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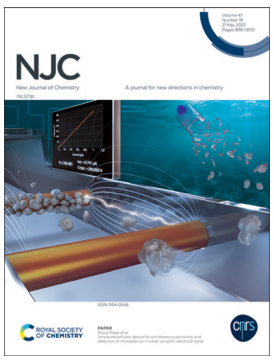
ISSN 1144–0546 CODEN NJCHES 47(19) 8981–9510 (2023)



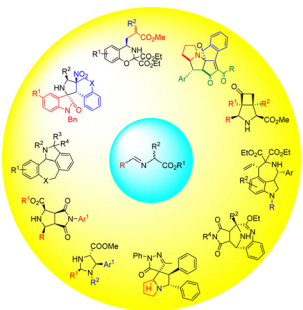
Cover
See Pouya Rezai *et al.*, pp. 9050–9060. Image reproduced by permission of Alireza Zabihihesari from *New J. Chem.*, 2023, **47**, 9050.

PERSPECTIVE

8997

Recent advances in the (3+2) cycloaddition of azomethine ylide

Sapana Dubey, Anit Pal, Shreya Roy, Souvik Sasmal, Aashi Tamrakar, Rathin Jana* and Tapas Das*

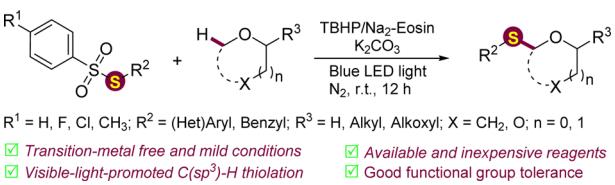


COMMUNICATIONS

9035

Visible-light-promoted C(sp^3)–H thiolation of aliphatic ethers with thiosulfonates

Wen-Zhu Bi,* Qing-Pu Liu, Chen-Yu Li, Wen-Jie Zhang, Su-Xiang Feng,* Yang Geng,* Xiao-Lan Chen and Ling-Bo Qu



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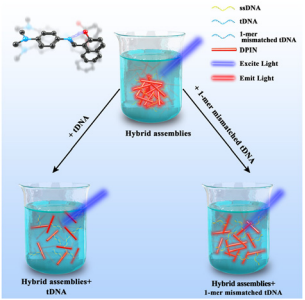
COMMUNICATIONS

9040

DNA-embedding Schiff base molecule assemblies: an efficient biological detection approach based on clustering-triggered emission

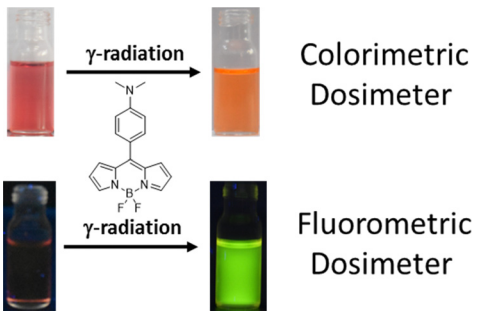
Danning Lv, Jingyuan Huang, Xianyang Li, Chunzhi Cui* and Dong June Ahn*



9045

Development of a BODIPY-based ratiometric fluorescence off-on dosimeter for gamma radiation

Manoj K. Choudhary and Soumyaditya Mula*



PAPERS

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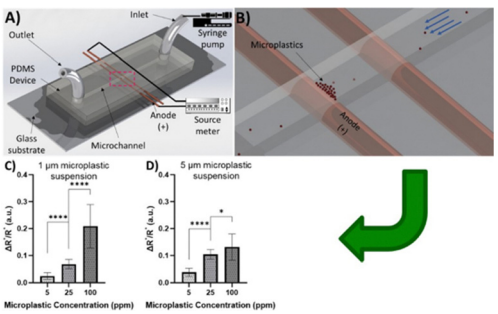
Simple microfluidic device for simultaneous extraction and detection of microplastics in water using DC electrical signal

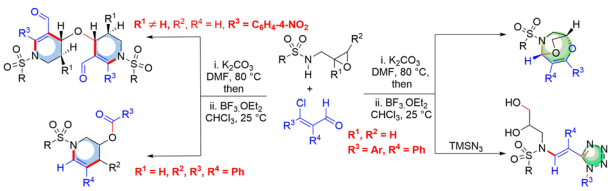
Alireza Zabihihesari, Arezoo Khalili, Mohammad-Javad Farshchi-Heydari, Armin Eilaghi and Pouya Rezai*



9061

Ring expansion/opening reactions of epoxy ene-amides: access to azabicyclononene, tetrahydropyridine and tetrazole scaffolds

