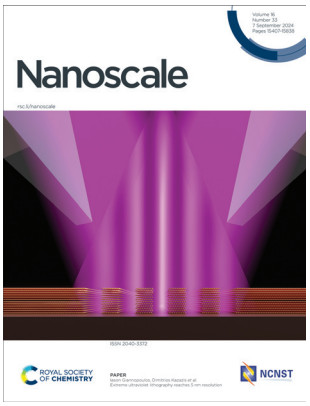
Nanoscale

rsc.li/nanoscale

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

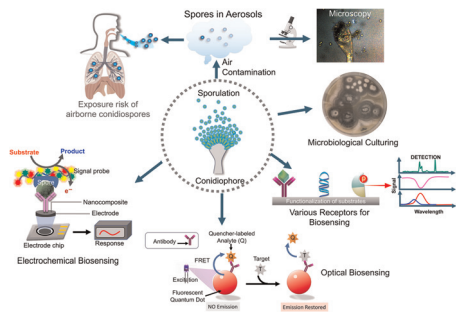
ISSN 2040-3372 CODEN NANOHL 16(33) 15407–15838 (2024)

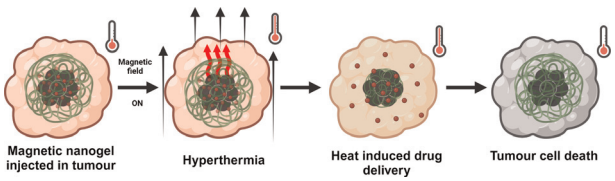


Cover
See Iason Giannopoulos, Dimitrios Kazazis *et al.*, pp. 15533–15543.

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

REVIEWS





ROYAL SOCIETY OF CHEMISTRY

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:

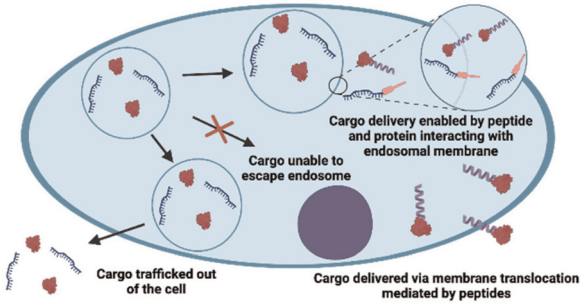
- subject area
- location
- event type
- skill level

