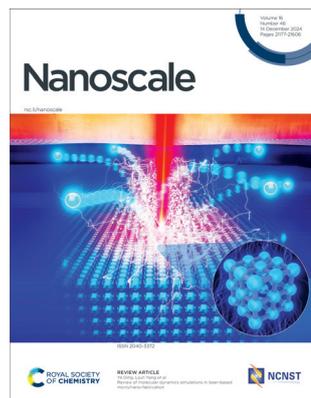


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### Cover

See Ye Ding,  
Lijun Yang *et al.*,  
pp. 21189–21215.

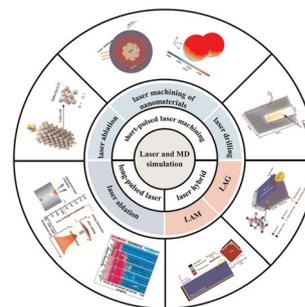
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## REVIEWS

21189

### Review of molecular dynamics simulations in laser-based micro/nano-fabrication

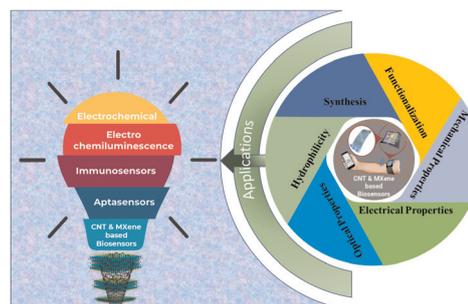
Hao Liu, Wanda Xie, Ye Ding,\* Ke Chen,  
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### Holistic insights into carbon nanotubes and MXenes as a promising route to bio-sensing applications

Nadeem Hussain Solangi, Rama Rao Karri,\*  
Nabisab Mujawar Mubarak,\* Shaukat Ali Mazari\* and  
Bharat Prasad Sharma



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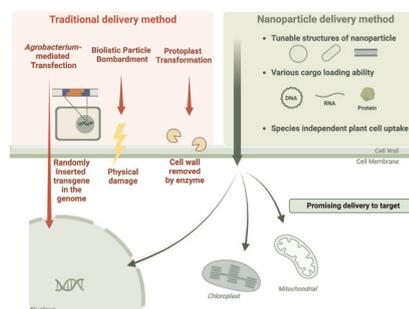
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## REVIEWS

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**Rational nanoparticle design for efficient biomolecule delivery in plant genetic engineering**

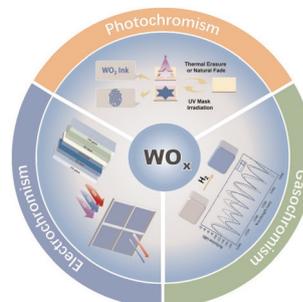
Yue Zhao, Calvin Thenarianto, Cansu Sevencan, Sivamathini Rajappa, Di Shen, Suppanat Puangpathumanond, Xiaomin Yao and Tedrick Thomas Salim Lew\*



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**Recent advances in tungsten oxide-based chromogenic materials: photochromism, electrochromism, and gasochromism**

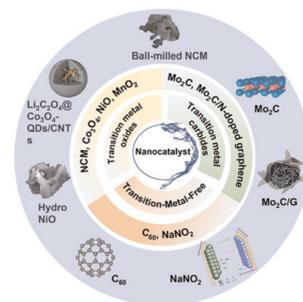
Yaqi Zhang, Yilin Ding, Fan Lan, Wenjing Zhang, Jingfa Li\* and Rufan Zhang\*



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**Nanocatalysis in cathode pre-lithiation for lithium-ion batteries: progress and challenges**

Fujun Niu, Liang Qiu, Huai Chen, Xinyu Chen, Xiangpeng Kong, Qiang Rong, Junqiao Xiong, Yang Guo, Zhijian Cai and Shaohua Shen\*

