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Cover
See Nuno M. M. Moura, Ana M. V. M. Pereira *et al.*, pp. 14762–14773.

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Inside cover
See Sheldon Sookai and Orde Q. Munro, pp. 14774–14789.

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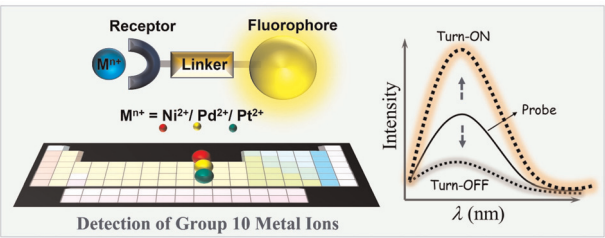
PERSPECTIVE

14704

Fluorescent and chromogenic organic probes to detect group 10 metal ions: design strategies and sensing applications

Nidhi Goswami, Sudhanshu Naithani, Jimmy Mangalam, Tapas Goswami, Ritesh Dubey, Pramod Kumar, Pankaj Kumar* and Sushil Kumar*



FRONTIER

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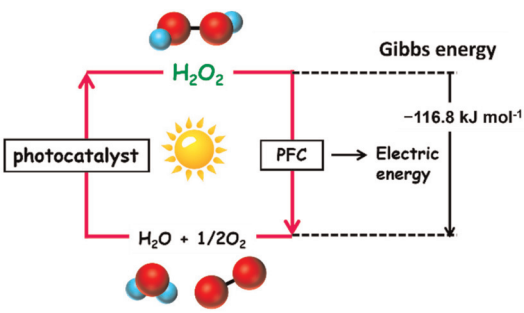
Hydrogen peroxide photo-fuel cells

Hiroaki Tada



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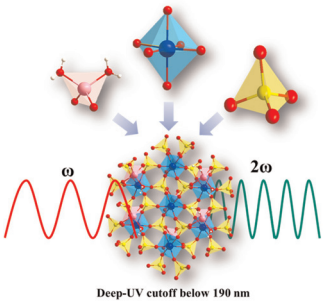
COMMUNICATIONS

14742

A lithium–scandium sulfate with second-harmonic generation response and deep-ultraviolet transparency

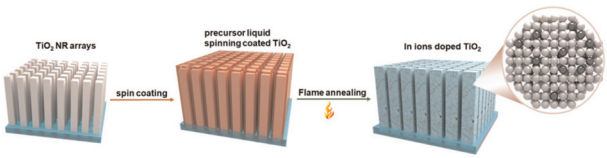
Zi-Long Geng, Hong-Xin Tang, Rui-Biao Fu,* Zu-Ju Ma* and Xin-Tao Wu



14747

Flame doping of indium ions into TiO_2 nanorod arrays for enhanced photochemical water oxidation

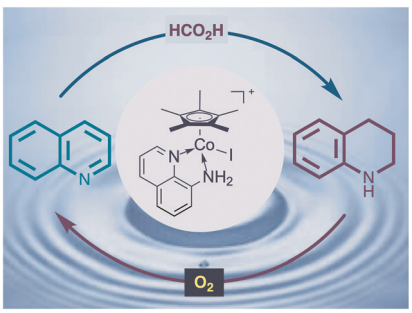
Xue Chen, Biyi Chen, Dan Li, Longhua Li, Dongbo Xu* and Weidong Shi*



14752

Hydrogenation and dehydrogenation of N-heterocycles under Cp*Co(III)-catalysis

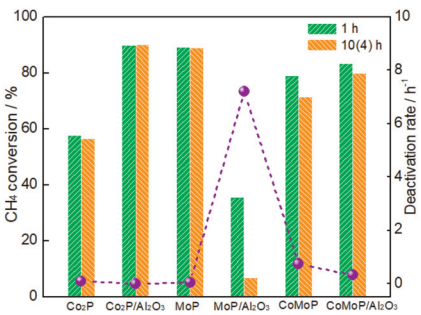
Pardeep Dahiya, Nidhi Garg, Rinaldo Poli and Basker Sundararaju*



14757

Interesting influence of Al_2O_3 on the catalytic stability of Co_2P, MoP and CoMoP catalysts for dry reforming of methane

