

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1144-0546 CODEN NJCHES 48(20) 8979–9398 (2024)



Cover

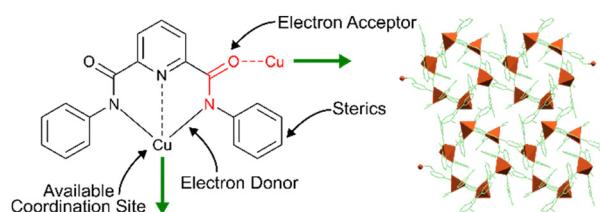
See Matthew L. Bracken et al., pp. 8994–8999.
Image reproduced by permission of Matthew L. Bracken from *New J. Chem.*, 2024, **48**, 8994.

COMMUNICATIONS

8994

Structural basis for Cu(II) metallocycle hexamer formation

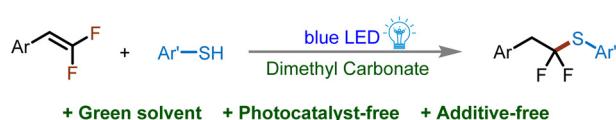
Matthew L. Bracken,* Manuel A. Fernandes, Daniel Wamwangi and Orde Q. Munro



9000

Photocatalyst-free hydrothiolation of gem-difluoroalkenes with thiols

Lin Zuo, Zhiyang Zhang, Xiao-Ya Yuan, Kai Sun* and Bing Yu*



Environmental Science journals

One impactful portfolio for
every exceptional mind

Harnessing the power of interdisciplinary
science to preserve our environment

rsc.li/envsci

Fundamental questions
Elemental answers



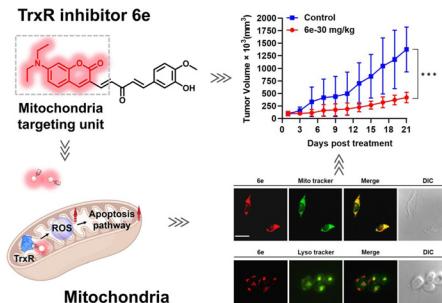
Registered charity number: 207890

COMMUNICATIONS

9004

Discovery of a mitochondria-targeted fluorescent probe as TrxR inhibitors for cancer therapy

Yixian Liao, Wenda Zhang, Zejun Zhang and Wenying Yu*

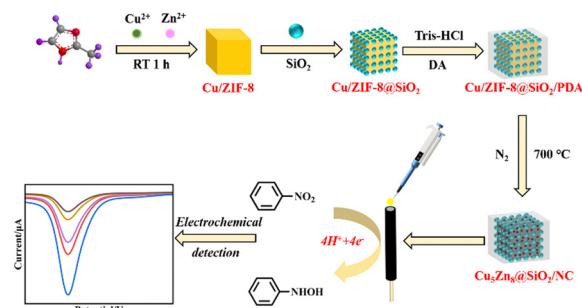


PAPERS

9008

 $\text{Cu}_5\text{Zn}_8@\text{SiO}_2/\text{NC}$ derived from Cu/ZIF-8 as an efficient electrochemical sensor for environmental pollutant detection in water bodies

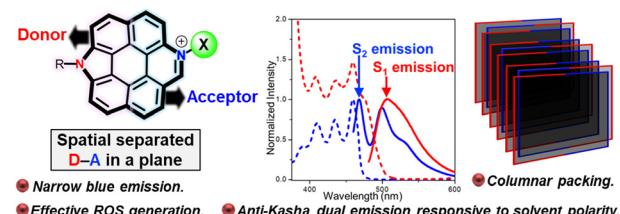
Zi-Hao Yu, Jing-Shuai Chen, Xing-Pei Liu,* Chang-Jie Mao* and Bao-Kang Jin



9014

Perylene with peripherally fused pyrrole and pyridine: columnar packing, anti-Kasha dual emission and reactive oxygen species generation

