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Cover
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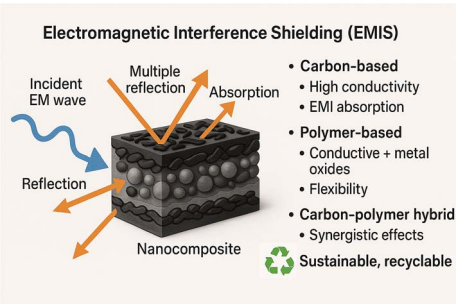
REVIEWS

4510

Electromagnetic interference shielding: a comprehensive review of materials, mechanisms, and applications

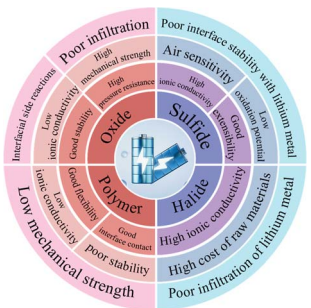
Hareesh M. S., Praveen Joseph and Sumesh George*



4535

A review of interface optimization strategies for solid electrolytes and anode materials

Dandan Wang, Xinyang Wu, Yongpeng Ren,* Yaru Li,* Xiaolin Xie, Xiqiang Ma, Ihar Razanau, Xuemin Chen, Junhao Lu and Kunming Pan



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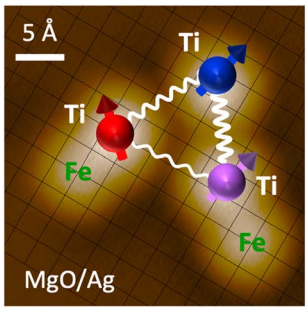
REVIEWS

4551

Electron spin resonance with scanning tunneling microscopy: a tool for an on-surface quantum platform of identical qubits

Deung-Jang Choi,* Soo-hyon Phark, Andreas J. Heinrich and Nicolás Lorente

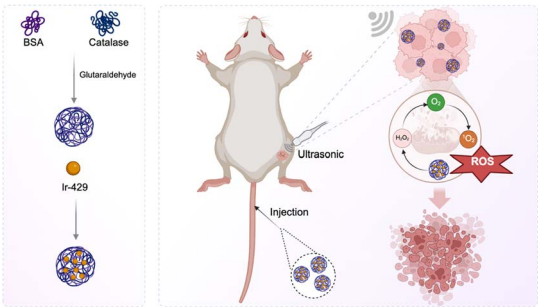


COMMUNICATION

4559

Engineering BSA-CAT-Ir nanoparticles for enhanced sonodynamic therapy *via* alleviating tumor hypoxia

Qiufang Gong, Lixuan Huo, Shiyi Xiong, Yingying Han, Xuefen Zhao, Lutong Wen, Jiaxi Ru, Hongyu Zhang, Fang Yang,* Guosheng Song* and Chao Liang*

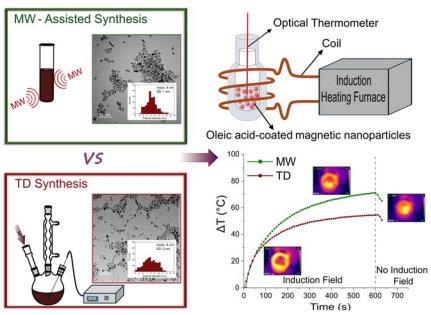


PAPERS

4563

Optimizing superparamagnetic ferrite nanoparticles: microwave-assisted *vs.* thermal decomposition synthesis methods

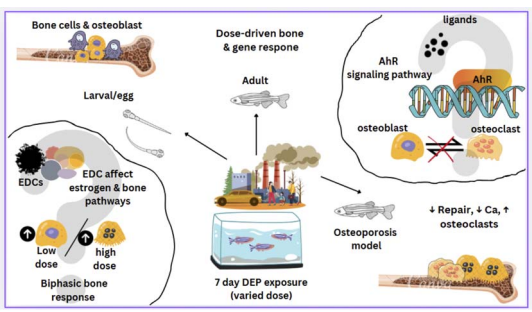
Kimia Moghaddari, Lars Schumacher, Rainer Pöttgen and Guido Kickelbick*



4577

Diesel exhaust particles modulate bone remodeling and worsen osteoporosis: *in vitro* and *in vivo* investigations

