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Cover
See Qiong Yu *et al.*, pp. 18467–18472.

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Inside cover
See Oscar H. Lloyd Williams, Nicole J. Rijs *et al.*, pp. 18473–18483.

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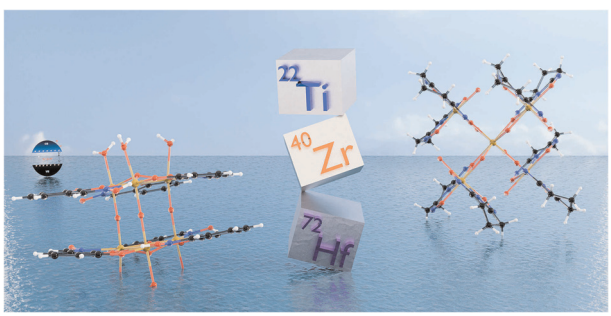
PERSPECTIVES

18400

Revitalisation of group IV metal-oxo clusters: synthetic approaches, structural motifs and applications

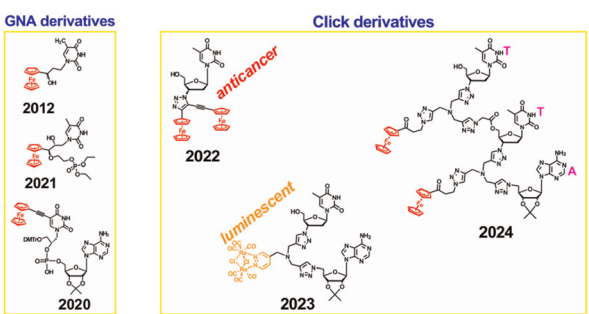
Stamatis S. Passadis, Mark Gray, Tatjana N. Parac-Vogt,* Anastasios D. Keramidas,* Haralampos N. Miras* and Themistoklis A. Kabanos*



18420

Chemistry of organometallic nucleic acid components: personal perspectives and prospects for the future

Mateusz Klarek and Konrad Kowalski*



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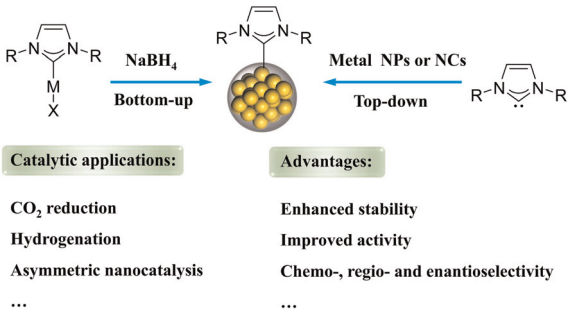
FRONTIERS

18440

N-Heterocyclic carbene-functionalized metal nanoparticles and nanoclusters for nanocatalysis

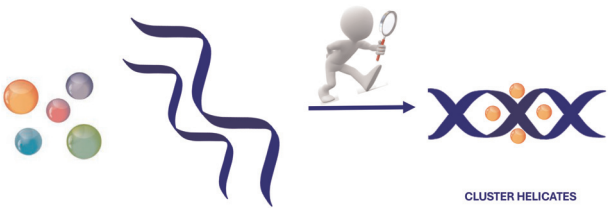
Siyi Wang, Xianli Yu, Yedong Wang, Bingsong Zhou, Fan Shen and Hai Cao*



18451

Cluster helicates: promising functional materials

Sandra Fernández-Fariña, Uxía Barreiro-Sisto, Miguel Martínez-Calvo, Rosa Pedrido and Ana M. González-Noya*