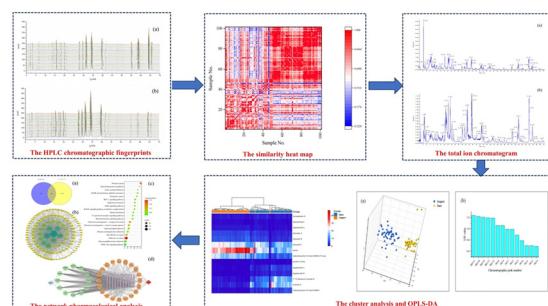
Jing Cao, Wenhao Zhang, Yeda Ding, Xuejin Zhang, Yuanyuan Zhang, Dan Qiao, Shumin Biao, Xuefei Dong, Jiayi Song, Gaole Dai,* Ruiguo Zhao* and Qing Wang*



9020

Quality differentiation of *Epimedium* from different harvesting periods based on LC-MS and network pharmacology

Jianyu Zhang, Yuru Chen, Yuchen Tang, Shubo Guo, Cheng Ye and Wenlong Li*



PAPERS

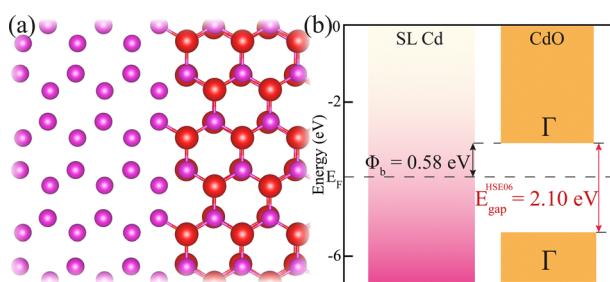
9030



Circularly polarized room-temperature phosphorescence enhanced by dynamic cross-linked network fixation

Bochun Wang, Yuzhan Li, Changli Zhang, Sirong Sun, Wanli He, Dong Wang, Hui Cao and Zhou Yang*

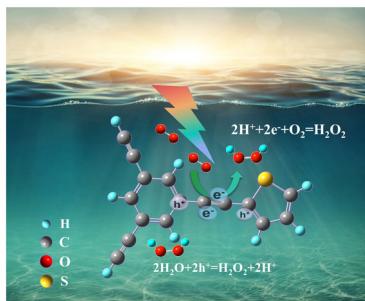
9036



Thickness-dependent characteristics and oxidation of 2D-cadmium

Arda Gulucu and Hasan Sahin*

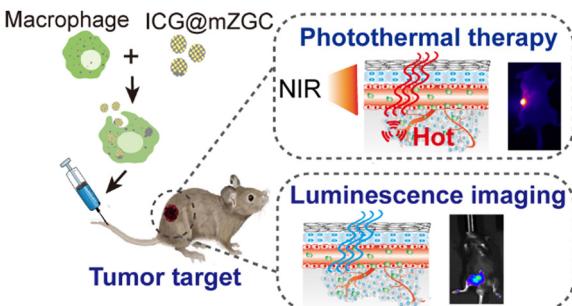
9043



The construction of an alkynyl-containing porous polymer for enhanced photocatalytic H_2O_2 generation

Yumiao Wang, Wenwen Chi, Renbao Zhang, Yingxin Guo, Xinyu Sun, Hui Zhao, Jiawei Zhang, Yuming Dong* and Yongfa Zhu

9052



Near infrared-emitting persistent luminescence nanoparticles@macrophages as cell-based carriers for precise imaging-guided cancer cell ablation

Hua Wang, Jie Zhang, Bin Zheng, Zirui Yang, Jiayi Sun, Xiao Liu* and Niansong Qian*

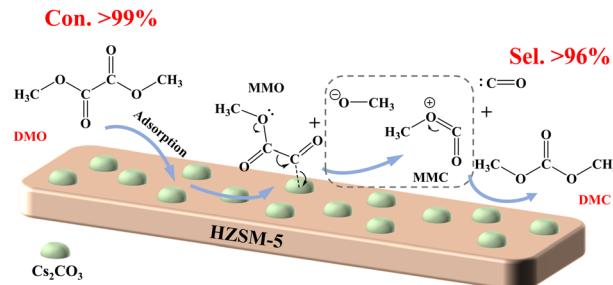


PAPERS

9062

Decarbonylation of dimethyl oxalate to dimethyl carbonate over $\text{Cs}_2\text{CO}_3/\text{HZSM}-5$

