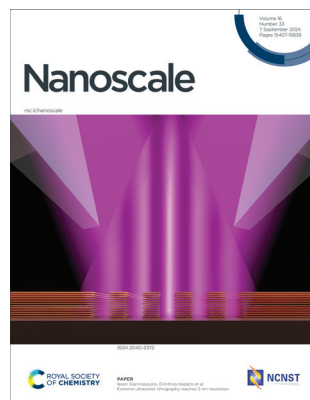


IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 16(33) 15407–15838 (2024)



Cover

See Iason Giannopoulos, Dimitrios Kazazis *et al.*, pp. 15533–15543.

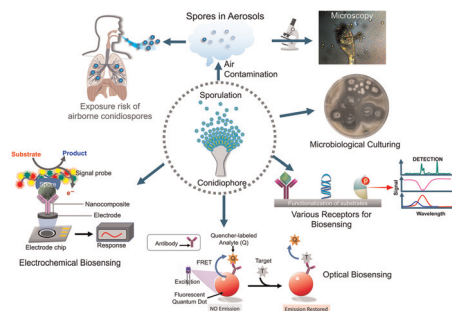
Image reproduced by permission of Iason Giannopoulos & Iacopo Mochi from *Nanoscale*, 2024, **16**, 15533.

REVIEWS

15419

Biosensors for detection of airborne pathogenic fungal spores: a review

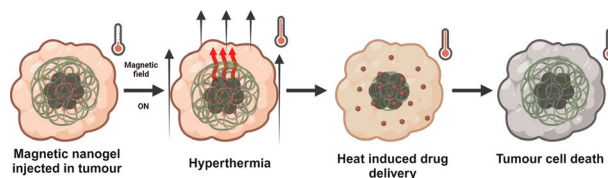
Roomia Memon, Javed H. Niazi* and Anjum Qureshi*



15446

Magnetic iron oxide nanogels for combined hyperthermia and drug delivery for cancer treatment

Sofia Patri, Nguyen Thi Kim Thanh* and Nazila Kamaly*



Royal Society of Chemistry approved training courses

Explore your options.
Develop your skills.
Discover learning
that suits you.

**Courses in the classroom,
the lab, or online**

Find something for every
stage of your professional
development. Search our
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit rsc.li/cpd-training



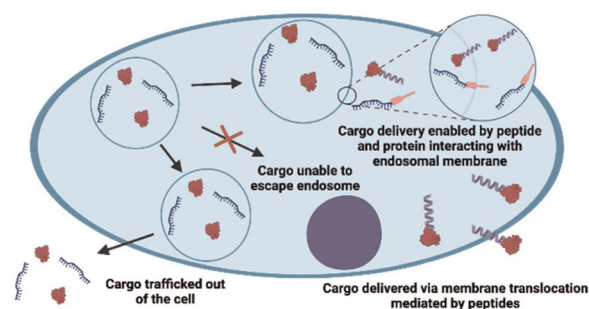
**SAVE
10%**

REVIEWS

15465

Intracellular delivery strategies using membrane-interacting peptides and proteins

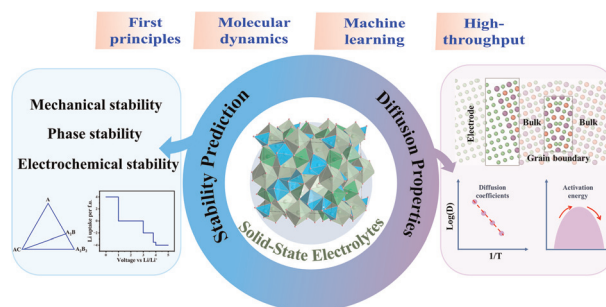
Linh D. Mai, Sydney C. Wimberley and Julie A. Champion*



15481

Theoretical calculations and simulations power the design of inorganic solid-state electrolytes

