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IN THIS ISSUE

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Cover

See Chiara Bisio, Jocelyne Brendlé, Morena Nocchetti, Fabrice Leroux *et al.*, pp. 14525–14550.

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Inside cover

See Jordi Cirera *et al.*, pp. 14592–14601.

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EDITORIAL

14520

Intercalation compounds: properties, mechanisms and advanced applications

Chiara Bisio,* Sébastien Cahen* and Fabrice Leroux*

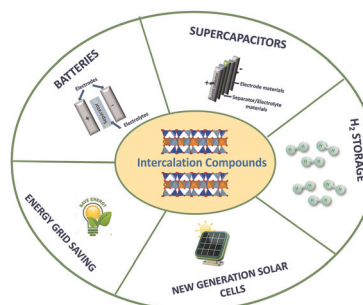


PERSPECTIVES

14525

Recent advances and perspectives on intercalation layered compounds part 1: design and applications in the field of energy

Chiara Bisio,* Jocelyne Brendlé,* Sébastien Cahen, Yongjun Feng, Seong-Ju Hwang, Klara Melanova, Morena Nocchetti,* Dermot O'Hare, Pierre Rabu and Fabrice Leroux*



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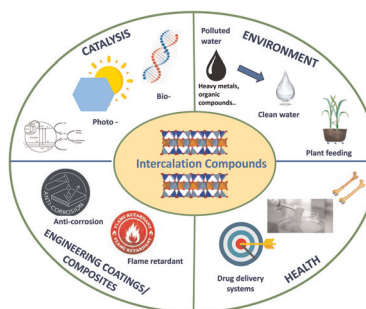
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PERSPECTIVES

14551

Recent advances and perspectives for intercalation layered compounds. Part 2: applications in the field of catalysis, environment and health

Chiara Bisio,* Jocelyne Brendlé,* Sébastien Cahen, Yongjun Feng, Seong-Ju Hwang, Morena Nocchetti,* Dermot O'Hare, Pierre Rabu, Klara Melanova and Fabrice Leroux*

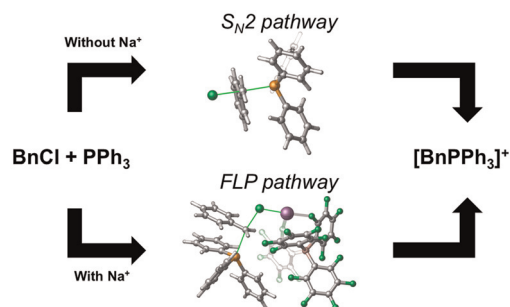


COMMUNICATIONS

14582

Evidence for a kinetic FLP reaction pathway in the activation of benzyl chlorides by alkali metal–phosphine pairs

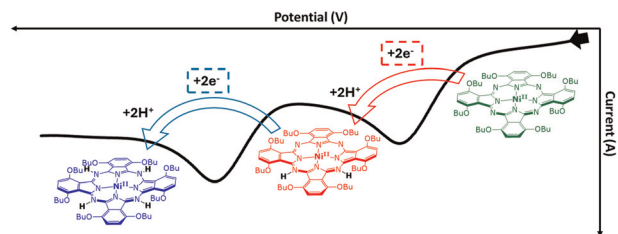
Dániel Csókás, Max Coles, Zhi Hao Toh and Rowan D. Young*



14587

Exploring ligand-centered electrocatalytic H₂O reduction: hydrogen generation with a soluble Ni(II) octabutoxyphthalocyanine complex

Josh Brown and Darrin Richeson*

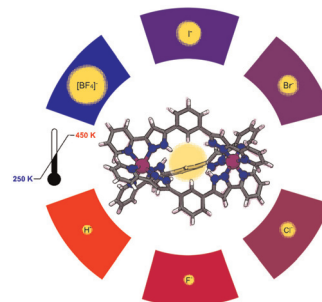


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14592

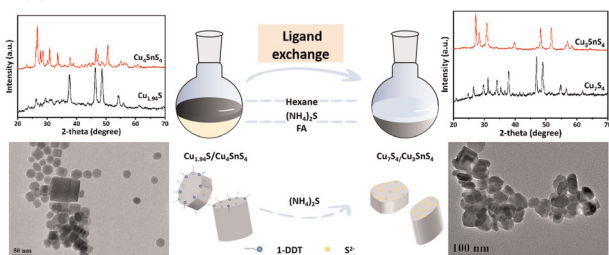
Tuning the spin-crossover properties of [Fe₂] metal–organic cages

