



# RSC Applied Polymers

GOLD  
OPEN  
ACCESS

The application of polymers,  
both natural and synthetic

Interdisciplinary and open access

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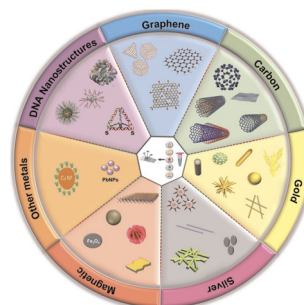
Fundamental questions  
Elemental answers

## REVIEWS

4974

**Nanomaterials in electrochemical nanobiosensors of miRNAs**

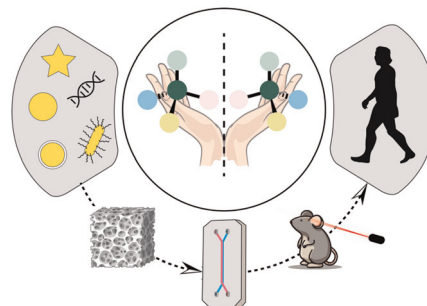
Marziyeh Mousazadeh, Maryam Daneshpour, Saeed Rafizadeh Tafti, Nahid Shoaie, Fatemeh Jahanpeyma, Faezeh Mousazadeh, Fatemeh Khosravi, Patricia Khashayar,\* Mostafa Azimzadeh\* and Ebrahim Mostafavi\*



5014

**Chiral nanomaterials in tissue engineering**

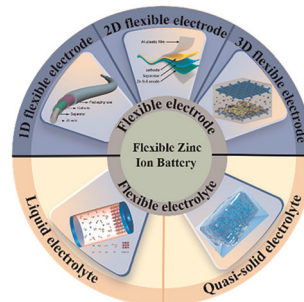
Zhenxu Yang, Arun Jaiswal, Qiankun Yin, Xiaoqi Lin, Lu Liu, Jiarong Li, Xiaochen Liu, Zhejun Xu, Jiao Jiao Li\* and Ken-Tye Yong\*



5042

**Recent progress in critical electrode and electrolyte materials for flexible zinc-ion batteries**

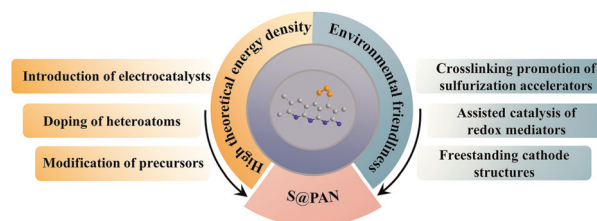
Yunjie Mao, Bangchuan Zhao,\* Jin Bai, Peiyao Wang, Xuebin Zhu and Yuping Sun



5060

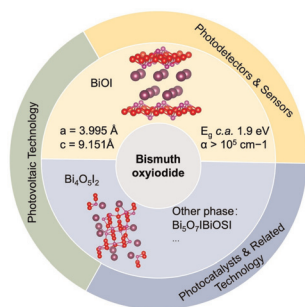
**Sulfurized polyacrylonitrile as cathodes for advanced lithium–sulfur batteries: advances in modification strategies**

Xiaolin Wu, Yaqi Zhao,\* Hang Li, Cheng Zhou,\* Xuanpeng Wang\* and Lingzhi Du\*



## REVIEWS

5079

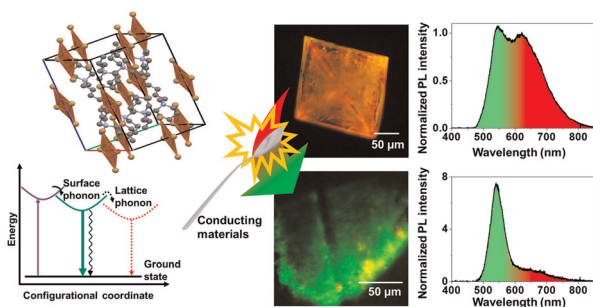


## Potential application of bismuth oxyiodide (BiOI) when it meets light

Zaichun Sun and Tahta Amrillah\*

## COMMUNICATIONS

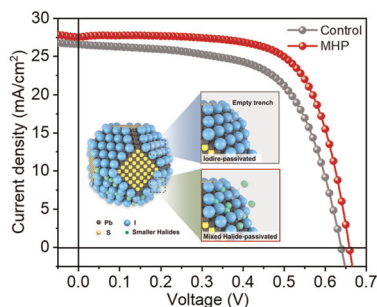
5107



## Dual-color photoluminescence modulation of zero-dimensional hybrid copper halide microcrystals

Rahul Ghosh Dastidar, Takuya Okamoto,\* Kiyonori Takahashi, Yuta Takano, Chakkooth Vijayakumar, Challapalli Subrahmanyam and Vasudevanpillai Biju\*

