

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(38) 7257-7470 (2023)



Cover

See Gregor Häfner and Marcus Müller, pp. 7281–7292. Image reproduced by permission of Lukas Kroll from *Soft Matter*, 2023, 19, 7281. Artist credit: Lukas Kroll



Inside cover

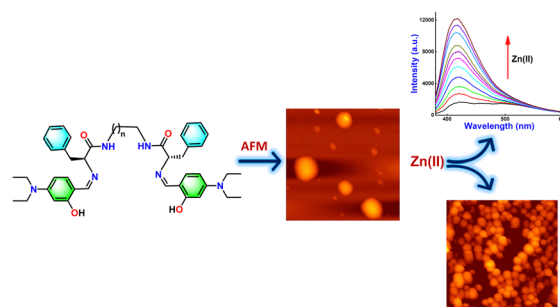
See Gareth H. McKinley *et al.*, pp. 7293–7312. Image reproduced by permission of Miguel Gonzalez from *Soft Matter*, 2023, 19, 7293.

COMMUNICATIONS

7266

L-Phenylalanine-derived pseudopeptidic bioinspired materials: Zn(II) induced fluorescence enhancement and precise tuning of self-assembled nanostructures

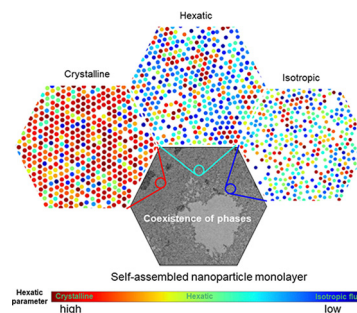
Kamlesh Kumar Nigam, Arpna Tamrakar and Mrituanjay D. Pandey*



7271

Topological phases in nanoparticle monolayers: can crystalline, hexatic, and isotropic-fluid phases coexist in the same monolayer?

Kaustav Bhattacharjee,* Salil S. Vaidya, Tushar Pathak, Jayesh R. Shimpi and Bhagavatula L. V. Prasad*



Editorial Staff

Executive Editor

Maria Southall

Deputy Editor

Laura Ghandhi

Editorial Production Manager

Chris Goodall

Assistant Editors

Sean Browner, Molly Colgate, Paul Scott, Alison Winder

Editorial Assistant

Basita Javeed

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, UK CB4 0WF.

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 to 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 clearing 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, Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

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 and reviews.

Editorial Board

Editor-in-Chief

Alfred Crosby, University of Massachusetts
Amherst, USA

Associate Editors

Roberto Cerbino, University of Vienna, Austria
Lorna Dougan, University of Leeds, UK

Ewa Górecka, Warsaw University, Poland
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
Lixin Wu, Jilin University, China
Emanuela Zaccarelli, Sapienza University of
Rome, Italy
Xuehua Zhang, University of Alberta, Canada

Advisory Board

Dave Adams, University of Glasgow, UK
Shaun Ahn, Dow, USA
Tommy Angelini, University of Florida, 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 Basavaraj, Indian Institute of Technology
Madras, India
Patricia Bassereau, Physico Chimie Curie Lab,
France
Jasna Bruijic, 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 Fakhraei, University of Pennsylvania, 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
Jianbin Huang, Peking University, China
Lucio Isa, ETH Zurich, Switzerland
Paul Janmey, University of Pennsylvania, USA
Gijze 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 Il, 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,
India

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
Peter Schurtenburger, Lund University, Sweden
Kathleen Stebe, University of Pennsylvania, USA
Joakim Stenhammar, Lund University, Sweden
Howard Stone, Princeton University, USA
Hajime Tanaka, University of Tokyo, Japan
Evelyn Van Ruymbeke, Université Catholique de
Louvain, Belgium
Jan Vermant, ETH Zurich, Switzerland
Petia Vlahovska, Northwestern University, USA
Dimitris Vlassopoulos, University of Crete, Greece
Yilin 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



