

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(16) 2849–3048 (2023)



Cover

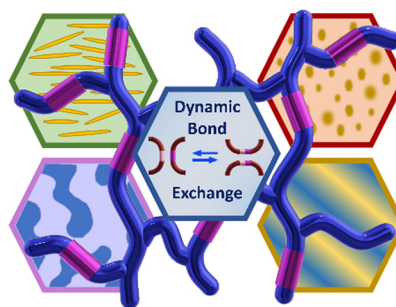
See Lefeng Wang *et al.*,
pp. 2883–2890.
Image reproduced
by permission of
Lefeng Wang
from *Soft Matter*,
2023, **19**, 2883.

REVIEW

2857

Phase separation in supramolecular and covalent adaptable networks

Martijn H. P. de Heer Kloots, Sybren K. Schoustra,
Joshua A. Dijksman* and Maarten M. J. Smulders*

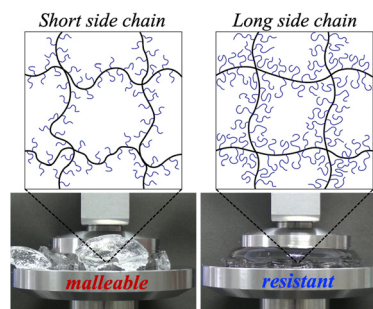


COMMUNICATION

2878

Controlling the mechanical properties of hydrogels via modulating the side-chain length

Takuma Kureha,* Kazuma Takahashi, Mion Kino,
Hikaru Kida and Takuto Hirayama



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

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

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 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
Lucio Isa, ETH Zurich, Switzerland
Paul Janmey, University of Pennsylvania, USA
Gijse 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, 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
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

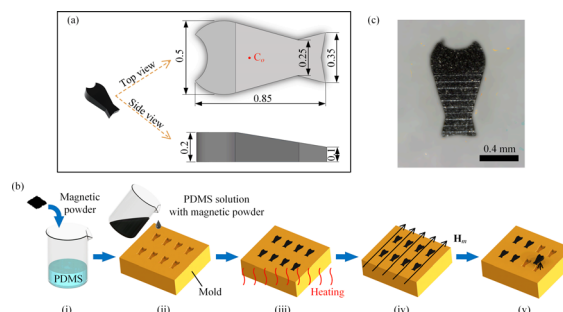


PAPERS

2883

Fish-like magnetic microrobots for microparts transporting at liquid surfaces

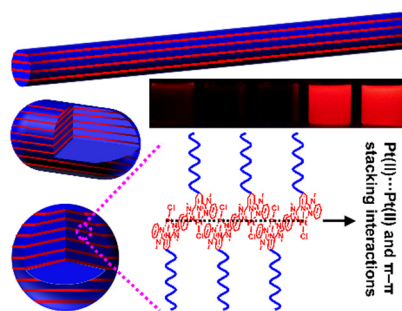
Lefeng Wang,* Min Zhao, Yuanzhe He, Sizhe Ding and Lining Sun



2891

Synthesis of platinum(II)-complex end-tethered polymers: spectroscopic properties and nanostructured particles

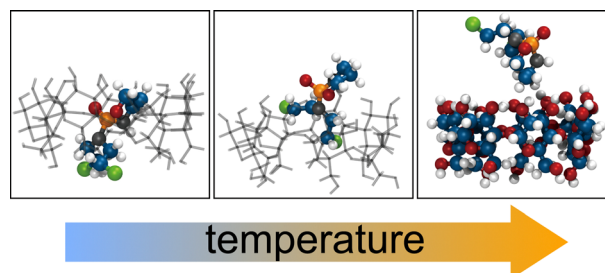
Shengchao Qiu, Hua Xue, Ran Wang, Chi Zhang, Qun He,* Guanjun Chang and Weifeng Bu*



2902

Effect of temperature on the structure and drug-release behaviour of inclusion complex of β -cyclodextrin with cyclophosphamide: a molecular dynamics study

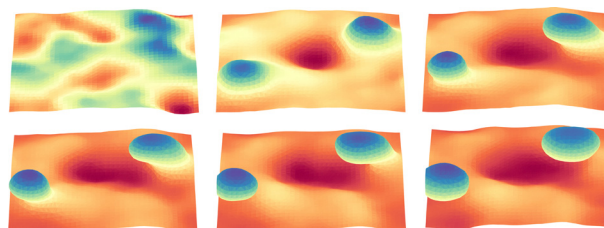
Seiga Sakai, Yoshinori Hirano, Yusei Kobayashi and Noriyoshi Arai*



2908

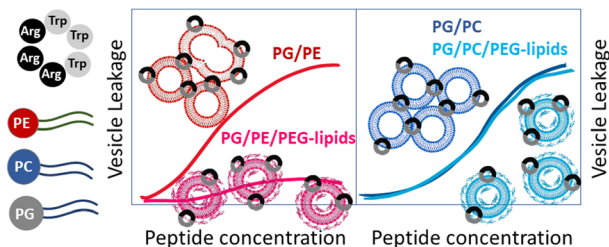
Vesicle formation induced by thermal fluctuations

Andreu F. Gallen,* J. Roberto Romero-Arias, Rafael A. Barrio and Aurora Hernandez-Machado



PAPERS

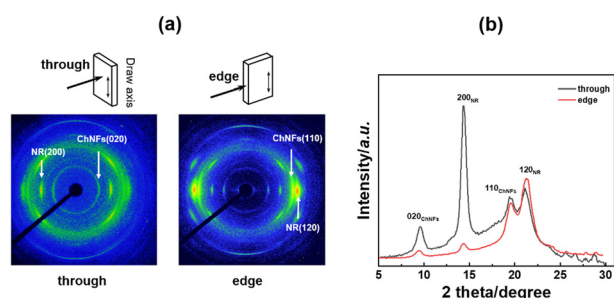
2919



Membrane permeabilization can be crucially biased by a fusogenic lipid composition – leaky fusion caused by antimicrobial peptides in model membranes