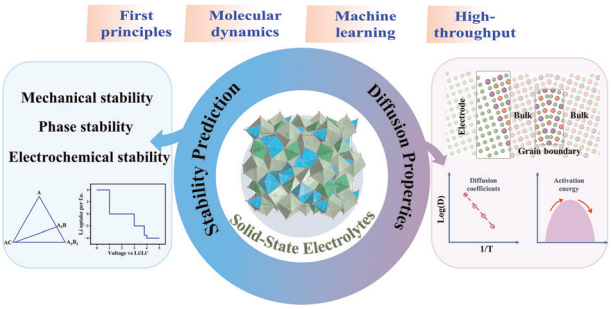
Members **get at least 10% off**

Visit **rsc.li/cpd-training**

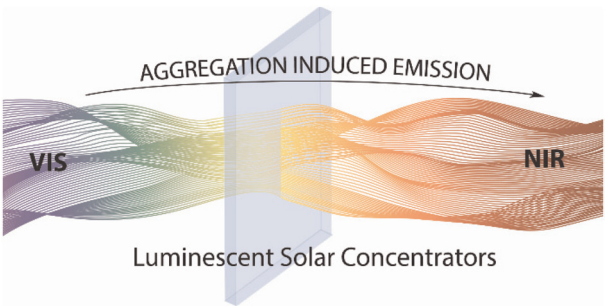
SAVE 10%

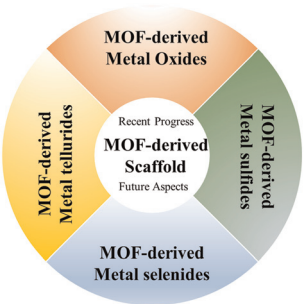
REVIEWS





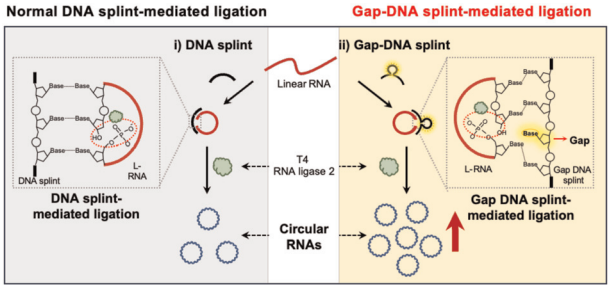
MINIREVIEWS





COMMUNICATION

15529

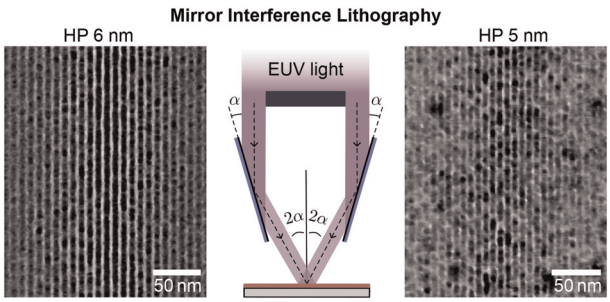


Efficient circular RNA synthesis through Gap-DNA splint-mediated ligation

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

PAPERS

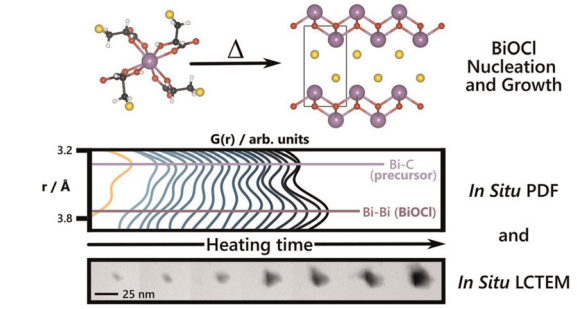
15533



Extreme ultraviolet lithography reaches 5 nm resolution

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

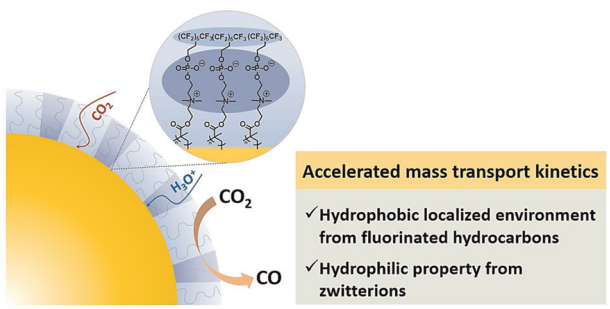
15544



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

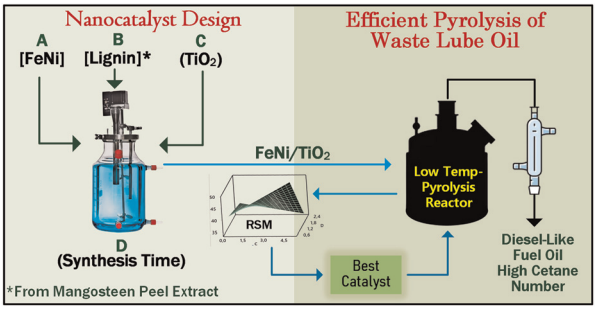
Qiang Luo, Joseph Tapia, Le Zhou, Chung-Hao Liu, Maham Liaqat, Hanyi Duan, Zhefei Yang, Mu-Ping Nieh, Todd Emrick,* Peng Bai* and Jie He*

PAPERS

15568

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

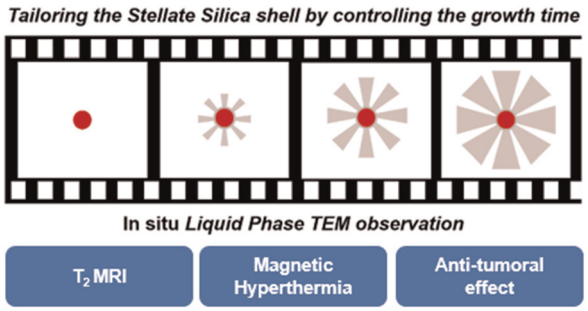
Riny Yolandha Parapat,* Aji Tri Laksono, Rizki Imam Fauzi, Yuni Maulani, Freddy Haryanto, Alfian Noviyanto, Michael Schwarze and Reinhard Schomäcker



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

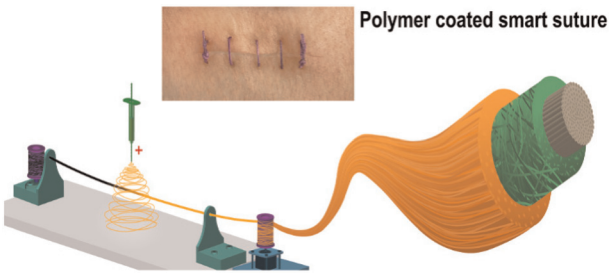
J. Bizeau, J. Journaux-Duclos, C. Kiefer, B. Freis, D. Ihiawakrim, M. de los A. Ramirez, T. Lucante, K. Parkhomenko, C. Vichery, J. Carrey, O. Sandre, C. Bertagnolli, O. Ersen, S. Bégin-Colin, V. Gigoux and D. Mertz*