Shuo Chen, Qingshan Rong, Dongmei Liu,* Na Sun and Zhiwei Yao*



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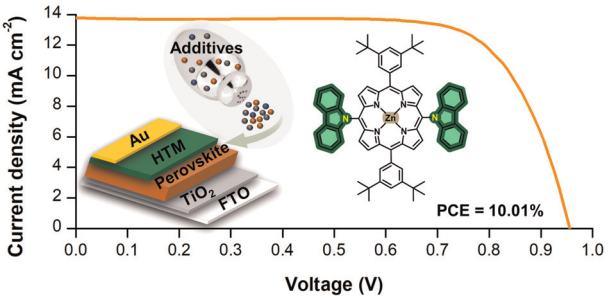
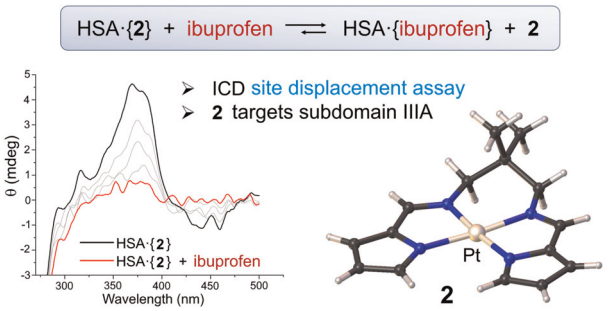


C–N linked donor type porphyrin derivatives: unrevealed hole-transporting materials for efficient hybrid perovskite solar cells

Melani J. A. Reis, Ana T. Nogueira, Ana Eulálio, Nuno M. M. Moura,* Joana Rodrigues, Dzmitry Ivanou, Paulo E. Abreu, M. Rosário P. Correia, Maria G. P. M. S. Neves, Ana M. V. M. Pereira* and Adélio Mendes

14774



Spectroscopic and computational study of the interaction of Pt(II) pyrrole-imine chelates with human serum albumin

Sheldon Sookai and Orde Q. Munro*

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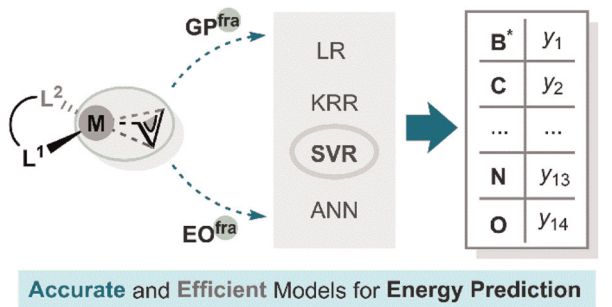

Using a single complex to predict the reaction energy profile: a case study of Pd/Ni-catalyzed ethylene polymerization

Han Lu, Xiaohui Kang, Hang Yu, Wenzhen Zhang and Yi Luo*

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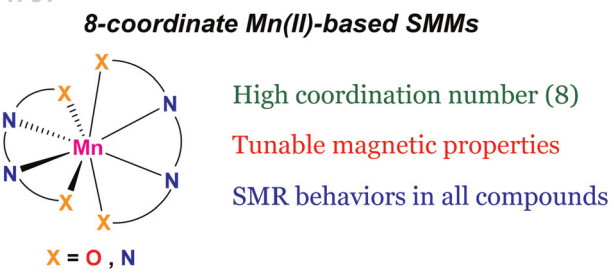

Slow magnetic relaxation in 8-coordinate Mn(II) compounds

Li-Xin Wang, Xiao-Fan Wu, Xin-Xin Jin, Jia-Yi Li, Bing-Wu Wang,* Ji-Yan Liu,* Jing Xiang* and Song Gao

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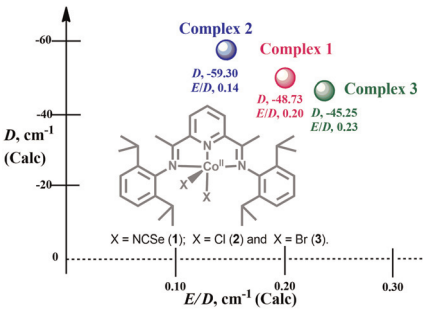
Field induced single ion magnet behavior in Co^{II} complexes in a distorted square pyramidal geometry

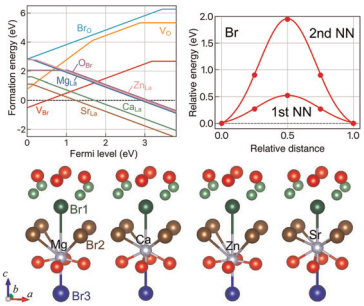
Atanu Dey,* Junaid Ali, Shruti Moorthy, Jessica Flores Gonzalez, Fabrice Pointillart,* Saurabh Kumar Singh* and Vadapalli Chandrasekhar*



