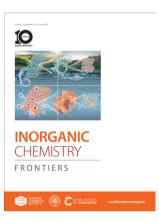
# **INORGANIC** CHEMISTRY

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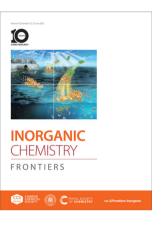
ISSN 2052-1553 CODEN ICFNAW 10(12) 3417-3732 (2023)



#### Cover

See Yiping Wang, Xiaodong Lei et al., pp. 3515-3524.

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#### Inside cover

See Qiwei Zhang et al., pp. 3525-3535.

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## **REVIEWS**

3428

# Strategies to boost chemiresistive sensing performance of In<sub>2</sub>O<sub>3</sub>-based gas sensors: an overview

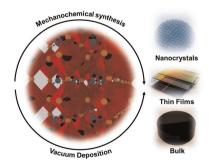
Sanjit Manohar Majhi, Sachin T. Navale, Ali Mirzaei, Hyoun Woo Kim\* and Sang Sub Kim\*



## 3468

# Solvent-free synthetic protocols for halide perovskites

Xinrui Zhang, Jiaomao Zheng, Yifan Wang, Zhenlong Wang, Luyao Zheng, Amin Nozariasbmarz, Kai Tao, Binghe Ma, Bed Poudel, Kai Wang\* and Tao Ye\*



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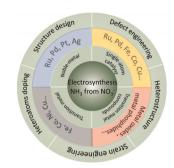


# **REVIEWS**

#### 3489

Recent progress and strategies on the design of catalysts for electrochemical ammonia synthesis from nitrate reduction

Wei Song, Luchao Yue.\* Xiaova Fan, Yongsong Luo. Binwu Ying, Shengjun Sun, Dongdong Zheng, Qian Liu, Mohamed S. Hamdy and Xuping Sun\*

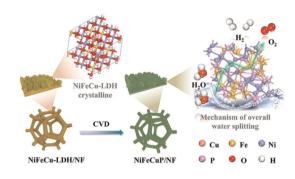


#### **RESEARCH ARTICLES**

#### 3515

NiFeCu phosphides with surface reconstruction via the topotactic transformation of layered double hydroxides for overall water splitting

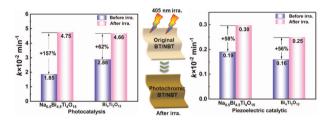
Jingmin Ge, Shuteng Diao, Jiaxing Jin, Yiping Wang,\* Xuhui Zhao, Fazhi Zhang and Xiaodong Lei\*



#### 3525

Photochromism-promoted highly efficient photocatalytic degradation in ferroelectric photochromics

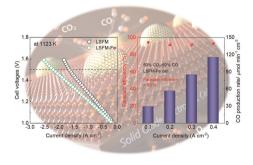
Lizhen Lu, Zhen Zhang, Peng Li, Haiqin Sun, Qiwei Zhang\* and Xihong Hao



#### 3536

Enhancing CO<sub>2</sub> electrolysis performance with various metal additives (Co, Fe, Ni, and Ru) decorating the La(Sr)Fe(Mn)O<sub>3</sub> cathode in solid oxide electrolysis cells

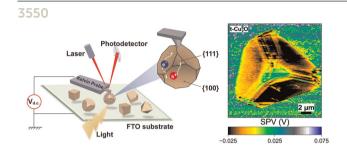
Sang Won Lee, Tae Heon Nam, Minkyu Kim, Seokhee Lee, Kyu Hyung Lee,\* Jong Hyeok Park\* and Tae Ho Shin\*



# 3544 room temperature in air $Zn(II) \Longrightarrow Zn(I)$

# Room-temperature photosynthesis of Zn(ı) compounds with high air stability

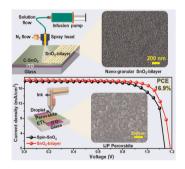
Yi-Min Lin, Lu Liu, Ming-Sheng Wang\* and Guo-Cong Guo\*



# Spatial separation of photogenerated charges on the anisotropic facets of cuprous oxide

Tianhui Su, Chunlei Yang, Fushuang Niu, Yanbo Hua, Qinshang Xu, Ke Hu and Liming Zhang\*

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# Spray-assisted deposition of a SnO<sub>2</sub> electron transport bilayer for efficient inkjet-printed perovskite solar cells