Laia Navarro, Arnau Garcia-Duran and Jordi Cirera*



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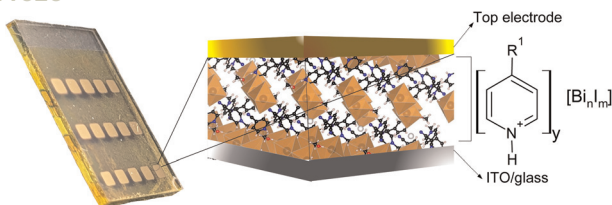
14602



Ligand exchange induced crystal structure and morphology evolution of copper–tin–sulfur binary and ternary compounds

Suqin Chen, Ying Xu, Yangyang Weng, Pengfei Lou, Xiaoyan Zhang* and Ningzhong Bao*

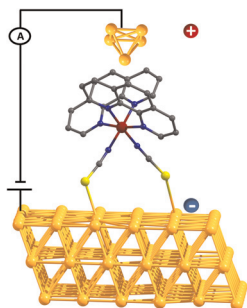
14610



Memristive properties and synaptic plasticity in substituted pyridinium iodobismuthates

Gisya Abdi,* Tomasz Mazur, Ewelina Kowalewska, Andrzej Sławek, Mateusz Marzec and Konrad Szaciłowski*

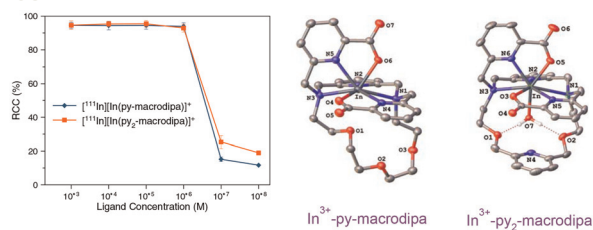
14623



Investigating the influence of oriented external electric fields on modulating spin-transition temperatures in Fe(II) SCO complexes: a theoretical perspective

Rupesh Kumar Tiwari, Rajdeep Paul and Gopalan Rajaraman*

14634



Chelation of $[^{111}\text{In}]\text{In}^{3+}$ with the dual-size-selective macrocycles py-macrodipa and py₂-macrodipa

Kevin K. Lee, Mou Chakraborty, Aohan Hu, Thines Kanagasundaram, Daniel L. J. Thorek and Justin J. Wilson*

✓ mild radiolabeling conditions ✓ remarkable kinetic stability ✓ high in vivo stability

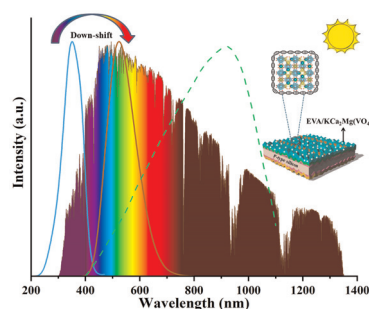


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14648

Enhanced photovoltaic performance of silicon solar cells using a down-shift $\text{KCa}_2\text{Mg}_2(\text{VO}_4)_3$ phosphor

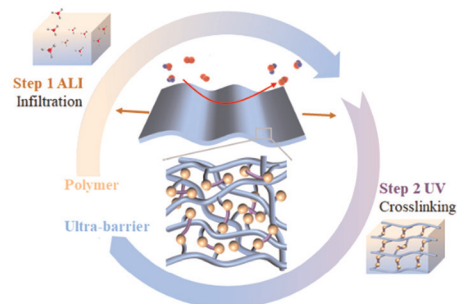
Hong Su, Cong Dou, Fan Dou, Wen Li, Jiachen Li, Xiaolian Chao, Zupei Yang, Xiaoming Wang* and Huan Jiao*



