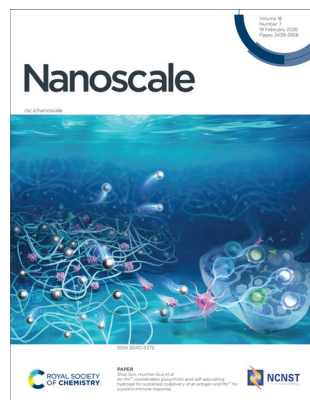


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### Cover

See Shiqi Sun,  
Huichen Guo *et al.*,  
pp. 3559–3574.

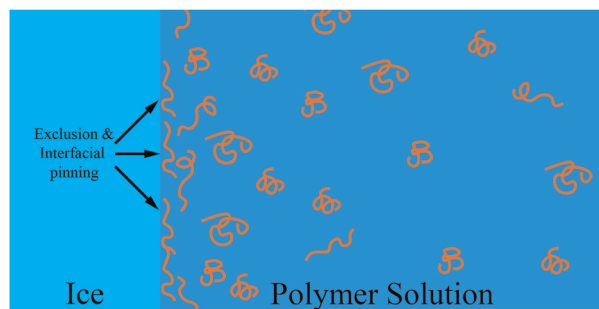
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### Interfacial mechanisms in the freezing of polymer solutions

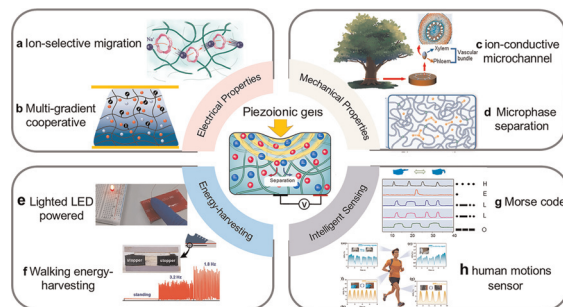
Nicolas Gustav Ulrich and Jean-François Louf\*



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### Piezoionic effect in gels: multifunctional applications from energy harvesting to intelligent sensing

Yanrong Li, Yufei Zhang, Bochao Chang,  
Saeed Ahmed Khan, Xiaojing Cui, Jie Zhang\* and  
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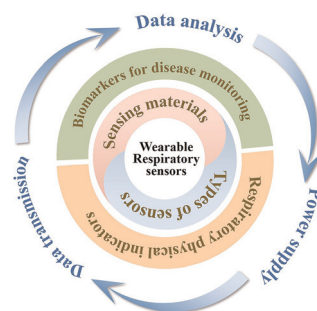
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## REVIEWS

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### Wearable respiratory sensors for non-invasive healthcare monitoring: applications and intelligent technologies

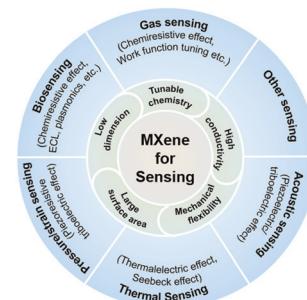
Luming Yu, Guiyan Liu, Hao Zhang and Dan Wen\*



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### MXenes for sensing technology: from fundamental properties to diverse applications

Haowen Qin, Haitao Dai,\* Menghua Wu, Zhuangfei Zhang and Ye Wang\*

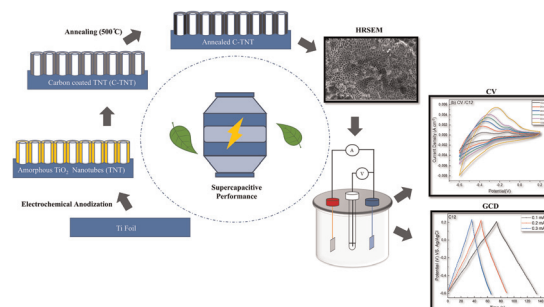


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### Surface engineering of titanium dioxide nanotube electrodes via *in situ* carbon incorporation for enhanced supercapacitance