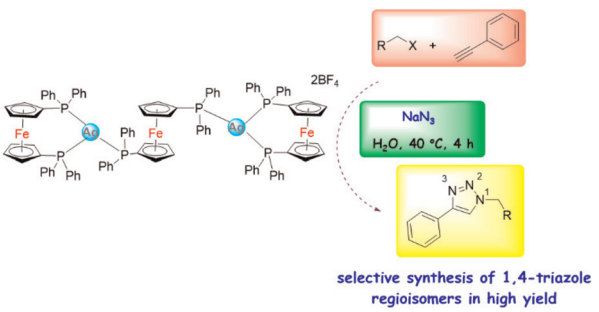


COMMUNICATIONS

18458

Stable homogeneous silver(I) catalysts for the highly efficient cycloaddition of azides onto terminal alkynes in water

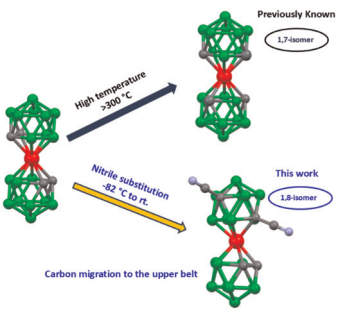
Meysam Kakavand, Anna Kozakiewicz-Piekarz and Abdollah Neshat*



18462

Modification of cobalt bis(dicarbollide) ions with nitrile groups on carbon atoms: a unique low-temperature skeletal rearrangement due to the specific electron-donor character of CN substitution

Ece Zeynep Tüzün, Drahomír Hnyk, Dmytro Bavol, Miroslava Litecká, Jindřich Fanfrlík and Bohumír Grűner*



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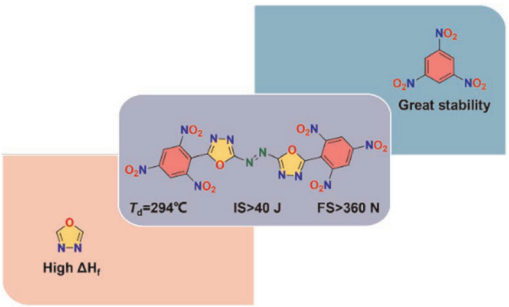
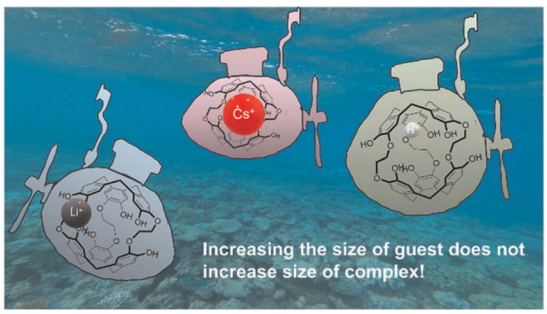
18467



Energetic derivatives substituted with trinitrophenyl: improving the sensitivity of explosives

Qiong Yu,* Yu-cong Chen, Zihao Guo, Tao Li, Zunqi Liu, Wenbin Yi,* Richard J. Staples and Jean'ne M. Shreeve*

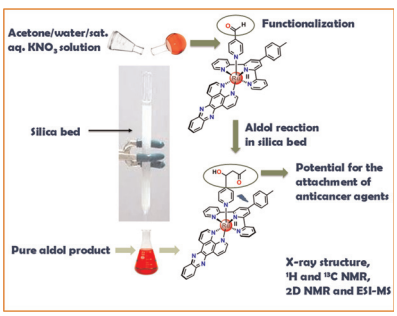
18473



Cation induced changes to the structure of cryptophane cages

Oscar H. Lloyd Williams, Claudia S. Cox, Meng Yuan Zhang, Martina Lessio, Olivia Rusli, William A. Donald, Lachlan Jekimovs, David L. Marshall, Michael C. Pfrunder, Berwyck L. J. Poad, Thierry Brotin and Nicole J. Rijs*

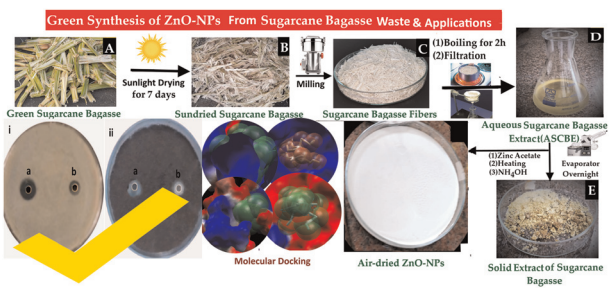
18484



A serendipitous crossed aldol reaction in the ligand periphery of a Ru(II) polypyridyl complex in silica bed: prospects for delivering anticancer agents for photoactivated chemotherapy

