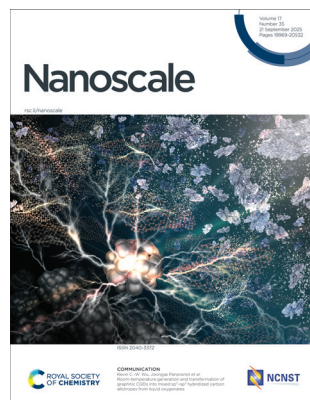


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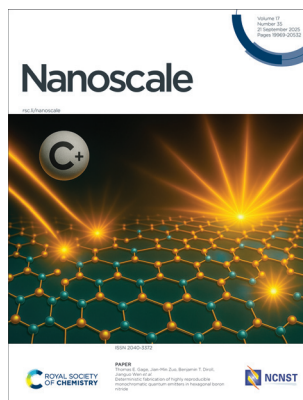
ISSN 2040-3372 CODEN NANOHL 17(35) 19969–20532 (2025)



Cover

See Kevin C.-W. Wu, Joongjai Panpranot *et al.*, pp. 20057–20073.

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Inside cover

See Thomas E. Gage, Jian-Min Zuo, Benjamin T. Diroll, Jianguo Wen *et al.*, pp. 20081–20088.

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EDITORIAL

19984

Introduction to Superwetting nanoelectrodes for renewable energy

Zuankai Wang, Alex Bell, Alberto Vomiero and Xiaoming Sun*

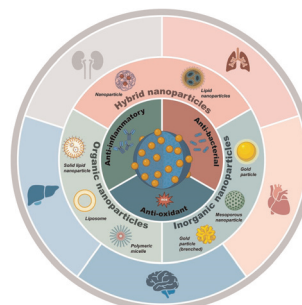


REVIEWS

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Neutrophil-targeted nanomedicine delivery systems: therapeutic applications and future perspectives in sepsis management

Huiyi Huang, Jingyan Wang, Lixia Mao, Jiahao Huang* and Liehua Deng*



Environmental Science: Atmospheres

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Fundamental questions
Elemental answers

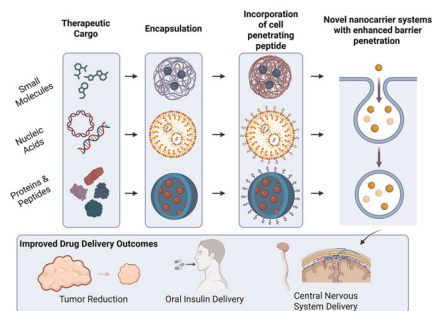


REVIEWS

20006

Cell-penetrating peptides as facilitators of cargo-specific nanocarrier-based drug delivery

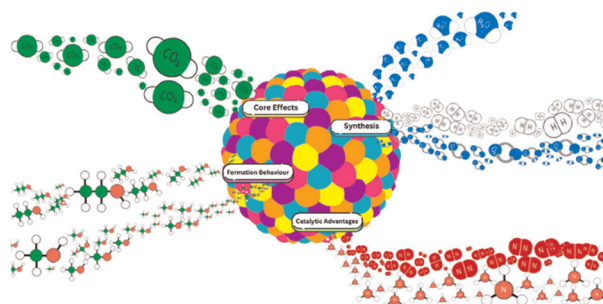
Ashleigh M. Jankowski, Matthew A. Ensign and Katharina Maisel*



20020

Synthesis of high-entropy alloys for electrocatalysis

Alexander Li, Nayla Qureshi and Vivek Maheshwari*

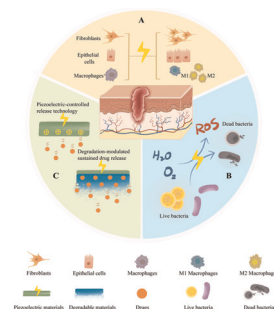


MINIREVIEW

20044

Integrating piezoelectric dressings with botanicals as emerging smart dressings for diabetic wound healing

Yaqi Yue, Ruodan Xu* and Ning Li*

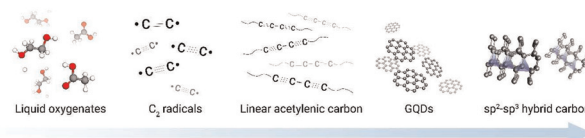


COMMUNICATIONS

20057

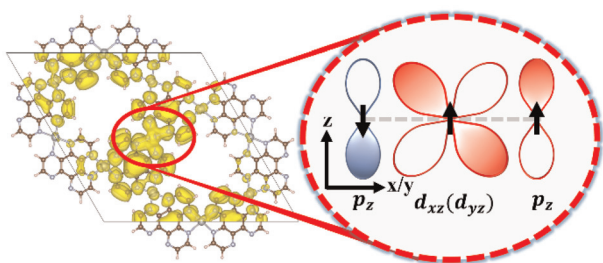
Room-temperature generation and transformation of graphitic CQDs into mixed sp^2 - sp^3 hybridized carbon allotropes from liquid oxygenates