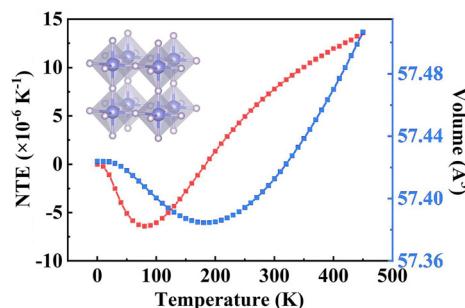
Ning Jv, Ci Li, Fang Li,* Wei Xue* and Jianhua Lv



9076

Theoretical prediction of negative thermal expansion in cubic VF_3

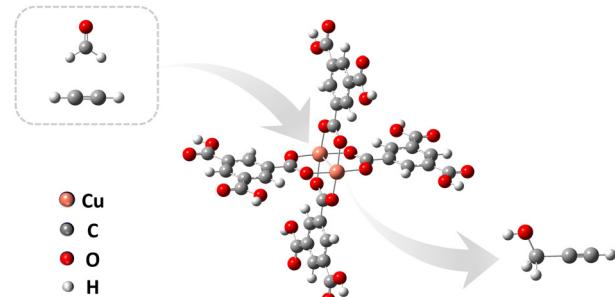
Dingfeng Yang,* Yurou Tang, Junzhu Yang, Hongzheng Pu, Mingyu Pi* and Yuanyuan Li*



9082

Catalytic ethynylation of formaldehyde for selective propargyl alcohol production using the copper metal organic framework HKUST-1

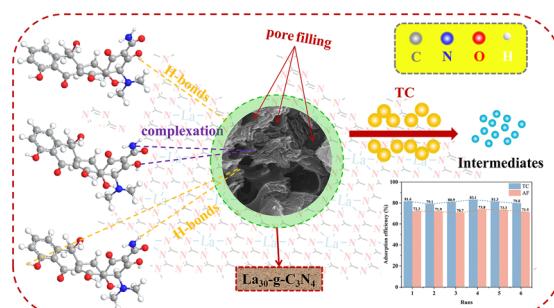
Wanxi Yang, Wencai Peng,* Han Li, Jin Mao, Liqiang Qian and Qingyu Zhang



9090

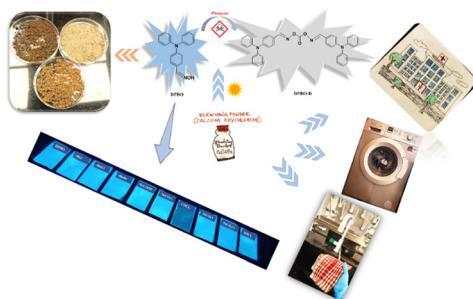
Evaluation of the adsorption and degradation performance of lanthanum-modified mesoporous carbon nitride composite materials for tetracycline wastewater treatment

Zhiqiang Wu,* Yueyi Li, Pengxi Jiang, Sisi Ma, Wenfei Dong, Hongjian Zhao, Enke Feng* and Xu-Ming Wang*



PAPERS

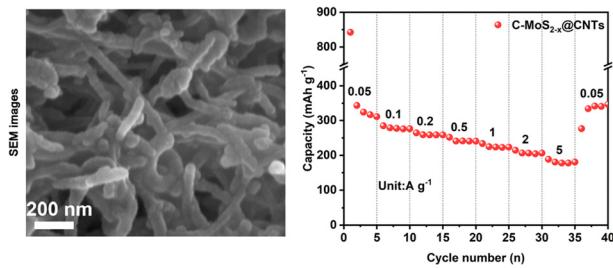
9103



A rapid and selective "on-off" fluorescence detection of lethal pulmonary agent phosgene supplemented with theoretical approach: a cost-effective sensing tool for household bleach and soil analysis

Malavika S. Kumar, Malay Dolai and Avijit Kumar Das*

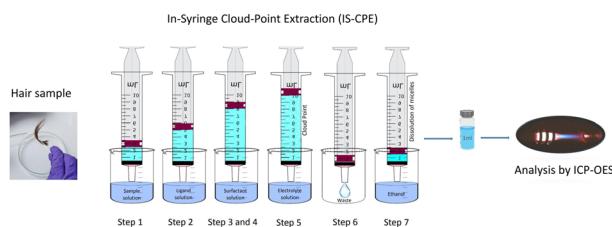
9110



Vacancy engineering in MoS₂ nanolayers coupled with dual-carbon confinement for potassium storage