Suraj and K. C. Kumara Swamy*



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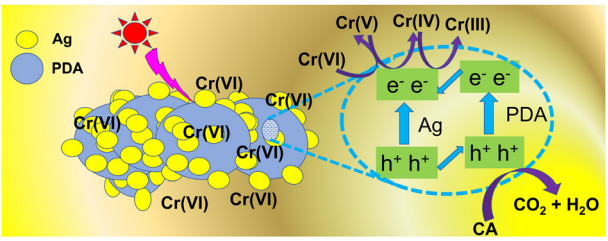
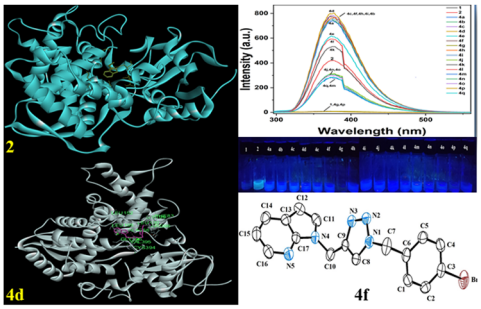


Mussel-inspired PDA/Ag nanocomposite catalyst for highly-efficient Cr(VI) removal *via* visible light-induced reduction and absorption

Xi Lu, Zhiwei Gao, Guihua Wang, Sheng Chen, Yingchun Gu, Bin Yan and Qin Yang*

9077



Fluorescent 7-azaindole *N*-linked 1,2,3-triazole: synthesis and study of antimicrobial, molecular docking, ADME and DFT properties

Kanika Sharma, Ram Kumar Tittal,* Kashmiri Lal, Ramling S. Mathpati and Ghule Vikas D.

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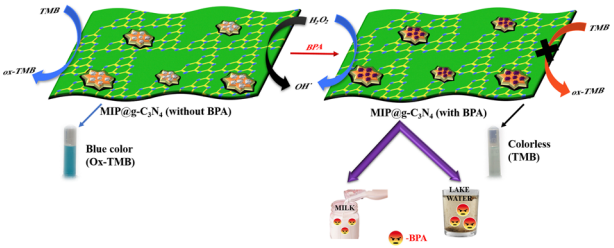
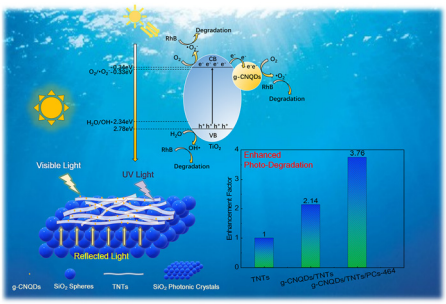


Selective and sensitive on-site colorimetric detection of 4,4′-isopropylidenediphenol using non-enzymatic molecularly imprinted graphitic carbon nitride hybrids in milk and water samples

M. Komal, J. Vinoth Kumar, R. Arulmozhi, M. Sherlin Nivetha, S. Pavithra and N. Abirami*

9101



Ternary-structured graphite carbon nitride quantum dots/TiO_2 nanotubes/3D SiO_2 photonic crystals for enhanced dye photodegradation

Ping Li, Huaiyuan Jiang, Qing Wang, Ruizhen Liu, Yutian Fan, Ru'an Chi, Jian Cheng and Renliang Lyu*

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PAPERS

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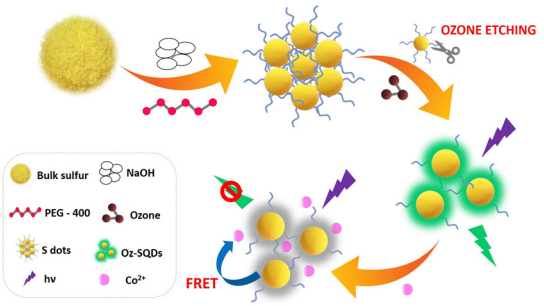
Rapid and scalable synthesis of sulfur quantum dots through ozone etching: photoluminescence and FRET-mediated Co^{2+} sensing

R. V. Reji and V. Biju*



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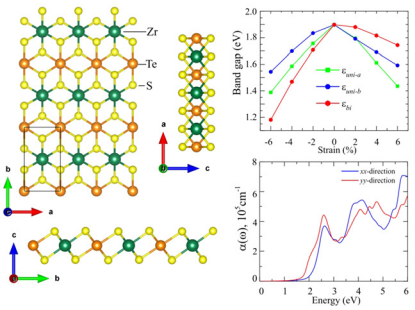
Electronic, optical, and transport properties of single-layer $ZrTeS_4$: a DFT study

Dat D. Vo, Tuan V. Vu, A. A. Lavrentyev, O. Y. Khyzhun, A. I. Kartamyshev, Hien D. Tong and Nguyen N. Hieu*



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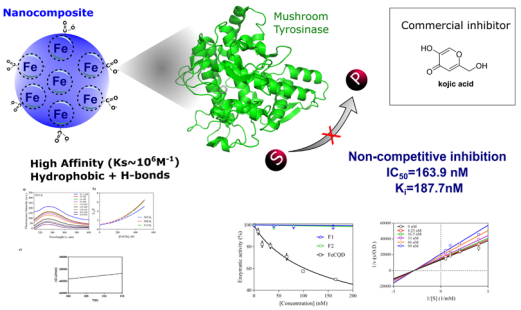
Inhibitory effects of iron-based carbonaceous nanocomposites on mushroom tyrosinase activity: molecular aspects and mechanistic insights