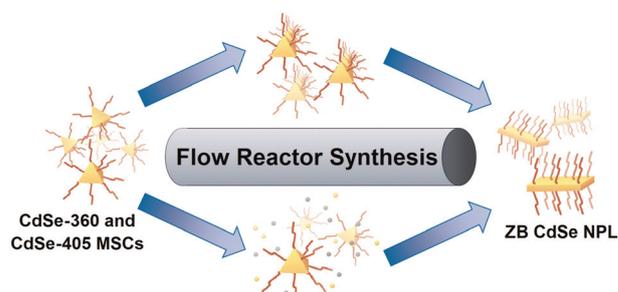


## COMMUNICATION

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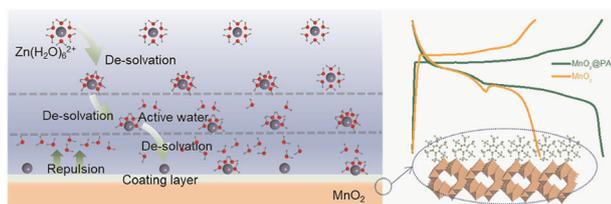
**Insights into the formation of CdSe nanoplatelets using a flow reactor**

Julia Irmhild Marie Funk,\* Benedikt Sochor, Sarathlal Koyiloth Vayalil and Horst Weller



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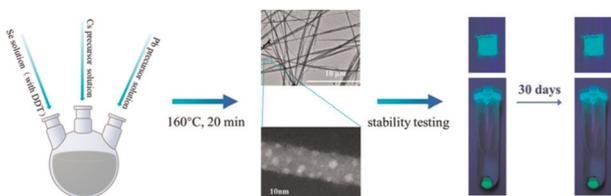
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### Tunable $\text{Zn}^{2+}$ de-solvation behavior in $\text{MnO}_2$ cathodes via self-assembled phytic acid monolayers for stable aqueous Zn-ion batteries

Tianhang Ding, Shichao Yu, Ziyu Feng, Bin Song,\*  
Hong Zhang\* and Ke Lu\*

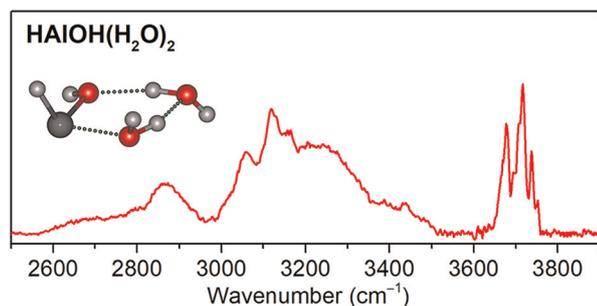
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### One-pot synthesis of heterostructured $\text{CsPbBr}_3/\text{PdSe}$ nanowires with excellent humidity stability

Shuai Ye, Mingyi Huang, Jun Song\* and Junle Qu\*

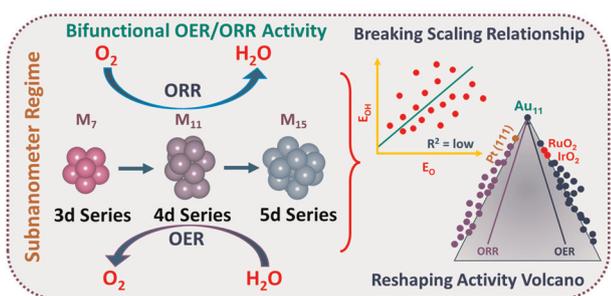
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### Characterization of neutral metal hydride–hydroxide hydrogen-bonded clusters $\text{HMOH}(\text{H}_2\text{O})_2$ ( $\text{M} = \text{Al}$ and $\text{Ga}$ )

Wenhui Yan, Huijun Zheng, Tiantong Wang, Shuai Jiang,  
Shangdong Li, Jianxing Zhuang, Hua Xie, Gang Li\* and  
Ling Jiang\*

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### High-throughput screening of bifunctional catalysts for oxygen evolution/reduction reaction at the subnanometer regime

