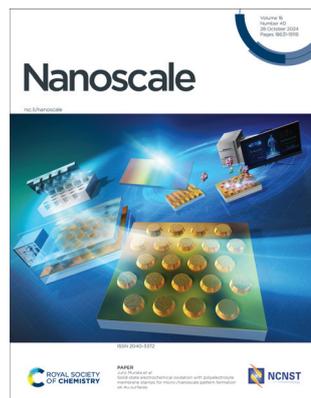


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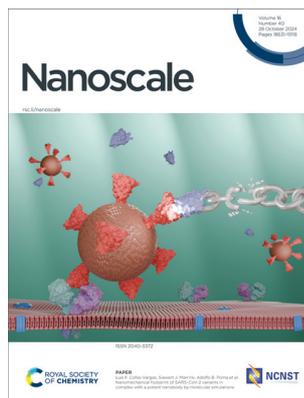
ISSN 2040-3372 CODEN NANOHL 16(40) 18631–19118 (2024)



### Cover

See Junji Murata *et al.*, pp. 18811–18823.

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### Inside cover

See Luis F. Cofas-Vargas, Siewert J. Marrink, Adolfo B. Poma *et al.*, pp. 18824–18834.

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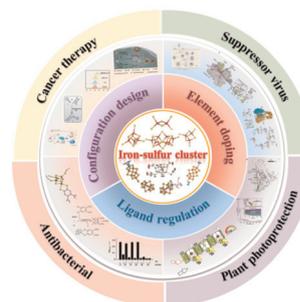
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## REVIEWS

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### Atomic-level design of biomimetic iron–sulfur clusters for biocatalysis

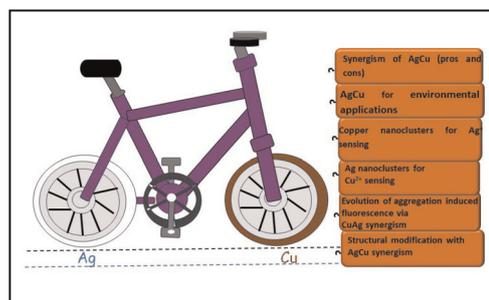
Sufei Zhou, Di Liu, Kelong Fan, Haile Liu\* and Xiao-Dong Zhang\*



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### Synergism between copper and silver nanoclusters induces fascinating structural modifications, properties, and applications

Priyanka Sharma, Mainak Ganguly\* and Ankita Doi



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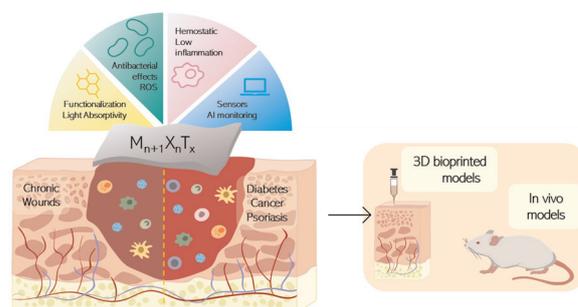
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## REVIEWS

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### Advanced approaches in skin wound healing – a review on the multifunctional properties of MXenes in therapy and sensing

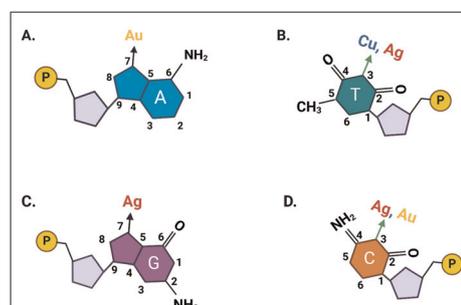
Valeria Ferrara, Caterina Perfili, Giulia Artemi, Brunella Iacolino, Francesca Sciandra, Giordano Perini, Laura Fusco, Maksym Pogorielov, Lucia Gemma Delogu, Massimiliano Papi,\* Marco De Spirito\* and Valentina Palmieri



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### DNA-templated fluorescent metal nanoclusters and their illuminating applications