14822

Mechanisms of point defect formation and ionic conduction in divalent cation-doped lanthanum oxybromide: first-principles and experimental study

Kazuki Shitara,* Akihide Kuwabara, Naoyoshi Nunotani, Muhammad Radzi Iqbal Bin Misran, Miki Inada, Tomoki Uchiyama, Yoshiharu Uchimoto and Nobuhito Imanaka



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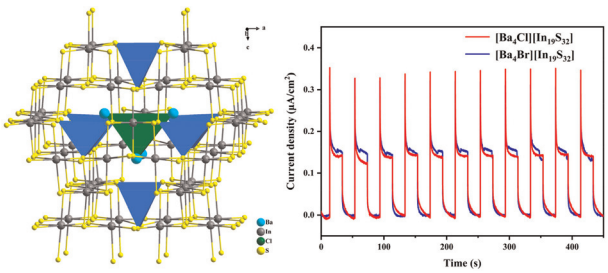
$[Ba_4X][In_{19}S_{32}]$ (X = Cl, Br): two quaternary metal chalcohalides exhibiting remarkable photocurrent responses

Chunlan Tang, Wenhao Xing, Fei Liang, Jian Tang, Jieyun Wu,* Wenlong Yin* and Bin Kang



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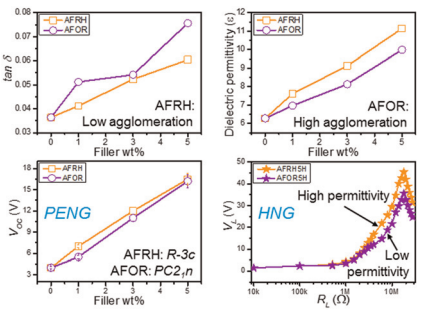
Electroactive properties and piezo-tribo hybrid energy harvesting performances of PVDF-$AlFeO_3$ composites: role of crystal symmetry and agglomeration of fillers

Abhishek Sasmal, Sourav Maity, A. Arockiarajan and Shrabanee Sen*



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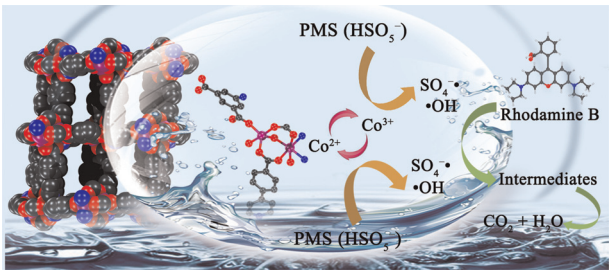
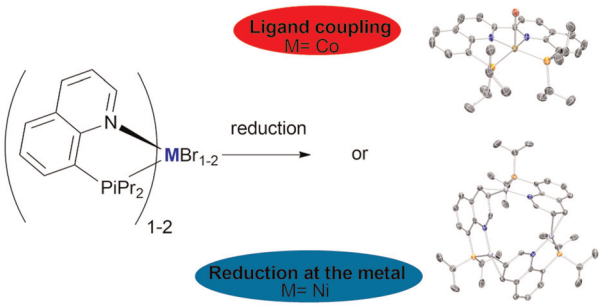


Co-based MOF heterogeneous catalyst for the efficient degradation of organic dye *via* peroxymonosulfate activation

Wei Xie, Yuan Yuan, Jia-Jun Wang, Shu-Ran Zhang, Guang-Juan Xu, Nan Jiang, Yan-Hong Xu* and Zhong-Min Su*

14859



Phosphinoquinoline supported Co^{II}, Ni^{II}, and Fe^{II} complexes: divergent behaviour upon reduction

Pauline Schiltz, Nicolas Casaretto, Sophie Bourcier, Audrey Auffrant* and Corinne Gosmini*

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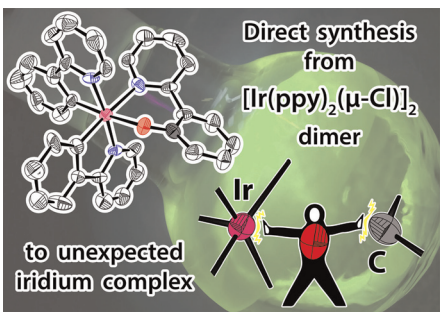

Unexpected reactivity of cyclometalated iridium(III) dimers. Direct synthesis of a mononuclear luminescent complex