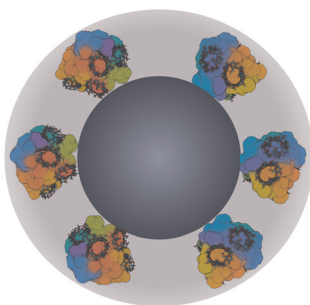
5115



## *In situ* synergistic halogen passivation of semiconducting PbS quantum dot inks for efficient photovoltaics

Xiaobo Ding, Xin Wen, Yuto Kawata, Yang Liu, Guozheng Shi, Refka ben Ghazi, Xiang Sun, Yujie Zhu, Hao Wu, Haotian Gao, Qing Shen, Zeke Liu\* and Wanli Ma

5123



## Exploiting cyclodextrins as artificial chaperones to enhance enzyme protection through supramolecular engineering

Ali Foroutan Kalourazi, Seyed Amirabbas Nazemi, Ajmal Roshan Unniram Parambil, Ruben Muñoz-Tafalla, Paula Vidal, S. Shirin Shahangian, Victor Guallar, Manuel Ferrer and Patrick Shahgaldian\*

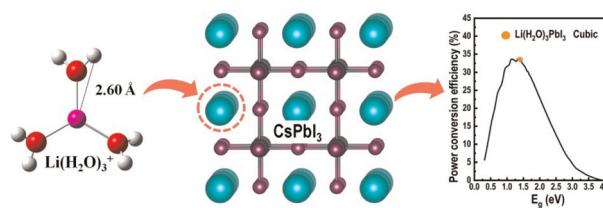


## COMMUNICATIONS

5130

## Superalkali halide perovskites with suitable direct band gaps for photovoltaic applications

Tingwei Zhou\* and Anlong Kuang

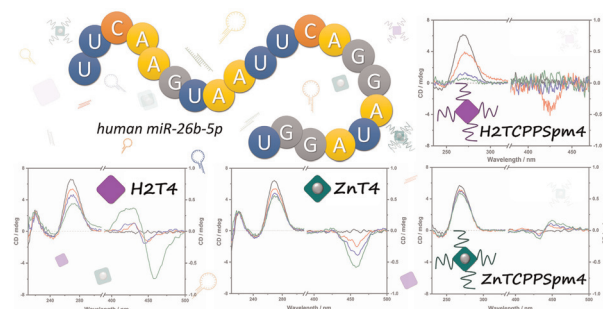


## PAPERS

5137

## Interactions between achiral porphyrins and a mature miRNA

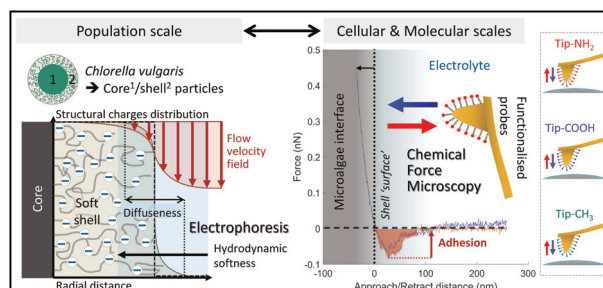
Gabriele Travagliante, Massimiliano Gaeta, Chiara M. A. Gangemi, Salvatore Alaimo, Alfredo Ferro, Roberto Purrello\* and Alessandro D'Urso\*



5149

Physicochemical surface properties of *Chlorella vulgaris*: a multiscale assessment, from electrokinetic and proton uptake descriptors to intermolecular adhesion forces

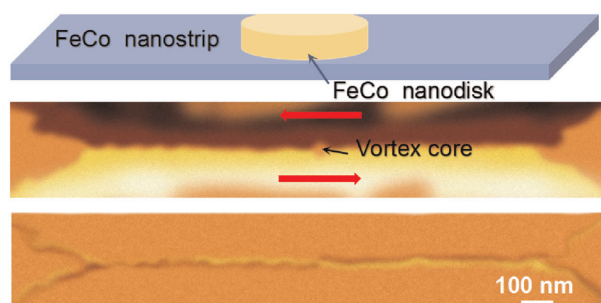
Nicolas Lesniewska,\* Jérôme F. L. Duval,\* Céline Cailliet, Angelina Razafitianamaravo, José P. Pinheiro, Isabelle Bihannic, Renaud Gley, Hélène Le Cordier, Varun Vyas, Christophe Pagnout, Bénédicte Sohm and Audrey Beaussart\*