Marcela Rodrigues de Barros, Thais Meira Menezes, Yarima Sanchez Garcia and Jorge Luiz Neves*



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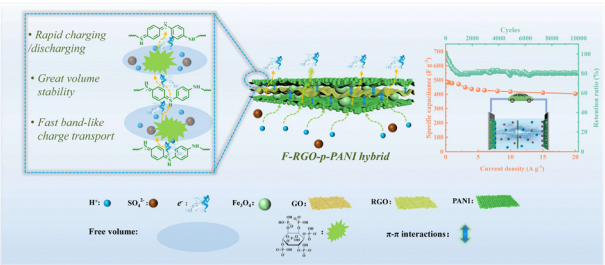
Ternary Fe_3O_4/reduced graphene oxide/phytic acid doped polyaniline hybrid based supercapacitive electrode with high capacitance retention and good cycling stability

Yaxiong Zhao, Ming Zhou,* Ruifeng Ni, Yi Li, Jiangyu Huang, Zhenyu Li and Jingyu Chen*



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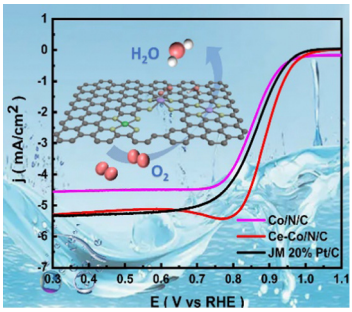

High-dispersion Co/N/C ultra-thin carbon nanosheets modified with trace Ce as efficient oxygen reduction reaction catalysts

Xiaoqi Zhu, Shengnan Xie, Xin Fu, Sheng Zhu, Yulin Min, Qunjie Xu and Qiaoxia Li*

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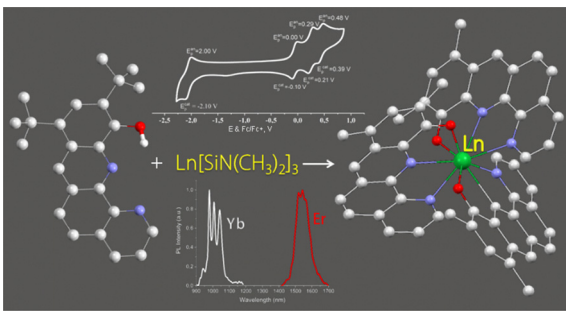

New NIR-luminescent lanthanide complexes with tridentate oxybenzophenanthroline ligands

Tatyana V. Balashova,* Maxim V. Arsenyev, Svetlana K. Polyakova, Vasily A. Ilichev, Roman V. Rumyantcev, Georgy K. Fukin, Artem N. Yablonskiy and Mikhail N. Bochkarev

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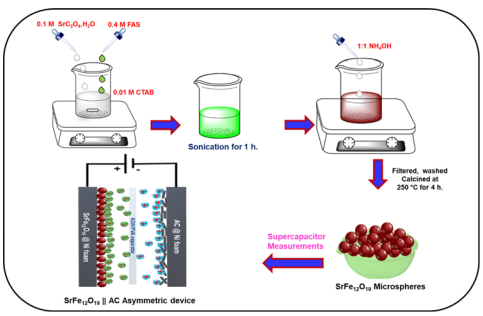
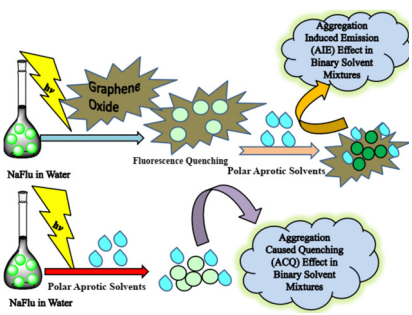


Surfactant assisted synthesis of strontium hexaferrite microspheres for the fabrication of high-performance asymmetric supercapacitors

Elaiyappillai Elanthamilan and Sea-Fue Wang*

9186



Graphene oxide promotes aggregation-induced emission in binary solvent mixtures

Souvik Pandit, Sanyukta Bhattacharjee and Debabrata Seth*

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PAPERS

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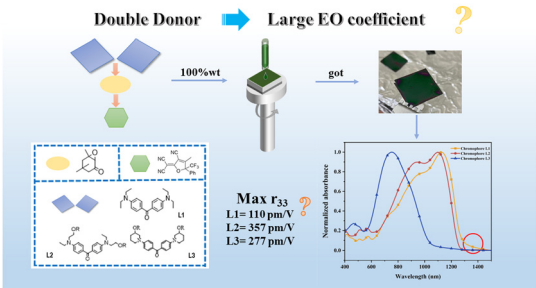
Synthesis and characterization of Y-shaped optical nonlinear chromophores with strong acceptors

