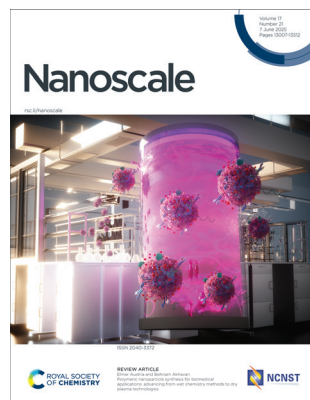


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ISSN 2040-3372 CODEN NANOHL 17(21) 13007–13512 (2025)



### Cover

See Elmer Austria and Behnam Akhavan, pp. 13020–13056.

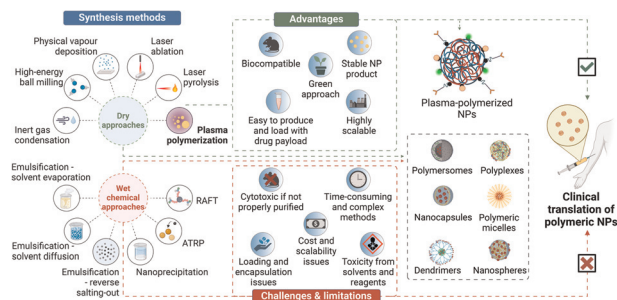
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### Polymeric nanoparticle synthesis for biomedical applications: advancing from wet chemistry methods to dry plasma technologies

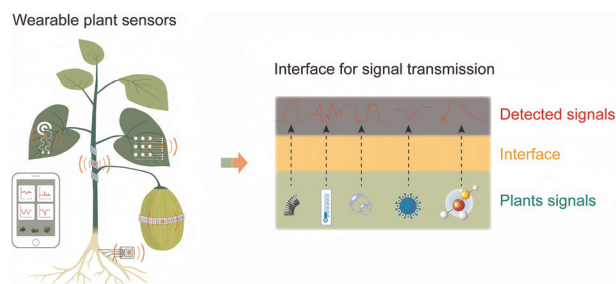
Elmer S. Austria, Jr. and Behnam Akhavan\*



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### Inspiration of plant-related adhesion for plant wearable sensor interface design

Peicheng Teng,\* Yinmin Cai, Xinxin Liu, Yulu Tuo, Shihao Wu, Qiannian Wang, Yiheng Li, Feilong Zhang\* and Shutao Wang



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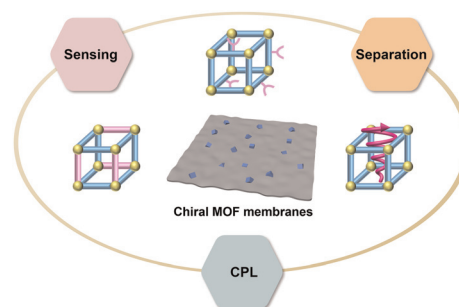
Fundamental questions  
Elemental answers

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### Emerging frontiers in chiral metal–organic framework membranes: diverse synthesis techniques and applications

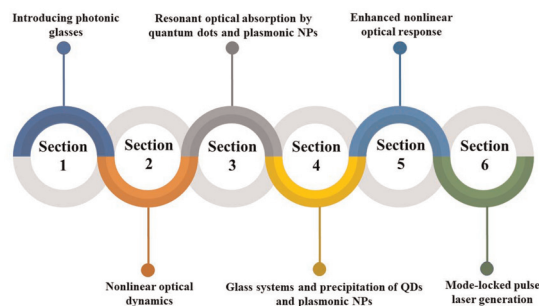
Yun Fan and Mengyun Chen\*



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### Nonlinear photonics in glass systems doped with quantum dots and plasmonic nanoparticles

