

# 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 22(5) 1073–1282 (2026)



### Cover

See Ali Lakkis,  
Reinhard Richter,  
Sofia Kantorovich *et al.*,  
pp. 1081–1091.  
Image reproduced  
by permission of Ali Lakkis,  
Sofia Kantorovich,  
Reinhard Richter  
from *Soft Matter*,  
2026, 22, 1081.  
Cover artwork created by  
Sofia S. Kantorovich, utilizing  
an experimental photo as  
background image.



### Inside cover

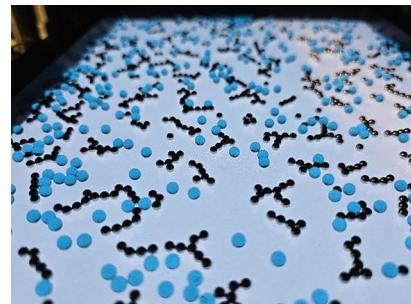
See Nick J. Carroll  
*et al.*, pp. 1092–1097.  
Image reproduced  
by permission of  
Adam Quintana,  
Gabriel P. López and  
Nick J. Carroll from  
*Soft Matter*, 2026, 22, 1092.

## PAPERS

1081

### Two time scales drive the formation of transient networks in a ferrogranular experiment

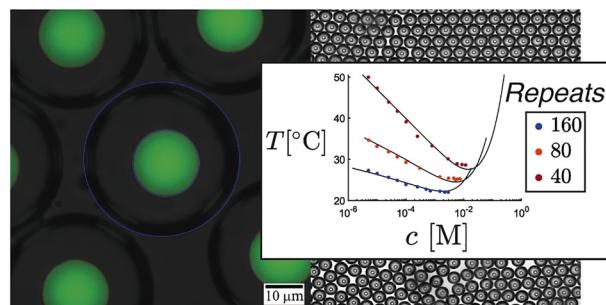
Ali Lakkis,\* Matthias Biersack, Oksana Bilous,  
Sofia Kantorovich and Reinhard Richter\*



1092

### Equilibrium scaling of phase separated elastin-like polypeptides for engineered condensates

Adam Quintana, Gabriel P. López and Nick J. Carroll\*



# 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%**

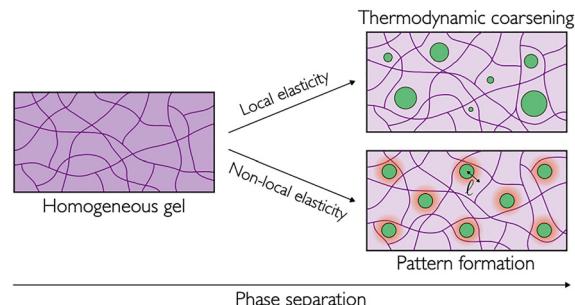


## PAPERS

1098

**Dynamics of phase separation in non-local elastic networks**

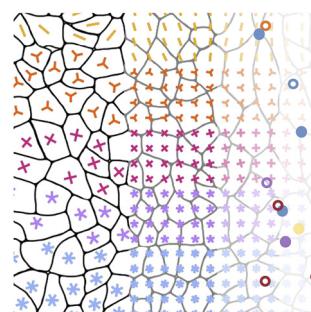
Oliver W. Paulin, Yicheng Qiang and David Zwicker\*



1109

**A spectrum of  $p$ -atic symmetries and defects in confluent epithelia**

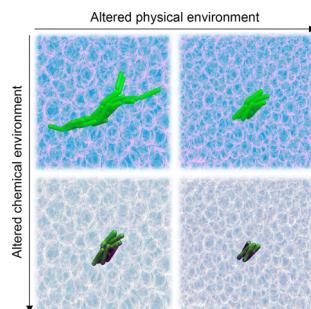
Lea Happel, Griseldis Oberschelp, Anneli Richter, Gwenda Roselene Rode, Valeria Grudtsyna, Amin Doostmohammadi and Axel Voigt\*



1130

**Physico-chemical regulation of bacterial growth success under 3D confinement**

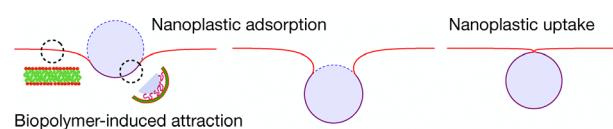
Nikita Bagade, M. Sreepadmanabh, Gokulnath Ganesan and Tapomoy Bhattacharjee\*



1141

**Predicting bio-corona-induced adsorption and uptake of nanoplastics**

Wenlin Zhang\* and Anderson D. S. Duraes

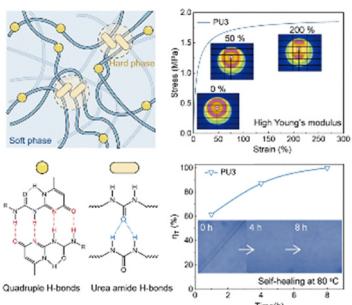


In this work, we combine theories of polymer adsorption and elasticity of lipid membranes to predict bio-corona-induced adsorption and uptake of nanoplastics.



