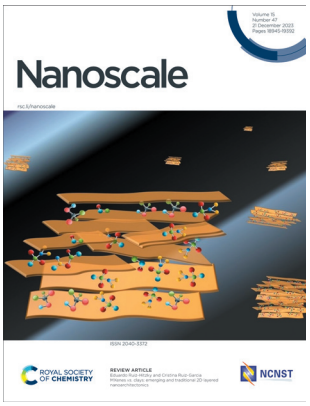
Nanoscale

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.

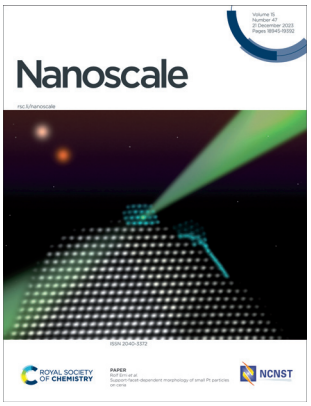
IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 15(47) 18945–19392 (2023)



Cover
See Eduardo Ruiz-Hitzky and Cristina Ruiz-Garcia, pp. 18959–18979.

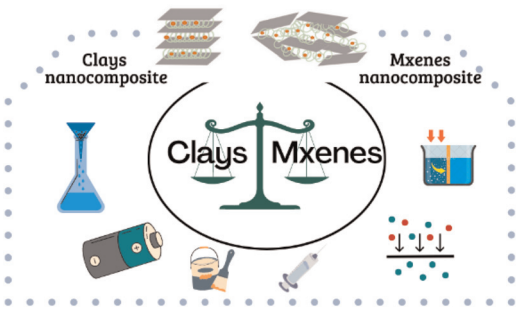
Image reproduced by permission of Eduardo Ruiz-Hitzky and Cristina Ruiz-Garcia from *Nanoscale*, 2023, **15**, 18959.

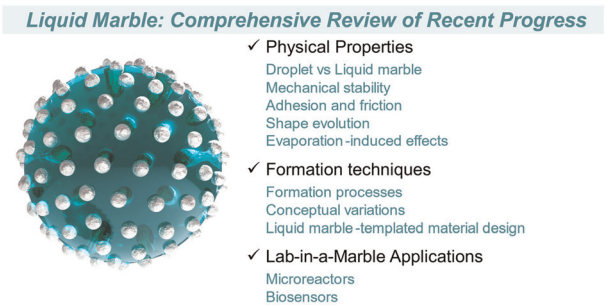


Inside cover
See Rolf Erni *et al.*, pp. 19091–19098.

Image reproduced by permission of Henrik Eliasson from *Nanoscale*, 2023, **15**, 19091.

REVIEWS





For queries about submitted papers, please contact Jonathon Watson, Editorial Production Manager in the first instance. E-mail: **nanoscale@rsc.org**
For pre-submission queries please contact Michaela Mühlberg, Executive Editor. E-mail: **nanoscale-rsc@rsc.org**
Nanoscale (electronic: ISSN 2040-3372) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK
Tel +44 (0)1223 432398; E-mail orders@rsc.org
2023 Annual (electronic) subscription price: £1936/$3155. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at **www.rsc.org/ip**
Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

ROYAL SOCIETY OF CHEMISTRY

Nanoscale

rsc.li/nanoscale

Nanoscale publishes experimental and theoretical work across the breadth of nanoscience and nanotechnology.

