Nanoscale

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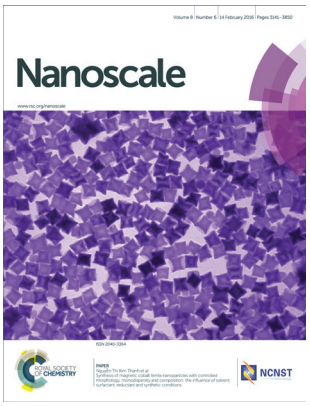
IN THIS ISSUE

ISSN 2040-3364 CODEN NANOHL 8(6) 3141–3850 (2016)



Cover
See Nguyễn Thị Kim Thanh *et al.*, *Nanoscale*, 2015, **7**, 19596.

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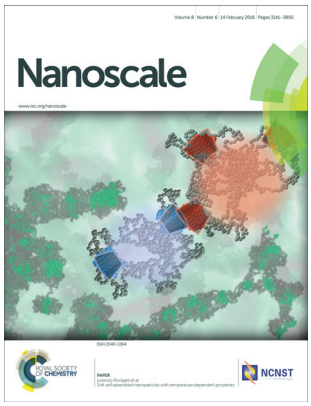

Inside cover
See Lorenzo Rovigatti *et al.*, pp. 3287–3294.

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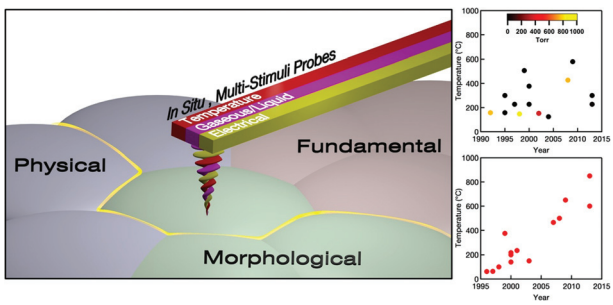
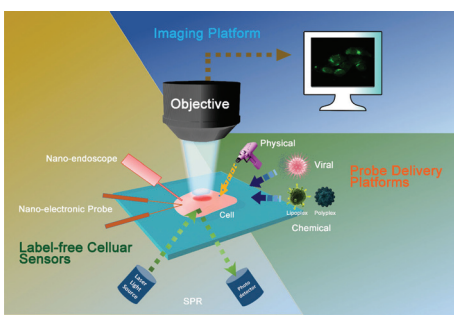
REVIEWS





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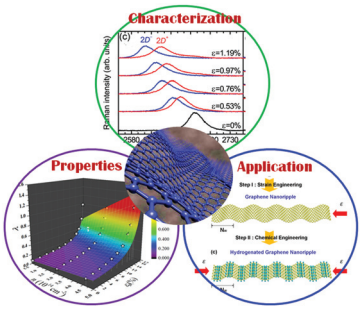

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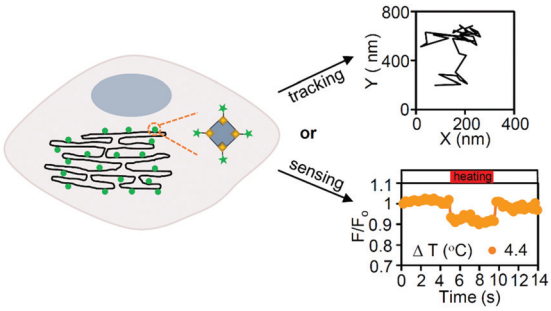