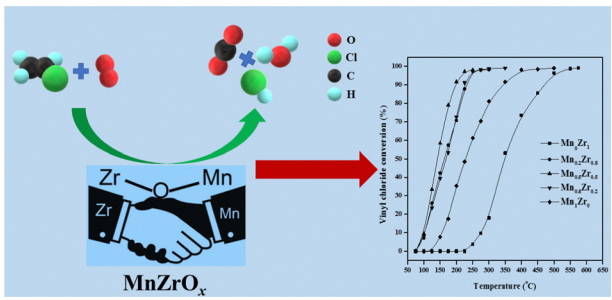
Zhibei Li, Ziying Zeng, Shuangke Wu, Jianhua Liu,* Tongyu Luo, Juanfei Liao, Ruoxi Yang and Fenggang Liu*



9212

Mn–Zr composite oxides as efficient catalysts for catalytic oxidation of vinyl chloride

Zhiyong Deng,* Mingju Wang, Hongliang Zhang and Chuanhui Zhang*



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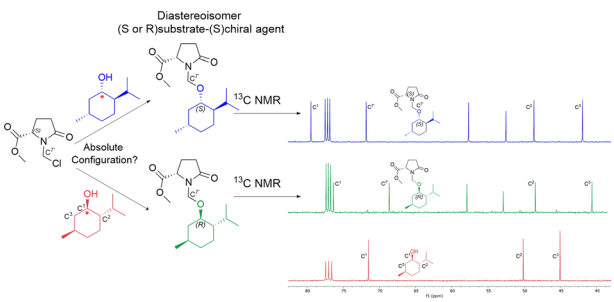
Assignment of the absolute configuration of secondary alcohols by ^{13}C NMR and its correlation with methyl-1-(chloromethyl)-oxopyrrolidine-2-carboxylate and quantum-mechanical GIAO calculations

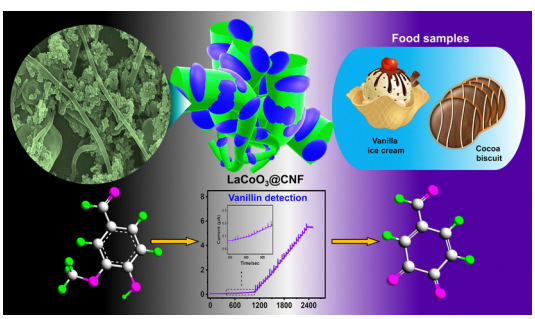
Eréndira Torales, Serguei Fomine and Jorge Cárdenas*



9229

Rhombohedral type of $LaCoO_3$ with carbon nanofiber composite as an electrocatalyst enables the amperometry detection of vanillin in food samples

Subramaniyan Vinoth and Sea-Fue Wang*



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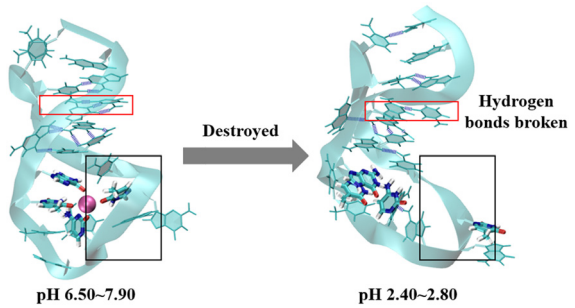

Mechanism of pH influence on aptamer binding with Cd^{2+} revealed by molecular dynamics simulation

Hongen Yuan, Xiuxiu Wu,* Xingfa Ren, Bin Xue, Wenjie Qiu, Dinghui Nong, Tao Yang and Fei Xu

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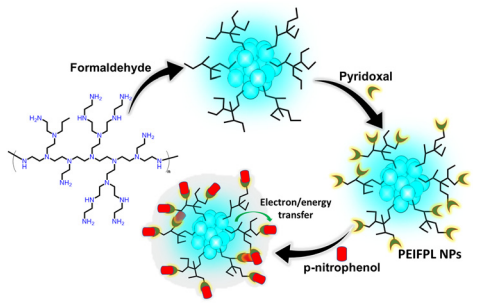

Polyethyleneimine-based fluorescent polymeric nanoparticles: synthesis and application in fluorescence sensing of pH and *para*-nitrophenol

Anuj K. Saini, Bigyan R. Jali and Suban K. Sahoo*

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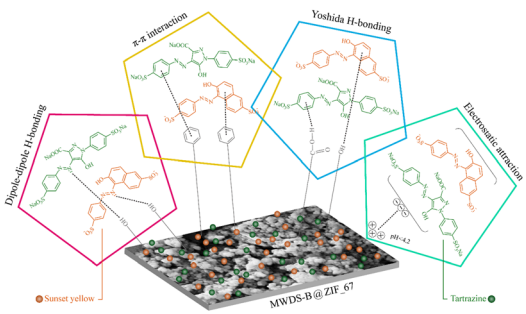

Rapid microwave-assisted synthesis of a magnetic biochar@ZIF-67: an efficient nanocomposite-based adsorbent for the dye-contaminated water cleanup

Sepehr Haghdoust, Payam Arabkhani, Sajad Ghaderi, Mehrorang Ghaedi* and Arash Asfaram*

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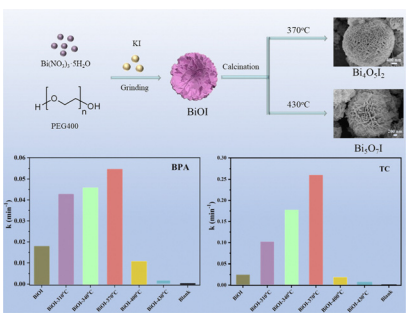