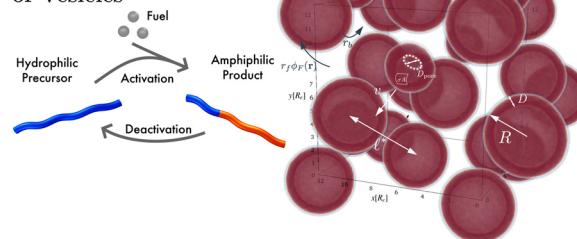
PAPERS

7281

Reaction-driven assembly: controlling changes in membrane topology by reaction cycles

Gregor Häfner and Marcus Müller*

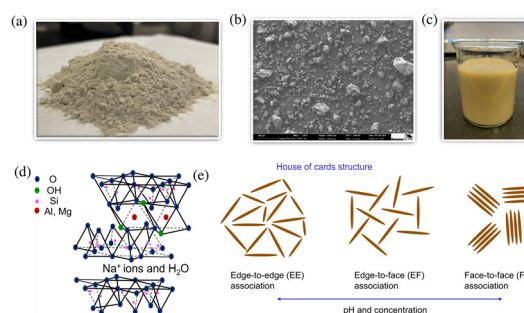
Reaction-Driven Assembly of Vesicles



7293

Elastoviscoplasticity, hyperaging, and time–age–time–temperature superposition in aqueous dispersions of bentonite clay

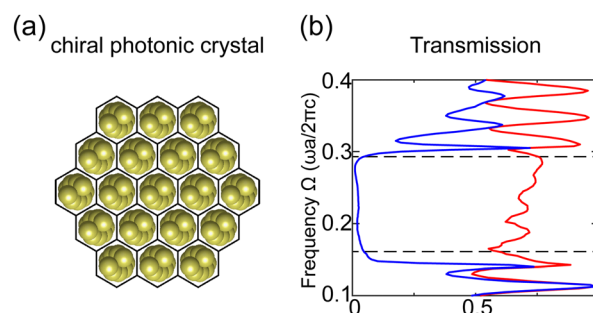
Joshua David John Rathinaraj, Kyle R. Lennon, Miguel Gonzalez, Ashok Santra, James W. Swan and Gareth H. McKinley*



7313

Chiral photonic crystals from sphere packing

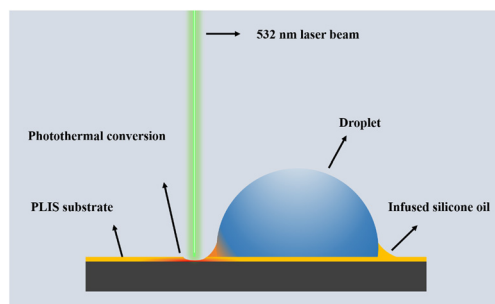
Tao Liu, Ho-Kei Chan and Duanduan Wan*



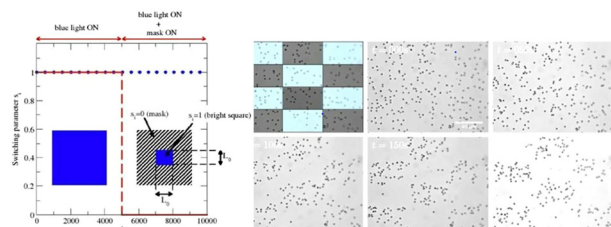
7323

Droplet transportation on photosensitive lubricant-impregnated slippery surfaces in response to the light induced Marangoni effect and asymmetrical wetting ridges

Haonan Li, Yijing Yang, Xun Zhu, Dingding Ye, Yang Yang, Hong Wang, Rong Chen* and Qiang Liao



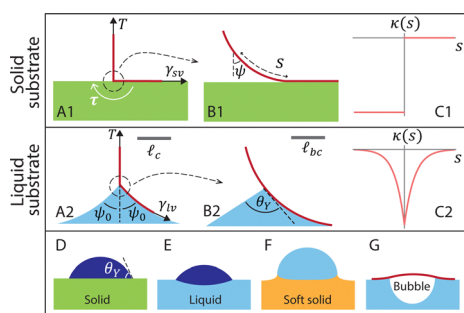
7334



Microswimmers under the spotlight: interplay between agents with different levels of activity