Jing Tu, Daniele Veclani, Filippo Monti,* Andrea Mazzanti, Letizia Sambri, Nicola Armaroli and Andrea Baschieri*

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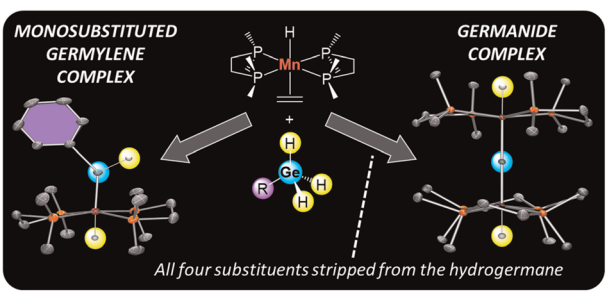

Reactions of $[(dmpe)_2MnH(C_2H_4)]$ with hydrogermanes to form germylene, germyl, hydrogermane, and germanide complexes

Jeffrey S. Price, Ignacio Vargas-Baca, David J. H. Emslie* and James F. Britten

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PAPERS

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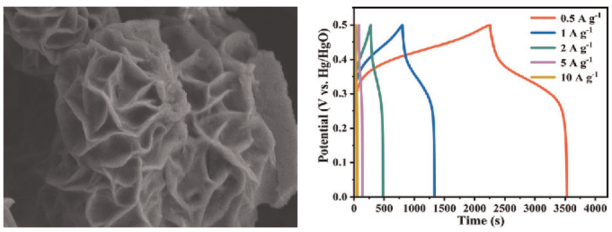
Two birds with one stone: facile fabrication of an iron–cobalt bimetallic sulfide nanosheet-assembled nanosphere for efficient energy storage and hydrogen evolution

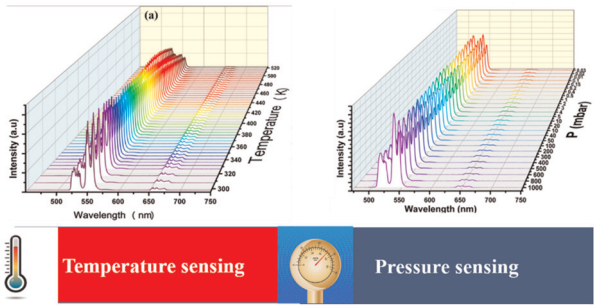
Tong Guo, Dawei Zheng, Guangyu Xu, Yigang Ding and Dong Liu*



14904

Ultralow pressure sensing and luminescence thermometry based on the emissions of Er^{3+}/Yb^{3+} codoped $Y_2Mo_4O_{15}$ phosphors

Kamel Saidi,* Christian Hernández-Álvarez, Marcin Runowski,* Mohamed Dammak and Inocencio R. Martín



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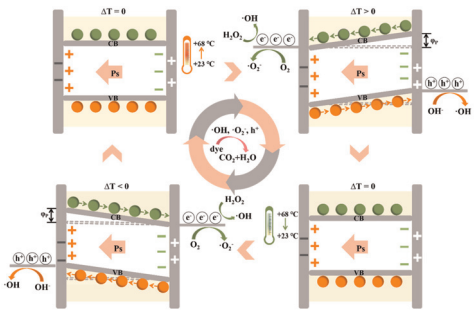
Pyroelectric catalytic performance of Sm^{3+}-modified $Pb(Mg_{1/3}Nb_{2/3})O_3$–$PbTiO_3$ for organic dyes: degradation efficiency, kinetics and pyroelectric catalytic mechanism

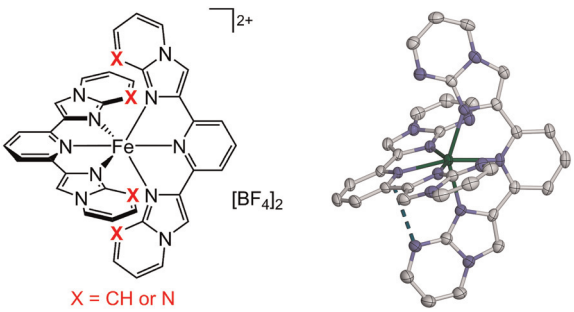
Xinyi Lin, Jina Ding,* Xiaohua Li, Zhuo Tang, Hongbing Chen, Huan Dong, Anhua Wu and Linwen Jiang*



14928

Iron(II) complexes of 2,6-bis(imidazo[1,2-*a*]pyridin-2-yl)pyridine and related ligands with annelated distal heterocyclic donors

