

# Nanoscale Advances

An open access journal publishing across the breadth of nanoscience and nanotechnology  
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## IN THIS ISSUE

ISSN 2516-0230 CODEN NAADAI 5(7) 1819–2122 (2023)



**Cover**  
See Quan Li *et al.*, pp. 1830–1852. Image reproduced by permission of the Quan Li group from *Nanoscale Adv.*, 2023, 5, 1830.



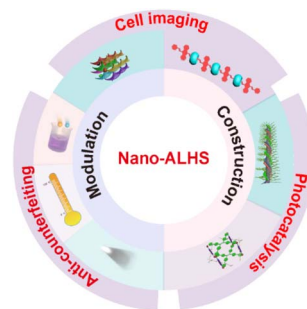
**Inside cover**  
See Yusuke Sato and Masahiro Takinoue, pp. 1919–1925. Image reproduced by permission of Yusuke Sato and Masahiro Takinoue from *Nanoscale Adv.*, 2023, 5, 1919.

## REVIEWS

1830

### Self-assembled supramolecular artificial light-harvesting nanosystems: construction, modulation, and applications

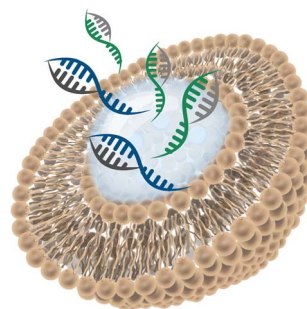
Xu-Man Chen, Xiao Chen, Xiao-Fang Hou, Shu Zhang, Dongzhong Chen and Quan Li\*



1853

### Lipid-based colloidal nanoparticles for applications in targeted vaccine delivery

Muhammad Saad Khan, Sila Appak Baskoy, Celina Yang, Joohye Hong, Jayoung Chae, Heejin Ha, Sungjun Lee, Masayoshi Tanaka, Yonghyun Choi\* and Jonghoon Choi\*



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*Nanoscale Advances* publishes experimental and theoretical work across the breadth of nanoscience and nanotechnology.



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## REVIEWS

1870

### Nanomedicine strategies to improve therapeutic agents for the prevention and treatment of preterm birth and future directions

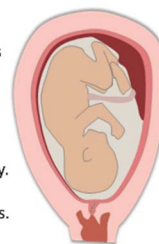
Jessica Taylor, Andrew Sharp, Steve P. Rannard, Sarah Arrowsmith\* and Tom O. McDonald\*

#### Global health issue

- 15 million babies are born preterm each year.
- One of the largest causes of lifelong disability.

#### Opportunities

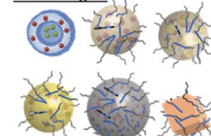
- Targeting APIs to the uterus to improve safety.
- Utilising new nanomedicine platforms.



#### Challenge

- Understanding the design rules for nanomedicines.
- Increasing drug loading of formulations.

#### Technologies

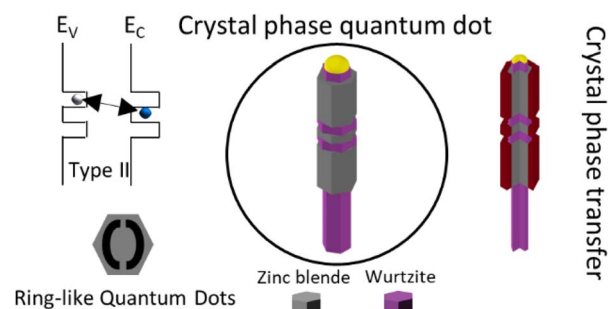


#### Nanomedicines for the prevention and treatment of preterm birth

1890

### Epitaxial growth of crystal phase quantum dots in III–V semiconductor nanowires

Miguel Sinusia Lozano and Víctor J. Gómez\*

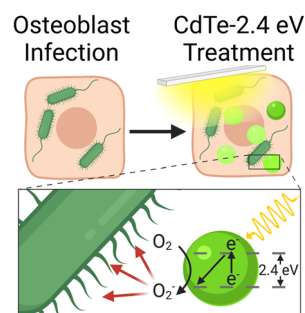


## COMMUNICATION

1910

### Photoactivated antibiotics to treat intracellular infection of bacteria

Kristen A. Eller, Dana F. Stamo, Colleen R. McCollum, Jocelyn K. Campos, Max Levy, Prashant Nagpal and Anushree Chatterjee\*



