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Dalton Transactions

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Cover
See Yangjuan Li and Yu Gong, pp. 5342–5345.

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Inside cover
See Anna Lucia Pellegrino, Graziella Malandrino *et al.*, pp. 5360–5372.

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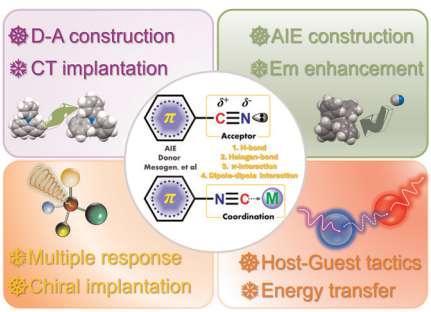
PERSPECTIVE

5320

Stimuli-responsive luminescence from polar cyano/isocyano-derived luminophores *via* structural tailoring and self-assembly

Bo Yang, Suqiong Yan, Yuan Zhang, Fanda Feng and Wei Huang*

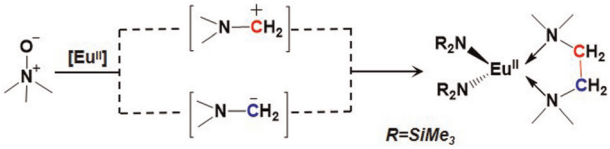


COMMUNICATIONS

5342

Formation of *N*,*N*,*N*′,*N*′-tetramethylethylene-diamine *via* coupling of the two charge reversed C–N bonds of Me_3NO in the presence of an Eu(II) bis(trimethylsilyl)amide complex

Yangjuan Li and Yu Gong*



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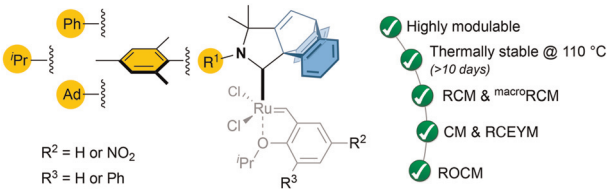
COMMUNICATIONS

5346

Cyclic (amino)(barrelene)carbene Ru-complexes: synthesis and reactivity in olefin metathesis

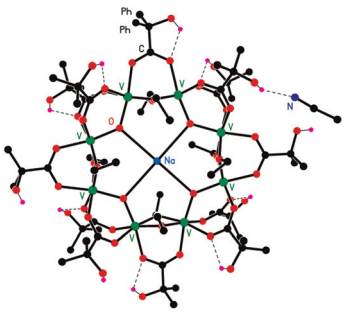
Jakub Talcik, Melinda R. Serrato, Antonio Del Vecchio, Sophie Colombel-Rouen, Jennifer Morvan, Thierry Roisnel, Rodolphe Jazzar,* Mohand Melaimi, Guy Bertrand* and Marc Mauduit*



5351

Reaction of $Ph_2C(X)(CO_2H)$ (X = OH, NH_2) with $[VO(OR)_3]$ (R = Et, *n*Pr): structure, magnetic susceptibility and ROP capability

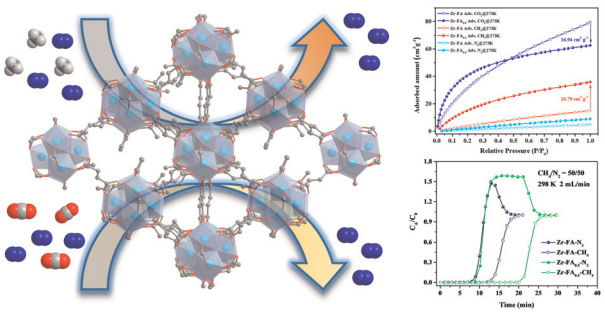
Mollie A. Glenister, Josef W. A. Frese, Mark R. J. Elsegood, Angelos B. Canaj, Euan K. Brechin and Carl Redshaw*



5356

Defect engineering improves CO_2/N_2 and CH_4/N_2 separation performance of MOF-801

