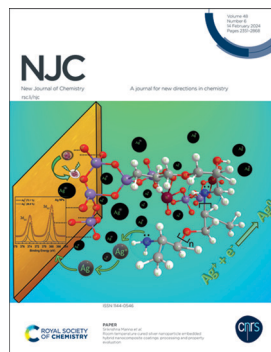


IN THIS ISSUE

ISSN 1144-0546 CODEN NJCHES 48(6) 2351-2868 (2024)



Cover

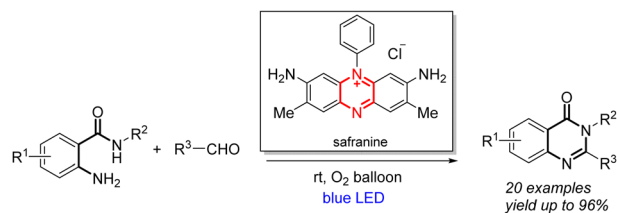
See Srikrishna Manna *et al.*, pp. 2371–2380. Image reproduced by permission of Srikrishna Manna, Prabir Pal, Milan Kanti Naskar and Samar Kumar Medda from *New J. Chem.*, 2024, **48**, 2371.

COMMUNICATION

2367

Old dye safranin as an organic photocatalyst for the synthesis of substituted quinazolinones

Cheng-Hang Liu, Jun-Jie Wang, Mengyang Xu, Qiyun Luo, Ziyang Wang, Wenyue Tan, Xingzeng Zhao and Xiaodong Jia*

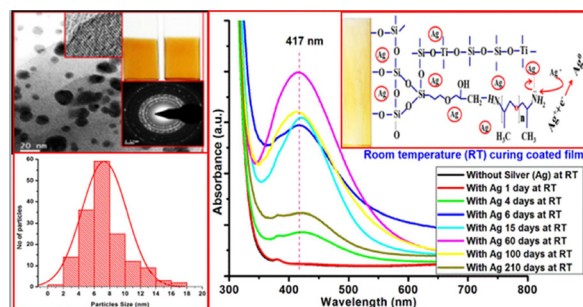


PAPERS

2371

Room temperature cured silver nanoparticle embedded hybrid nanocomposite coatings: processing and property evaluation

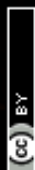
Srikrishna Manna,* Prabir Pal, Milan Kanti Naskar and Samar Kumar Medda*



RSC Applied Polymers

The application of polymers,
both natural and synthetic

Interdisciplinary and open access



rsc.li/RSCApplPolym

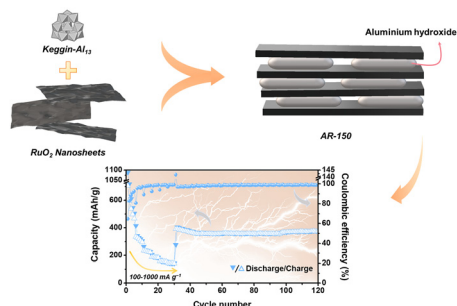
Fundamental questions
Elemental answers

PAPERS

2381

Exfoliation and restacking route to Keggin- Al_{13} -treated layered ruthenium oxide for enhanced lithium ion storage performance

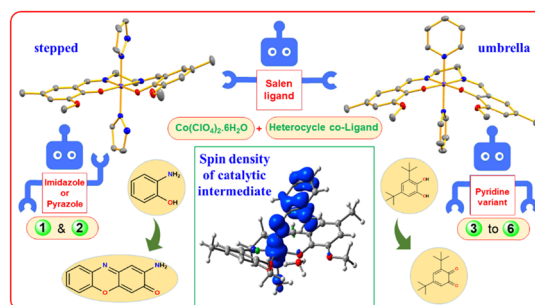
Minseop Lee, Ji-Ho Park and Seung-Min Paek*



2389

Insight into the conformational selectivity of cobalt(III) complexes with a tetradentate salen-type Schiff base ligand and their biorelevant catalysis: a combined experimental and theoretical study

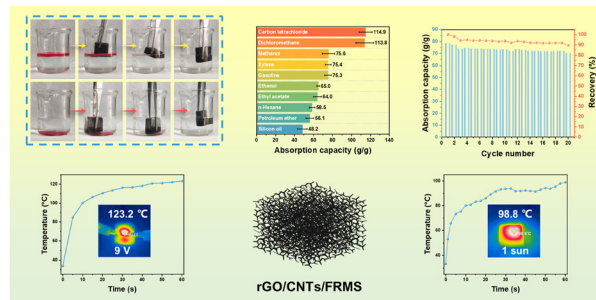
Narayan Ch. Jana,* Paula Brandão, Rosa M. Gomila, Antonio Frontera* and Anangamohan Panja*



