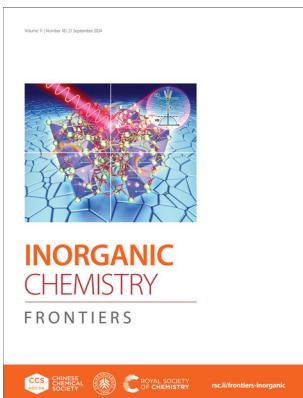


IN THIS ISSUE

ISSN 2052-1553 CODEN ICFNAW 11(18) 5755–6198 (2024)

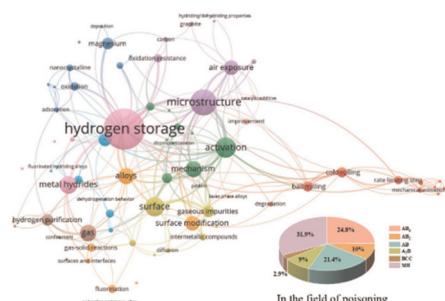


REVIEWS

5768

Poisoning resistance: challenges for hydrogen storage alloys toward engineering applications

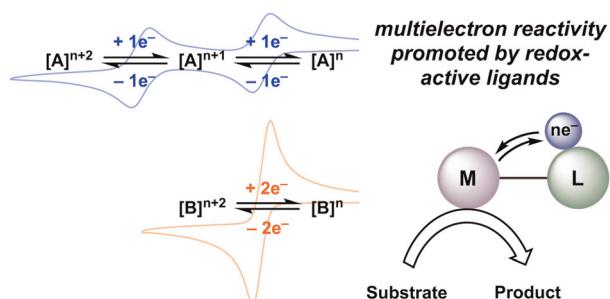
Jing Gu, Zhendong Yao,* Ge Gao, Yijing Wang, Min Liu, Miaogen Chen, Chao Li, Meiqiang Fan, Xuezhang Xiao and Lixin Chen*



5795

Redox-active ligand promoted multielectron reactivity at earth-abundant transition metal complexes

Minzhu Zou and Kate M. Waldie*





GOLD
OPEN
ACCESS

RSC Applied Polymers

The application of polymers,
both natural and synthetic

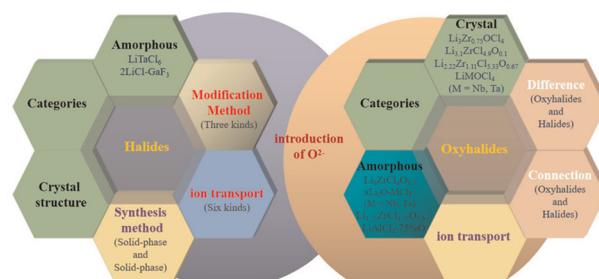
Interdisciplinary and open access

rsc.li/RSCApplPolym

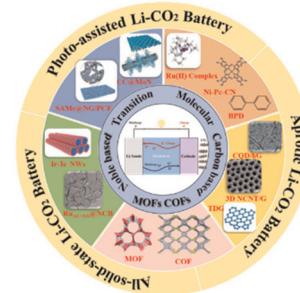
Fundamental questions
Elemental answers

REVIEWS

5810

New advances in solid-state electrolytes: from halides to oxyhalidesQingtao Wang,* Zhenyang Shen, Pengfei Du,
Yongmei Zhou, Peng Zhang and Ying Liu*

5833

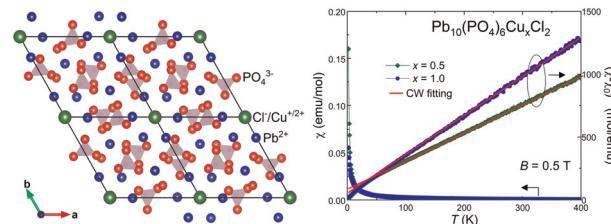
Recent advances in the mechanism and catalyst design in the research of aprotic, photo-assisted, and solid-state Li-CO₂ batteriesHaixia Chen, Xijuan Li, Hairong Xue,* Lulu Jia,*
Yunyun Xu, Yinglei Tao, Yige Yan, Xiaoli Fan,*
Jianping He and Tao Wang*

