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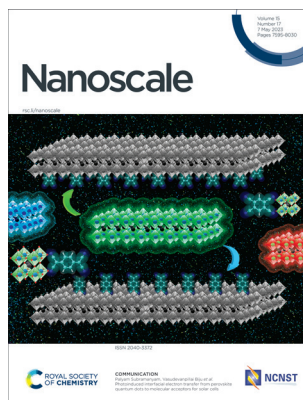
ISSN 2040-3372 CODEN NANOHL 15(17) 7595-8030 (2023)



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See Munho Kim,  
Guo-En Chang *et al.*,  
pp. 7745–7754.

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### Inside cover

See Palyam Subramanyam,  
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pp. 7695–7702.

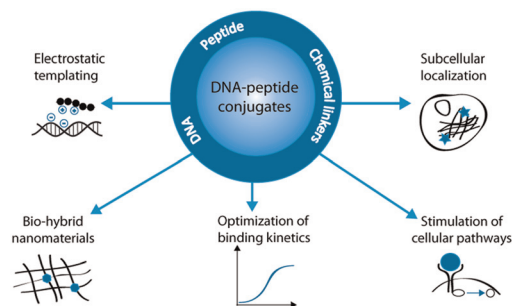
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## REVIEWS

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### Integration of functional peptides into nucleic acid-based nanostructures

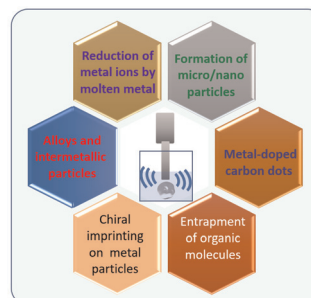
Jessica S. Freitag, Christin Möser, Robel Belay, Basma Altattan, Nico Grasse, Bhanu Kiran Pothineni, Jörg Schnauß and David M. Smith\*



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### Sonochemistry of molten metals

Vijay Bhooshan Kumar, Aharon Gedanken and Ze'ev Porat\*



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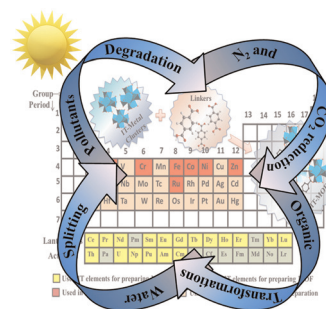


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## Inner transition metal-modulated metal organic frameworks (IT-MOFs) and their derived nanomaterials: a strategic approach towards stupendous photocatalysis

Jayashree Panda, Suraj Prakash Tripathy, Srabani Dash, Asheli Ray, Pragyaandeepti Behera, Satyabrata Subudhi and Kulamani Parida\*

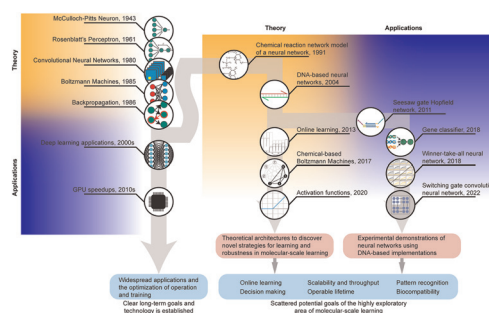


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## A survey on molecular-scale learning systems with relevance to DNA computing

Rajiv Teja Nagipogu,\* Daniel Fu\* and John H. Reif

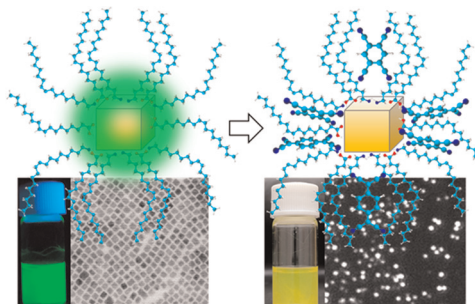


## COMMUNICATIONS

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## Photoinduced interfacial electron transfer from perovskite quantum dots to molecular acceptors for solar cells