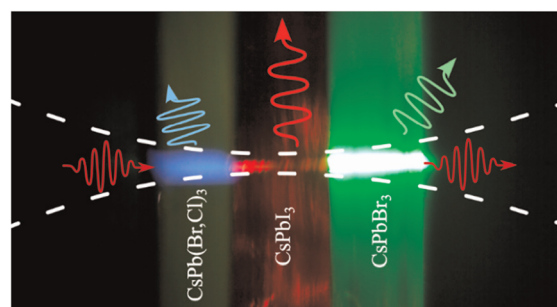
Soumya Jha and R. Prasanth\*



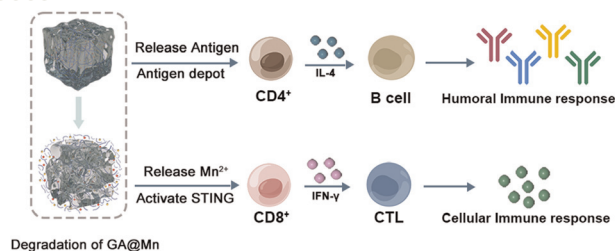
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### Two-photon photoluminescence excitation spectra of perovskite nanocrystals in a glass matrix

Matvei N. Bataev,\* Ivan V. Ignatiev, Evgenii V. Ubyivovk, Dmitrii V. Pankin, Mikhail B. Smirnov, Maria. S. Kuznetsova and Elena. V. Kolobkova



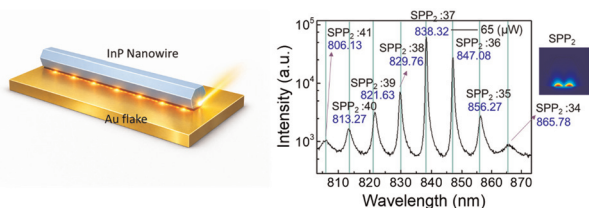
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### An Mn<sup>2+</sup>-coordinated glycyrrhizic acid self-adjuvating hydrogel for sustained codelivery of an antigen and Mn<sup>2+</sup> for a potent immune response

Jingjing Zhou, Shengying Zhang, Hu Dong, Yunhua Li, Haoyue Zang, Zhidong Teng, Mingyang Zhang, Yifan Liu, Shiqi Sun\* and Huichen Guo\*

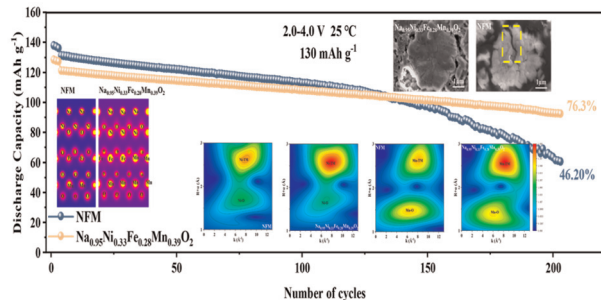
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Yu-Shi Tsai, Hung-Jung Shen, Chia-Hung Wu, Guan-Ting Lin, Kuo-Ping Chen, Jhih-Sheng Wu and Tien-Chang Lu\*

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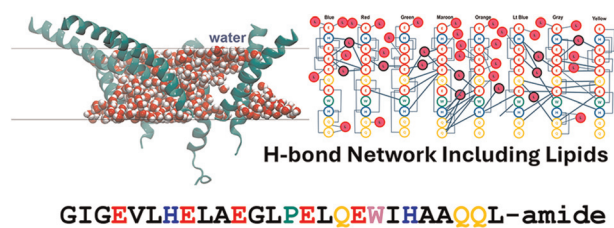


### Dopant-free synergy of Fe gradient and Na vacancies for boosted Na<sup>+</sup> transport in O3-type cathodes

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### pH-responsive Peptide Nanopores