RESEARCH ARTICLES

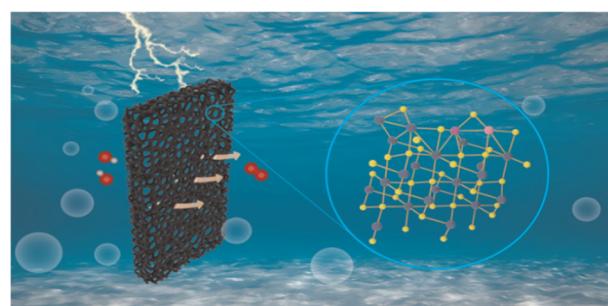
5858

One-step synthesis of Cu-doped Pb₁₀(PO₄)₆Cl₂ apatite: a wide-gap semiconductor

Wuzhang Yang, Zhihong Pang and Zhi Ren*

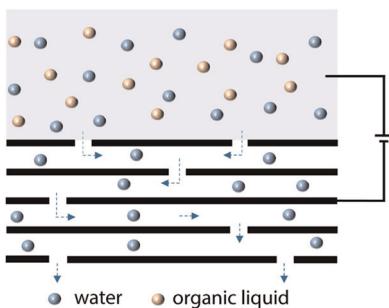


5866

Synergistic promotion of the oxygen evolution reaction by Co and Fe dual-doping of NiS₂Wen-juan Xu, Ying-yu Wang, Jiang-yan Dang,
Xiao-ying Zhang,* Wen-liang Li* and Jing-ping Zhang*

RESEARCH ARTICLES

5876

**Spontaneous and rapid electrostatic solvent nanofiltration based on a conductive layered membrane**

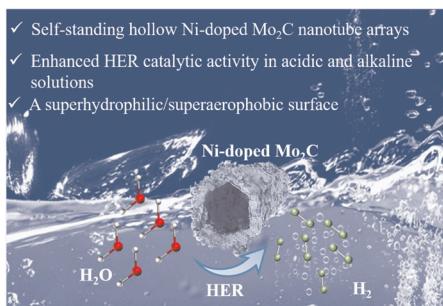
Song Song, Haozhe Sun, Jiaxiang Xia, Shiwen Bao, Wenbin Ding, Nuo Liu, Tianwen Wang, Kunyan Sui,* Jun Gao,* Xueli Liu* and Lei Jiang

5884

**Tailoring electronic environments of dispersed Ru sites for efficient alkaline hydrogen evolution**

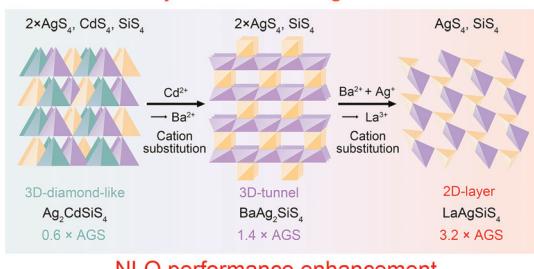
Mengyu Zhang, Bowen Zhou, Lingfei Guo, Hongdong Li, Weiping Xiao, Guangrui Xu, Dehong Chen, Caixia Li, Yunmei Du, Zexing Wu* and Lei Wang*

5894

**Self-standing hollow Ni-doped Mo₂C nanotube arrays induced by the Kirkendall effect for an efficient hydrogen evolution reaction in acidic and alkaline solutions**

Chen Li, Beirong Ye, Tengfei Zhang, Renhong Chen, Yongqi Li, Xin Liu, Tongwei Wu, Hongxian Liu,* Xinhui Xia* and Yongqi Zhang*

5905

crystal structure regulation**Multi-step cation substitution facilitating the exploration of potential infrared nonlinear optical materials**