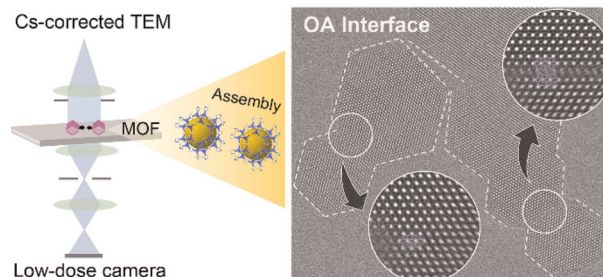
Bhagyashree Mahesha Sachith, Zhijing Zhang, Palyam Subramanyam,\* Challapalli Subrahmanyam, Akihiro Furube, Naoto Tamai, Takuya Okamoto, Hiroaki Misawa and Vasudevanpillai Biju\*



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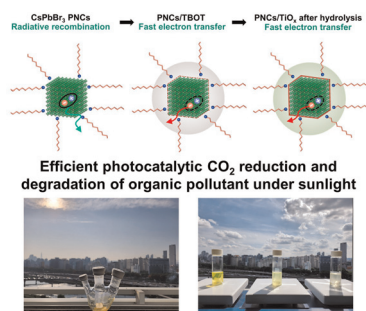
## Oriented attachment interfaces of zeolitic imidazolate framework nanocrystals

Xiaocang Han, Rui Su, Wenqian Chen, Qi Han, Yuan Tian, Jihui Han, Xiaodong Wang, Shuangxi Song, Kolan Madhav Reddy, Hexiang Deng, Pan Liu\* and Mingwei Chen\*



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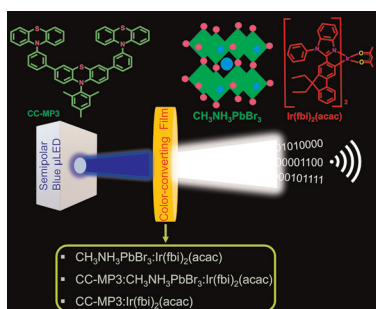
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### Investigating the interfacial properties of halide perovskite/TiO<sub>x</sub> heterostructures for versatile photocatalytic reactions under sunlight

Tae Hyung Kim, Inho Park, Kyeong Ho Lee, Jin-Han Sim, Min-Ho Park, Tae-Hee Han, Ungyu Paik, Jaeyoung Jang,\* Ho Bum Park\* and Young-Hoon Kim\*

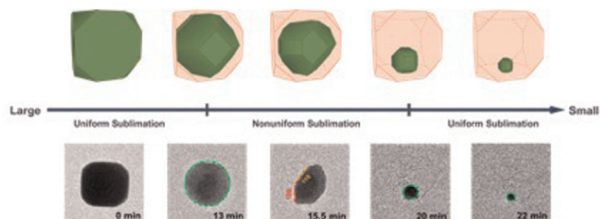
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### High bandwidth semipolar (20–21) micro-LED-based white light-emitting diodes utilizing perovskite quantum dots and organic emitters in color-conversion layers for visible light communication and solid-state lighting applications

Annada Sankar Sadhu, Yi-Hua Pai, Li-Yin Chen,\* Chung-An Hsieh, Hao-Wu Lin and Hao-Chung Kuo\*

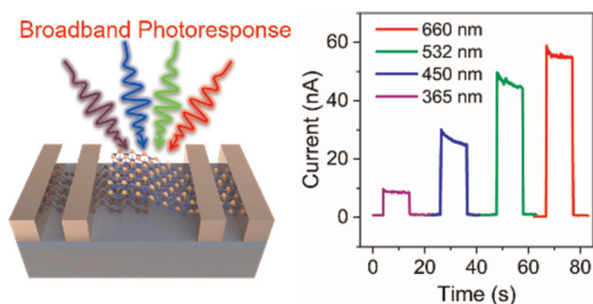
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### Probing the sublimation kinetics of Ag, Ag@TiO<sub>2</sub>, and Ag@C nanoparticles

Hao-Chin Huang, Kai-Yuan Hsiao, Yu-Han Tseng, Yan-De Chen and Ming-Yen Lu\*

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### A two-dimensional Te/ReS<sub>2</sub> van der Waals heterostructure photodetector with high photoresponsivity and fast photoresponse