Rungkiat Nganglumpoon, Krongkwan Poolboon, Pongpan Sitiputa, Piriya Pinthong, Chanon Pornrunroj, Petra Ágota Szilágyi, Yan Liu, Shibo Xi, Supareak Praserttham, Akkarach Sukserm, Udomsilp Pinsook, Kevin C.-W. Wu* and Joongjai Panpranot*



COMMUNICATIONS

20074

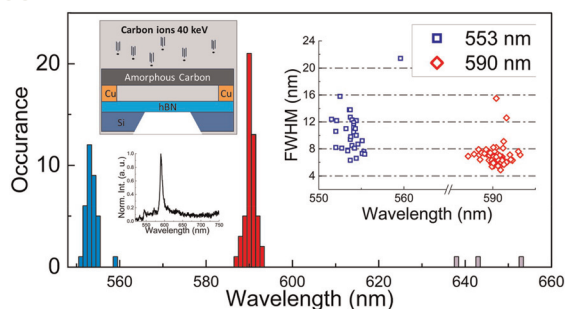


Variable π - d orbital hybridization in 2D transition metal-organic frameworks

Chengkun Lyu, Yuantao Chen, Muqing Hua, Songyu Mo, Yifan Gao, Xiaobo Wang, Li Huang* and Nian Lin*

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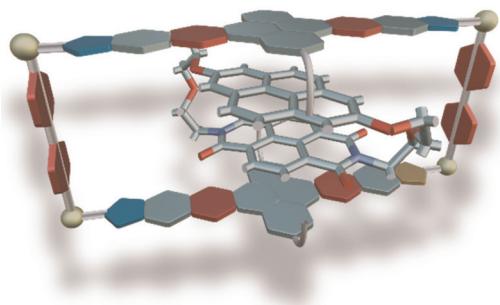
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Deterministic fabrication of highly reproducible monochromatic quantum emitters in hexagonal boron nitride

Muchuan Hua, Wei-Ying Chen, Hanyu Hou, Venkata Surya Chaitanya Kolluru, Maria K. Y. Chan, Haihua Liu, Thomas E. Gage,* Jian-Min Zuo,* Benjamin T. Diroll* and Jianguo Wen*

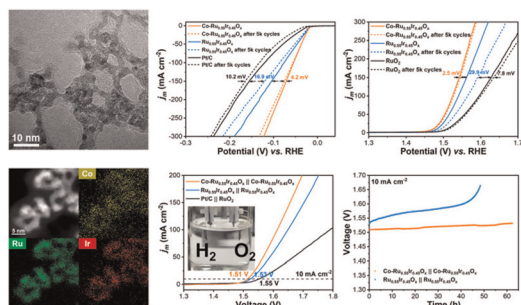
20089



A metallocupramolecular-based ring-in-ring complex showing reversible host-guest dynamics and switchable electrochemical properties

Joel Martínez-Visiedo, Susana Ibáñez,* Louise N. Dawe and Eduardo Peris*

20096



Co-doped RuIr nanoparticles for enhanced activity and stability in alkaline overall water splitting

Zhuofan Gan, Jingwen Cao, Zhixu Chen, Peixi Qiu, Jianguyun Bai, Chengyong Shu* and Wei Tang*

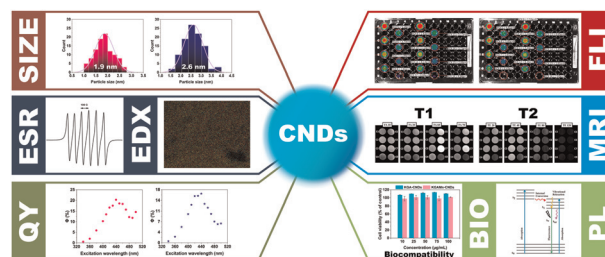


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20107

 α -Ketoglutaric acid-derived carbon nanodots doped with manganese as fluorescent and MRI contrast agents

