

Soft Matter

Where physics meets chemistry meets biology for fundamental soft matter research

rsc.li/soft-matter-journal

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 1744-6848 CODEN SMOABF 21(19) 3661–3912 (2025)



Cover

See Kripa K. Varanasi et al.,
pp. 3688–3699.
Image reproduced
by permission of
Varanasi Research
Group @ MIT
from *Soft Matter*,
2025, **21**, 3688.



Inside cover

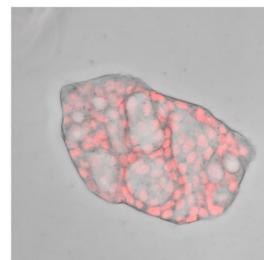
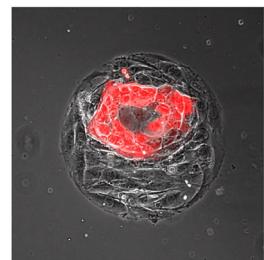
See Marc Couty et al.,
pp. 3700–3719.
Image reproduced
by permission of
Semen Vasin - Marc Couty
MFP MICHELIN
from *Soft Matter*,
2025, **21**, 3700.

REVIEW

3670

Interface morphodynamics in living tissues

Cheng-Lin Lv and Bo Li*



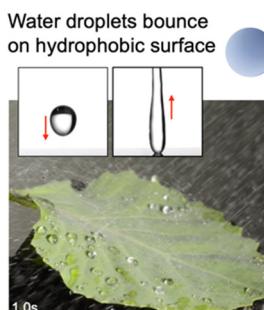
Tissue interfaces in the life process

PAPERS

3688

Enhancing spray retention using cloaked droplets to reduce pesticide pollution

Vishnu Jayaprakash, Simon Rufer, Sreedath Panat and Kripa K. Varanasi*



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%**

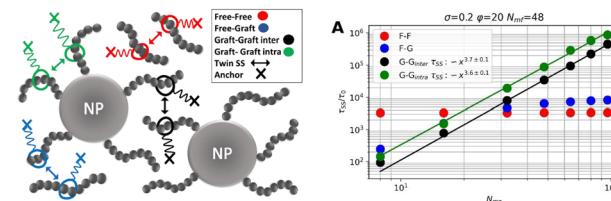


PAPERS

3700

A simulation method for highly entangled polymer nanocomposites: scaling exponents of slip-spring age among free and grafted chains, grafting density and nanoparticle/polymer interaction dependence on particle dispersion

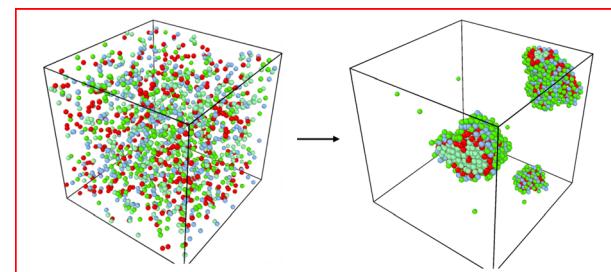
Semen Vasin, Gaetan Maurel, Taiji Mikami, Corentin Hermange, Iurii Chubak, Robert J. Tannenbaum, Sarah C. Seeger, Catherine Gauthier and Marc Couty*



3720

Multilayered ordered arrays self-assembled from a mixed population of nanoparticles

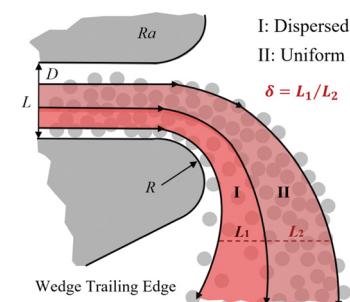
Camila Faccini de Lima, Nathasha D. Hewagama, Masaki Uchida, Trevor Douglas* and Vikram Jadhao*



3741

Granular flow–solid wall interaction: investigation of the teapot effect

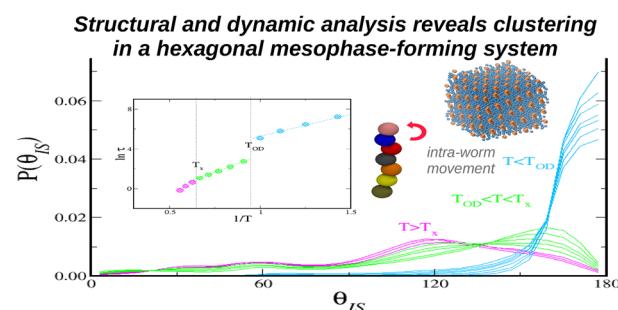
Yishan Hong, Hongyi Zou, Lijun Yang, Yitan Li* and Ruo-Yu Dong*