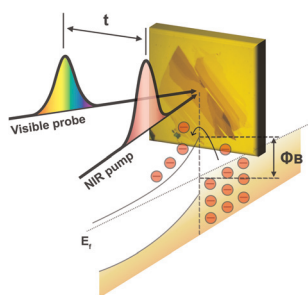
5164

High-resolution imaging of 3D stray-field components with a Fe<sub>3</sub>O<sub>4</sub> nanoparticle sensor

Yan Qi, Yihong Kan and Zhenghua Li\*



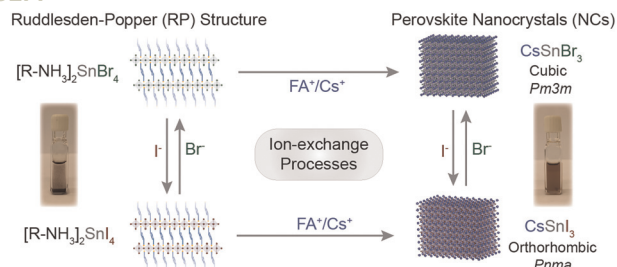
5169



### Optical spectroscopic detection of Schottky barrier height at a two-dimensional transition-metal dichalcogenide/metal interface

Du Chen, Surendra B. Anantharaman, Jinyuan Wu, Diana Y. Qiu, Deep Jariwala and Peijun Guo\*

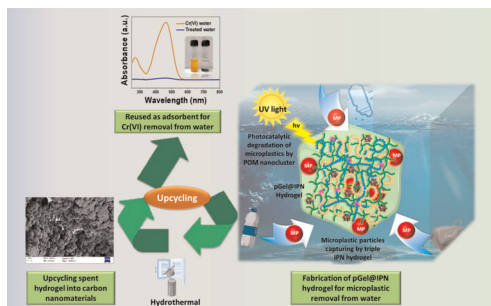
5177



### Structural and optical control through anion and cation exchange processes for Sn-halide perovskite nanostructures

Kushagra Gahlot, Julius Meijer and Loredana Protesescu\*

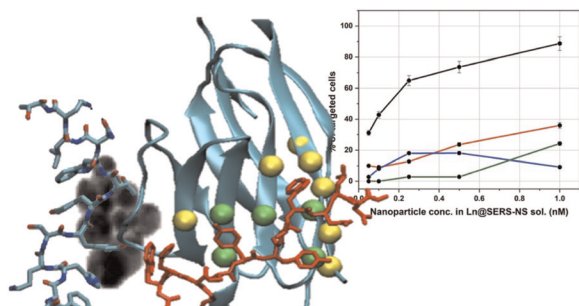
5188



### Polyoxometalate nanocluster-infused triple IPN hydrogels for excellent microplastic removal from contaminated water: detection, photodegradation, and upcycling

Soumi Dutta,\* Ashok Misra and Suryasarathi Bose\*

5206



### SERS nanostructures with engineered active peptides against an immune checkpoint protein

Marina Gobbo, Isabella Caligiuri, Micaela Giannetti, Lucio Litti, Claudia Mazzuca, Flavio Rizzolio, Antonio Palleschi and Moreno Meneghetti\*