Ya-Xiang Han, Chun-Li Hu, Wen-Tong Chen and Jiang-Gao Mao*

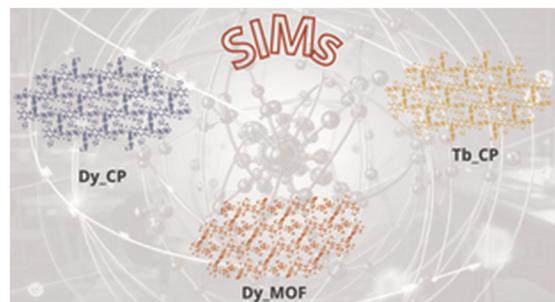


RESEARCH ARTICLES

5913

Tunable SIM properties in a family of 3D anilato-based lanthanide-MOFs

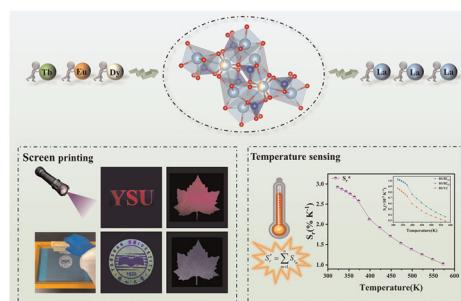
Noemí Monni, Sourav Dey, Víctor García-López, Mariangela Oggianu, José J. Baldoví, María Laura Mercuri,* Miguel Clemente-León* and Eugenio Coronado



5924

Exploring structural and optical properties of CLSO:Dy for ultra-sensitive luminescent thermometers and high-bright screen printing

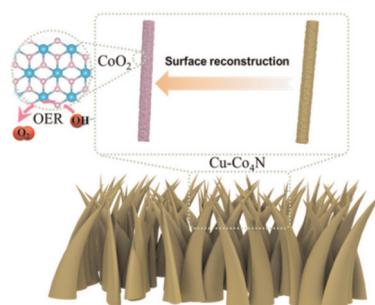
Xinyao Zhang, Zhen Sun,* Ruiying Lu, Jiarui Xu, Hongyu Xu and Wei Xu



5939

Copper dopants facilitated generation of high-valent cobalt sites for improved oxygen evolution

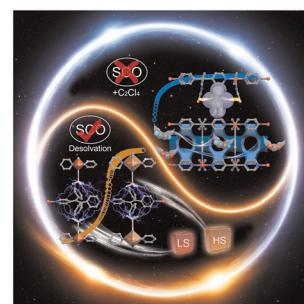
Jingrui Han, Jieshu Zhou, Hao Zhang, Haibin Wang, Kangning Liu, Xuhui Sun, Lihua Liu* and Hongyan Liang*



5946

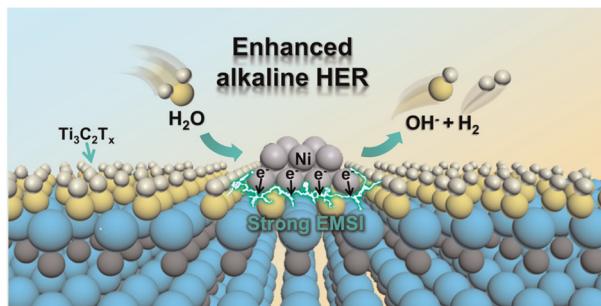
Responsive structural adaptability in ultra-microporous frameworks: guest recognition and macroscopic shape transformations induced by spin transitions within single crystals

Yu-Ting Yang, Wei Guo, Yu-Xia Li, Zhi-Kun Liu, Yuqiao Chai,* Xing Li, Bao Li* and Jin-Peng Xue*



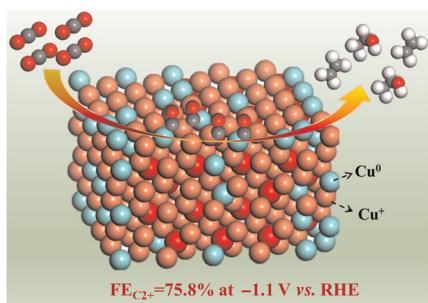
RESEARCH ARTICLES

5957

**Ti₃C₂T_x MXene induces strong electronic metal-support interaction with Ni nanoparticles for hydrogen evolution reaction with Pt-like activity**

