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**Damage in elastomers: Healing of internally nucleated cavities and micro-cracks**

*Soft Matter*, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00238J, Paper
Xavier M Poulain, Oscar Lopez-Pamies, Krishnaswamy Ravi-Chandar
Following on the work of Poulain et al. (Damage in elastomers: Nucleation and growth of cavities, micro-cracks, and macro-cracks. *International Journal of Fracture* 2017, *205*, 1--21.), this paper presents an...

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**Mechanical properties of bulk graphene oxide / poly(acrylic acid) / poly(ethylenimine) ternary polyelectrolyte complex**

*Soft Matter*, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00176F, Paper
Yipin Duan, Chao Wang, Mengmeng Zhao, Bryan D Vogt, Nicole Zacharia
Ternary complexes formed in a single pot process through the mixing of cationic (branched polyethylenimine, BPEI) and anionic (graphene oxide, GO, and poly(acrylic acid), PAA) aqueous solutions exhibit superior mechanical...

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**Active hole generation in a liquid droplet dissolving into a binary solvent**

*Soft Matter*, 2018, Advance Article
DOI: 10.1039/C8SM00357B, Paper
Noriko Oikawa, Keita Fukagawa, Rei Kurita
Fluorescence micrograph of the active holes created in a droplet of an ionic liquid.
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**Attenuation of pressure dips underneath piles of spherocylinders**

*Soft Matter*, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00280K, Paper
Haiyang Zhao, Xizhong An, Dazhao Gou, Bo Zhao, Runyu Yang
The discrete element method (DEM) was used to simulate the piling of rod-like (elongated spherocylindrical) particles, mainly focusing on the effect of particle shape on the structural and force
**Deswelling behaviour of ionic microgel particles from low to ultra-high densities**

Soft Matter, 2018, Advance Article  
DOI: 10.1039/C8SM00390D, Paper  
Sofi Nojd, Peter Holmqvist, Niels Boon, Marc Obiols-Rabasa, Priti S. Mohanty, Ralf Schweins, Peter Schurtenberger  
The swelling of ionic microgel particles is measured at a wide range of concentrations using a combination of light, X-ray and neutron scattering techniques. Theoretical modeling as well as simulations are used to interpret the data.  
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**Glassy worm-like micelles in solvent and shear mediated shape transitions**

Soft Matter, 2018, Advance Article  
DOI: 10.1039/C8SM00080H, Paper  
Kaushik Chakraborty, Kandaswamy Vijayan, Andre E. X. Brown, Dennis E. Discher, Sharon M. Loverde  
Solvent effect on the shape of worm-like glassy micelles as characterized both experimentally and with simulation.  
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Ionic liquid mediated micelle to vesicle transition of a cationic gemini surfactant: a spectroscopic investigation

Soft Matter, 2018, Advance Article
DOI: 10.1039/C7SM02241G, Paper
Sonali Mondal, Animesh Pan, Animesh Patra, Rajib Kumar Mitra, Soumen Ghosh
In this contribution, we have examined a composition dependent self aggregated structural modification of a catanionic mixture of the surface active ionic liquid (IL) 1-butyl-3-methylimidazolium octyl sulphate and a cationic gemini surfactant (14-5-14) in aqueous medium.
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Growth of Wormlike Surfactant Micelles Induced by Embedded Polymer: Role of Polymer Chain Length
Soft Matter, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00776D, Paper
Alexander Lvovich Kvyatkovsky, Vyacheslav S. Molchanov, Hari Sharma, Aleksandr Ivanovich Kuklin, Elena Dormidontova, Olga Philippova
Incorporation of polymer chains into wormlike surfactant micelles, which find a large range of applications, offers the opportunity to modify their structure and properties. In this paper using spectroscopic, scattering....
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Charge and hydration structure of dendritic polyelectrolytes: molecular simulations of polyglycerol sulfate
Soft Matter, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00714D, Paper
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Rohit Nikam, Xiao Xu, Matthias Ballauff, Matej Kanduc, Joachim Dzubiella
Macromolecules based on dendritic or hyperbranched polyelectrolytes have been emerging as high potential candidates for biomedical applications. Here we study the charge and solvation structure of dendritic polyglycerol sulphate (dPGS)...
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Anionic shell shields a cationic core allowing for uptake and release of polyelectrolytes within core-shell responsive microgels

*Soft Matter*, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00397A, Paper
To realize carriers for drug delivery, cationic containers are required for anionic guests. Nevertheless, the toxicity of cationic carriers limits their practical use. In this study, we investigate a model...