Lirong Xia, Hengzhi Liu and Yong Pei*

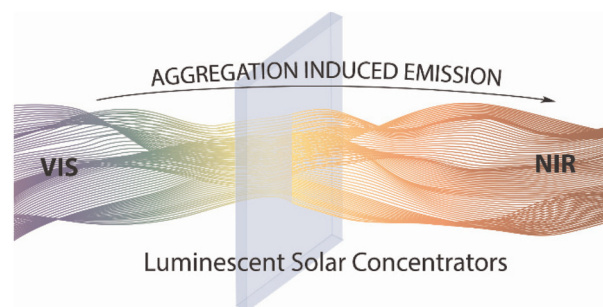


MINIREVIEWS

15502

Aggregation-induced emissive nanoarchitectures for luminescent solar concentrators

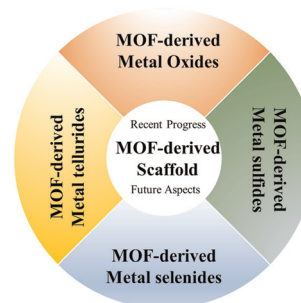
Elisavet Tatsi, Andrea Nitti, Dario Pasini* and Gianmarco Griffini*



15515

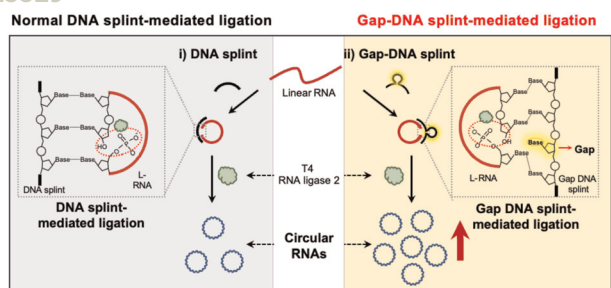
MOF-derived scaffolds as electrode materials: a mini-review

Iftikhar Hussain* and Kaili Zhang*



COMMUNICATION

15529

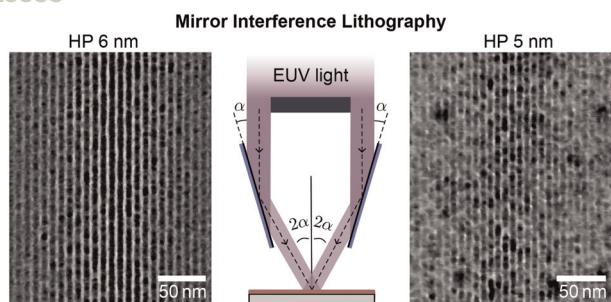


Efficient circular RNA synthesis through Gap-DNA splint-mediated ligation

Hyunji Kim, Dajeong Kim, Sunghyun Moon and Jong Bum Lee*

PAPERS

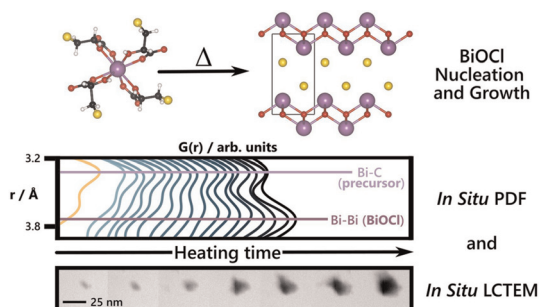
15533



Extreme ultraviolet lithography reaches 5 nm resolution

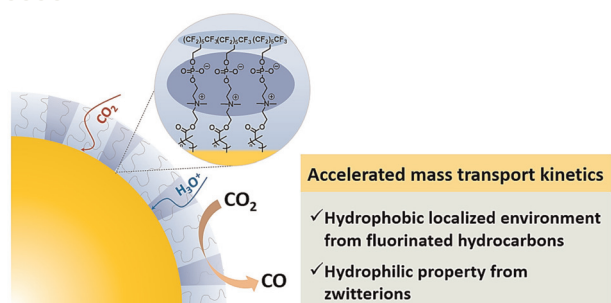
Iason Giannopoulos,* Iacopo Mochi, Michaela Vockenhuber, Yasin Ekinici and Dimitrios Kazazis*