2403

Novel fabrication of flame-retardant melamine sponge for all-weather cleanup of viscous oil spills by Joule heat and photothermal effects

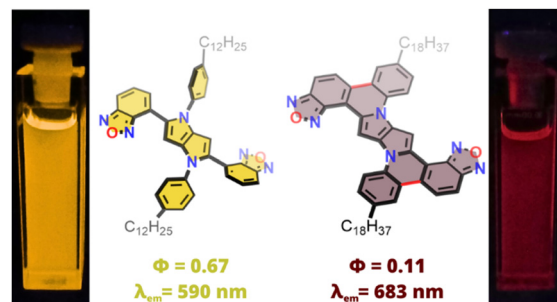
Yucheng Wu, Xueli Wen and Bihe Yuan*



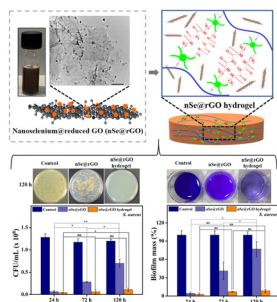
2416

The effect of rigidity on the emission of quadrupolar strongly polarized dyes

Bartosz Szymański, Smruti Ranjan Sahoo, Rashid Valiev, Olena Vakuliuk, Piotr Łaski, Katarzyna N. Jarzemska, Radosław Kamiński, Glib Baryshnikov,* Mohammad B. Teimouri* and Daniel T. Gryko*



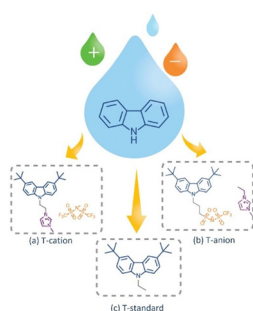
2421



Antimicrobial hydrogels incorporating nanoselenium@reduced graphene oxide nanocomposites for biofilm inhibition

Deepa Garg, Vijayesh Kumar, Mercy Merlin S S, Abhay Sachdev* and Ishita Matai*

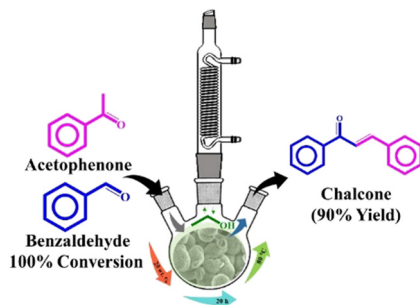
2439



Novel carbazole-based ionic liquids and their charge-transfer kinetics pertaining to Marcus theory towards highly efficient redox active electrolytes

Kulika Pithaksinsakul, Tobias Burton, Chayaporn Pareseecharoen, Siraprapha Deebansok, Vinich Promarak and Olivier Fontaine*

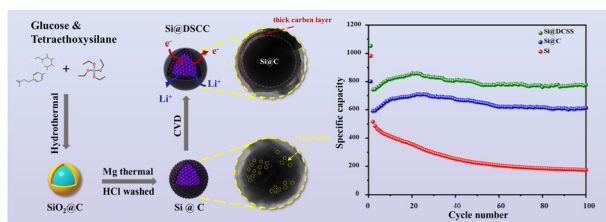
2448



Exploring the engineered hierarchical MgO microspheres as a selective catalyst for the Claisen-Schmidt condensation reaction

Dipak B. Bawiskar, Puneethkumar M. Srinivasappa, Balasaheb L. Nikam, Suman Kusuma, Nitin K. Chaudhari and Arvind H. Jadhav*

2464



Rational design of three-dimensional pomegranate-shaped double-layer carbon-shell-coated Si nanoparticles as an excellent anode material for lithium-ion batteries

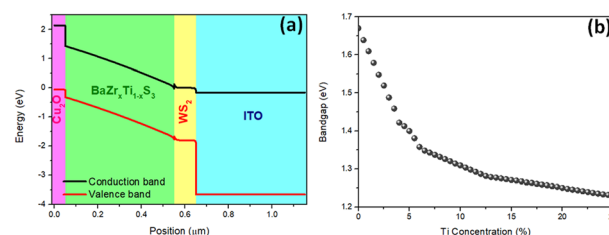
Yuan Gao, Zhengguang Zhang, Ruiwen Cui, Shuo Wang, Zheng Li, Xiaoting Zhang, Rongna Chen and Li Hou*



2474

Numerical investigation of a high-efficiency $\text{BaZr}_x\text{Ti}_{1-x}\text{S}_3$ chalcogenide perovskite solar cell

