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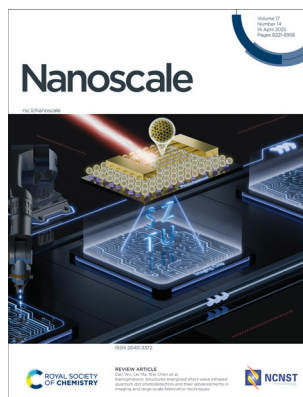


Cover

See Filip Strubbe *et al.*, pp. 8496–8504.

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Inside cover

See Dan Wu, Lei Ma, Wei Chen *et al.*, pp. 8239–8269.

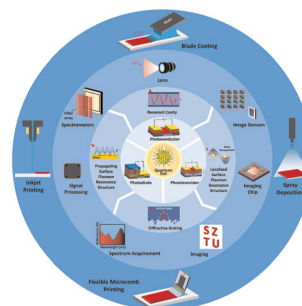
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REVIEWS

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Nanophotonic structures energized short-wave infrared quantum dot photodetectors and their advancements in imaging and large-scale fabrication techniques

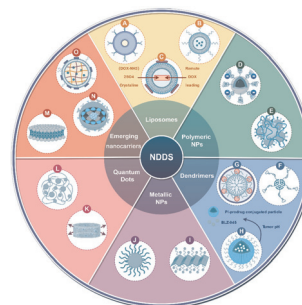
Dan Wu,* Genghao Xu, Jing Tan, Xiao Wang, Yilan Zhang, Lei Ma,* Wei Chen* and Kai Wang



8270

Nanoparticle-based drug delivery systems: opportunities and challenges in the treatment of esophageal squamous cell carcinoma (ESCC)

Linjia Peng, Zixuan Gao, Yanfeng Liang, Xiaonan Guo, Qiuli Zhang and Daxiang Cui*



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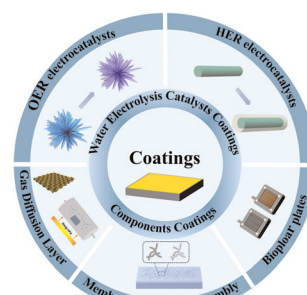
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REVIEWS

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Application of functional coatings in water electrolyzers and fuel cells

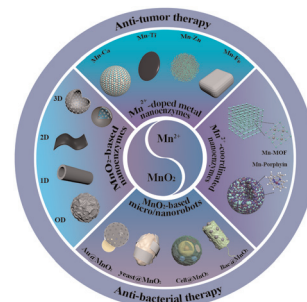
Jiaxin Zhou, Fangwang Ming* and Hanfeng Liang*



8301

Manganese-based nanoenzymes: from catalytic chemistry to design principle and antitumor/antibacterial therapy

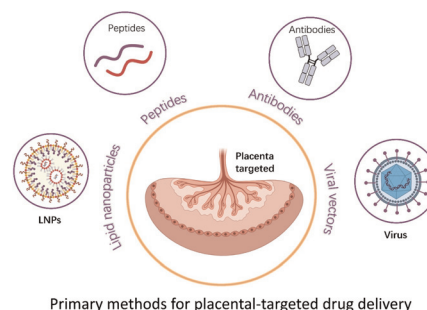
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Placental targeted drug delivery: a review of recent progress

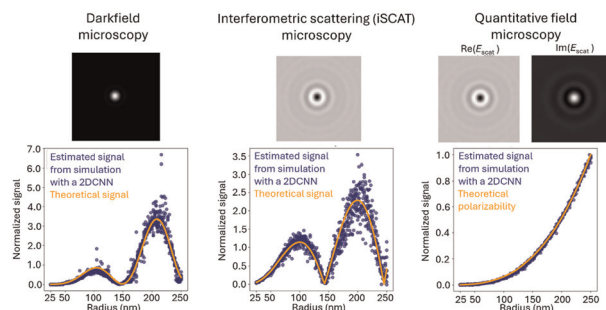
Linjian Wang, Qiuqiu Mu, Wenjing Zhang, Wei-qian Zheng, Xiaojun Zhu, Ying Yu, YuPeng Wang, Wenli Xu, Zhimin Lu* and Xiujun Han*



8336

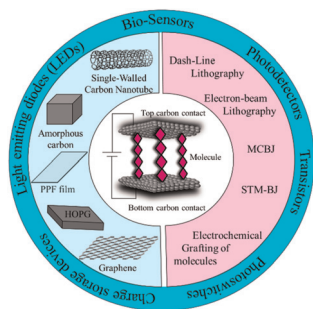
Optical label-free microscopy characterization of dielectric nanoparticles

Berenice García Rodríguez, Erik Olsén,* Fredrik Skärberg, Giovanni Volpe, Fredrik Höök and Daniel Sundås Midtvedt*



REVIEWS

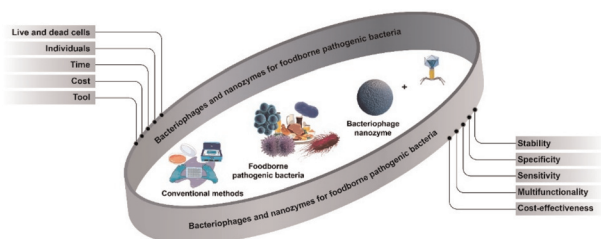
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Harnessing carbon electrodes in molecular junctions: progress and challenges in device engineering