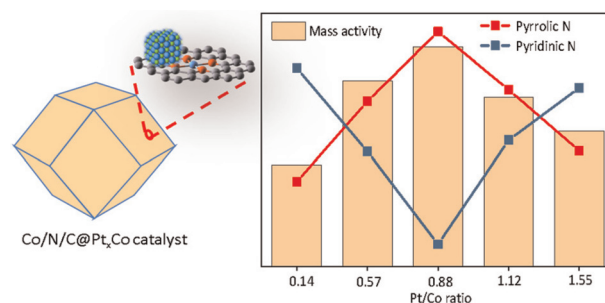


## PAPERS

5215

### Unraveling a volcanic relationship of Co/N/C@Pt<sub>x</sub>Co catalysts toward oxygen electro-reduction

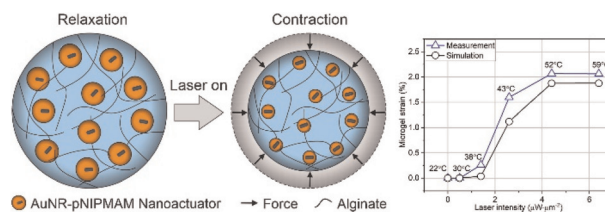
Yangdong Zhou, Junda Chen, Zhiyin Huang, Yuqin Peng, Lixin Xing, Chunmei Tang, Ning Wang, Ling Meng, Mingjie Wu,\* Lei Du\* and Siyu Ye\*



5222

### A multiscale approach to assess thermomechanical performance and force generation in nanorobotic microgels

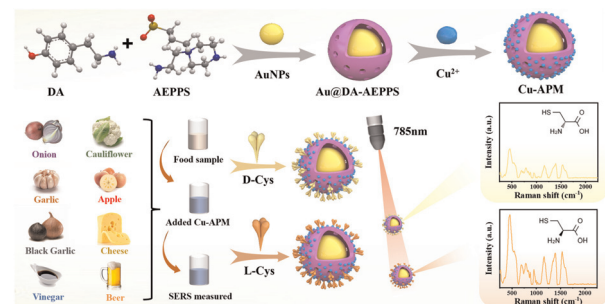
Chen Wang, Philipp Harder, Nergishan Iyisan, Bolin Li, Lukas Hiendlmeier, Bernhard Wolfrum and Berna Özkale\*



5232

### Metal-assisted core-shell plasmonic nanoparticles for small molecule biothiols analysis and enantioselective recognition

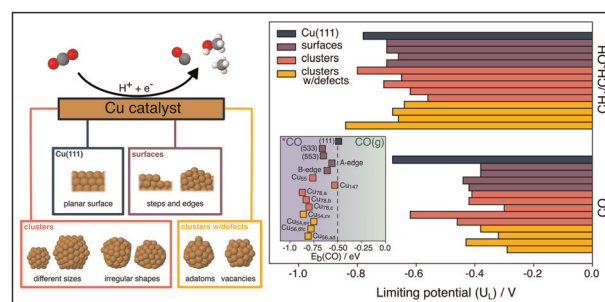
Meihuang Zeng, Linmin Chen, Xiaocong Hou, Jingwen Jin, Qihong Yao, Tingxiu Ye, Zhiyong Guo,\* Xiaomei Chen\* and Xi Chen\*



5242

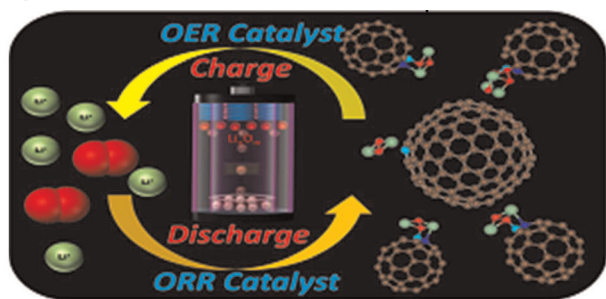
### Calculations of the effect of catalyst size and structure on the electrocatalytic reduction of CO<sub>2</sub> on Cu nanoclusters

Geoffrey R. Weal, Kristinn Ingi Guðmundsson, Frank D. Mackenzie, John R. Whiting, Nicholas B. Smith, Egill Skúlason and Anna L. Garden\*



## PAPERS

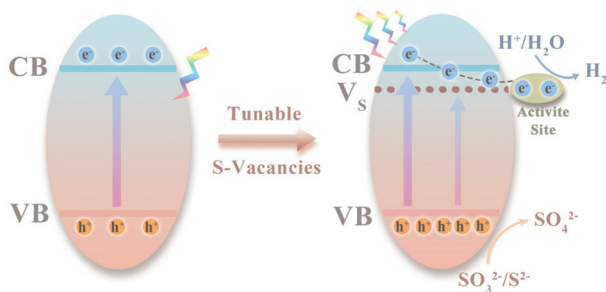
5257



### Localized charge-induced ORR/OER activity in doped fullerenes for Li-air battery applications

Nishchal Bharadwaj and Biswarup Pathak\*

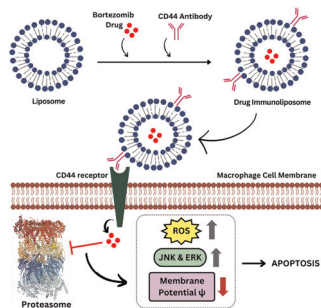
5267



### Facile synthesis of $Zn_{0.5}Cd_{0.5}S$ nanosheets with tunable S vacancies for highly efficient photocatalytic hydrogen evolution