Ramranjan Mishra, Pritha Chatterjee, Ray J. Butcher and Ashis K. Patra*

18494



Green synthesis of ZnO-NPs using sugarcane bagasse waste: phytochemical assessment of extract and biological study of nanoparticles

Marwa H. Suleiman, Said M. El-sheikh,* Eslam T. Mohamed, Mohamed A. El Raey, Samya El Sherbiny, Fatma A. Morsy, Soliman I. El-Hout and Sheta M. Sheta*

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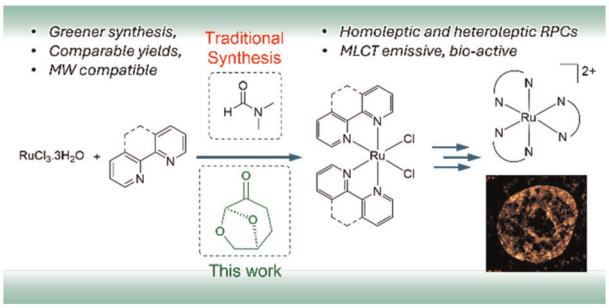
18506

Cyrene™ as a green alternative to *N,N'*-dimethylformamide (DMF) in the synthesis of MLCT-emissive ruthenium(II) polypyridyl complexes for biological applications

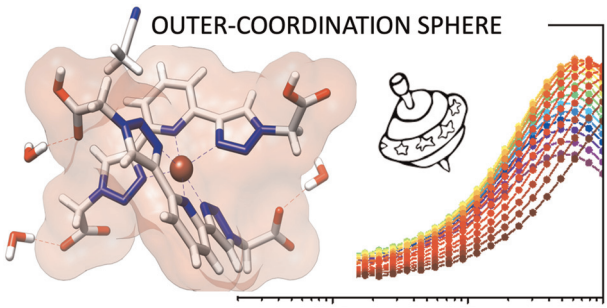
Steffan D. James, Christopher E. Elgar, Dandan Chen, Matthew I. Lewis, Elias T. L. Ash, Dominic S. Conway, Benjamin J. Tuckley, Leigh E. Phillips, Natália Kolozsvári, Xiaohe Tian* and Martin R. Gill*



18515

Single-ion magnetism in novel Btp-based cobalt complexes of different charge

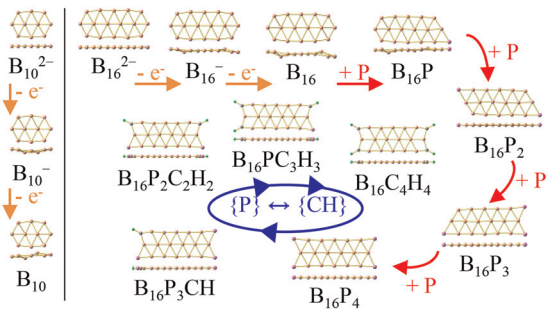
Gustavo Rama-Martínez, Marcelo Osorio-Celis, Yolanda Sabater-Algarra, Diego Sánchez-Brunete, Antonio L. Llamas-Saiz, Eugenia P. Quirós-Díez, M. Eugenio Vázquez, Miguel Vázquez López and María del Carmen Giménez López*



18528

Triple-chain boron clusters: lengthening *via* phosphorus doping and enhancing stability through {P} by {CH} substitution

Long Van Duong, Nguyen Minh Tam, Amir Karton* and Minh Tho Nguyen*



18542

Spin and dielectric transitions promoted by dimerization of anionic radical stacks and volume-conserving motion of cations in an ion-pair compound