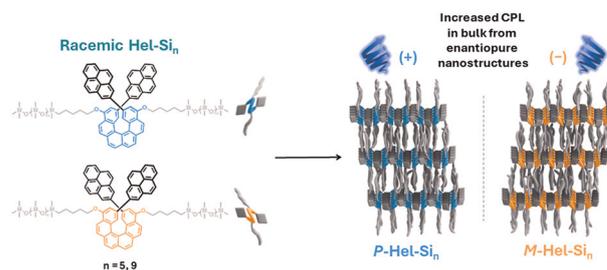
Rahul Kumar Sharma, Harpriya Minhas and  
Biswarup Pathak\*



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## Engineering circularly polarized light emission in nanostructured oligodimethylsiloxane-helicene chiral materials

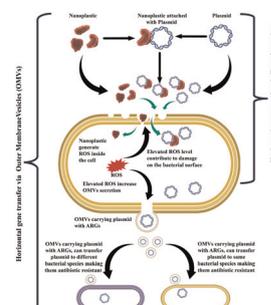
Stefano Cadeddu, Bart W. L. van den Bersselaar, Bas de Waal, Marie Cordier, Nicolas Vanthuyne, Stefan C. J. Meskers,\* Ghislaine Vantomme\* and Jeanne Crassous\*



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## Single-use polyethylene terephthalate bottle-derived nanoplastics propagate antibiotic resistance in bacteria *via* transformation and outer membrane vesicle secretion

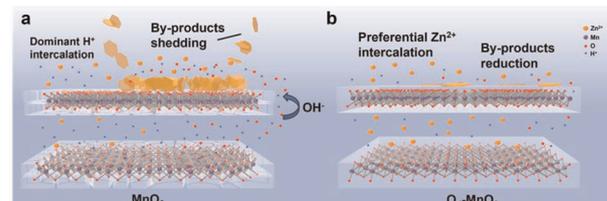
Prashant Sharma, Abhinoy Kishore and Manish Singh\*



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## Inducing preferential intercalation of $Zn^{2+}$ in $MnO_2$ with abundant oxygen defects for high-performance aqueous zinc-ion batteries

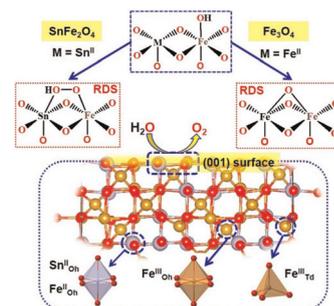
Simin Dai, Xinyan Zhuang, Hongrun Jin, Ruixuan Yang, Yan Wang, Bei Qi, Wenhuan Guo, Kefeng Xie, Zhimi Hu, Meilin Liu and Liang Huang\*



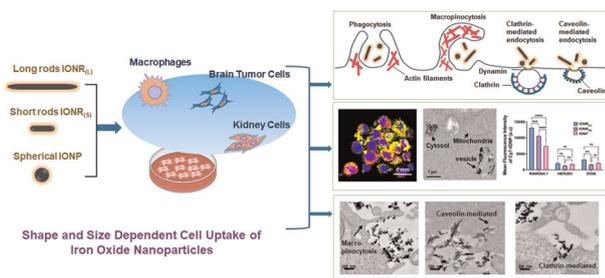
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## Recognizing the reactive sites of $SnFe_2O_4$ for the oxygen evolution reaction: the synergistic effect of $Sn^{II}$ and $Fe^{III}$ in stabilizing reaction intermediates

Anubha Rajput, Pandiyan Sivasakthi, Pralok K. Samanta\* and Biswarup Chakraborty\*



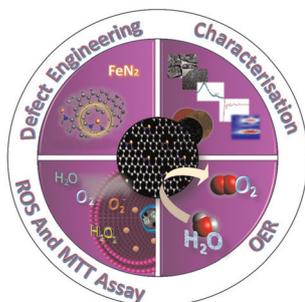
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### Shape-dependent cellular uptake of iron oxide nanorods: mechanisms of endocytosis and implications on cell labeling and cellular delivery

Anbu Mozhi Thamizhchelvan, Hedi Ma, Tianhe Wu, Darlene Nguyen, Jonathan Padelford, Ted J. Whitworth, Yuancheng Li, Lily Yang and Hui Mao\*