Chen-Ning Li, Wei-Guo Xu, Lin Liu* and Zheng-Bo Han*

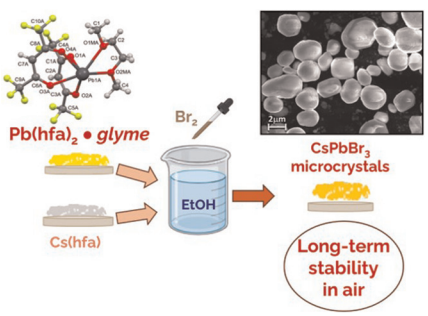


PAPERS

5360

Highly stable $CsPbBr_3$ perovskite phases from new lead β-diketonate glyme adducts

Lorenzo Sirna, Anna Lucia Pellegrino,* Salvatore Pio Sciacca, Martina Lippi, Patrizia Rossi, Carmela Bonaccorso, Giuseppe Bengasi, Marina Foti and Graziella Malandrino*



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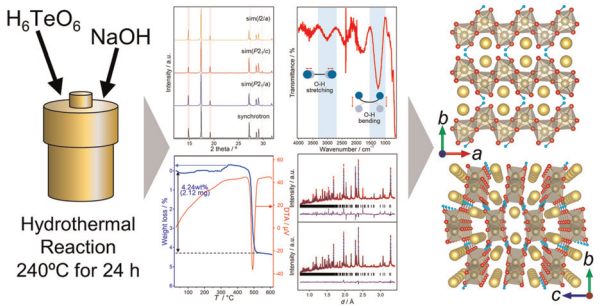
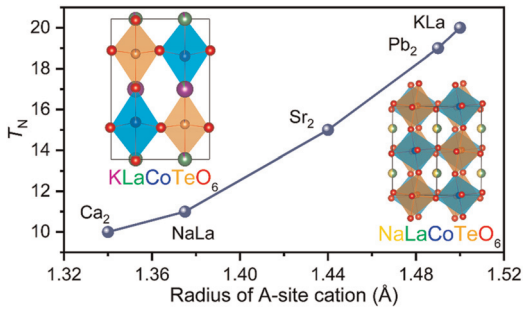
5373



Synthesis, crystal structure and investigation of ion-exchange possibility for sodium tellurate $NaTeO_3(OH)$

Tsubasa Ishii, Yue Jin Shan,* Kotaro Fujii, Tetsuhiro Katsumata, Hideo Imoto, Ariunaa Baterdene, Keitaro Tezuka and Masatomo Yashima

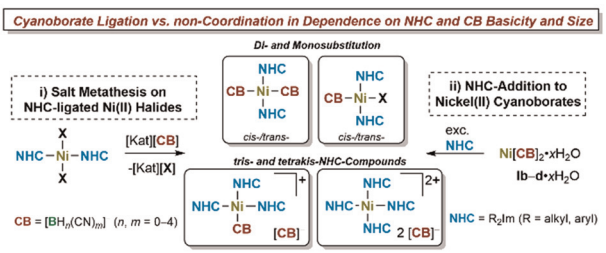
5382



The impact of A-site cations on the crystal structure and magnetism of the new double perovskites $ALaCoTeO_6$ (A = Na and K)

Haoyu Wu, Zhilin Fang, Pengfei Jiang* and Tao Yang*

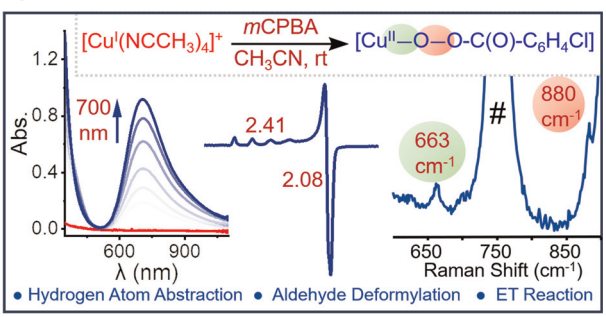
5391



NHC-ligated nickel(II) cyanoborate complexes and salts

Martin S. Luff, Luis Walther, Maik Finze* and Udo Radius*

5401



Amphoteric reactivity of a putative Cu(II)-*m*CPBA intermediate

Rakesh Kumar, Anweshika Maji, Bhargab Biswas and Apparao Draksharapu*

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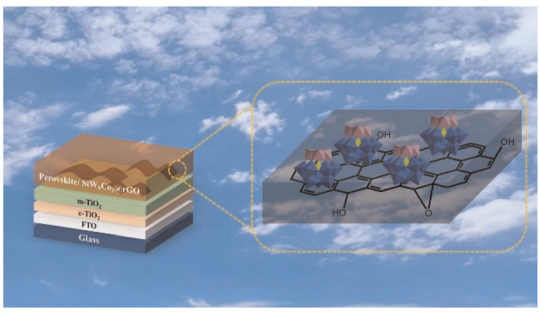
PAPERS