Zi-Heng Feng, Qin-Yu Zhu, Yin Qian,* Xu-Sheng Gao* and Xiao-Ming Ren*

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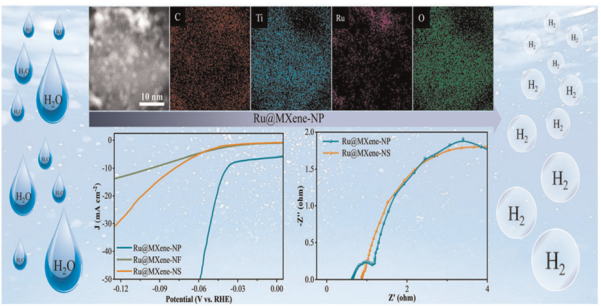
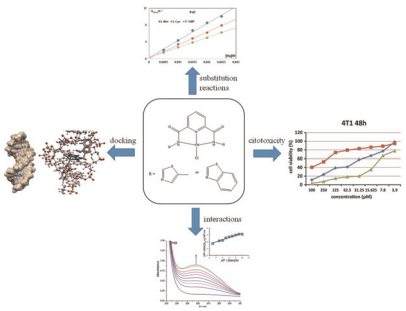


$Ti_3C_2T_x$ MXene-supported ruthenium nanoclusters for efficient electrocatalytic hydrogen evolution

Xuanyin Li, Dong Fang,* Jianhong Yi, Lang Zhang,* Jian Liu and Feng Liu

18560



New Pd(II)-pincer type complexes as potential antitumor drugs: synthesis, nucleophilic substitution reactions, DNA/HSA interaction, molecular docking study and cytotoxic activity

Sladjana Pavlović, Biljana Petrović, Dušan Ćoćić, Andreas Schreurer, Snežana Sretenović, Maja D. Nešić, Marija Nišavić, Zorana Maric, Isidora Stanisavljević, Irfan Ćorović, Bojana Simović Marković, Veljko Maric, Ivan Jovanović, Gordana Radić, Snežana Radisavljević* and Snežana Jovanović Stević*

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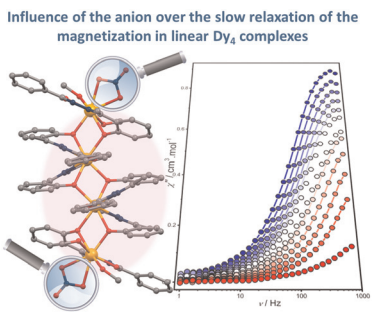
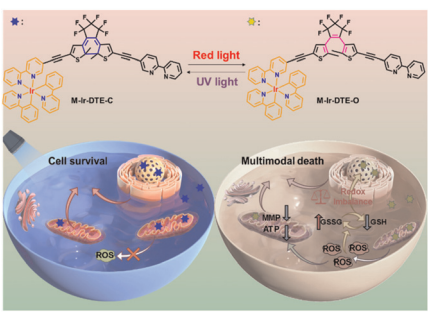


Modulating magnetic anisotropy in linear tetranuclear dysprosium(III) complexes *via* coordinated anions

Guan-Lin Lu, Shih-Ting Chiu, Po-Heng Lin* and Jérôme Long*

18585



Light switchable Ir(III)-based photosensitizers: a dual-state system for non-invasive, reversible ROS control in tumor therapy

Zhitong Chu, Na Xu, Yan Su,* Hongbao Fang* and Zhi Su*

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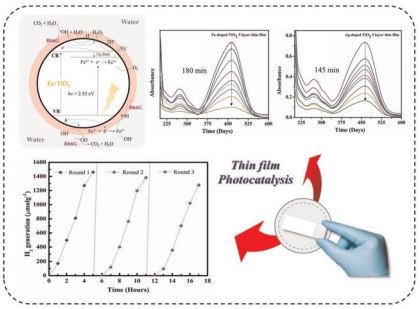
18592