Linfen Yang, Yuhua Wang\* and Yong Peng\*

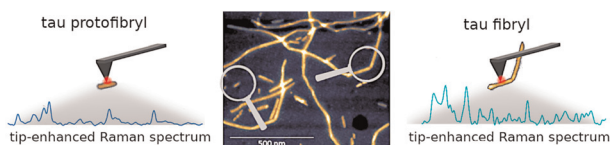
5280



### Bortezomib-loaded immunoliposomes against CD44 expressing macrophages: an interplay for inflammation resolution

Simran Nasra, Haly Shukla, Milonee Patel and Ashutosh Kumar\*

5294



### Tip-enhanced Raman spectroscopy reveals the structural rearrangements of tau protein aggregates at the growth phase

Kamila Sofińska,\* Sara Seweryn, Katarzyna Skirlińska-Nosek, Jakub Barbasz and Ewelina Lipiec\*

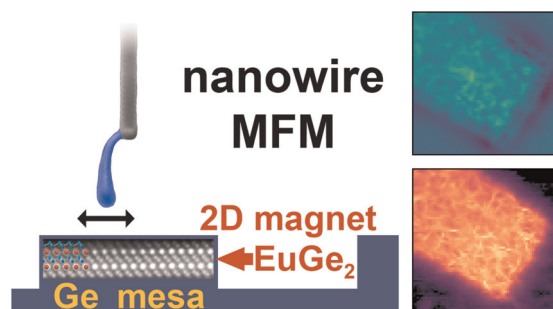


## PAPERS

5302

## Mapping the phase-separated state in a 2D magnet

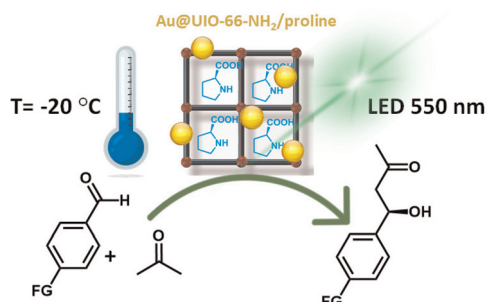
Hinrich Mattiat, Lukas Schneider, Patrick Reiser, Martino Poggio,\* Pardis Sahafi, Andrew Jordan, Raffi Budakian, Dmitry V. Averyanov, Ivan S. Sokolov, Alexander N. Taldenkov, Oleg E. Parfenov, Oleg A. Kondratev, Andrey M. Tokmachev and Vyacheslav G. Storchak\*



5313

## Merging gold plasmonic nanoparticles and L-proline inside a MOF for plasmon-induced visible light chiral organocatalysis at low temperature

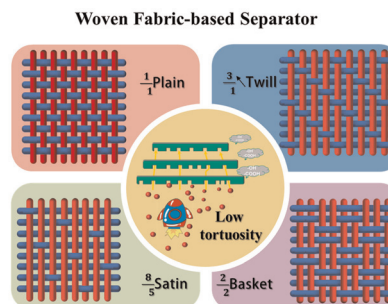
A. Kushnarenko, A. Zabelina, O. Guselnikova, E. Miliutina, B. Vokatá, D. Zabelin, V. Burtsev, R. Valiev, Z. Kolska, M. Paidar, V. Sykora, P. Postnikov,\* V. Svorcik and O. Lyutakov\*



5323

## Woven fabric-based separators with low tortuosity for sodium-ion batteries

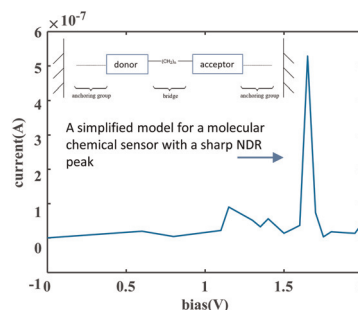
Tianyun Zhang,\* Lirong Zhang, Fujuan Wang, Yanci Wang, Tian Zhang and Fen Ran\*