Vaishnavi N, Saravanan Sekaran, Renugaa Suresh babu, Swathi Sudhakar* and Selvaraj Vimalraj*



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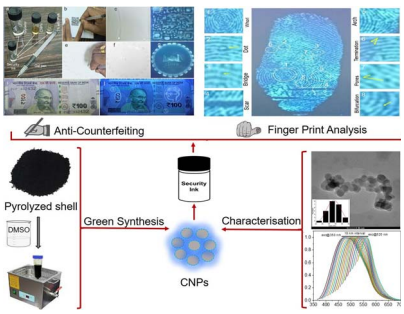
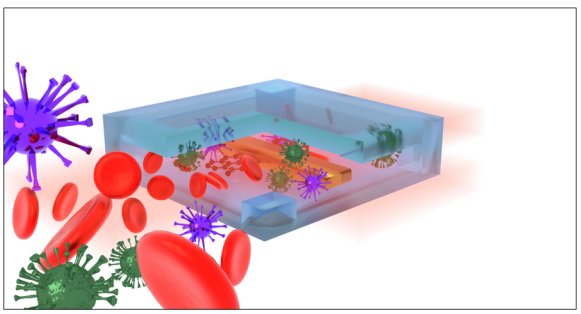


Development of cost-effective fluorescent carbon nanoparticles as security ink for anticounterfeiting and fingerprint visualization

Shiv Rag Mishra, Tuhin Mandal, Ashish Kumar Ghosh and Vikram Singh*

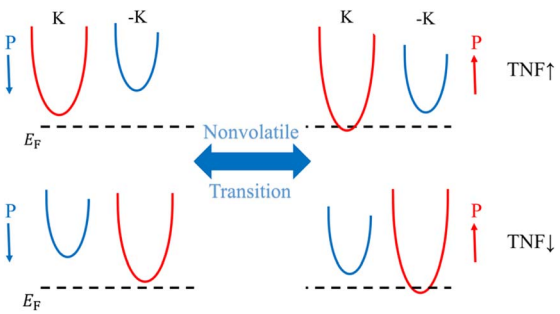
4600



Sensitive terahertz plasmonic metasurface biosensor integrated with microfluidics

Amir MoradiFotouhi and Mahdi Pourfath*

4610



Nonvolatile metal–semiconductor transition of a single valley in two-dimensional ferrovalley/ferroelectric van der Waals heterostructures

Jianrong Ye, Rongkun Chen, Hua Bai,* Shiqian Hu* and Chunhua Zeng*

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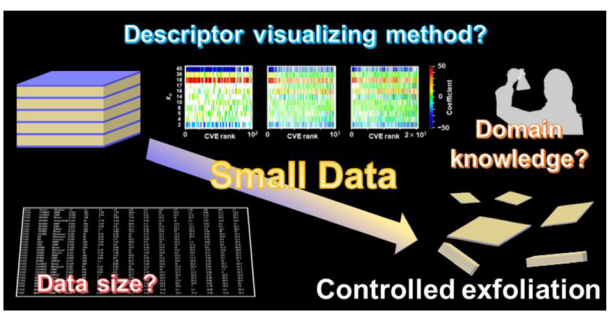

Data-scientific validation of prediction models for the controlled syntheses of exfoliated nanosheets

Yuka Kitamura, Yuki Namiuchi, Hiroaki Imai, Yasuhiko Igarashi* and Yuya Oaki*

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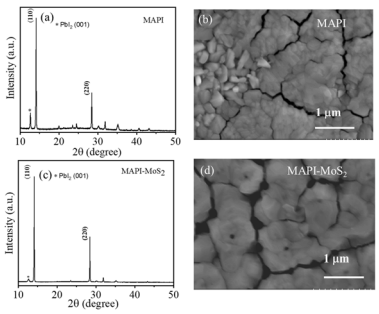
MAPI–MoS_2 quantum dot composite films as active layers for efficient photovoltaics

Subha Sadhu, Ankur Kambley, Talitha R. C. Santos, Abhijit Ganguly, Slavia Deeksha Dsouza, Dilli Babu Padmanaban, Pagona Papakonstantinou, Paul Maguire, Vladimir Svrcek and Davide Mariotti*