14656

Two-step construction of KPDMS/ Al_2O_3 ultra-barriers for wearable sensors

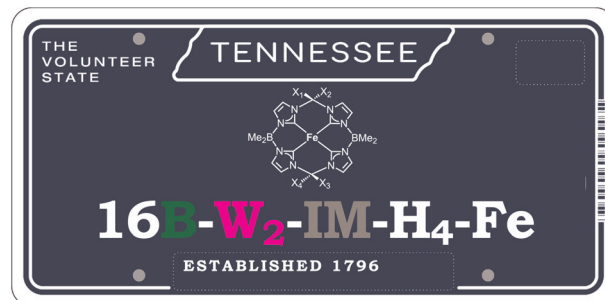
Di Wen, Ruige Yuan, Fan Yang* and Rong Chen*



14665

Ligand engineering of tetra N-heterocyclic carbenes for boosting catalytic aziridination

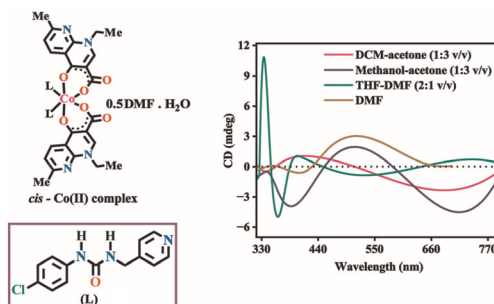
Brett A. Smith, Somon Hakimov, David M. Jenkins* and Konstantinos D. Vogiatzis*



14678

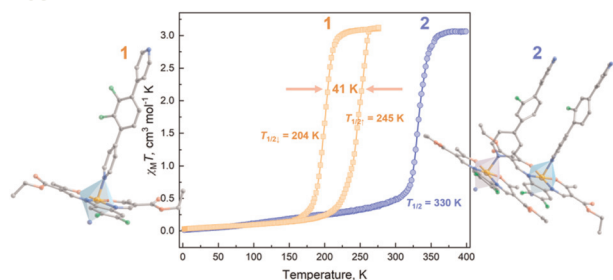
Synthesis and characterization of *cis* and *trans* cobalt(II) nalidixate complexes having a 1-(4-chlorophenyl)-3-(pyridin-4-ylmethyl)urea ligand

Rinki Brahma, Abhay Pratap Singh and Jubaraj Bikash Baruah*



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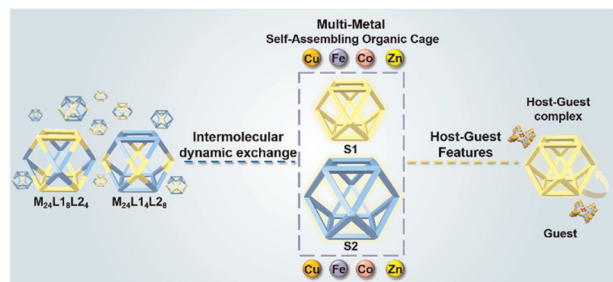
14692



Effects of mono- or di-fluoro-substitution on spin crossover behavior in a pair of Schiff base-like Fe^{II}-coordination polymers

Yu Luo, Ren-He Zhou, Zhen Shao, Dan Liu, Han-Han Lu, Meng-Jia Shang, Liang Zhao,* Tao Liu and Yin-Shan Meng*

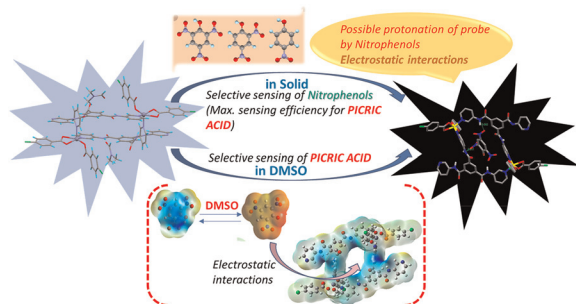
14701



Self-assembly and dynamic exchange of cuboctahedral metal–organic cages

Jialin Liu, Yan Huang, Qixia Bai,* Qiaoan Yang, Xinyi Wu, Limin Zhang, Tun Wu, Pingshan Wang, Jianqiao Wang* and Zhe Zhang*