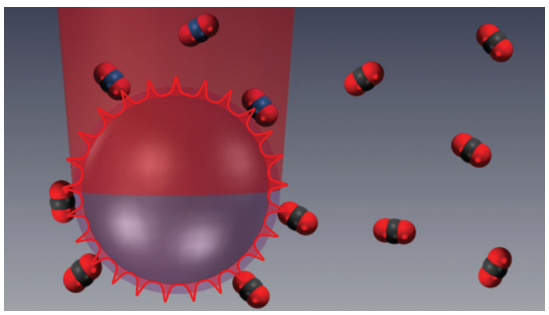

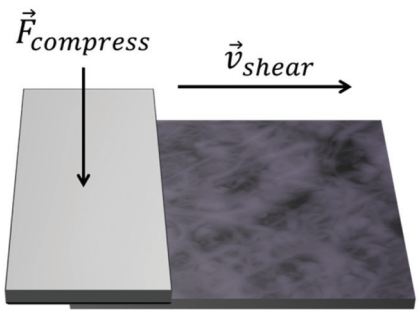

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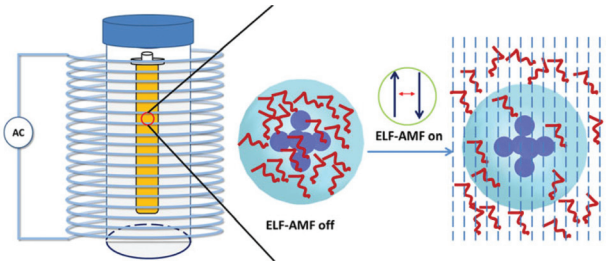

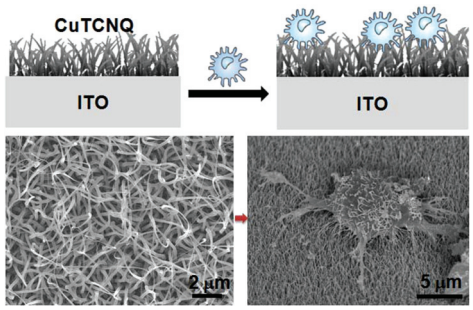

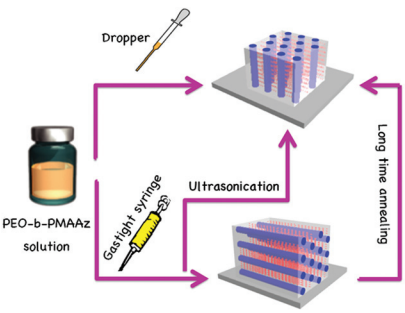

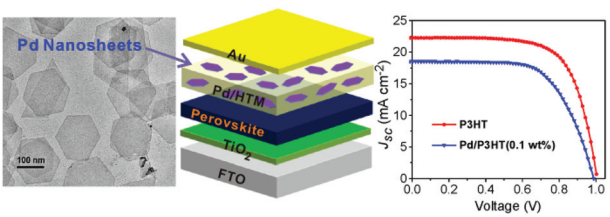

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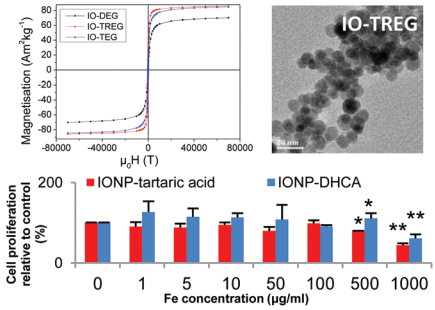
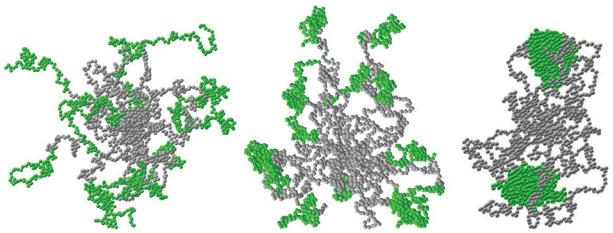


Polyol synthesis, functionalisation, and biocompatibility studies of superparamagnetic iron oxide nanoparticles as potential MRI contrast agents

R. Hachani, M. Lowdell, M. Birchall, A. Hervault, D. Mertz, S. Begin-Colin and N. T. K. Thanh*

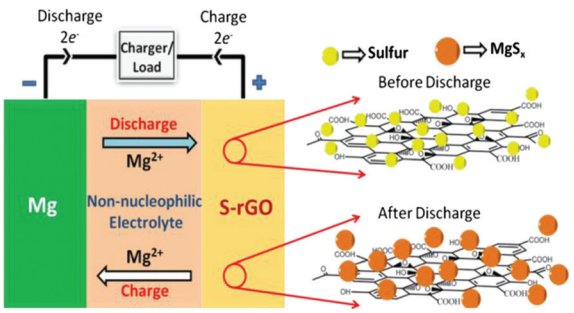
High pressure and high temperature conditions were used to achieve IONPs with a narrow particle size distribution and high magnetic moment. Their biocompatibility was demonstrated with human mesenchymal stem cells.



