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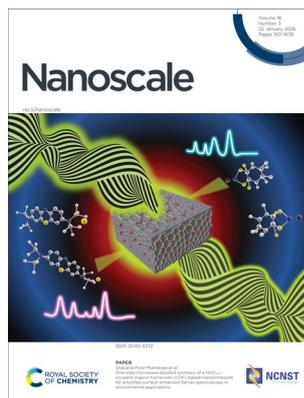


Cover

See Luis R. De Jesús Báez *et al.*, pp. 1335–1344.

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Inside cover

See Shatabdi Porel Mukherjee *et al.*, pp. 1345–1356.

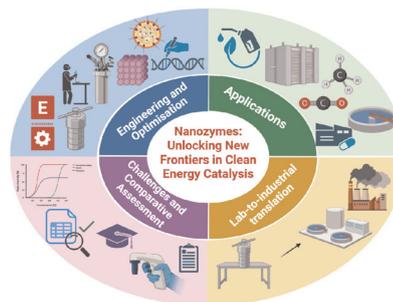
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REVIEWS

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Nanozymes for clean energy catalysis: unlocking potential, progress and perspectives

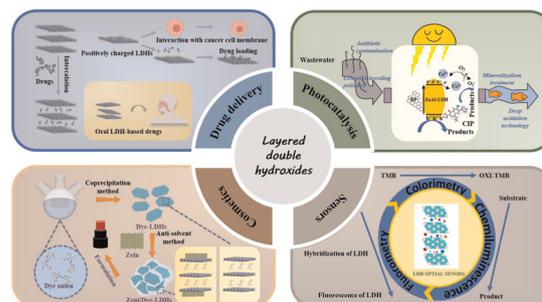
Harshita, Murali Sastry and Shanthi Priya Samudrala*



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Tailoring layered double hydroxide nanomaterials through surface modification: design strategies and practical paradigms

Ling Ni, You Wu, Siyue Sha and Yilun Wu*



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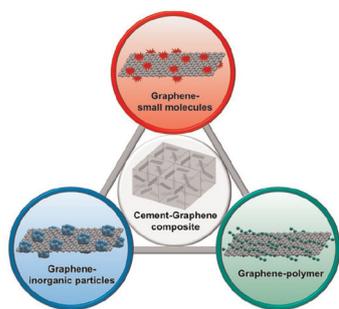
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MINIREVIEW

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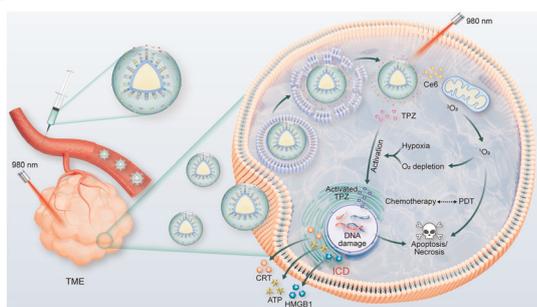


Surface functionalization of graphene-based materials: enhancing the performance and sustainability of cement composites

Matgorzata Safuta,* Cataldo Valentini and Artur Ciesielski

COMMUNICATION

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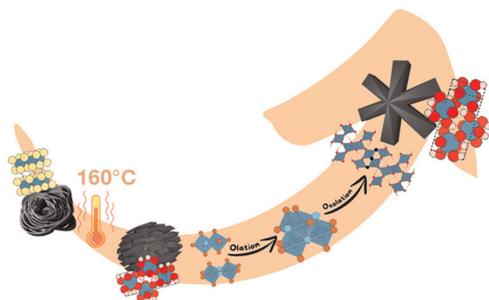


NIR-light triggered photodynamic therapy combined with hypoxia activated chemotherapy for anti-tumor effects

Xiaoyi Meng, Fang Wang, Huijuan Duan, Wenfei Xu, Wenjing Liu, Hong Sun, Jun Ye,* Yin Xiao,* Zhaogang Sun* and Hongqian Chu*