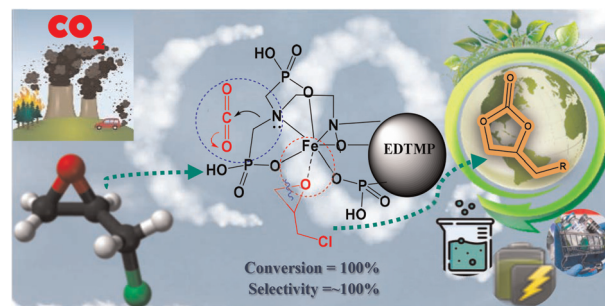
Ioana-Andreea Turin-Moleavin, Adina Coroaba, Adrian Fifere,* Narcisa Laura Marangoci, Mariana Pinteala, Cristina Mariana Uritu, Silviu Iulian Filipciuc, Marius Dobromir, Ionut Radu Tigoianu and Tudor Pinteala



20123

Nitrogen-rich nanoporous iron phosphonate as an acid–base bifunctional catalyst for efficient and selective CO₂ conversion without co-catalyst and solvent

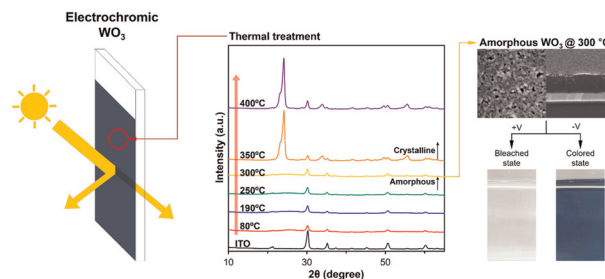
Naveen Beniwal, Nidhi Sharma, Sangeeta, Lovjeet Singh* and Pawan Rekha*



20135

Temperature-dependent electrochromic cycling performance of solution-processed WO₃ films

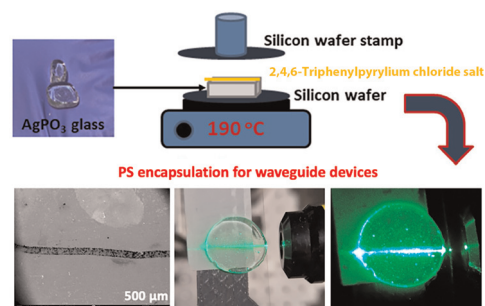
Hoon Kang, Gyung Hyun Kim, Sungho Kang, Tae Hoon Park, Kwanchul Kim, Hwan Kyu Kim* and Yekyung Kim*



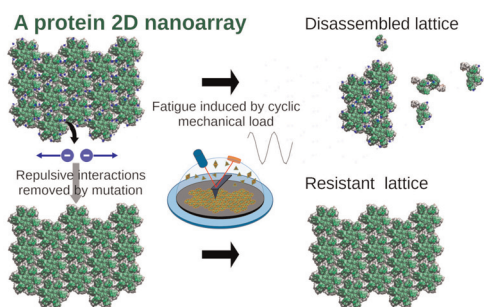
20148

Advanced optical waveguide design via encapsulation of 2,4,6-triphenylpyrylium chloride in oxide glasses

Eleni Agapaki, Ioannis Konidakis,* Egor Evlyukhin, Klytaimnitra Katsara, Georgios Kenanakis, David King, Haesook Han, Pradip K. Bhowmik and Emmanuel Stratakis*



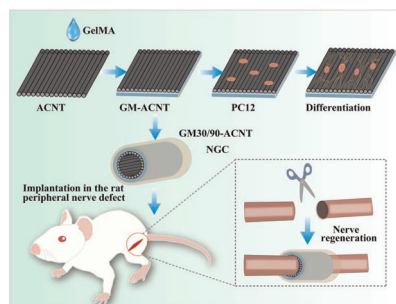
20157



Engineering mechanical strength and resistance to fatigue of a nanostructured protein material through genetic removal of electrostatic repulsions

Judith Escrig, Juan Carlos Gil-Redondo, Alejandro Valbuena* and Mauricio G. Mateu*

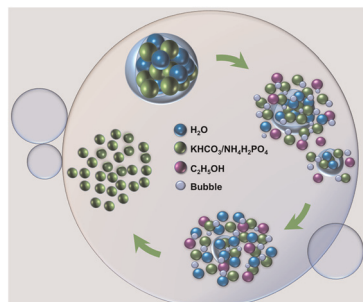
20169



Viscoelastic and conductive nerve guidance conduits for peripheral nerve repair

Haiyan Yin, Yangnan Hu,* Hong Cheng, Bin Zhang, Shan Gao, Xiangyu Ma, Shuwen Song, Wei Wang,* Hao Wu,* Chen Zhang* and Renjie Chai*

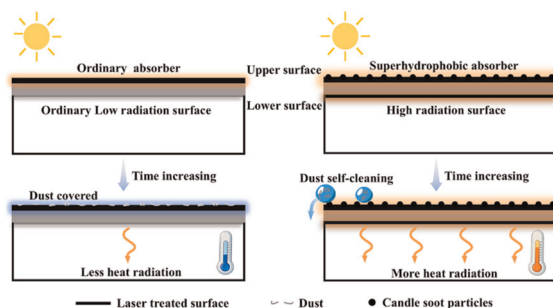
20178



Efficient and sustainable preparation of fine particles by a bubble-assisted freeze-dissolving method

