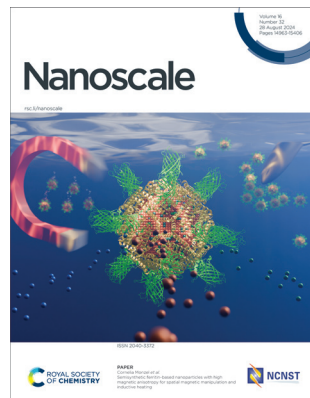


IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 16(32) 14963–15406 (2024)



Cover

See Cornelia Monzel *et al.*, pp. 15113–15127.

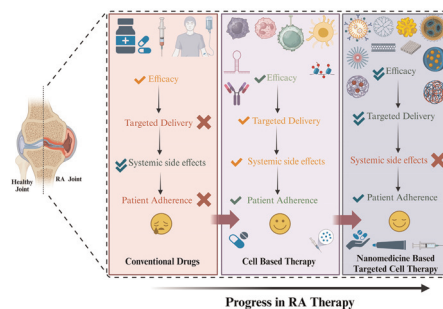
Image reproduced by permission of Andreas Neusch from *Nanoscale*, 2024, **16**, 15113.

REVIEWS

14975

Advancements in rheumatoid arthritis therapy: a journey from conventional therapy to precision medicine via nanoparticles targeting immune cells

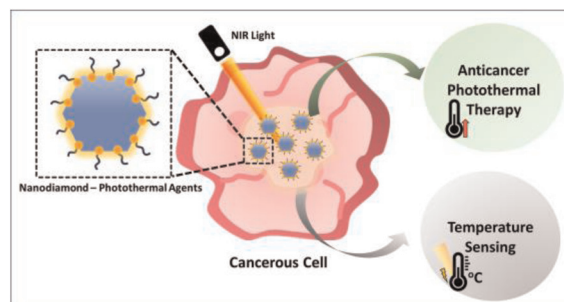
Anwasha Laha, Simran Nasra, Dhiraj Bhatia and Ashutosh Kumar*



14994

Exploring nanodiamonds: leveraging their dual capacities for anticancer photothermal therapy and temperature sensing

Wesley Wei-Wen Hsiao,* Xuan Mai Lam, Trong-Nghia Le, Chi-An Cheng* and Huan-Cheng Chang



RSC Sustainability

GOLD
OPEN
ACCESS

Dedicated to sustainable
chemistry and new solutions

For an open, green and inclusive future

rsc.li/RSCSus

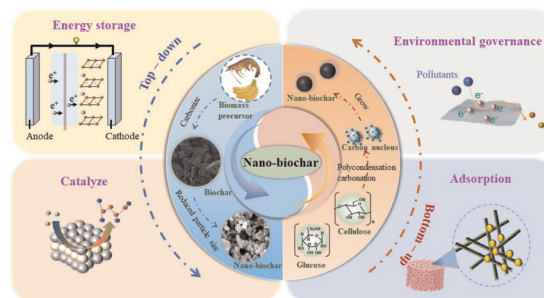
Fundamental questions
Elemental answers

REVIEWS

15009

Advances in sustainable nano-biochar: precursors, synthesis methods and applications

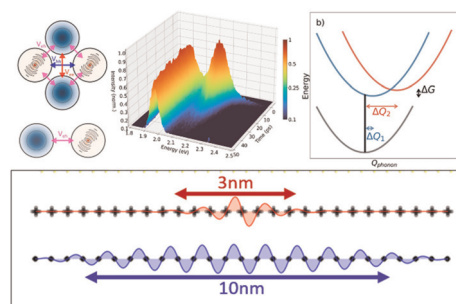
Junchao Xu, Yiming Xie, Qingdong Yao, Li Lv and Huaqiang Chu*



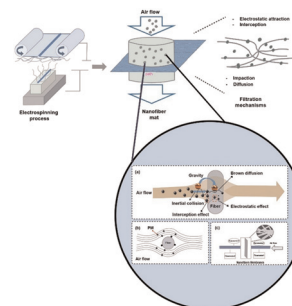
15033

Unraveling the excitonics of light emission from metal-halide perovskite quantum dots

Patanjali Kambhampati



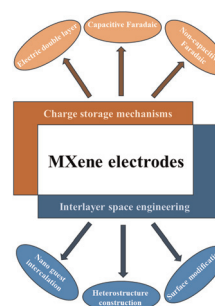
15059

Nanoporous air filtering systems made from renewable sources: benefits and challengesArnab Dutta, Solmaz Karamikamkar,*
Mohammadreza Nofar and Ehsan Behzadfar*