PAPERS

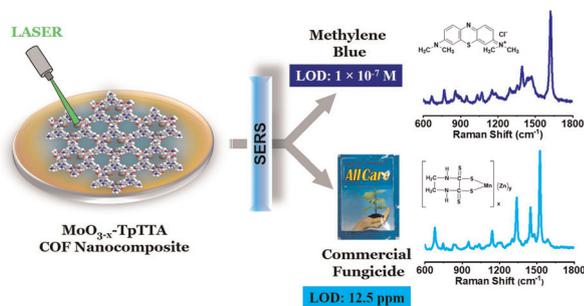
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On the crystal growth of vanadyl hydroxide (VOOH) with six-fold arms morphology

Jayanti Sharma, Thomas J. Kolpack, Karla M. Pérez Colón, Mayuresh Janpandit, Chloe Viyannalage, Yuguang C. Li and Luis R. De Jesús Báez*

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One-step microwave-assisted synthesis of a MoO_{3-x}-covalent organic framework (COF)-based nanocomposite for amplified surface-enhanced Raman spectroscopy in environmental applications

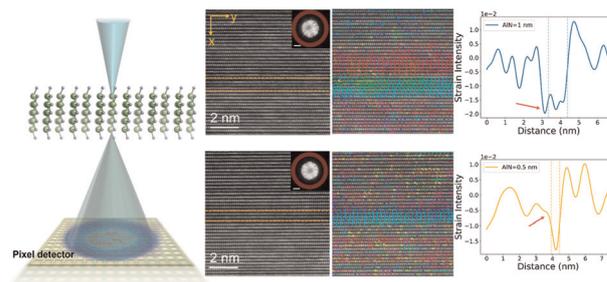
Manoj Krishnat Patil, Premjeet Gangadhar Wagh and Shatabdi Porel Mukherjee*



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Thickness-dependent polarization modulation at AlN interlayers in GaN heterostructures revealed by atomic-scale 4D-STEM

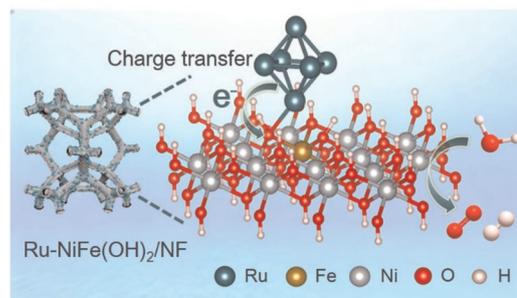
Jiamin Tian, Fangren Shen, Yitian Gu, Zidong Cai, Chao Feng, Qin Hu, Shuang Zhao, Qizhi Li, Lei Yang, Changrun Cai, Haolin Hu, Wei Zeng, David Zhou,* Hongyan Liu and Kuang-Tse Ho*



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Electronic modulation of Ru active sites via interfacial engineering for efficient overall water splitting

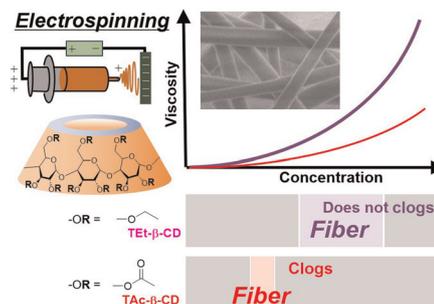
Sailei Kang, Jizhe Ma, Zezhong Shan, Yingxin Ma, Mengyuan Xing, Yu Zhang,* Jian Shang* and Bocheng Qiu*



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Role of weak and transient interactions in the polymer-free electrospinning of β -cyclodextrin derivatives

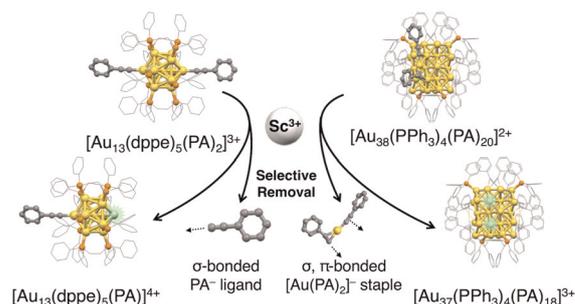
Naoto Hirano, Yuto Sasakawa, Hiroaki Yoshida* and Hiroharu Ajiro*