Qitong Zhang, Jiaqi Luo, Yingchen Wang, Wenhao Yan, Mingting Yuan, Yimin Jia, Qiushuo Yu,* Xinyue Zhai, Yuan Zou and Huaiyu Yang*

20190



Efficient solar-to-thermal management on femtosecond laser composite fabrication of hierarchical Janus plates

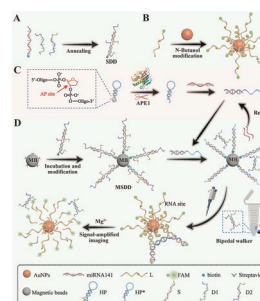
Shiqing Tang, Kai Yin,* Jianqiang Xiao, Haonan Yu, Xinghao Song, Yin Huang, Xin Deng and Hua Wang



20199

Sensitive detection of miRNA-141 using an endogenous dual-switch activated bipedal DNAzyme walker biosensor

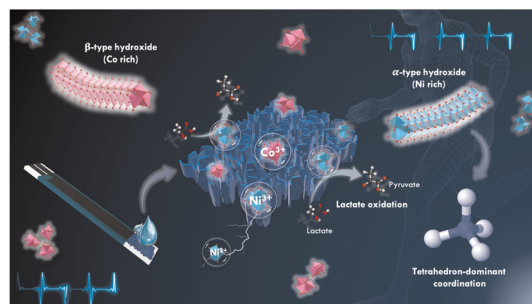
Beibei Zhang, Xinyi Wang, Min Pan, Xinhao Li, Hong Wang* and Yingwei Zhang*



20207

Fine-tuning the Ni/Co ratio to elucidate the coordination structure–activity relationship of MOF-derived bimetallic layered double hydroxides for highly sensitive enzyme-free lactate biosensors

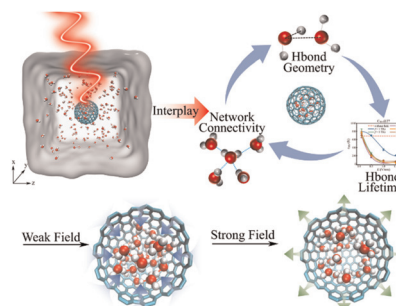
Yi-Ting Guo, Mia Rinawati, Ling-Yu Chang,* Chieh Li, Ching-Ju Ho, Ping-Chen Shi, Kuan-Jung Chen, Wei-Hsiang Huang, Hitoshi Mizuguchi and Min-Hsin Yeh*



20219

Hydrogen-bond dynamics of confined water in a nanocage manipulated by terahertz waves

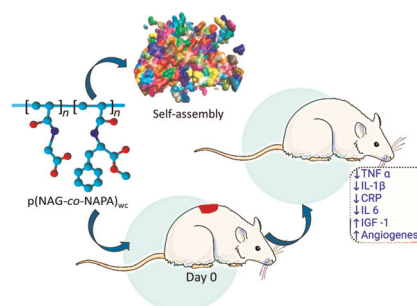
Sihao Zhu, Tao Zhang, Zi Wang and Jiaye Su*



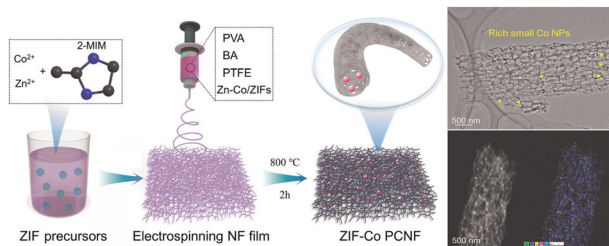
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Self-assembled amino acid-based copolymer nanoparticles for wound healing and tissue regeneration: structure studied through molecular dynamic simulation

Sukanya Patra, Desh Deepak Yadav, Gurmeet Singh, Jyotirmayee, Prakriti Sundar Samanta, Divya Pareek, Aman Srikant Kudada, Anjali Ramsabad Mourya, Debdip Bhandary* and Pradip Paik*



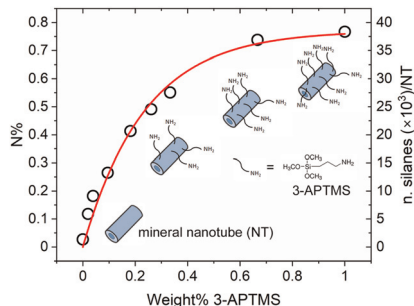
20251



Constructing macroporous nanofibers with enriched Co–N–C sites *via* a cascade chamber confinement strategy for an efficient oxygen reduction reaction