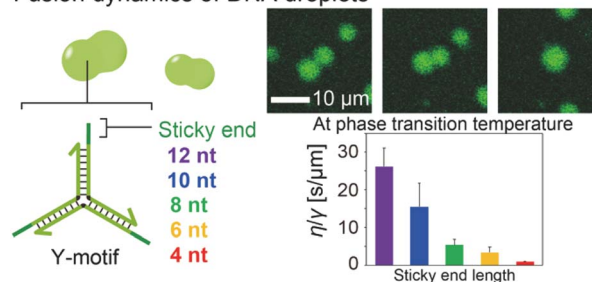
## PAPERS

1919

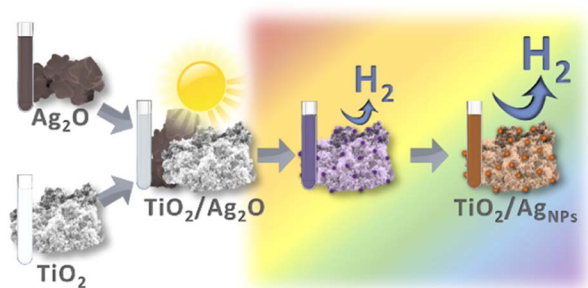
### Sequence-dependent fusion dynamics and physical properties of DNA droplets

Yusuke Sato\* and Masahiro Takinoue\*

#### Fusion dynamics of DNA droplets



1926



### Phototransformations of $\text{TiO}_2/\text{Ag}_2\text{O}$ composites and their influence on photocatalytic water splitting accompanied by methanol photoreforming

Anna Jakimińska, Kaja Spilarewicz and Wojciech Macyk\*

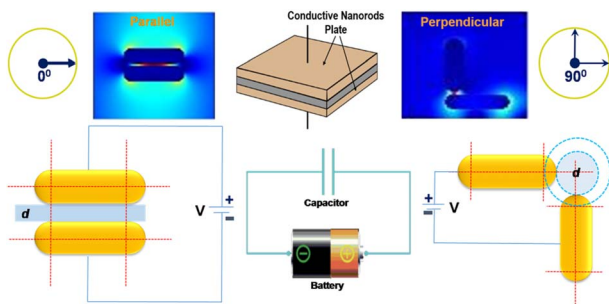
1936



### A hydrangea-like nitrogen-doped $\text{ZnO}/\text{BiOI}$ nanocomposite for photocatalytic degradation of tetracycline hydrochloride

Xiujuan Chen, Shaobo Du, Lei Gao, Kejin Shao, Zhan Li\* and Bin Liu\*

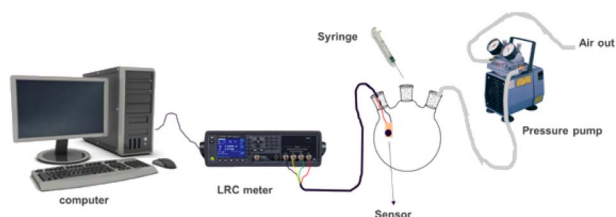
1943



### Angle-resolved plasmonic photocapacitance of gold nanorod dimers

Sudip Kumar Pal, Dorothy Bardhan, Debarun Sen, Hirak Chatterjee and Sujit Kumar Ghosh\*