## PAPERS

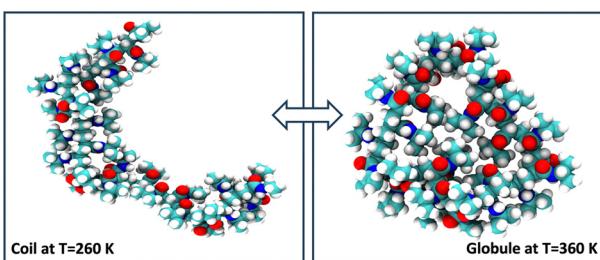
1151



### Hydrogen bond-triggered self-healing polyurea elastomers with mechanical robustness *via* dual-dynamic phase structure construction

Tianyu Wang, Chenxi Huyan, Qiuzhen Chen, Xiang Han, Fahu Yang, Zibi Wang, Changxiang Guo, Dong Liu\* and Fei Chen

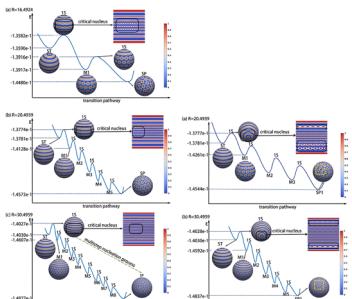
1161



### Sequence-defined phase behavior of poly(*N*-isopropylacrylamide-*co*-acrylamide) in water

Sandeep Parma, Ramamurthy Nagarajan and Tarak K. Patra\*

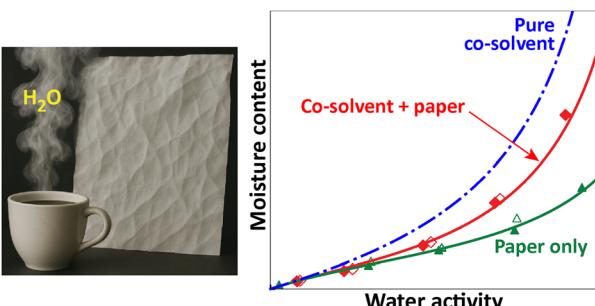
1171



### Exploring nucleation and phase transition of crystalline phases confined on spherical surfaces *via* the Landau–Brazovskii model

Qun Qiu and Guanghua Ji\*

1183



### Moisture sorption of cellulose-based porous media containing co-solvents and its impact on pore-fiber transport rates of co-solvent solutions

Sajjad Karimnejad and Anton A. Darhuber\*

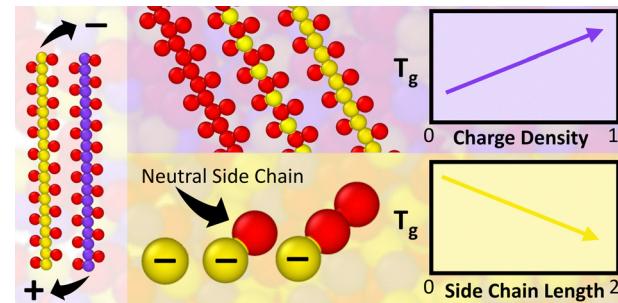


## PAPERS

1195

**A molecular dynamics study of the structure and dynamics of screened polyelectrolyte complex materials**

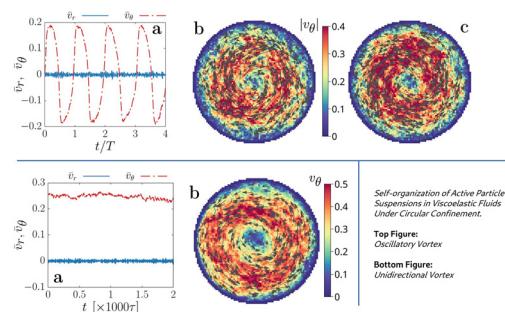
Sophie G. M. van Lange, Nayan Vengallur, Andrea Giuntoli\* and Jasper van der Gucht\*