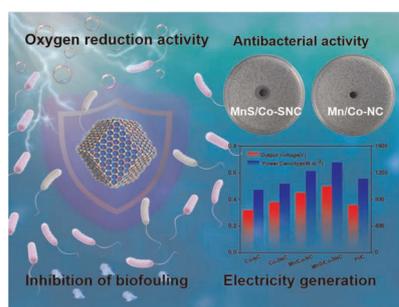
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Sc(OTf)₃-induced, selective removal of alkynyl ligands from heteroleptic Au₁₃ and Au₃₈ nanoclusters

Zengguang Huang, Shinjiro Takano and Tatsuya Tsukuda*



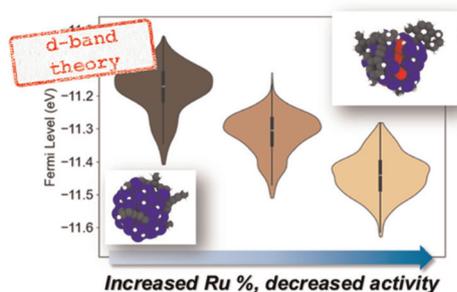
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Antibacterial MnS/Co-SNC cathode catalysts for high-performance microbial fuel cells

Sainan Cai, Qi Qi, Tianwen Zheng, Hong Dai and Yuqiao Wang*

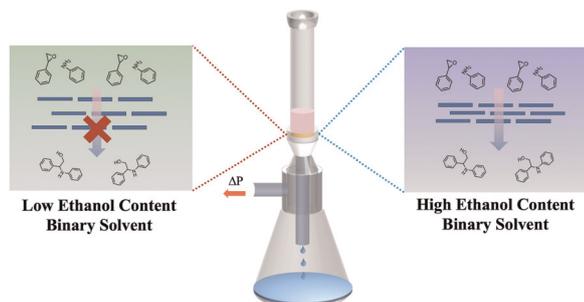
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Electronic structure of bimetallic CoRu catalysts modulates the early stages of SWCNT nucleation

Alister J. Page,* Dan M. Villamanca, Placidus B. Amama and Ben McLean

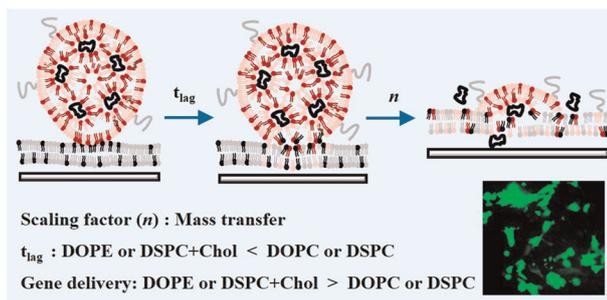
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Binary solvent-mediated modulation of two-dimensional nanoconfined catalytic behaviors

Haoran Shi, Xiaotao Yang, Xinxin Cui, Hongyan Xiao, Shuai Pang, Xiang Li, Yue Long,* Xiqi Zhang,* Kai Song* and Lei Jiang

1420



Helper lipids accelerate the mass transfer of cationic lipid nanoparticles resulting in an efficient gene delivery

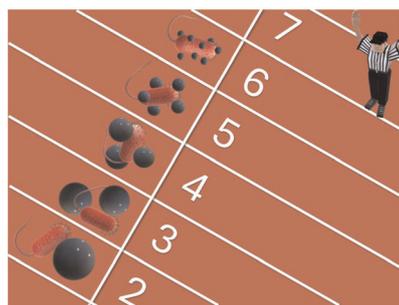
Anurag Sharma, Khushika, Monika Chaudhary, Pritam Kumar Jana and Nagma Parveen*



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Size effects in magnetic separation for rapid and efficient bacteria removal