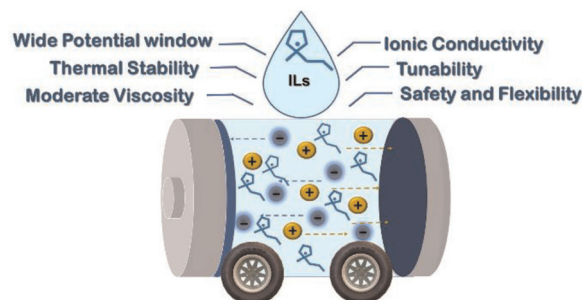
Muhammad Aamir Iqbal, Jianrong Qiu and Xiaofeng Liu\*



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### Challenges, opportunities, and roadmap for ionic liquid-based electrolytes in advancing energy storage devices

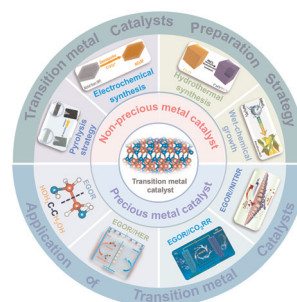
Sudeshna Chaudhari, Poulomi Nandi and Chandramouli Subramaniam\*



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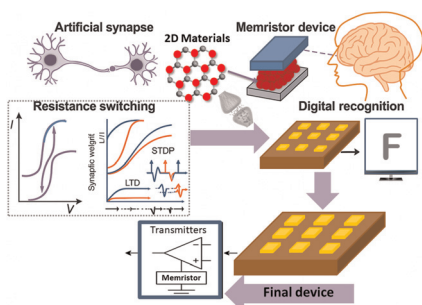
### Research progress of transition metal catalysts for electrocatalytic EG oxidation

Hongjing Wu, Xiaoyue Zheng, Jiajia Liu, Yanru Yuan, Yuquan Yang, Chenjing Wang, Li Zhou, Lulu Wang, Binbin Jia,\* Xiaoyu Fan\* and Jinlong Zheng\*



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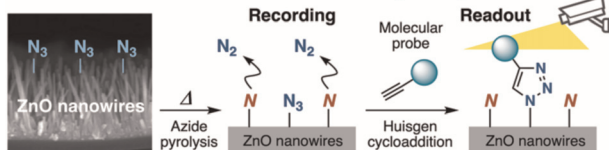
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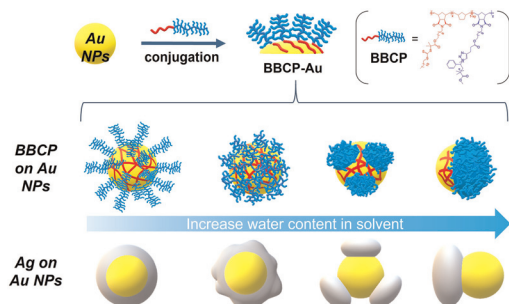


### Azido-enabled thermal history analysis on a metal-oxide surface

Satoki Yamaguchi, Tomohiro Iwaj,\* Hiromichi V. Miyagishi, Hiroshi Masai, Takuro Hosomi, Takeshi Yanagida, Ken Uchida and Jun Terao\*

## PAPERS

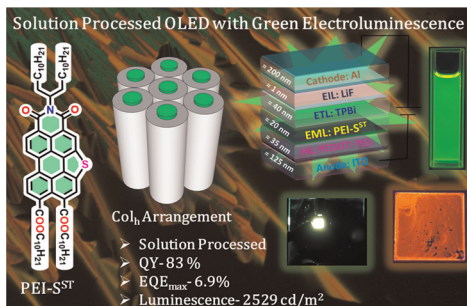
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### Bottlebrush polymer patches template heterometal growth on a gold nanoparticle surface

Minjun Kim, Jiyun Nam, Jiseok Kim, Hyunsik Hwang, Myungeun Seo\* and Hyunjoon Song\*

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### Unsymmetrical S-annulated perylene diester imide, stabilizing room temperature columnar phase as a dopant for greenish-yellow OLEDs with an outstanding EQE of 6.9%