15544

Insights into the nucleation and growth of BiOCl nanoparticles by *in situ* X-ray pair distribution function analysis and *in situ* liquid cell TEM

Matthew N. Gordon, Laura S. Junkers, Jack S. Googasian, Jette K. Mathiesen, Xun Zhan, David Gene Morgan, Kirsten M. Ø. Jensen and Sara E. Skrabalak*

15558

Fluorinated polymer zwitterions on gold nanoparticles: patterned catalyst surfaces guide interfacial transport and electrochemical CO_2 reduction

Qiang Luo, Joseph Tapia, Le Zhou, Chung-Hao Liu, Maham Liaqat, Hanyi Duan, Zhefei Yang, Mu-Ping Nieh, Todd Emrick,* Peng Bai* and Jie He*

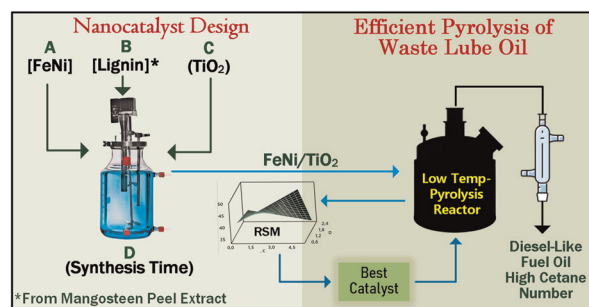


PAPERS

15568

Effect of design parameters in nanocatalyst synthesis on pyrolysis for producing diesel-like fuel from waste lubricating oil

Riny Yolanda Parapat,* Aji Tri Laksono, Rizki Imam Fauzi, Yuni Maulani, Freddy Haryanto, Alfian Noviyanto, Michael Schwarze and Reinhard Schomäcker

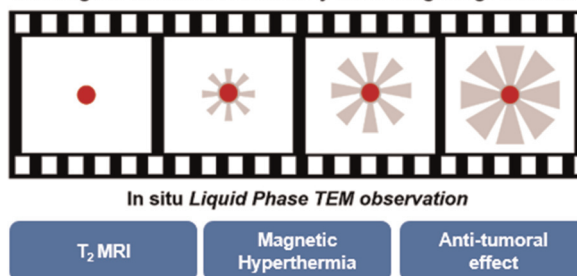


15585

Tailoring the pore structure of iron oxide core@stellate mesoporous silica shell nanocomposites: effects on MRI and magnetic hyperthermia properties and applicability to anti-cancer therapies

J. Bizeau, J. Journaux-Duclos, C. Kiefer, B. Freis, D. Ihiwakrim, M. de los A. Ramirez, T. Lucante, K. Parkhomenko, C. Vichery, J. Carrey, O. Sandre, C. Bertagnolli, O. Ersen, S. Bégin-Colin, V. Gigoux and D. Mertz*

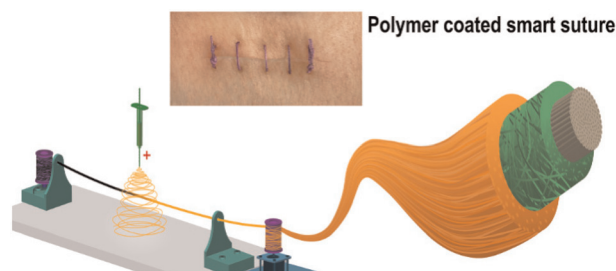
Tailoring the Stellate Silica shell by controlling the growth time



15615

Facile roll-to-roll production of nanoporous fiber coatings for advanced wound care sutures