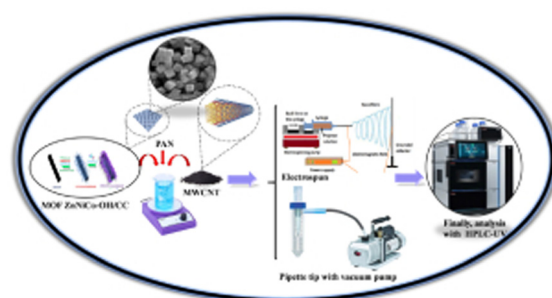
Debashish Pal,* Abdulkarem H. M. Alkawgani, Soumee Das, Amrindra Pal, Md. Ferdous Rahman, Adam R. H. Alhawari and Sagar Bhattarai*



2484

Developing a cube-like nanocomposite integrated into a polymer network as a highly porous and effective electrospun nanofiber for extracting trace quantities of opioid and analgesic drugs in biological fluids

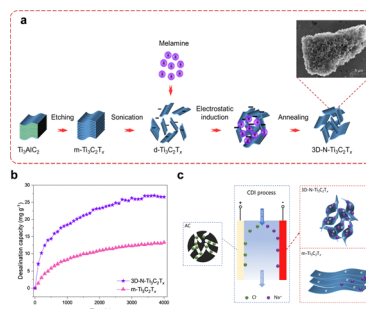
Fatemeh Sadat Hosseini, Farbod Kharazmi, Saied Saeed Hosseini Davarani* and Homeira Ebrahimzadeh



2496

Electrostatically induced reconstruction of the 3D nitrogen-doped $\text{Ti}_3\text{C}_2\text{T}_x$ electrode and its excellent desalination performance for hybrid capacitive deionization

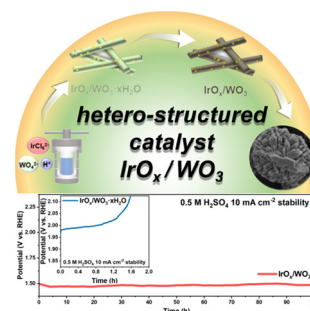
Jiao Wu, Bingbing Chen, Aihu Feng, Kun Liu* and Yun Yu*



2505

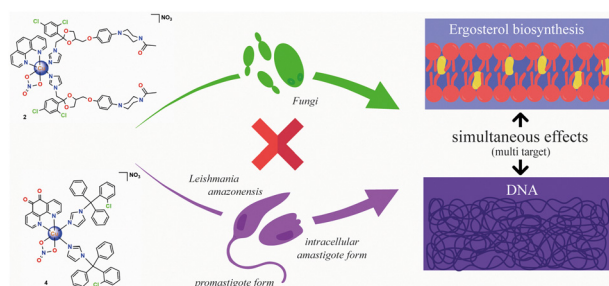
Interfacial engineering to construct an IrO_x/WO_3 hetero-structured catalyst for efficient acidic OER catalysis

Zeyu Guan, Yuxiao Weng, Jiankun Li, Shiyi Li, Keyu Wang, Linfeng Lei, Yixing Wang, Linzhou Zhuang* and Zhi Xu*



PAPERS

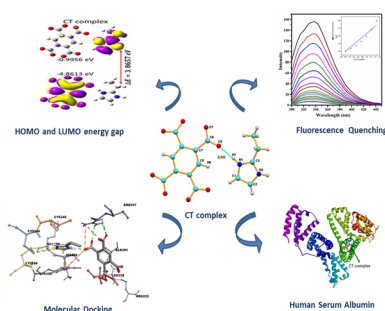
2515



Synthesis, characterization, and biological evaluation of hybrid copper(II) complexes containing azole drugs and planar ligands against neglected diseases

José Aleixo de Azevedo-França, Victor Feliciano dos Santos Ramos, Luigi Messori, Fabio Santanni, Lorenzo Sorace, Luana Pereira Borba-Santos, Sonia Rozental, Juliany Cola Fernandes Rodrigues and Maribel Navarro*

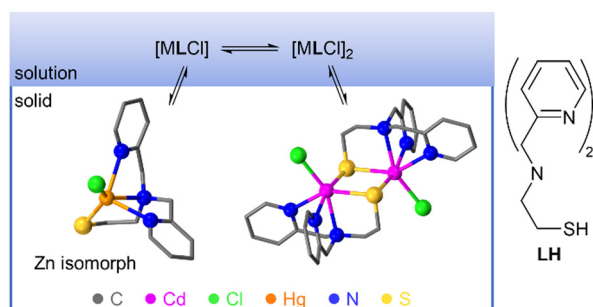
2527



Investigating the binding of organic charge transfer co-crystals to human serum albumin by experimental and theoretical methods: spectroscopy, molecular docking and DFT/TD-DFT studies

Ishaat M. Khan,* Arshi Khan, Sonam Shakya, Mohammad Osama, Maidul Islam, Farha Naaz and Musheer Ahmad