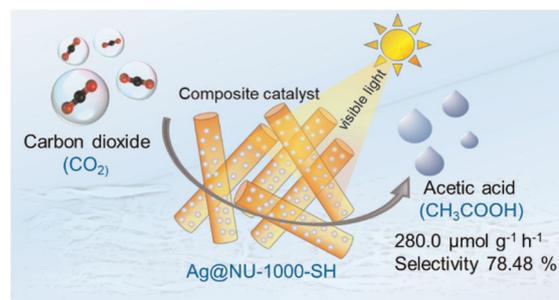
Jingge Chen, Alicia M. Chandler, Indrek Külaots, Qingbo Zhang and Vicki L. Colvin*



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Efficient photocatalytic conversion of CO₂ to acetic acid using a composite catalyst

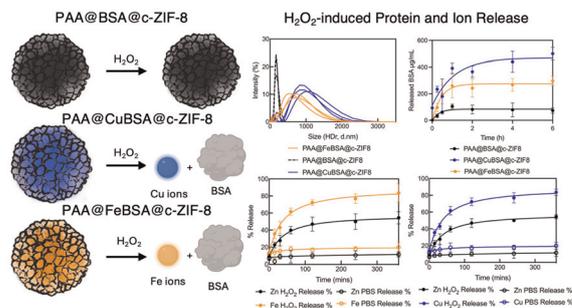
Ravari Kandy Aparna, Alok Kumar, Shamna Muhamed, Sreehari Surendran Rajasree and Sukhendu Mandal*



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Polymeric-protein-MOF nanoparticles with stimuli-responsive disassembly and highly reproducible synthesis

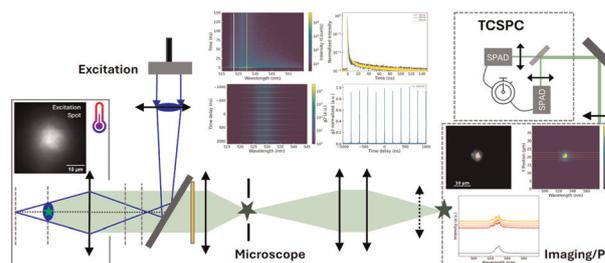
Justin Van Houten, Sarah E. S. Quail, Melissa C. D'Amaral, Kezia E. Suryoraharjo, Abigail Richards, Ruben Castillo Barberi, Rachel Leigh Mander and Alana F. Ogata*



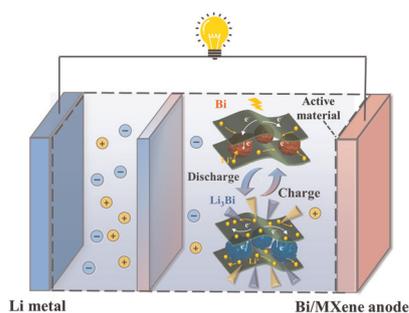
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Cryo-optical setup for wide-field microscopy and spectroscopy of luminescent nanomaterials

Lorenzo Tallarini, Gioele Lapo, Marzo C. López Cerón, Ivan G. Scheblykin and Dmitry Baranov*



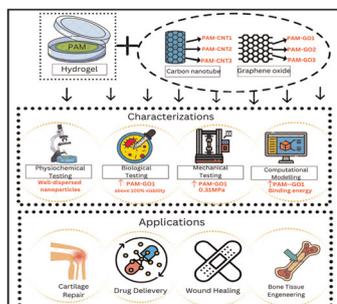
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Intercalation of bismuth nanoparticles into Ti_3C_2 MXene as an anode material for lithium-ion batteries

Mengxiang Chen, Kai Li, Yanqinping Lu, Guoyin Zhu* and Yizhou Zhang*

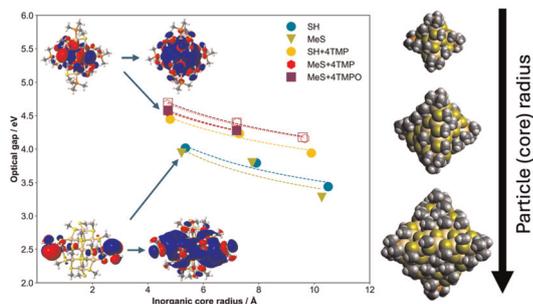
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Nanoallotrope-integrated polyacrylamide hydrogels: a synergistic experiment–theory approach for engineering mechanically resilient and cytocompatible composites for cartilage tissue regeneration