1956



### A humidity-resistant and room temperature carbon soot@ZIF-67 composite sensor for acetone vapour detection

Lesego Malepe, Tantoh Derek Ndinteh, Patrick Ndungu and Messai Adenew Mamo\*



1970

### High performance multi-purpose nanostructured thin films by inkjet printing: Au micro-electrodes and SERS substrates

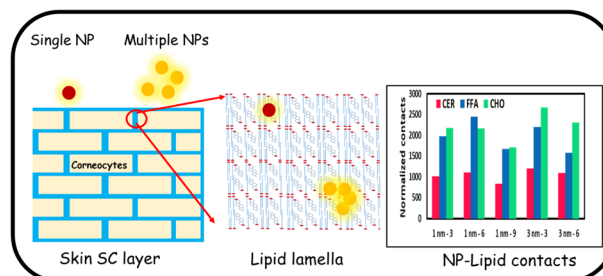
Simona Ricci, Marco Buonomo, Stefano Casalini, Sara Bonacchi, Moreno Meneghetti and Lucio Litti\*



1978

### Elucidating collective translocation of nanoparticles across the skin lipid matrix: a molecular dynamics study

Yogesh Badhe, Pradyumn Sharma, Rakesh Gupta\* and Beena Rai



1990

### Visible-light-induced superhydrophilicity of crystallized $WO_3$ thin films fabricated by using a newly isolated $W^{6+}$ complex salt of citric acid

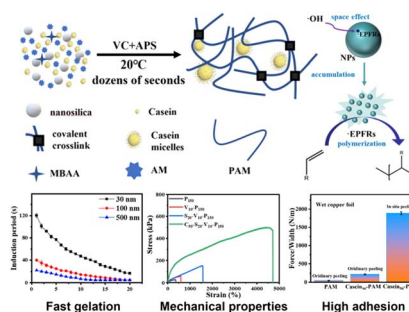
Taichi Murayama, Mitsunobu Sato, Hiroki Nagai\* and Eiko Yasui



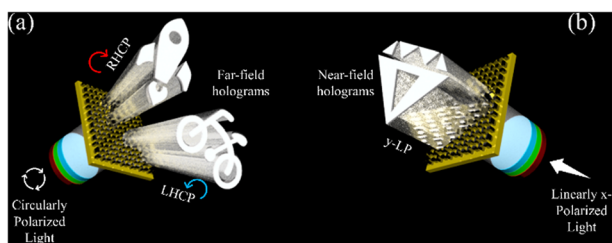
1999

### *In situ* rapid synthesis of hydrogels based on a redox initiator and persistent free radicals

Wei Yuan, Fangfang Wang, Xinyu Qu, Siying Wang, Bing Lei, Jinjun Shao, Qian Wang,\* Jianjian Lin,\* Wenjun Wang and Xiaochen Dong\*



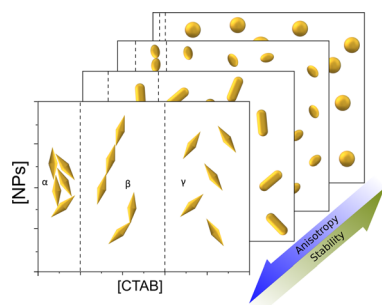
2010



### A highly efficient broadband multi-functional metaplate

Azhar Javed Satti, Muhammad Ashar Naveed, Isma Javed, Nasir Mahmood, Muhammad Zubair, Muhammad Qasim Mehmood\* and Yehia Massoud\*

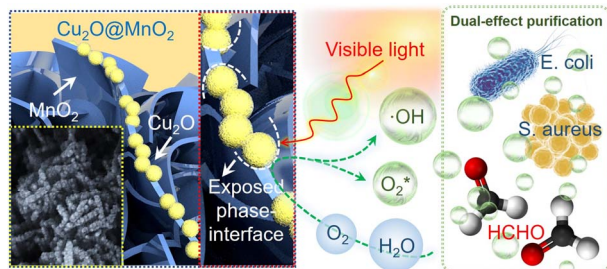
2017



### Gold nanoparticle shape dependence of colloidal stability domains

Antonio Carone, Samuel Emilsson, Pablo Mariani, Anthony Désert\* and Stephane Parola