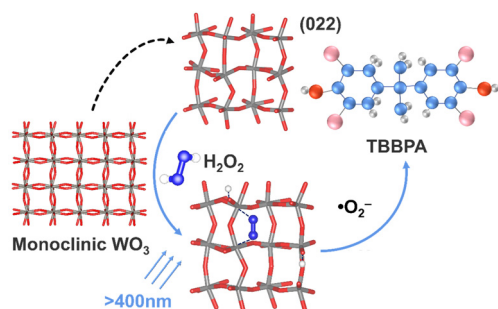
2547



Aggregation behavior of group 12 complexes of a tripodal mixed NS(thiolato) donor ligand

Michelle A. Sturner, Isla D. Thomas, Joshua E. Owusu-Koramoah, Todd M. Reynolds, Steven M. Berry, Raymond J. Butcher and Deborah C. Bebout*

2558



Structure induced activity enhancement of tungsten oxide for tetrabromobisphenol A photodegradation under visible light illumination

Shiman Zhou, Qianqian Zhu,* Denan Li, Lifeng Zhang, Yanshuo Li* and Zhenxin Zhang*

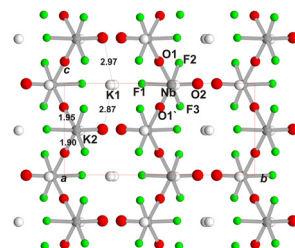


PAPERS

2569

New nonlinear optical oxyfluoride $K_2NbO_2F_3$ with strong pseudo-centrosymmetry, obtained by mild hydrothermal synthesis

Elena L. Belokoneva,* Sergey Yu. Stefanovich, Anatoly S. Volkov, Olga V. Dimitrova and Alexandra Mozgova

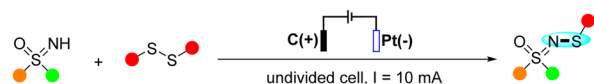


$K_2NbO_2F_3$ - polar crystal, space group $Pna2_1$ with high pseudosymmetry, supergroup $Pnam$

2576

Electrochemical oxidative cross coupling of NH-sulfoximines with disulfides

Shuai Zhang, Meiqian Hu, Changsheng Qin, Shoucai Wang, Fanghua Ji* and Guangbin Jiang*

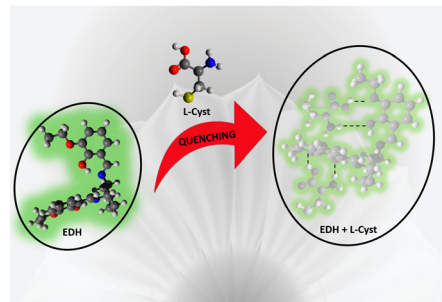


- ✓ operationally convenient and readily scalable
- ✓ metal-, oxidant- and base-free
- ✓ green strategy for *N*-thioetherification of sulfoximines
- ✓ mild reaction condition
- ✓ broad substrate scope and synthetic application
- ✓ readily available substrates

2584

A novel Salen-based dual channel sensor for easy and selective nanomolar detection of L-cysteine

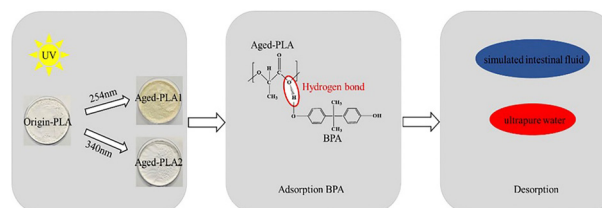
Nithya Mohan,* S. S. Sreejith and M. R. Prathapachandra Kurup*



2594

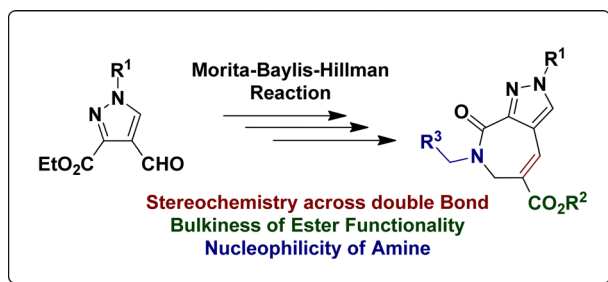
Adsorption/desorption behavior of degradable polylactic acid microplastics on bisphenol A under different aging conditions

Liqing Li, Xiumin Zhong, Minghao Zheng, Panwang Wu, Fei Yu, Shaobo Ouyang* and Jie Ma*