### pH-Responsive peptide nanopores are stabilized by lipid and water-mediated hydrogen bonding networks

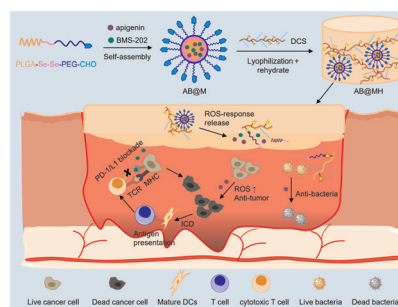
Ana-Nicoleta Bondar,\* Samo Lešnik, Kalina Hristova and William C. Wimley\*



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### ROS-responsive multifunctional DCS-based micelle hydrogel for simultaneously inhibiting post-resection melanoma recurrence and promoting wound healing

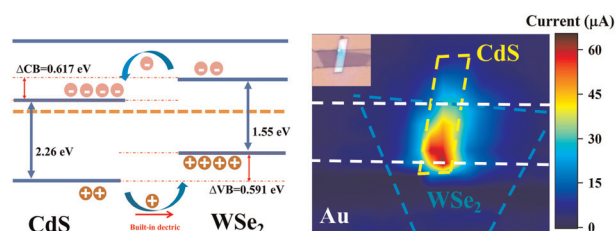
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### A van der Waals stacked CdS /WSe<sub>2</sub> heterostructure for high-performance photodetection

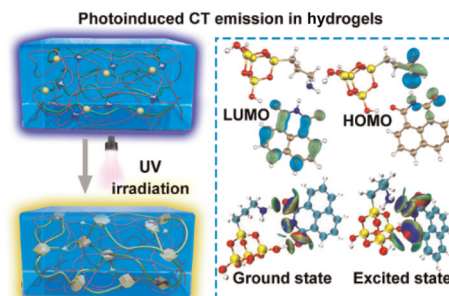
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### A crosslinking confined charge-transfer complex for the construction of photo-responsive hydrogels

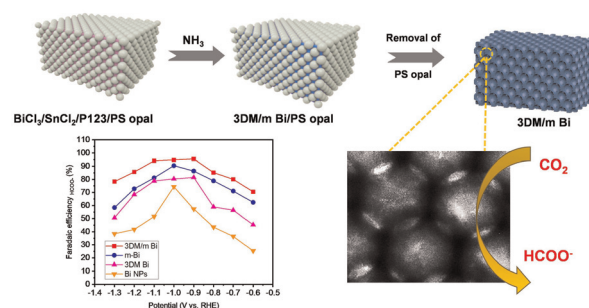
Menglin Wu, Baochuan Zhang, Pengcheng Wang, Tongyu He, Xin Jiang, Lulu Qian, Mingyue Cui,\* Bin Song\* and Yao He\*



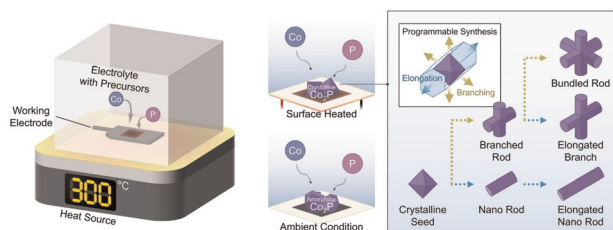
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### Three-dimensionally ordered macro-/mesoporous bismuth for efficient electrocatalytic CO<sub>2</sub> reduction to formate

Yixin Zhang, Fulin Li, Kunlong Liu, Tingming Xu, Tingting Sun and Lianbin Xu\*



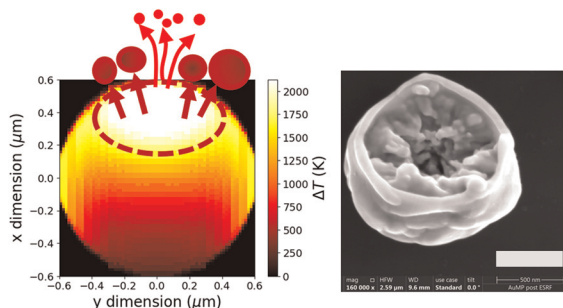
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### Thermo-electrochemistry-enabled phase and morphology control of metal phosphide nanocrystals