Xiaotong Wei, Shuang Tian,* Tengteng Wang, Xue Zhang, Jingyi Huang, Peibo Gao, Yu Feng, Huanian Zhang, Jin Zhou and Tong Zhou*

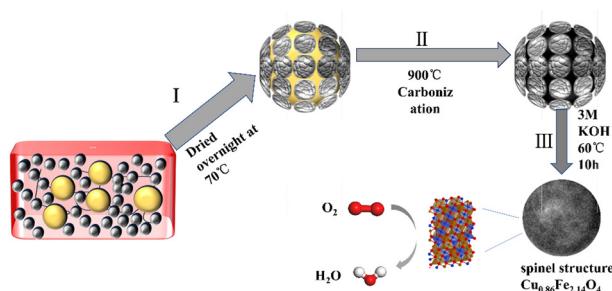
9119



A novel in-syringe cloud point extraction method for the determination of cadmium and lead in human hair samples

Hesane Zolfaghari, Seyed Mosayeb Daryanavard* and Aghil Gholamshahzadeh

9129



In situ growth of highly active Cu–Fe spinel materials on N-doped porous carbon spheres via an adjustable localized microenvironment

Qidi Lu, Jianrong Wang and Zhenlu Zhao*

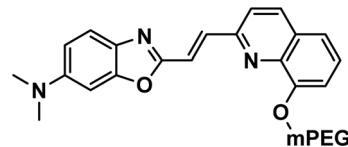


PAPERS

9136

Mitochondrial-targeted fluorophore: synthesis, property and cells imaging

Jindao Liu, Lin Kong and Yi Chen*

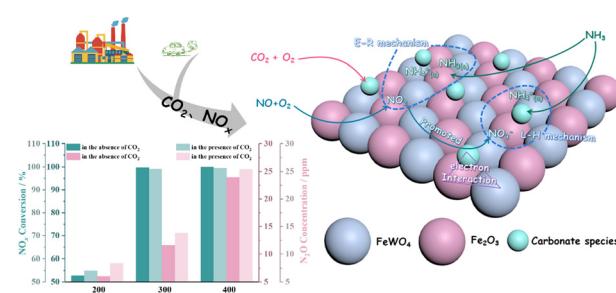


- (1) Good water-solubility
- (2) Large Stokes shift
- (3) High photostability
- (4) NIR excitation and red emission
- (5) Mitochondrial-targeted imaging

9142

Revealing the influencing mechanism of CO₂ on SCR of NO_x with NH₃ over FeW mixed oxide catalyst: interactions of carbonate-Fe₂O₃-FeWO₄

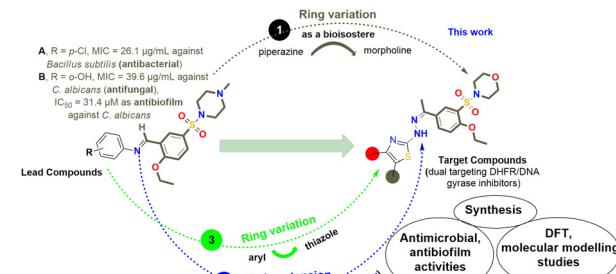
Hui Wang, Yujie Qiao, Xiang Li and Zhenping Qu*



9149

Tailoring of novel morpholine-sulphonamide linked thiazole moieties as dual targeting DHFR/DNA gyrase inhibitors: synthesis, antimicrobial and antibiofilm activities, and DFT with molecular modelling studies

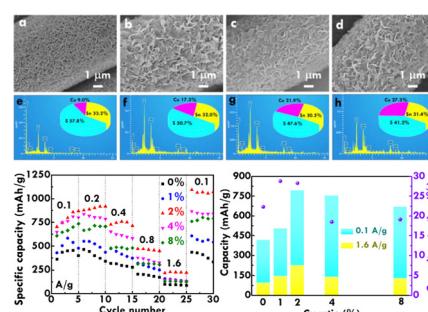
Moaz M. Abdou,* Essam M. Eliwa, M. A. M. Abdel Reheim, Ahmed Abu-Rayyan, Shimaa M. Abd El-Gilil, Mohammed Abu-Elghait, Mohamed H. Sharaf, Mohamed H. Kalaba, Ahmed H. Halawa and Walid E. Elgammal