15078

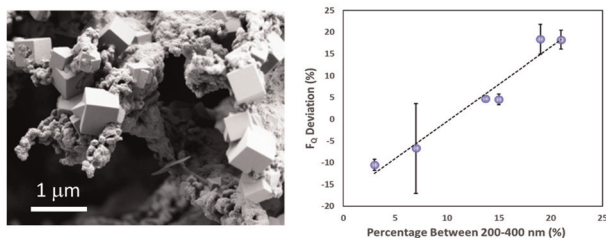
Effects of interlayer space engineering and surface modification on the charge storage mechanisms of MXene nanomaterials: A review on recent developments

Mohammad Bandpey and Dominik P. J. Barz*



COMMUNICATIONS

15094

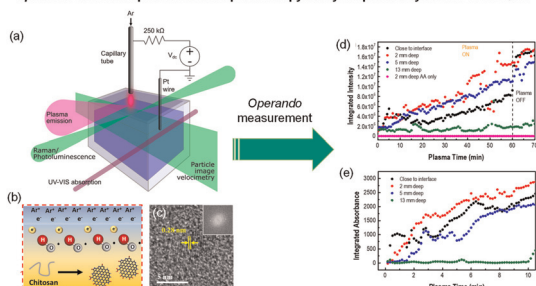


Microstructure-dependent particulate filtration using multifunctional metallic nanowire foams

James Malloy, Erin Marlowe, Christopher J. Jensen, Isaac S. Liu, Thomas Hulse, Anne F. Murray, Daniel Bryan, Thomas G. Denes, Dustin A. Gilbert, Gen Yin and Kai Liu*

15104

Operando time and space-resolved spectroscopy study for plasma synthesis of NGQDs

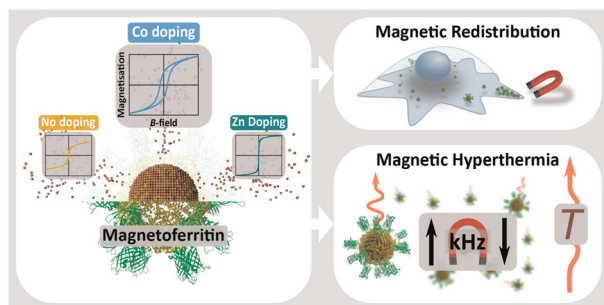


Operando time and space-resolved liquid-phase diagnostics reveal the plasma selective synthesis of nanographenes

Darwin Kurniawan, Francesca Caielli, Karthik Thyagajaran, Kostya (Ken) Ostrikov, Wei-Hung Chiang* and David Z. Pai*

PAPERS

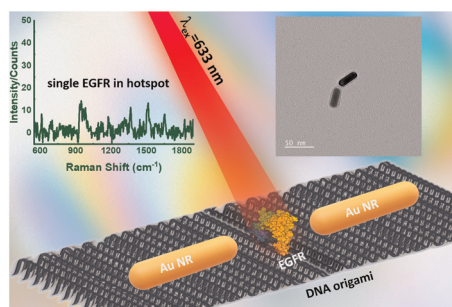
15113



Semisynthetic ferritin-based nanoparticles with high magnetic anisotropy for spatial magnetic manipulation and inductive heating

Andreas Neusch, Ulf Wiedwald, Iuliia P. Novoselova, Daniel A. Kuckla, Nikolaos Tetos, Sarah Sadik, Philipp Hagemann, Michael Farle and Cornelia Monzel*

15128



DNA origami-templated gold nanorod dimer nanoantennas: enabling addressable optical hotspots for single cancer biomarker SERS detection

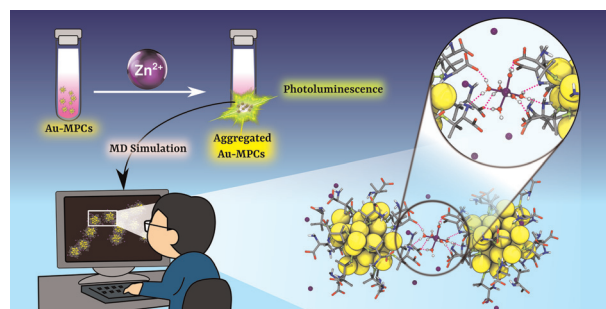
Mridu Sharma, Charanleen Kaur, Priyanka Singhmar, Shikha Rai and Tapasi Sen*