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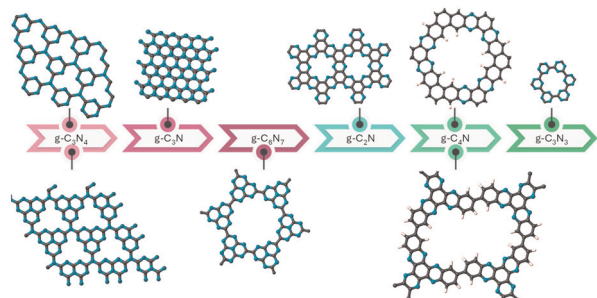
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Synergistic effect between bacteriophages and nanozymes for hybrid dual recognition of pathogenic bacteria from water, food, and agricultural samples: promising new tools for sensitive and specific biosensing

Chou-Yi Hsu, Sofiene Mansouri,* Jasur Rizaev,* Gaurav Sanghvi, Dmitry Olegovich Bokov, Jaswinder Kaur, Indu Sharma, Pranchal Rajput, Yasser Fakri Mustafa and Layth Hussein

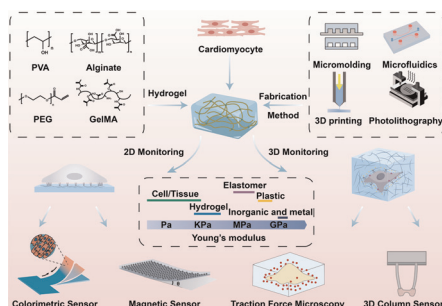
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The effects of bandgap and porosity on catalysis and materials characteristics of layered carbon nitrides

Esmail Doustkhah

8436



Hydrogel sensing platforms for monitoring contractility in *in vitro* cardiac models

Junxiu Lu, Xiatong Pan, Wenhong Zhang,* Junlei Han, Jun Chen, Ming Song, Chonghai Xu, Xinyu Li, Jing Wang and Li Wang*

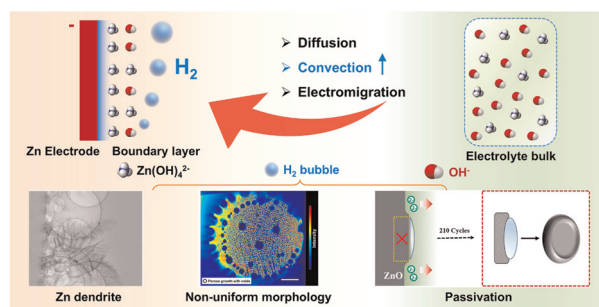


MINIREVIEW

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Hydrogen bubble evolution and its induced mass transfer on zinc electrodes in alkaline and neutral media

Yi He, Yongfu Liu, Wenxu Shang* and Peng Tan*

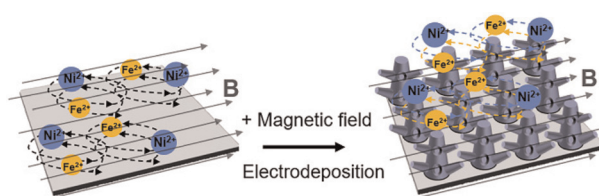


COMMUNICATIONS

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Lorentz force-assisted growth of romanesco-like Ni–Fe nano-cone arrays for enhanced oxygen evolution reaction at high current densities

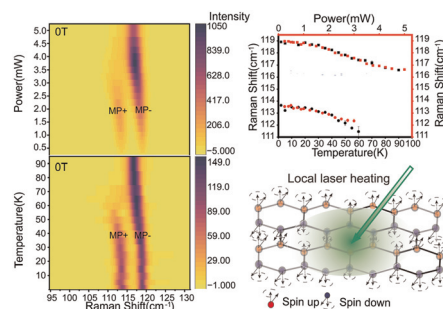
Hongjie Liu, Yunyi Jia, Shunhang Hua, Jingjing Weng, Lumeng Wang and Cheng Yang*



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Strong and reciprocal magneto-phonon effects in a 2D antiferromagnetic semiconductor FePSe_3

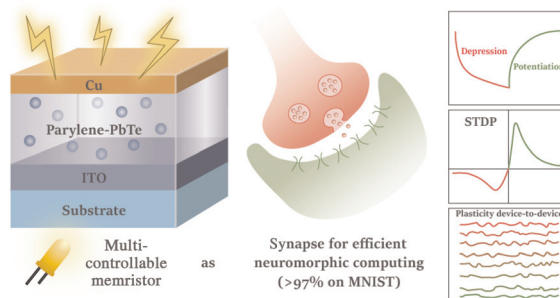
Yue Sun, Bo Liu, Chee Kwan Gan, Shian Xia, Haoyun Lin, Sheng Liu* and Ting Yu*



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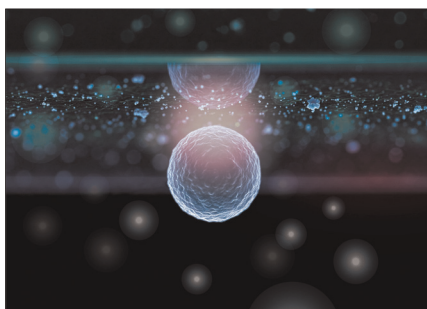
Photosensitive resistive switching in parylene–PbTe nanocomposite memristors for neuromorphic computing

Andrey D. Trofimov, Andrey V. Emelyanov,* Anna N. Matsukatova, Alexander A. Nesmelov, Sergey A. Zavyalov, Timofey D. Patsaev, Pavel A. Forsh, Gang Liu, Vladimir V. Rylkov and Vyacheslav A. Demin



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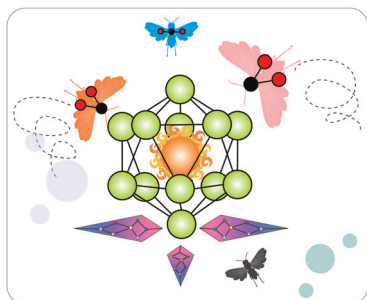
8496