Nehal, Murli Manohar, Komal,* Kantesh Balani,* Sarvesh Kumar Pandey* and Shikha Awasthi*

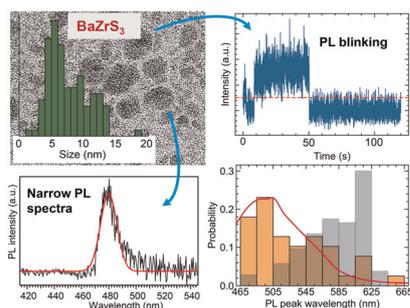
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Quantum dot or not? The effect of ligands on the nature of excitations in CdS nanoparticles

Eimear Madden and Martijn A. Zwijnenburg*

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Synthesis and single-particle photophysics of BaZrS_3 chalcogenide perovskite quantum dots

Toranosuke Takagi, Yoshinori Kimoto, Nithin Pathoor, Shun Omagari, Tadashi Kawamoto, Takuya Kato, Hiroaki Nakamura, Issei Takenaka and Martin Vacha*

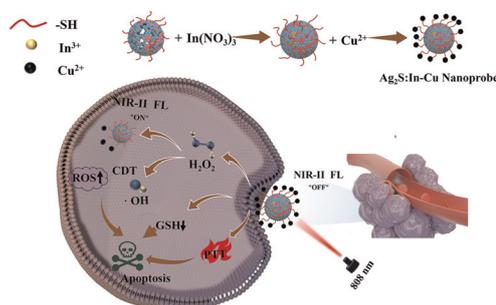


PAPERS

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An H_2O_2 activated $\text{Ag}_2\text{S}:\text{In}-\text{Cu}$ nanoprobe for *in vitro* synergistic tumor treatment

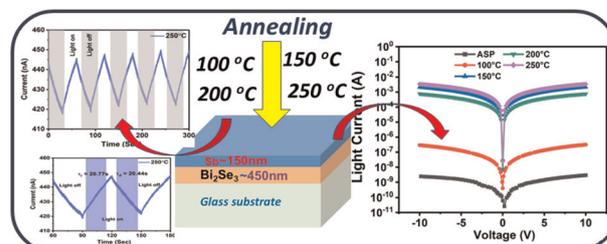
Xiaoyan Zhang, Ruiqi Liu, Zhouyu Yu and Baisong Chang*



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Enhanced photoresponsivity and photodetectivity by Sb doping into Bi_2Se_3 thin films for visible light photodetectors

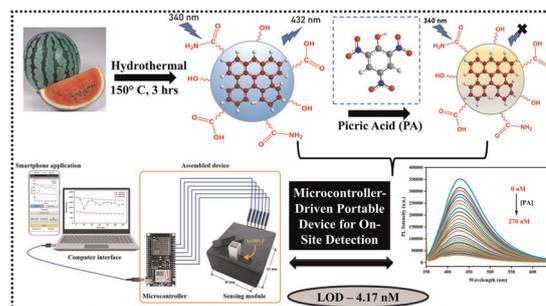
Gouttam Mallick, Prabhurupa C. Kumar, Ramakanta Naik* and Rajib Biswal*



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Sustainable carbon dot-based fluorosensor integrated with a microcontroller-driven portable device for on-site nanomolar detection of picric acid

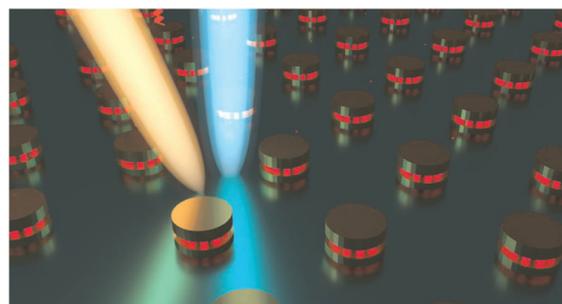
Mallika Phull, Amjad Ali, Jobanpreet Brar, Amit Mishra and Banibrata Maity*