9163

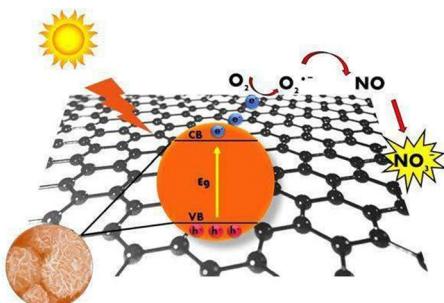
Design of novel Cu-doped SnS₂ on carbon cloth as a binder-free anode to improve high-rate performance of sodium ion battery

Tsai-Mu Cheng,* Kuan-Hsien Lin, Chutima Kongvarhodom, Hung-Ming Chen, Sadang Husain, Sibidou Yougbaré and Lu-Yin Lin*

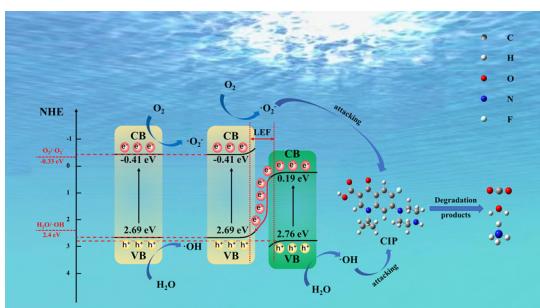


PAPERS

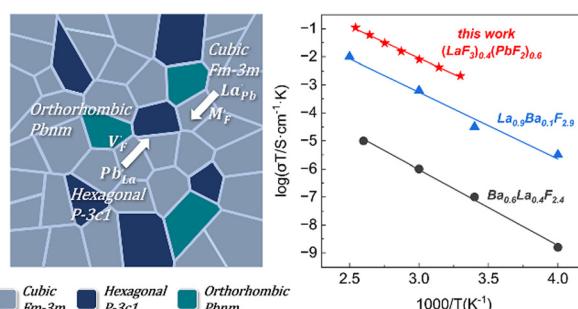
9172



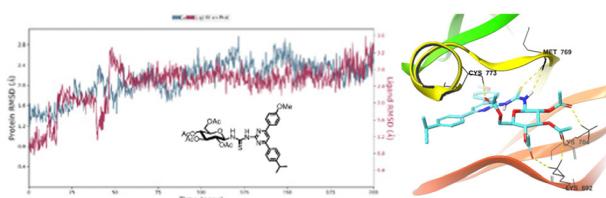
9185



9196



9208



Facile assembly of BiOI/GO composites with enhanced photocatalytic activity for NO photooxidation under visible light irradiation

M. Y. Nava-Núñez,* E. López-Cuéllar and
A. Martínez-de la Cruz

Construction of an MIL-101(Fe)/layered bimetallic oxide heterojunction for enhanced ciprofloxacin removal

Shikai Xue, Dongying Zhu, Qing Zuo, Shuangfeng Yang, Haiyan Wang, Qiuju Lu, Guoxing Yin, Guihua Ruan and Fuyou Du*

Effects of mixed phases on ionic conductivities for $(LaF_3)_{1-x}(PbF_2)_x$ fast-fluoride-ion-conducting solid electrolytes

Yawei Hao, Qiaojun Nie, Xiaocao Cao, Jiafan Zheng, Kai Zhang, Jun Zheng, Haodong Wang, Yafang Zhao, Jiayi Liu, Zhiguang Lin, Ming Zhang* and Zhongrong Shen*

Synthesis, anticancer activity, and molecular simulation of *N*-(2,3,4,6-tetra-O-acetyl- β -D-glucopyranosyl)thioureas containing a pyrimidine ring

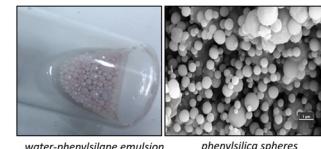
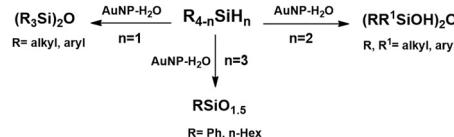
Vu Ngoc Toan, Nguyen Dinh Thanh,* Do Son Hai and
Nguyen Minh Tri