PAPERS

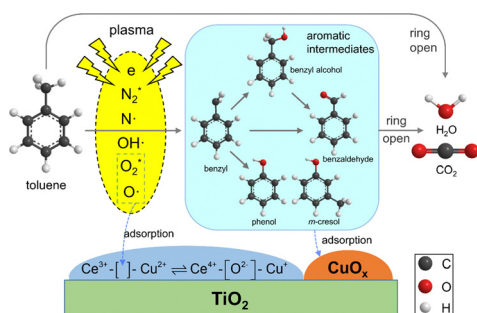
2608



Synthesis of pyrazolo-azepinone derivatives via Morita–Baylis–Hillman chemistry as potent antimicrobial agents

Nisha Devi,* Virender Singh* and Arun Singh Pathania

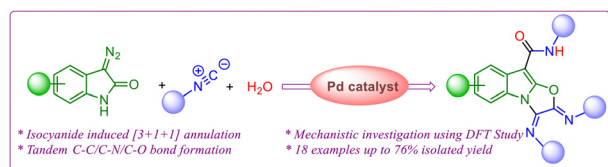
2624



Plasma-catalytic oxidation of toluene over MCeZrO_x/TiO₂ (M = Cu, Mn, Ni and Co) catalysts using a dielectric barrier discharge reactor

Guangtao Hu, Yichen Ma,* Qinglan Hao, Deliang Liu, Baojuan Dou and Feng Bin*

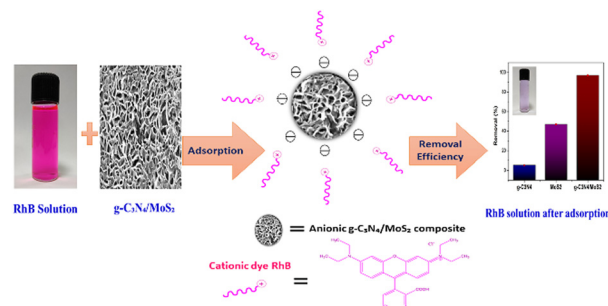
2639



Synthesis of *N*-fused polycyclic indoles via a Pd-catalyzed multicomponent cascade reaction consisting of an amide-directed [3+1+1] annulation reaction of 3-diazo oxindole and isocyanides

Pooja Soam, Debasish Mandal and Vikas Tyagi*

2649



Facile fabrication of embedded g-C₃N₄/MoS₂ nano-adsorbent for the removal of persistent rhodamine B contaminant in aqueous solution

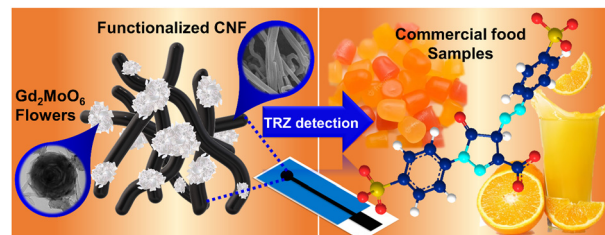
Sayantan Adak, Rajib Ghosh Chaudhuri and Mrinal Kanti Mandal*

PAPERS

2660

A disposable tartrazine sensor fabricated with a synchronously activated nanocomposite comprising gadolinium molybdate nanoflowers anchored on functionalized carbon nanofibers

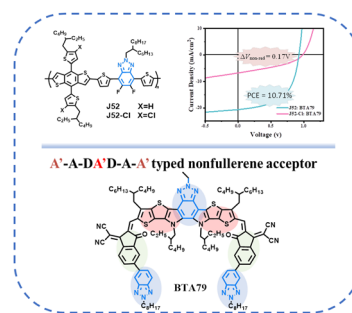
Abishek Jayapaul, Rajalakshmi Sakthivel, Yu-Chien Lin, Udesb Dhawan, Xinke Liu, Hsiao-Wei Wen and Ren-Jei Chung*



2673

An A'-A-DA'D-A-A'-type acceptor enables organic solar cells with high V_{OC} and low nonradiative voltage loss

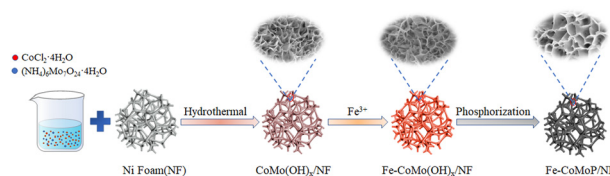
Bingjie Zhou, Helin Wang,* Zehua He, Guoqiang Zheng,* Ailing Tang and Erjun Zhou*