$Bi_xO_yI_z$ with oxygen vacancies for boosting the photocatalytic oxidation of bisphenol A and tetracycline

Jing Xie,* Suixin Yin, Zhenjiang Lu, Jindou Hu, Aize Hao and Yali Cao*

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PAPERS

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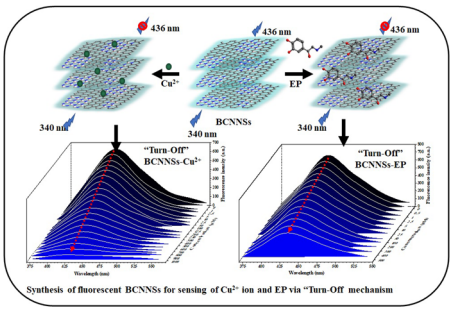
Synthesis of fluorescent boron carbon nitride nanosheets for the detection of Cu^{2+} ions and epinephrine

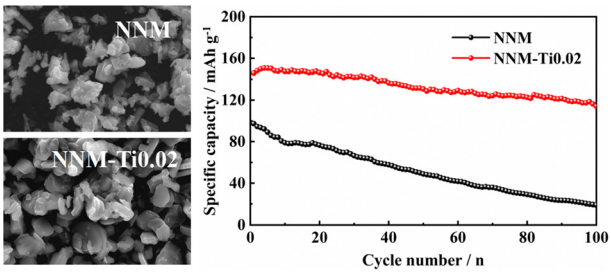
Mayurkumar Revabhai Patel, Tae Jung Park and Suresh Kumar Kailasa*



9288

Cathode material stability enhancement for layered manganese-based sodium-ion batteries by doping titanium

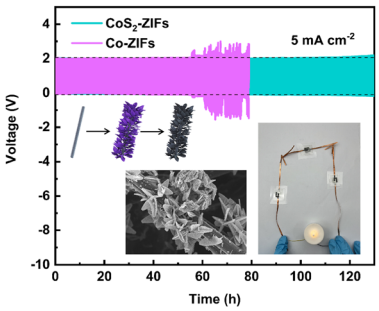
Qingmei Xiao, Soroosh Mahmoodi, Ziting Guo, Jinchao Huang and Shengwen Zhong*



9297

A leaf-like porous N-doped carbon structure embedded with CoS_2 nanoparticles self-supported on carbon fiber paper as a cathode in flexible zinc–air batteries

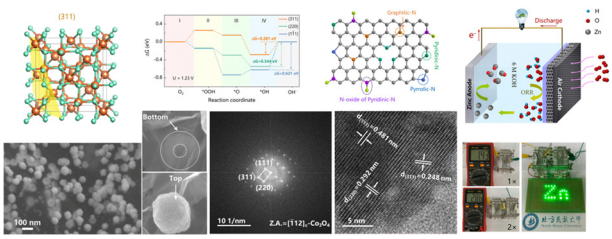
Mengyu Chen, Yongjian Wu, Yujie Zhou, Xinxin Yu, Peng Dai, Jing Yu, Tongtong Jiang* and Mingzai Wu*



9307

***In situ* growth of Co_3O_4 nanoparticles on nitrogen-doped reduced graphene oxide for high-efficiency oxygen reduction catalysis**

Yue Yang, Qitong Ye, Quan Zhou, Tong Xue,* Yipu Liu,* Xiahui Shi, Zheng-Jian Chen, Xiang-Hui Yan, You-Jun Lu, Zhong-Li Zou, Bei-Ping Wang, Li-Hua Cui and Feng-Lan Han



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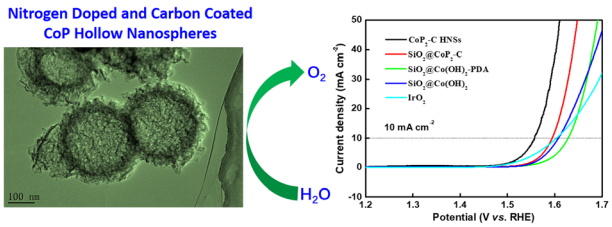
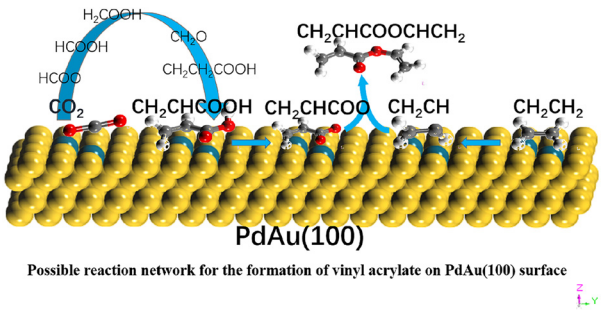
9316



Nitrogen doped and carbon coated CoP hollow nanospheres with enhanced electrocatalytic activity towards the oxygen evolution reaction