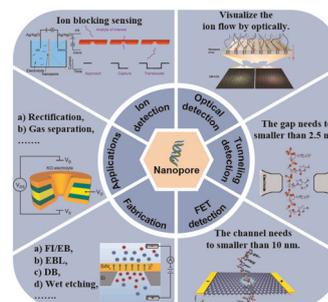
Ashwin Rajeev and Dhiraj Bhatia\*



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### Nanopore-based sensors for DNA sequencing: a review

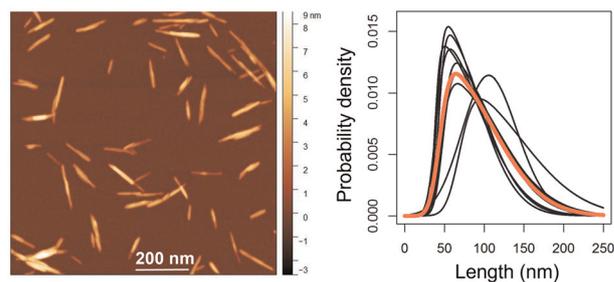
Jiangtao Wei, Hao Hong, Xing Wang, Xin Lei, Minjie Ye and Zewen Liu\*



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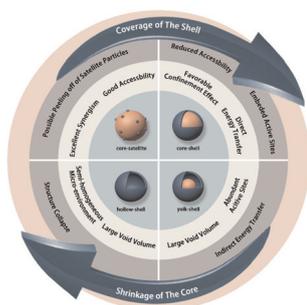
### Cellulose nanomaterial metrology: microscopy measurements

Linda J. Johnston



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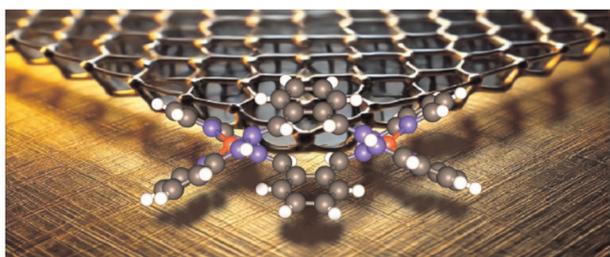


## Structural engineering in hierarchical nanoarchitectures of metal–organic frameworks and their derivatives

Tianzhu Mao, Hongchuan Fu and Kui Shen\*

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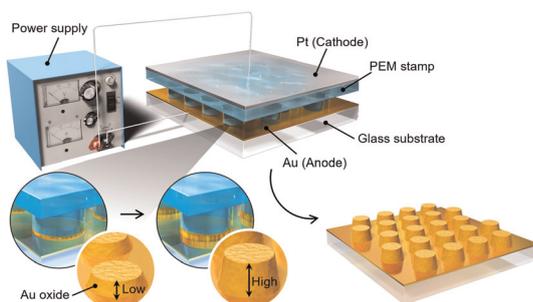


## Functionalisation of graphite and thermally reduced graphene oxide with bis-hydrazone copper(I) nitrate salt

Piotr W. Zabierowski,\* Lukáš Děkanovský, Vlastimil Mazánek, Maciej Hodorowicz and Zdeněk Sofer\*

## PAPERS

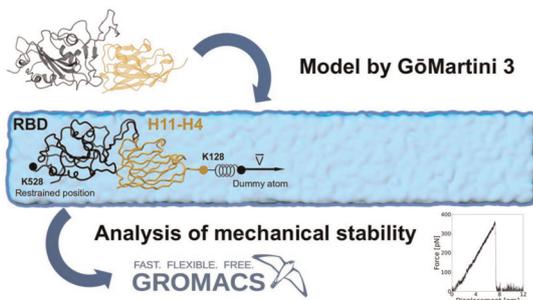
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## Solid-state electrochemical oxidation with polyelectrolyte membrane stamps for micro-/nanoscale pattern formation on Au surfaces

Tatsuya Fujii, Atsuki Tsuji, Masaru Takizawa and Junji Murata\*

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## Nanomechanical footprint of SARS-CoV-2 variants in complex with a potent nanobody by molecular simulations