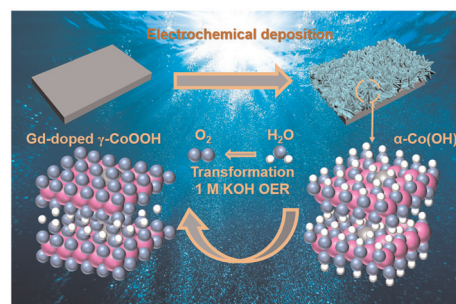
Tavia Walsh, Zhina Hadisi, Seyed Mohammad Hossein Dabiri, Sadegh Hasanpour, Sadaf Samimi, Mostafa Azimzadeh and Mohsen Akbari*



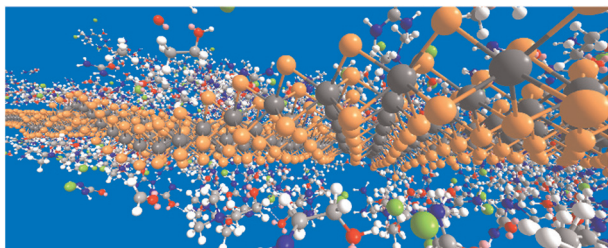
15629

In situ evolution of bulk-active γ -CoOOH with immobilized Gd dopants enabling efficient oxygen evolution electrocatalysis

Tianjue Hou, Ruotao Yang, Jiaxin Xu, Xiaodie He, Hongyuan Yang, Prashanth W. Menezes* and Ziliang Chen*



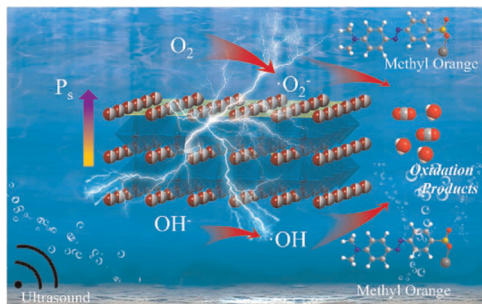
15640



Synthesis and characterization of MoSe₂ nanoscrolls *via* pulsed laser ablation in deep eutectic solvents

Alejandro L. Morales Betancourt, Sadasivan Shaji, Ernesto Flores and Kelly L. Nash*

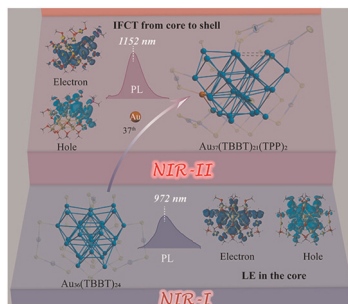
15652



Ultrathin Ba_{0.75}Sr_{0.25}TiO₃ nanosheets with highly exposed {001} polar facets for high-performance piezocatalytic application

Kanghui Ke, Jiang Wu,* Zihan Kang, Enzhu Lin, Ni Qin* and Dinghua Bao

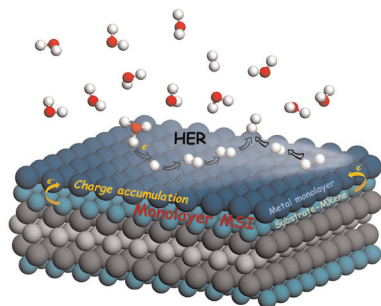
15663



A single-gold-atom addition regulates sharp redshift in the fluorescence of atomically precise nanoclusters

Yesen Tan, Kang Li, Jingjing Xu, Qinzhen Li, Sha Yang, Jinsong Chai,* Yong Pei,* Dianzeng Jia* and Manzhou Zhu*

15670



Platinum monolayer dispersed on MXenes for electrocatalyzed hydrogen evolution: a first-principles study

Mingqi He, Yanan Zhou, Qiquan Luo* and Jinlong Yang*

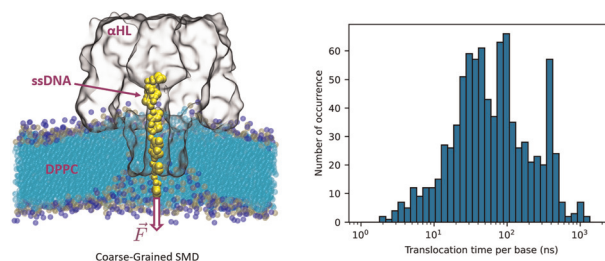


PAPERS

15677

Exploring ssDNA translocation through α -hemolysin using coarse-grained steered molecular dynamics