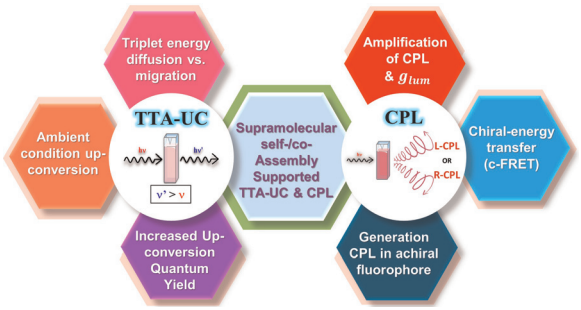
Published in collaboration with the National Centre for Nanoscience and Technology, Beijing, China

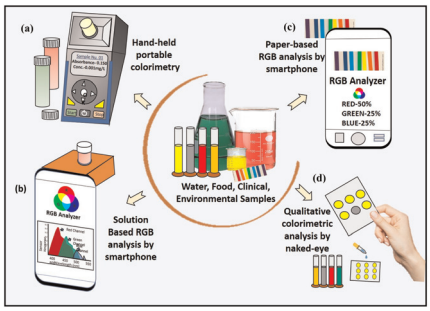
Information for Authors

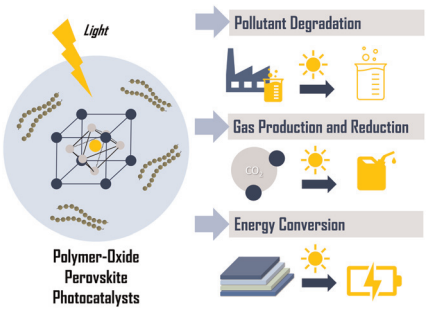
Full details on how to submit material for publication in Nanoscale are given in the Instructions for Authors (available from http://**www.rsc.org/authors**). Submissions should be made via the journal's homepage: **rsc.li/nanoscale**

Registered charity number: 207890

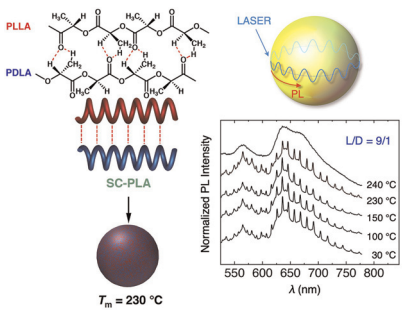
REVIEWS





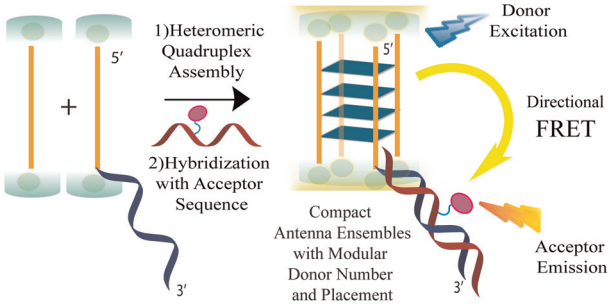


COMMUNICATIONS



COMMUNICATIONS

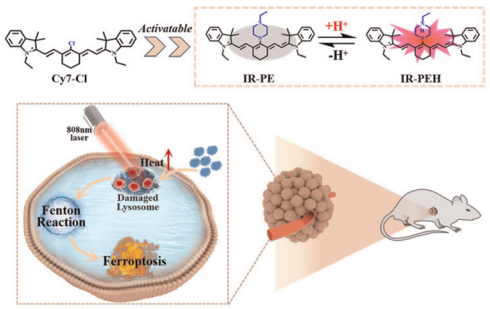
19069



Heteromeric guanosine (G)-quadruplex derived antenna modules with directional energy transfer

Mohammad Amin Zarandi, Pravin Pathak, Noah Beltrami, Jada N. Walker, Fengqi Zhang, Jennifer S. Brodbelt, Russell Schmehl and Janarthanan Jayawickramarajah*

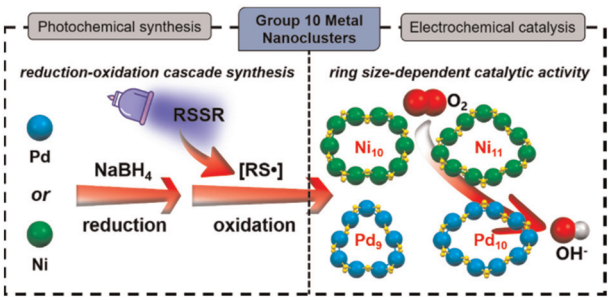
19074



Inducing tumor ferroptosis *via* a pH-responsive NIR-II photothermal agent initiating lysosomal dysfunction

