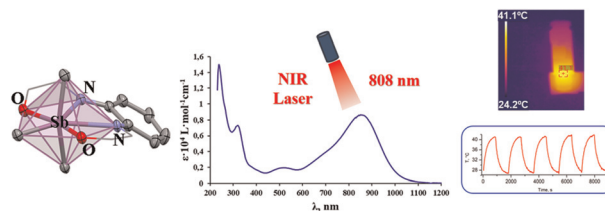
Ye Yang, Fenping Cui, Fenglin Xian and Gaige Zheng\*



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### Antimony(v) complexes with tetradentate ONNO redox-active ligands: optical, electrochemical and photothermal properties

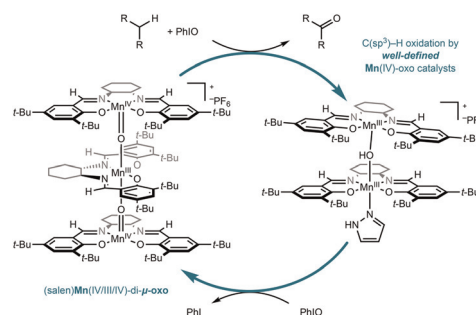
Svetlana V. Baryshnikova,\* Polina O. Shisterova, Maxim V. Arsenyev, Irina N. Meshcheryakova, Dmitry S. Kolevatov, Ilya A. Yakushev, Tatyana N. Kocherova, Rinat R. Aysin and Alexandr V. Piskunov



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### Crystallographic evidence of a trinuclear (salen) manganese(IV/III/IV)- $\mu$ -oxo formed during catalytic C(sp<sup>3</sup>)-H oxidation reactions

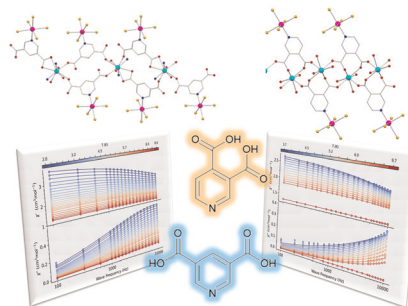
Bhaswati Paul, Kusalvin Dabare, Joshua D. Bocarsly and L. Reginald Mills\*



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### Self-assembly of lanthanide-based single-ion magnets (SIMs) into 1D networks via Re(IV)-based metalloligands

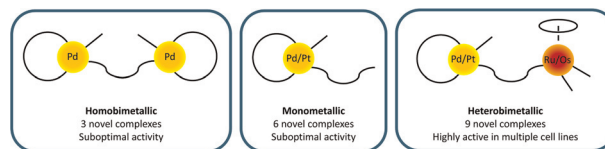
Carolina Ferrari-Argachá, Santiago Valiero, Carlos Rojas-Dotti, Aparicio Loaces, Raúl Chiozzone, Nicolás Moliner, Leopoldo Suescun, Joan Cano, Francesc Lloret, José Martínez-Lillo\* and Ricardo González\*



865

### Mono- and bimetallic homo- and heterodinuclear Pd and Pt complexes bridged by diphosphines: synthesis, characterisation and cytotoxicity

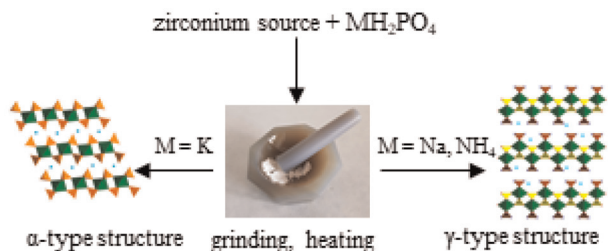
Basile Roufousse, Tomas Brice, Marco Papaldo, Lucy W. Macharia, Karabo Serala, Mihlali V. Mlaza, Thato T. Medupe, Sharon Prince,\* Christoph Marschner, Thomas J. Cleij and Burgert Blom\*



Synthesis and characterization of eighteen novel complexes  
Slight structural variations in quest of structure-activity relationships  
Three solid state X-ray crystal structures  
Cytotoxic testing on eight cancer cell lines  
Aqueation studies - speciation