5407

SiW_9Co_3 @rGO composite–doping improved the crystallization and stability of a perovskite film for efficient photodetection

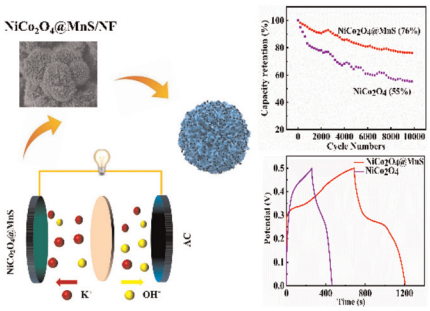
Sijie Duan, Yue Peng, Hongyu Guan* and Weilin Chen*



5416

Construction and application of $NiCo_2O_4$@MnS composite with hierarchical structure for hybrid supercapacitor

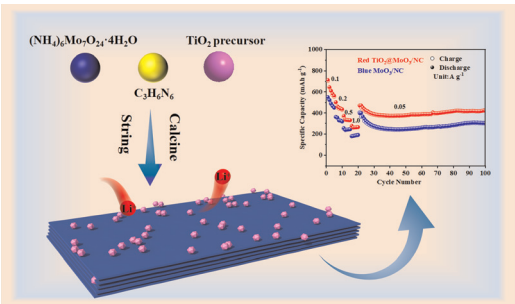
Xuan Liao, Xiaolong Hou, Caini Yi, Guimiao Wang, Shuo Wang, Ying Yang, Changguo Chen, Danmei Yu,* Yuping Liu* and Xiaoyuan Zhou*



5427

TiO_2-modified two-dimensional composite of nitrogen-doped molybdenum trioxide nanosheets as a high-performance anode for lithium-ion batteries

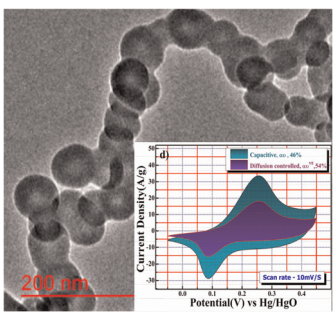
Zhixin Guo, Lixin Zhang,* Hongfang Jiu,* Dong Liang,* Congli Wang, Wei Song, Luchao Yue, Sicong Che, Yuxin Han and Jinfeng Ma



5435

$Ni_{0.5}Co_{0.5}S$ nano-chains: a high-performing intercalating pseudocapacitive electrode in asymmetric supercapacitor (ASC) mode for the development of large-scale energy storage devices

Vishal Kushwaha, K. D. Mandal, Asha Gupta* and Preetam Singh*



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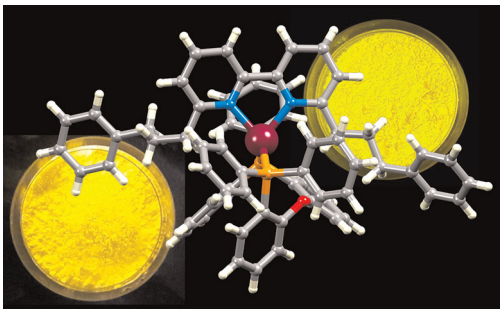
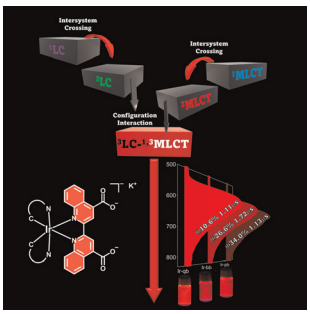


Introducing sterically demanding substituents and π–π-interactions into [Cu(P^P)(N^N)]$^+$ complexes

Marco Meyer, Alessandro Prescimone, Edwin C. Constable and Catherine E. Housecroft*