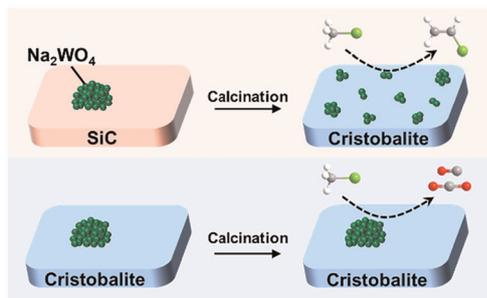
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Emission enhancement of colloidal quantum dots confined in double disc nano-antennas with controlled opening

Vaibhav Gupta, José Luis Montaña-Priede, Shu Hu, Eric S. A. Goerlitzer, Mario Zapata-Herrera, Ruben Esteban, Nerea Zabala, Jeremy J. Baumberg, Javier Aizpurua* and Nicolas Vogel*



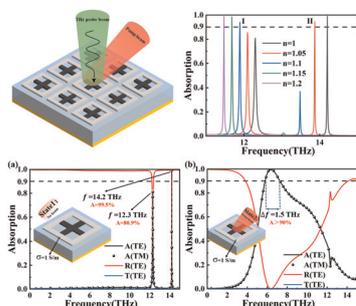
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Phase transition of SiC support induces dispersed Na_2WO_4 catalysts for CH_3Cl -to- $\text{C}_2\text{H}_3\text{Cl}$ conversion

Xutao Chen, Yue Wang, Kunkun Wei, Yunxin Bao, Jifeng Ouyang, Chengyuan Liu, Yang Pan, Shihui Zou* and Jie Fan*

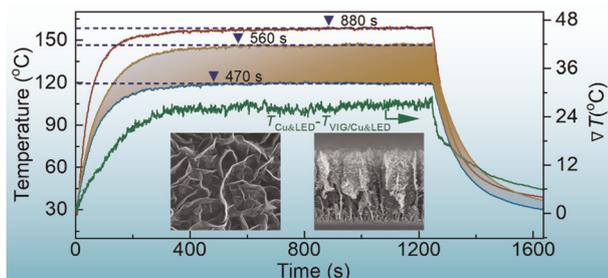
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Dual-tunable terahertz metamaterial perfect absorption device based on optical pumping and temperature control

Hao Tang, Qianju Song, Jun Zhu* and Zao Yi*

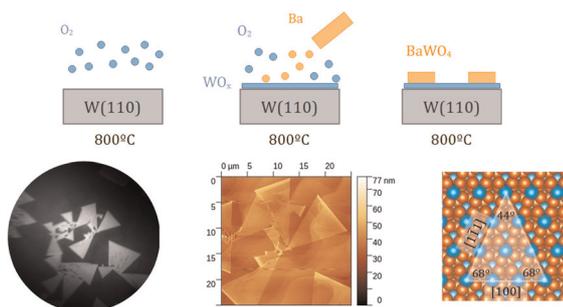
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Quasi-honeycomb graphene architectures enabling geometry-adaptive thermal regulation for high-density electronics

Qiang Zhao, Ying Wang, Xiang Zheng, Xianzhen Cai, Jingze Li, Yongqi Zhang* and Xinhui Xia*

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High-temperature oxygen-assisted molecular beam epitaxy of BaWO_4 on $\text{W}(110)$: growth mechanism and structural characterization

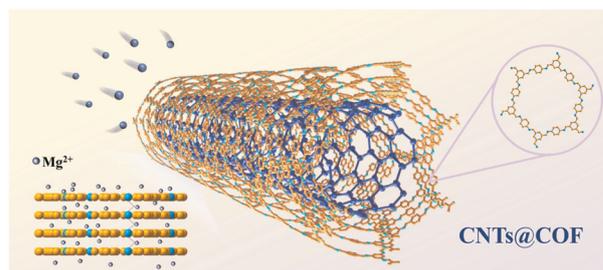
Clara Gutiérrez-Cuesta,* Víctor Rojo, José Emilio Prieto, Anna Mandziak, Pawel Nita, Adolfo del Campo, Natalia Kwiatek-Maroszek, Iulia Cojocariu, Marcin Szpytma, Giovanni Fevola, Arantzazu Mascaraque, José F. Marco, Tevfik Onur Menteş, Andrea Locatelli, Adrián Quesada and Juan de la Figuera