Paresh Kumar Behera, Sushanta Lenka, Feng-Rong Chen, Mrinmoy Roy, Lu Chun-Chang, Chang-Hua Liu, Jwo-Huei Jou\* and Ammathnadu Sudhakar Achalkumar\*

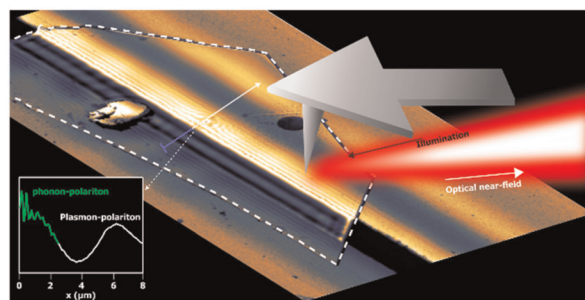


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### Nanophotonics of mid-infrared plasmon-polaritons at interfaces between metals and two-dimensional crystals

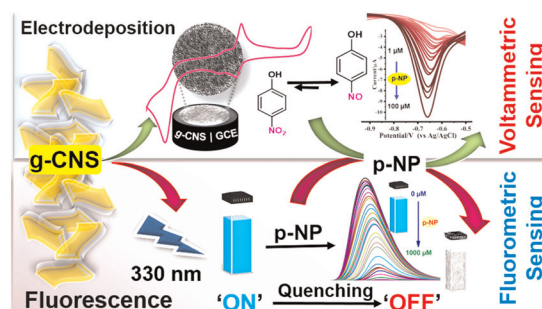
Flávio H. Feres,\* Ingrid D. Barcelos, Dario A. Bahamon, João E. Levandoski, Andrea Mancini, Thiago M. dos Santos, Rafael A. Mayer, Davi H. S. Camargo, Carlos C. B. Bufon, Adrian Cernescu, Stefan A. Maier, Raul de O. Freitas and Francisco C. B. Maia\*



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### Metal-free graphitic carbon nitride nanosheet for dual mode fluorescence and electrochemical detection of *para*-nitrophenol

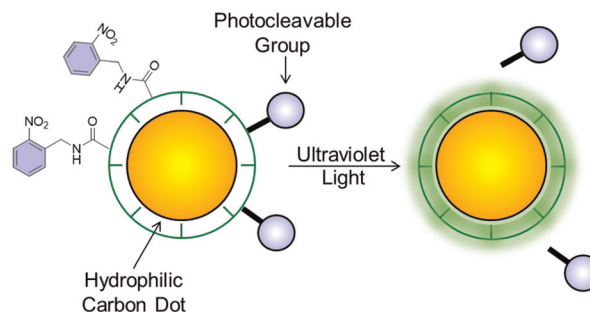
Ankush Kumar Singh, Aayoosh Singh, Mithilesh Patel, Vinod P. Singh and Rosy\*



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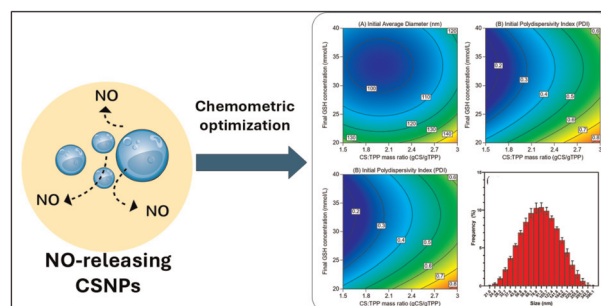
Aviya S. Akari, Maria R. Narciso, Emmanuel O. Fagbohun, Pedro D. Ortiz, Roberto J. Botelho and Stefania Impellizzeri\*