14710



Selective sensing of picric acid using a Zn(II)-metallacycle: experimental and theoretical validation of the sensing mechanism and quantitative analysis of sensitivity in contact mode detection

Vishakha Jaswal, Sanya Pachisia, Jagrity Chaudhary, Krishnan Rangan and Madhushree Sarkar*

14725



A cobalt porphyrin-bridged covalent triazine polymer-derived electrode for efficient hydrogen production

Aijian Wang,* Xin Yang, Fengqiang Zhang, Qitao Peng, Xiaoyu Zhai and Weihua Zhu*

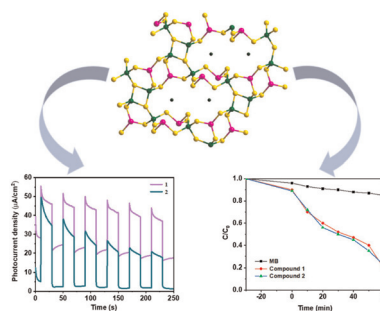


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Syntheses, crystal structure, and photoelectric properties of two selenoantimonates A–Zn–Sb–Se (A = Rb and Cs)

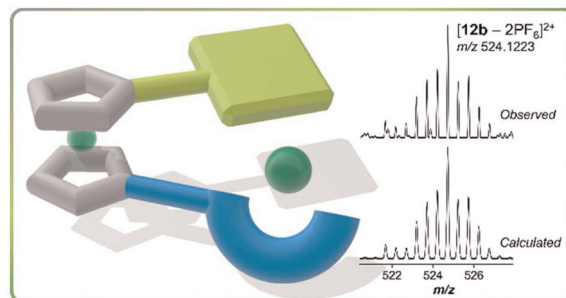
Lirong Zhang, Gele Teri, Liming Qi, Sagala Bai, Xin Liu* and Menghe Baiyin*



14742

Towards building blocks for metallocupramolecular structures: non-symmetrically-functionalised ferrocenyl compounds

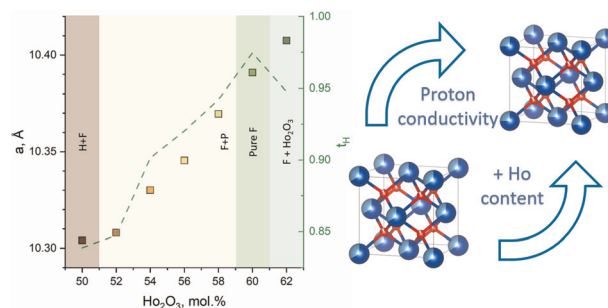
William D. J. Tremlett, James D. Crowley, L. James Wright and Christian G. Hartinger*



14752

Proton conductivity of fluorite based rare earth titanates (Ln_xTi_{1-x})₄O_{8-2x} (Ln = Yb, Er, Ho, 0.667 ≤ x ≤ 0.765)

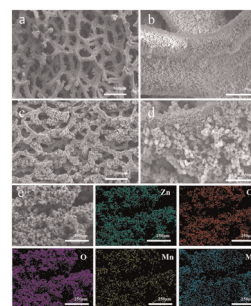
Nikolay Gorshkov, Egor Baldin, Dmitry Stolbov, Galina Vorobieva, Alexander Shatov and Anna Shlyakhtina*



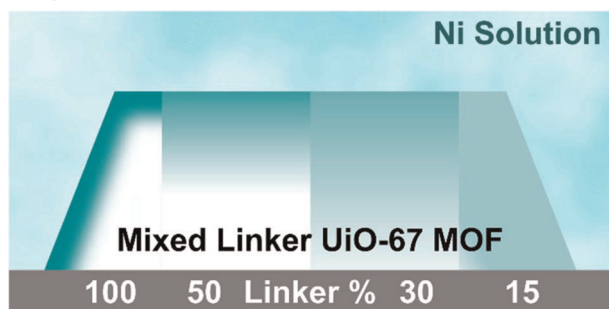
14767

Synthesis and performances of a ZnCo₂O₄@MnMoO₄ composite for a hybrid supercapacitor