15615

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

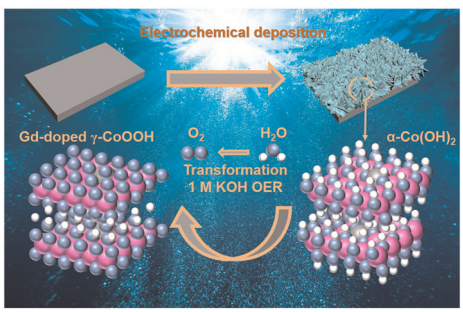
Tavia Walsh, Zhina Hadisi, Seyed Mohammad Hossein Dabiri, Sadegh Hasanpour, Sadaf Samimi, Mostafa Azimzadeh and Mohsen Akbari*



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*



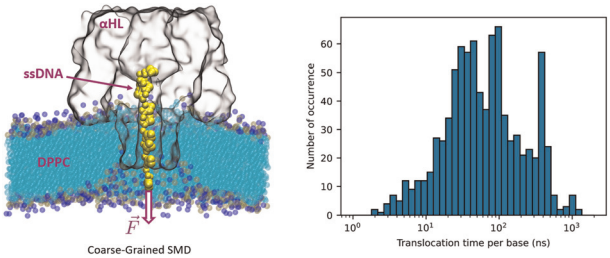
PAPERS

PAPERS

15677

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

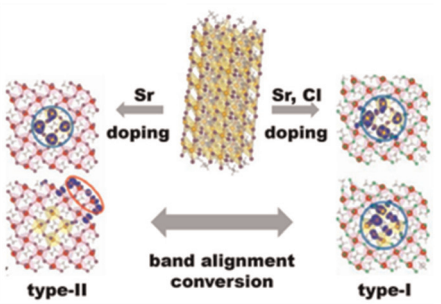
Cagla Okyay, Delphine Dessaux, Rosa Ramirez, Jérôme Mathé and Nathalie Basdevant*



15690

Carrier modulation of one-dimensional $MAPb_xSr_{1-x}(I_yCl_{1-y})_3$ core–shell perovskite nanowires

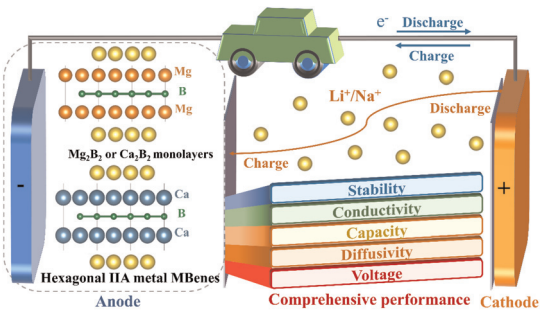
Pengjie Fu, Mengni Liu, Guixian Ge, Jianguo Wan and Xiaodong Yang*



15699

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

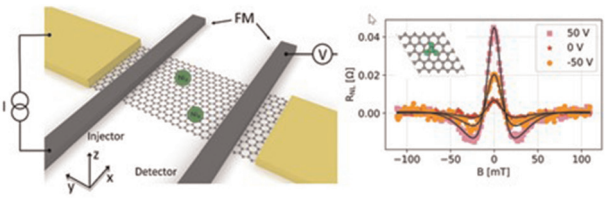
Yuqi Sun, Kaiqi Li, Bing Wang, Weiming Zhang, Erpeng Wang, Jian Zhou* and Zhimei Sun*



15713

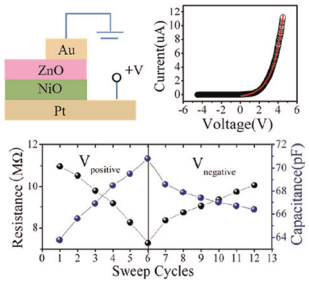
Magnetic clusters as efficient EY-like spin-scattering centres in graphene