Axial electrokinetic trapping of label-free nanoparticles using evanescent field scattering

Yera Ussembayev, Farshad Rezakhanloo, Kristiaan Neyts and Filip Strubbe*

8505

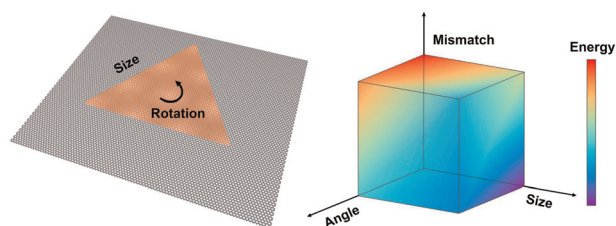


Activation and electrochemical reduction of carbon dioxide by transition metal atom-doped copper clusters

Manish Kumar Mohanta and Puru Jena*

8515

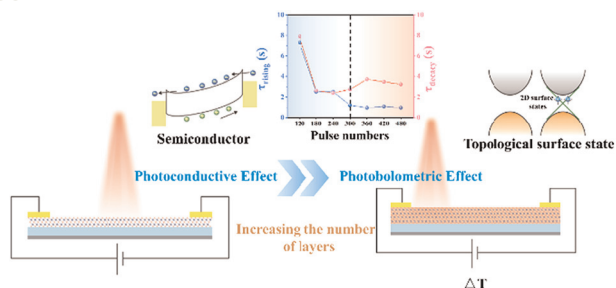
Universal scaling law



Universal scaling laws on the rotational energy landscape for twisted van der Waals bilayers

Zichong Zhang and Shuze Zhu*

8524



Unraveling the infrared detection properties of Bi_2Te_3 depending on thickness under the semiconductor and metal surface states

Qijun Kao, Yongfeng Jia, Zhihao Wu, Zhangxinyu Zhou, Xun Ge, Jian Peng, Piotr Martyniuk, Jin Wang,* Chuanbin Wang* and Fang Wang*

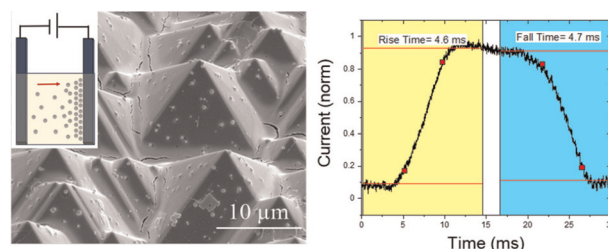


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Single-step, conformal, and efficient assembly of ligand-exchanged quantum dots for optoelectronic devices *via* an electric field

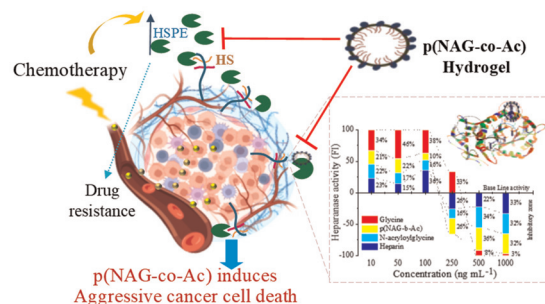
Xiaojie Xu,* Tom Nakotte,* Bret N. Flanders, Jenny Zhou and Christine A. Orme*



8544

Poly[(*N*-acryloyl glycine)-*co*-(acrylamide)]-induced cell growth inhibition in heparanase-driven malignancies

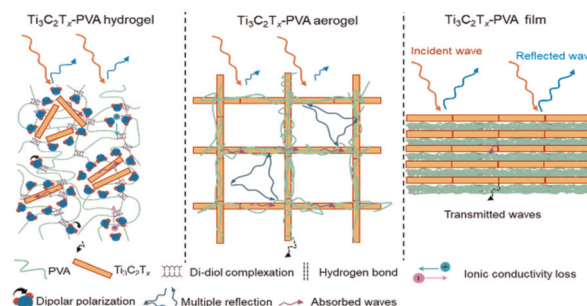
Kirti Wasnik, Gurmeet Singh, Desh Deepak Yadav, Sukanya Patra, Prem S. Gupta, Alagu Oviya, Sandeep Kumar, Divya Pareek and Pradip Paik*



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Comparative electromagnetic shielding performance of $\text{Ti}_3\text{C}_2\text{T}_x$ -PVA composites in various structural forms: compact films, hydrogels, and aerogels

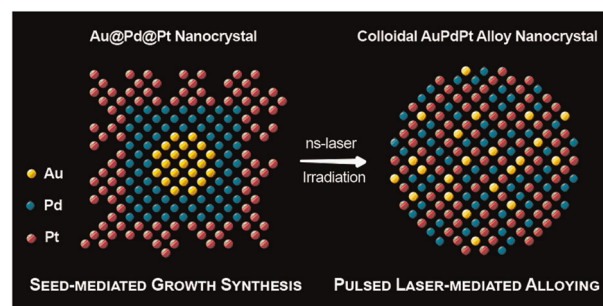
Shabbir Madad Naqvi, Tufail Hassan, Aamir Iqbal, Shakir Zaman, Sooyeong Cho, Noushad Hussain, Xiangmeng Kong, Zubair Khalid, Zhiwang Hao and Chong Min Koo*