Synergistic effects of Fe and Ag doping on the structural and optical properties of a TiO_2 thin film: a dual function platform for hydrogen generation and dye degradation

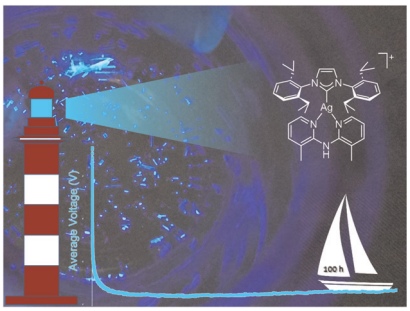
Akhil Pradiprao Khedulkar, S. Bolloju, L. K. Pradhan, Bidhan Pandit, Umesh T. Nakate, S. S. Mahato* and S. Mahata*



18607

Trigonal NHC bis-pyridyl silver(I) complexes: a beacon of light in the darkness of light-emitting electrochemical cells?

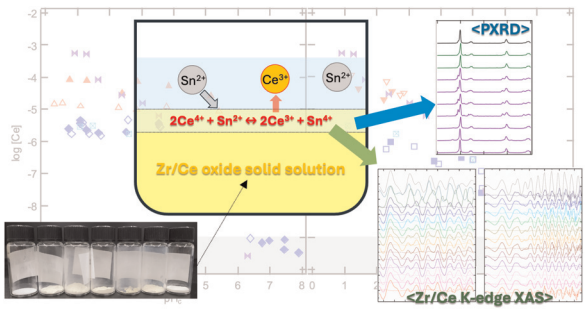
Ginevra Giobbio, Lucie Greffier, Sophia Lipinski, Anaïs Montrieul, Jean-François Lohier, Mathieu Linares, Rubén D. Costa* and Sylvain Gaillard*



18616

Dissolution of zirconium–cerium oxide solid solution in an aqueous system

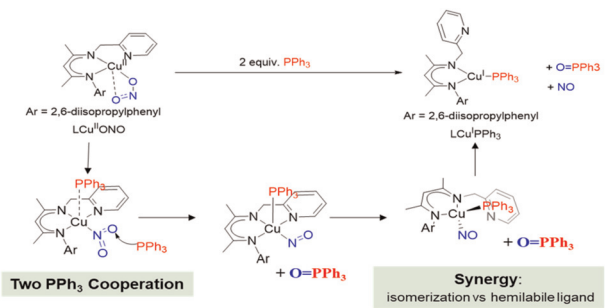
Taishi Kobayashi,* Yutaro Sato, Ryutaro Tonna, Daiju Matsumura, Takayuki Sasaki and Atsushi Ikeda-Ohno*



18629

Mechanistic insights into nitric oxide generation from nitrite *via* O-atom transfer in the unsymmetrical β-diketiminato copper(II) nitrite complex

Yi-Rong Hsiang, Naorem Jemes Meitei, Gifta Evangeline Henry, Sodio C. N. Hsu* and Ya-Fan Lin*



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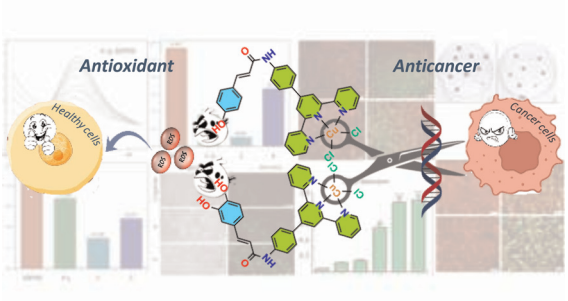
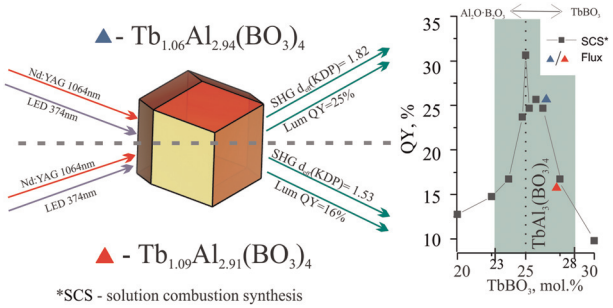