Caroline Desgranges, Melissa Ferrari, Paul M. Chaikin,* Stefano Sacanna, Mark E. Tuckerman and Jerome Delhommelle*

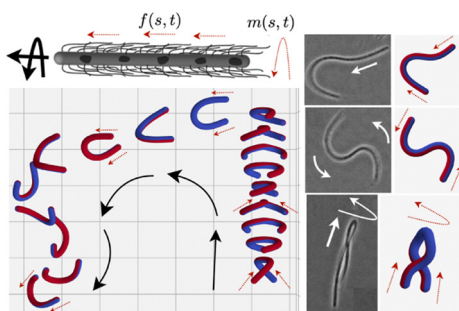
7343



Peeling from a liquid

Deepak Kumar,* Nuoya Zhou, Fabian Brau, Narayanan Menon and Benny Davidovitch

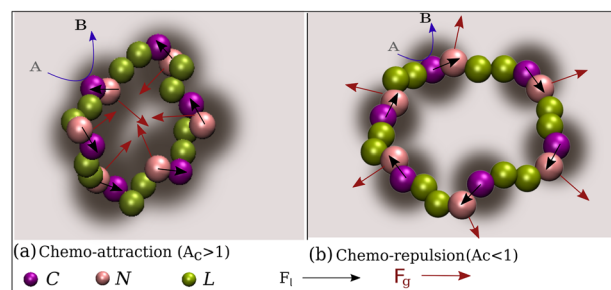
7349



Self-buckling and self-writhing of semi-flexible microorganisms

Wilson Lough,* Douglas B. Weibel and Saverio E. Spagnolie

7358



Structure and dynamics of chemically active ring polymers: swelling to collapse

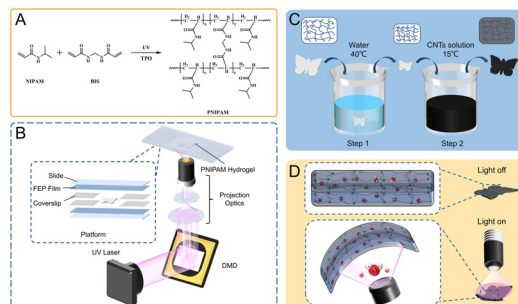
Namita Jain and Snigdha Thakur*



7370

An aquatic biomimetic butterfly soft robot driven by deformable photo-responsive hydrogel

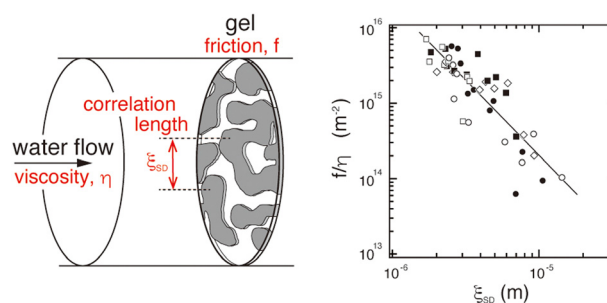
Qinghao Guo, Wenguang Yang,* Huibin Liu, Wenhao Wang, Zhixing Ge and Zheng Yuan*



7379

Frictional properties of phase-separated agarose hydrogels in water permeation

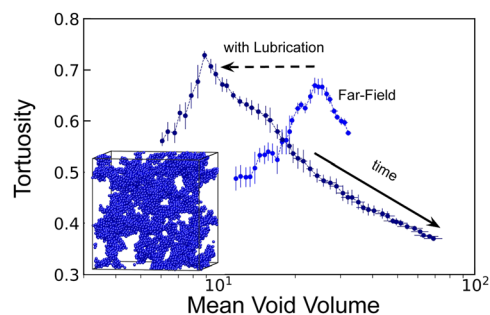
Masayuki Tokita,* Mamoru Uwataki, Yasuhiro Yamashita, Takemi Hara and Miho Yanagisawa*