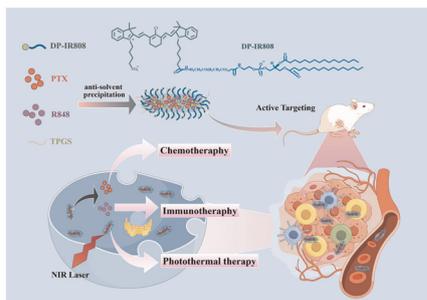
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### Coordinately unsaturated single Fe-atoms with N vacancies and enhanced sp<sup>3</sup> carbon defects in Fe–N(sp<sup>2</sup>)–C structural units for suppression of cancer cell metabolism and electrochemical oxygen evolution

Anubha Yadav, Netra Hiremath, Bhagirath Saini, Babasaheb M. Matsagar, Po-Chun Han, Masaki Ujihara, Mohammed Hussein Modi, Kevin C.-W. Wu, Rakesh K. Sharma,\* Raviraj Vankayala\* and Saikat Dutta\*

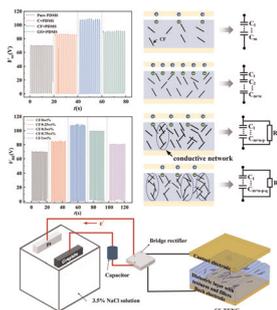
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### A versatile tumor-targeted drug-delivery system based on IR808-modified nanoparticles, its co-loading with PTX and R848 and its extraordinary antitumor efficacy

Yaoyao Guo, Manzhen Li, Xinxin Liu, Xi Wang, Ziqi Zhang, Dongchun Liu\* and Xiangtao Wang\*

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### Triboelectric nanogenerators with groove textures and carbon fillers for self-powered cathodic protection

Weixu Yang,\* Zepeng Ma, Suqing Yang, Yanqiang Hu and Lu Zhang

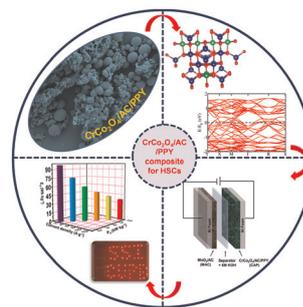


## PAPERS

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### A chromium cobaltite based ternary composite as an efficient electrode material for hybrid supercapacitors with theoretical investigation

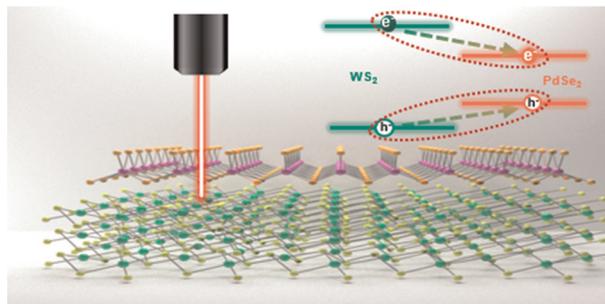
Simran Kour, Pawanpreet Kour and A. L. Sharma\*



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### A type-I van der Waals heterostructure formed by monolayer WS<sub>2</sub> and trilayer PdSe<sub>2</sub>

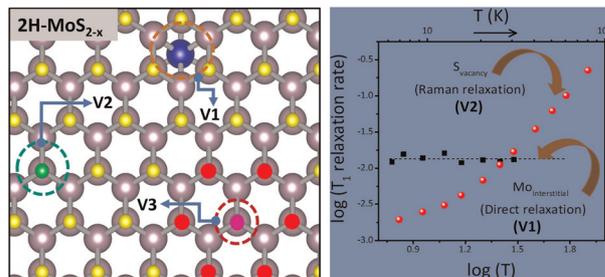
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### Exploring spin multiplicity in MoS<sub>2</sub>

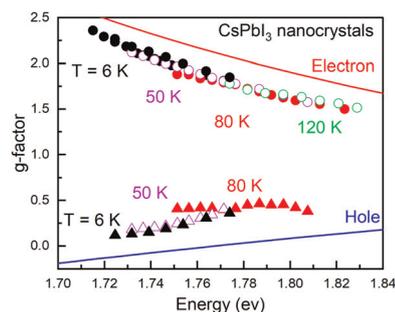
Sudipta Khamrui, Kamini Bharti, Daniella Goldfarb, Tilak Das\* and Debamalya Banerjee\*