Rafal Kulmaczewski and Malcolm A. Halcrow*



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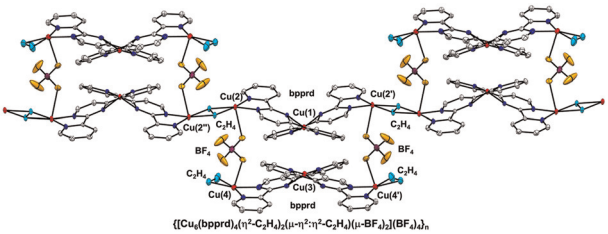

Structural diversity of copper(I)–ethylene complexes with 2,4-bis(2-pyridyl)pyrimidine directed by anions

Masahiko Maekawa,* Terumasa Hayashi, Kunihisa Sugimoto, Takashi Okubo and Takayoshi Kuroda-Sowa

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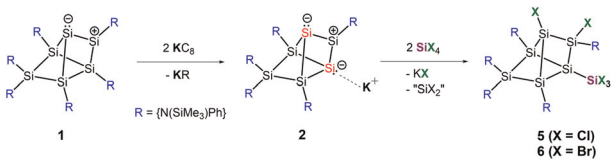
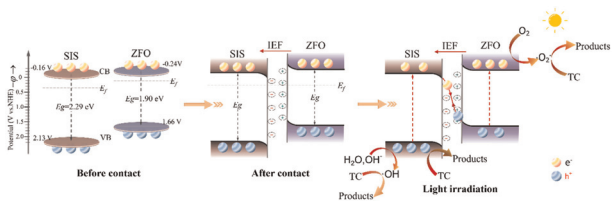


Synthesis and functionalization of the six-vertex anionic amido-substituted silicon cluster $[Si_6\{N(SiMe_3)Ph\}_5]^-$

Joschua Helmer, Alexander Hepp, Raphael J. F. Berger and Felicitas Lips*

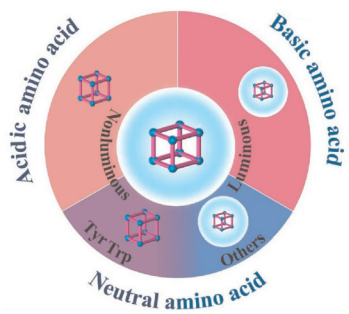
14956



A novel $SnIn_4S_8/ZnFe_2O_4$ S-scheme heterojunction with excellent magnetic properties and photocatalytic degradation activity for tetracycline

Dafeng Zhang,* Ruiqi Zhang, Xue Jiang, Dong Zhang, Hengshuai Li, Junchang Liu, Xipeng Pu* and Peiqing Cai

14967



Differential fluorescent response to amino acids based on metal–organic framework Zn-PBC

Wenxin Lin,* Yijia Wang, Haoke Zhang, Kei Hoi Shan, Panpan Si, Shijiang Yu, Zhen Wang, Dian Zhao, Junkuo Gao, Minghua Wu and Ben Zhong Tang*

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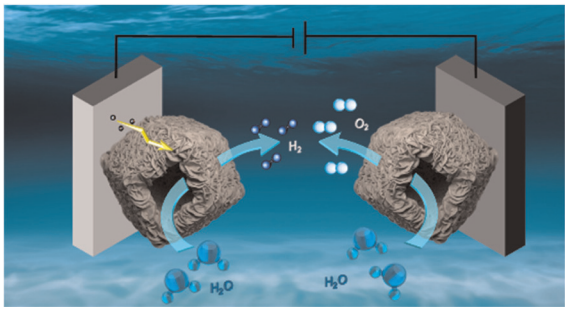
14973

ZIF template-based Fe-doped defect-rich hierarchical structure Co_3S_4/MoS_2 as a bifunctional electrocatalyst for overall water splitting

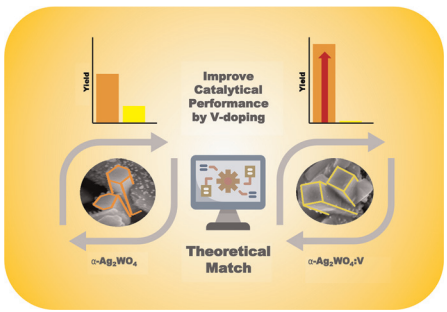
Xiangyu Zhang, Hong Li, Yanhui Li, Xianhui Wang, Hongbin Wang, Wenrong Yang, Jingquan Liu* and Da Li*



