

# Soft Matter

Where physics meets chemistry meets biology for fundamental soft matter research

[rsc.li/soft-matter-journal](https://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(13) 2377–2560 (2025)



### Cover

See Paul A. Janmey et al., pp. 2400–2412.  
Image reproduced by permission of Jakub A. Kochanowski from *Soft Matter*, 2025, 21, 2400.



### Inside cover

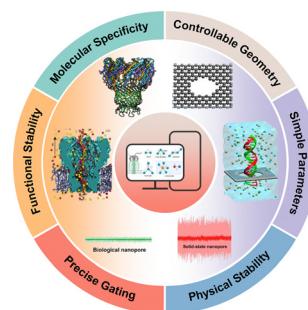
See Lihao Zhao et al., pp. 2413–2421.  
Image reproduced by permission of Lihao Zhao, Bocheng Li and Jingran Qiu from *Soft Matter*, 2025, 21, 2413.

## PERSPECTIVE

2385

### Probing nanopores: molecular dynamics insights into the mechanisms of DNA and protein translocation through solid-state and biological nanopores

Yuanshuo Zhang and Mingming Ding\*

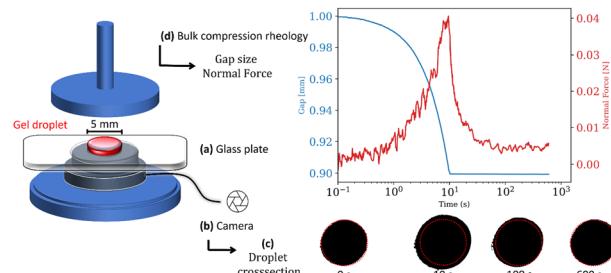


## PAPERS

2400

### Poroelasticity and permeability of fibrous polymer networks under compression

Paul Mollenkopf, Jakub A. Kochanowski, Yifei Ren, Kyle H. Vining, Paul A. Janmey\* and Prashant K. Purohit



# 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](https://rsc.li/cpd-training)

**SAVE  
10%**

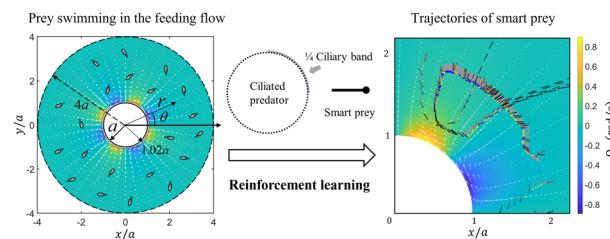


## PAPERS

2413

**Escape from the predator-induced flow: smart prey strategies with steering and swimming actions**

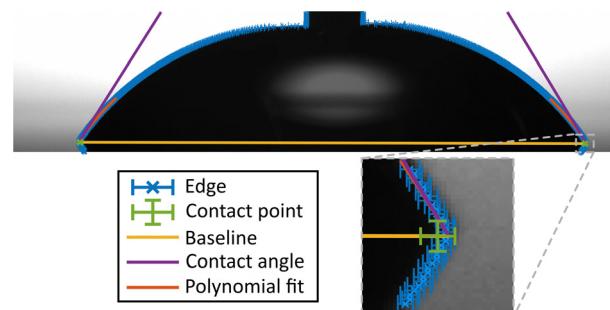
Bocheng Li, Jingran Qiu and Lihao Zhao\*



2422

**In situ error analysis in contact angle goniometry**

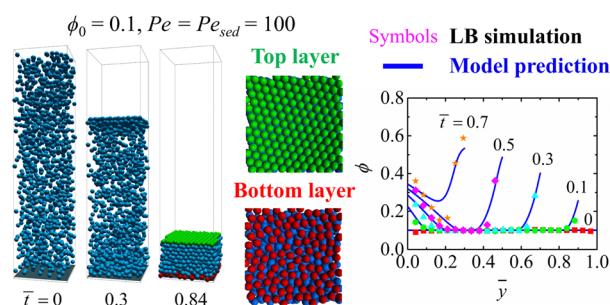
Heikki A. Nurmi,\* Gentrit Zenuni, Sakari Lepikko, Reetta Saine, Maja Vuckovac and Robin H. A. Ras\*



