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 19(18) 3241-3406 (2023)



Cover

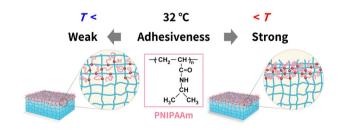
See Sangwoo Lee et al., pp. 3257–3266. Image reproduced by permission of Juhong Ahn and Sangwoo Lee from Soft Matter, 2023, 19, 3257.

COMMUNICATIONS

3249

A surface-grafted hydrogel demonstrating thermoresponsive adhesive strength change

Aya M. Akimoto,* Yuji Ohta, Yuki Koizumi, Taichi Ishii, Masaru Endo, Takafumi Enomoto, Taihei Nishimoto and Ryo Yoshida*



3253

Colloidal antibiotic mimics: selective capture and killing of microorganisms by shape-anisotropic colloids

Sihua Ren, Fei Xu, Huaguang Wang* and Zexin Zhang*



Editorial Staff

Executive Editor

Maria Southall

Deputy Editor Laura Ghandhi

Editorial Production Manager

Emily Skinner

Assistant Editors

Sean Browner, Molly Colgate, Paul Scott, Alison Winder

Editorial Assistant

Rasita laveed

Publishing Assistant Allison Holloway

Publisher

Sam Keltie

For queries about submitted papers, please contact
Emily Skinner Editorial Production Manager in the first instance.
E-mail: softmatter@rsc.org

For pre-submission queries please contact Maria Southall, Executive Editor. E-mail: softmatter-rsc@rsc.org

Soft Matter (electronic: ISSN 1744-6848)

is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, LIK CR4 OWF

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry,

Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK

Tel +44 (0)1223 432398; E-mail: orders@rsc.org

2023 Annual (electronic) subscription price: £1641; \$2891. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US dearing bank.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office:
Burlington House, Piccadilly, London W1J 0BA, UK,

Advertisement sales:

Telephone: +44 (0) 207 4378 6556.

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017; E-mail: advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

Soft Matter

rsc.li/soft-matter-journal

An interdisciplinary journal focusing on innovative soft matter topics through original research amd reviews.

Editorial Board

Editor-in-Chief

Alfred Crosby, University of Massachusetts

Associate Editors

Tommy Angelini, University of Florida, USA Ewa Górecka, Warsaw University, Poland Jianbin Huang, Peking University, China Sanat Kumar, Columbia University, USA Guruswamy Kumaraswamy, Indian Institute of Technology Bombay, India Zhihong Nie, Fudan University, China Amy Shen, Okinawa Institute of Science and Technology, Japan Emanuela Zaccarelli, Sapienza University of Rome, Italy Xuehua Zhang, University of Alberta, Canada Editorial Board members Lorna Dougan, University of Leeds, UK

Advisory Board

Dave Adams, University of Glasgow, UK Shaun Ahn, Dow, USA Markus Antonietti, Max Planck Institute of Colloids and Interfaces, Germany Omar Azzaroni, UNLP, Argentina

Piero Baglioni, University of Florence, Italy Anna Balazs, University of Pittsburgh, USA Arindam Banerjee, Indian Association for the Cultivation of Science, India Madivala Basavarai, Indian Institute of Technology

Madras, India
Patricia Bassereau, Physico Chimie Curie Lab,

Patricia Bassereau, Physico Chimie Curie Lab France

Jasna Brujic, New York University, USA Jacinta Conrad, University of Houston, USA Vincent Craig, Australian National University, Australia

Emanuela Del Gado, Georgetown University, USA Jan Dhont, Forschungszentrum Jülich, Germany

Carmen Domene, University of Bath, UK Zahra Fakhraai, University of Pennysylvania, USA Glenn Fredrickson, University of California at Santa Barbara, USA

Valeria Garbin, TU Delft, The Netherlands

Jian Ping Gong, Hokkaido University, Japan Ian Hamley, University of Reading, UK Lucio Isa, ETH Zurich, Switzerland Paul Janmey, University of Pennsylvania, USA Gijsje Koenderink, AMOLF, Netherlands Daniela Kraft, Leiden University, Netherlands Eugenia Kumacheva, University of Toronto, Canada