14982

Tuning the morphology to enhance the catalytic activity of α-Ag_2WO_4 through V-doping

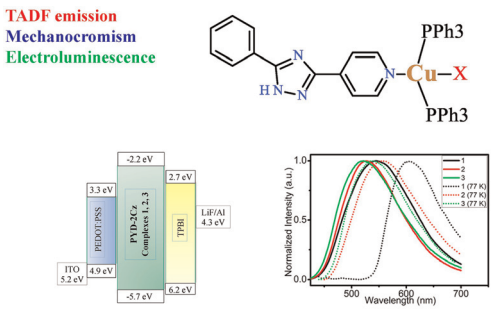
Katiana Lima Patrocinio, Jeziel Rodrigues Santos, Luis Ignacio Granone, Miguel Adolfo Ponce, Maria Sandra Churio, Lara Kelly Ribeiro, Marcio Daldin Teodoro, Rosa Llusar, Juan Andrés, Elson Longo and Marcelo Assis*



14995

Mononuclear copper(I) complexes bearing a 3-phenyl-5-(pyridin-4-yl)-1,2,4-triazole ligand: synthesis, crystal structure, TADF-luminescence, and mechanochromic effects

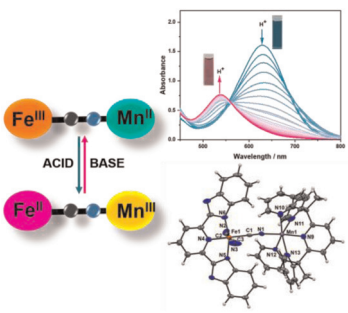
Alexey Gusev,* Elena Braga, Ekaterina Zamnius, Mikhail Kiskin, Amjad Ali, Glib Baryshnikov* and Wolfgang Linert*



15009

Observation of protonation-induced intra-molecular metal-to-metal charge transfer in cyano-bridged [Fe–CN–Mn/Ni] dinuclear complexes

Shuwen Jia, Xinrui Zhu and Dongfeng Li*



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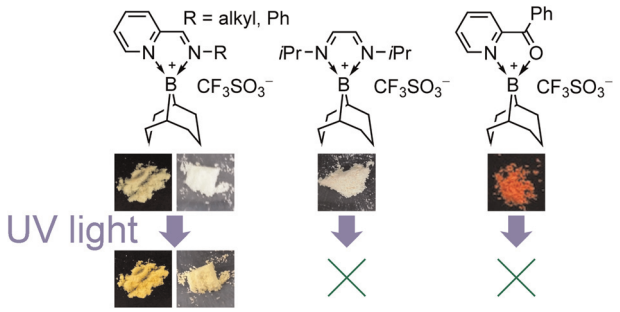
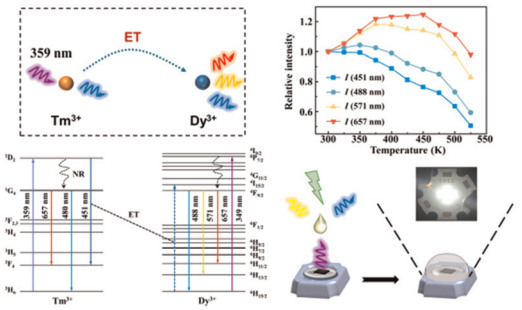
15017



Synthesis, structures, and solid-state photoresponsive color change behavior of boronium complexes bearing a pyridine-imine, diimine, or pyridine-ketone bidentate ligand

Junro Yoshino,* Yoshito Hirono, Ayako Kaneda and Naoto Hayashi

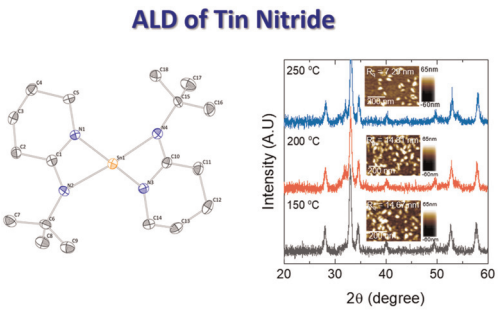
15023



Color-tunable luminescence based on the efficient energy transfer of a Tm–Dy system for optical thermometry and white LED lighting

Qi Xiao, Xingyu Wu, Na Zhou, Zhi Li, Yuqi Liu, Xinyao Dong, Xiumei Yin and Xixian Luo*