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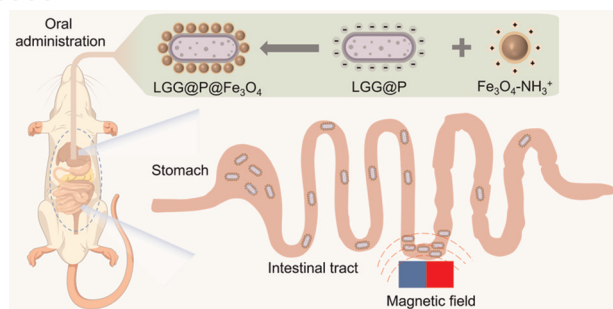
Colloidal gold-palladium-platinum alloy nanospheres with tunable compositions and defined numbers of atoms

Sergio Triviño-Sánchez, Ren Xu, Jesús González-Izquierdo, Luis Bañares, Israel Cano, Jorge Pérez-Juste, Andrés Guerrero-Martínez* and Guillermo González-Rubio*



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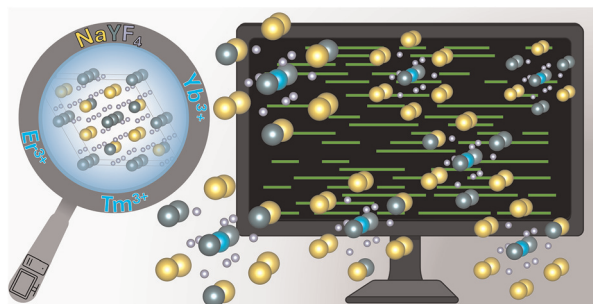
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Magnetically targeted delivery of probiotics for controlled residence and accumulation in the intestine

Hanye Xing, Xingyu Liu, Ju Wang,* Tao Zhou, Xiangxiang Jin, Rui Qiu, Yang Lu, Changhong Liu* and Yonghong Song*

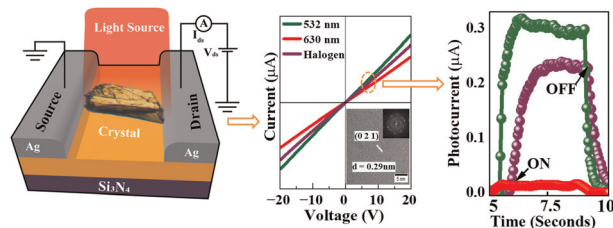
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The true atomistic structure of a disordered crystal: a computational study on the photon upconverting material β -NaYF₄ and its Er³⁺, Tm³⁺, and Yb³⁺-doped derivatives

Chris Steve Conrad, Holger Euchner, Eva Hemmer* and Reinhold F. Fink*

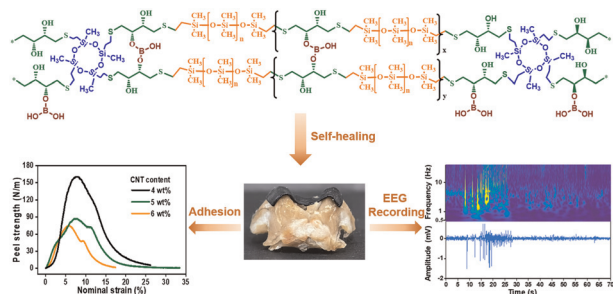
8614



Investigating the visible range photoresponse of an organic single-crystal analogue of the green fluorescent protein

Vishal Virole, Niteen Dabke, Sahil Verma, Ajay Kumar, Rinu Pandya, Sudhir Husale, Kumar Vanka, Rajesh Gonnade and Rajesh Kanawade*

8624



Self-healing and highly adhesive conductive polydimethylsiloxane-based elastomers for chronic epilepsy monitoring

Miao Tang, Ke Lei, Xingying Zhao, Xifeiling Hu, Quansheng He, Ke Zhang, Xianhui Ma, Hualiang Ni, Yousheng Shu and Zili Li*

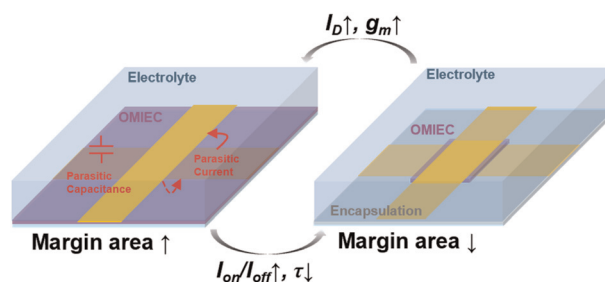


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Effect of channel patterning precision on the performances of vertical OECTs

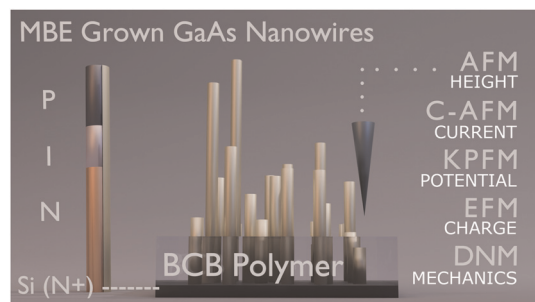
Ruhua Wu, Chufeng Wu, Jinhao Zhou, Liang-Wen Feng, Jianhua Chen, Dan Zhao* and Wei Huang*



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Atomic force microscopy as a multimetrological platform for energy devices

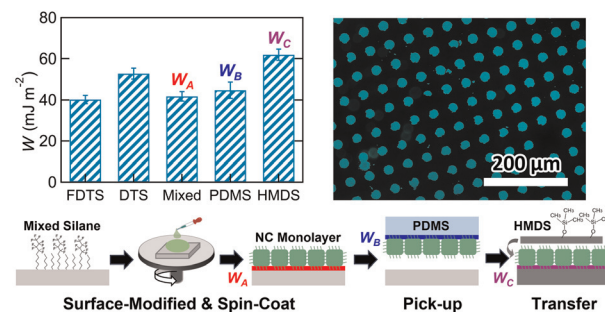
Hüsni Aslan,* Khaled Kaja, José Morán-Meza, François Piquemal, José Alvarez, Nicolas Chauvin, José Penuelas, Steffan Møller Sønderskov and Philippe Regreny