7388

Hydrodynamic lubrication in colloidal gels

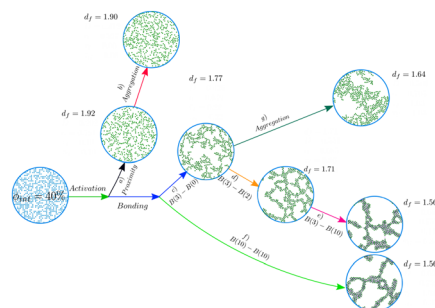
K. W. Torre* and J. de Graaf



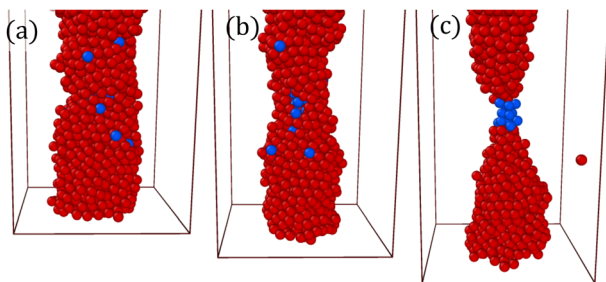
7399

Computational mesoscale framework for biological clustering and fractal aggregation

Elnaz Zohravi,* Nicolas Moreno* and Marco Ellero*



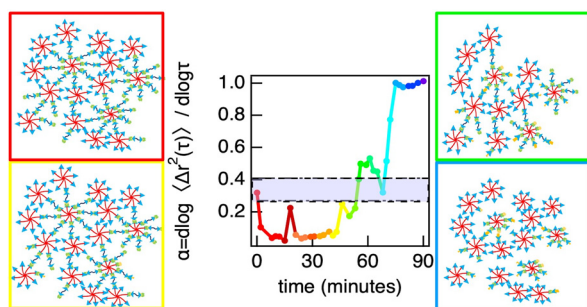
7412



Necking and failure of a particulate gel strand: signatures of yielding on different length scales

Kristian Thijssen, Tanniemola B. Liverpool, C. Patrick Royall and Robert L. Jack*

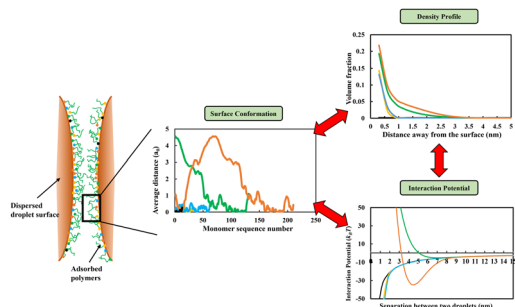
7429



Characterizing rheological properties and microstructure of thioester networks during degradation

Shivani Desai, Benjamin J. Carberry, Kristi S. Anseth and Kelly M. Schultz*

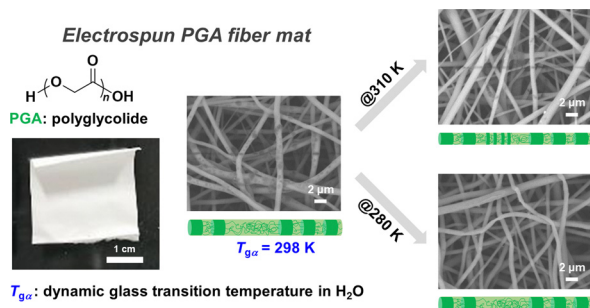
7443



Emulsifying properties of plant-derived polypeptide and their conjugates: a self-consistent-field calculation study of the impact of hydrolysis

Yue Ding,* Adem Zengin, Weiwei Cheng, Libo Wang and Rammile Ettelaie*

7459



Effect of segmental motion on hydrolytic degradation of polyglycolide in electro-spun fiber mats

Hisao Matsuno,* Reiki Eto, Misato Fujii, Masayasu Totani and Keiji Tanaka*



CORRECTION

7468

Correction: Abrupt onset of the capillary-wave spectrum at wall–fluid interfaces

Andrew O. Parry* and Carlos Rascón