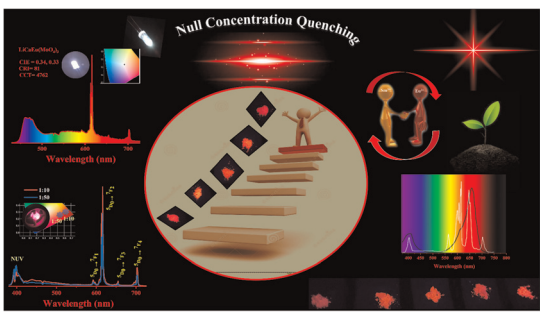
15033



Evaluation of tin nitride (Sn_3N_4) *via* atomic layer deposition using novel volatile Sn precursors

Hyeonbin Park, Heenang Choi, Sunyoung Shin, Bo Keun Park, Kibum Kang, Ji Yeon Ryu,* Taeyong Eom* and Taek-Mo Chung*

15043



Narrow-band dazzling red-emitting ($LiCaLa(MoO_4)_3$:Eu^{3+}) phosphor with scheelite structure for hybrid white LEDs and $LiCaLa(MoO_4)_3$:Sm^{3+},Eu^{3+}-based deep-red LEDs for plant growth applications

Priyansha Sharma, Jaya Prakash Madda* and Sivakumar Vaidyanathan*

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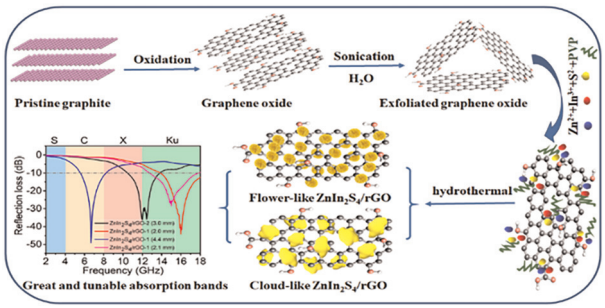
15057

Microstructure optimization strategy of $ZnIn_2S_4$/rGO composites toward enhanced and tunable electromagnetic wave absorption properties

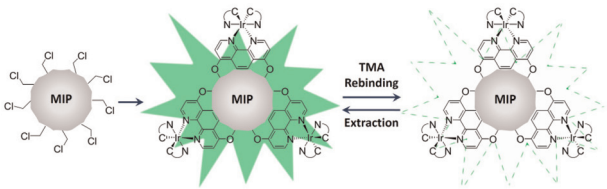
Ran Xu, Man He,* Shuangjiang Feng, Yanmei Liu, Chunfeng Mao, Yongjuan Wang, Xiaohai Bu, Meiyun Zhang and Yuming Zhou*



15071

An Ir(III) cyclometalate-functionalized molecularly imprinted polymer: photophysics, photochemistry and chemosensory applications

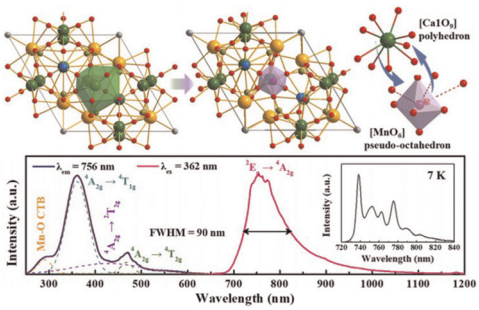
Ruoyang Liu, Shun-Cheung Cheng, Chi-On Ng, Yelan Xiao, Kin-Man Tang, Ka-Ming Tong, Ngai-Yu Lei and Chi-Chiu Ko*



15078

A novel broadband $Ba_3Ca_4(BO_3)_3(SiO_4)Cl:Mn^{4+}$ near-infrared phosphor with a special pseudo-octahedral Mn^{4+} coordination structure

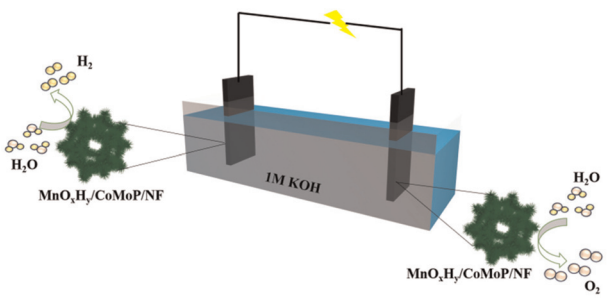
Jiutian Wang, Tao Tan, Ran Pang, Da Li, Chengyu Li, Su Zhang,* Lihong Jiang* and Hongjie Zhang