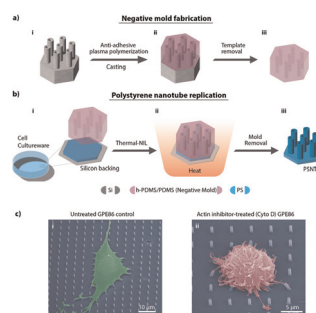
Yafei Yan, Minxin Li, Kai Xia, Kemeng Yang, Dun Wu, Liang Li, Guangtao Fei\* and Wei Gan\*



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## The influence of dysfunctional actin on polystyrene-nanotube-mediated mRNA nanoinjection into mammalian cells

Hao Zhe Yoh, Yaping Chen,\* Ali-Reza Shokouhi, Helmut Thissen, Nicolas H. Voelcker\* and Roey Elnathan\*

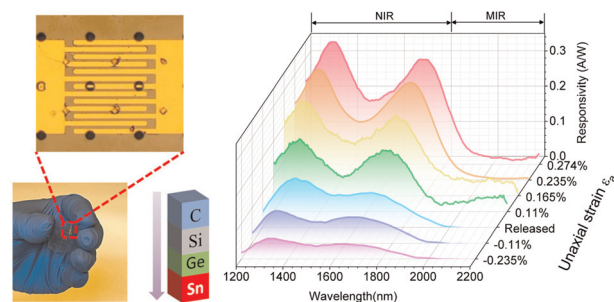


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## Transfer-printing-enabled GeSn flexible resonant-cavity-enhanced photodetectors with strain-amplified mid-infrared optical responses

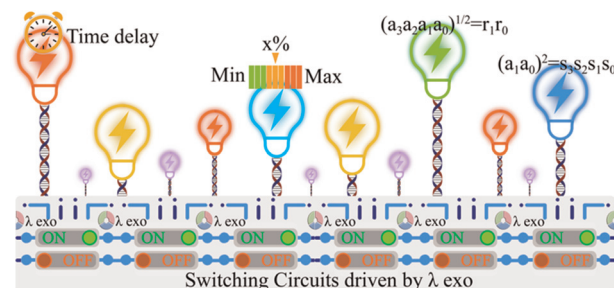
Yeh-Chen Tai, Shu An, Po-Rei Huang, Yue-Tong Jheng, Kuo-Chih Lee, Hung-Hsiang Cheng, Munho Kim\* and Guo-En Chang\*



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## Construction of DNA-based molecular circuits using normally open and normally closed switches driven by lambda exonuclease

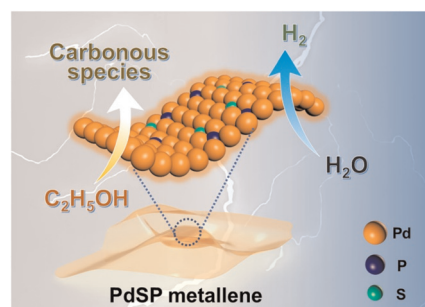
Xin Liu, Xun Zhang, Yao Yao, Peijun Shi, Chenyi Zeng and Qiang Zhang\*



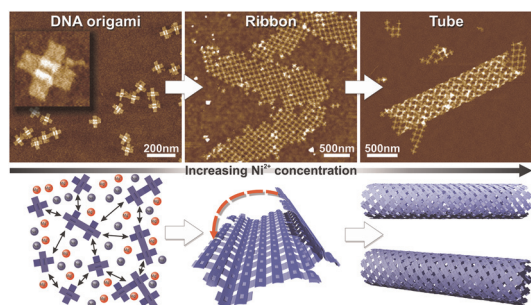
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## Sulfur and phosphorus co-doping optimized electronic structure and modulated intermediate affinity on PdSP metallene for ethanol-assisted energy-saving H<sub>2</sub> production

Hongjing Wang, Yanan Guo, Qiqi Mao, Hongjie Yu, Kai Deng, Ziqiang Wang, Xiaonian Li, You Xu\* and Liang Wang\*



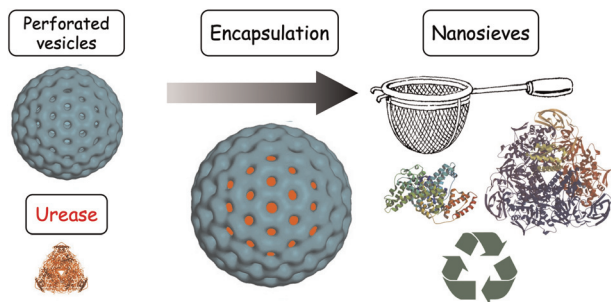
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### Creation of ordered 3D tubes out of DNA origami lattices