Copper-assisted anticancer activity of hydroxycinnamic acid terpyridine conjugates on triple-negative breast cancer

Anindya Roy, Sajmina Khatun, Prashant Dattatraya Dewale, Aravind Kumar Rengan and Jugun Prakash Chinta*

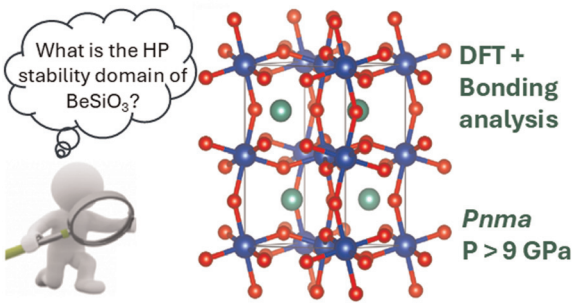
18653



Nonstoichiometry as a hidden aspect of $TbAl_3(BO_3)_4$ optical properties

A. B. Kuznetsov,* A. Y. Jamous, M. I. Rakhmanova, E. A. Simonova, V. A. Svetlichnyi, A. E. Kokh, V. N. Yudin, S. F. Solodovnikov, V. S. Shevchenko and K. A. Kokh*

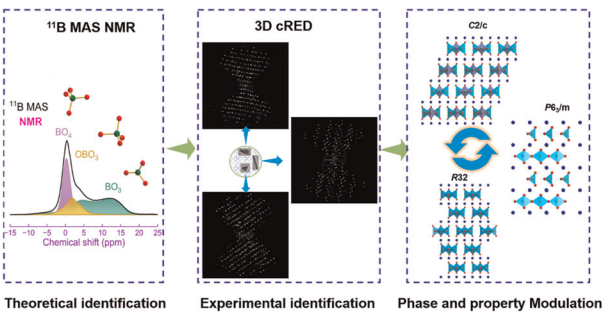
18662



Determination of the high-pressure domain of stability of $BeSiO_3$ and characterization of its crystal structure and properties

Tarik Ouahrani,* Ruth Franco, Álvaro Lobato, Fernando Izquierdo-Ruiz, Alfonso Muñoz and Daniel Errandonea*

18674



DFT-based ^{11}B solid-state NMR calculations for guiding fine local structure identification and phase-property modulation in $Zn_xY_{1-x}BO_{3-0.5x}$ borate oxide ion conductors

Yuan Gou, Xiaohui Li,* Xiaoge Wang, Mengjia Zhang, Jinxiao Zhang, Qiang Li, Xianran Xing and Xiaojun Kuang*

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PAPERS

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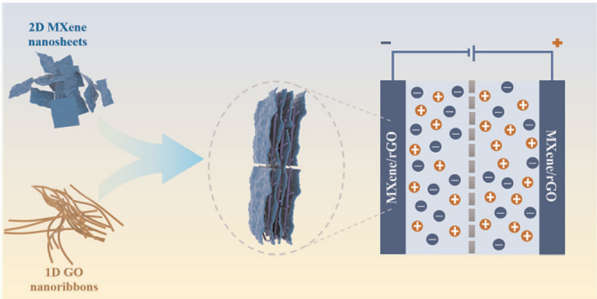
Introduction of 1D rGO nanoribbons as spacers between 2D MXenes for a high-performance electrode for supercapacitors

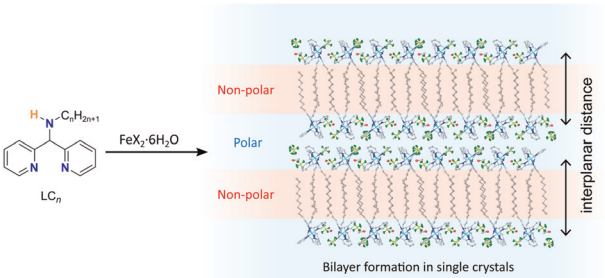
Xiaolong Lu, Yan Zhou, Cancan Li, Qi Wang, Bijun Fang, Yi Shi, Ningyi Yuan* and Jianning Ding