Yuanyuan Zhang,* Haotian Guo, Zihao Li, Wei Jiang, Xiaojun Wang, Yan Xu, Xinzhong Wang and Jianhua Yan*

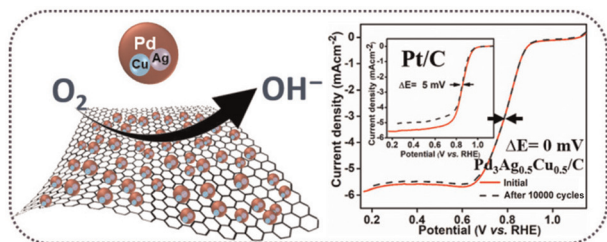
20259



Tunable functional coverage of biocompatible magnesium silicate nanotubes by microwave-assisted silanization

Valeria Secchi, Daniela D'Alessio, Andrea Erroi, Silvia Mostoni, Giancarlo Capitani, Alberto Calloni, Gianlorenzo Bussetti, Massimiliano D'Arienzo, Roberto Lorenzi, Keren Keinan-Adamsky, Shai Rahimipour, Angelo Monguzzi and Marcello Campione*

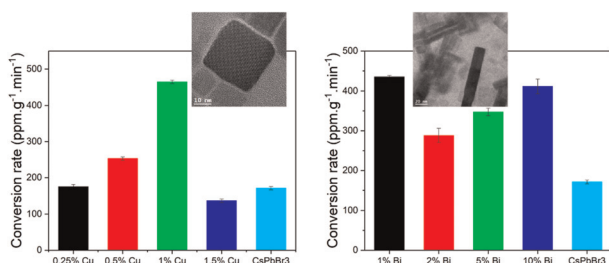
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Interface-driven Pd–Ag–Cu/C nanocomposites with increased oxygen reduction reaction kinetics

Rashmi Chetry, Shaheen Parveez Bhuyan, Rupjyoti Dutta, Sanjana Das, Manash R. Das, Priyanka Dutta, Nand Kishor Gour, Ramesh Ch. Deka and Pankaj Bharali*

20280



Impact of Bi³⁺ and Cu²⁺ doping on the optical and electronic properties of CsPbBr₃ for photocatalytic toluene oxidation

Marija Knezevic, Thi-Hieu Hoang, Vien Duong Quach, Alba Garzón Manjón, David Llorens Rauret, Marie Erard, Audrey Gayral, Mireille Benoit, David Berardan, Jordi Arbiol, Christophe Colbeau-Justin and Mohamed Nawfal Ghazzal*

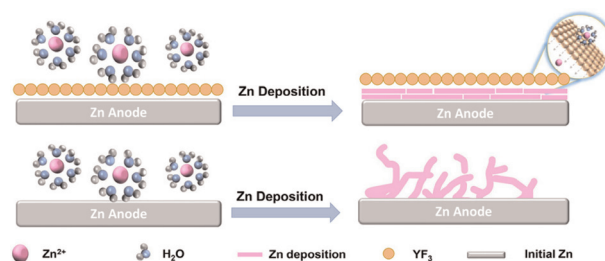


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Robust fluorine-rich YF_3 artificial interfacial layer for providing uniform Zn^{2+} flux and enhancing cycling stability of Zn anodes

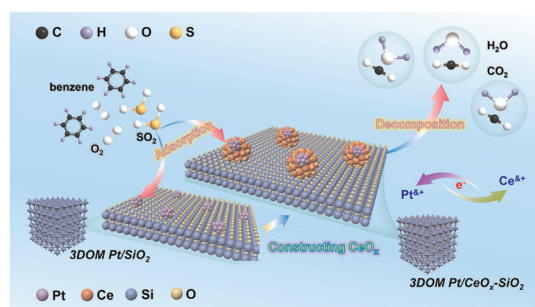
Run Jiao, Yanjie Wang,* Jiahui Liu, Shuai Guo, Diandian Han, Wanwan Li, Han Zhao, Juan Shi, Kongyao Chen* and Liwei Mi*



20301

A novel 3DOM Pt/ MeO_x - SiO_2 catalyst for the catalytic oxidation of VOCs

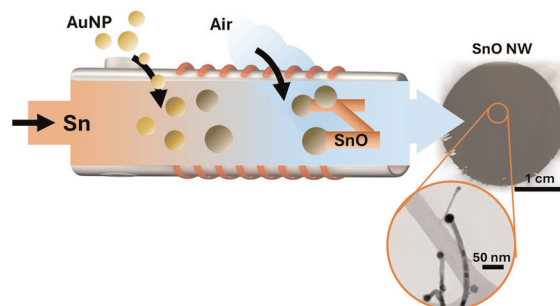
Sha Liu, Fang Dong,* Weigao Han, Jiyi Zhang* and Zhicheng Tang*