Hyokyum Ahn, Yunwoo Nam, Taeyeon Kang and Hyun S. Ahn\*

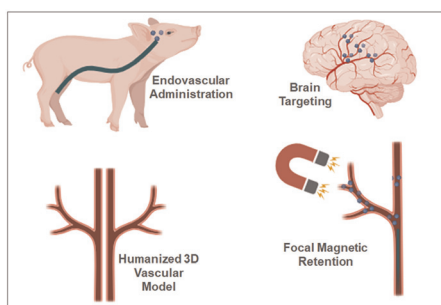
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### Pulsed-laser induced gold microparticle fragmentation by thermal strain

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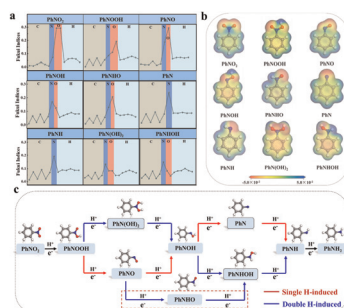
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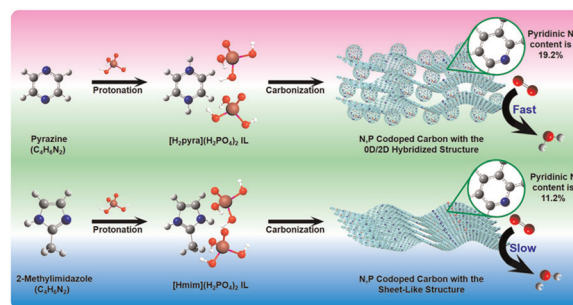
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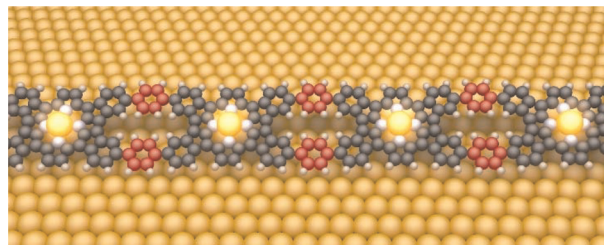
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### On-surface synthesis of doubly-linked porphyrin polymers via cycloaromatization of isopropyl substituents on Au(111)

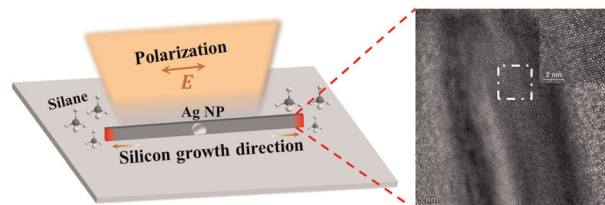
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### Polarization-directed growth of single-crystalline silicon nanostructures

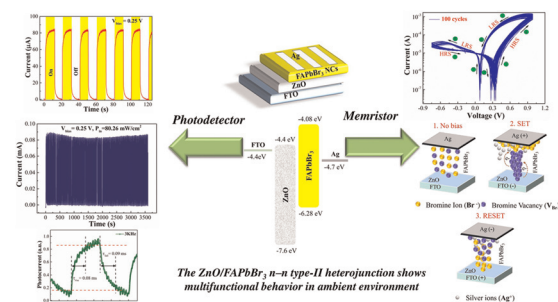
Jin Hu, Jin Qin and Zhikun Liu\*



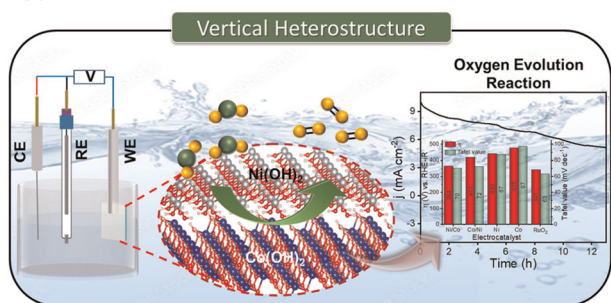
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Monisha Nayak, Ashutosh Mohanty, Pragalb Kashyap, Abhijit Bar and Sudip K. Saha\*