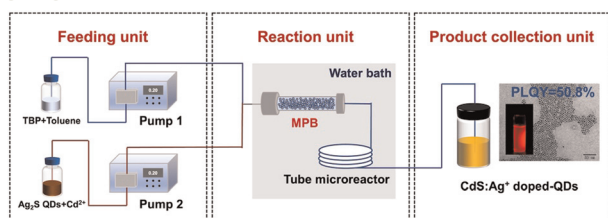
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### Multivariate chemometric design of nitric oxide-releasing chitosan nanoparticles for skin-related biomedical applications

Renan S. Nunes,\* Victor D. P. Cinel, Joana C. Pieretti, Kelli C. F. Mariano, Roberta A. dos Reis, Morgana Halfeld and Amedea B. Seabra\*



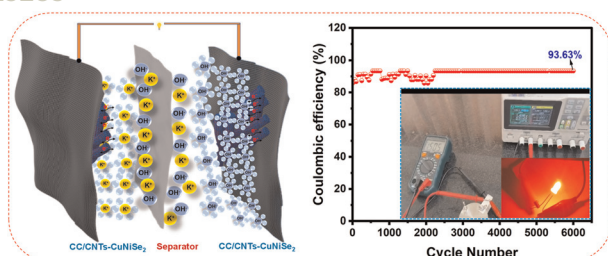
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### A MPB-intensified tube microreactor system for continuous synthesis of Ag<sup>+</sup> doped CdS quantum dots

Chuwei Zhu, Yuxi Li, Tailie Hou, Xiaole Gu, Xinyuan Li,\*  
Le Sang\* and Jiatao Zhang\*

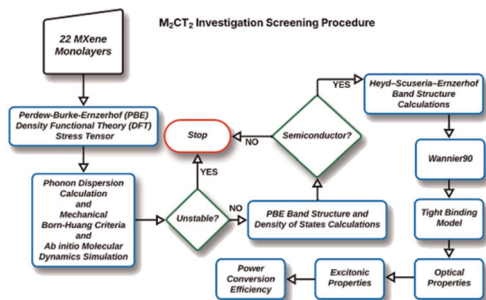
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### *In situ* synthesis of bimetallic chalcogenides with highly conductive carbon nanotubes for efficient symmetric hybrid supercapacitors

Soumyajit Jana, Sampath Karingula, Anjana Sajeevan,  
Phani Kumar V. V. N. and Yugender Goud Kotagiri\*

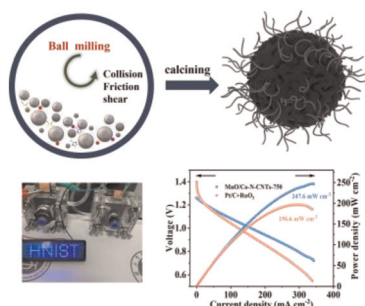
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### Enhanced solar harvesting efficiency in nanostructured MXene monolayers based on scandium and yttrium

Bill D. Aparicio-Huacarpuma, Marcelo L. Pereira, Jr,\*  
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Alexandre C. Dias

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### Interwoven MnO/Co-derived N-doped carbon nanotube composites as highly efficient and durable bifunctional oxygen catalysts for zinc–air batteries

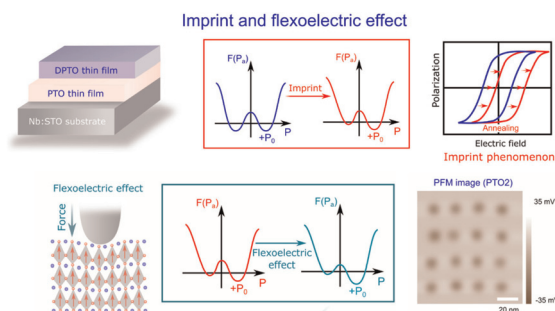
Yun Yang, Qing Long, Wei Wang,\* Junlin Huang,\*  
Yufei Zhao, Hao Liu and Hong Gao\*



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### Local ferroelectric domain switching phenomenon in $\text{PbTiO}_3$ thin films affected by the imprint effect and external force