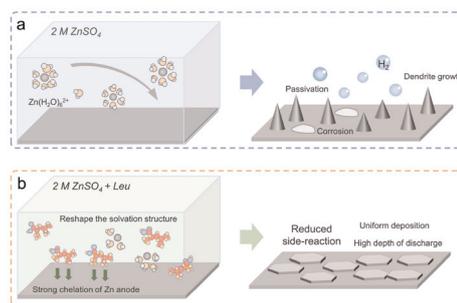
Luis F. Cofas-Vargas,\* Gustavo E. Olivos-Ramirez, Mateusz Chwastyk, Rodrigo A. Moreira, Joseph L. Baker, Siewert J. Marrink\* and Adolfo B. Poma\*



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### Guiding uniform Zn deposition with a multifunctional additive for highly utilized Zn anodes

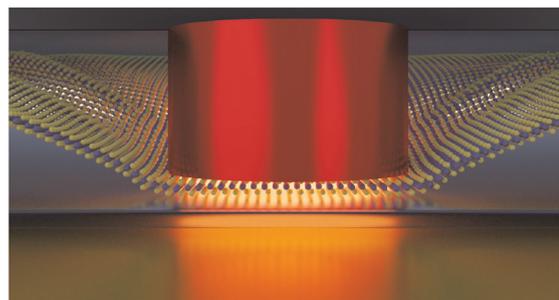
Xi Li, Zhenjie Chen, Pengchao Ruan, Xueting Hu, Xiaoming Yuan, Bingan Lu, Liping Qin\* and Jiang Zhou\*



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### Photoluminescence modal splitting *via* strong coupling in hybrid Au/WS<sub>2</sub>/GaP nanoparticle-on-mirror cavities

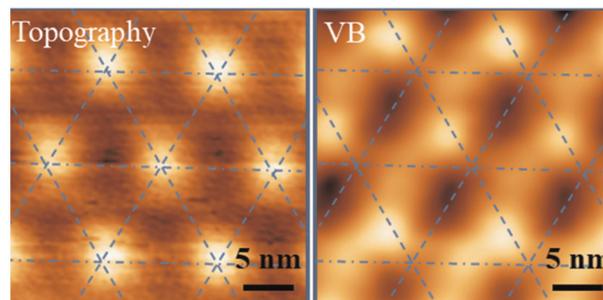
Merve Gülmüs, Thomas Possmayer, Benjamin Tilmann, Paul Butler, Ian D. Sharp, Leonardo de S. Menezes, Stefan A. Maier and Luca Sortino\*



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### Visualizing localized nematic states in twisted double bilayer graphene

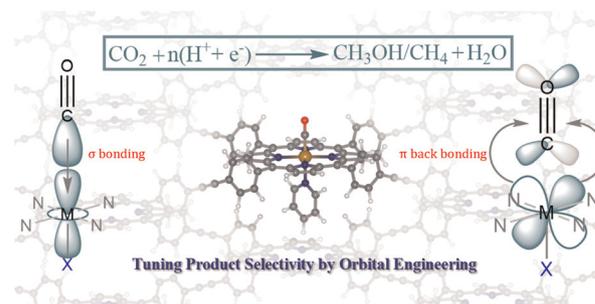
Zhen-Yu Wang, Jia-Jun Ma, Qianqian Chen, Kefan Wu, Shuigang Xu, Qing Dai, Zheng Zhu, Jindong Ren,\* Hong-Jun Gao and Xiao Lin\*



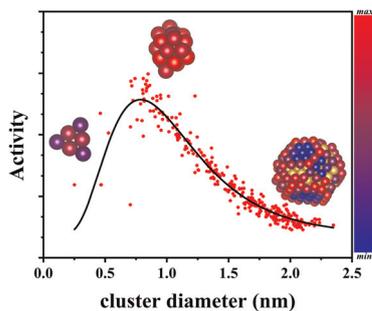
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### Tuning the product selectivity of single-atom catalysts for CO<sub>2</sub> reduction beyond CO formation by orbital engineering