15141

A molecular dynamics study on the ion-mediated self-assembly of monolayer-protected nanoclusters

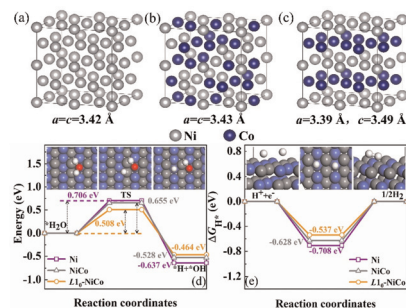
Vikas Tiwari, Anushna Bhattacharyya and Tarak Karmakar*



15148

Design and fabrication of intermetallic NiCo electrocatalysts for the alkaline HER

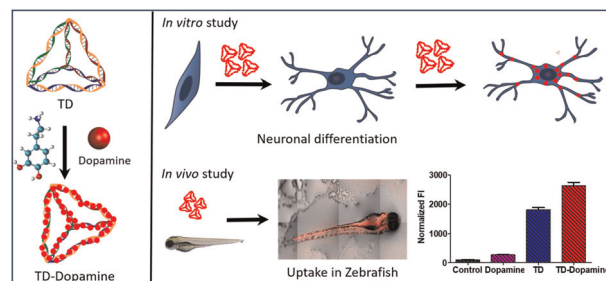
Chun Wu,* Xuhui Wang, Mengyao Huang, Chao Meng, Ling Chang, Dake Xu and Wenli Pei*



15158

DNA tetrahedral nanocages as a promising nanocarrier for dopamine delivery in neurological disorders

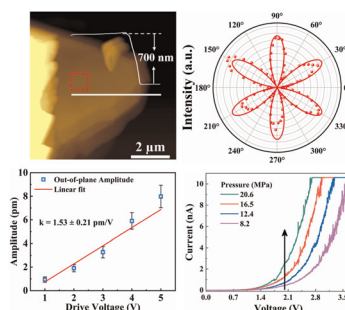
Ramesh Singh, Krupa Kansara, Pankaj Yadav, Sandip Mandal, Ritu Varshney, Sharad Gupta, Ashutosh Kumar, Prabal K. Maiti and Dhiraj Bhatia*



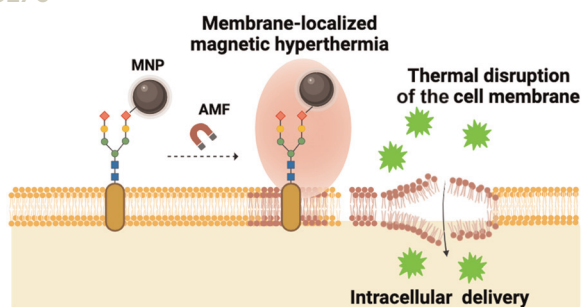
15170

Piezoelectricity in wide bandgap semiconductor 2D crystal GaN nanosheets

Yong Wang, Shaopeng Wang, Yu Zhang,* Zixuan Cheng, Dingyi Yang,* Yongmei Wang,* Tingting Wang, Liang Cheng, Yizhang Wu* and Yue Hao



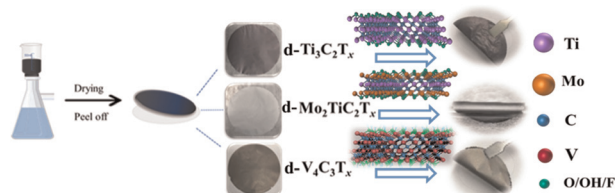
15176



Membrane-localized magnetic hyperthermia promotes intracellular delivery of cell-impermeant probes

Javier Idiago-López, Daniela Ferreira, Laura Asín, María Moros, Ilaria Armenia, Valeria Grazú, Alexandra R. Fernandes, Jesús M. de la Fuente, Pedro V. Baptista* and Raluca M. Fratila*

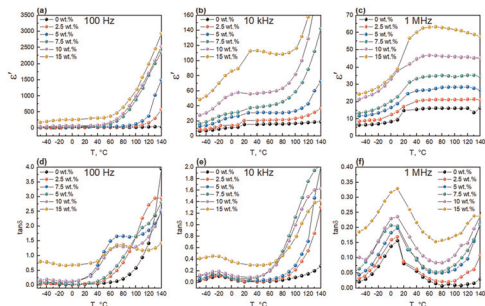
15196



The synthesis and supercapacitor application of flexible free-standing $\text{Ti}_3\text{C}_2\text{T}_x$, $\text{Mo}_2\text{TiC}_2\text{T}_x$, and $\text{V}_4\text{C}_3\text{T}_x$ MXene films