Oleg Lavrentovich, Kent State University, USA Junbai Li, Institute of Chemistry, Chinese Academy of Sciences, China

Christos Likos, University of Vienna, Austria Dongsheng Liu, Tsinghua University, China Tom McLeish, University of York, UK Bradley Olsen, Massachusetts Institute of Technology, USA

Rossana Pasquino, The University of Naples Federico II, Italy

Susan Perkin, University of Oxford, UK Sarah Perry, University of Massachusetts Amherst, USA

Darrin Pochan, University of Delaware, USA David Quéré, ESPCI, France Sriram Ramaswamy, Indian Institute of Science, Meital Reches, The Hebrew University of Jerusalem, Israel Alejandro Rey, McGill University, Canada Connie Roth, Emory University, USA Michael Rubinstein, Duke University, USA Sam Safran, Weizmann Institute of Science, Israel Takamasa Sakai, The University of Tokyo, Japan

lakamasa Sakai, I he University of Tokyo, Japan Peter Schurtenburger, Lund University, Sweden Kathleen Stebe, University of Pennslyvania, USA Joakim Stenhammar, Lund University, Sweden Howard Stone, Princeton University, USA Hajime Tanaka, University of Tokyo, Japan Evelyne Van Ruymbeke, Université Catholique de Louvain, Belgium

Jan Vermant, ETH Zurich, Switzerland Petia Vlahovska, Northwestern University, USA Dimitris Vlassopoulos, University of Crete, Greece Yllin Wang, Institute of Chemistry, Chinese Academy of Sciences, China Catherine Whitby, Massey University of New Zealand. New Zealand

Tim White, University of Colorado, USA Duyang Zang, Northwestern Polytechnical University, China

Information for Authors

Full details on how to submit material for publication in Soft Matter are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be made via the journal's homepage: rsc.li/soft-matter-journal. Submissions: The journal welcomes submissions of manuscripts for publication as Full Papers, Communications, Reviews, Perspectives, Tutorial Reviews. Full Papers and Communications should describe original work of high quality and impact.

Additional details are available from the Editorial Office or http://www.rsc.org/authors

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

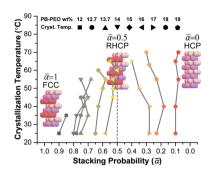
Registered charity number: 207890



3257

Continuous transition of colloidal crystals through stable random orders

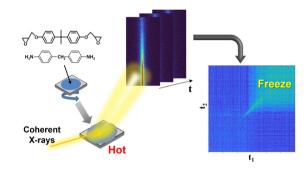
Juhong Ahn, Liwen Chen, Patrick T. Underhill, Guillaume Freychet, Mikhail Zhernenkov and Sangwoo Lee*



3267

Dynamic behaviours of epoxy resin thin films during the curing process

Taiki Hoshino,* Yasushi Okamoto, Atsushi Yamamoto and Hiroyasu Masunaga

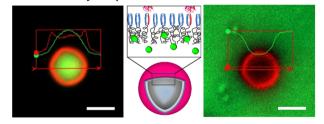


3273

Temperature-responsive membrane permeability of recombinant fusion protein vesicles

Jackson Powers and Yeongseon Jang*

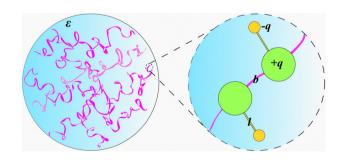
The permeability changes of protein vesicles to dyes, dictated by temperature and membrane structure



3281

Theory of self-coacervation in semi-dilute and concentrated zwitterionic polymer solutions

Yury A. Budkov,* Petr E. Brandyshev and Nikolai N. Kalikin

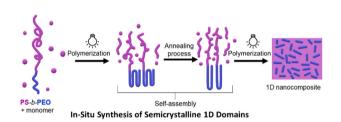


3290 All atom Coarse-grained

Development of a coarse-grained model for surface-functionalized gold nanoparticles: towards an accurate description of their aggregation behavior