Zhiwei Zhang, Jingjing Xiang, Lijiao Guan, Pu Chen, Changzhong Li, Chunlei Guo, Yan Hu,* Saipeng Huang,* Lintao Cai* and Ping Gong*

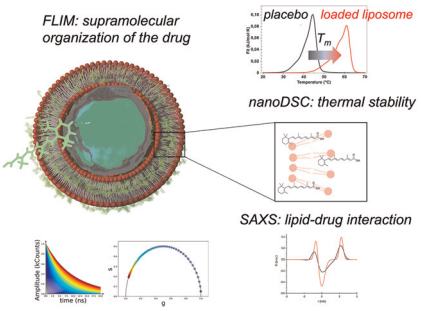
19079



Photochemical synthesis of group 10 metal nanoclusters for electrocatalysis

Ji-Qiang Fan, Kehui Cen, Hua-Jun Xu, Hai-Yang Wang, Ying Yang, Ze-Min Zhu, Hao Liu, Dengyu Chen, Weigang Fan* and Man-Bo Li*

19085



Phasor-FLIM-guided unraveling of ATRA supramolecular organization in liposomal nanoformulations

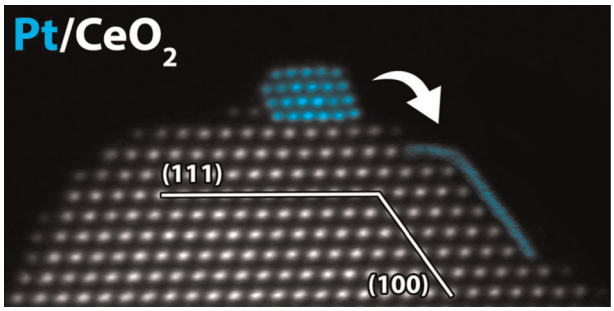
Mario Bernardi, Michael Vernizzi, Laura Baraldi, Sandor Balog, Irene Bassanetti, Elisa Sgarbi, Luca Fornasari, Chiara Arrigoni and Francesco Cardarelli*

PAPERS

19091

Support-facet-dependent morphology of small Pt particles on ceria

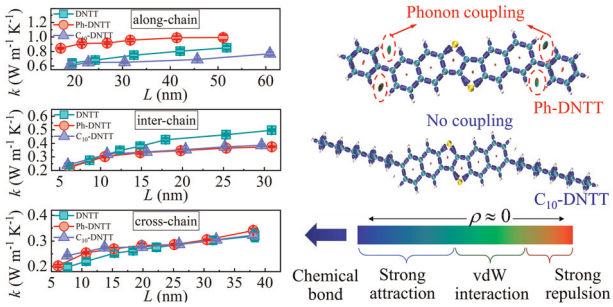
Henrik Eliasson, Yubiao Niu, Richard E. Palmer, Henrik Grönbeck and Rolf Erni*



19099

Insight into the effect of side chains on thermal transport of organic semiconductors

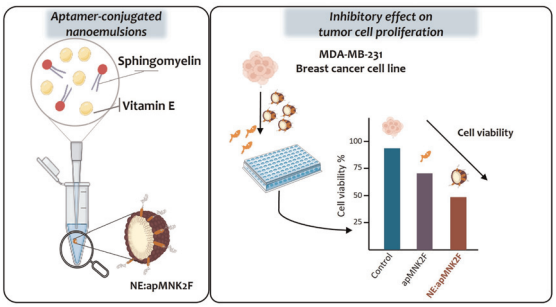
Chao Yang, Weitao Wang, Boyu Peng, Wanxiang Ji and Xinyu Wang*