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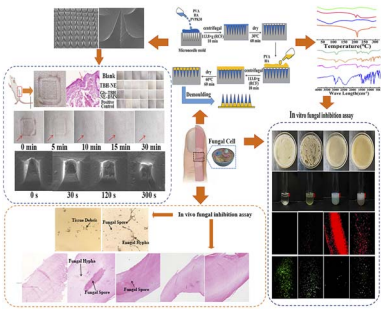
Experimental research on fungal inhibition using dissolving microneedles of terbinafine hydrochloride nanoemulsion for beta-1,3-glucanase

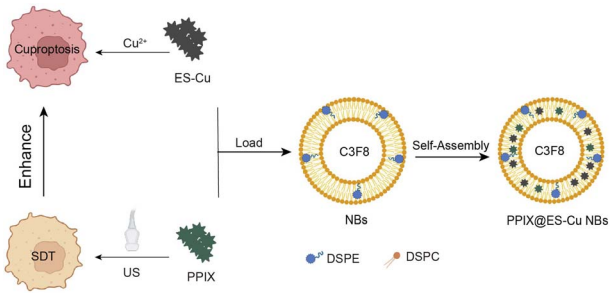
Huilin Wang, Yan Wang, Jianing Liu, Yonghua Qi, Weitong Sun, Hongbin Qiu,* Yu Zhang* and Yang Ping*



4651

Nanobubble-mediated sonodynamic therapy enhances cuproptosis in the treatment of hepatocellular carcinoma

Jiabao Ouyang,* Nan Li, Chunbo Liu and Yu Zhang



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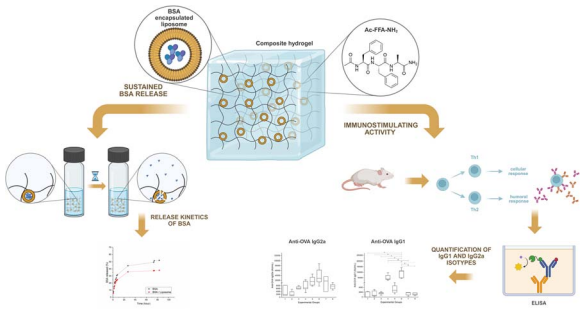
Self-assembled Ac-FFA-NH_2 based hydrogels with strong immunostimulating activity for vaccine delivery

Nika Gazdek Serdar, Tihomir Pospišil, Marcela Šišić, Ivo Crnolatac, Petra Maleš, Ruža Frkanec* and Leo Frkanec*



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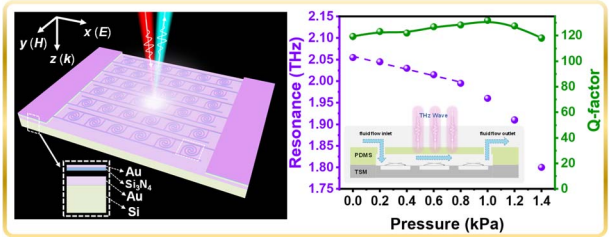

A microelectromechanical system-based terahertz spiral metamaterial for pneumatic pressure sensing applications

Binghui Li and Yu-Sheng Lin*

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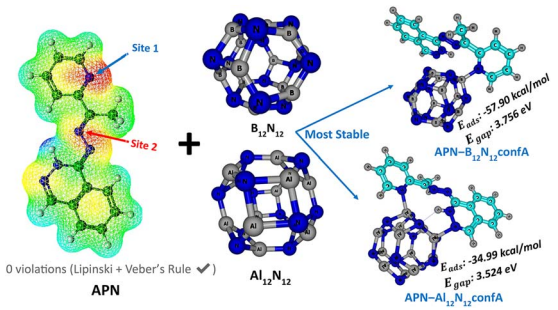

Assessing $B_{12}N_{12}$ and $Al_{12}N_{12}$ nanocages as potential vehicles for 1-(phthalazin-1(2*H*)-one)[(pyridin-2-yl) ethylidene]hydrazine, against onchocerciasis: a DFT study

Remi Nkeih Tamighang, Stanley Numbonui Tasheh,* Nyiang Kennet Nkungli, Godfred Ayimele Aponglen, Numbonui Angela Beri, Rajesh Haldhar* and Julius Numbonui Ghogomu*