Johannes M. Parikka, Heini Järvinen, Karolina Sokołowska, Visa Ruokolainen, Nemanja Markešević, Ashwin K. Natarajan, Maija Vihinen-Ranta, Anton Kuzyk, Kostı Tapio\* and J. Jussi Toppari\*

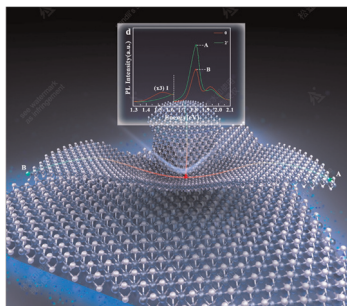
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### Fluorinated dendritic amphiphiles, their stomatosome aggregates and application in enzyme encapsulation

Tiffany Guitton-Spasky, Florian Junge, Abhishek Kumar Singh, Boris Schade, Katharina Achazi, Marta Maglione, Stephan Sigrıst, Rashmi Rashmi and Rainer Haag\*

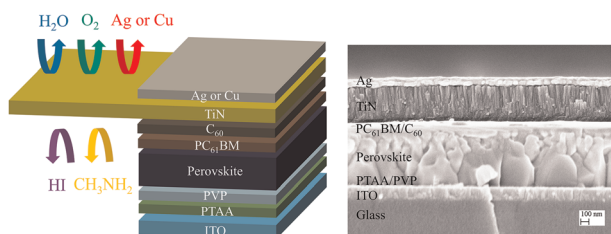
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### A natural indirect-to-direct band gap transition in artificially fabricated MoS<sub>2</sub> and MoSe<sub>2</sub> flowers

Jun Zhou, Juan Cui, Shuo Du, Zihan Zhao, Jianfeng Guo, Songyang Li, Weifeng Zhang, Nan Liu, Xiaotian Li, Qinghu Bai, Yang Guo, Shuo Mi, Zhihai Cheng, Lin He, J. C. Nie, Yu Yang\* and Ruifen Dou\*

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### High-performance p–i–n perovskite photodetectors and image sensors with long-term operational stability enabled by a corrosion-resistant titanium nitride back electrode

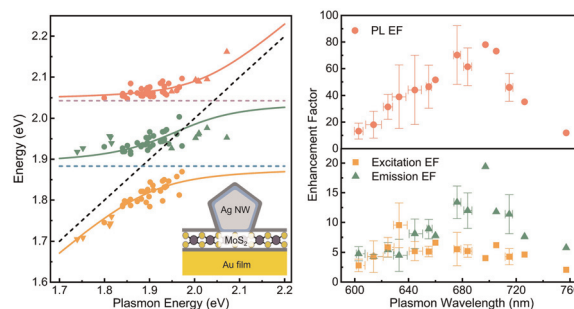
Tian Sun, Tong Chen, Jiahao Chen, Qiang Lou, Zihao Liang, Guijun Li,\* Xiaoyun Lin, Guoshen Yang and Hang Zhou\*



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### Excitation and emission distinguished photoluminescence enhancement in a plasmon–exciton intermediate coupling system

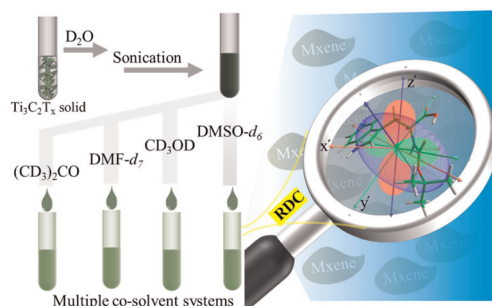
Wenjun Zhang, Long Gao, Xiaohong Yan, Hongxing Xu\* and Hong Wei\*



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### Weakly aligned $Ti_3C_2T_x$ MXene liquid crystals: measuring residual dipolar coupling in multiple co-solvent systems