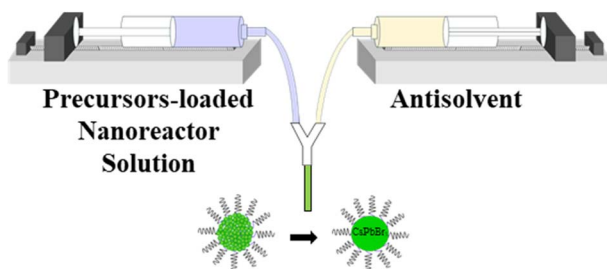
2027



### Bimetallic oxide $\text{Cu}_2\text{O}@\text{MnO}_2$ with exposed phase interfaces for dual-effect purification of indoor formaldehyde and pathogenic bacteria

Jia Yu Zheng, Hao Zhang, Jun Da He, Bo Hai Tian, Chang Bao Han,\* Zhixiang Cui\* and Hui Yan

2038



### Continuous manufacturing of highly stable lead halide perovskite nanocrystals via a dual-reactor strategy

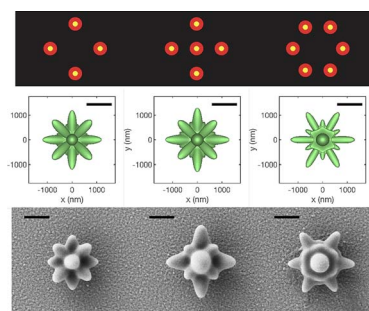
Shuang Liang, Gill M. Biesold, Mingyue Zhuang, Zhitao Kang,\* Brent Wagner and Zhiqun Lin\*



2045

### Mapping complex profiles of light intensity with interferometric lithography

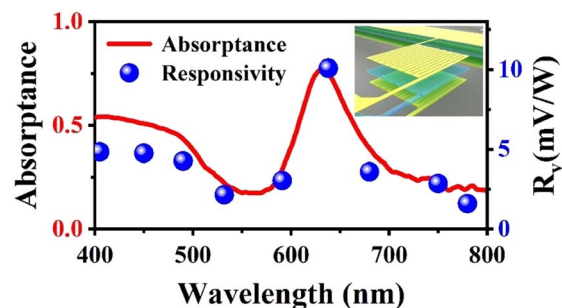
Joseph Holmes, Mi Zhang, Tine Greibe, William L. Schaich, Stephen C. Jacobson\* and Bogdan Dragnea\*



2054

### A spectrally selective visible microbolometer based on planar subwavelength thin films

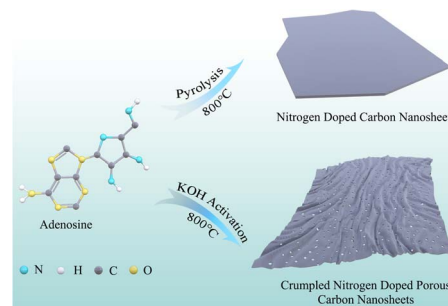
Qianqian Xu, Ziji Zhou, Chong Tan, Xiaohang Pan, Zhengji Wen, Jinguo Zhang, Dongjie Zhou, Yan Sun, Xin Chen, Lei Zhou, Ning Dai, Junhao Chu and Jiaming Hao\*



2061

### Facile synthesis of crumpled nitrogen-doped porous carbon nanosheets with ultrahigh surface area for high-performance supercapacitors

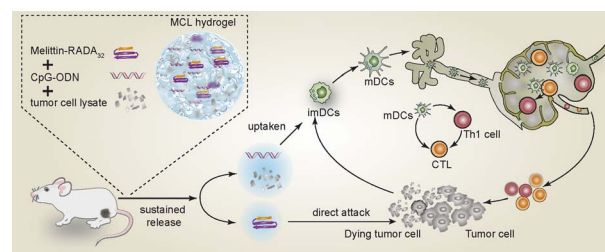
Chong Chen,\* Jiacan Shao, Yaru Zhang, Li Sun, Keying Zhang, Hongyan Wang, Guang Zhu\* and Xusheng Xie