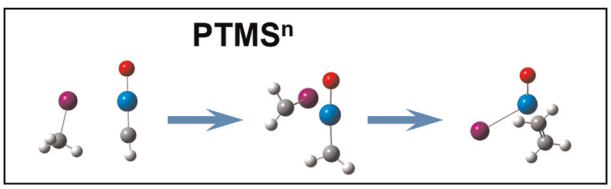
5466



Featuring long-lifetime deep-red emitting iridium^{III} complexes with high colour purity: insights into the excited state dynamics from spectroscopic and theoretical perspectives

Renan C. Silva,* Felipe S. M. Canisares, Leonardo F. Saraiva, Ana M. Pires and Sergio A. M. Lima*

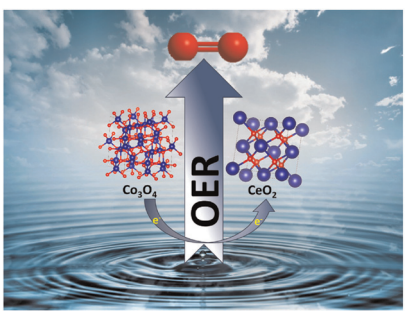
5478



Gas-phase synthesis of [O═U–X]$^+$ (X = Cl, Br and I) from a UO_2^{2+} precursor using ion-molecule reactions and an [O═U≡CH]$^+$ intermediate

Justin Terhorst, Samuel Lenze, Luke Metzler, Allison N. Fry, Amina Ihabi, Theodore A. Corcovilos and Michael J. van Stipdonk*

5484



The role of reducibility *vis-à-vis* oxygen vacancies of doped Co_3O_4/CeO_2 in the oxygen evolution reaction

Saraswati Roy, Preeti Dahiya, Tapas Kumar Mandal and Sounak Roy*

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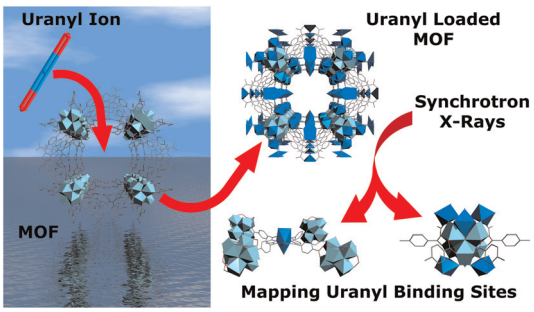
5495

Uranyl uptake into metal–organic frameworks: a detailed X-ray structural analysis

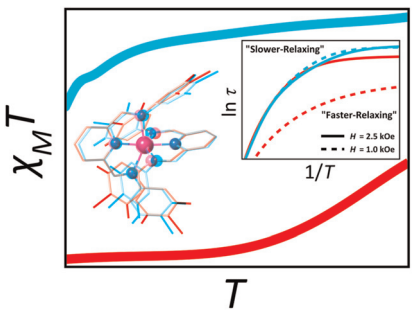
Matthew P. Heaney, Hannah M. Johnson, Julia G. Knapp, Shinhyo Bang, Soenke Seifert, Natalie S. Yaw, Jiahong Li, Omar K. Farha, Qiang Zhang and Liane M. Moreau*



5507

How the spin state tunes the slow magnetic relaxation field dependence in spin crossover cobalt(II) complexes

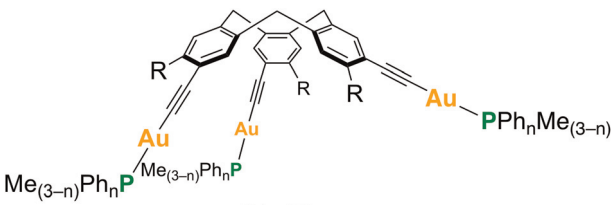
Renato Rabelo, Luminita Toma, Miguel Julve, Francesc Lloret, Jorge Pasán, Danielle Cangussu, Rafael Ruiz-García and Joan Cano*



5521

Cyclotribenzylene alkynylgold(I) phosphine complexes: synthesis, chirality, and exchange of phosphine

Jing Zhang, Nathalie Zorn, Emmanuelle Leize-Wagner,* Marion Jean, Nicolas Vanthuyne,* Enrique Espinosa, Emmanuel Aubert,* Bruno Vincent and Jean-Claude Chambron*