Vinayak Vitthal Satale, Neetesh Kumar, Hock Beng Lee, Manoj Mayaji Ovhal, Sagnik Chowdhury, Barkha Tyagi, Asmaa Mohamed and Jae-Wook Kang\*

3568



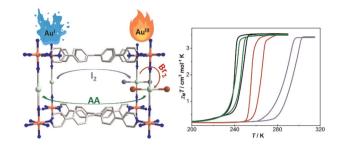
# A honeycomb carbon substrate anchored with Sn and Sb bimetallic atoms boosts oxygen-reduction electrocatalysis

Shuting Li, Jinxi Han, Yuyu Guo, Zhengqiang Xia, Sanping Chen,\* Gang Xie, Shengli Gao and Qi Yang\*

#### 3577

# Successive redox modulation in an iron(II) spin-crossover framework

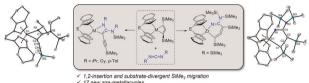
Bang-Heng Lyu, Ze-Yu Ruan, Wen Cui, Si-Guo Wu,\* Zhao-Ping Ni\* and Ming-Liang Tong\*



#### 3584

# Selective 1,2-insertion of carbodiimides and substrate-divergent silyl group migration at 1-metallacyclobuta-2,3-dienes

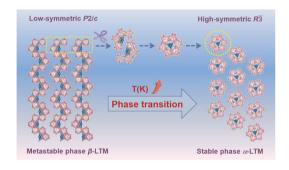
Xinzhe Shi, Sihan Li, Anke Spannenberg, Fabian Reiß\* and Torsten Beweries\*



#### 3595

# A new stable polymorph of Li<sub>2</sub>TeMo<sub>3</sub>O<sub>12</sub> with wide mid-infrared transparency and a large Raman response

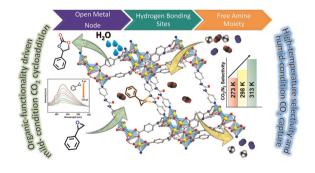
Yuheng She, Fei Liang, Jinmiao Jiao, Wenli Zhao, Ning Ye, Zhanggui Hu, Yicheng Wu and Conggang Li\*



#### 3605

Contrasting-functionality-decked robust MOF for moisture-tolerant and variable-temperature CO<sub>2</sub> adsorption with in-built urea group mediated mild condition cycloaddition

Manpreet Singh, Partha Pratim Mondal, Sonal Rajput and Subhadip Neogi\*

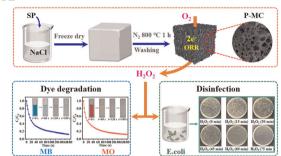


# MoO<sub>4</sub><sup>2-</sup> dissolution Bulk and rapid reconstruction NH<sub>3</sub>-treated Ni(Fe)MoO<sub>4</sub> Distorted y-Ni(Fe)OOH

# Regulation of bulk reconstruction of FeNiMoO<sub>4</sub> via NH<sub>3</sub> treatment for high performance water oxidation

Fanan Wang,\* Lianggao Hu, Renzhi Deng, Shiwei Dai, Dongfei Lu, Xin Chen, Xinchen Pan, Xinyi Ren, Dibo Dong, Rengui Weng,\* Gang Xu\* and Hongbin Yang

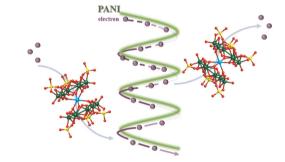
3632



# Phosphorus doped hierarchical porous carbon: an efficient oxygen reduction electrocatalyst for $on\text{-}site\ H_2O_2$ production

Lizhi Liu, Chenglu Yan, Xuanyan Luo, Caixia Li, Di Zhang, Huaqiao Peng, Huiyong Wang, Baozhan Zheng\* and Yong Guo\*

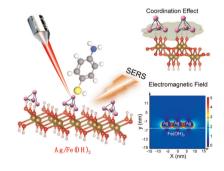
3641



# Solid-state supercapacitors based on polyoxometalate-based crystalline materials modified with polyaniline

Chen Wang, Zhi-Xin Gao, Hong-Ying Zang,\* Tao-Wen Dong\* and Zhong-Min Su\*

3648



# Significant surface-enhanced Raman scattering effect of Ag-loaded iron hydroxide enabled by coordination effect between Ag and hydroxyl group