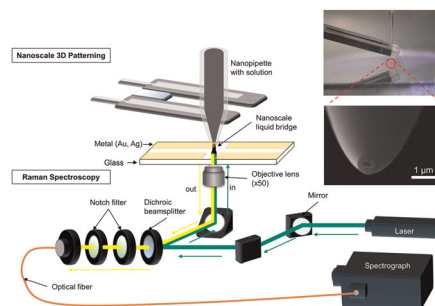
Eunmi Lee and Jong Yeog Son\*



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### Atomic force microscope-guided nanoscale 3D patterning for carbon nanofibers with *in situ* Raman spectroscopy

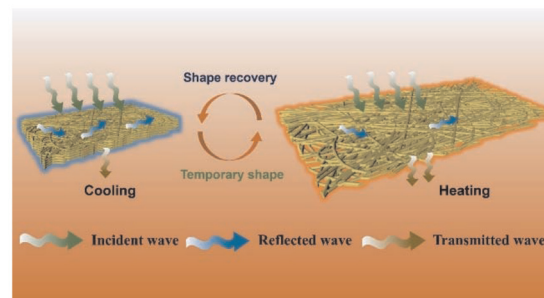
Yeonju Bae, Hojin Jang, Taesun Yun, Chanuk Yang, Jonggeun Hwang, Minji Park, Sanghan Lee, Jangyup Son,\* Kyoung-Duck Park,\* Jongwoo Kim,\* Wonho Jhe\* and Sangmin An\*



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### Shape memory composite membrane with widely programmable electromagnetic shielding effectiveness

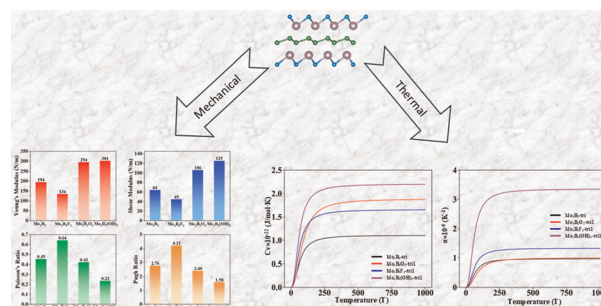
Zhiyong Zeng, Jv Li, Chuanru Zheng, Hongmei Chen, Gang Liu, Jian Huang, Kun Qian, Fenghua Zhang and Wenbing Li\*



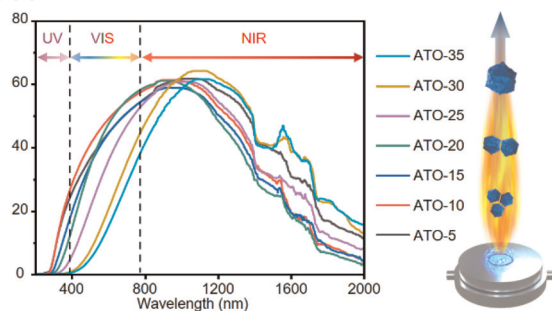
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Di Zhao, Mengqing Hu, Ming Zhou, Mingli Li, Oscar Allen, Irfan Ali Soomro, Samuel Akinlolu Ogunkunle, Lei Zhang, Liang Wang, Zhenzhen Wu, Porun Liu, Yuan Mei and Yun Wang\*



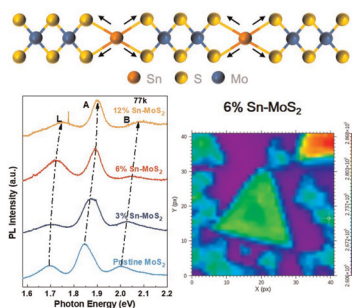
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### Tailored nanoscale structure of flame-made antimony doped tin oxides and their near-infrared shielding properties

Tung Van Pham, Tomoyuki Hirano,\* Eishi Tanabe, Eka Lutfi Septiani, Kiet Le Anh Cao and Takashi Ogi