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



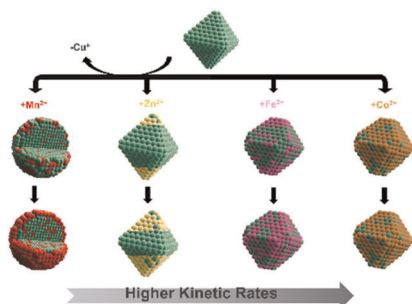
14779



Optimizing post-synthetic metal incorporation in mixed-linker MOFs: insights from metalation studies on bipyridine-containing UiO-67 single crystals

Wanja Gschwind, Gyula Nagy, Daniel Primetzhofer and Sascha Ott*

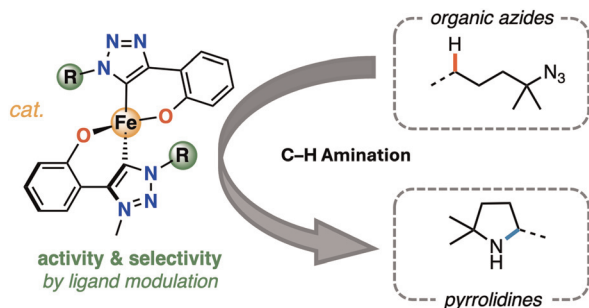
14786



Kinetically controlled morphology and composition of colloidal nanoparticles: cation exchange reactions from copper sulfide to transition metal (Mn, Zn, Fe, and Co) sulfides

Boeun An, Wooseok Jeong, Yun Jae Hwang, Hyeonseok Lee, Yeongbin Lee, Heesoo Jeong, Gyuhyeon Kim and Don-Hyung Ha*

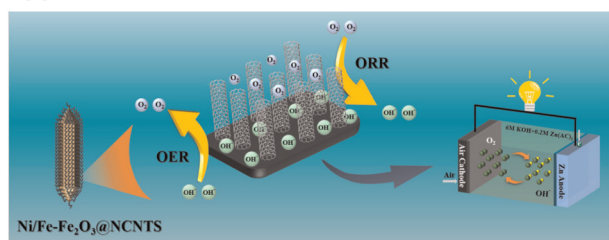
14795



Tailoring C–H amination activity *via* modification of the triazole-derived carbene ligand

Luke A. Hudson, Wowa Stroek and Martin Albrecht*

14801



Ni-doping optimized d-band center in bifunctional Fe₂O₃ modified by bamboo-like NCNTs as a cathode material for Zn–air batteries

Yang Shi, Songhan Hu, Xinxin Xu* and Jin Chen

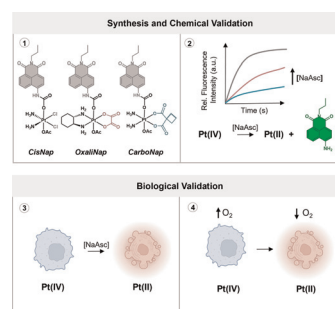


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14811

Fluorogenic platinum(IV) complexes as potential predictors for the design of hypoxia-activated platinum(IV) prodrugs

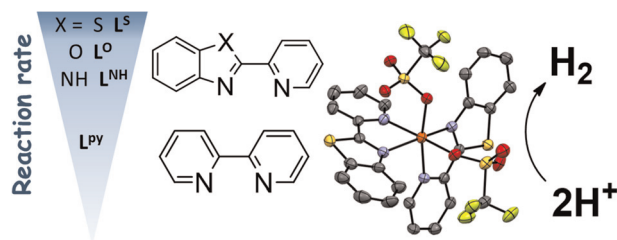
Jevon W. Marsh, Lina Hacker, Shitong Huang, Marie H. C. Boulet, Jhanelle R. G. White, Louise A. W. Martin, Megan A. Yeomans, Hai-Hao Han, Ismael Diez-Perez, Rebecca A. Musgrave, Ester M. Hammond* and Adam C. Sedgwick*