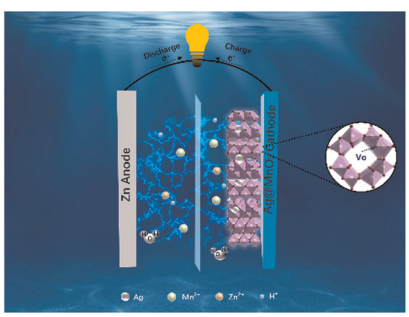


C1 - C6
(n = 1 - 3, R = H or OMe)

5534

A silver and manganese dioxide composite with oxygen vacancies as a high-performance cathode material for aqueous zinc-ion batteries

Yun Wang, Tengfei Wang, Wenjing Zhang, Liangjun Li, Xiaoxia Lv* and Hua Wang



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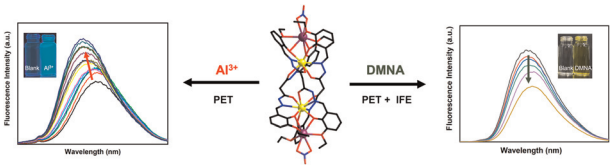
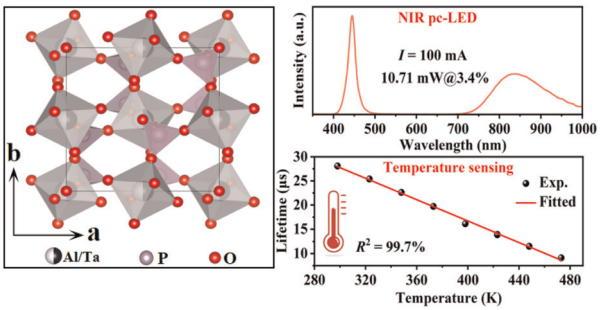


A dysprosium(III)-based triple helical-like complex as a turn-on/off fluorescence sensor for Al(III) and 4,5-dimethyl-2-nitroaniline

Yi Yin, Rong Luo, Wen Wang, Rui Wang, Nan Jiang, Peng Chen, Hai-Jun Yu, Shuang-Yu Bi and Feng Shao*

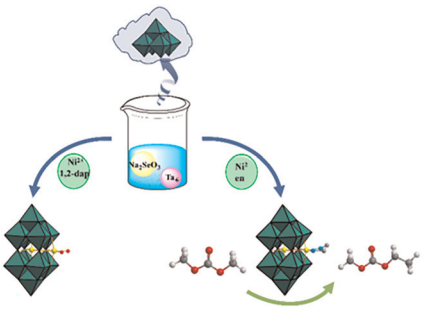
5553



Broadband near-infrared luminescence in a cubic pyrophosphate $Al_{0.5}Ta_{0.5}P_2O_7:Cr^{3+}$ phosphor for multi-functional applications

Long Chen, Jiyou Zhong,* Jiajun Wu and Weiren Zhao*

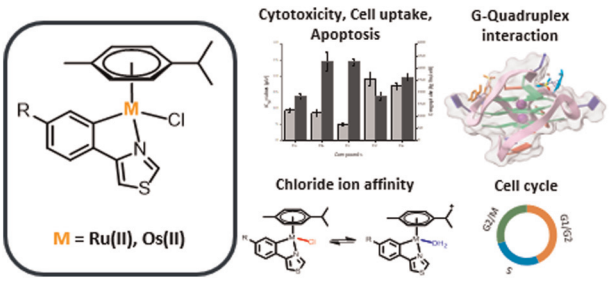
5562



Two binuclear Ni-inserted polyoxotantalates based on $\{NiTa_{10}O_{32}\}$ units with catalytic activity

Hui Zhao, Hanhan Chen, Ming yang Zhang, Yuanyuan Yang, Zongfei Yang, Pengtao Ma, Jingyang Niu* and Jingping Wang*

5567



Investigating the anticancer potential of 4-phenylthiazole derived Ru(II) and Os(II) metalacycles

Paul Getreuer, Laura Marretta, Emine Toyoglu, Orsolya Dömötör, Michaela Hejl, Alexander Prado-Roller, Klaudia Cseh, Anton A. Legin, Michael A. Jakupec, Giampaolo Barone, Alessio Terenzi, Bernhard K. Keppler and Wolfgang Kandioller*