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



PAPERS

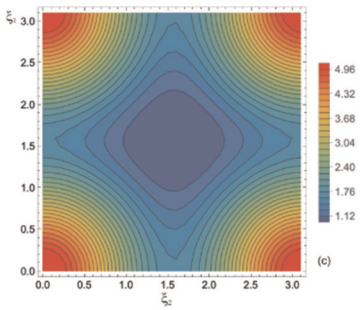
15722



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*

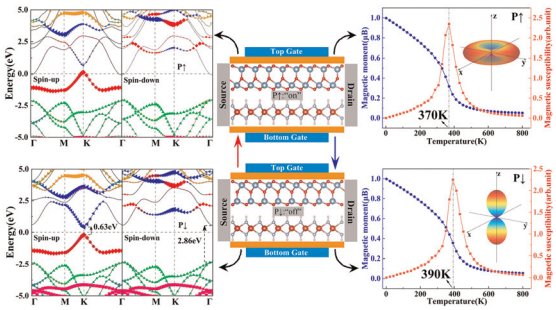
15730



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

Alexey O. Ivanov* and Ekaterina A. Elfimova

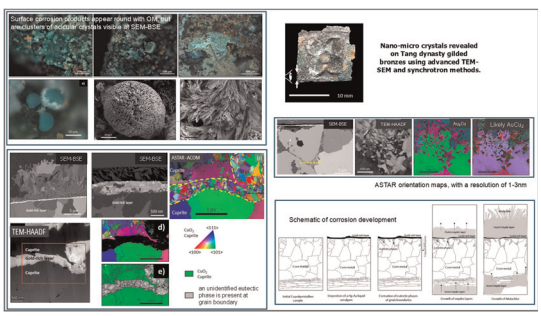
15746



Ferroelectrically controlled electromagnetic and transport properties of VN_2H_2/Al_2O_3 van der Waals multiferroic heterostructures

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

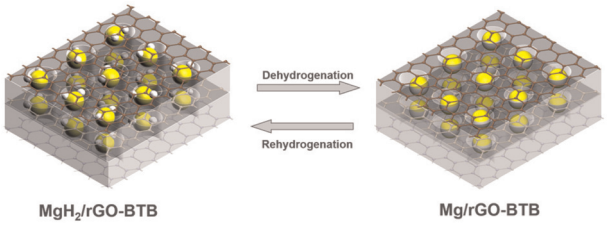
15758

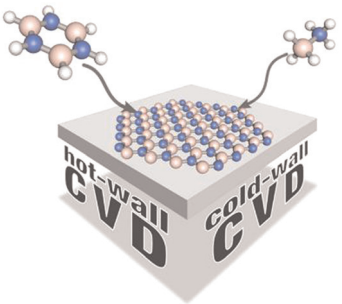


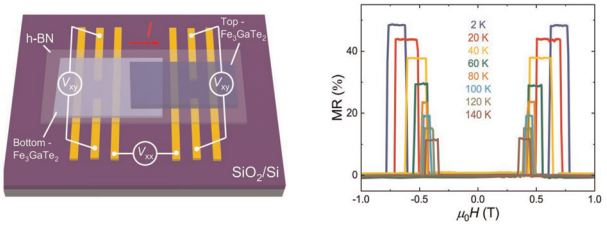
Nano–microcrystals revealed on Tang dynasty gilded bronze using advanced TEM–SEM and synchrotron methods

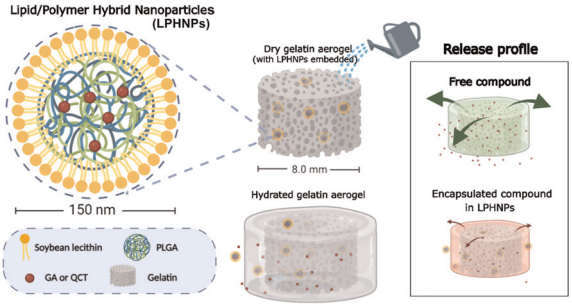
Ioannis Liritzis,* Sophie Cazottes, Thierry Douillard, Muriel Véron, Josep Roqué-Rosell, Carlo Marini, Partha Pratim Das, Alejandro Gomez-Perez, Athanassios S. Galanis, Stavros Nicolopoulos, Panagiota Manti, Junchang Yang and Xiangyu Zhang

PAPERS

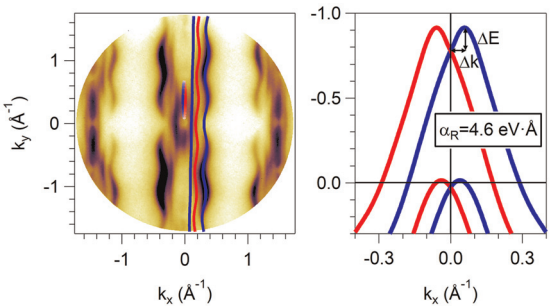






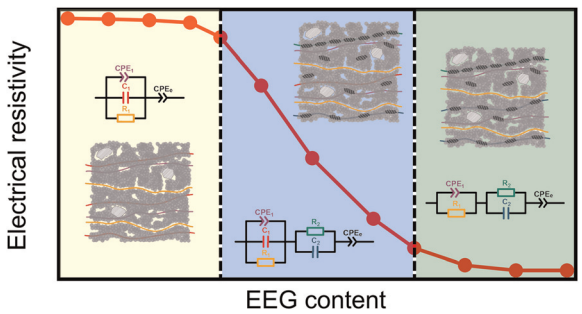


PAPERS



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



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

Małgorzata Safuta,* Cataldo Valentini, Artur Ciesielski and Paolo Samorì*

RETRACTION

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

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*