Soft self-assembled nanoparticles with temperature-dependent properties

Lorenzo Rovigatti,* Barbara Capone and Christos N. Likos

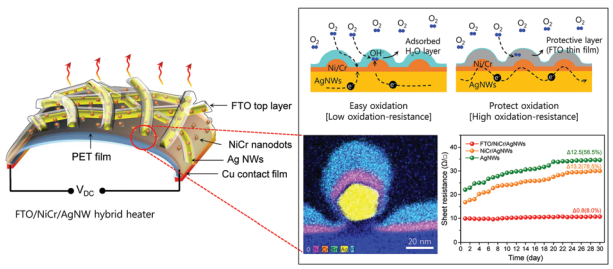
Telechelic star polymers, *i.e.* star polymers made of a number *f* of di-block copolymers grafted on a central anchoring point, spontaneously and reliably self-assemble into soft patchy particles. The properties of the stars can be finely controlled by changing the physical and chemical parameters of the solution, providing a robust route for the generation of novel materials.



Performance study of magnesium–sulfur battery using a graphene based sulfur composite cathode electrode and a non-nucleophilic Mg electrolyte

B. P. Vinayan,* Zhirong Zhao-Karger, Thomas Diemant, Venkata Sai Kiran Chakravadhanula, Nele I. Schwarzburger, Musa Ali Cambaz, R. Jürgen Behm, Christian Kübel and Maximilian Fichtner*

A magnesium–sulfur battery using a graphene based sulfur composite as a cathode electrode and non-nucleophilic Mg complex as an electrolyte.



Oxidation-resistant hybrid metal oxides/metal nanodots/silver nanowires for high performance flexible transparent heaters

A-Young Kim, Min Kyu Kim, Chairul Hudaya, Ji Hun Park, Dongjin Byun, Jong Choo Lim and Joong Kee Lee*

The FTO/NiCr/AgNW hybrid heater exhibits excellent optoelectronic and thermal properties, oxidation-resistance, and high durability over 10 000 bending cycles.

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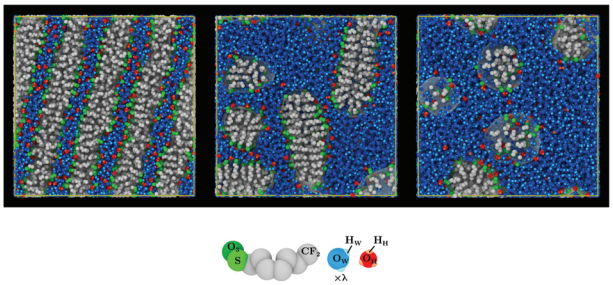