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PAPERS

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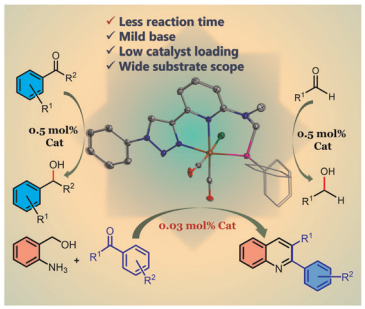
Catalytic utility of PNN-based Mn^{I} pincer complexes in the synthesis of quinolines and transfer hydrogenation of carbonyl derivatives

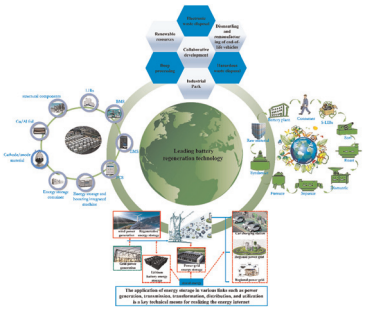
Manali A. Mohite, Sonu Sheokand, Dipanjan Mondal and Maravanji S. Balakrishna*



5592

Leaching Li from mixed cathode materials of spent lithium-ion batteries *via* carbon thermal reduction

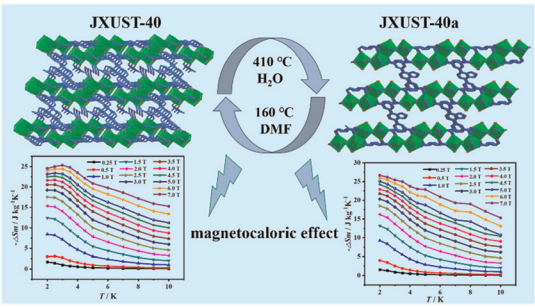
Yunchun Zha, Yuyun Li, Zitong Fei, Changyi Fan, Qi Meng,* Xingyi Peng* and Peng Dong*



5601

Reversible single-crystal-to-single-crystal transition in Gd(III) metal–organic frameworks induced by heat and solvents with a significant magnetocaloric effect

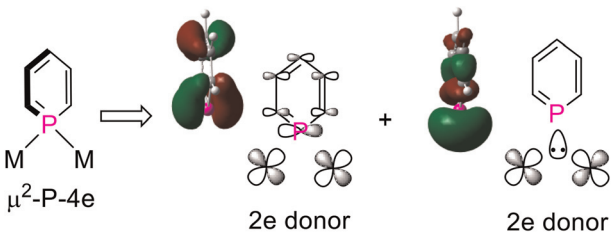
Jin-Jin Wang, Yu Li, Teng-Fei Zheng,* Yan Peng, Jing-Lin Chen, Sui-Jun Liu* and He-Rui Wen



5608

The case of a μ_2-P aromatic phosphinine as a 4-electron donor forming σ- and π-three–center-two-electron bonds

Jie Zhang, Yuanfeng Hou, Shihua Liu, Jieli Lin and Zhongshu Li*



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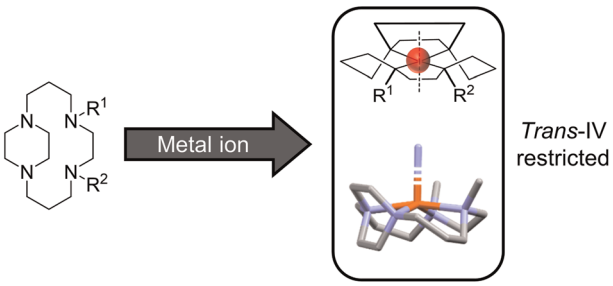
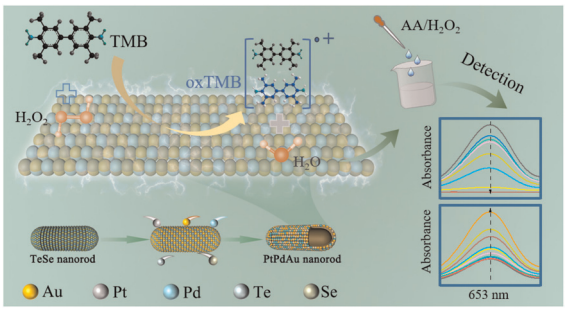


trans-IV restriction: a new configuration for metal bis-cyclam complexes as potent CXCR4 inhibitors

Seraj O. Alzahrani, Graeme McRobbie, Abid Khan, Thomas D'huys, Tom Van Loy, Ashlie N. Walker, Isaline Renard, Timothy J. Hubin, Dominique Schols, Benjamin P. Burke and Stephen J. Archibald*