Vasanthapandiyan Mari and Naiwrit Karmodak\*



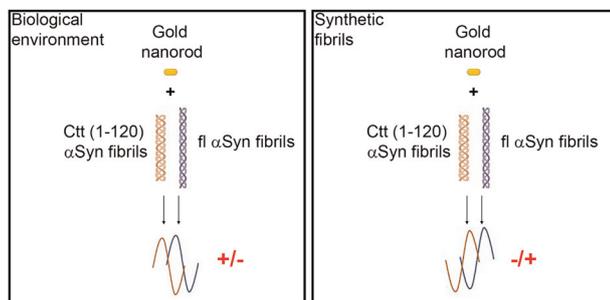
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### Size-dependent catalytic activity for CO oxidation over sub-nano-Au clusters

Yuqi Wang, Haoxiang Xu,\* Jiqin Zhu\* and Daojian Cheng\*

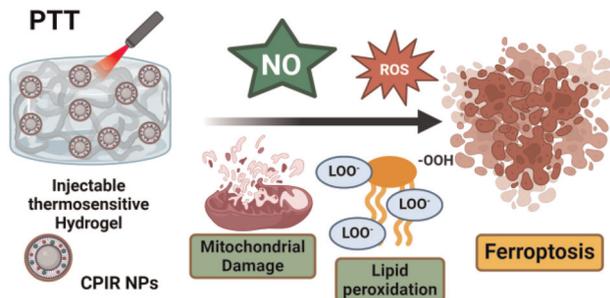
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### Nanorod-associated plasmonic circular dichroism monitors the handedness and composition of $\alpha$ -synuclein fibrils from Parkinson's disease models and post-mortem brain

Francesca Longhena, Rihab Boujebene, Viviana Brembati, Michele Sandre, Luigi Bubacco, Sergio Abbate, Giovanna Longhi\* and Arianna Bellucci\*

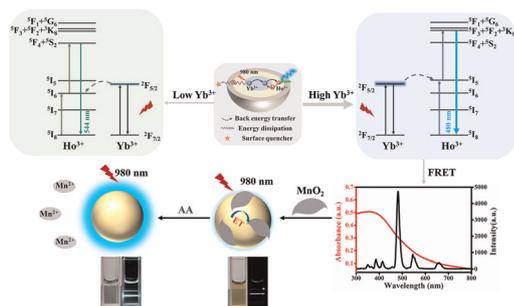
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### *In situ* thermosensitive $H_2O_2/NO$ self-sufficient hydrogel for photothermal ferroptosis of triple-negative breast cancer

Sri Amruthaa Sankaranarayanan, Kalyani Eswar, Rupali Srivastava, Ajinkya Madhukar Thanekar, Mounika Gubige, Veeresh Bantal and Aravind Kumar Rengan\*

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### Blue emission-dominated $NaYbF_4@NaYF_4:2\% Ho@NaYF_4$ upconversion nanoparticles for detecting ascorbic acid

Pengli Wang, Jiaxin Li, Yujiao Zhang, Dan Xiao and Cuisong Zhou\*

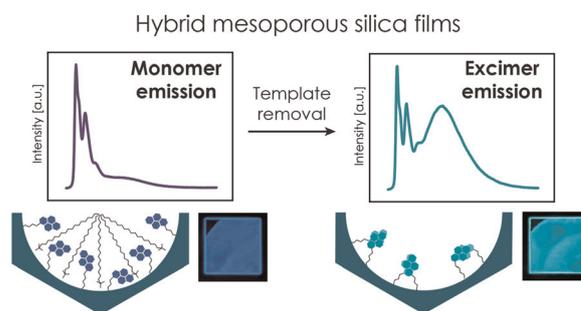


## PAPERS

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### Pyrene monomer–excimer dynamics to reveal molecular organization in mesoporous hybrid silica films

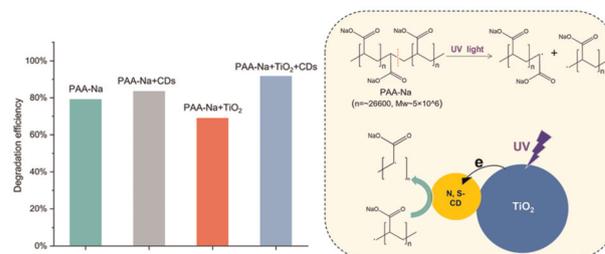
Jakub Kusz, Cédric Boissiere,\* Yann Bretonnière, Clément Sanchez and Stéphane Parola\*