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Transfer printing of perovskite nanocrystal self-assembled monolayers via controlled surface wettability

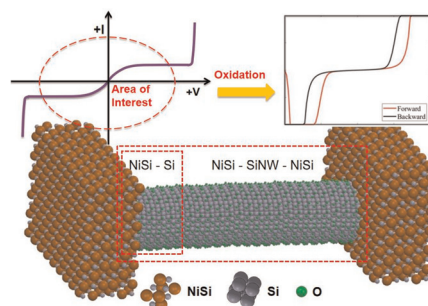
Yuto Kajino,* Yuta Tanaka, Yukiko Aida, Yusuke Arima and Kaoru Tamada*

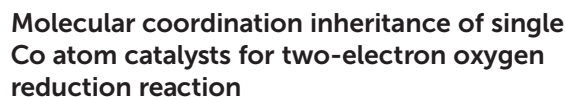


8660

Role of the oxide in memristive quasi-1D silicon nanowires

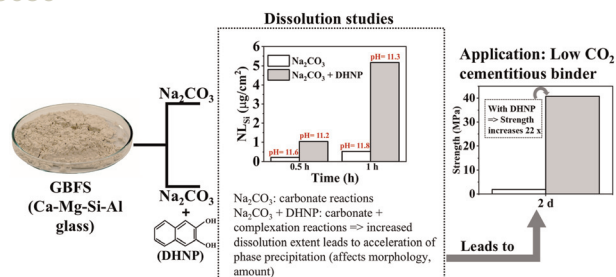
Junrui Chen,* Kapil Bhardwaj and Sandro Carrara





Qianqian Qin, Mengxue Huang, Chaoqi Han, Xue Jing,
Wenwen Shi,* Ruiming Ding* and Xi Yin*

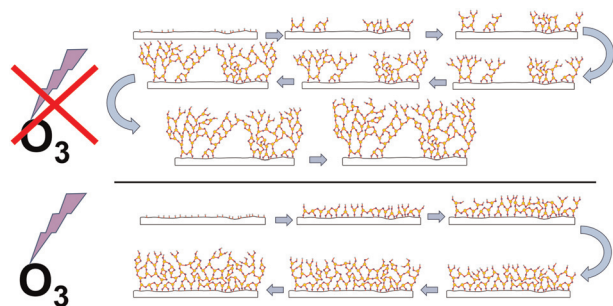
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Dissolution–precipitation reactions of blast furnace slag and sodium carbonate with 2,3-dihydroxynaphthalene

Rajeswari Ramaswamy and Juho Yliniemi*

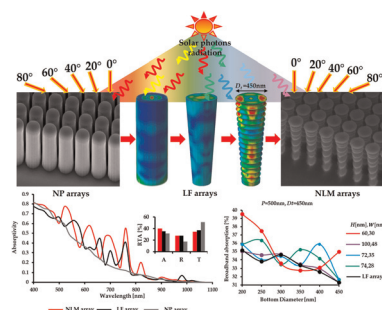
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UV-ozone surface pretreatment for high quality ALD-grown ultrathin coatings on bismuth oxyhalide photocatalysts

Nitai Arbell, Shakked Regev and Yaron Paz*

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Arrays of nano-light-mixers for enhanced broadband and omnidirectional absorption of solar radiation for solar energy technologies

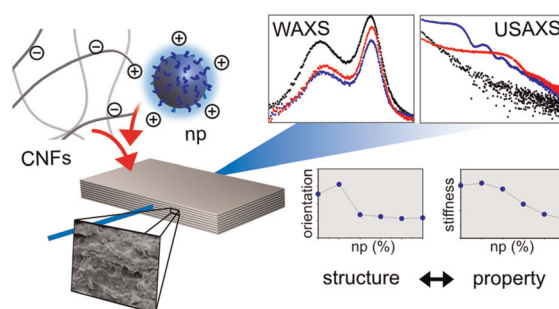
Ankit Kumar, Erez Golan, Nadav Aharon and Gil Shalev*

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Decoding in-plane orientation in cellulose nanopapers hybridized with tailored polymeric nanoparticles

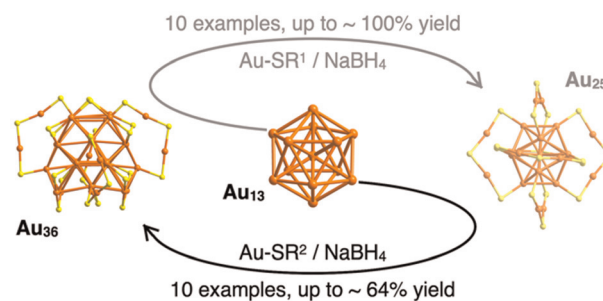
Åsa Jerlhagen, Korneliya Gordeyeva, Martina Cattaruzza, Louise Brandt, Benedikt Sochor, Sarathlal Koyiloth Vayalil, Stephan V. Roth, Lars Wågberg and Eva Malmström*



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Efficient synthesis of $\text{Au}_{36}(\text{SR})_{24}$ nanoclusters via the cluster-from-cluster approach