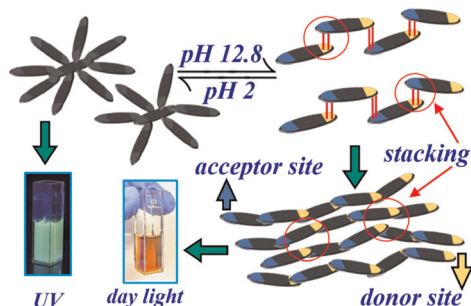
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### CVD synthesis and optical study of bandgap-tunable Sn-doped monolayer molybdenum disulfide

Yuxin Zhang, Zhengbo Zhong, Yuhao Mi, Jiawei Duan, Sheng Han,\* Tianhui Ren\* and Zhipeng Li\*

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### Multi-emissive graphene oxide quantum dots with remarkable pH-responsive long-wavelength emission

Indrani Chakraborti, Udayan Basak, Subhadip Roy, Mahuya Pakhira, Arindam Das and Dhruva P. Chatterjee\*

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### Revisiting the dissolution-recrystallization mechanism of rutile growth from protonated titanate nanotubes

Yanxin Chen, Fan Wu, Lijing Fan, Shaohua Chen, Jieyi Shen and Pengxin Liu\*

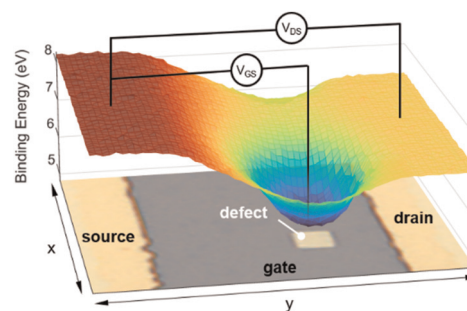


## PAPERS

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**Operando observation of gate defects in quantum dot-based field effect transistors**

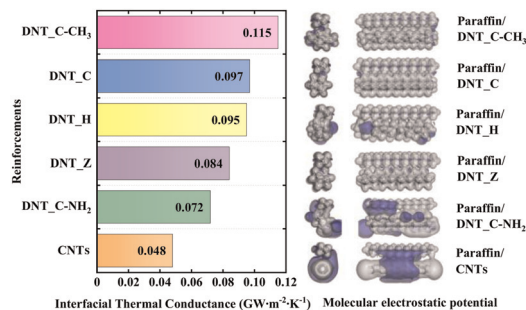
Mariarosa Cavallo, Dario Mastripolito, Erwan Bossavit, Clement Gureghian, Albin Colle, Tommaso Gemo, Adrien Khalili, Huichen Zhang, Yoann Prado, Erwan Dandeu, Sandrine Ithurria, Pavel Dudin, José Avila, Debora Pierucci and Emmanuel Lhuillier\*



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**Enhanced interfacial thermal transport in diamond nanothread reinforced polymer nanocomposites: insights from atomistic simulations and density functional theory**

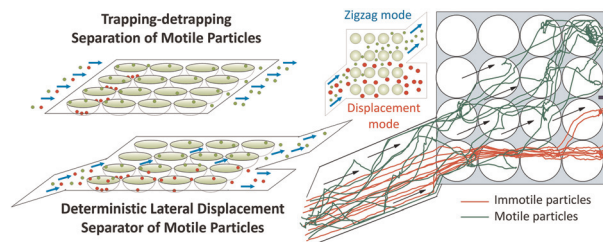
Xuefeng Liu, Rui Yang, Zhiwu Bie, Fenghua Nie,\* Yong Fan, Erkan Oterkus and Xiaoqiao He



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**Motility-dependent selective transport of active matter in trap arrays: separation methods based on trapping-detrapping and deterministic lateral displacement**