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### Improved photodegradation of a superabsorber via carbon dots as electron transfer stations

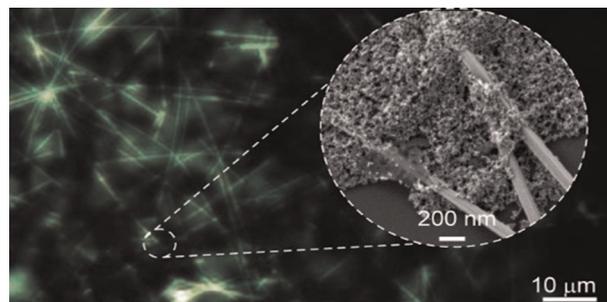
Shuxin Sui, Fengjiao Zhao,\* Tianfu Zhang, Zhen Chen and Hongming Yin\*



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### Localized three-photon upconversion enhancement in silver nanowire networks and its effect in thermal sensing

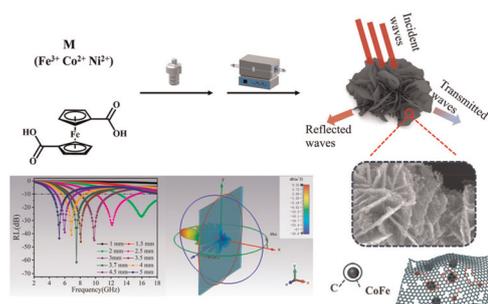
Eduardo D. Martínez,\* Luiz H. A. R. Ferreira, Albano N. Carneiro Neto, Carlos D. S. Brites and Luís D. Carlos



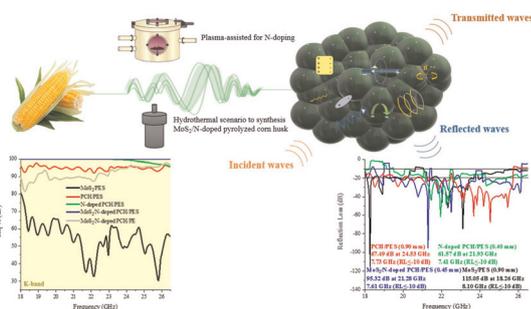
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### Fabrication of flower-like CoFe/C composites derived from ferrocene-based metal–organic frameworks: an *in situ* growth strategy toward high-efficiency electromagnetic wave absorption

Xueling Wang, Xuan Zhang, Jiaqi Lu and Zhiliang Liu\*



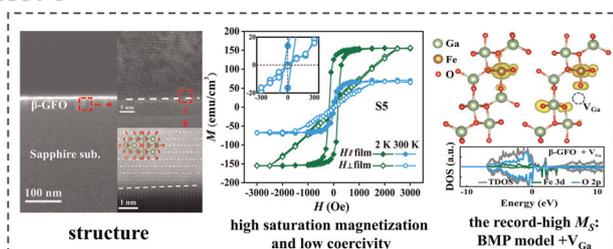
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## Plasma-assisted doping of pyrolyzed corn husk strengthened by MoS<sub>2</sub>/polyethersulfone for fascinating microwave absorbing/shielding and energy saving properties

Hassan Rezaei, Fereshteh Soltani-Mohammadi, Haniyeh Dogari, Hossein Ghafuri\* and Reza Peymanfar\*

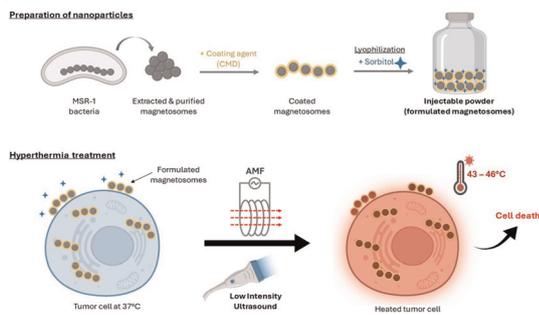
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## Room-temperature ferromagnetic semiconductor Fe-doped $\beta$ -Ga<sub>2</sub>O<sub>3</sub> thin films with high saturation magnetization and low coercivity