Xiaoqing Bin, Minhao Sheng, Binshan Kong, Yijia Luo, Jing Xiao and Wenxiu Que*

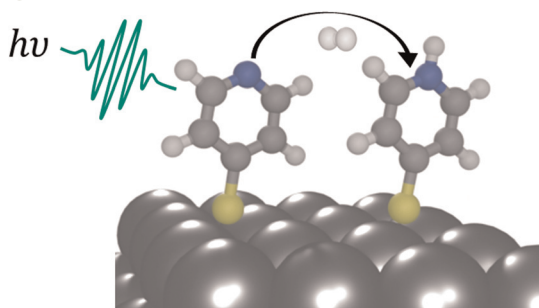
15208



Thermal behavior of the dielectric response of composites based on poly(vinylidene fluoride) filled with two-dimensional V_2CT_x MXenes

Alexey Tsyganov,* Maria Vikulova, Ilya Zotov, Olga Grapenko, Valery Vlasenko, Alexey Bainyashev, Alexander Gorokhovskiy and Nikolay Gorshkov*

15219



Assessing plasmon-induced reactions by a combined quantum chemical-quantum/classical hybrid approach

Sadaf Ehtesabi, Martin Richter, Stephan Kupfer* and Stefanie Gräfe*

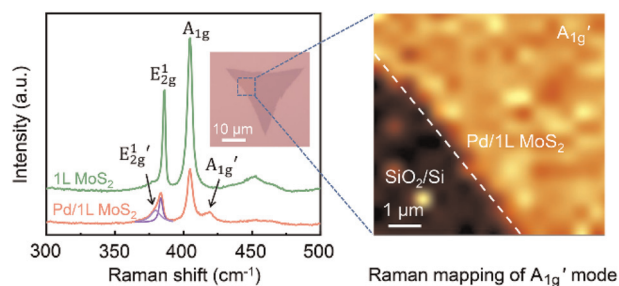


PAPERS

15230

Changes of phonon modes and electron transfer induced by interface interactions of Pd/MoS₂ heterostructures

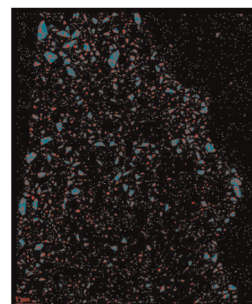
Xinyi Chen, Liang Zhou, Yusong Wu, Yadi Cao, Wengui Jiang, Yingying Xu, Rongming Wang* and Yinghui Sun*



15240

Formation of EGFRwt/EGFRvIII homo- and hetero-dimers in glioblastoma cells as detected by single molecule localization microscopy

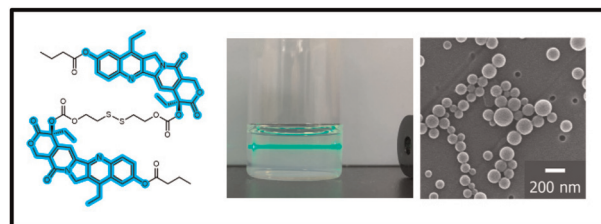
Kevin Jahnke, Nina Struve,* Daniel Hofmann, Martin Julius Gote, Margund Bach, Malte Kriegs and Michael Hausmann*



15256

Carrier-free nano-prodrugs for minimally invasive cancer therapy

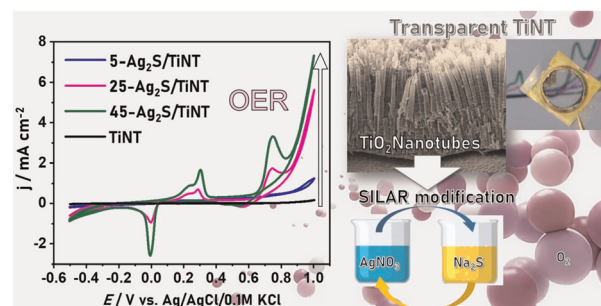
Keita Tanita, Yoshitaka Koseki,* Sanjay Kumar, Farsai Taemaitree, Asuka Mizutani, Hirotaka Nakatsuji, Ryuju Suzuki, Anh Thi Ngoc Dao, Fumiyoshi Fujishima, Hiroshi Tada, Takanori Ishida, Ken Saijo, Chikashi Ishioka and Hitoshi Kasai*



