

# Nanoscale Advances

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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

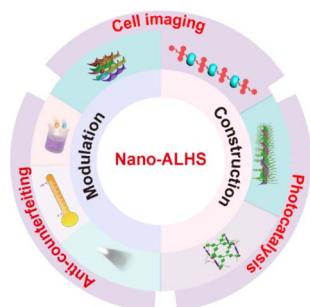
See Yusuke Sato and Masahiro Takinoue, pp. 1919–1925. Image reproduced by permission of Yusuke Sato and Masahiro Takinoue from *Nanoscale Adv.*, 2023, 5, 1919.

## REVIEWS

1830

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

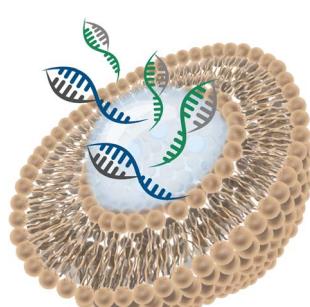
Xu-Man Chen, Xiao Chen, Xiao-Fang Hou, Shu Zhang, Dongzhong Chen and Quan Li\*



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\*



# Nanoscale Advances

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## REVIEWS

1870

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

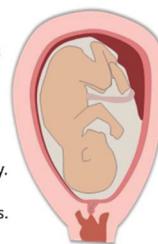
Jessica Taylor, Andrew Sharp, Steve P. Rannard, Sarah Arrowsmith\* and Tom O. McDonald\*

Global health issue

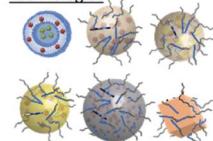
- 15 million babies are born preterm each year.
- One of the largest causes of lifelong disability.

Opportunities

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

Challenge

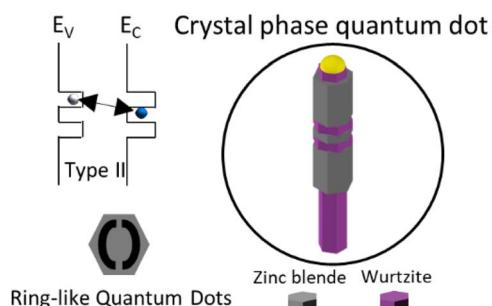
- Understanding the design rules for nanomedicines.
- Increasing drug loading of formulations.

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\*



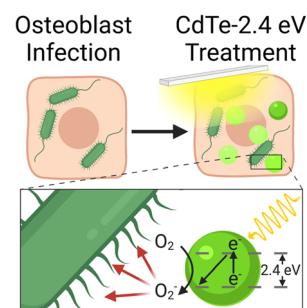
Crystal phase transfer

## 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\*

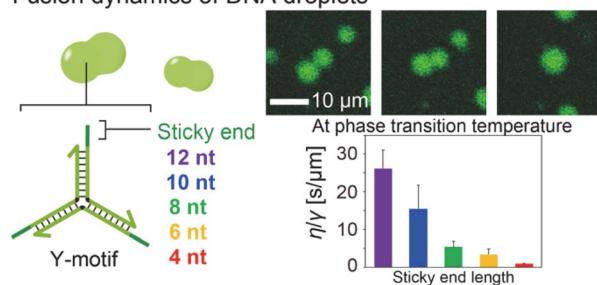


## PAPERS

1919

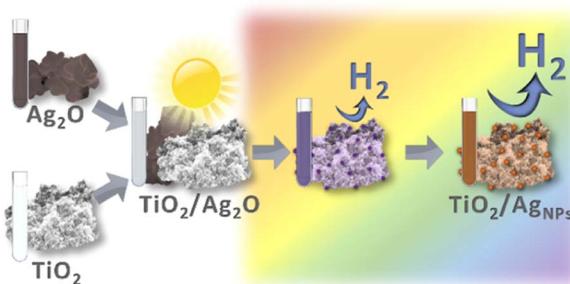
**Sequence-dependent fusion dynamics and physical properties of DNA droplets**