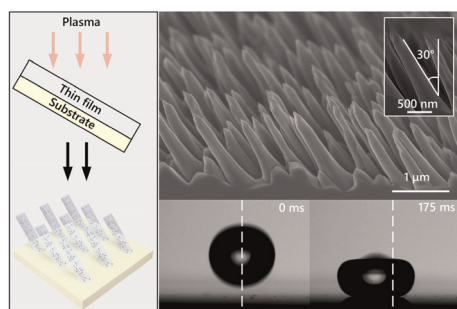
5334

## A computational model for a molecular chemical sensor

Mengxuan Li, Clotilde S. Cucinotta and Andrew P. Horsfield\*



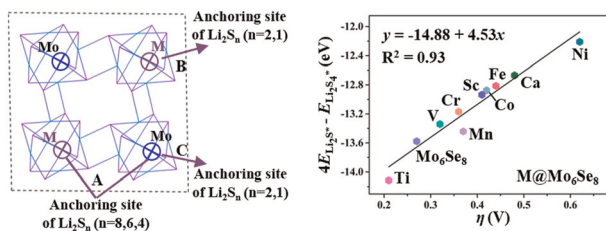
5343



### Oriented bouncing of droplets with a small Weber number on inclined one-dimensional nanoforests

Mao Li, Qiming Guo, Jing Wen, Fei Zhan, Meng Shi, Na Zhou, Chengjun Huang, Lei Wang\* and Haiyang Mao\*

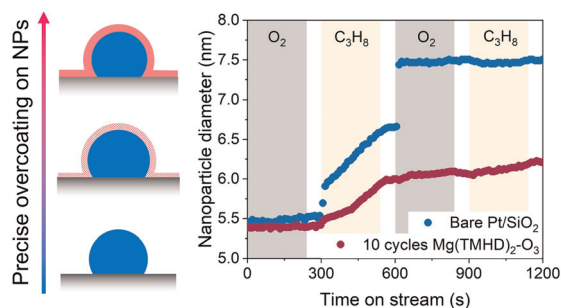
5352



### A doping strategy to regulate the adsorption energy of $\text{Li}_2\text{S}_4$ and $\text{Li}_2\text{S}$ to promote sulfur reduction on Chevrel phase $\text{Mo}_6\text{Se}_8$ in lithium–sulfur batteries

Tengfei Duan, Dong Fan, Zhongyun Ma\* and Yong Pei\*

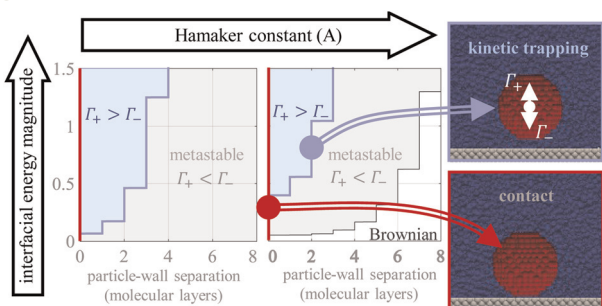
5362



### Controlling Pt nanoparticle sintering by sub-monolayer MgO ALD thin films

Zhiwei Zhang, Matthias Filez, Eduardo Solano, Nithin Poonkottil, Jin Li, Matthias M. Minjauw, Hilde Poelman, Martin Rosenthal, Philipp Brüner, Vladimir V. Galvita, Christophe Detavernier and Jolien Dendooven\*

5374



### Kinetic trapping of nanoparticles by solvent-induced interactions

Troy Singletary, German Drazer, Amy C. Marschilok, Esther S. Takeuchi, Kenneth J. Takeuchi\* and Carlos E. Colosqui\*

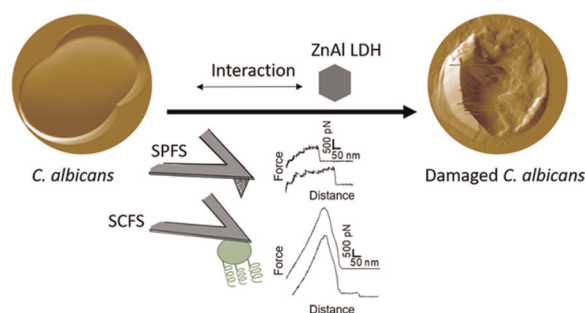


## PAPERS

5383

### Understanding the nanoscale adhesion forces between the fungal pathogen *Candida albicans* and antimicrobial zinc-based layered double hydroxides using single-cell and single-particle force spectroscopy