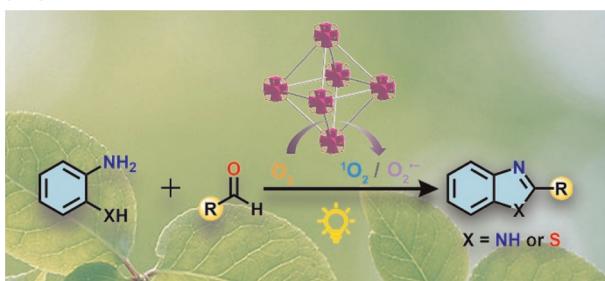
Yixuan Han, Xiaodan Yang, Yidan Zhao, Mingyang Zhao, Hongming Sun,* Jing Chen, Jianchao Sun,* Xiang Chen and Cheng-Peng Li*

5964

**A derived-Cu catalyst with a potential-driven interface and tensile strain for enhancing CO₂ electrocatalytic reduction**

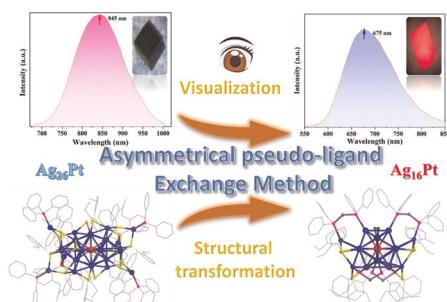
Fangfang Chang, Zihan Lin, Yongpeng Liu, Qing Zhang, Xiaolei Wang and Zhengyu Bai*

5973

**Visible-light-active benzothiadiazole-based MOFs as efficient ROS generators for the synthesis of benzimidazoles and benzothiazoles**

Hua Liu, Wen-Wen Yi,* Quan-Quan Li* and Shu-Ya Zhao

5979

**Visualizing the fluorescence of AgPt NCs by an asymmetrical pseudo-ligand exchange method**

Lizhong He,* Tingting Dong, Xiaoyang Hu and Zibao Gan*

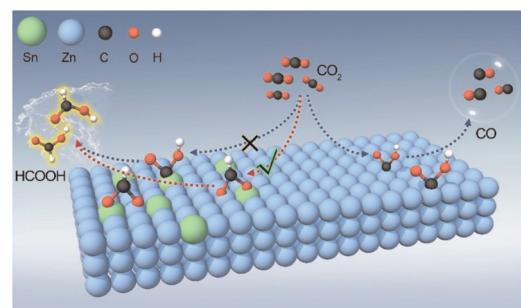


RESEARCH ARTICLES

5987

Trace Sn modified Zn catalysts for efficient CO₂ electroreduction to HCOOH

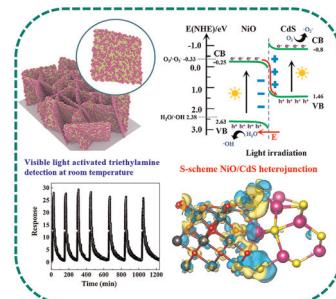
Rui Yang,* Hao Fu, Zimin Han, Guoqing Feng, Huazhi Liu, Yangguang Hu* and Yiyin Huang*



5997

A step-scheme mechanism in a NiO/CdS heterojunction nanoarray for visible light-activated gas sensing at room temperature

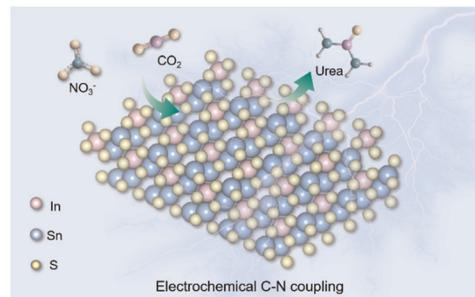
Wufei Gong, Shenman Yao, Dehua Wang, Jiahao Li, Yulin Zhu, Jianxian You, Yan Liang,* Yanxing Yang and Yong Yang*



6010

Efficient electrosynthesis of urea using CO₂ and nitrate over a bifunctional In₄SnS₈ catalyst

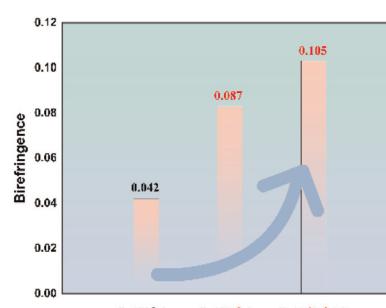
Mao Li, Yanan Gao,* Ji Xu, Sangzi Wang, Yujin Wei, Jingru Wang, Bo Ouyang* and Kun Xu*