Yusuke Sato\* and Masahiro Takinoue\*

**Fusion dynamics of DNA droplets**

## PAPERS

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\*

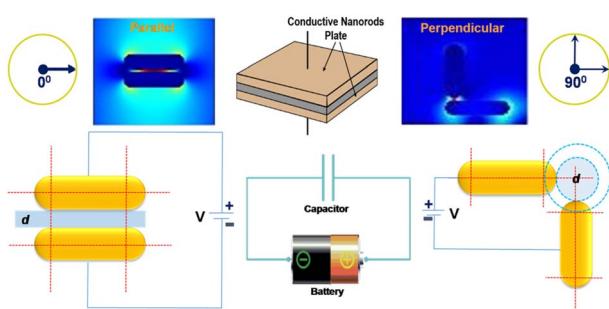
1936



**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\*

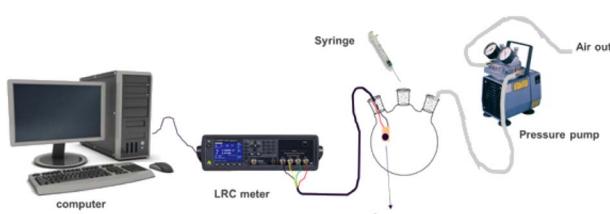
1943



**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\*



## PAPERS

1970

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

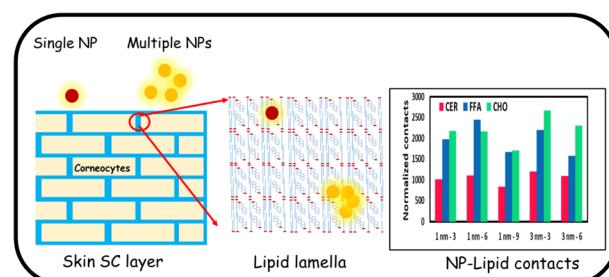
Simona Ricci, Marco Buonomo, Stefano Casalini, Sara Bonacchi, Moreno Meneghetti and Lucio Litti\*



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 $\text{WO}_3$ thin films fabricated by using a newly isolated $\text{W}^{6+}$ complex salt of citric acid

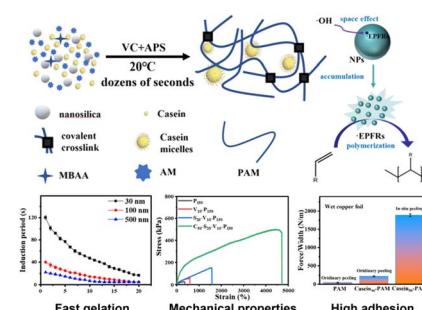
Taichi Murayama, Mitsunobu Sato, Hiroki Nagai\* and Eiko Yasui



1999

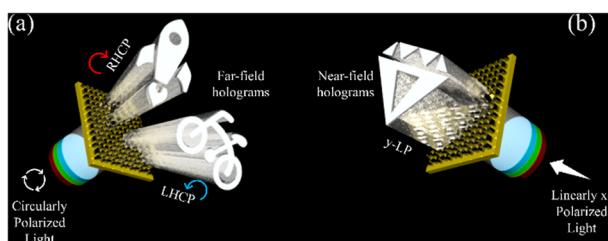
## *In situ* rapid synthesis of hydrogels based on a redox initiator and persistent free radicals