3748

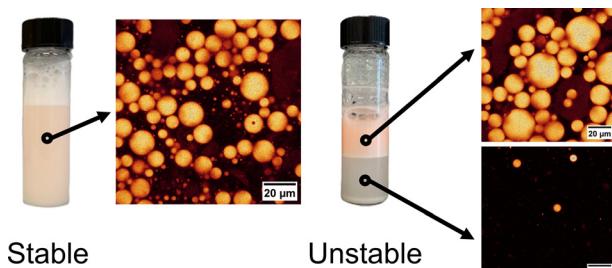
Temperature-driven self-assembly in a hexagonal mesophase-forming model: a dynamic and structural study

Maria Victoria Uranga Wassermann, Ezequiel Rodolfo Soulé and Cristian Balbuena*



PAPERS

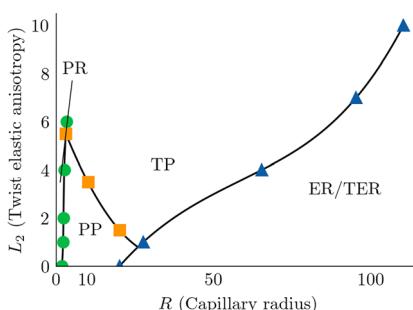
3757



What makes oil-in-water emulsions with pea protein stable? The role of excess protein in network formation and yield stress development

Eleonora Olsmats,* Adrian R. Rennie and Daniel Bonn

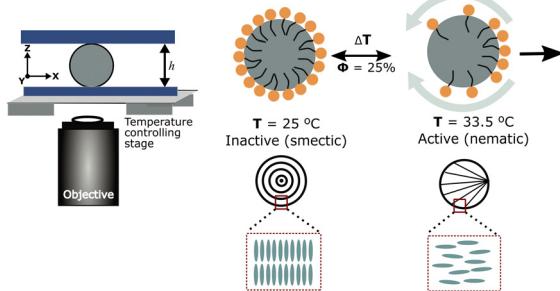
3768



Chiral ground states in a nematic liquid crystal confined to a cylinder with homeotropic anchoring

Lucas Myers* and Jorge Viñals

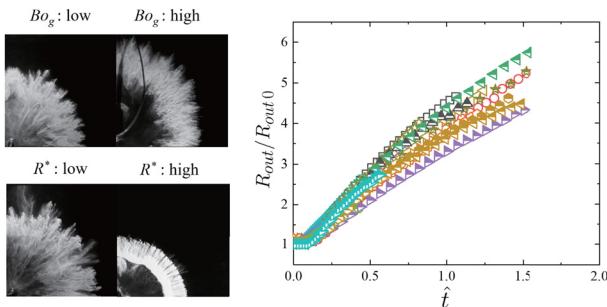
3782



Temperature switchable self-propulsion activity of liquid crystalline microdroplets

Manoj Kumar,* Siddharth Sane, Aniruddh Murali and Shashi Thutupalli

3789



Shock-induced dispersion patterns of powder with diverse physical properties

Jaehun Yoo, Ji Hoon Kim and Daegyoun Kim*

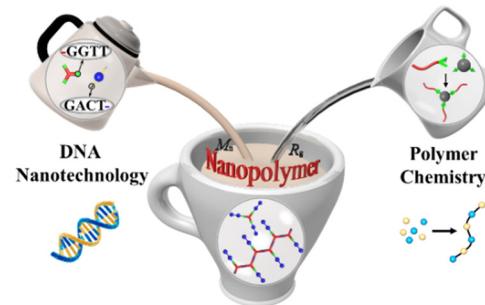


PAPERS

3803

Convergence of DNA nanotechnology and polymer chemistry to 'synthesize' nanopolymers with branching architectures: a computational perspective

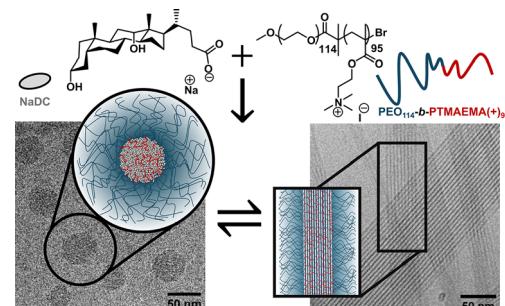
Tianyun Cai, Qianlin Cai, Jiaping Lin and Liangshun Zhang*[†]



3814

Structural interplay in block copolymer-bile salt complexes: from globules to ribbons

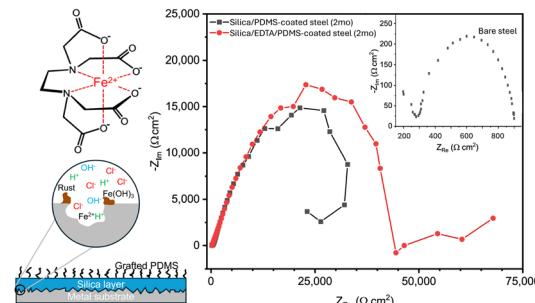
Suelen Gauna Trindade, Guanqun Du, Luciano Galantini, Lennart Piculell, Watson Loh* and Karin Schillén*



3829

Corrosion-resistant omniphobic coating for low-carbon steel substrates using silica layers enhanced with ethylenediamine tetraacetic acid