6020

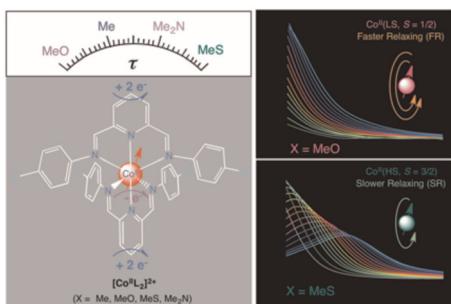
From BaAlBO₃F₂ to BaAlB₃O₆F₂ and BaAl₂(B₃O₆)₂F₂: the enhancement of birefringence and band gap by extending the π-conjugated system combined with [Al–O/F] functional groups

Cheng Chen, Danyang Dou, Yunjie Bai, Bingbing Zhang and Ying Wang*



RESEARCH ARTICLES

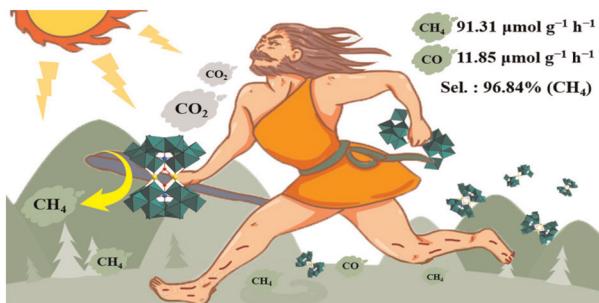
6028



Multielectron transfer and field-induced slow magnetic relaxation in opto-electroactive spin crossover cobalt(II) complexes: structure–function correlations

Renato Rabelo, Luminita Toma, Miguel Julve, Francesc Lloret, Jorge Pasán, Danielle Cangussu, Rafael Ruiz-García and Joan Cano*

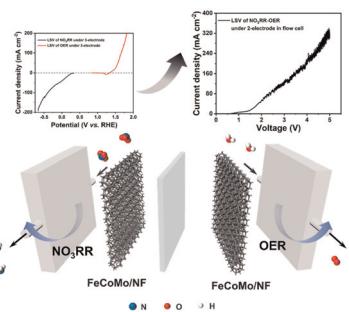
6044



A purely inorganic germanium–molybdenum–oxo cluster with ruthenium participation for visible-light-driven CO₂ reduction

Kunhong Li, Yumei Hong, Xinyi Ma, Yujie Zhao, Shihao Zhang, Pengtao Ma, Jingyang Niu* and Jingping Wang*

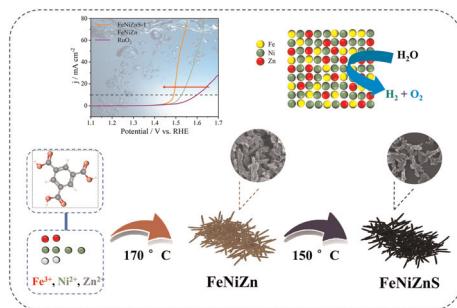
6052



Fe-modified Co₂Mo₃O₈-promoted nitrate-cascade reduction reaction coupled with the oxygen evolution reaction for electrocatalytic ammonia synthesis

Yaru Wang, Shiyu Qin, Xiaoyue Chen, Xiangchao Meng and Zizhen Li*

6064



Universal synthesis of coral-like ternary MOF-derived sulfides as efficient OER electrocatalysts

Tianpeng Liu, Yangping Zhang, Jun Yu, Mengyun Hu, Zhengying Wu,* Xiao Wei, Shudi Yu and Yukou Du*

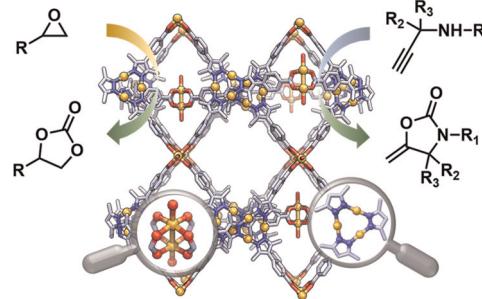


RESEARCH ARTICLES

6072

A mixed-valence Cu^I/Cu^{II} metal–organic framework for CO₂ conversion

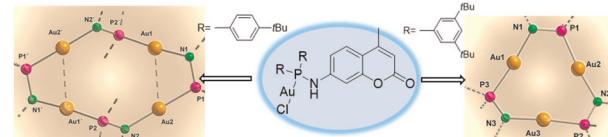
Yu-Mei Wang, Kai-Ming Mo, Dong Luo, Mei-Xia Tao, Xu Chen, Guo-Hong Ning* and Dan Li*