20319

Sequential control of catalyst alloying and oxygen-mediated nucleation for continuous synthesis of SnO nanowires floating in the gas phase

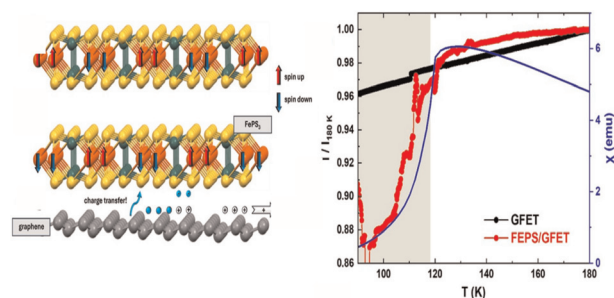
Isabel Gómez-Palos, Álvaro Ridruejo and Juan J. Vilatela*



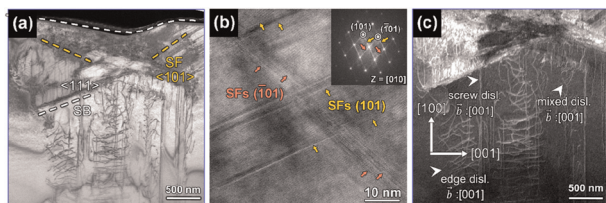
20327

Conductance modulation in graphene/antiferromagnet van der Waals heterostructures induced by magnetic order

Adrián García-Martín, Rocío Sánchez-de-Armas, Sara Gullace, Esther Calle, Lucía Martín-Pérez, Nicolás Montenegro-Pohlhammer, Miriam Jaafar, José Sanchez Costa, Carmen J. Calzado* and Enrique Burzuri*



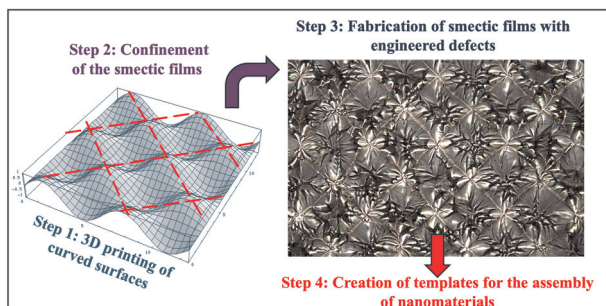
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Dislocation-enabled plasticity in rutile TiO_{2-x} at room temperature

Bo Yang,* Nicholas Richter, Huan Li, Zhongxia Shang, Zihao He, Hongyi Dou, Jianan Shen, R. Edwin García, Noam Bernstein, C. Stephen Hellberg, Haiyan Wang and Xinghang Zhang*

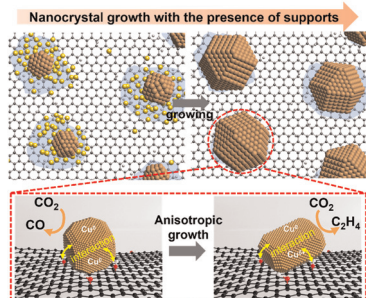
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Templated self-assembly of gold nanoparticles in smectic liquid crystals confined at 3D printed curved surfaces

Mackenzie O'Keefe, Jane Bernadette Denise M. Garcia, Abeco J. Rwakabuba, Timothy M. Otchy, Daniel A. Beller* and Mohamed Amine Gharbi*

20365

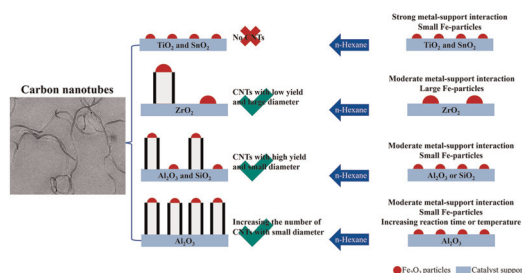


Atomic-scale investigation of the role of supports in nanocrystal growth

Xiao Han, Xiaolin Tai, Xun Hong, Jingxiang Low, Yongfei Ji* and Yue Lin*

20375

Carbon nanotube growth from *n*-hexane on Fe-based catalysts



Insights into the reaction process and mechanism of CNT growth from *n*-hexane on Fe-based catalysts

Changchang Tian, Dongzhe Cui, Xu Hou,* Xinyao Sun, Ao Dong, Jing Huang,* Li Yin and Enxian Yuan*