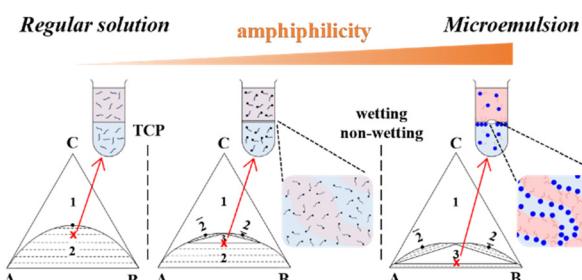
Parnian Mirabi, Fariba Vaez Ghasemi, Masoud Zakeri, Ibrahim Ogunsanya and Kevin Golovin*



3839

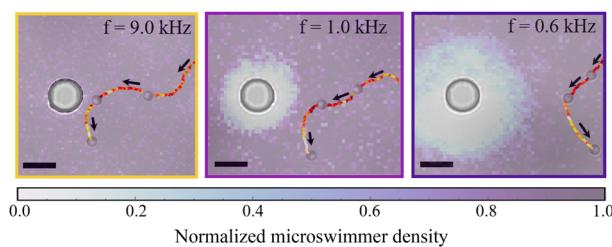
From regular solutions to microemulsions

Shih-Yu Tseng, Reinhard Strey, Ulf Olsson* and Thomas Sottmann*



PAPERS

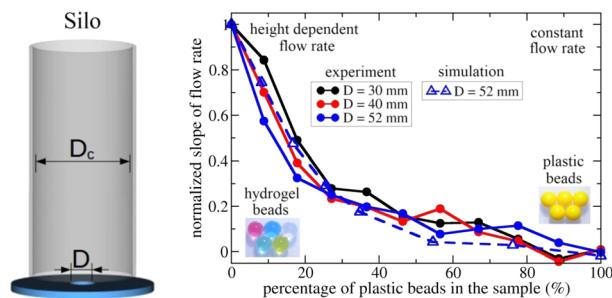
3850



Gating and tunable confinement of active colloids within patterned environments

Carolina van Baalen, Stefania Ketsetzi, Anushka Tintor, Israel Gabay and Lucio Isa*

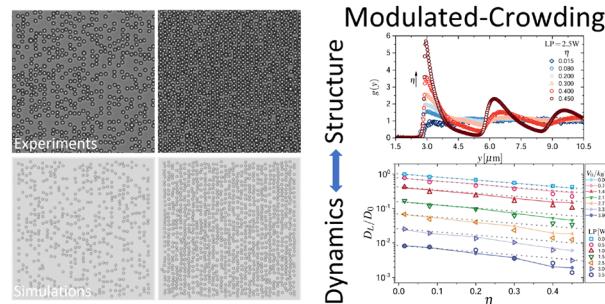
3859



Granular flow of 3D mixtures of soft and hard spheres

Bo Fan, Tivadar Pongó, Joshua A. Dijksman, Jasper van der Gucht and Tamás Börzsönyi*

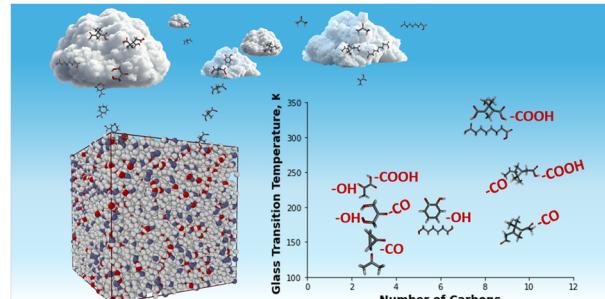
3868



Colloidal transport in periodic potentials: the role of modulated-crowding

Ramón Castañeda-Priego, Erick Sarmiento-Gómez, Yasamin Mohebi Satalsari, Stefan U. Egelhaaf and Manuel A. Escobedo-Sánchez*

3880



Predicting and parameterizing the glass transition temperature of atmospheric organic aerosol components via molecular dynamics simulations

Panagiota Siachouli, Vlasis G. Mavrantzas* and Spyros N. Pandis*

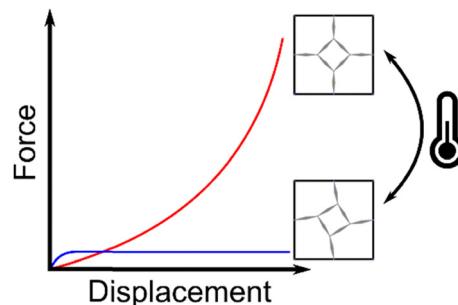


PAPERS

3890

Tuning stiffness of mechanical metamaterial unit cells via transitions to second-order rigid and pre-stressed states

Joseph C. Roback, Arya Nagrath, Sameera Kristipati, Christian D. Santangelo* and Ryan C. Hayward*



3899

Bubbling and mixing of vibrated and non-vibrated gas-fluidized active granular matter

Oscar J. Punch,* Michael W. Jordan, Angelina S. Moncrieffe, Qiang Guo and Christopher M. Boyce*