6079

Synthesis of luminescent coumarin-substituted phosphinoamide-bridged polynuclear gold(I) metallacycles and reactivity studies

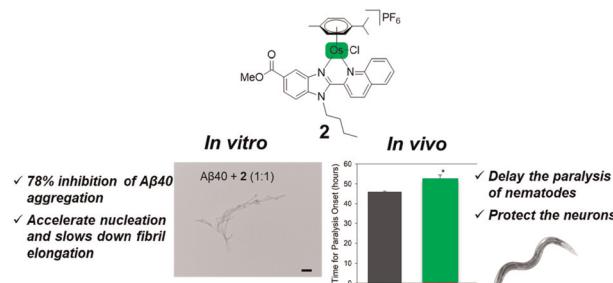
Vanitha R. Naina, Akhil K. Singh, Shubham, Julia Krämer, Mohd Iqbal and Peter W. Roesky*



6089

Piano-stool metal complexes as inhibitors of amyloid-β aggregation *in vitro* and *in vivo*

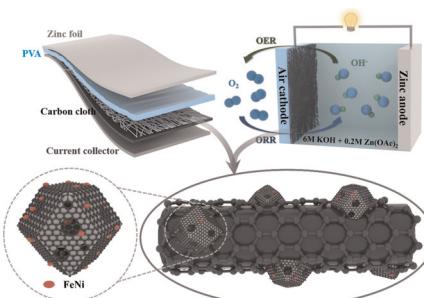
Gloria Vigueras, Raimon Sabate, Leoní A. Barrios, Ana B. Caballero,* Samanta Hernández-García, Pau Bayón, Fernando Gandía-Herrero,* José Ruiz* and Patrick Gamez



6103

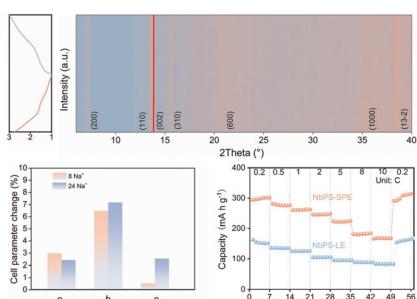
FeNi alloys embedded in porous carbon shells on a dual substrate as efficient electrocatalysts for zinc–air batteries

Han Guo, Guangxu Yao, Chuanzhen Feng, Mi Wang, Huijuan Zhang* and Yu Wang*



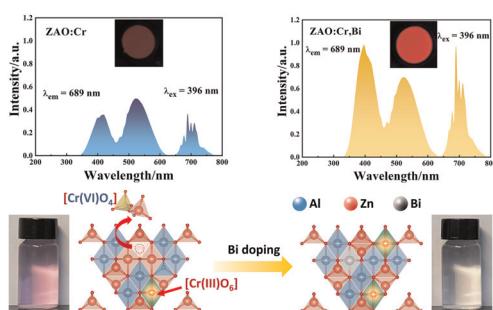
RESEARCH ARTICLES

6118

**A quasi-zero-strain layered $\text{Nb}_4\text{P}_2\text{S}_{21}$ cathode for high-energy solid-state polymer Na–metal batteries**

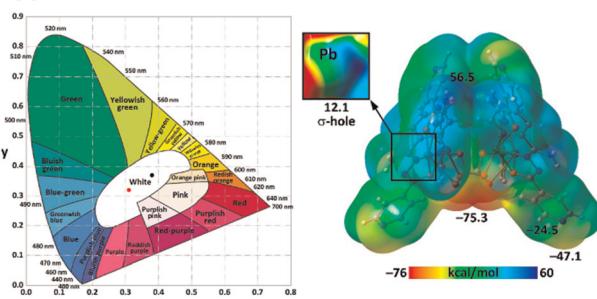
Xueyang Tu, Baixin Peng, Xue Wang, Xue Wang,
Shaoning Zhang, Yuqiang Fang, Wujie Dong, Jiabo Le,*
Keyan Hu* and Fuqiang Huang*