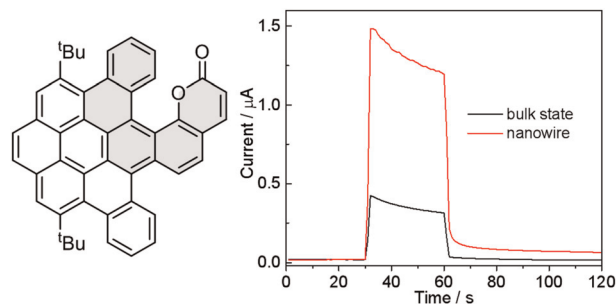
Jazia Awassa, Samantha Soulé, Damien Cornu, Christian Ruby and Sofiane El-Kirat-Chatel\*



5395

### Coumarin-embedded [5]helicene derivatives: synthesis, X-ray analysis and photoconducting properties

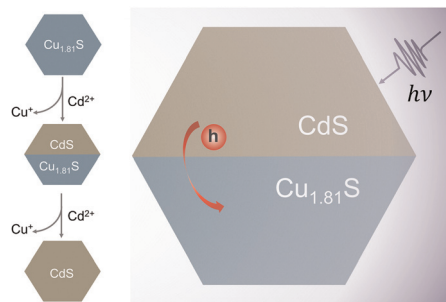
Hui Yang, Guofeng Chen,\* Ran Zhang, Yanjie Zhu and Jinchong Xiao\*



5401

### Visible light-induced hole transfer in single-nanoplate $\text{Cu}_{1.81}\text{S}$ -CdS heterostructures

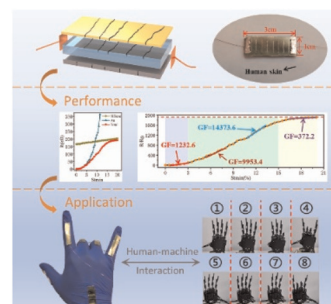
Chang Wang, Zhaozhe Chen, Si Xiao\* and Jun He\*



5409

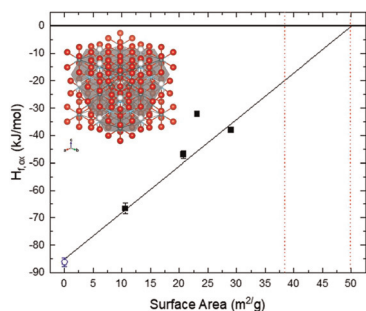
### A double-crack structure for bionic wearable strain sensors with ultra-high sensitivity and a wide sensing range

Di Zhu, Shengshun Duan, Jiachen Liu, Shanyan Diao, Jianlong Hong, Shengxin Xiang, Xiao Wei, Peng Xiao, Jun Xia, Wei Lei, Baoping Wang, Qiongfeng Shi and Jun Wu\*



## PAPERS

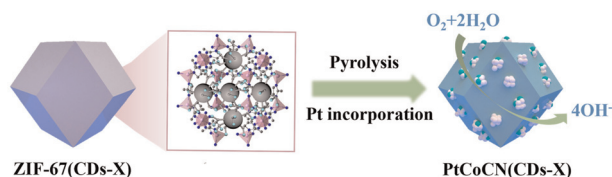
5421



### Surface thermodynamics of yttrium titanate pyrochlore nanomaterials

Margaret E. Reece, Jiahong Li, Andrew C. Strzelecki, Juan Wen, Qiang Zhang and Xiaofeng Guo\*

5433



### Low platinum loading electrocatalyst supported on a carrier derived from carbon dots doped ZIF-67 for the ORR and zinc–air batteries

Lijing Yang, Junhong Ma,\* Yuemei Liu, Chaoyun Ma,\* Xue Yu and Zhaohui Chen

## EXPRESSION OF CONCERN

5441

### Expression of concern: Intelligent nanoflowers: a full tumor microenvironment-responsive multimodal cancer theranostic nanoplatform

Xunan Jing, Yanzi Xu, Daomeng Liu, Youshen Wu, Na Zhou, Daquan Wang, Kai Yan and Lingjie Meng\*

## CORRECTION

5442

### Correction: pH-Responsive fluorescent graphene quantum dots for fluorescence-guided cancer surgery and diagnosis

Zetan Fan, Shixin Zhou, Cesar Garcia, Louzhen Fan\* and Jiangbing Zhou\*