Xiangyu Meng, Jian Yu, Jingjing Wu, Yuening Wang, Xiaoyu Song, Ziyan Xu, Anran Li,\* Lin Qiu,\* Jie Lin\* and Xiaotian Wang\*

#### 3656

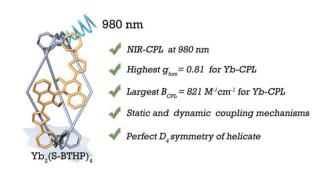
Cobalt pincer-type complexes demonstrating unique selectivity for the hydroboration reaction of olefins under mild conditions

Dariusz Lewandowski and Grzegorz Hreczycho\*

#### 3664

Remarkable 980 nm circularly polarized luminescence from dinuclear Yb(III) helicates with a D<sub>4</sub> symmetry

Lingli Wang, Zhiwei Yao, Wenru Huang, Ting Gao, Pengfei Yan, Yanyan Zhou\* and Hongfeng Li\*



## 3675

Interfacial engineering of FeWO<sub>4</sub>/Fe<sub>2</sub>O<sub>3</sub> homometallic heterojunctions for synergistic electrocatalytic water splitting

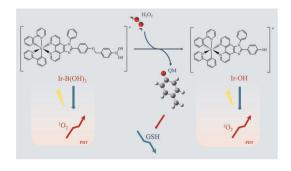
Rongfang Li, Heng Zhang,\* Junling Chen, Ka Zhang, Wenqiang Li, Xun Feng,\* Huijuan Zhang, Ibro Douka Abdoulkader,\* Xu Zhang and Tiexin Zhang\*



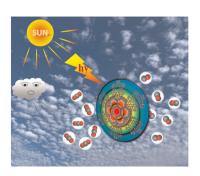
#### 3686

Mechanism of action of an Ir(III) complex bearing a boronic acid active as a H<sub>2</sub>O<sub>2</sub>-responsive photosensitizer: ROS generation and quinone methide release for GSH scavenging

Pierraffaele Barretta and Gloria Mazzone\*



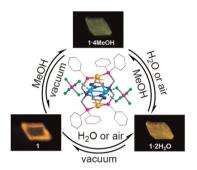
3699



# Novel COF@Ti-MOF hybrid photocatalysts enabling enhanced photocatalytic CO<sub>2</sub> reduction in a gas-solid system without additives

Rui-Gang Yang, Yao-Mei Fu, Xing Meng, Li Xue, Zhen Zhou, Yu-Ou He, Jian-Xin Qu, Hai-Ning Wang\* and Zhong-Min Su

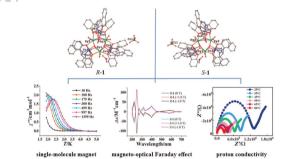
3706



A PN(Pz)P ligand protected Au<sub>2</sub>Cu<sub>2</sub> complex for photoluminescent ultra-low humidity detection with reversible single-crystal-to-single-crystal transformations

Shengnan Hu, Sisi Yan, Yuanyuan Hu, David James Young, Hong-Xi Li, Chengrong Lu,\* Jing-Hui He\* and Zhi-Gang Ren\*

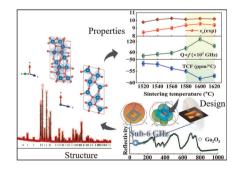
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Homochiral Cu<sub>6</sub>Dy<sub>3</sub> single-molecule magnets displaying proton conduction and a strong magnetooptical Faraday effect

Cai-Ming Liu,\* Shui-Dong Zhu, Ying-Bing Lu, Xiang Hao and He-Rui Wen

3723



# β-Ga<sub>2</sub>O<sub>3</sub>: ultralow-loss and low-permittivity dielectric ceramic for high-frequency packaging substrate

Wei Wang, Chao Du, Xin Wang, Diming Xu,\* Hong-Song Qiu, Biao-Bing Jin, Zhong-Qi Shi, Fayaz Hussain, Moustafa Adel Darwish, Tao Zhou, Ya-Wei Chen, Qi-Xin Liang, Mei-Rong Zhang and Di Zhou\*

# CORRECTION

3730

Correction: A hollow urchin-like metal-organic framework with Ni-O-cluster SBUs as a promising electrode for an alkaline battery-supercapacitor device

Tianqi Chen, Sujuan Bian, Xutian Yang, Wenjie Lu, Kuaibing Wang,\* Yuxuan Guo, Cheng Zhang and Qichun Zhang\*