PAPERS

9224

Organosilanes as synthetic precursors for oligosiloxanes and phenylsilica spheres

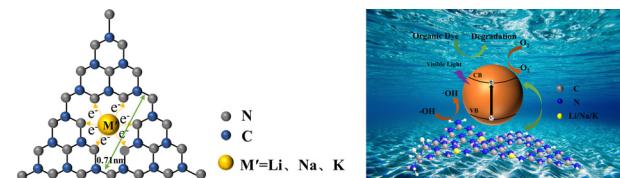
Ragini Jain and Ravi Shankar*



9231

Enhanced photocatalytic activity of carbon nitride nanosheets *via* alkali metal ion doping

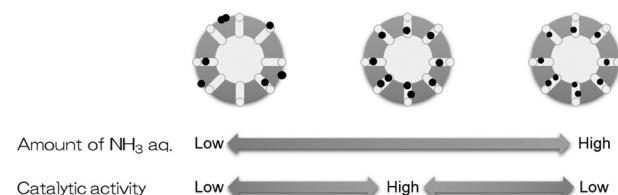
Xinhang Sun, Gang Zhao, Songyuan Li, Junhui Liu* and Mingju Huang*



9243

Effect of ammonia addition on the dispersion and activity of supported copper species on porous silica–alumina hollow spheres for catalytic decomposition of nitrous oxide

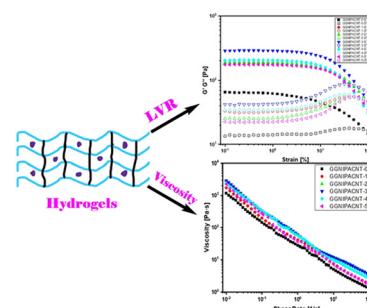
Tetsuo Umegaki,* Takeru Nakamura and Yoshiyuki Kojima



9249

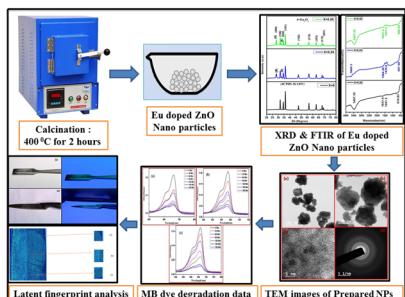
Effect of functionalized multiwalled carbon nanotubes on the mechanical, swelling and viscoelastic properties of gum ghatti-cl-poly(NIPAm) hydrogels

Pragnesh N. Dave* and Pradip M. Macwan



PAPERS

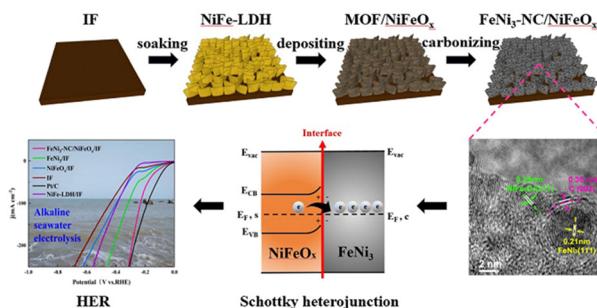
9262



Facile synthesis of Eu-doped ZnO nanoparticles for the photodegradation of the MB dye and enhanced latent fingerprint imaging

Shreya A., Bhojya Naik H. S.,* Vishnu G., Barikara Shivaraj, Adarshgowda N. and Hareeshanaik S.

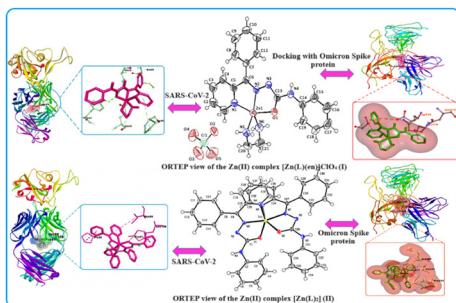
9277



Self-sacrificial templated-directed synthesis of an ultrathin 0D/2D FeNi₃-NC/NiFeO_x Schottky junction as a hydrogen evolution reaction electrode for alkaline seawater electrolysis