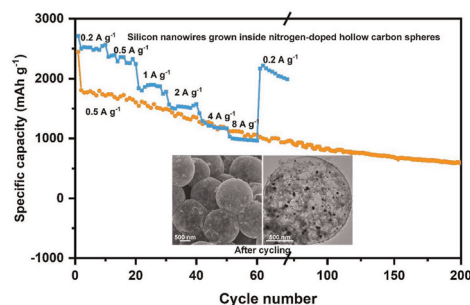


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20390

Silicon nanowires grown inside nitrogen-doped hollow carbon spheres as anode materials for lithium-ion batteries

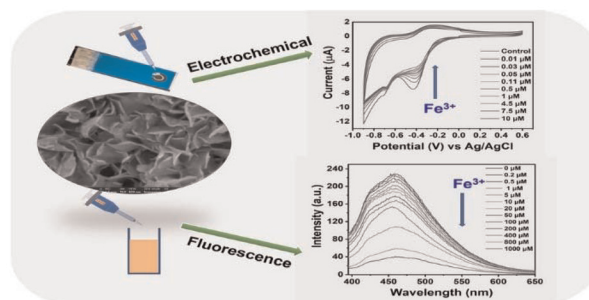
Xin-Tao Li, Qing-Chen Xiong and Fei-Hu Du*



20400

Bi₂O₂Se nanosheets for dual-mode electrochemical/fluorescence turn-off sensing of ferric ions

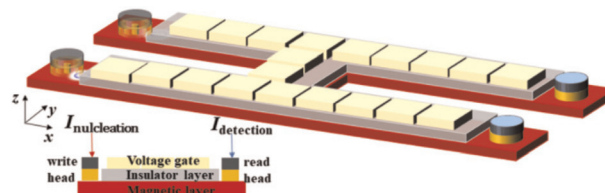
Amit Kumar Shringi, Rajeev Kumar, Rajneesh Chaurasiya, Justin Lin, Nutifafa Y. Doumon and Fei Yan*



20410

Voltage-driven flexible skyrmioniums for high-speed transport and reversible logic in discrete electrode nanowires

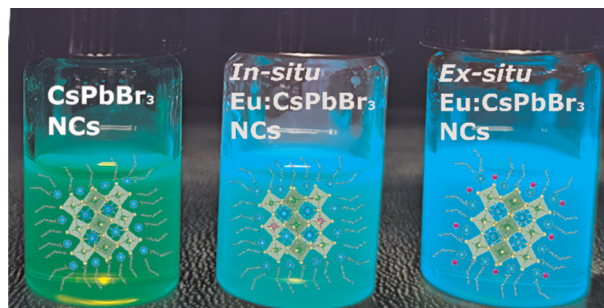
Luowen Wang, Ziyang Yu,* Qingbo Liu,* Lun Xiong* and Rui Xiong



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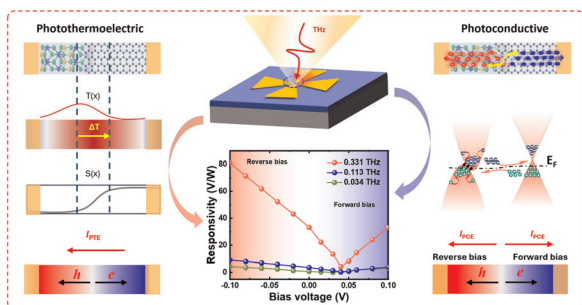
Europium doping effects on the properties of CsPbBr₃ nanocrystals: *in situ* vs. *ex situ* synthetic path analysis

Hila Shalom, Ayelet HaShachar Wallach, Raanan Carmieli and Lena Yadgarov*



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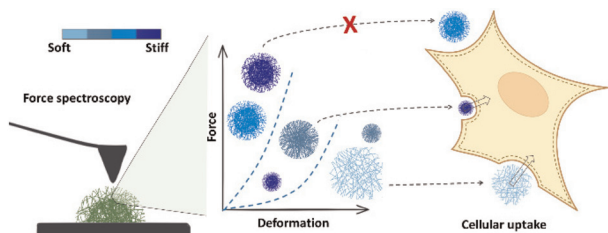
20435



High-sensitivity broadband terahertz detection enabled by synergistic effects in an antenna-integrated TaCo₂Te₂/graphene heterostructure

Donghai Zhang, Changlong Liu,* Sheng Ni, Changyi Pan, Weiwei Tang, Lin Wang, Kin Seng Chiang* and Xiaoshuang Chen*