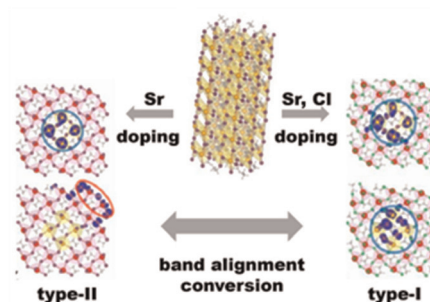
Cagla Okyay, Delphine Dessaux, Rosa Ramirez, Jérôme Mathé and Nathalie Basdevant*



15690

Carrier modulation of one-dimensional $\text{MAPb}_x\text{Sr}_{1-x}(\text{I}_y\text{Cl}_{1-y})_3$ core-shell perovskite nanowires

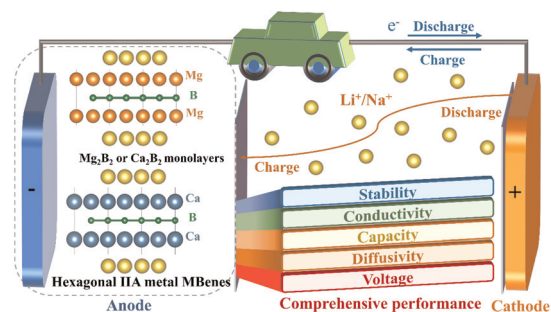
Pengjie Fu, Mengni Liu, Guixian Ge, Jianguo Wan and Xiaodong Yang*



15699

Hexagonal Mg_2B_2 and Ca_2B_2 monolayers as promising anode materials for Li-ion and Na-ion batteries

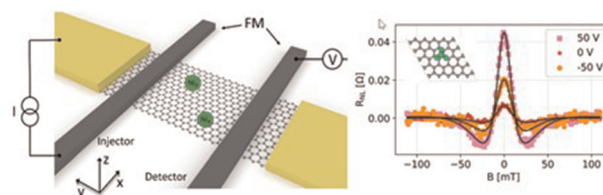
Yuqi Sun, Kaiqi Li, Bing Wang, Weiming Zhang, Erpeng Wang, Jian Zhou* and Zhimei Sun*



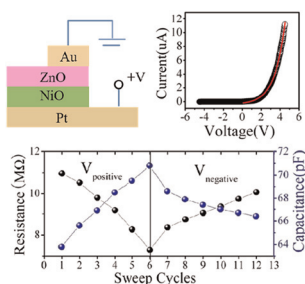
15713

Magnetic clusters as efficient EY-like spin-scattering centres in graphene

Wout Keijes, Ramasamy Murugesan, Guillaume Libeert, Bart Raes, Steven Brems, Stefan De Gendt, Michel Houssa, Ewald Janssens* and Joris Van de Vondel*



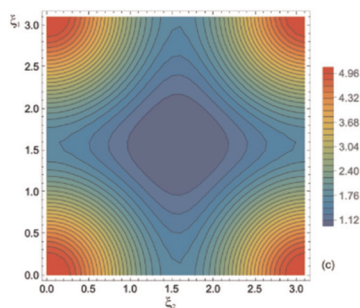
15722



Building a depletion-region width modulation model and realizing memory characteristics in PN heterostructure devices