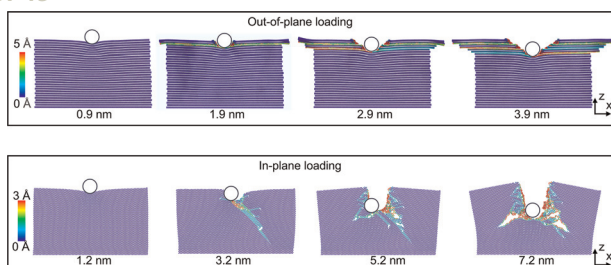
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Manav Saxena,\* Sayali Ashok Patil, Anjali Prajapati, Ranjit Thapa, Sebastien Royer and Pramila K. Misra\*

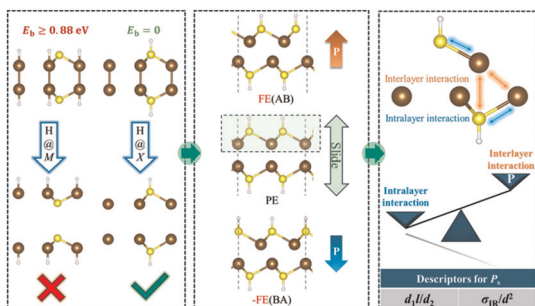
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### Anisotropy deformation behavior of multi-layer black phosphorus

Zihan Li, Guangrui Zhao, Xiaosong Zhang, Yongda Yan and Yanquan Geng\*

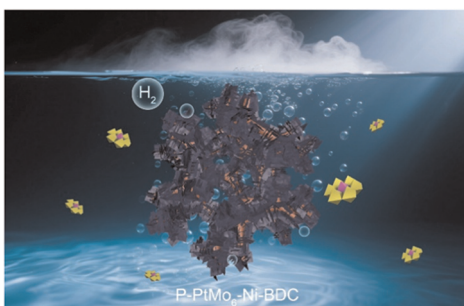
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Bo-Cong Shi, Man Jin, Jun-Rui Chen, Pengfei Wu, Dongsheng Geng and Yu-Jia Tang\*

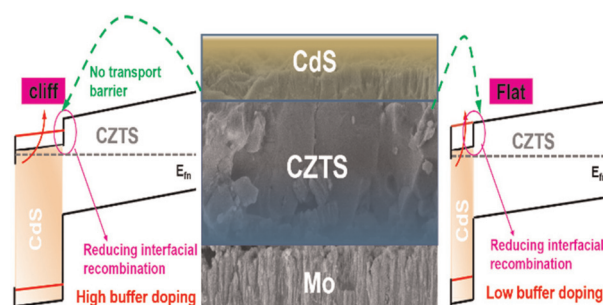


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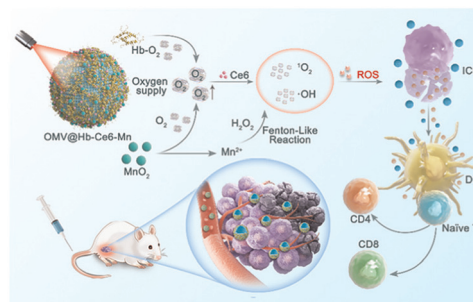
Siyu Wang,\* Yue Liu, Haoran Li and Yi Zhang\*



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### Enhancing tumor ROS generation via nanozyme-amplified photodynamic therapy with oxygen-supplying bacterial OMVs