2679

Self-supporting FeCoMoP nanosheets for efficient overall water splitting

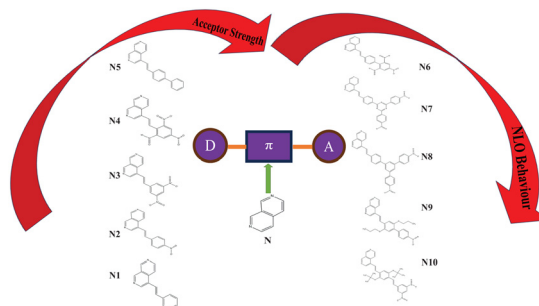
Hongxi Xiong, Shuihua Tang,* Mingjie Xu, Zelong Yu, Yuhang Xie, Shaoxiong Zhang, Xiaohan Wang, Yonglin Chen and Lei Zhang*



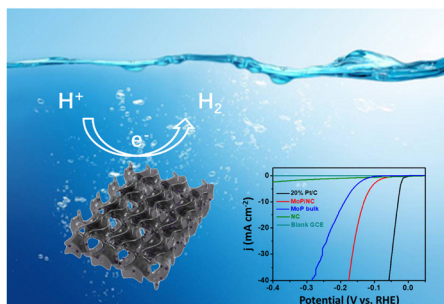
2689

Non-linear optical properties of 2,7-naphthyridine derivatives for optical switching applications: a DFT study

Dhanya P. K., Prakash Chandran R., Sobha Vijayan Nair and Renjith Raveendran Pillai*



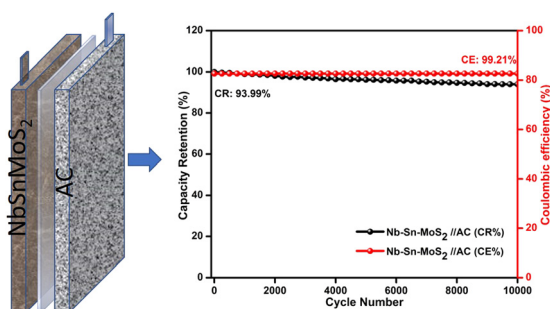
2707



MoP nanocrystals encapsulated in N-doped three-dimensional carbon networks for efficient hydrogen evolution electrocatalysis

Yang Yu, Ling Jiang,* Xinxin Zhang, Tiansui Zhang, Shiyin Zhang, Yanting Wu, Dong Liu, Dequan Liu, Hongfang Liu* and Haitao Wang*

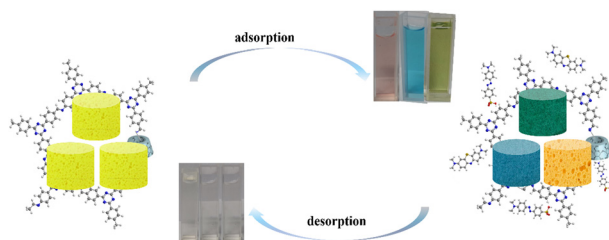
2715



Enhanced energy storage efficiency with NbSnMoS₂ nanosheets as electrode material in hybrid supercapacitor devices

Vediyappan Thirumal, Sankaiya Asaithambi, Rajkumar Palanisamy, Babu Bathula, Kisoo Yoo* and Jinho Kim*

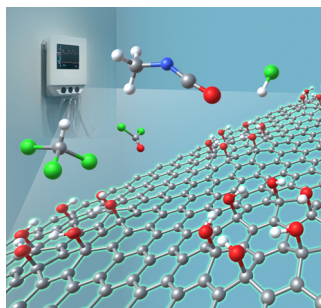
2726



Functionalized covalent organic framework aerogels for highly efficient removal of anionic and cationic dyes

Xiaodi Chen, Chang Du, Zilu Pan, Hongping Wu, Changqun Cai, Chunyan Chen* and Guanqun Zhong*

2734



Unravelling the sensing efficacy of graphene oxide towards hazardous volatile organic compounds in the polyurethane industry

Levin Joseph Bernardshaw, Priya Ranjan Dev, Rajadurai Vijay Solomon* and Paul Wilson*

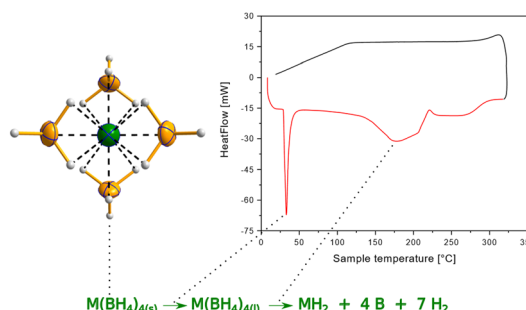


PAPERS

2743

Structural and thermodynamic investigations of $\text{Zr}(\text{BH}_4)_4$ and $\text{Hf}(\text{BH}_4)_4$ between 280 K and their decomposition temperatures