Emanuele Petretto, Pablo Campomanes and Stefano Vanni*

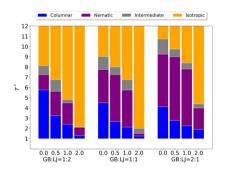
3301



Controlling block copolymer one-dimensional self-assembly in polymeric matrices

Jessica Gutiérrez González, Marcelo Ceolín, Walter F. Schroeder and Ileana A. Zucchi*

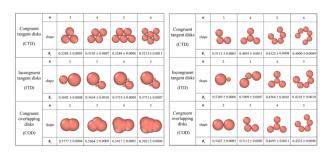
3311



Phase behaviour of mixtures of charged soft disks and spheres

Valerio Mazzilli, Katsuhiko Satoh* and Giacomo Saielli*

3325



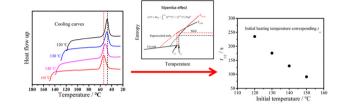
Optimal shapes of disk assembly in saturated random packings

Zhaohui Huang, Wei Deng, Shixuan Zhang and Shuixiang Li*

3337

Mpemba effect in crystallization of polybutene-1

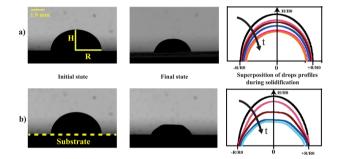
Jinghua Liu, Jingqing Li, Binyuan Liu, Ian W. Hamley and Shichun Jiang*



3348

Structuration and deformation of colloidal hydrogels

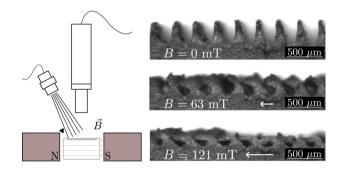
S. N'Mar,* L. Pauchard, P. Guenoun, J. P. Renault and F. Giorgiutti-Dauphiné



3357

Dynamically tunable lamellar surface structures from magnetoactive elastomers driven by a uniform magnetic field

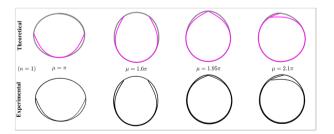
Izidor Straus, Gašper Kokot,* Gaia Kravanja, Luka Hribar, Raphael Kriegl, Mikhail Shamonin, Matija Jezeršek and Irena Drevenšek-Olenik



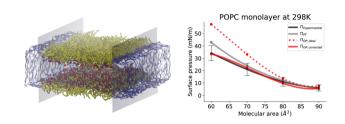
3366

Growth of a flexible fibre in a deformable ring

Arsenio Cutolo, Massimiliano Fraldi, Gaetano Napoli* and Giuseppe Puglisi

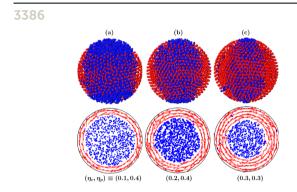


3377



An in silico osmotic pressure approach allows characterization of pressure-area isotherms of lipid monolayers at low molecular areas

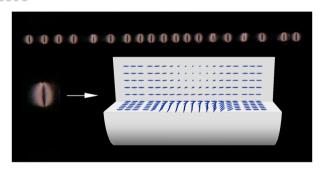
Janak Prabhu, Akhil Pratap Singh and Stefano Vanni*



Phase behavior and dynamics in a colloid-polymer mixture under spherical confinement

Arabinda Bera, Kurt Binder, Sergei A. Egorov and Subir K. Das*





Photopolymerization of 1D photonic structures induced by nematic-isotropic phase transition in liquid crystal

Miłosz S. Chychłowski,* Marta Kajkowska, Bartłomiej Jankiewicz, Bartosz Bartosewicz, Tomasz R. Woliński and Piotr Lesiak