18698

Crystalline bilayer formation in homoleptic low-spin Fe(II) compounds with alkyl chain substituents

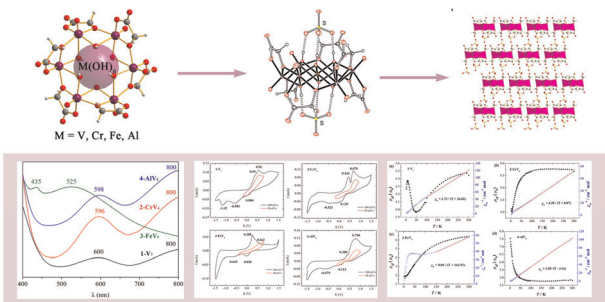
Blaise L. Geoghegan,* Spyridon Koutsoukos, Wasinee Phonsri, Keith S. Murray, Peter J. Cragg, Marcus K. Dymond and Ian A. Gass*



18711

Iso- and hetero-polyoxovanadium glycolates $[V_6^{IV}O_6(glyc)_6M^{III}(OH)_6]^{3-}$ (M = V, Cr, Fe, and Al) encapsulating metal hydroxides

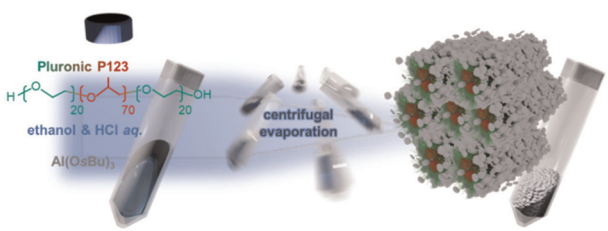
Wan-Ting Jin,* Zhen-Lang Xie, Xing Su, Chuan-Hua Gao, Jing Hu and Zhao-Hui Zhou*



18720

High-throughput centrifugal evaporation for mesoporous alumina powder synthesis *via* evaporation-induced self-assembly (EISA)

Ryutaro Wakabayashi



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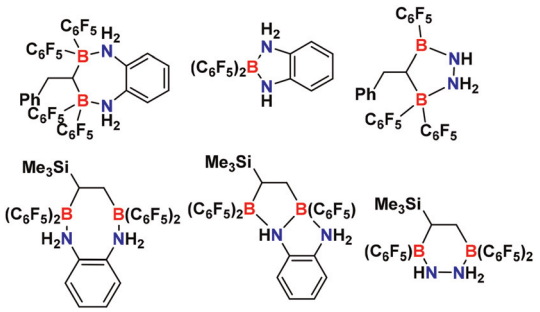
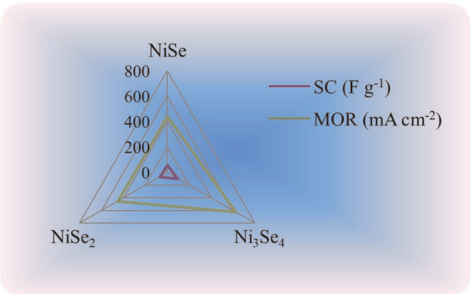


Reactions of 1,1- and 1,2-bis-boranes with a protic diamine and hydrazine

Jason Yeung, Amir Yeganeh-Salman, Linkun Miao and Douglas W. Stephan*

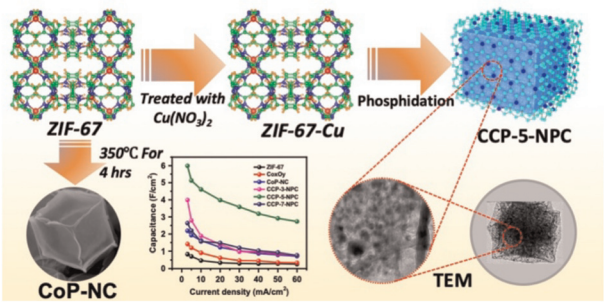
18736



Hydrothermal nickel selenides as efficient electrodes in alkaline media: application to supercapacitors and the methanol oxidation reaction