Xing Guo, Xinmiao Li, Ruixiao Wang, Wenhui Zhu, Liancheng Wang and Lei Zhang*

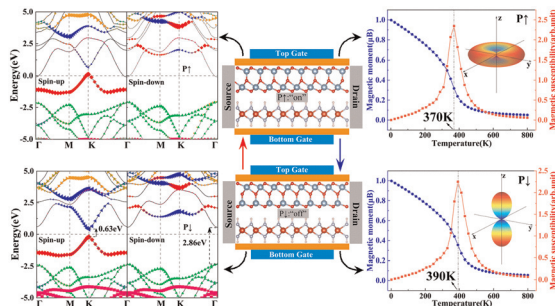
15730



Pair correlations of the easy magnetisation axes of superparamagnetic nanoparticles in a ferrofluid/ferrocomposite

Alexey O. Ivanov* and Ekaterina A. Elfimova

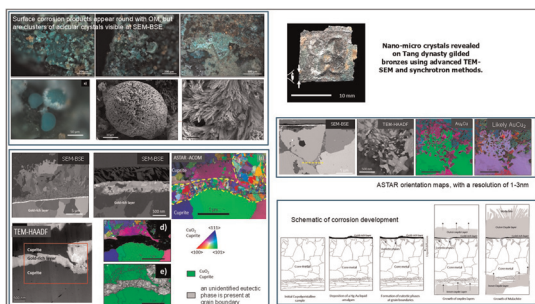
15746



Ferroelectrically controlled electromagnetic and transport properties of $\text{VN}_2\text{H}_2/\text{Al}_2\text{O}_3$ van der Waals multiferroic heterostructures

Caijia Sun, Haoshen Ye, Yijie Zhu, Leiming Chen, Dongmei Bai* and Jianli Wang*

15758



Nano–microcrystals revealed on Tang dynasty gilded bronze using advanced TEM–SEM and synchrotron methods

Ioannis Liritzis,* Sophie Cazottes, Thierry Douillard, Muriel Véron, Josep Roqué-Rosell, Carlo Marini, Partha Pratim Das, Alejandro Gomez-Perez, Athanassios S. Galanis, Stavros Nicolopoulos, Panagiota Manti, Junchang Yang and Xiangyu Zhang

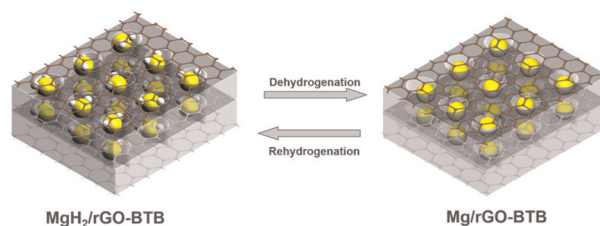


PAPERS

15770

MgH₂ nanoparticles confined in reduced graphene oxide pillared with organosilica: a novel type of hydrogen storage material

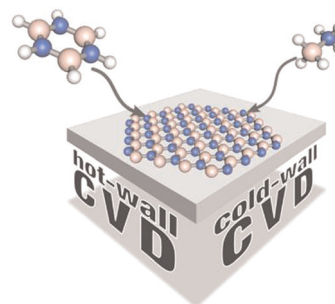
Feng Yan, Estela Moreton Alfonsín, Peter Ngene, Sytze de Graaf, Oreste De Luca, Huatang Cao, Konstantinos Spyrou, Liqiang Lu, Eleni Thomou, Yutao Pei, Bart J. Kooi, Dimitrios P. Gournis, Petra E. de Jongh and Petra Rudolf*



15782

Understanding vapor phase growth of hexagonal boron nitride

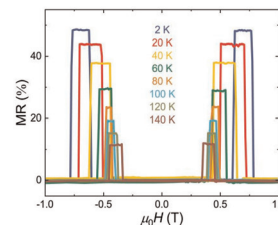
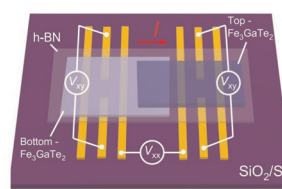
Anja Sutorius, René Weißing, Carina Rindtorff Pérez, Thomas Fischer, Fabian Hartl, Nilanjan Basu, Hyeon Suk Shin and Sanjay Mathur*