19110

Chemical conjugation of aptamer–sphingomyelin nanosystems and their potential as inhibitors of tumour cell proliferation in breast cancer cells

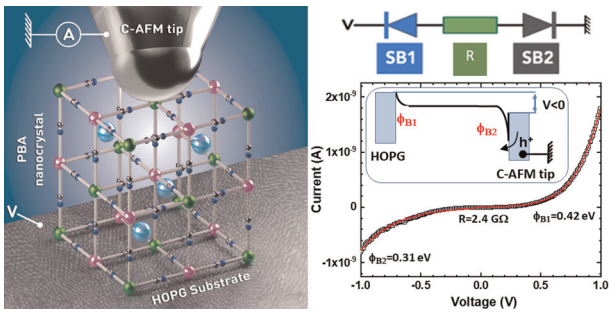
Jenifer García-Fernández, Laura Rivadulla Costa, Celia Pinto-Díez, M. Elena Martín, Víctor M. González and María de la Fuente Freire*



19128

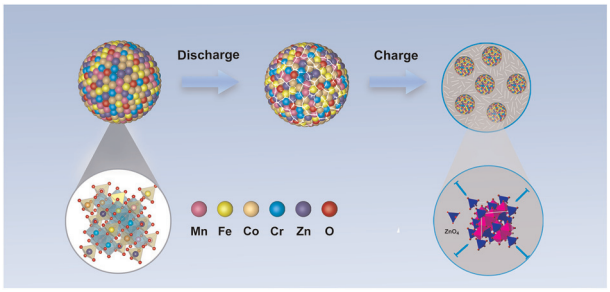
Electronic properties of single Prussian Blue Analog nanocrystals determined by conductive-AFM

Hugo Therssen, Laure Catala, Sandra Mazérat, Talal Mallah, Dominique Vuillaume, Thierry Mélin and Stéphane Lenfant*



PAPERS

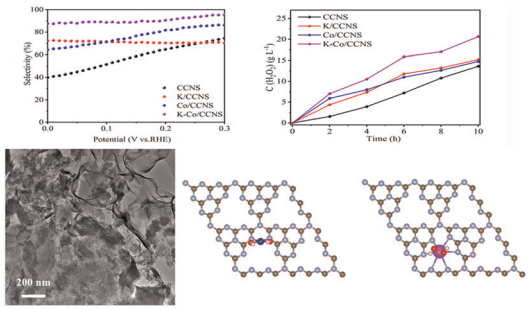
19139



The elemental pegging effect in locally ordered nanocrystallites of high-entropy oxide enables superior lithium storage

Huitao Leng, Panpan Zhang, Jiansheng Wu, Taiding Xu, Hong Deng, Pan Yang, Shouyue Wang, Jingxia Qiu,* Zhenzhen Wu* and Sheng Li*

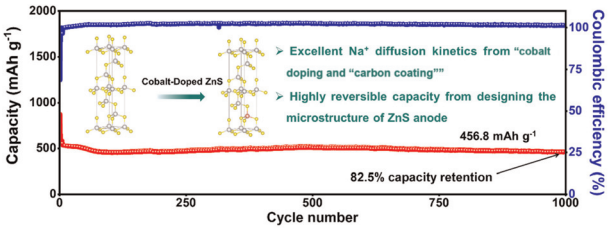
19148



Electrochemical production of hydrogen peroxide by non-noble metal-doped g-C_3N_4 under a neutral electrolyte

Ying Wang, Hongcen Yang, Niandi Lu, Di Wang, Kun Zhu, Zhixia Wang, Lianshan Mou, Yan Zhang, Yawei Zhao, Kun Tao, Fei Ma* and Shanglong Peng*