2430

**Microstructural evolution in drying colloidal films driven by evaporation and sedimentation: lattice Boltzmann simulation and a mathematical model**

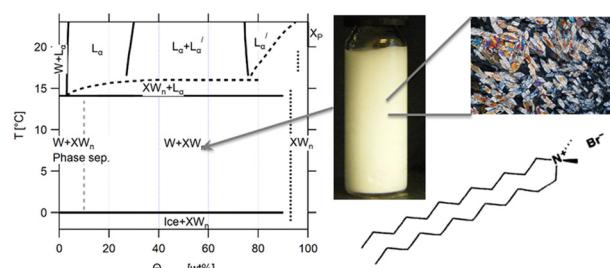
Jinseong Yun, Byoungjin Chun\* and Hyun Wook Jung\*



2445

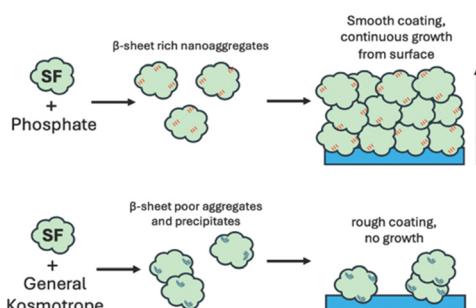
**Physical science of the didodecyldimethylammonium bromide–water system: 1. Equilibrium phase behaviour**

Louisa Reissig,\* Wim Pyckhout-Hintzen, Simon Dalgleish, Andrew R. Mount, Michael E. Cates, David J. Fairhurst\* and Stefan E. Egelhaaf



## PAPERS

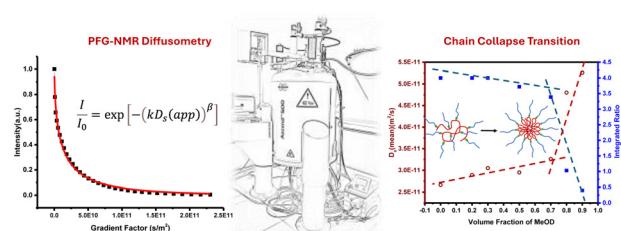
2461



## The role of phosphate in silk fibroin self-assembly: a Hofmeister study

Caleb Wigham, Vrushali Varude, Henry O'Donnell and R. Helen Zha\*

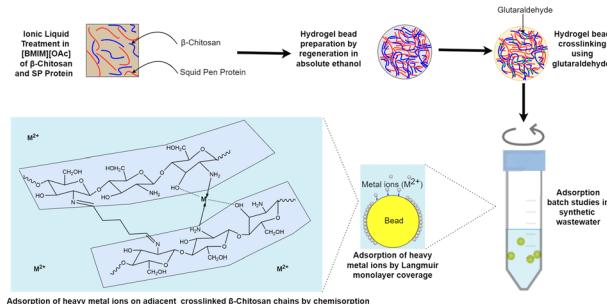
2471



## Tracking solvent-induced conformational collapse of periodically grafted amphiphilic polymers using PFG NMR diffusometry

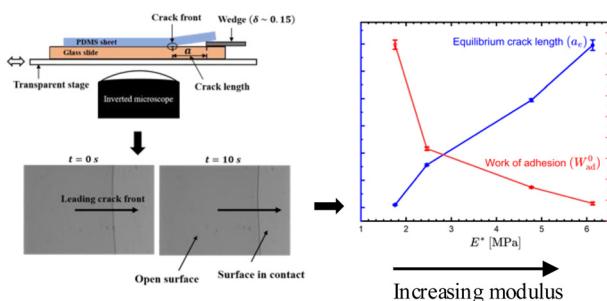
Harshita Sardana, B. V. N. Phani Kumar\* and S. Ramakrishnan\*

2480

Preparation of hybrid  $\beta$ -chitosan – squid pen protein hydrogel beads by ionic liquid regeneration for adsorption of copper(II) and zinc(II) from wastewater

Liyan Moralez, Pedro Nakasu\* and Jason Hallett\*

2493



## Adhesion study at the interface of a PDMS-elastomer and borosilicate glass-slide: effect of modulus and thickness of the elastomer