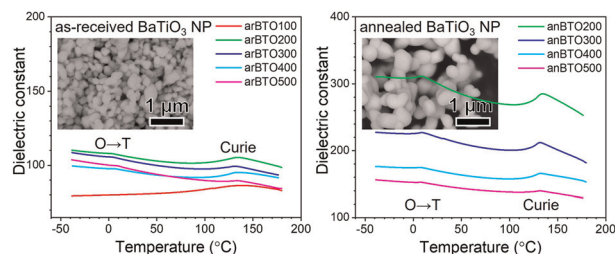
You Zhao, Huan Qin, Yan-Ling Yang, Jia-Qian Li, Si-Yong Qin,\* Ai-Qing Zhang\* and Xinxiang Lei\*



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### Investigation into the crystal structure–dielectric property correlation in barium titanate nanocrystals of different sizes

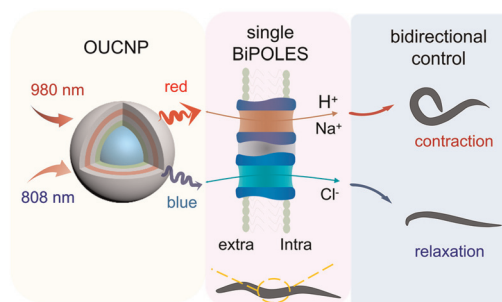
Qiong Li, Tianxiong Ju, Ruipeng Li, Shuang Wang, Yongfang Yang, Hatsuo Ishida, Yeu-Wei Harn, Jihua Chen, Benjamin Hirt, Alp Sehrioglu, Zhiqun Lin\* and Lei Zhu\*



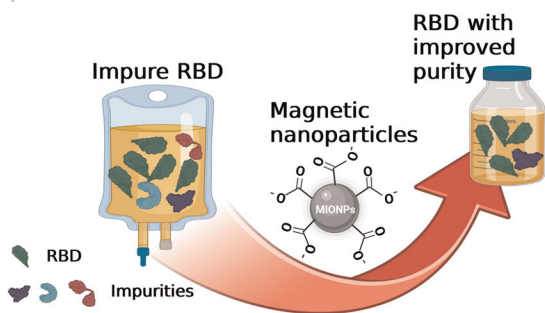
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### Bidirectional near-infrared regulation of motor behavior using orthogonal emissive upconversion nanoparticles

Jingxuan Guo, Lili Chen, Feihong Xiong, Yongning Zhang, Ruipeng Wang, Xuefei Zhang, Quan Wen, Shangbang Gao\* and Yan Zhang\*



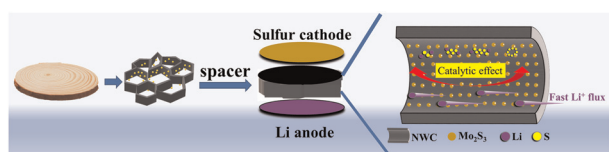
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### Efficient capture of recombinant SARS-CoV-2 receptor-binding domain (RBD) with citrate-coated magnetic iron oxide nanoparticles

D. A. González-Martínez,\* G. González Ruíz,\* C. Escalante-Bermúdez, J. A. García Artalejo, T. Gómez Peña, J. A. Gómez, E. González-Martínez, Y. Cazañas Quintana, T. Fundora Barrios, T. Hernández, R. C. Varela Pérez, D. Díaz Goire, D. Castro López, I. Ruíz Ramírez, C. R. Díaz-Águila and J. M. Moran-Mirabal

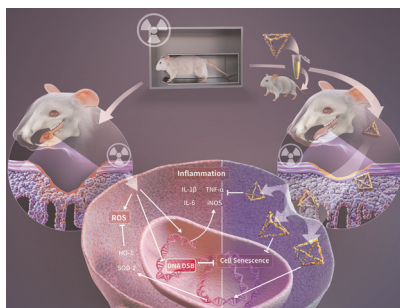
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### Defect-rich Mo<sub>2</sub>S<sub>3</sub> loaded wood-derived carbon acts as a spacer in lithium-sulfur batteries: forming a polysulfide capture net and promoting fast lithium flux

Xin Huang, Wanli Sha, Songchun He, Lijie Zhao, Shaobin Li, Chunmei Lv, Chunhua Lou, Xintong Xu, Jianxin Wang\* and Hong Pan\*