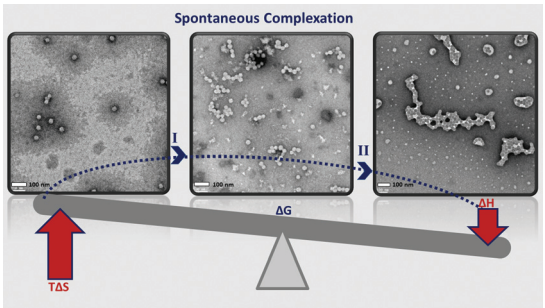

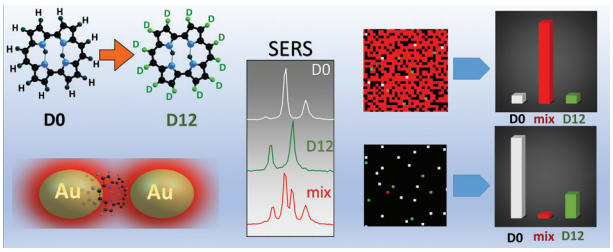

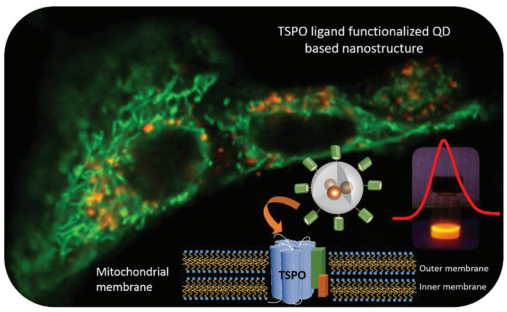

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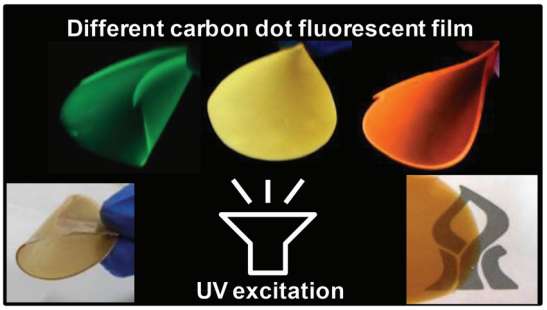

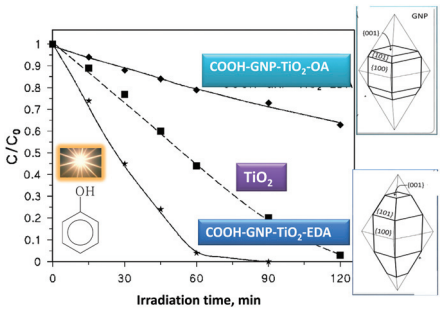

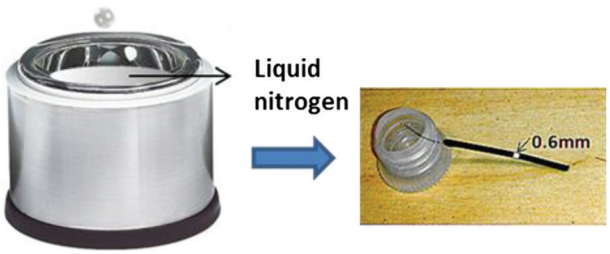

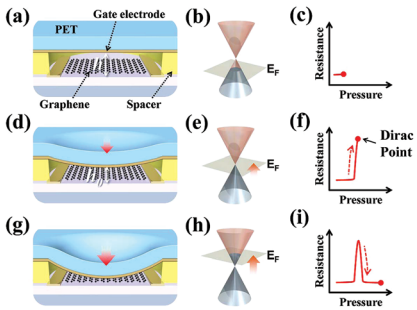

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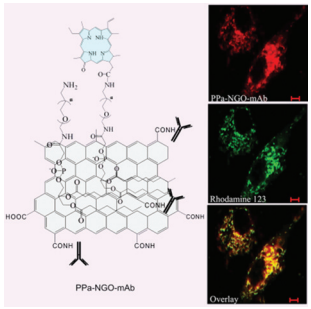