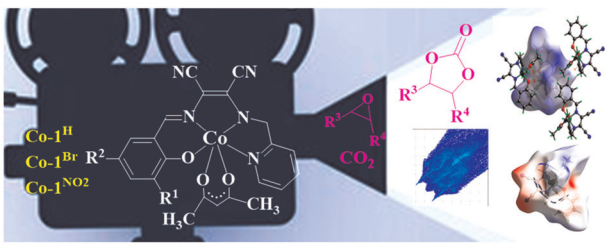
5624



Galvanic replacement synthesis of PtPdAu hollow nanorods as peroxidase mimic with high specific activity for colorimetric detection

Yi Tan, Jincheng Yuan, Rui Shang, Jian Hao, Shengyang Hu* and Kai Cai*

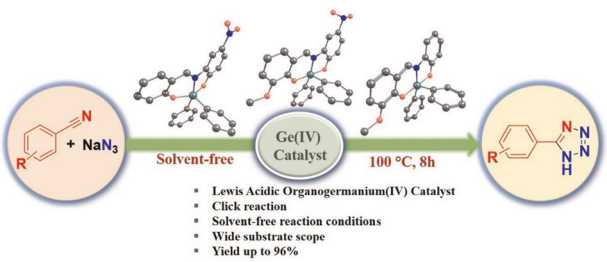
5632



Non-covalent interactions in molecular architectures and solvent-free catalytic activity towards CO_2 fixation of mononuclear Co(III) complexes installed on modified Schiff base ligands

Souvik Barman, Dhiraj Das and Kuntal Pal*

5648



Mononuclear organogermanium(IV) catalysts for a [3 + 2] cycloaddition reaction

Debayan Basu, Barshali Ghosh, Diship Srivastava, Niladri Patra and Hari Pada Nayek*

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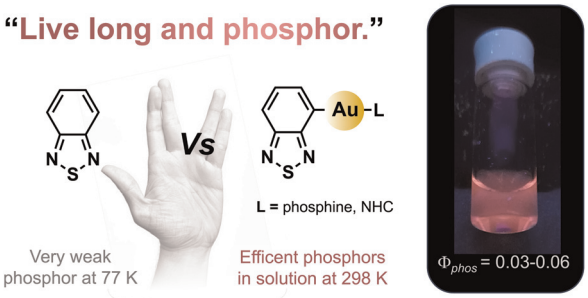
PAPERS

5658

Access to long-lived room temperature phosphorescence through auration of 2,1,3-benzothiadiazole

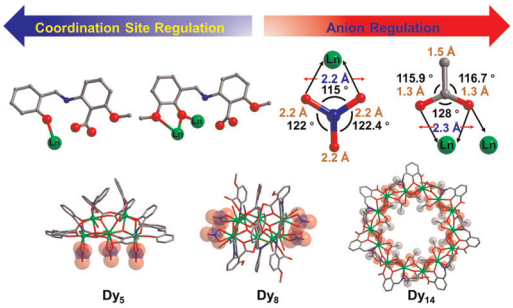
Mauricio Posada Urrutia, Nidhi Kaul, Tobias Kaper, Dustin Hurrell, Linus Chiang, Jordann A. L. Wells, Andreas Orthaber, Leif Hammarström, Lukasz T. Pilarski and Christine Dyrager*



5665

Different anion (NO_3^- and OAc^-)-controlled construction of dysprosium clusters with different shapes

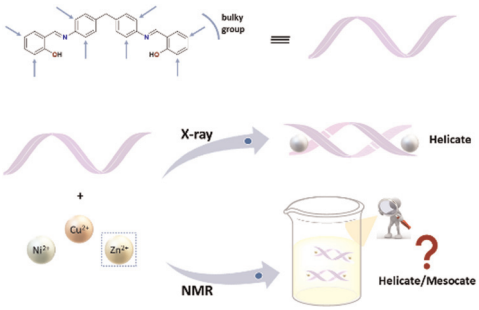
Jia-Nan Xie, Yun-Lan Li, Hai-Ling Wang, Zi-Xin Xiao, Zhong-Hong Zhu,* Fu-Pei Liang and Hua-Hong Zou*



5676

Nickel, copper, and zinc dinuclear helicates: how do bulky groups influence their architecture?