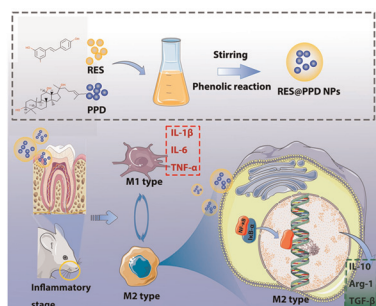
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### Nano shield: a new tetrahedral framework nucleic acids-based solution to radiation-induced mucositis

Geru Zhang, Liwei Huang, Maogeng Feng, Tianxu Zhang, Yang Gao, Yangxue Yao, Songhang Li, Xiaobing Li\* and Yunfeng Lin\*

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### Facile engineering of resveratrol nanoparticles loaded with 20(S)-protopanaxadiol for the treatment of periodontitis by regulating the macrophage phenotype

Huimin Huangfu, Shulin Du, Hao Zhang, Hanchi Wang, Yi Zhang, Zhen Yang, Xinwei Zhang, Sicong Ren, Siyu Chen, Cuizhu Wang,\* Yidi Zhang\* and Yanmin Zhou\*

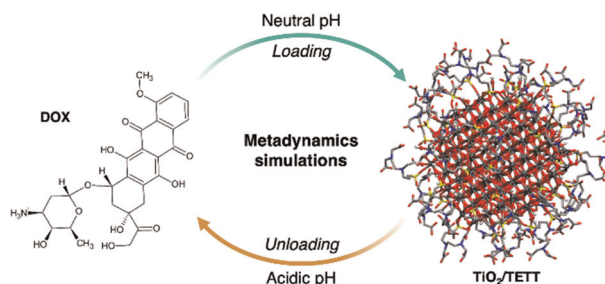


## PAPERS

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### Metadynamics simulations for the investigation of drug loading on functionalized inorganic nanoparticles

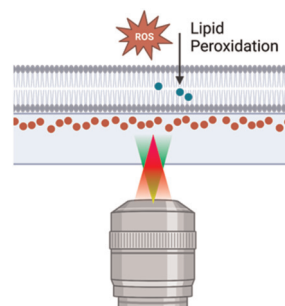
Stefano Motta, Paulo Siani, Edoardo Donadoni, Giulia Frigerio, Laura Bonati and Cristiana Di Valentin\*



7920

### Lipid peroxidation in diamond supported bilayers

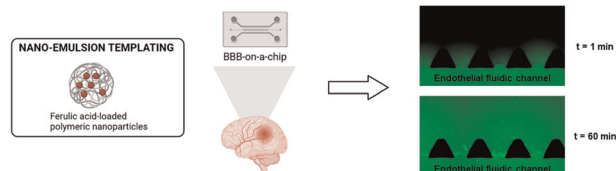
A. R. Ortiz Moreno, R. Li, K. Wu and R. Schirhagl\*



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### Ferulic acid-loaded polymeric nanoparticles prepared from nano-emulsion templates facilitate internalisation across the blood–brain barrier in model membranes

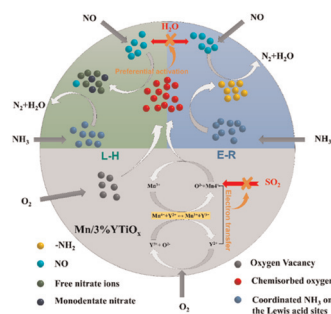
Luna Garcia, Sujey Palma-Florez, Victor Espinosa, Fatemeh Soleimani Rokni, Anna Lagunas, Mònica Mir, Maria José García-Celma, Josep Samitier, Carlos Rodríguez-Abreu\* and Santiago Grijalvo\*



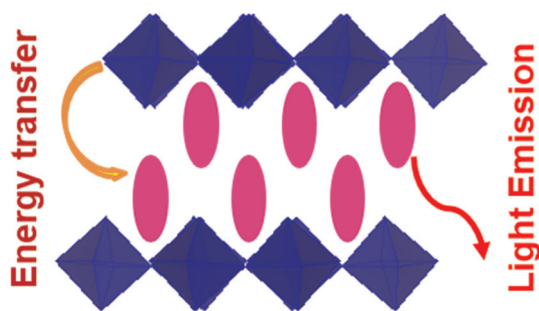
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### Engineering 3D structure Mn/YTiO<sub>x</sub> nanotube catalyst with an efficient H<sub>2</sub>O and SO<sub>2</sub> tolerance for low-temperature selective catalytic reduction of NO with NH<sub>3</sub>