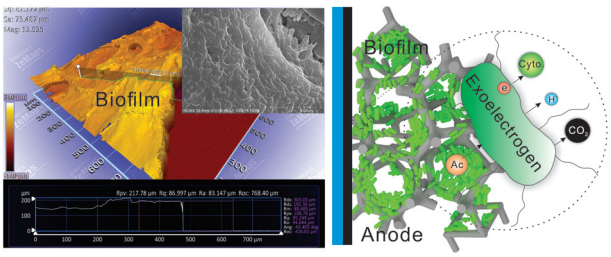

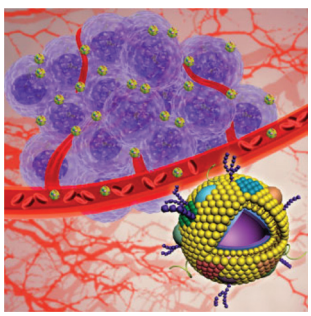

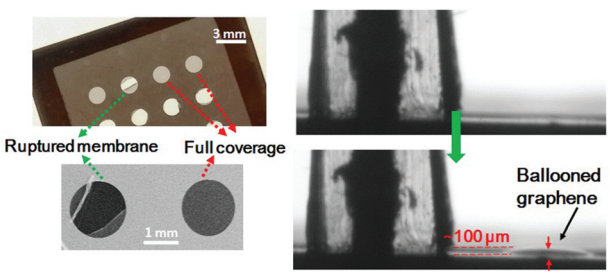

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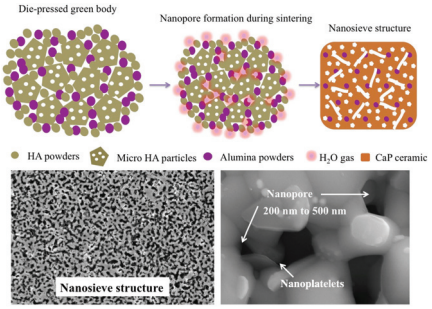
Novel porous calcium aluminate/phosphate nanocomposites: *in situ* synthesis, microstructure and permeability

Jingzhou Yang,* Xiaozhi Hu,* Juntong Huang, Kai Chen, Zhaohui Huang, Yangai Liu, Minghao Fang and Xudong Sun

Permeable porous nanomaterials have extensive applications in engineering fields.

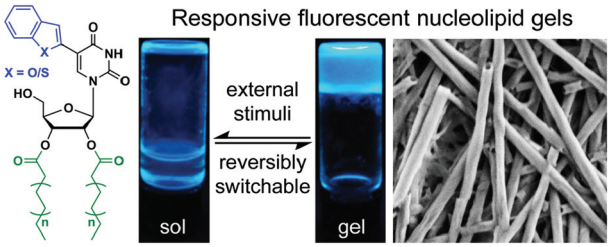


3607

Hierarchical self-assembly of switchable nucleolipid supramolecular gels based on environmentally-sensitive fluorescent nucleoside analogs

Ashok Nuthanakanti and Seergazhi G. Srivatsan*

Multistimuli-responsive supramolecular fluorescent nucleolipid gels, which show aggregation-induced enhanced emission, have been developed by using a new family of environmentally-sensitive nucleoside–lipid hybrid synthons.

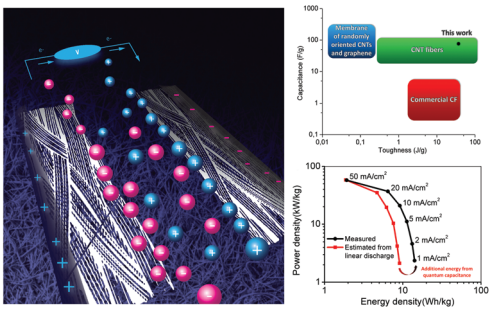


3620

Macroscopic fibres of CNTs as electrodes for multifunctional electric double layer capacitors: from quantum capacitance to device performance

E. Senokos, V. Reguero, J. Palma, J. J. Vilatela* and Rebeca Marcilla*

Large planar EDLC of strong CNT fibres and ionic liquids with high power and energy densities, exhibiting CNT quantum capacitance.

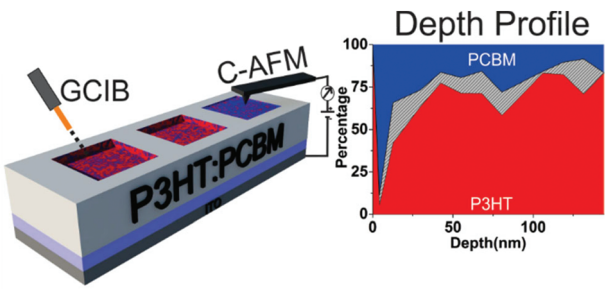


3629

Insights into the nanoscale lateral and vertical phase separation in organic bulk heterojunctions *via* scanning probe microscopy

R. Chintala,* J. G. Tait, P. Eyben, E. Voroshazi, S. Surana, C. Fleischmann, T. Conard and W. Vandervorst

This work demonstrates the feasibility of 3-dimensional characterization of chemical composition with nanometer spatial resolution using a combination of GCIB sputtering and SPM techniques.