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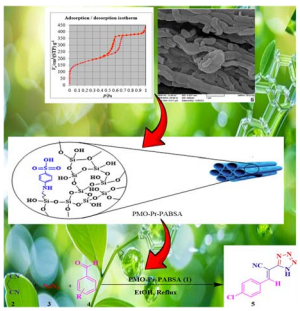

Periodic mesoporous organosilica functionalized with *p*-aminobenzenesulfonic acid: an efficient solid acid catalyst for one-pot synthesis of 5-substituted 1*H*-tetrazoles under eco-friendly conditions

Hamidreza Fanimoghadam, Mohammad G. Dekamin* and M. Reza Naimi-Jamal

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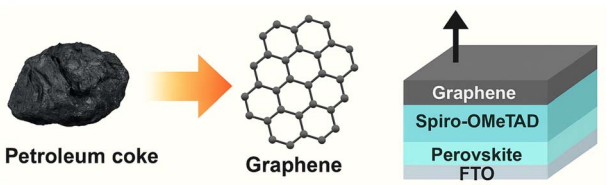

Petroleum coke-derived graphene as a low-cost electrode material for efficient perovskite solar cells

Masfar Alkhatani,* Mzoun M. Almutairi, Mariam H. Alalwan, Hawraa K. Algharash, Raghad A. Aldossary, Yahya A. Alzahrani, Sultan Alenzi, Ibtisam S. Almalki, Ghazal S. Yafi, Abdulmalik M. Alessa, Faisal S. Alghannam, Abdulaziz Aljuwayr, Nouf K. Al-Saleem,* Anwar Alanazi and Masaud Almalki

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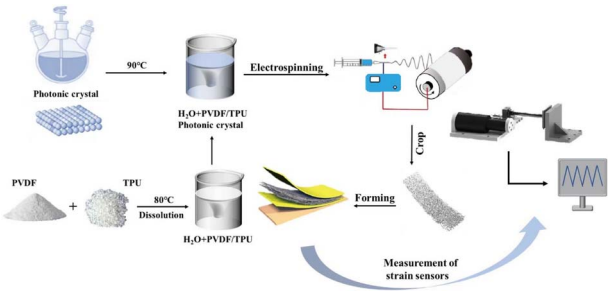
Study of the impact of photonic crystal additives on the piezoresponse of PVDF nanofibers

Qianqian Zhang, Neha Yadav, Yongling Wu,* Ashish Yadav* and Zheng Hongyu*



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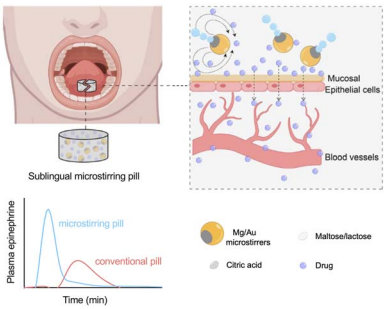
Sublingual microrobotic pills for rapid and efficient drug delivery

Nelly Askarinam, Chuanrui Chen, Vivian Vo, Michael Casares, Kyra Wu, Ethan Shen, Majd Iskandarani, Víctor de la Asunción-Nadal, An-Yi Chang, Tomohiro Yamamoto, Janna Sofia Sage-Sepulveda, Baha Öndeş, Zhenning Zhou, Zike Yan, Jesse Qualliotine* and Joseph Wang*



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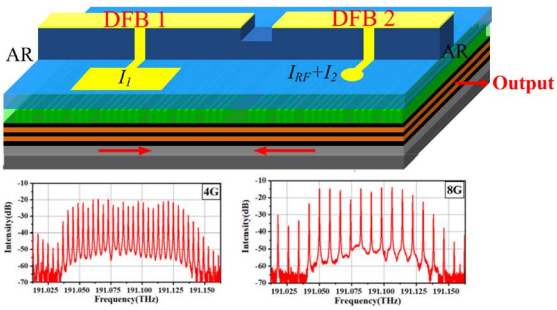
Generation of optical frequency combs in optically injected integrated gain-switched semiconductor lasers and their applications in Doppler LIDAR

Yunshan Zhang, Yibing Chen, Mengxi Zhou, Yitong Liu, Wenxuan Ma, Zeyu Gang, Zhenxing Sun, Jilin Zheng,* Xiangfei Chen and Pu Li*