15091

MnO_xH_y-modified CoMoP/NF nanosheet arrays as hydrogen evolution reaction and oxygen evolution reaction bifunctional catalysts under alkaline conditions

Xuemin Wang, Ke Zhang, Yuhan Xie, Dehua Yu, Haoze Tian and Yongbing Lou*



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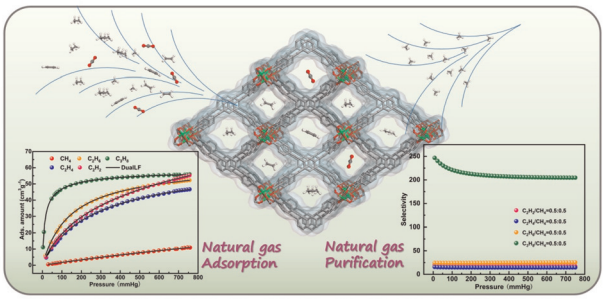
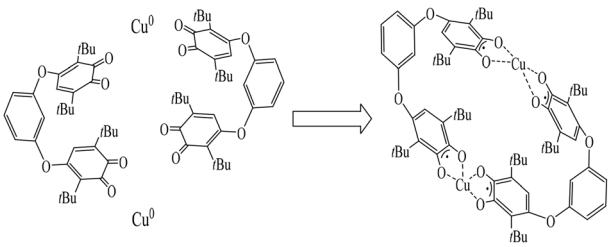
15101



An ethynyl-modified interpenetrated metal–organic framework for highly efficient selective gas adsorption

Xueyue Yu, Ziyang Huang, Rajamani Krishna, Xiaolong Luo* and Yunling Liu*

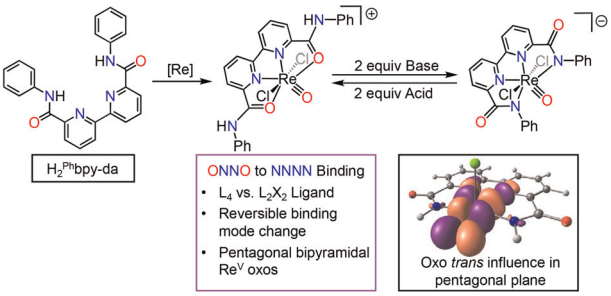
15107



Self-assembly of a metal–organic cage-like structure bearing cofacial redox-active bis-(*o*-semiquinone) copper(II) units

Anna V. Cherkasova, Anton V. Cherkasov, Konstantin A. Martyanov, Artem S. Bogomyakov, Victor N. Khrustalev, Alexander A. Kissel, Konstantin A. Kozhanov, Viacheslav A. Kuropatov* and Vladimir K. Cherkasov

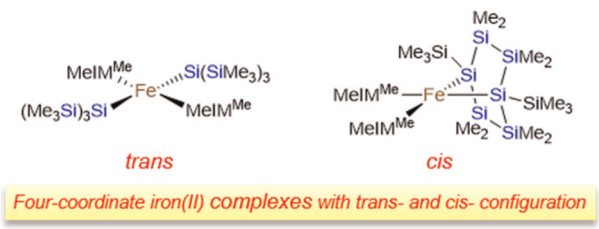
15115



Synthesis and bonding analysis of pentagonal bipyramidal rhenium carboxamide oxo complexes

Noah D. McMillion, Quinton J. Bruch, Chun-Hsing Chen, Faraj Hasanayn* and Alexander J. M. Miller*

15124



Four- and three-coordinate planar iron(II) complexes supported by bulky organosilyl ligands

Reon Ishii, Minesato Nakagawa, Yoshimasa Wada and Yusuke Sunada*

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CORRECTIONS

15131

Correction: Synthesis and characterization of heterometallic rings templated through alkylammonium or imidazolium cations

Rajeh Alotaibi, Amy Booth, Edmund Little, Adam Brookfield, Amritroop Achari, Selena J. Lockyer, Grigore A. Timco, George F. S. Whitehead, Iñigo J. Vitórica-Yrezábal, Nicholas F. Chilton, Rahul R. Nair, David Collison* and Richard E. P. Winpenny*

15132

Correction: Optical property trends in a family of $\{Mo_6I_8\}$ aquahydroxo complexes

Margarita V. Marchuk, Natalya A. Vorotnikova, Yuri A. Vorotnikov,* Natalia V. Kuratieva, Dmitri V. Stass and Michael A. Shestopalov