Rongji Cui, Xiaosheng Huang, Guodong Zhang and Zhicheng Tang\*



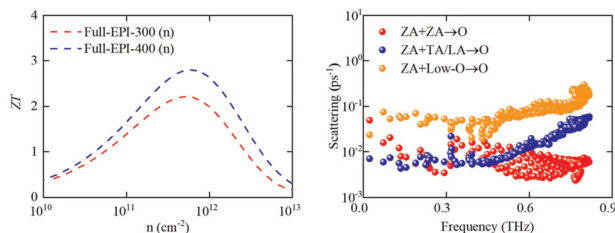
7962



### Energy level alignments between organic and inorganic layers in 2D layered perovskites: conjugation vs. substituent

Eti Mahal, Shyama Charan Mandal, Diptendu Roy and Biswarup Pathak\*

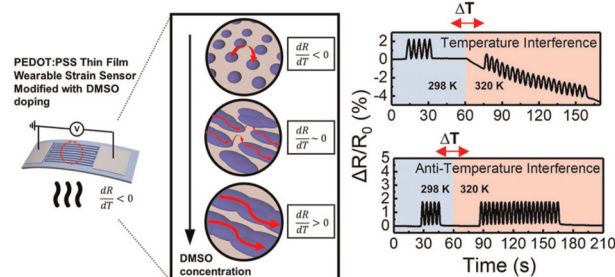
7971



### Excellent thermoelectric properties of the $Tl_2S_3$ monolayer for medium-temperature applications

Lang Zhou, Qi Wang, Mei Xu, Chengwei Hu, Xue Deng, Yumin Li, Bing Lv\* and Wenzhong Wang\*

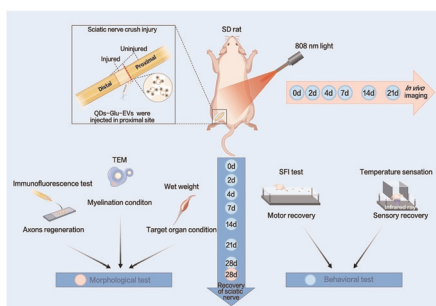
7980



### Charge transport transition of PEDOT:PSS thin films for temperature-insensitive wearable strain sensors

Young Kyun Choi, Tae Hyuk Kim, Jeong Han Song, Byung Ku Jung, Woosik Kim, Jung Ho Bae, Hyung Jin Choi, Jeonghun Kwak,\* Jae Won Shim\* and Soong Ju Oh\*

7991



### Spatio-temporally deciphering peripheral nerve regeneration *in vivo* after extracellular vesicle therapy under NIR-II fluorescence imaging

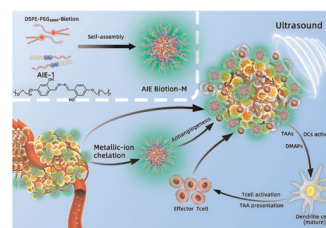
Yueming Wang, Huaixuan Sheng, Meng Cong, Wenjin Wang, Qianru He, Huizhu Li, Shuniao Li, Jian Zhang, Yuzhou Chen, Shuaicheng Guo, Lu Fang, Stefano Pluchino, Ewelina Biskup, Mikhail Artemyev, Fuchun Chen, Yunxia Li, Jun Chen,\* Sijia Feng\* and Yan Wo\*



8006

## Tumor-targeted AIE polymeric micelles mediated immunogenic sonodynamic therapy inhibits cancer growth and metastasis

Kai Deng,\* Yifeng Yu, Yong Zhao, Jiami Li, Kunheng Li, Hongyang Zhao, Meng Wu\* and Shiwen Huang\*



Schematic illustration of AIE/Biotin-M mediated sonodynamic therapy and metal ions chelation for inhibiting breast cancer growth and metastasis.

8019

## Orientation order of a nonpolar molecular fluid compressed into a nanosmall space

Dan Wang, Milena Lippmann, Johannes Gäding, Anita Ehnes, Dmitri Novikov, Robert Meißner and Oliver H. Seeck