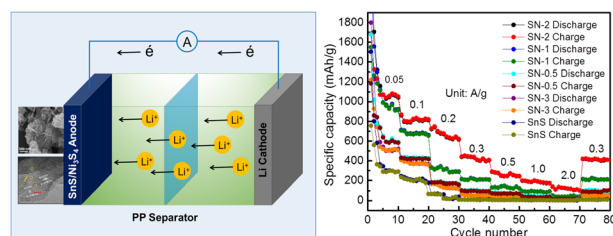
Konrad Burkmann, Franziska Habermann, Erik Schumann, Jakob Kraus, Bianca Störr, Horst Schmidt, Erica Brendler, Jürgen Seidel, Klaus Bohmhammel, Jens Kortus and Florian Mertens*



2755

Tuning kinetics of $\text{SnS}/\text{Ni}_3\text{S}_4$ binary sulfides for high rate and long cyclic lithium-ion batteries

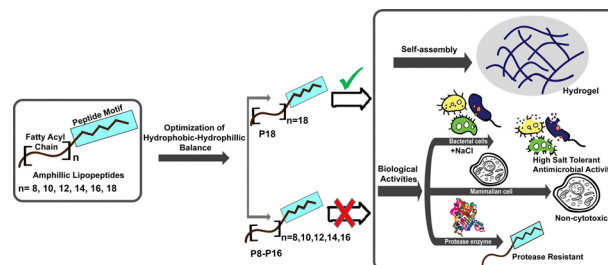
Muhammad Imran, Tanveer Hussain Bokhari, Yuefeng Wu, Zohaib Rana, Eman Gul, Gul Rahman, Amina Zafar, Tahir Ali, Saqib Javaid, Shafqat Hussain, Khan Maaz, Shafqat Karim, Mashkoor Ahmad,* Guolei Xiang* and Amjad Nisar*



2764

Tuning of hydrophobic–hydrophilic balance for the development of a salt-tolerant and protease-resistant lipopeptide AMP

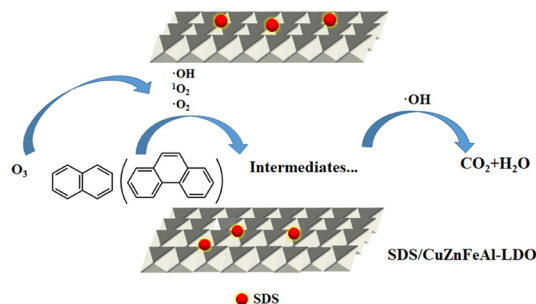
Monikha Chetia, Tanumoy Sarkar, Maitery Yadav, Chandrima Dey, Pradeep Kumar Sundaravadielu, Rajkumar P. Thummer and Sunanda Chatterjee*



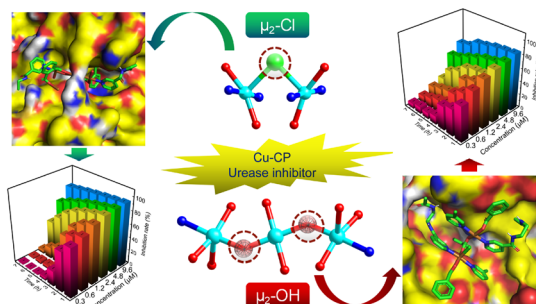
2778

Study of adsorption-oxidative degradation of PAHs over organic–inorganic hybrid layered double hydroxides

Huimin Zhang, Jinhua Liang,* Yang Xu, Yitao Gu, Tanyi Yang, Chaoferi Peng and Xiaoqian Ren*



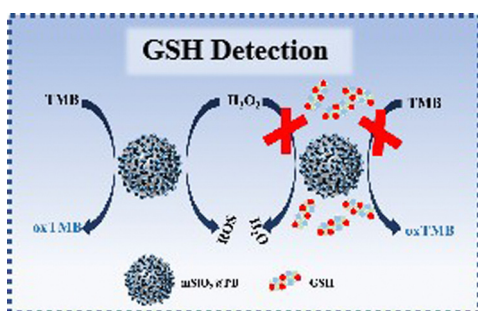
2787



Influence of bridging atoms in copper-based coordination polymers for enhancing urease inhibition activity

Ling-Li Wang, Kai-Tong Wang, Wen-Long Duan,*
Jian Luan* and Xiao-Ri Han*

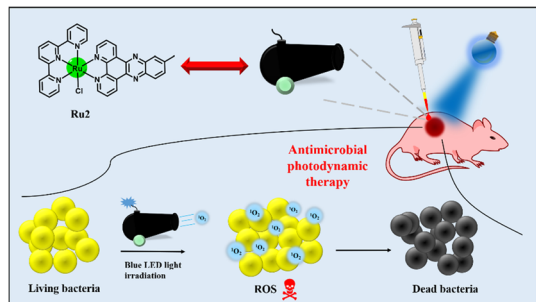
2796



Construction of a peroxidase nanozyme based on Prussian blue and its application in GSH colorimetric assays