Xiangwei Wang, Yunyun Zhai* and Haiqing Liu*

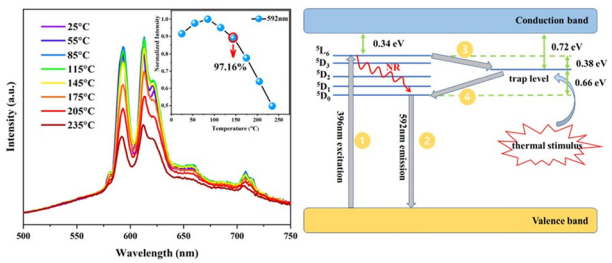
9323



Theoretical insight into the generation mechanism of vinyl acrylate in the production of vinyl acetate on PdAu(100)

Yingzhe Yu, Jia Guo, Weiwei Zhang, Hai Chen and Minhua Zhang*

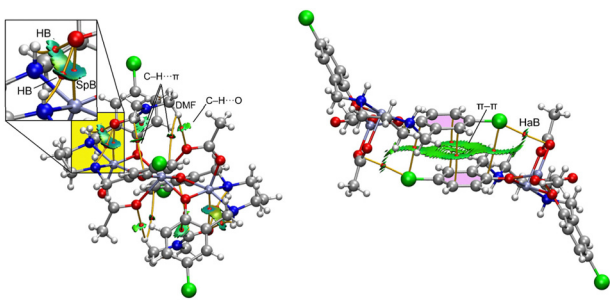
9335



A bright orange-red emitting phosphor $Ba_9La_2W_4O_{24}$:Eu^{3+} with double perovskite structure and abnormal thermal quenching behavior

Xiaoxi Ma, Chuqi Wang, Qingyi Lv, Bohuai Shao, Shuo Yang and Chuang Wang*

9346



The importance of spodium bonds, H-bonds and π-stacking interactions in the solid state structures of four zinc complexes with tetradentate secondary diamine ligands

Puspendu Middya, Mainak Karmakar, Rosa M. Gomila, Michael G. B. Drew, Antonio Frontera* and Shouvik Chattopadhyay*

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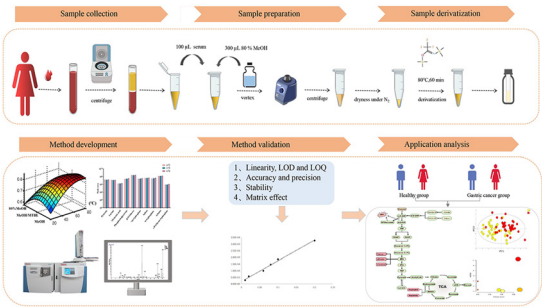
9364

Optimization of a quantitative protocol for the intermediate metabolites of the glycolysis pathway in human serum using gas chromatography–mass spectrometry

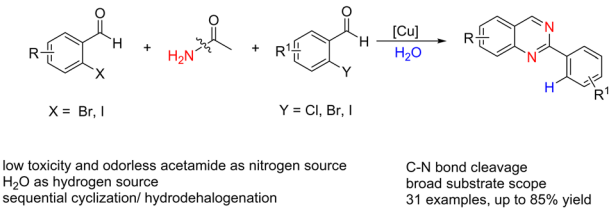
Ying-Shu Tang, Ming-Jia Zhang, Jin-Hui Zhao and Li-Yan Liu*



9377

Copper-catalyzed synthesis of quinazolines *via* cascade cyclization/hydrodehalogenation

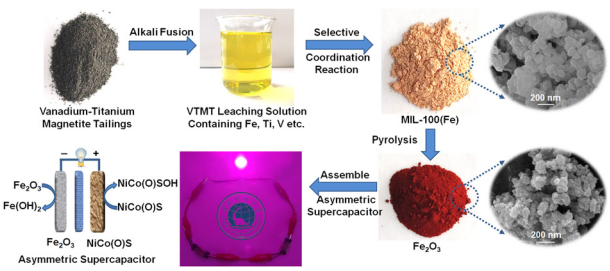
Peng Ma, Yuhang Wang, Jianhui Wang* and Ning Ma*



9383

Recycling of iron from vanadium titanium magnetite tailings and its application in an asymmetric supercapacitor

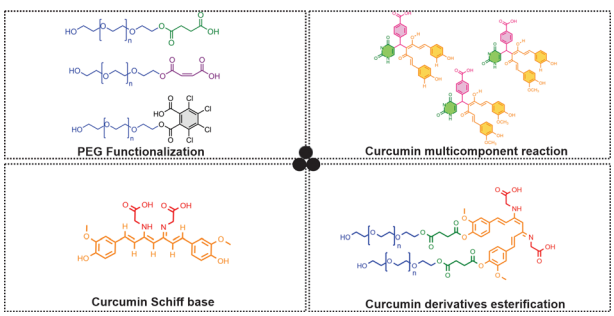
Jiale Chen, Lei Qian,* Zongyao Fu, Guanfeng Li and Ying Zeng



9392

Mechanochemical method: a powerful tool to obtain ω-poly(ethylene glycol)-functionalized structures and curcumin analogues