Jiaojiao Ren, Yong Zhang, Junshan Li,* Junfeng Liu, Jiwei Hu, Chaochao Li, Yun Ke, Jun Zhao, Andreu Cabot* and Bin Tang*

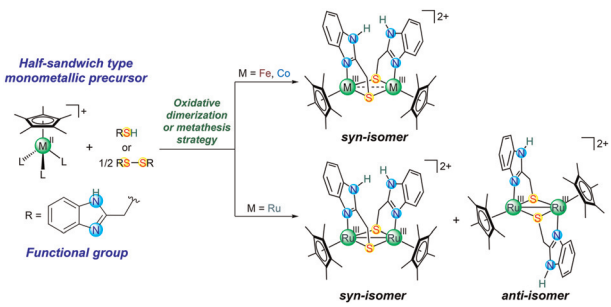
18745



Topotactic transformation of zeolitic imidazolate frameworks into high-performance battery type electrodes for supercapattery application

Jatin Sharma, Srinivasan Alagar, Aashi, Rajdeep Kaur, Ashish Gaur, Krishankant, Vikas Pundir, Deepak Upreti, Rekha Rani, K. Arun and Vivek Bagchi*

18754



A new family of thiolate-bridged bimetallic complexes featuring a benzimidazole moiety: synthesis, structure and redox reactivity

Kai Di, Dawei Yang,* Linan Su, Ronghuan Du, Shengbin Dong, Baomin Wang and Jingping Qu*

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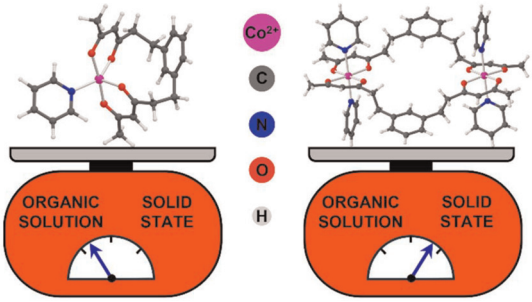
PAPERS

18762

Phase-dependent polymerization isomerism in the coordination complexes of a flexible bis(β-diketonato) ligand

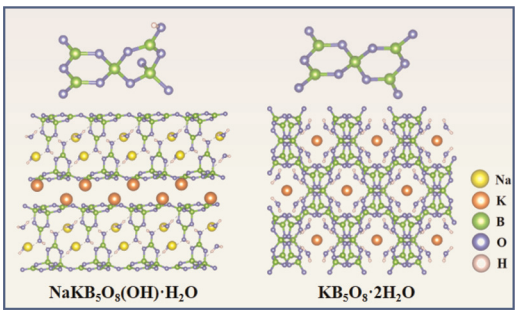
Manuel Imperato, Alessio Nicolini, Matteo Boniburini, Silvia Gómez-Coca, Eliseo Ruiz, Fabio Santanni, Lorenzo Sorace and Andrea Cornia*



18782

Syntheses, structures and properties of two new members of the pentaborate family: $NaKB_5O_8(OH)\cdot H_2O$ and $KB_5O_8\cdot 2H_2O$

Xiaojing Li, Luyong Zhang, Fuming Li, Zhihua Yang, Xueling Hou* and Fangfang Zhang*



EXPRESSION OF CONCERN

18789

Expression of concern: Valence tautomeric interconversion of bis-dioxolene cobalt complex with imino-pyridine functionalized by TEMPO moiety in solid solutions with isostructural nickel analogue: phase transitions and monocrystal destruction

Michael P. Bubnov,* Alexey A. Zolotukhin, Georgy K. Fukin, Roman V. Rumyantcev and Artem S. Bogomyakov