6127

**Achieving a Cr^{6+} -free Cr^{3+} -activated spinel phosphor by a one-step solid-state reaction**

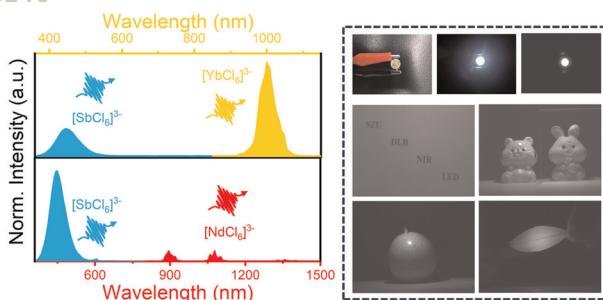
Yiqing Zhou, Quantian Cao, Yue Han, Zhongxian Qiu,*
Jilin Zhang, Wenli Zhou and Shixun Lian*

6135

**Aerial carbon dioxide conversion to carbonate mediated by a lead(II) complex with tridentate bipyridine containing a hydrazide ligand under electrochemical conditions yielding single-component white-light-emitting phosphors**

Ghodrat Mahmoudi, Isabel Garcia-Santos,*
Elena Labisbal, Alfonso Castañeiras, Vali Alizadeh,*
Rosa M. Gomila, Antonio Frontera* and Damir A. Safin*

6146

**Enabling efficient near-infrared emission in lead-free double perovskite via a codoping strategy**

Xiangyan Yun, Hanlin Hu, Haizhe Zhong, Jingheng Nie,*
Henan Li and Yumeng Shi*

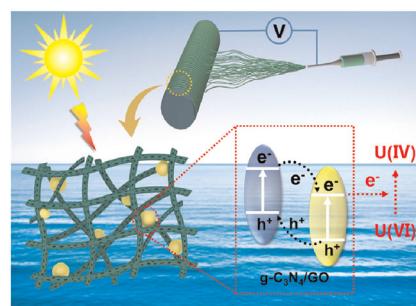


RESEARCH ARTICLES

6156

Graphene oxide/graphitic carbon nitride/polyamide oxime nanofibers for adsorption and photocatalytic reduction of uranium from seawater

Shiliang Qin, Jianang Sha, Peipei Yang,* Songwei Li,* Chuntao Liu and Changyu Shen



6168

The ultrafast reconfigurability and ultrahigh durability of an NiFe phosphide electrocatalyst with an Fe-rich surface induced by *in situ* acid corrosion for water oxidations

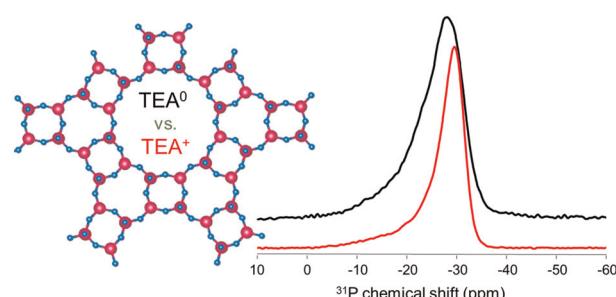
Min Jiang, Jiaming Zhang, Hanxiao Liao, Huanhuan Zhai, Xuanzhi Liu, Pengfei Tan,* Ke Yang* and Jun Pan*



6178

Revealing the effect of templates on atomic scale ordering and the hydrophilic properties of aluminophosphates

Ludovica Pace, Eddy Dib,* Diogenes Honorato-Piva, Valérie Ruaux, Aurelie Vicente and Svetlana Mintova*



6190

Remarkable enhancement of Ca²⁺ affinity using a redox-switchable coordinating group

Juan Pedro Merino, Adrián M. Abelairas, Javier Hernández-Ferrer, Ana M. Benito, Wolfgang K. Maser, José L. Vilas-Vilela, David Esteban-Gómez, Alejandro Criado, Jesús Mosquera* and Carlos Platas-Iglesias*