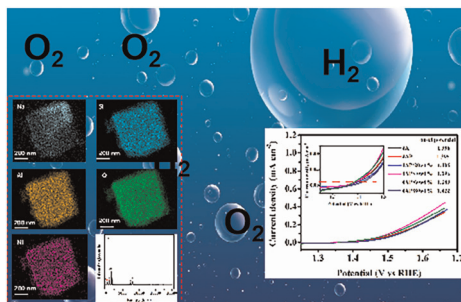
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### Minimal liquid-assisted method for synthesis of ammonium, sodium, and potassium intercalated zirconium hydrogen phosphate: the effect of the cation used on the formation of an $\alpha$ - or $\gamma$ -structure

Klára Melánová,\* Ludvík Beneš, Rokas Lemežis, Vytautas Klimavičius and Jan Smolík

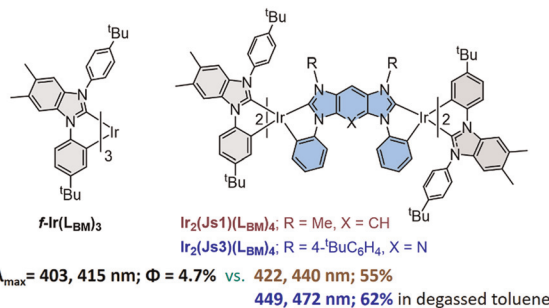
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### Boosting oxygen evolution reaction performance via hydrothermally synthesized 4A zeolite-supported Ni catalysts: structure–activity relationship investigation

Xiuzhen Xie,\* Chenglu Hu, Cao Luo, QiuJie Shi, Yongyang Wang, Zhuohan Xie, Zihan Yao, Qizhi Le and Wen-yi Hu\*

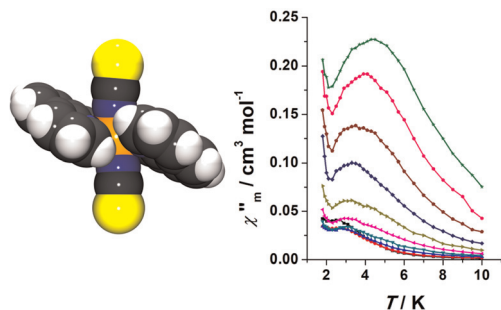
904



### Janus-type diiridium complexes with functional carbene cyclometalates for high-energy phosphorescence

Guowei Ni, Yi Pan, Muyu Zhou, Yufeng Sang, Shek-Man Yiu,\* Kai Chung Lau\* and Yun Chi\*

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### Probing the need for a very low axial zero-field splitting in $\text{Mn}^{\text{II}}$ systems with slow relaxation of the magnetization

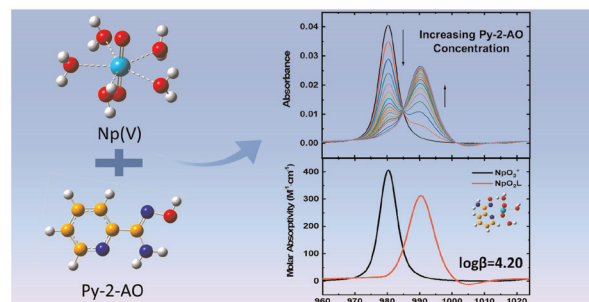
Evangelos Pilichos, Júlia Mayans and Albert Escuer\*



926

### Spectroscopic and DFT study on the complexation of Np(V) with amidoxime-derived ligands in aqueous solutions: speciation and structural optimization

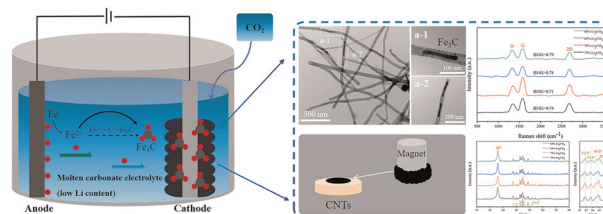
Yuxiao Guo, Zhijin Zhao, Huaixin Hao, Yishi Yu, Hong Cao, Jing Chen, Zhipeng Wang\* and Chao Xu\*