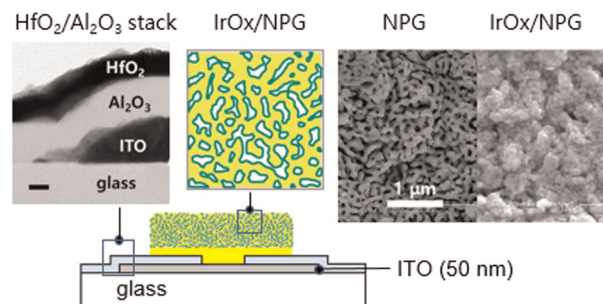
Yan-Yan Lin, Zi-Ang Nan, Zhen Lei* and Quan-Ming Wang*



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In vitro recording and stimulation performance of multi-electrode arrays passivated with plasma-enhanced atomic layer-deposited metal oxides

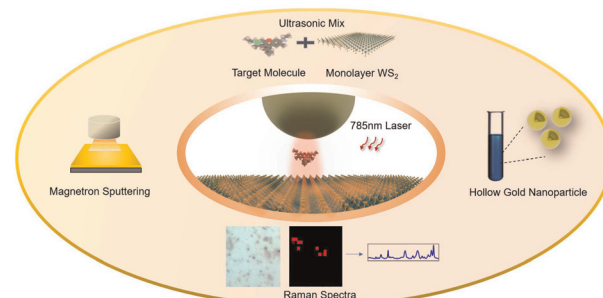
Yong Hee Kim, Jaehee Lee, Jung Wook Lim, Kukjoo Kim, Dae Hyun Ahn, Congqi Yang, Seongjun Park, Min Sun Kim and Sang-Don Jung*



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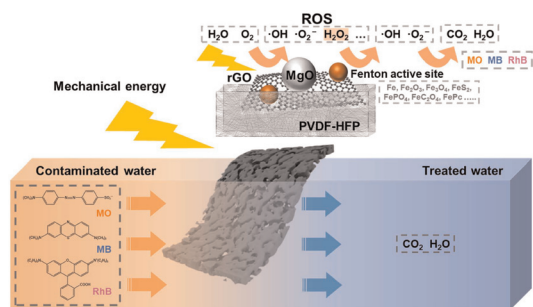
Hollow Au nanoparticles for single-molecule Raman spectroscopy via a synergistic electromagnetic and chemical enhancement strategy

Zihan Gao, Haiyao Yang, Jianzhi Zhang, Jie Yang, Lihong Hong* and Zhi-Yuan Li*



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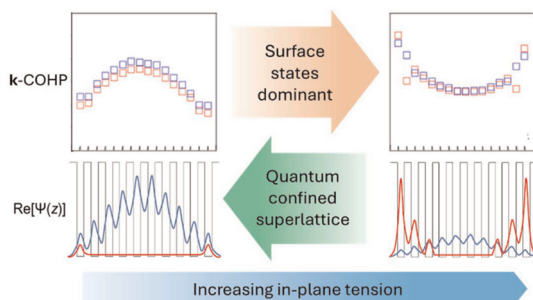
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Rationalizing high-entropy catalytic self-Fenton pollutant degradation from an effective porous piezoelectric composite film

Jiahui Cai, Feng Han,* Dan Tian, Xinnan Li, Jialin Zhuang, Yunfan Chen and Qi An*

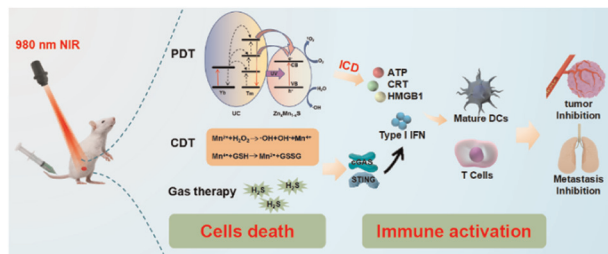
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Tuning the electronic properties of ZnO nanofilms via strain-induced structural phase transformations and quantum confinement

Raul Morales-Salvador, Ilker Demiroglu, Francesc Viñes and Stefan T. Bromley*

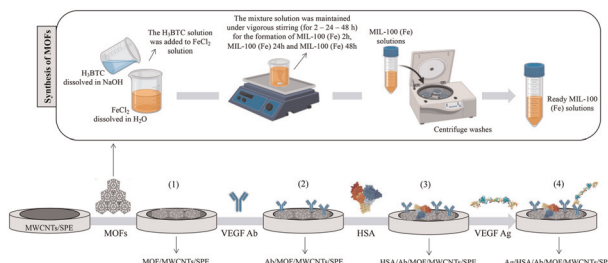
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NIR light activates upconverting nanoparticles/ Zn_xMn_{1-x}S core-shell nanoparticles for improved breast cancer treatment

Guoqiang Zhang, Yechun Jiang, Weinan Zhang, Lingling Kan, Jiangwei Sun, Lingling Xu,* Haisheng Qian* and Jianan Sun*

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An ecofriendly iron MOF-based immunosensor for sensitive detection of vascular endothelial growth factor in the serum of cancer patients

Ilaria Grazia Zizzari, Valeria Gigli, Tommaso Gentili, Cristina Tortolini, Alessandro Latini, Aurelia Rugghetti, Maria Chiara di Gregorio, Andrea Isidori, Marianna Nuti and Riccarda Antiochia*

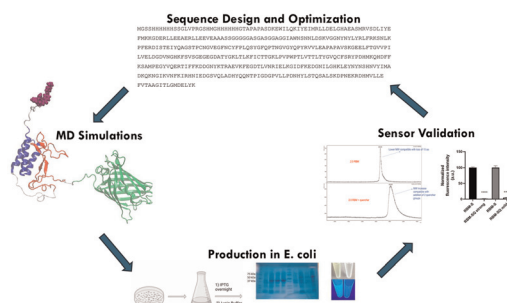


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An intramolecular FRET biosensor for the detection of SARS-CoV-2 in biological fluids