Dan Gong, Xi Zhang,\* Xu Dai, Yongjia Tan, Yong Peng and Gang Xiang\*

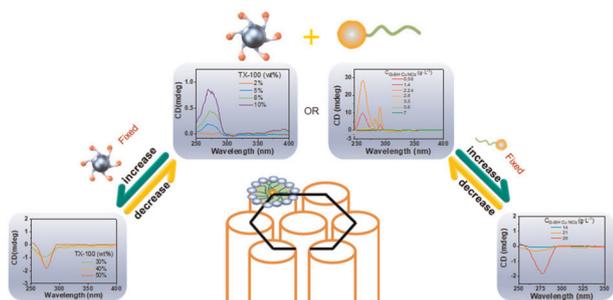
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## Stable pharmaceutical composition of cryo-protected non-pyrogenic isotonic chains of magnetosomes for efficient tumor cell destruction at 45 ± 1 °C under alternating magnetic field or ultrasound application

Tieu Ngoc Nguyen, Imène Chebbi, Raphaël Le Fèvre, François Guyot and Edouard Alphandéry\*

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## Liquid crystal-mediated self-assembly of copper nanoclusters with induced circular dichroism and amplified circularly polarized luminescence

Shulin Li, Ning Feng, Mengdi Sun, Yuxiang Sha, Xia Xin,\* Hui Zhao and Hongguang Li\*

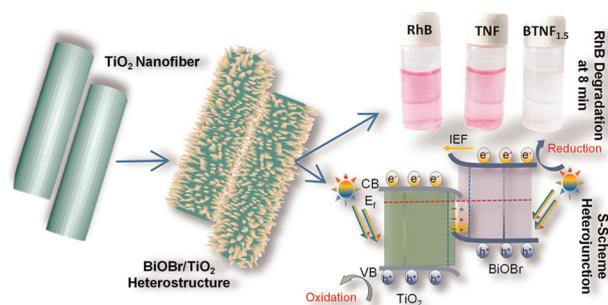


## PAPERS

19006

### Unveiling efficient S-scheme charge carrier transfer in hierarchical BiOBr/TiO<sub>2</sub> heterojunction photocatalysts

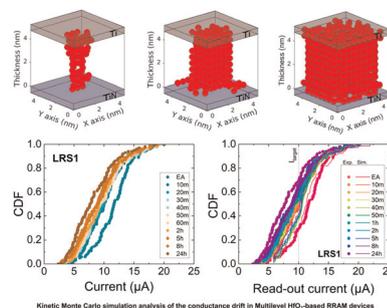
Pooja P. Sarngan, Sheethal Sasi, Prateekshita Mukherjee, Koushik Mitra, Yuvaraj Sivalingam, Anita Swami, Uttam Kumar Ghorai and Debabrata Sarkar\*



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### Kinetic Monte Carlo simulation analysis of the conductance drift in Multilevel HfO<sub>2</sub>-based RRAM devices

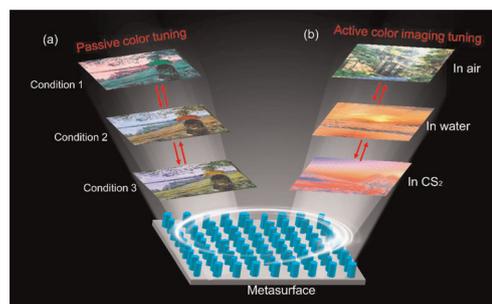
D. Maldonado, A. Baroni, S. Aldana, K. Dorai Swamy Reddy, S. Pechmann, C. Wenger, J. B. Roldán\* and E. Pérez



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### Deep learning-assisted inverse design of metasurfaces for active color image tuning