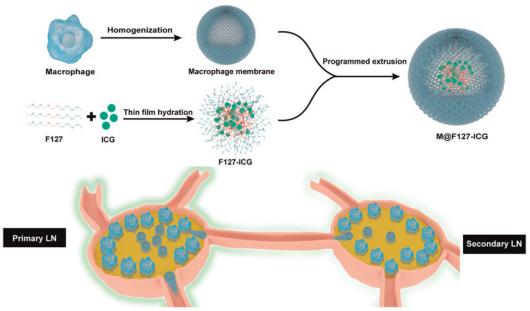
19159



A cobalt-doped hollow ZnS polyhedra@porous carbon shell composite anode for high-rate sodium-ion batteries

Miaoxin Di, Zhenqi Song, Suhua Chen* and Ying Bai*

19168



Biomimetic nanoplatform with selectively positioned indocyanine green for accurate sentinel lymph node imaging

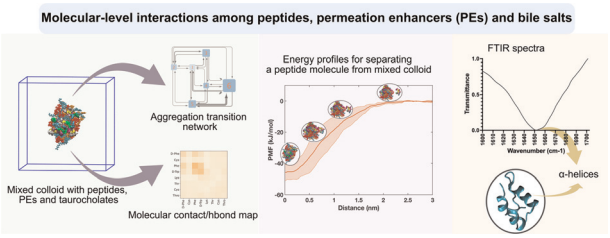
Wenjing Cheng, Xiangbai Wu, Shi Yu, Chengwei Zhang, Yinhong Song, Xinzhi Li and Xiang Yu*

PAPERS

19180

Revealing the interaction between peptide drugs and permeation enhancers in the presence of intestinal bile salts

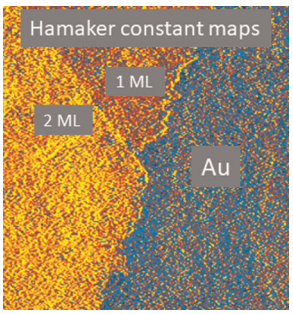
Shakhawath Hossain, Rosita Kneiszl and Per Larsson*



19196

Fast and high-resolution mapping of van der Waals forces of 2D materials interfaces with bimodal AFM

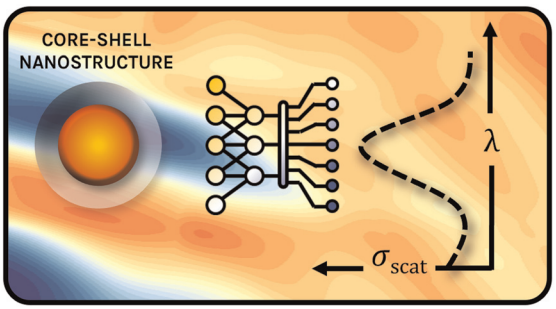
Victor G. Gisbert and Ricardo Garcia*



19203

Machine learning of all-dielectric core–shell nanostructures: the critical role of the objective function in inverse design

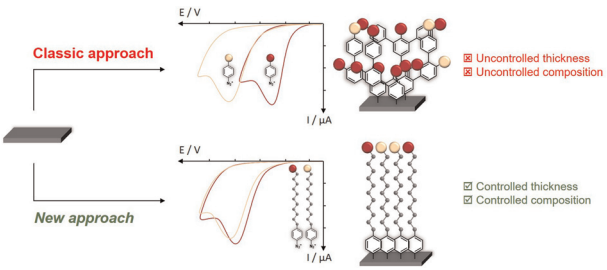
David J. Hoxie,* Purushotham V. Bangalore and Kannatassen Appavoo



19213

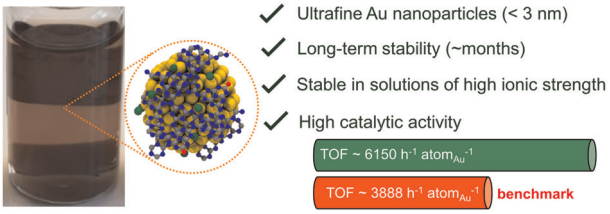
An innovative method for controlled synthesis of bicomponent monolayer films obtained by reduction of diazonium