Aniele de Moura,* Caroline Gaglieri, Luiz Octavio Terciotti, Daniel Rinaldo and Flávio Junior Caires*



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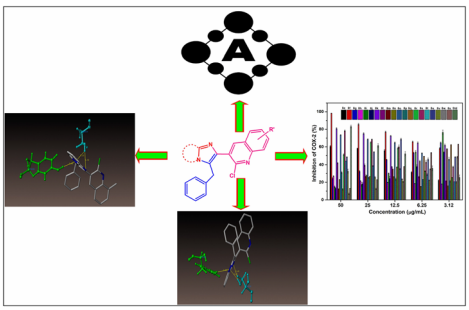
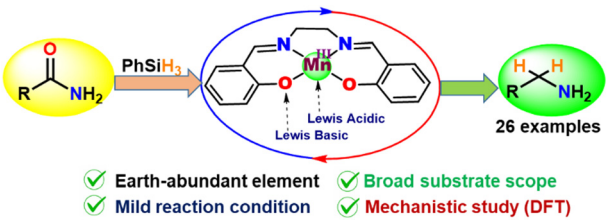
9401



Microwave-assisted copper(I) catalyzed A^3 cascade coupling of imidazo[1,2-*a*]pyridines *via* C–H bond functionalization as selective COX-2 inhibitors and antioxidants, and *in silico* studies

Aravind R. Nesaragi, Ravindra R. Kamble,* Swati R. Hoolageri, Shruti Dixit, Shrinivas D. Joshi, Shyamkumar Vootla and Vijay M. Kumbar

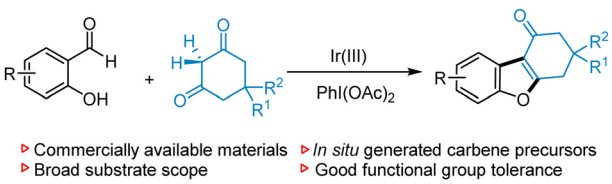
9414



Catalytic fate of structurally characterized manganese(III)–salen complexes towards efficient transformation of primary amides to amines or nitriles using hydrosilane

Nilaj Bandopadhyay, Krishnendu Paramanik, Gayetri Sarkar, Souvik Chatterjee, Suvojit Roy, Subhra Jyoti Panda, Chandra Shekhar Purohit, Bhaskar Biswas* and Hari Sankar Das*

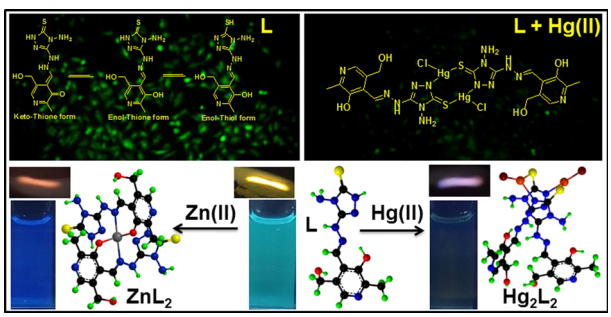
9421



Ir(III)-catalyzed decarbonylative annulation of salicylaldehydes with cyclohexane-1,3-diones

Qiao-Juan Jiang, Yu-Tao Min, Yan-Ping Liu, Hua Li, Jun-Ao Peng and Cong-Jun Liu*

9427



Dual responsive pyridoxal-AHMT based fluorescent sensor towards zinc(II) and mercury(II) ions and its bioimaging application

Kettalu Ananthan Karthick, Bhaskaran Shankar, Santhalingam Gayathri, Manikka Kubendran Aravind, Balasubramaniem Ashokkumar and Arunachalam Tamilselvi*

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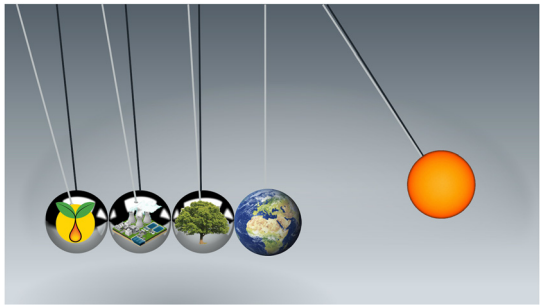
9440

Stabilization of the aqueous phase fraction of pine wood bio-oil using zirconia-supported Fe/Cu/Pd nano-catalysts under mild conditions

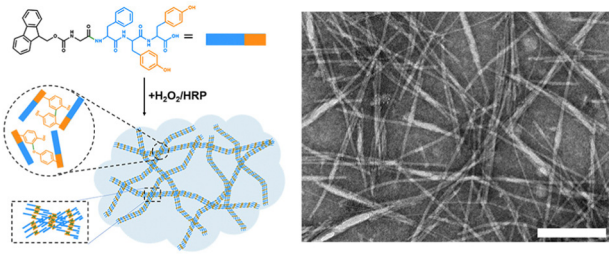
Giuseppe Bagnato,* Michela Signoretto, Elena Ghedini, Federica Menegazzo, Xiaoying Xi, Gert H. ten Brink, Bart J. Kooi, Hero Jan Heeres and Aimaro Sanna*