14817

Hydrogen evolution driven by heteroatoms of bidentate N-heterocyclic ligands in iron(II) complexes

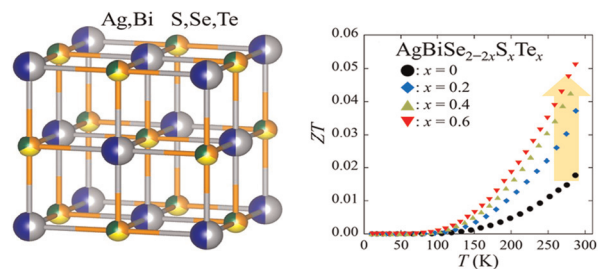
Soma Keszei,* Yiqing Wang, Haotian Zhou, Tamás Ollár, Éva Kováts, Krisztina Frey, Levente Tapasztó, Shaohua Shen and József Sándor Pap



14830

High entropy effect on thermoelectric properties of the nonequilibrium cubic phase of $\text{AgBiSe}_{2-2x}\text{S}_x\text{Te}_x$ with $x = 0-0.6$

Asato Seshita, Aichi Yamashita,* Takayoshi Katase and Yoshikazu Mizuguchi

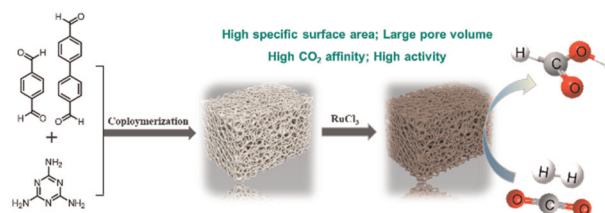


High-entropy-type $\text{AgBiSe}_{2-2x}\text{S}_x\text{Te}_x$ with cubic structure

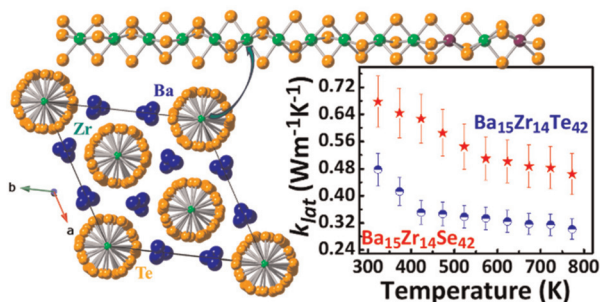
14839

Hydrogenation of CO_2 to formate catalyzed by a Ru catalyst supported on a copolymerized porous organic polymer

Yang Ding, Yuxuan Yang, Kefan Huo, Yang Li, Jiasheng Wang, Yuichiro Himeda, Wan-Hui Wang* and Ming Bao*



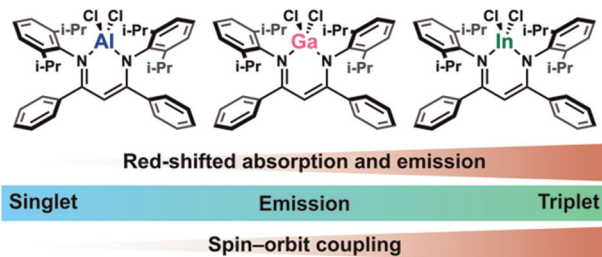
14848



$\text{Ba}_{15}\text{Zr}_{14}\text{Te}_{42}$: a new complex ternary telluride structure with low thermal conductivity

Sweta Yadav, Manish K. Niranjan and Jai Prakash*

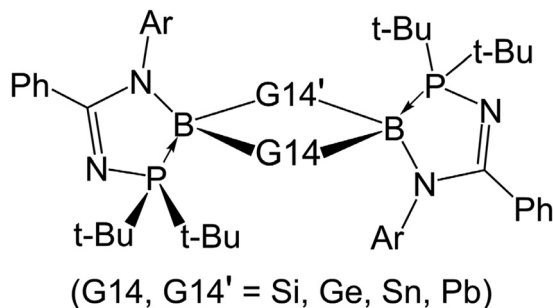
14858



Effects of a central element on the photoluminescence properties of β -diketiminato complexes composed of group 13 elements