Zili Xu, Yuankang Bao, Xun Xu,* Ping Li, Hao Zhang, Deliang Li and Shuwang Duo*

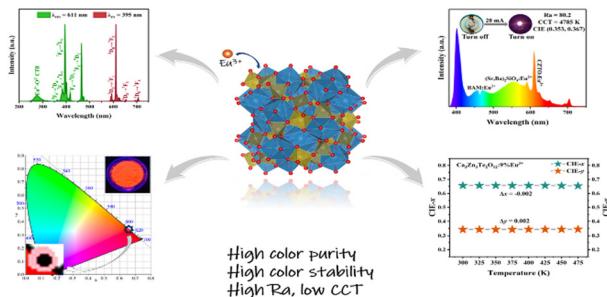
9287



Synthesis of Zn(II) coordination complexes, their molecular design and docking with SARS-CoV-2 RBD protein and Omicron spike protein

Simranjeet Singh and Mukesh Choudhary*

9314



A novel Eu³⁺ activated Ca₃Zn₃Te₂O₁₂ tellurate red phosphor for white LEDs with high color stability and color purity

Feiyan Xie,* Junqiang Gu, Dekang Xu, Qiancheng Xiong, Jinyu Yang, Xiangjian Ou and Dawei Wen*

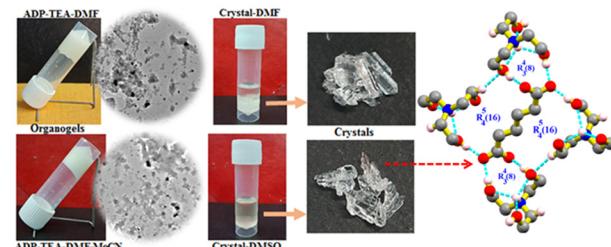


PAPERS

9322

Solvent and stoichiometry-dependent versatile organogelation and robust crystallization from the supramolecular association of adipic acid and triethanolamine

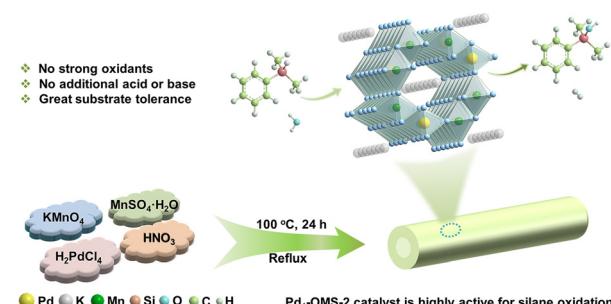
Gerald Lepcha, Indrajit Pal, Santanu Majumdar, Yogesh Dhasmana, Sanjay Mondal, Ennio Zangrando, Deepak Chopra* and Biswajit Dey*



9333

Pd single-atom decorated OMS-2 nanorod for efficient silane oxidation

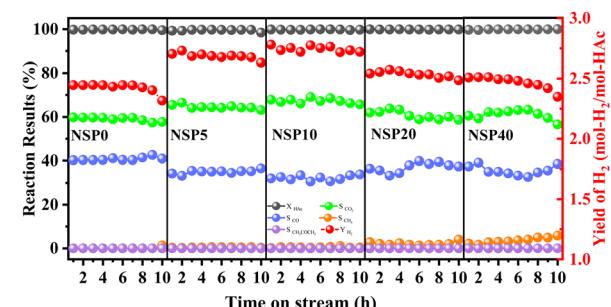
Liping Zhang, Xingchao Dai, Teng Li, Ce Liu, Bin Wang, Guomin Li, Peiqing Zhao* and Xinjiang Cui*



9340

Solid solution-type Sm–Pr–O supported nickel-based catalysts for auto-thermal reforming of acetic acid: the role of Pr in solid solution

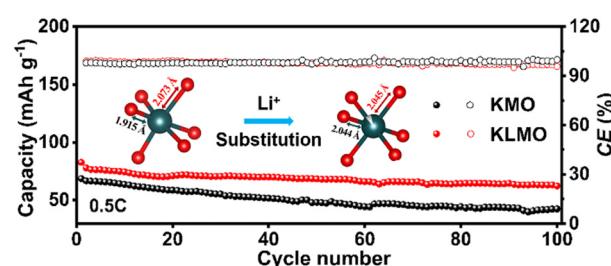
Jinbo Liu, Jia Huang, Chenyu Ding, Fuxia Liao, Chenghong Shu and Lihong Huang*