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Size-Dependent Penetrant Diffusion in Polymer Glasses

*Soft Matter*, 2018, Accepted Manuscript
DOI: 10.1039/C8SM00701B, Communication
Dong Meng, Kai Zhang, Sanat Kumar
Molecular Dynamics simulations are used to understand the underpinning basis of the transport of gas-like solutes in deeply quenched polymeric glasses. As found in previous work, small solutes, with sizes...

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Coacervation of dynamic covalent surfactants with polyacrylamides: properties and applications

*Soft Matter*, 2018, Advance Article
DOI: 10.1039/C8SM00773J, Paper
Weiwei Zhao, Hua Wang, Yilin Wang
Coacervation of cationic dynamic covalent surfactants with polyacrylamides and their application in extracting and releasing anionic dyes in water.
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Traction cytometry: regularization in the Fourier approach and comparisons with finite element method
Soft Matter, 2018, Advance Article
DOI: 10.1039/C7SM02214J, Paper
Ankur H. Kulkarni, Prasenjit Ghosh, Ashwin Seetharaman, Paturu Kondaiah, Namrata Gundiah
Traction forces exerted by adherent cells are quantified using displacements of embedded markers on polyacrylamide substrates due to cell contractility.
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Micromechanical characterization of soft, biopolymeric hydrogels: stiffness, resilience, and failure

Soft Matter, 2018, 14, 3478-3489
DOI: 10.1039/C8SM00501J, Paper
Shruti Rattan, Linqing Li, Hang Kuen Lau, Alfred J. Crosby, Kristi L. Kiick
Detailed understanding of the local structure-property relationships in soft biopolymeric hydrogels can be instrumental for applications in regenerative tissue engineering.
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Correction: Soft modes and strain redistribution in continuous models of amorphous plasticity: the Eshelby paradigm, and beyond?
Soft Matter, 2018, 14, 3652-3652
DOI: 10.1039/C8SM90066C, Correction
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Xiangyu Cao, Alexandre Nicolas, Denny Trimcev, Alberto Rosso
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Anatomy of triply-periodic network assemblies: characterizing skeletal and inter-domain surface geometry of block copolymer gyroids

*Soft Matter*, 2018, **14**, 3612-3623
DOI: [10.1039/C8SM00078F](https://doi.org/10.1039/C8SM00078F), Paper
Ishan Prasad, Hiroshi Jinnai, Rong-Ming Ho, Edwin L. Thomas, Gregory M. Grason
Mesogeometric anatomy - 2D inter-material surfaces and 1D skeletons - extracted from triply-periodic, double-gyroid network assembled from triblock copolymers.
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Nematic colloidal knots in topological environments

*Soft Matter*, 2018, Advance Article
DOI: [10.1039/C8SM00539G](https://doi.org/10.1039/C8SM00539G), Paper
S. Masoomeh Hashemi, Miha Ravnik
We demonstrate the role of environment, especially its topology, on defect formation and elastic fields, such as in nematic colloidal knots.
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Foam flow in a model porous medium: II. The effect of trapped gas
Soft Matter, 2018, 14, 3497-3503
DOI: 10.1039/C7SM02458D, Paper
S. A. Jones, N. Getrouw, S. Vincent-Bonnieu
Gas trapping is an important mechanism in foam injection processes in porous media.
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Probing nano-scale viscoelastic response in air and in liquid with dynamic atomic force microscopy

Soft Matter, 2018, Advance Article
DOI: 10.1039/C8SM00149A, Paper
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Federica Crippa, Per-Anders Thoren, Daniel Forchheimer, Riccardo Borgani, Barbara Rothen-Rutishauser, Alke Petri-Fink, David B. Haviland
We perform a comparative study of dynamic force measurements using an Atomic Force Microscope (AFM) on the same soft polymer blend samples in both air and liquid environments.
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Fatigue fracture of nearly elastic hydrogels
Enrui Zhang, Ruobing Bai, Xavier P. Morelle, Zhigang Suo
Fatigue fracture of polyacrylamide hydrogels of various water contents is studied both experimentally and theoretically.

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