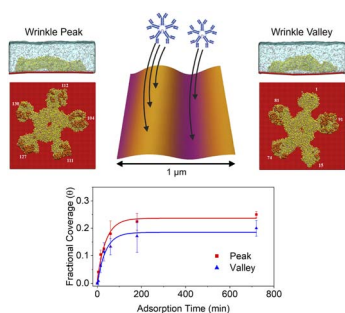
2071

### Sustained release of tumor cell lysate and CpG from an injectable, cytotoxic hydrogel for melanoma immunotherapy

Kui Yang, Yuhan Zhou, Biwang Huang, Guifang Zhao, Yuan Geng, Chao Wan, Fagang Jiang, Honglin Jin, Chengzhi Ye\* and Jing Chen\*



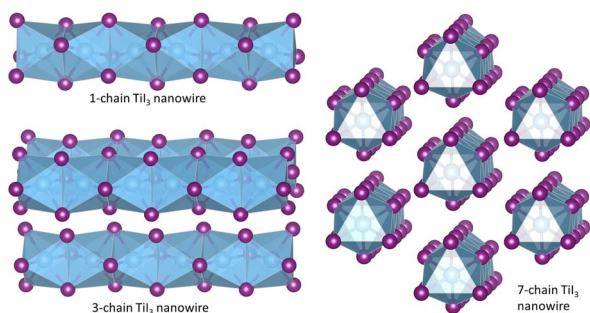
2085



### Immunoglobulin adsorption and film formation on mechanically wrinkled and crumpled surfaces at submonolayer coverage

Matthew T. Gole, Mohan T. Dronadula, Narayana R. Aluru and Catherine J. Murphy\*

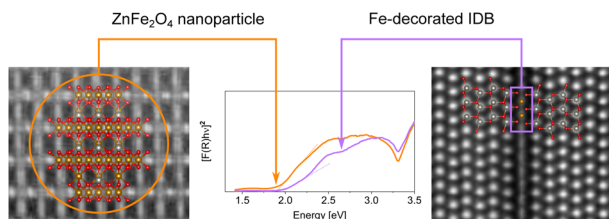
2096



### Nanowires exfoliated from one-dimensional van der Waals transition metal trihalides and quadrihalides

Chuanxun Su\* and Lixin He\*

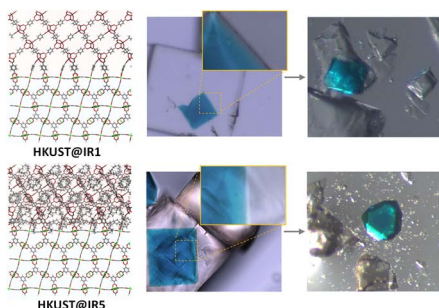
2102



### Optical properties of ZnFe<sub>2</sub>O<sub>4</sub> nanoparticles and Fe-decorated inversion domain boundaries in ZnO

S. B. Kjeldby,\* P. D. Nguyen, J. García-Fernández, K. Haug, A. Galeckas, I. J. T. Jensen, A. Thøgersen, L. Vines and Ø. Prytz

2111



### Effect of steric hindrance on the interfacial connection of MOF-on-MOF architectures

Junsu Ha, Mingyu Jeon, Jihyun Park, Jihan Kim\* and Hoi Ri Moon\*





## CORRECTIONS

2118

**Correction: Research progress in architecture and application of RRAM with computing-in-memory**

Chenyu Wang, Ge Shi,\* Fei Qiao, Rubin Lin, Shien Wu and Zenan Hu

2119

**Correction: Selective area growth of GaN nanowires and nanofins by molecular beam epitaxy on heteroepitaxial diamond (001) substrates**

Florian Pantle,\* Fabian Becker, Max Kraut, Simon Wörle, Theresa Hoffmann, Sabrina Artmeier and Martin Stutzmann\*