933

### Electrochemical conversion of CO<sub>2</sub> into magnetic carbon nanotubes via low-lithium molten salt electrolysis

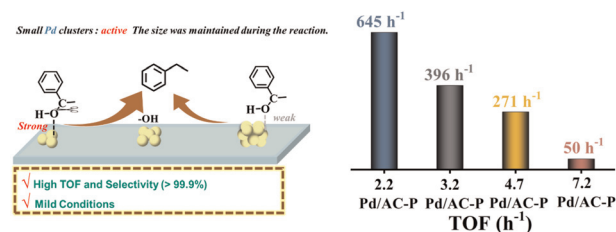
Yilan Chen, Jingrou Huang, Xiang Lin, Minyi Liu, Sheng Xu, Xiaozhu Wei, Xiawei Zhang and Yamin Liu\*



945

### Revealing the size effect of P-coated carbon-supported palladium nanoparticles in complete hydrodeoxygenation of bio-based aromatic alcohols

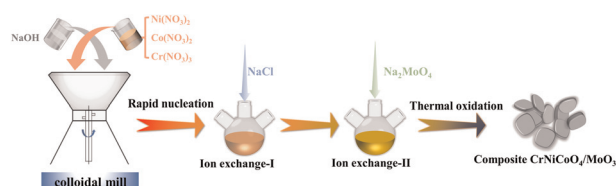
Wei Xuemei, Xu Haonan, Fang Zhengwei, Wang Kai, Cai Tao, Yu Guoqi, Shen Hualiang, Luo Yanjuan, Yan Mingming, Chen Jianhui\* and Shen Runpu\*



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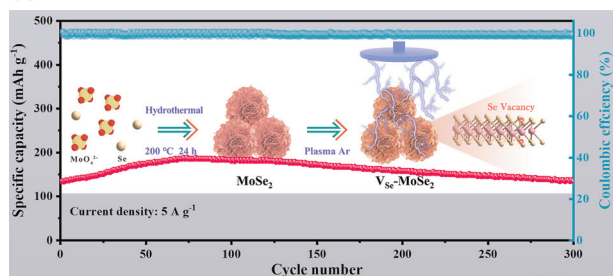
### Constructing CrNiCoO<sub>4</sub>/MoO<sub>3</sub> nanosheets via a multi-step strategy for efficient water splitting

Rong Zhu, Yefan Liu, Qianqiao Chen\* and Qin Zhong



## PAPERS

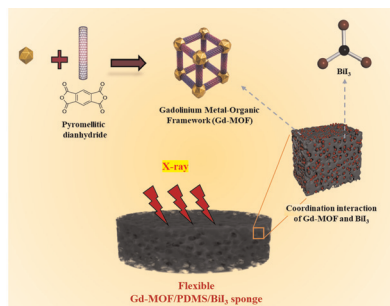
965



### Selenium vacancy engineering in MoSe<sub>2</sub> nanoflowers: unlocking high-rate and durable potassium storage through plasma-mediated defect activation

Yi Feng, Zhi-Yuan Song, Yuan-Na Zhu, Cai-Li Lv, Lin-Lin Fan,\* Yun-Dong Cao and Hong Liu\*

976



### Coordination interaction of Gd metal–organic frameworks and bismuth halides for efficient X-ray shielding

Nazmul Hossain, Shanmugam Mahalingam, Seok-Gyu Kang, Dae-Seong Kwon, Hyeon-Kwang Kim and Junghwan Kim\*

## CORRECTIONS

990

### Correction: Tuning the electronic properties of Fe(II)–NHC sensitizers with thienyl $\pi$ -extended ligands

Nour Shalhoub, Edoardo Marchini,\* Federico Coppola, Roberto Argazzi, Stefano Caramori, Mariachiara Pastore,\* Philippe Pierrat and Philippe C. Gros\*

991

### Correction: Copper(II)-mediated base pairing involving the artificial nucleobase 3H-imidazo[4,5-f]quinolin-5-ol

Nikolas Sandmann, Jim Bachmann, Marian Hebenbrock, Alexander Hepp, Nikos L. Doltsinis\* and Jens Müller\*



## CORRECTIONS

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**Correction: Charge compensation endows  $\text{K}_{0.16}\text{Na}_{0.05}(\text{NH}_4)_{0.71}\text{V}_4\text{O}_{10-x}\cdot 0.63\text{H}_2\text{O}$  cathode with tunable lattice strain for efficient  $\text{Zn}^{2+}$  storage**

Xueke Zhu, Dong Fang,\* Lang Zhang\* and Jianhong Yi