Shunichiro Ito, Kazuo Tanaka* and Yoshiki Chujo

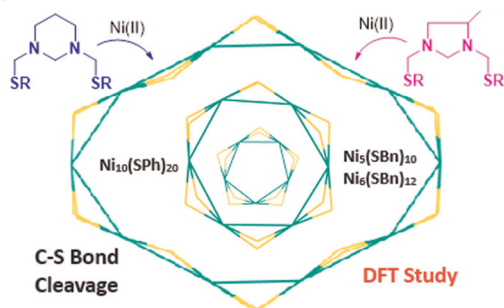
14866



Four-membered heterocyclic molecules featuring boron and heavy group 14 elements that exhibit both σ -aromatic and π -aromatic properties: a new synthetic target

Zheng-Feng Zhang, Cheuk-Wai So* and Ming-Der Su*

14875



Selective synthesis of the missing tiara-like Ni_{10} , Ni_5 and Ni_6 thiolates by the C–S bond cleavage of bis(thioether) molecules with a DFT study

Suparno Debnath, Sandip Giri and Ganesan Mani*

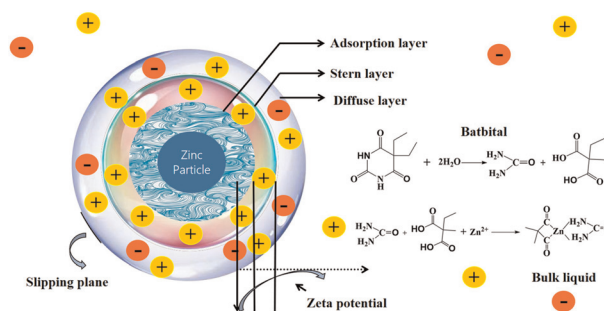


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14887

Barbital-derived chelating ligands for interface regulation and stabilization of Zn metal anodes for aqueous zinc-ion batteries

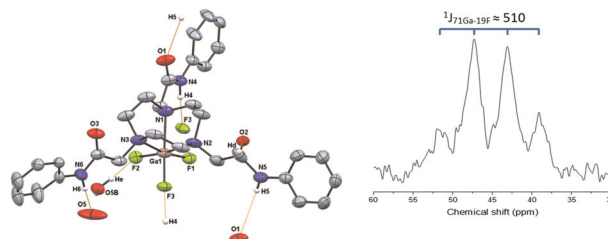
Pengju Wu, Wenbin Jia, BeiBei Sun, Shengnan Yang, Ying Wu,* Fengqin Tang* and Libing Hu*



14897

Synthesis and properties of metal trifluoride complexes with amide-functionalised tacn macrocycles and radiofluorination of [GaF₃(L¹)] by ¹⁸F/¹⁹F isotopic exchange

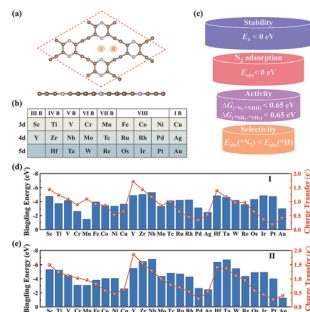
Charley O'Callaghan, Victoria K. Greenacre, Rhys P. King, Julian Grigg, Julie M. Herniman, Graeme McRobbie and Gillian Reid*



14910

Computational screening of pyrazine-based graphene-supported transition metals as single-atom catalysts for the nitrogen reduction reaction

Min Zhang, Caijuan Xia, Lianbi Li, Anxiang Wang, Dezhong Cao, Baiyu Zhang, Qinglong Fang* and Xumei Zhao*



14922

Structural modification of nickel tetra(thiocyanato)corroles during electrochemical water oxidation

Panisha Nayak, Ajit Kumar Singh, Manisha Nayak, Subhajit Kar, Kasturi Sahu, Kiran Meena, Dinesh Topwal, Arindam Indra* and Sanjib Kar*