15265

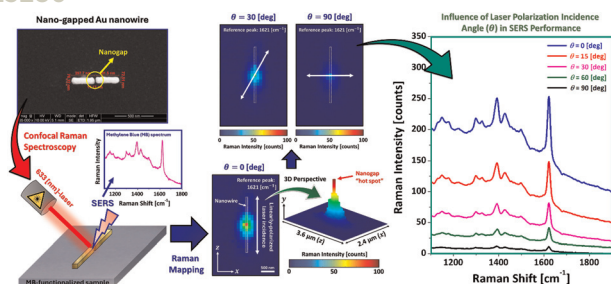
Transparent TiO₂ nanotubes supporting silver sulfide for photoelectrochemical water splitting

Wiktorja Lipińska, Stefania Wolff, Katharina E. Dehm, Simon P. Hager, Justyna Gumieniak, Agnieszka Kramek, Ryan W. Crisp, Emerson Coy, Katarzyna Grochowska and Katarzyna Siuzdak*



PAPERS

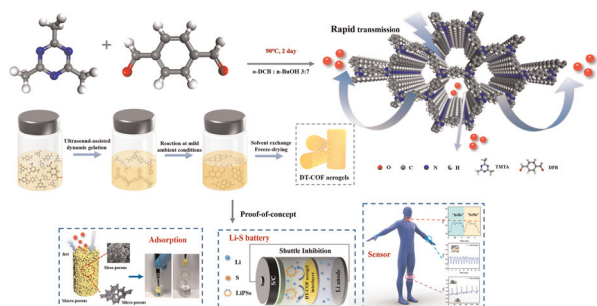
15280



Laser polarization as a critical factor in the SERS-based molecular sensing performance of nano-gapped Au nanowires

Simón Roa,* Terunori Kaihara, María Laura Pedano,* Henrik Parsamyan and Paolo Vavassori

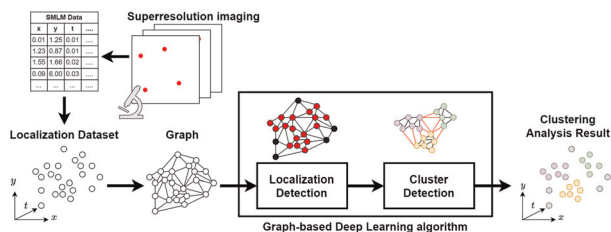
15298



Preparation of sp^2 carbon-bonded π -conjugated COF aerogels by ultrasound-assisted mild solvothermal reaction for multi-functional applications

Qiaomu Wang, Lei Gao, Peng Wang, Yandong Wang, Yang Xu, Haocheng Xu, Xuebin Wang,* Zhen Meng* and Kai Xi*

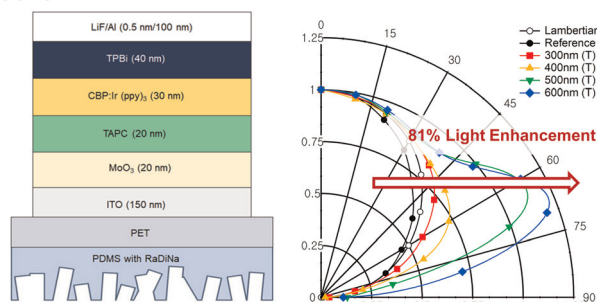
15308



A supervised graph-based deep learning algorithm to detect and quantify clustered particles

Lucas A. Saavedra, Alejo Mosqueira and Francisco J. Barrantes*

15319



Spectrally independent and wide-angle light extraction of organic light emitting diodes with randomly disassembled nanostructure

Joel Ndikumana and Kunsik An*

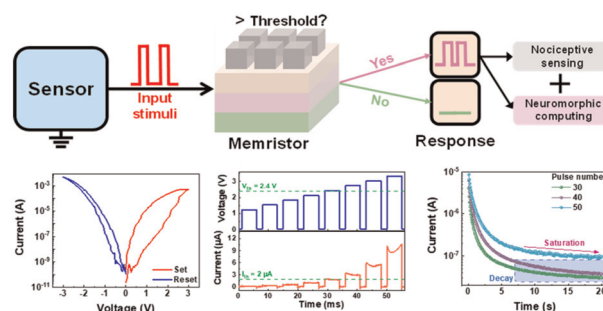


PAPERS

15330

On-receptor computing with classical associative learning in semiconductor oxide memristors