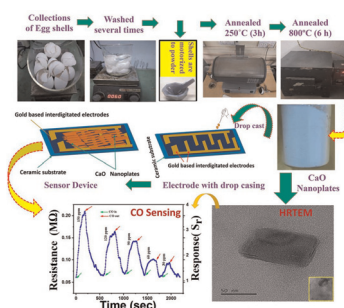
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### A selective resistive CO gas sensor based on bio-waste derived 2D-CaO nanoplates

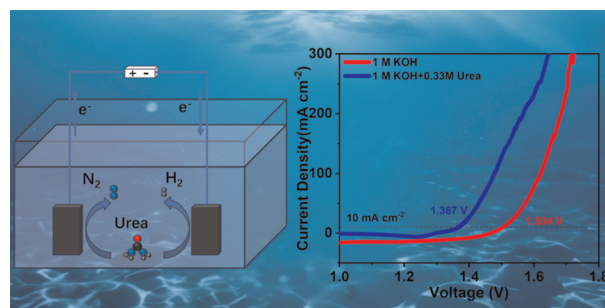
Amit Kumar Bhunia,\* Abhijit Narayan Eshore and Prasanta Kumar Guha



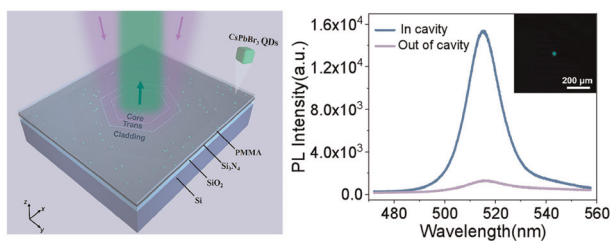
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### Construction of Fe regulated NiMoN nanorods as an efficient electrocatalyst for overall water splitting and urea electrolysis

Longlong Liu, Lanli Chen, Huaming Zhang,\* Muhammad Humayun, Yuxiao Liu, Junhong Duan, Yanjun Fu, Mohamed Bououdina, Xinying Xue\* and Chundong Wang



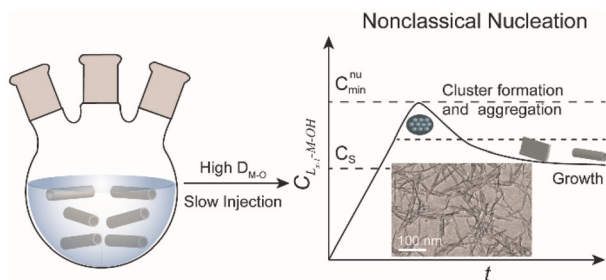
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### A highly efficient surface-emitting light source enabled by silicon nitride photonic crystal cavities coupled with perovskite quantum dots

Rongzi Wang, Ying Su, Na Jia, Hongji Fan, Chengxiang Qi and Tun Cao\*

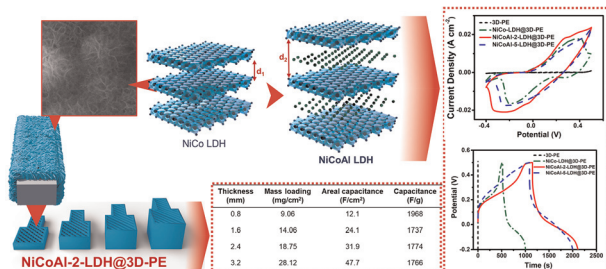
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Mengxuan Zhang, Ming Jiang, Zhongyao Bao, Zisheng Feng, Kun Han, Tao Han, Chenzhe Sun, Yakun Zhou, Chuanqiang Wu,\* Zhen Huang\* and Penghui Yin\*

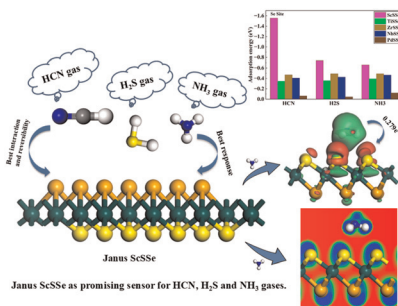
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### 3D-printed carbon nanoparticle monoliths enabling ultrahigh mass loading of NiCoAl layered double hydroxides for asymmetric supercapacitors