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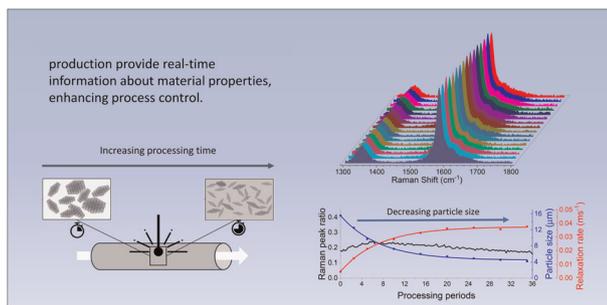
### Temperature dependence of the electron and hole Landé *g*-factors in CsPbI<sub>3</sub> nanocrystals embedded in a glass matrix

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## PAPERS

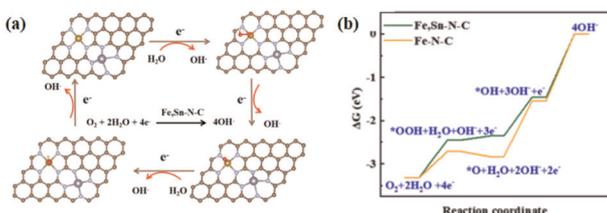
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### In-process monitoring of graphene nanoplatelet production using Raman spectroscopy and NMR relaxation

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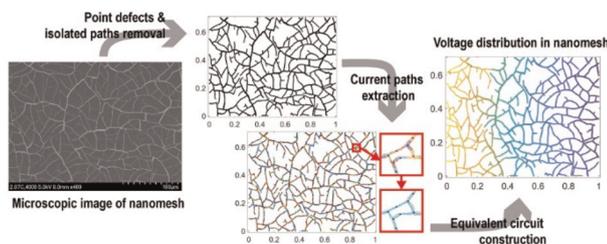
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### p-Block metal atom-induced spin state transition of Fe–N–C catalysts for efficient oxygen reduction

Jiana Chen, Tingyi Zhou, Changjie He, Zhaoyan Luo,\* Chuan Shi, Lei Zhang, Qianling Zhang, Chuanxin He and Xiangzhong Ren\*

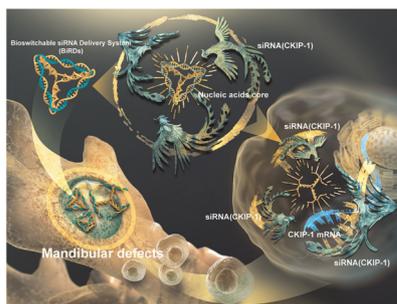
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### A computational framework for quantifying electrical conductance in metallic nanomesh using image processing and computer vision technologies

Jinyoung Hwang,\* Jungmin Lee, Seung Taek Jo and Jong Wook Roh\*

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### A bioswitchable siRNA delivery system: RNAi therapy based on tetrahedral framework nucleic acids for bone defect repair

Shengnan Liao, Songhang Li, Zhiqiang Liu, Weitong Lu, Yutian He, Kai Xia, Yigan Wang, Zhihe Zhao\* and Yunfeng Lin\*

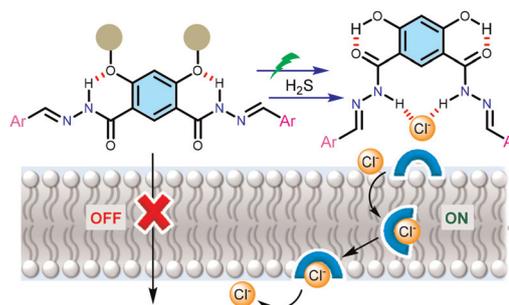


## PAPERS

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## Stimuli-responsive anion transport utilising caged hydrazone-based anionophores