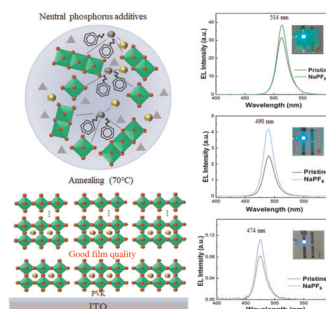
Daniele Montepietra, Lorenzo Germelli, Laura Marchetti,*
Valentina Tozzini, Elisa Angeloni, Chiara Giacomelli,
Barbara Storti, Ranieri Bizzarri, Elisabetta Barresi,
Sabrina Taliani, Giorgia Brancolini* and
Eleonora Da Pozzo



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Neutral inorganic salt additives universally regulate multicolor perovskites for efficient electroluminescence

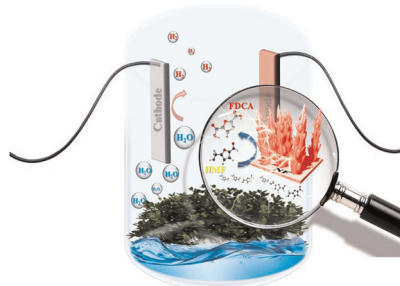
Jiahao Tang, Qunqing Lin, Yashuang Guo, Zailan Zhang,*
Xinyi Lv, Kun Zhang, Binbin Fan, Maria A. Sandzhieva,
Sergey V. Makarov, Zhesheng Chen, Hengyang Xiang*
and Haibo Zeng*



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Bimetallic Fe(OH)_x@Co_{0.8}Fe_{0.2}-MOF/NF composites as effective electrocatalysts for the production of 2,5-furandicarboxylic acid from 5-hydroxymethylfurfural

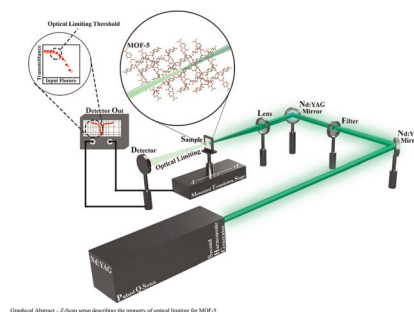
Mehran Nozari-Asbemar, Simin Arshi, Behnam Babaei,
Italo Pisano, Edmond Magner* and James J. Leahy*



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Synergistic effects of europium doping on MOF-5: exploring its photoluminescent and non-linear optical behaviour for enhanced optical limiting

Selva Boopalan A, Mani Rahulan K, Angeline Little
Flower N, A. Dhanusha, Sabari Girisun T C and
Annie Sujatha R*

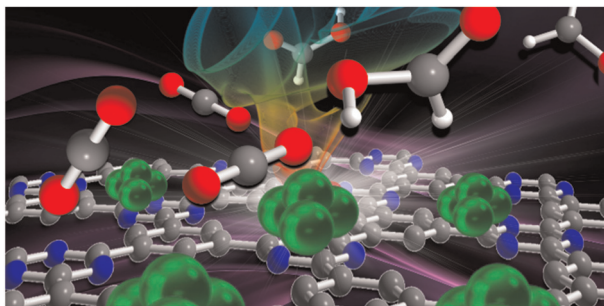


Graphical Abstract - Z-Scan setup describing the property of optical limiting for MOF-5



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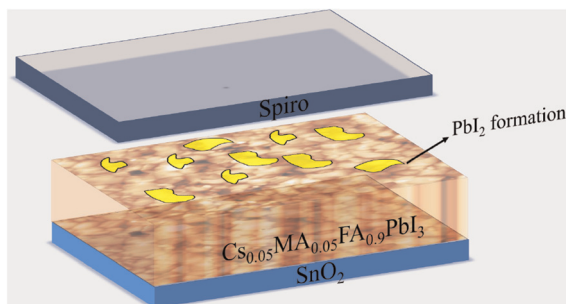
8850



Swapping CO₂ electro-reduction active sites on a nickel-based hybrid formed on a “guilty” covalent triazine framework

Giulia Tuci,* Miriam Moro, Andrea Rossin, Claudio Evangelisti, Lorenzo Poggini, Marco Etzi, Enrico Verlato, Francesco Paolucci, Yuefeng Liu, Giovanni Valenti* and Giuliano Giambastiani*

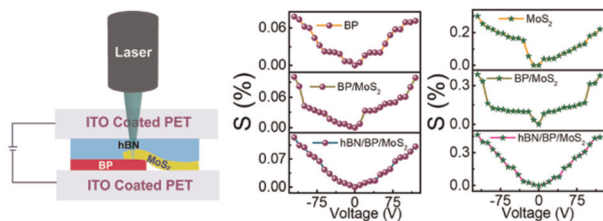
8861



Impact of processing atmosphere on nanoscale properties of highly efficient Cs_{0.05}MA_{0.05}FA_{0.9}PbI₃ perovskite solar cells

Muhammad Uzair Farooq, Sevan Gharabeiki, Ding Yong, Joana Ferreira Machado, Jean-Nicolas Audinot, Tom Wirtz, Mohammad Khaja Nazeeruddin, Susanne Sienbentritt and Alex Redinger*