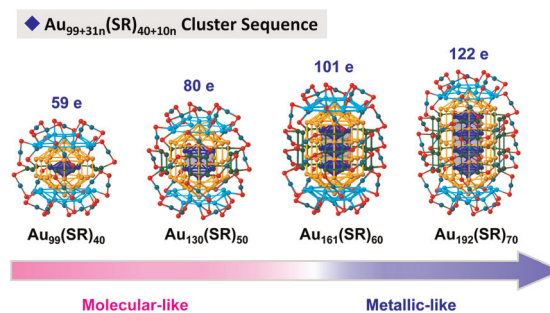
Vyacheslav R. Misko,\* Franco Nori and Wim De Malsche



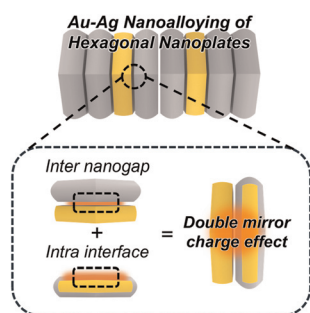
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**Theoretical study on a novel Au<sub>99+31n</sub>(SR)<sub>40+10n</sub> cluster sequence with D<sub>5</sub> symmetry**

Youqiong Fang and Lin Xiong\*



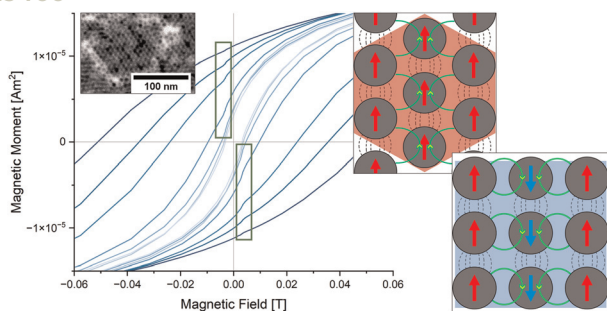
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### Au–Ag controllable composition nanoalloying of hexagonal nanoplates: heterogeneous interfacial nanogaps enhance near-field focusing

Sungbeen Park, Insub Jung, Soohyun Lee, Qiang Zhao, Sungwoo Lee, Hyunji Kim and Sungho Park\*

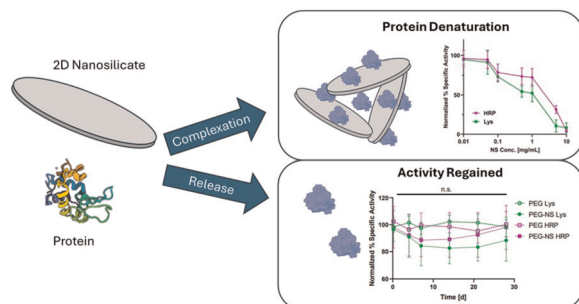
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### The role of superlattice phases and interparticle distance in the magnetic behaviour of SPION thin films

Marion Görke, Sherif Okeil, Guohui Yang, Hermann Nirschl, Thilo Viereck and Georg Garnweitner\*

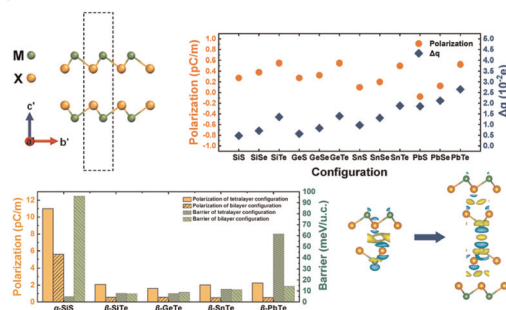
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### Protein structure and bioactivity upon adsorption and desorption from nanosilicate sustained release delivery devices

Samuel Stealey, Ether Dharmesh, Akhilesh K. Gaharwar, Jai S. Rudra and Silviya P. Zustiak\*

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**Rhodium–silver superatomic nanoclusters stabilized by diselenophosphate ligands**

Tzu-Hao Chiu, Michael N. Pillay, Samia Kahlal, Jean-Yves Saillard\* and C. W. Liu\*