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



## PAPERS

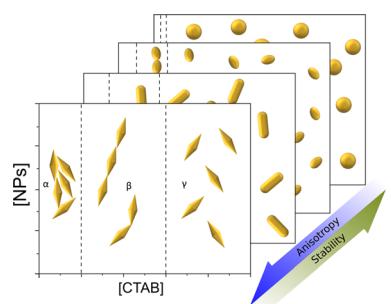
2010



### 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\*

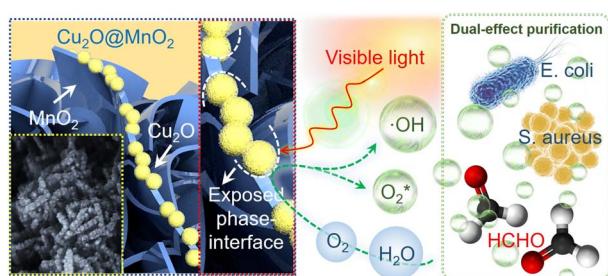
2017



### Gold nanoparticle shape dependence of colloidal stability domains

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

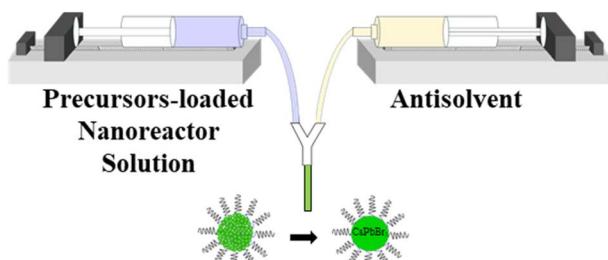
2027



### 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\*

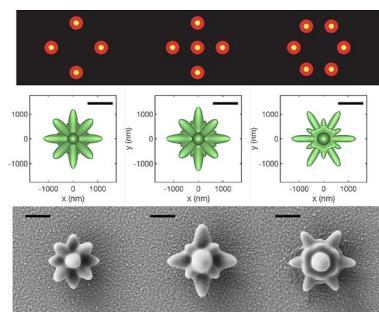


## PAPERS

2045

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

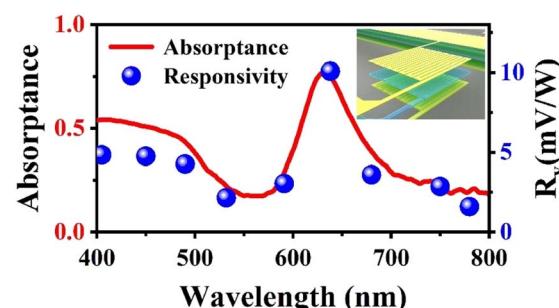
Joseph Holmes, Mi Zhang, Tine Greibe, William L. Schaich, Stephen C. Jacobson\* and Bogdan Dragnea\*



2054

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

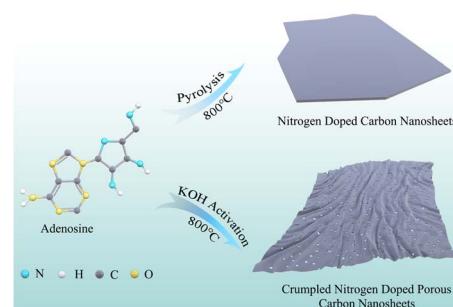
Qianqian Xu, Ziji Zhou, Chong Tan, Xiaohang Pan, Zhengji Wen, Jinguo Zhang, Dongjie Zhou, Yan Sun, Xin Chen, Lei Zhou, Ning Dai, Junhao Chu and Jiaming Hao\*



2061

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

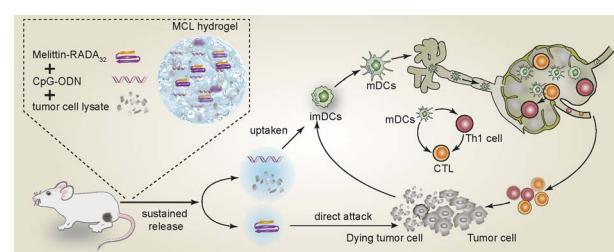
Chong Chen,\* Jiacan Shao, Yaru Zhang, Li Sun, Keying Zhang, Hongyan Wang, Guang Zhu\* and Xusheng Xie



2071

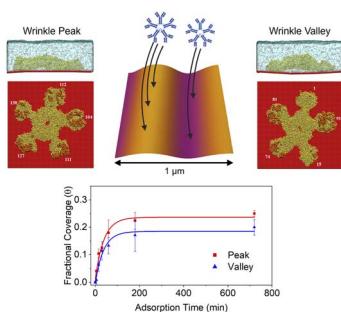
**Sustained release of tumor cell lysate and CpG from an injectable, cytotoxic hydrogel for melanoma immunotherapy**

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



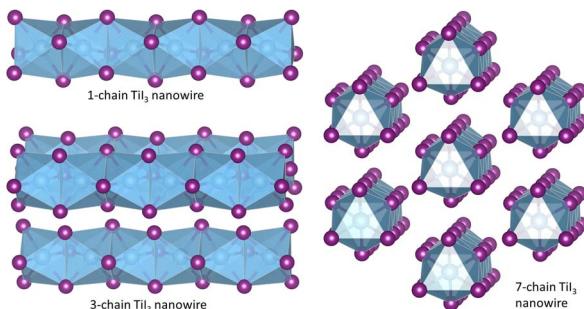
## PAPERS

2085


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

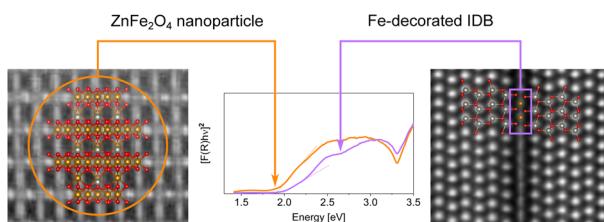
Matthew T. Gole, Mohan T. Dronadula, Narayana R. Aluru and Catherine J. Murphy\*

2096


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

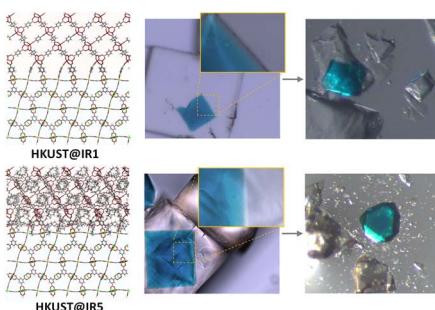
Chuanxun Su\* and Lixin He\*

2102


**Optical properties of  $\text{ZnFe}_2\text{O}_4$  nanoparticles and Fe-decorated inversion domain boundaries in  $\text{ZnO}$** 

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\*