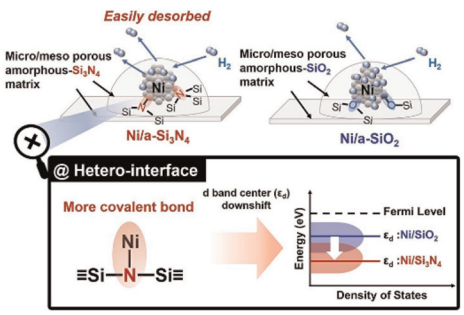
Sandra Fernández-Fariña, Marcelino Maneiro, Guillermo Zaragoza, José M. Seco, Rosa Pedrido* and Ana M. González-Noya*



5686

Downshift of the Ni d band center over Ni nanoparticles *in situ* confined within an amorphous silicon nitride matrix

Norifumi Asakuma, Shotaro Tada, Tomoyuki Tamura, Erika Kawaguchi, Sawao Honda, Toru Asaka, Assil Bouzid, Samuel Bernard and Yuji Iwamoto*



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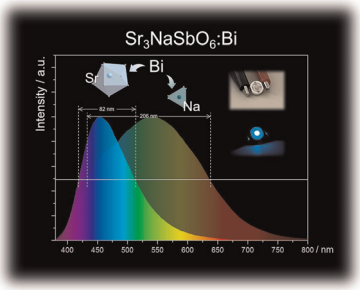
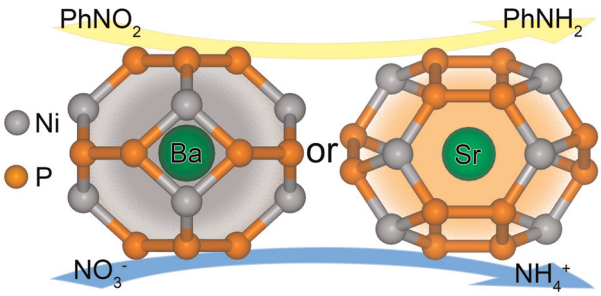
5695



A novel bismuth-activated Sr_3NaSbO_6 phosphor with multi-band switchable emission for NUV-pumped LEDs

Ziyao Wang,* Hui Li, Guofeng Ma and Xinyao Yang

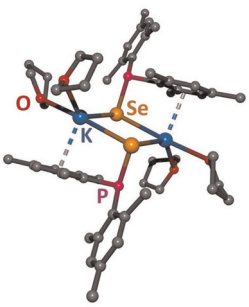
5702



Nitrate and nitroarene hydrogenations catalyzed by alkaline-earth nickel phosphide clathrates

Marquix A. S. Adamson, Lin Wei, Philip Yox, Fatema H. B. Hafiz and Javier Vela*

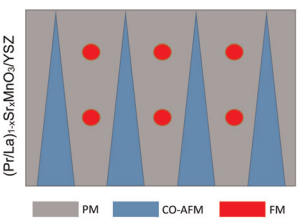
5711

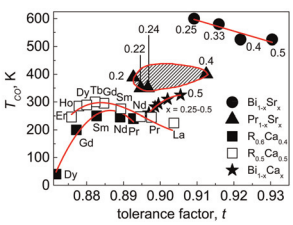


Coordination chemistry of alkali metal dimesityl-thio- and dimesityl-selenophosphinites $[(L)_2A\text{-}EPMes_2]_2$ (A = Li, Na, K; E = S, Se; L = THF, THP) and $[(18C6)K\text{-}SPMes_2]$

Richard C. C. Dorow, Phil Liebing, Helmar Görls and Matthias Westerhausen*

5721





Strain-induced charge ordering above room temperature in rare-earth manganites

Yu. Samoshkina,* M. Rautskii, D. Neznakhin, E. Stepanova, N. Andreev, V. Chichkov, V. Zaikovskii and A. Chernichenko

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CORRECTION

5732

Correction: Porous oligomeric materials synthesised using a new, highly active precatalyst based on ruthenium(III) and 2-phenylpyridine

Kacper Pobłocki,* Katarzyna N. Jarzembska, Radosław Kamiński, Joanna Drzeżdżon, Krystyna A. Deresz, Dominik Schaniel, Anna Gołąbiewska, Barbara Gawdzik, Przemysław Rybiński and Dagmara Jacewicz*

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