1205

**Spatiotemporal organization in an active viscoelastic suspension: a dissipative particle dynamics study**

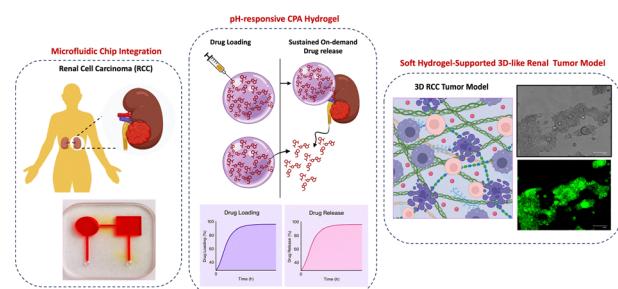
Simran Kapoor, Harinadha Gidituri and V. S. Akella\*



1214

**A bi-functional pH-responsive chip with a soft hydrogel-supported 3D-like renal tumor model for sustained drug delivery**

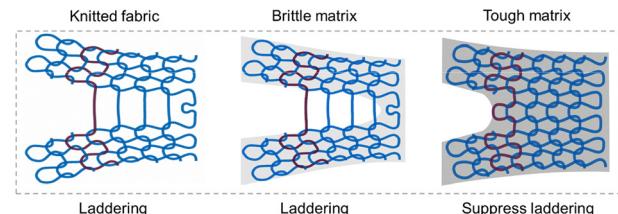
Upasana Gupta, Bisma Yousuf, Shashank Kumar Singh\* and Ravi Kumar Arun\*



1230

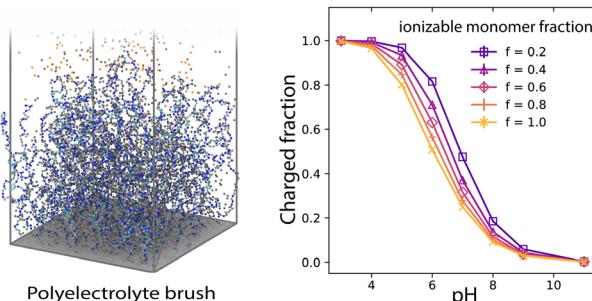
**Composite of knitted fabric and soft matrix. II. Laddering**

Fengkai Liu, Wanqi Zhang, Simin Zheng, Xi Chen and Jingda Tang\*



## PAPERS

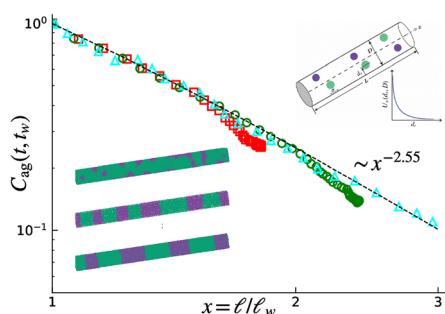
1240



### Simulation of weak polyelectrolyte brushes: the effects of ionizable monomer fraction and monovalent salt

Xin Yuan, Shahryar Ramezani Bajgiran, Rahatun Akter, Amanda B. Marciel\* and Jeremy C. Palmer\*

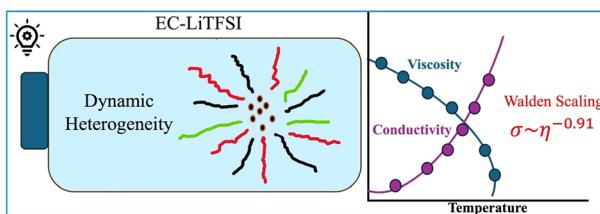
1251



### Domain growth and aging in a phase separating binary fluid confined inside a nanopore

Saikat Basu, Suman Majumder,\* Raja Paul and Subir K. Das

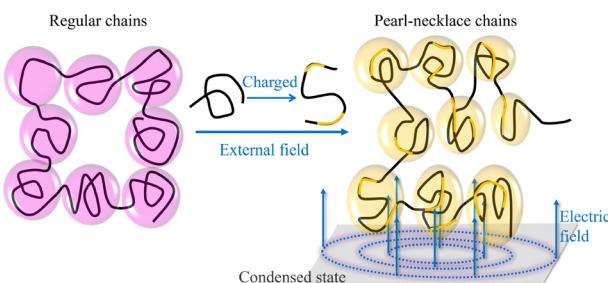
1262



### Molecular insights into temperature-driven transport mechanisms in EC-LiTFSI electrolytes

Hema Teherpuria, Prabhat K. Jaiswal and Santosh Mogurampelly\*

1272



### A thermodynamic strategy of hydrogels with pearl-necklace-like chains towards excellent hyperelasticity

Ziyu Xing,\* Yifan Liu, Xiaodong Wang,\* Xiaoling Hu and Rongguo Zhao