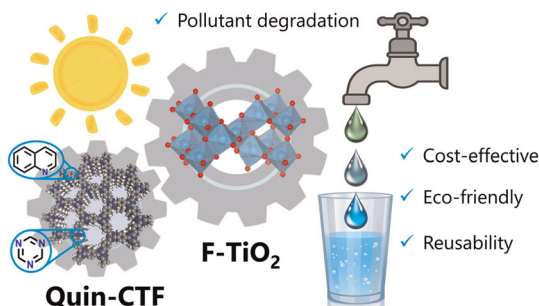
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Gate dielectric-induced lattice strain and band gap tuning in van der Waals 2D semiconducting channels

Manpreet Kaur, Km Neeshu, Jyoti Saini, Tapaswini Dash, Akash Kumar Maharana and Kiran S. Hazra*

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Enhancing photocatalytic performance of F-doped TiO₂ through the integration of small amounts of a quinoline-based covalent triazine framework

Alicia Moya, Miguel Sánchez-Fuente, Marta Linde, Víctor Cepa-López, Isabel del Hierro, Miguel Díaz-Sánchez,* Santiago Gómez-Ruiz* and Rubén Mas-Ballesté*

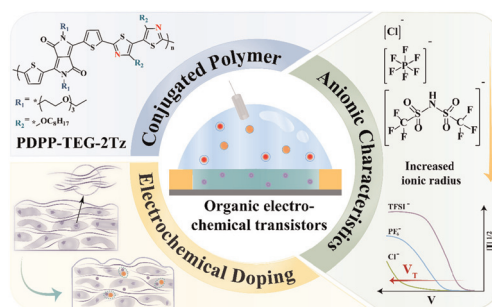


PAPERS

8892

Organic electrochemical transistors based on a conjugated diketopyrrolopyrrole-dialkoxybithiazole copolymer

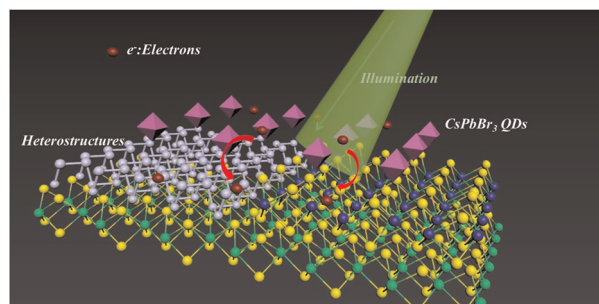
Zilan Chen, Xiaowei Zhao, Chengdong Wang, Wenxin Fang, Gang Ye,* Lichuan Chen, Junyu Li and Yanxi Zhang*



8901

High-performance optoelectronics enabled by synergistic integration of 2D heterostructures with perovskite quantum dots

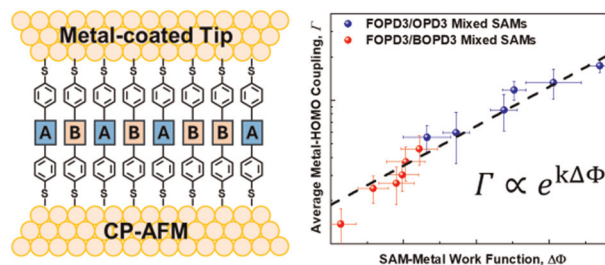
Xinli Ma, Linlin Wang, Xuyang Huang, Mariano Mahissi, Jing Jin, Yang Bai, Huanqing Zou, Shengli Fan and Weiming Cai*



8912

Molecular tunnel junctions based on mixed SAMs: exponential correlation of the average metal–HOMO coupling with SAM/metal work function

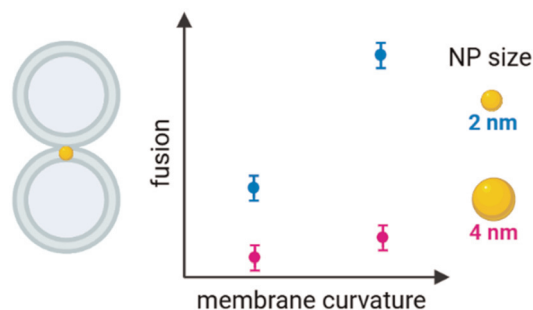
Gookyong Jeong and C. Daniel Frisbie*



8923

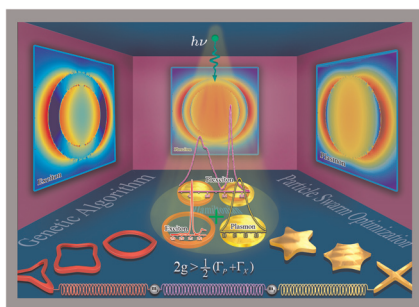
Physical determinants of nanoparticle-mediated lipid membrane fusion

Beatrice Leonardini, Davide Bochicchio, Paolo Volpe, Francesco Stellacci, Silvia Dante, Ester Canepa,* Giulia Rossi* and Annalisa Relini



PAPERS

8933



Mapping of multiple plexcitons in disk supershape hybrid nanoparticles

Emadoddin Yaghooti, Ferydon Babaei* and Renming Liu

CORRECTIONS

8951

Correction: DNA conductance modulation via aptamer binding

Hashem Mohammad,* Lina Alsaleh, Abrar Alotaibi, Olaiyan Alolaiyan, Taisei Takahashi, M. P. Anantram and Tomoaki Nishino

8952

Correction: Nano-spherical tip-based smoothing with minimal damage for 2D van der Waals heterostructures

Xiaolei Ding, Baoshi Qiao, Paul C. Uzoma, Muhammad Abid Anwar, Yuxuan Chen, Lansheng Zhang, Yang Xu* and Huan Hu*

8954

Correction: Starvation induces diffusion hindrance at the nanoscale in mammalian cells

Sakshi Sareen, Alicja Zgorzelska, Karina Kwapiszewska* and Robert Hołyst*