9451

Enzymatically cross-linked peptide hydrogels for enhanced self-assembling capability and controlled drug release

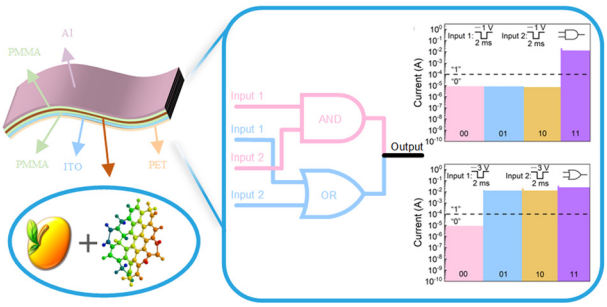
Xiujie Wang, Guoru Dai, Bianli Cheng, Jing Xu, Keming Xu* and Wenying Zhong*



9459

Bioresistive random access memory with an in-memory computing function based on graphene quantum dots

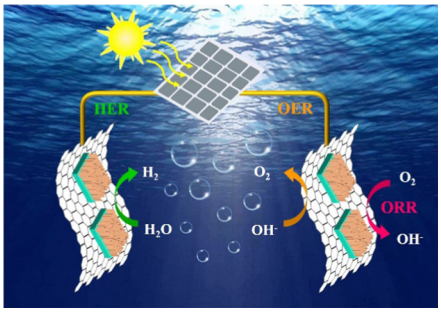
Lu Wang,* Yuting Wang, Jing Yang, Wenhao Li and Dianzhong Wen



9464

Cooperative catalysis of $Zn_3(VO_4)_2/Ni(OH)_2$/rGO nanosheet arrays advancing highly active O_2 reduction and water-splitting

Xue Li, Xinglong Gao, Enyan Guo, Mingzhi Wei, Conghui Si, Qifang Lu* and Yingping Pang*



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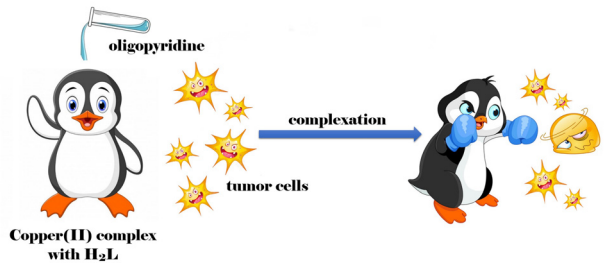
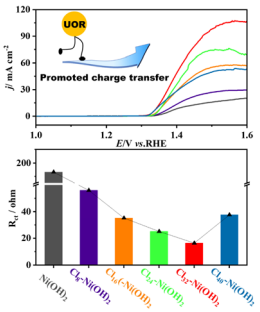
9472



Cytotoxic mixed-ligand copper(II) complexes with 1*H*-tetrazole-5-acetic acid and oligopyridine derivatives

Ekaterina A. Ermakova, Yuliya A. Golubeva, Ksenia S. Smirnova, Lyubov S. Klyushova, Alexey S. Berezin, Leonid N. Fetisov, Alexandra E. Svyatogorova, Natalia O. Andros, Alexander A. Zubenko and Elizaveta V. Lider*

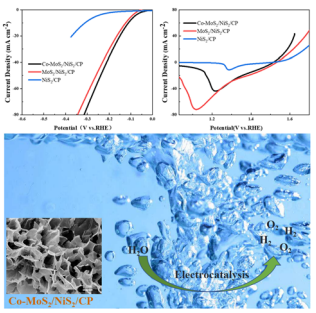
9483



Accelerating charge transfer for $Ni(OH)_2$ through chlorine-anion decoration in the urea electrooxidation reaction

Yongjie Zhao, Xiujuan Sun,* Qiuhan Cao, Jiajia Zhou, Wenjuan Tan, Zhu Piao, Enhui Liu, Rui Ding, Ping Gao and Weiwei Lin*

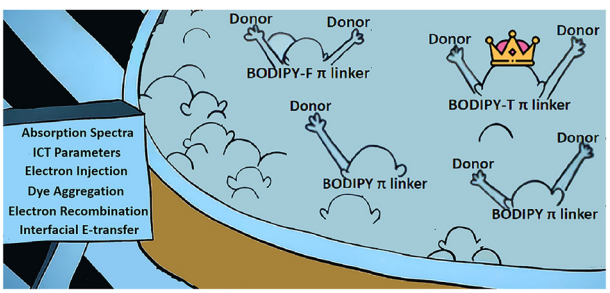
9492



Cobalt incorporation and MoS_2–NiS_2 heterostructure synergistic for improving full water electrolysis efficiency

Minyu Wu, Xiangdong Meng, Min Zhou* and Yuxue Zhou*

9501



Theoretical insight into the influence of different molecular design strategies on photovoltaic properties for a series of POM-based dyes applied in dye-sensitized solar cells

Yu Gao and Zhi-Bin Lu*

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