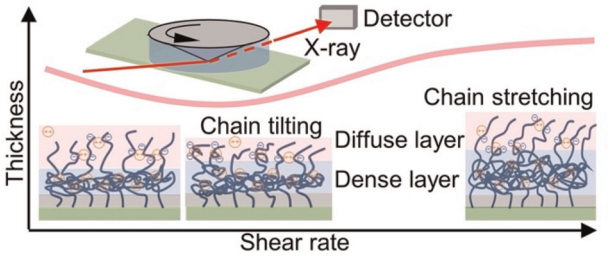
Julien Billon, Anna Omelchuk, Viacheslav Shkirskiy, Sylvie Dabos-Seignon, Olivier Alévêque, Eric Levillain, Tony Breton and Christelle Gautier*

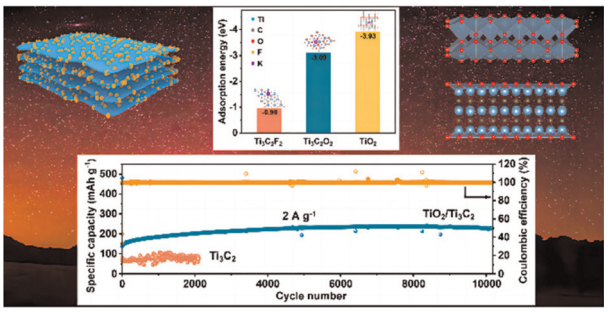


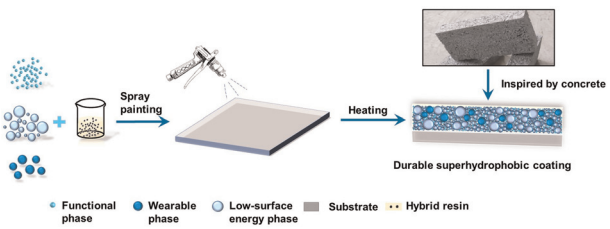
PAPERS

PAPERS



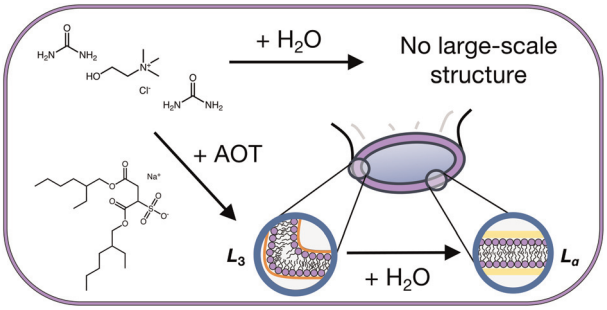






PAPERS

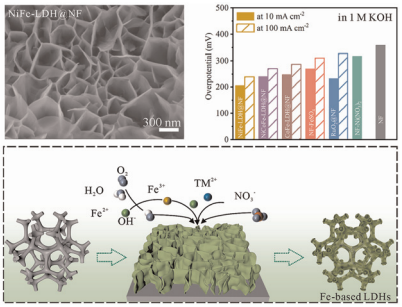
19314



Evidence for an L_3 phase in ternary deep eutectics: composition-induced L_3-to-L_α transition of AOT

Oliver S. Hammond,* Naomi S. Elstone, James Doutch, Peixun Li and Karen J. Edler

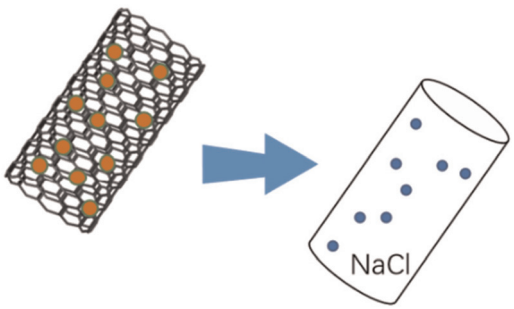
19322



A moderate method for *in situ* growing Fe-based LDHs on Ni foam for catalyzing the oxygen evolution reaction