9352

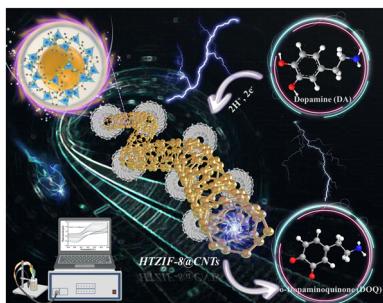
Suppression of Jahn–Teller distortion in a layered Mn-based oxide cathode with Li substitution toward achieving stable K-storage

Xiaoyu Yin, Mengjia Gu, Qian Yang and Kaixiang Lei*



PAPERS

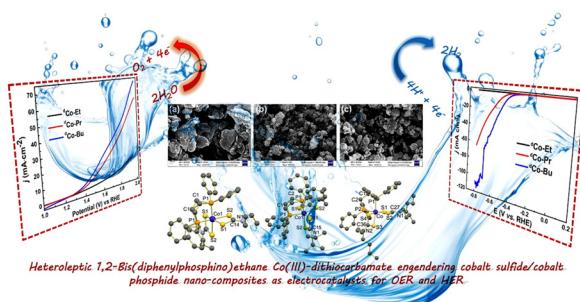
9358



Synthesis and characterization of hollow dual-tube MOF hybrid nanocomposites for electroanalytical applications

Junfeng Wang, Shuyue Tian, Sihua Pan, Yujuan Zhang, Wang Sun and Yang Wang*

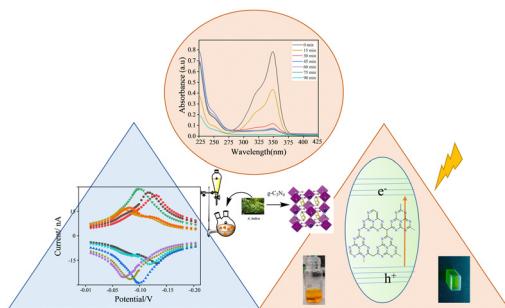
9366



1,2-Bis-(diphenylphosphino)ethane (dppe) appended cobalt(III)-dithiocarbamates as single source precursors of cobalt sulfide/cobalt phosphide composites: apt electrocatalytic materials for water splitting reactions

Devyani Srivastava, Aparna Kushwaha, Sudheer, Gabriele Kociok-Köhn, Ashish Kumar Singh,* Mohd. Muddassir and Abhinav Kumar*

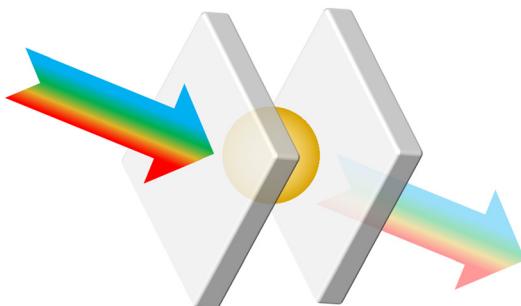
9376



Green-synthesized porous $\text{g-C}_3\text{N}_4@\text{ZnHCC}$ nanocomposite for the on-off fluorescence detection and elimination of toxic chromium(VI) metal ions

Jyoti Yadav, Manviri Rani* and Uma Shanker*

9390



Plasmonic Fabry-Pérot nanocavities produced via solution methods

Stylianos Kiourmourtzoglou, Robert Berical-Vadell, Vitor R. Silveira, Dan Li, Mikaela Görlin and Jacinto Sá*



CORRECTION

9396

Correction: Effect of electrolyte optimization on nitrogen-doped MXene ($Ti_3C_2T_x$) coupled with Cu–BTC MOF for a supercapattery and the hydrogen evolution reaction

Haseebul Hassan, Ehtisham Umar, M. Waqas Iqbal,* Afaf Khadr Alqorashi, Badriah S. Almutairi, Hussein Alrobe, Amir Muhammad Afzal and Niaz Ahmad