Xiaocheng Lv, Ying Zhang, Yajin Zheng, Qianzi Tong,
Yingying Zhang, Siyu Wang, Jing Chen, Xifu Liu* and
Xueke Sun*

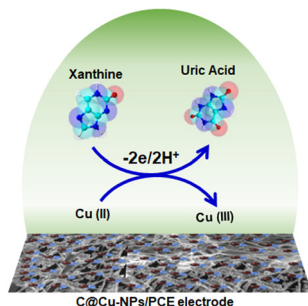
2806



Ruthenium terpyridine complexes based on dppz ligands as photodynamic antimicrobial agents against *Staphylococcus aureus*

Zhun Wang, Beibei Shi, Jing Zhu, Yanshi Xiong,
Xuemin Duan,* Xiangwen Liao* and Jintao Wang*

2817



C-entrapped Cu nanoparticles-infused polyaniline-modified cellulose nanofibers for the precise monitoring of xanthine in urine samples

Ahlam I. Al-Sulami, Ammara Fatima,
Fatimah Mohammad H. Al-Sulami, Abdul Sami,
Reema H. Aldahiri, Maria Khan, Azza A. Al-Ghamdi,
Naeem Akhtar* and Waleed Ahmed El Said*

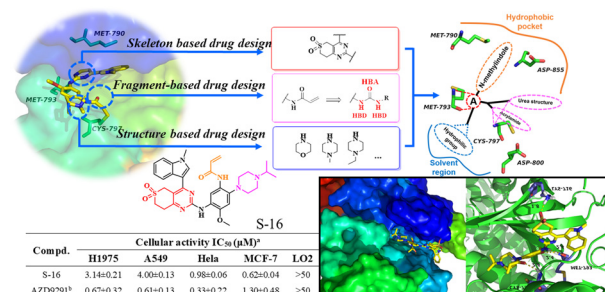


PAPERS

2825

Anti-cancer effects of bis-oxidized thiopyran derivatives on non-small cell lung cancer: rational design, synthesis, and activity evaluation

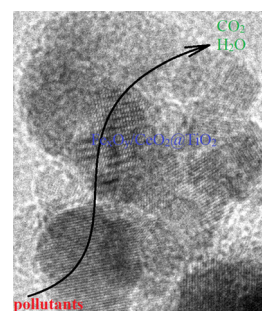
Han Zhang, Cilong Chu, Li Long, Pengwu Zheng* and Wufu Zhu*



2842

Catalytic activity of CeO₂@TiO₂ for environmental protection

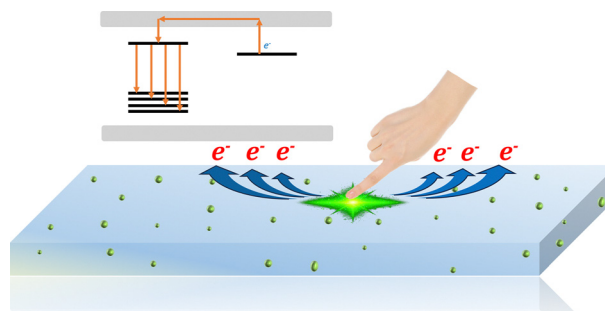
Igor V. Zagaynov,* Elena Yu. Liberman, Olga P. Prikhodko and Tatiana V. Kon'kova



2849

A mechanoluminescent CdSiO₃:Tb³⁺/PDMS composite elastomer with a deep trap

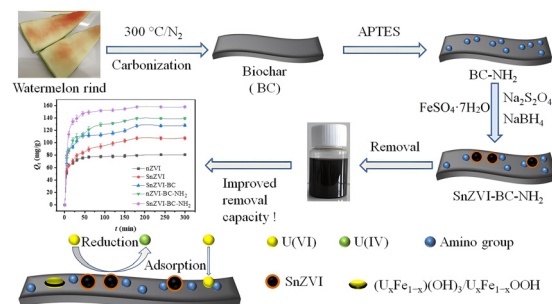
Yutong Lei, Wei Zeng,* Xin Chen, Wenxiao Chen, Mengdi Mei and Yue Wang



2855

Preparation of an amino-modified biochar supported sulfide nanoscale zero-valent iron composite and its efficient removal of U(VI) from wastewater by adsorption and reduction

Yunkai Sun,* Na Yin, Cheng Liu, Yi Ding and Pengfei Yang*



CORRECTION

2866

Correction: Revisiting lignin: a tour through its structural features, characterization methods and applications

Elodie Melro,* Alexandra Filipe, Dora Sousa, Bruno Medronho and Anabela Romano