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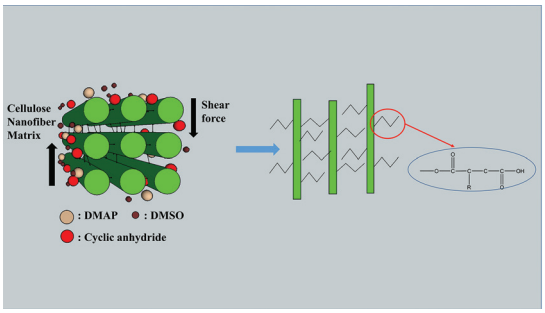

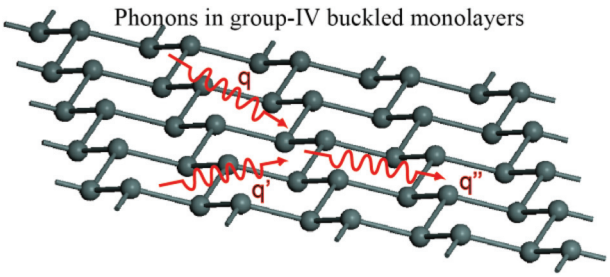

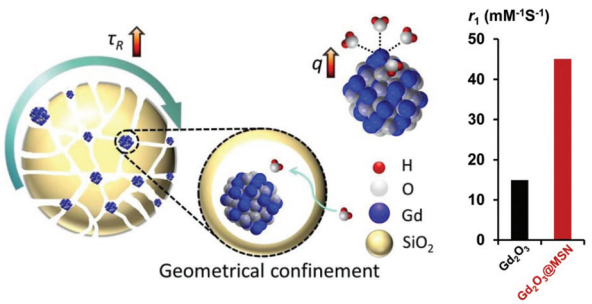

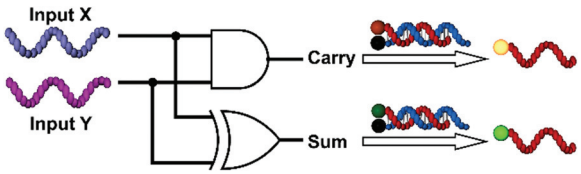

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0	+	1	=	0	1
1	+	1	=	1	0

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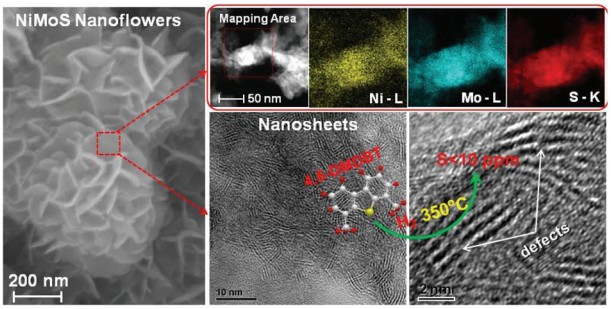

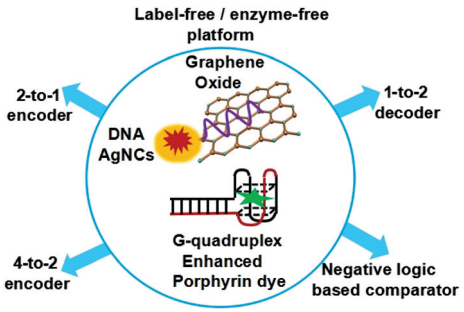

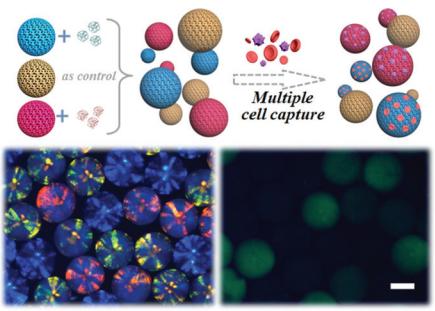

CORRECTION