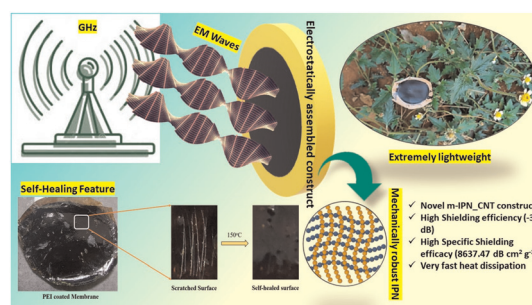
Dongyeol Ju, Jungwoo Lee and Sungjun Kim*



15343

'Donor-acceptor', 'interpenetrating polymer network' and 'electrostatic self-assembly' work in tandem to achieve extraordinary specific shielding effectiveness

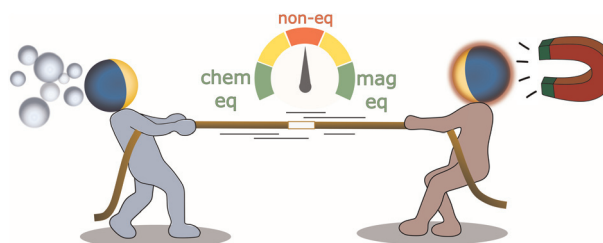
Amit Malakar, Samir Mandal, Ria Sen Gupta, Vinod Kashyap, Rishi Raj, Kunal Manna and Suryasarathi Bose*



15358

Accelerating and breaking adaptive nano-colloids (<100 nm) into unsteady state operation via push-pull effects

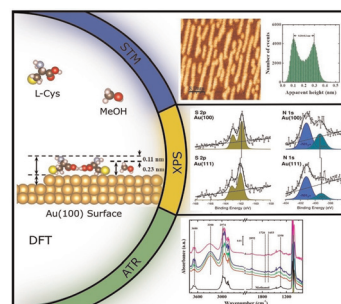
Cornelia Lanz, Nele Künnecke, Yaşar Krysiak and Sebastian Polarz*



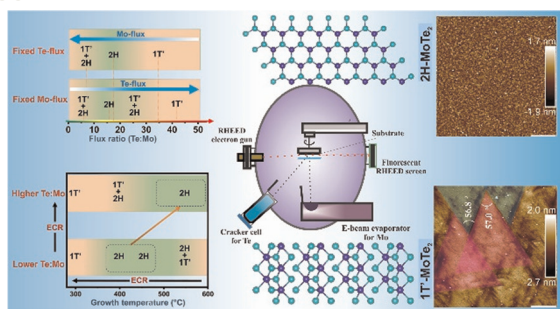
15366

Novel mixed self-assembled monolayers of L-cysteine and methanol on gold surfaces under ambient conditions

Vanina Gisela Franco,* Sindy Julieth Rodríguez, Florencia Carolina Calaza, Mario César Guillermo Passeggi and Gustavo Daniel Ruano



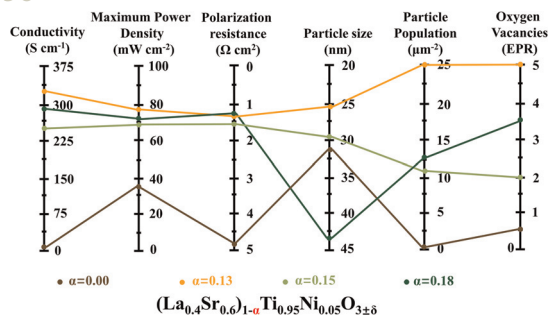
15381



Effective concentration ratio driven phase engineering of MBE-grown few-layer MoTe₂

Kamlesh Bhatt, Santanu Kandar, Nand Kumar, Ashok Kapoor and Rajendra Singh*

15396



A-site-deficiency range identified for *in situ* exsolution from (La_{0.4}Sr_{0.6})_{1-α}Ti_{0.95}Ni_{0.05}O_{3±δ} electrodes for SOFC and SOEC

Yao Jiang, Chengyu Li, Haonan Huang, Linxi Zhang, Jingyu Zhang, Cairong Jiang, Yongjin Chen,* Yali Yao* and Jianjun Ma*