Jungeun Bae, Thang Cao Doan, Anisa Fitriani Rosyadi, Yebin Park and Hyojong Yoo\*

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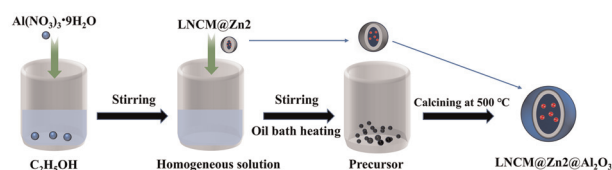
Sifat Reza Khoshnobish, Afiya Akter Piya, Tanu Arefin and Siraj Ud Daula Shamim\*



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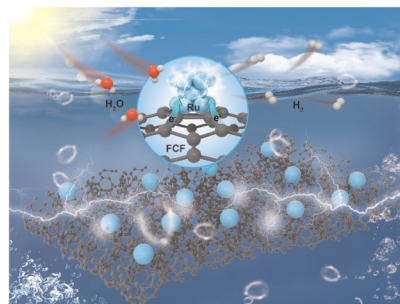
Biao Wang, Kaibo Fan, Kai Cao, Haozhong Huang, Xiaowu Fu, Jie Chen, Chenyang Zhang, Li Wang, Yong Zhao\* and Zhengguang Hu\*



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### Anchoring ruthenium nanoclusters using an electron-donating fullerene carbon matrix for high-performance hydrogen evolution

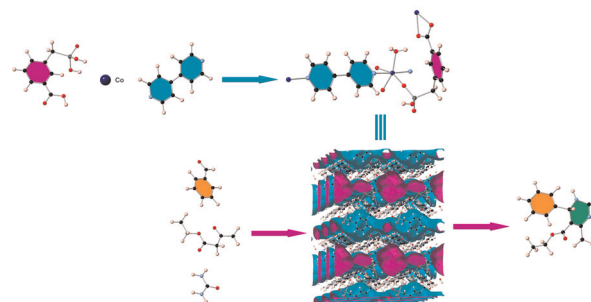
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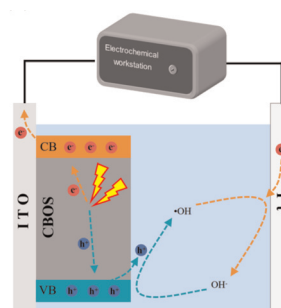
Ehsan Joukar Bahaderani, Khosro Mohammadi,\* Payam Hayati\* and Jan Janczak



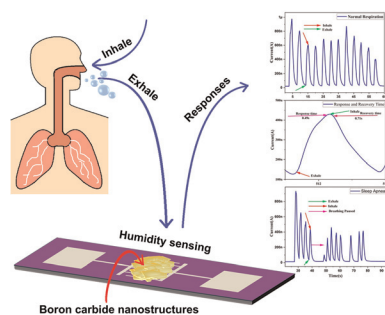
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### High performance broadband photoelectrochemical photodetectors based on Cu-doped $\text{Bi}_2\text{O}_2\text{Se}$ nanosheets

Xinyu Guo, Yanning Hu, Jiaxing Wang, Ziyang Zhou, Peijie Ma\* and Kun Zheng



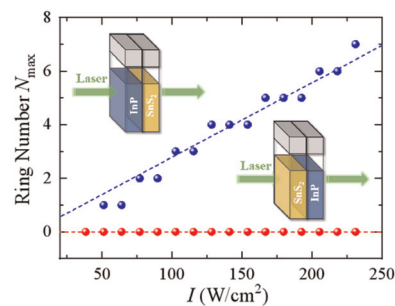
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### Surface-engineered boron carbide nanostructures for non-contact respiratory monitoring

Shubham Pandey, Aminul Islam,  
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Danyi Weng, Cheng Ling, Jun He, Qiannan Cui,\*  
Chunxiang Xu\* and Bing Gu\*