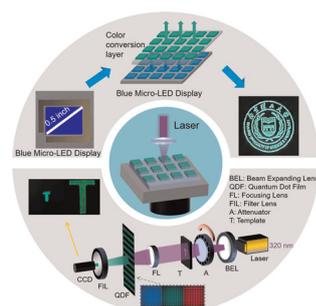
Qiang Weng and Yanjun Bao\*



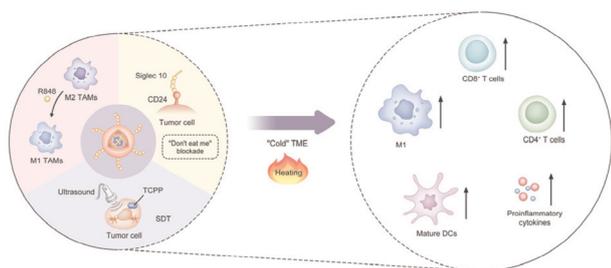
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### Continuous wave laser fabrication of small pitch/size perovskite pixels realizes high-resolution color conversion micro-LED displays

Teng Ma, Jun Chen,\* Ziyi Chen, Run Wang, Jinning Hu, Weishu Guo, Rongqiu Lv, Xiaoting Wang, Rongrong Xu, Qianxi Yin, Jiancheng Lai, Botao Ji, Hengyang Xiang, Zhenhua Li\* and Haibo Zeng\*



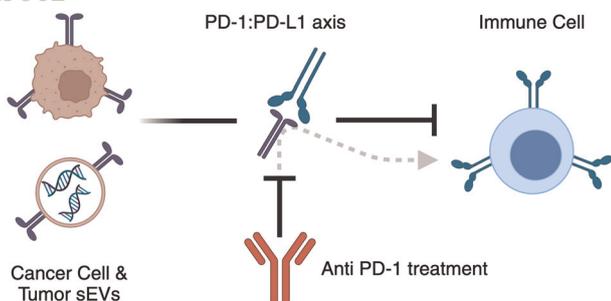
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### Engineering macrophage membrane-camouflaged nanoplateforms with enhanced macrophage function for mediating sonodynamic therapy of ovarian cancer

Xiaofei Wang, Hongling Wang, Yansheng Li, Zhihong Sun, Jie Liu, Chengming Sun\* and Xiaoli Cao\*

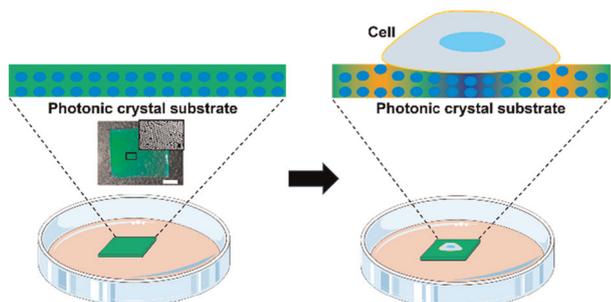
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### Investigating nano-sized tumor-derived extracellular vesicles in enhancing anti-PD-1 immunotherapy

Hesam Abouali, Michelle Przedborski, Mohammad Kohandel\* and Mahla Poudineh\*

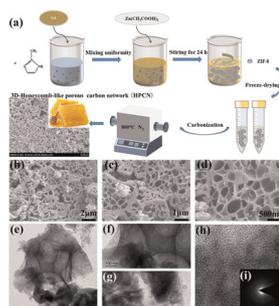
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### Visualizing and quantifying dynamic cellular forces with photonic crystal hydrogels

Jiankang Zhou, Ying Zhang,\* Yifu Fu, Qiwei Li, Jijia Zhang, Xiaojiang Liu\* and Zhongze Gu\*

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### Controllable construction of a 3D-honeycomb-like porous carbon network as a high-performance cathode for promoting Zn-ion storage capability

Qian Li, Tongde Wang, Tie Shu, Xiaoyi Pan and Yousheng Tao\*



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## Multiscale study of the chiral self-assembly of cellulose nanocrystals during the frontal ultrafiltration process

Samuel Mandin, Lorenzo Metilli, Mohamed Karrouch, Didier Blésès, Christine Lancelon-Pin, Pierre Sailler, William Chèvremont, Erwan Paineau, Jean-Luc Putaux, Nicolas Hengl, Bruno Jean and Frédéric Pignon\*