15793

Room-temperature spin-valve devices without spacer layers based on Fe₃GaTe₂ van der Waals homojunctions

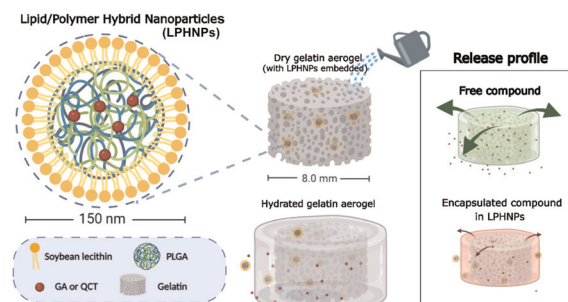
Yazhou Deng, Kejia Zhu, Mingjie Wang, Tao Hu, Yu Wang, Bin Lei* and Xianhui Chen*



15801

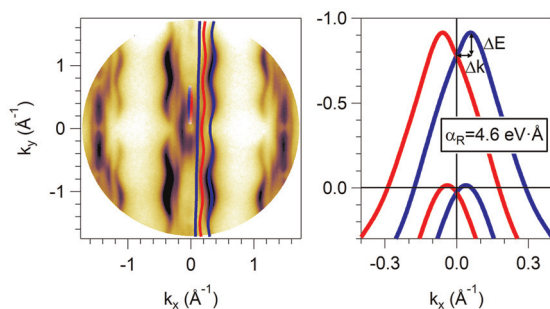
Evaluation of the release kinetics of hydrophilic and lipophilic compounds from lipid-polymer hybrid nanoparticles

Juan P. Carmona-Almazán, Ana B. Castro-Ceseña* and Sergio A. Aguila*



PAPERS

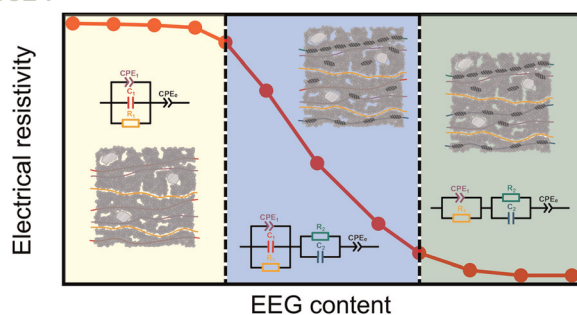
15815



Giant Rashba-splitting of one-dimensional metallic states in Bi dimer lines on InAs(100)

Polina M. Sheverdyaeva,* Gustav Bihlmayer, Silvio Modesti, Vitaliy Feyer, Matteo Jugovac, Giovanni Zamborlini, Christian Tusche, Ying-Jiun Chen, Xin Liang Tan, Kenta Hagiwara, Luca Petaccia, Sangeeta Thakur, Asish K. Kundu, Carlo Carbone and Paolo Moras

15824



Tailoring electrochemically exfoliated graphene electroactive pathways in cementitious composites for structural health monitoring of constructions

Matgorzata Safuta,* Cataldo Valentini, Artur Ciesielski and Paolo Samori*

RETRACTION

15834

Retraction: Microchip-based structure determination of low-molecular weight proteins using cryo-electron microscopy

Michael A. Casasanta, G. M. Jonaid, Liam Kaylor, William Y. Luqiu, Maria J. Solares, Mariah L. Schroen, William J. Dearnaley, Jarad Wilson, Madeline J. Dukes and Deborah F. Kelly*

CORRECTION

15835

Correction: Chitosan-gated organic transistors printed on ethyl cellulose as a versatile platform for edible electronics and bioelectronics

Alina S. Sharova, Francesco Modena, Alessandro Luzio, Filippo Melloni, Pietro Cataldi, Fabrizio Viola, Leonardo Lamanna, Nicolas F. Zorn, Mauro Sassi, Carlotta Ronchi, Jana Zaumseil, Luca Beverina, Maria Rosa Antognazza and Mario Caironi*