Yanqi Liu, Chenghao Zhang, Qingsong Cai, Jianmin Zhang* and Zongmin Zheng*

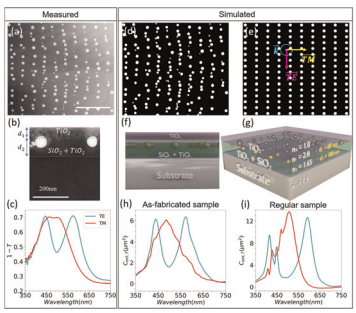
19330



Switchable NaCl cages *via* a MWCNTs/Ni[Fe(CN)$_6$]$_2$ nanocomposite for high performance desalination

Ze-Qin Yang, Wei-Bin Zhang,* Kang Yang, Bi Chen, Yi Yin, Jia-Jun Li, Jing-Lei Yang, Yue Gao and Xue-Jing Ma*

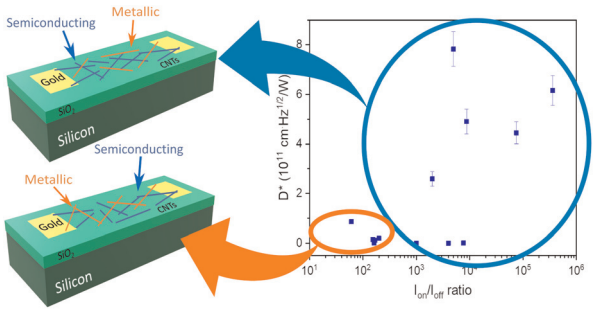
19339

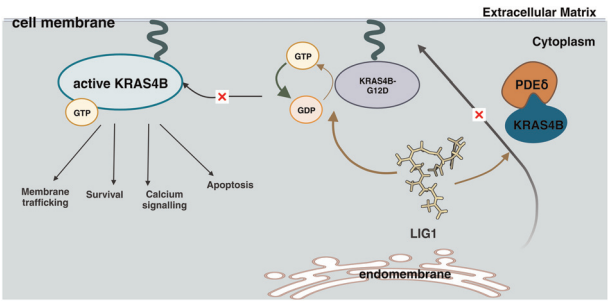


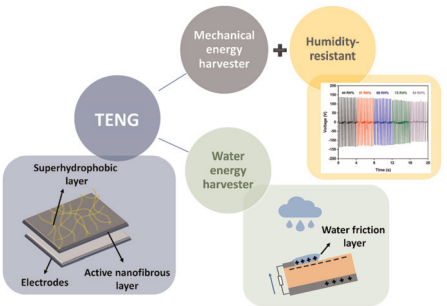
Hybridization between plasmonic and photonic modes in laser-induced self-organized quasi-random plasmonic metasurfaces

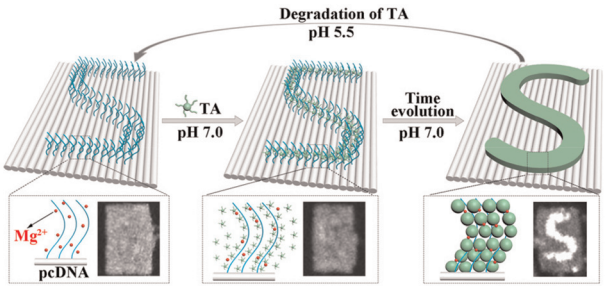
Van Doan Le, Yaya Lefkir and Nathalie Destouches*

PAPERS









CORRECTION

19389

Correction: Considerable slowdown of short DNA fragment translocation across a protein nanopore using pH-induced generation of enthalpic traps inside the permeation pathway

Loredana Mereuta, Alina Asandei, Ioan Andricioaei, Jonggwan Park, Yoonkyung Park* and Tudor Luchian*