Susheel Kumar, Chiranjit Majhi, Krishnacharya Khare and Manjesh K. Singh\*

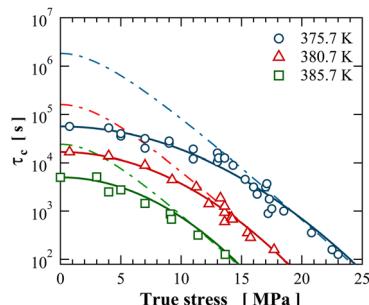


## PAPERS

2502

**Eyring theory for plasticity in amorphous polymers violates Curie's principle**

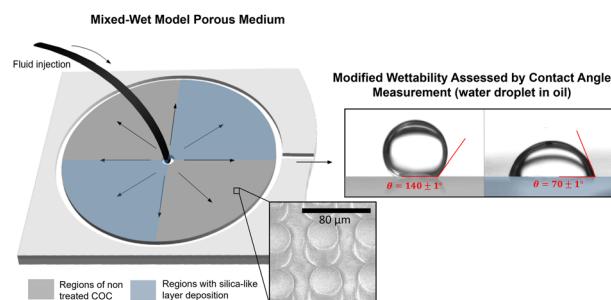
Thomas C. Merlette, Elian Masnada, Paul Sotta and Didier R. Long\*



2509

**Fabrication of COC micromodels with wettability heterogeneities: method and influence on fluid transport**

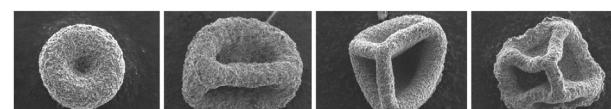
Camille Brigodiot,\* Elliot Speirs, Cédric Guyon, Michaël Tatoulian and Nicolas Pannacci



2518

**Evaporation driven buckling of a drop laden with graphene oxide nanosheets**

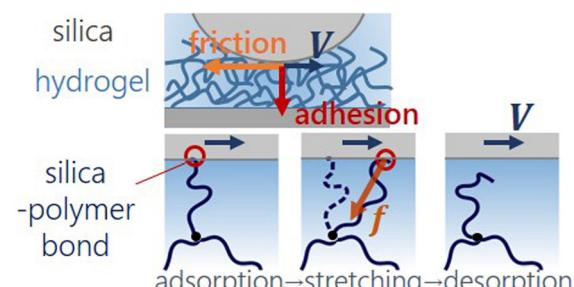
Suriya Prakash, Eva Krolis, Alvaro Marin and Lorenzo Botto\*



2529

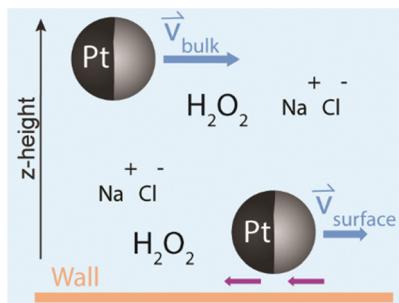
**Molecular adsorption induces normal stresses at frictional interfaces of hydrogels**

Lola Ciapa, Yvette Tran, Christian Frétigny, Antoine Chateauminois\* and Emilie Verneuil\*



## PAPERS

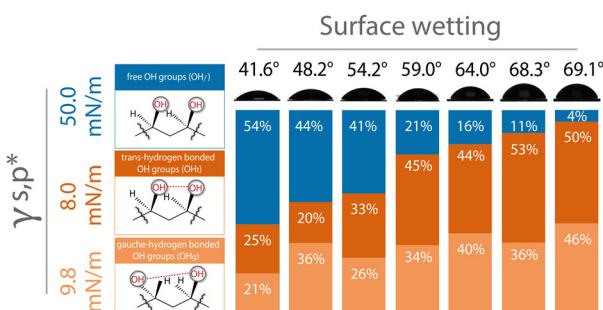
2541



### The motion of catalytically active colloids approaching a surface

Julio Melio, Solenn Riedel, Ali Azadbakht, Silvana A. Caipa Cure, Tom M.J. Evers, Mehrad Babaei, Alireza Mashaghi, Joost de Graaf and Daniela J. Kraft\*

2548



### Quantitative rationalization of the unexpectedly moderate water wettability of poly(vinyl alcohol) surfaces: thermodynamic evaluation and prediction of surface hydrogen bonding

Zhuohuan Guo, Zhuoyuan Ma\* and Dayang Wang\*