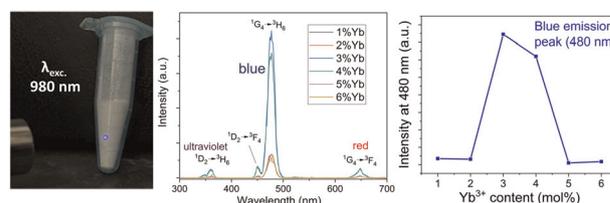
Manzoor Ahmad, Martin Flerin, Hui Min Tay, Amber L. Thompson, Fernanda Duarte\* and Matthew J. Langton\*



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Optimizing the composition of LaF<sub>3</sub>:Yb,Tm upconverting nanoparticles synthesised by the co-precipitation method to improve the emission intensity

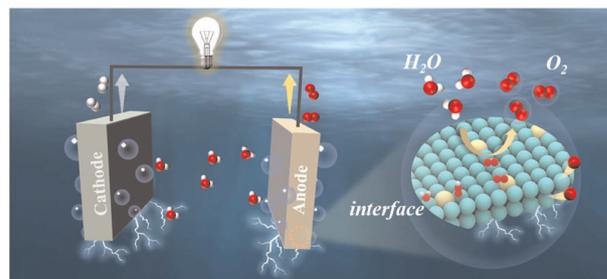
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Amorphous CoFePO<sub>x</sub> hollow nanocubes decorated with g-C<sub>3</sub>N<sub>4</sub> quantum dots to achieve efficient electrocatalytic performance in the oxygen evolution reaction

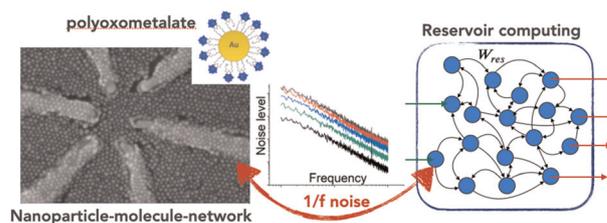
Ke Yuan, Wei Zhou, Xiaoyan Zhu, Weihua Ou, Minzhe Chen, Chuheng Zhu, Ningning Chen, Haofeng Zuo, Aocheng Wang, Dengke Zhao,\* Maozhong An\* and Ligui Li\*



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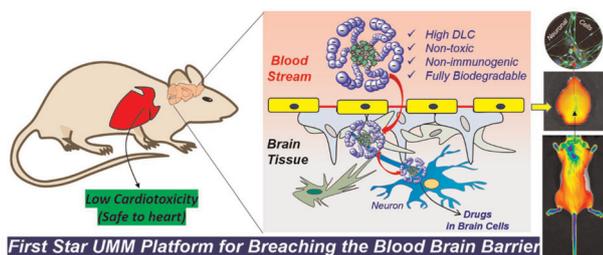
Low-frequency noise in nanoparticle–molecule networks and implications for *in materio* reservoir computing

Cécile Huez, David Guérin, Florence Volatron, Anna Proust and Dominique Vuillaume\*



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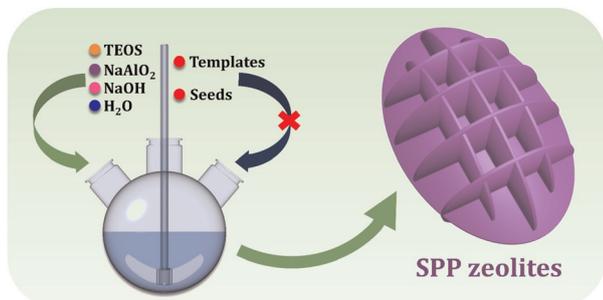
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### Star-polymer unimolecular micelle nanoparticles to deliver a payload across the blood–brain barrier

Mehak Malhotra, Meenakshi Pardasani, Shahidkhan Pathan, Priyadarshini Srikanth, Karishma Shaw, Nixon M. Abraham\* and Manickam Jayakannan\*

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### Synthesis of self-pillared pentasil zeolites without organic templates and seeds

Yuliang Guo, Wenshu Tai, Mingyu Zhao, Xiao Chen, Yuchao Chai, Guangjun Wu\* and Landong Li\*