1627

Unlocking Mg^{2+} storage in imine-functionalized CNTs@COF hybrids: role of *in situ* coatings in enhancing magnesium battery performance

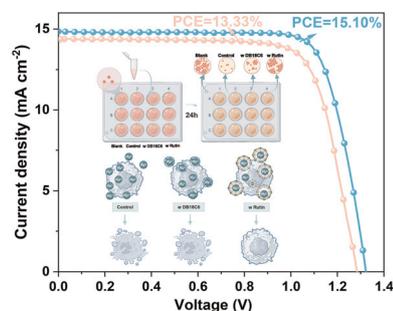
Xiangming Wang, Yang Zhao, Han Qin, Feng Yan,*
Tao An, Weimin Liu, Yu Su and Xianbo Yu*



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Alleviating perovskite toxicity and inhibition of lead leakage for sustainable perovskite solar cells

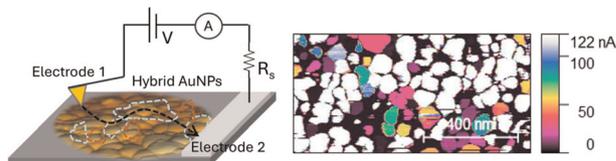
Xingxing Duan, Li Li, Quan Zhou, Jinyue Zhang,
Xianrong Zhang, Zhen Wang,* Qunwei Tang* and
Jialong Duan*



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Local networks of electrical conductance in hybrid gold nanoparticle–polymer films

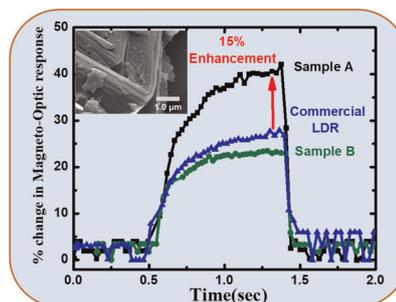
Sukanya Das, Michael A. H. Klos, Tobias Kraus and
Roland Bennewitz*



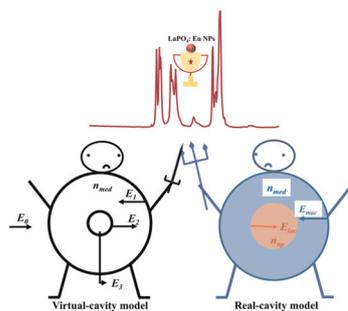
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Development of magneto-optic sensors in the ultra-violet region employing graphene quantum architectures

Rajib Mahato, Maruthi Mala and Anagh Bhaumik*



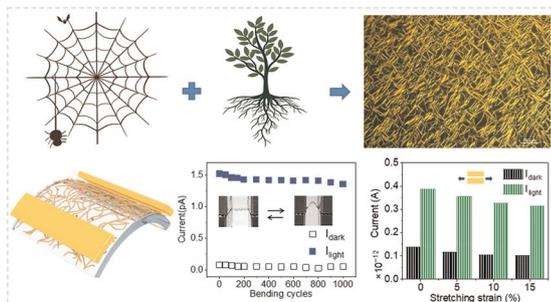
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Medium matters: modeling the luminescence spectra and emission decay of $\text{LaPO}_4:\text{Eu}^{3+}$ nanoparticles

Daiwen Xiao, Ka-Leung Wong* and Peter A. Tanner*

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High-adhesion stretchable organic single-crystal photoelectric thin films

Shao-Hua Wang, Xiao-Xiao Lu, Min Xu, Meng-Na Yu, Xue-Mei Dong, Fa Zhang, Yin-Xiang Li* and Ju-Qing Liu