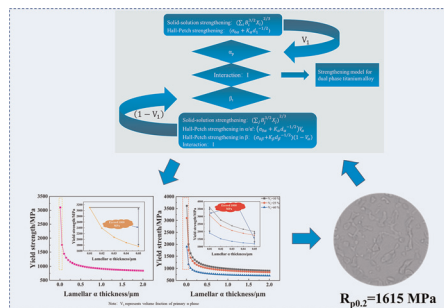
20445



Size and softness synergy in cellular microgel uptake: a force spectroscopy study

Andrey Babenyshev, Victoria K. Switacz, Marc Spehr and Walter Richtering*

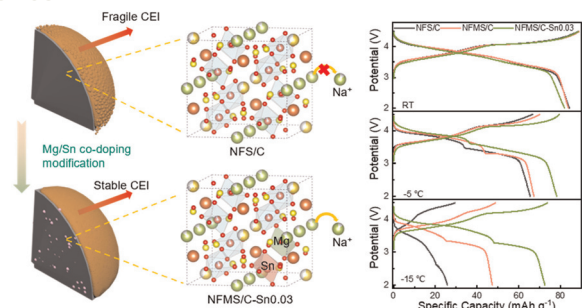
20455



The key approach to fabricate ultra-high strength dual-phase titanium alloys and its practice

Ruyi Ji, Leying Chen, Run Li, Haicheng Zhang, Liwei Cheng, Hengjun Luo* and Jian Mao*

20465



A novel spherical Mg/Sn co-doped alluaudite-type Na_{2+2x}Fe_{2-x}(SO₄)₃ cathode material for durable low-temperature sodium-ion batteries

Weiye Li, Min Zhang, Shen Cai, Yan Xin and Huajun Tian*

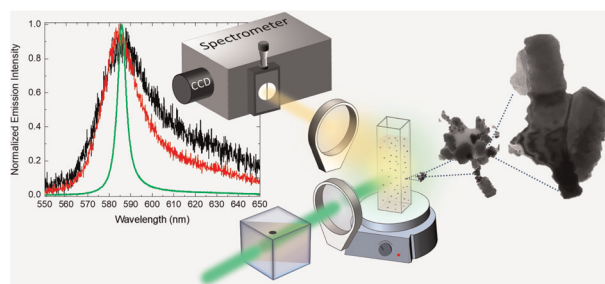


PAPERS

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Graphitic carbon nitride nanosheets as scatterers for random laser action

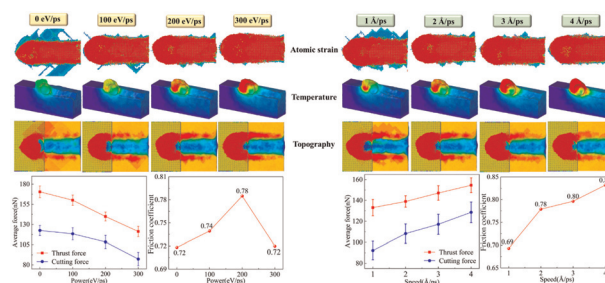
Pablo I. R. Pincheira,* Igor M. Gonçalves, Olga Rubilar, Ana Obreque, Edward Hermosilla, Alyson J. A. Carvalho and Leonardo de S. Menezes



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Simulation of laser-assisted machining of the GH2135 alloy using molecular dynamics: effects of machining parameters on cutting performance

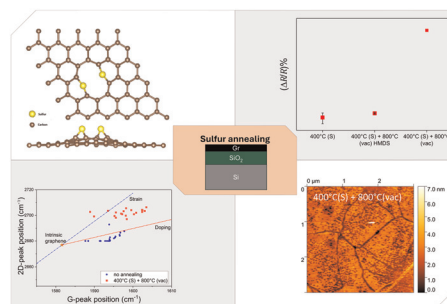
Bin Liu,* Yanyang Wang, Yun Bai, Zezhou Kuai and Xingbin Jing*



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Probing defect formation in sulfur-annealed graphene for TMDC integration

Ahmad Nizamuddin Muhammad Mustafa,* Victoria Greenacre, Huanyu Zhou, Shibin Thomas, Tianyi Yin, Sarah Alodan, Yasir J. Noori, Giuseppe Mallia, Nicholas M. Harrison, Gillian Reid, Philip N. Bartlett, Kees de Groot, Sami Ramadan,* Peter K. Petrov* and Norbert Klein



20519

Facile design of MOF-derived porous CeO₂/MWCNT nanocomposites for the hydrogen evolution reaction and machine learning-assisted stability forecasting

Mrunal M. Patil, Pramod A. Koyale, Sonali P. Sadavar, Anjali R. Shelake, Tukaram D. Dongale, Ananta G. Dhodamani, Santosh S. Sutar and Sagar D. Delekar*