Katharina Beck, Janina Nandy and Maria Hoernke*

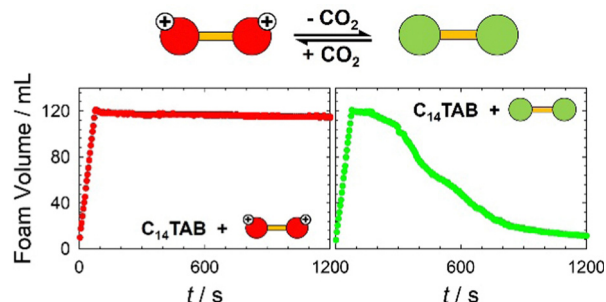
2932



Strain-induced 3D-oriented crystallites in natural rubber/chitin nanofiber composites

Jinghua Wu, Jin Yin, Jian Hu,* Qiran Wang, Hao Zhang, Rui Xin, Shaojuan Wang, Shouke Yan and Jianming Zhang

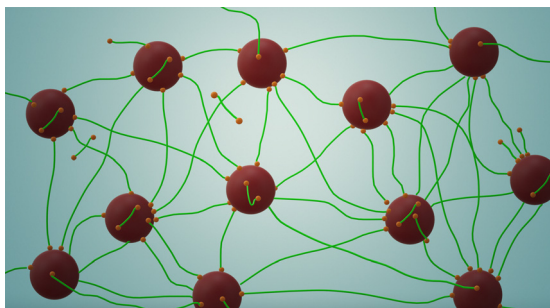
2941



Influence of a CO₂-switchable additive on the surface and foaming properties of a cationic non-switchable surfactant

Robin R. Benedix, Sophia Botsch, Natalie Preisig, Volodymyr Kovalchuk, Philip G. Jessop and Cosima Stubenrauch*

2949



Brownian dynamics simulations of telechelic polymer – latex suspensions under steady shear

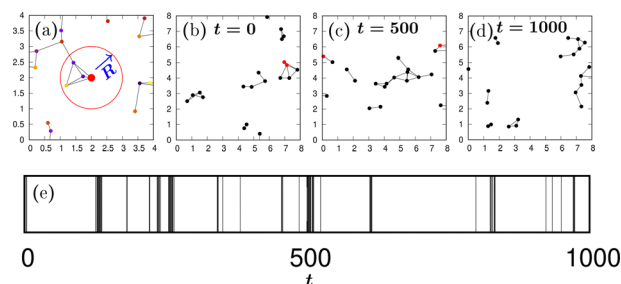
Sriram Krishnamurthy, Gopal Parthasarathy, Ronald G. Larson and Ethayaraja Mani*



2962

Burstiness and information spreading in active particle systems

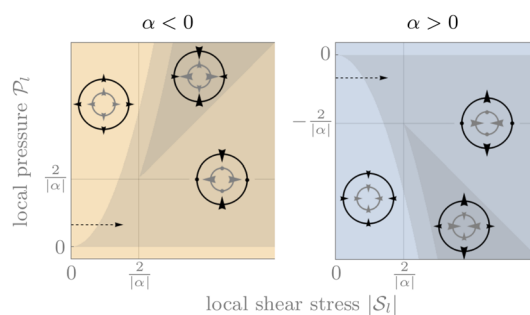
Wei Zhong,* Youjin Deng and Daxing Xiong*



2970

Generic stress rectification in nonlinear elastic media

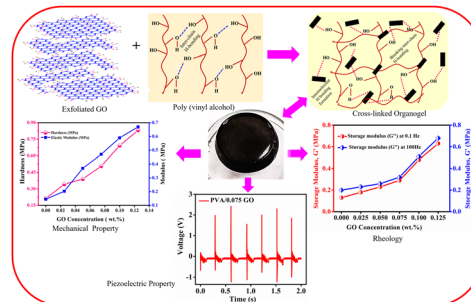
Félix Benoist, Guglielmo Saggiorato and Martin Lenz*



2977

Influence of graphene oxide on rheology, mechanical, dielectric, and triboelectric properties of poly(vinyl alcohol) nanocomposite hydrogels prepared via a facile one step process

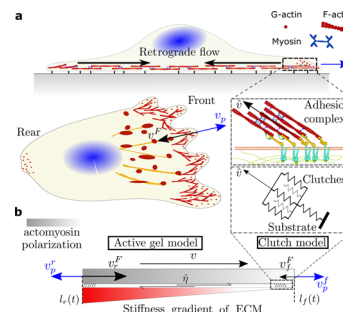
Swati Sharma, Akanksha Adaval, Shiva Singh, Pradip K. Maji, Cherumannil Karumuthil Subash, Valiyaveetil Haneefa Shafeeq and Arup R. Bhattacharyya*



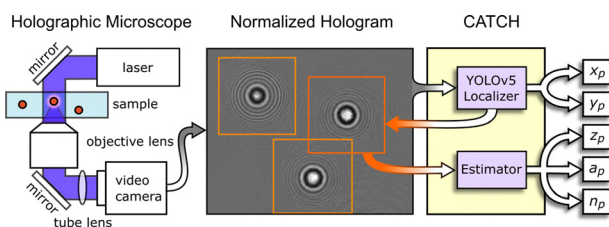
2993

Positive, negative and controlled durotaxis

P. Sáez* and C. Venturini



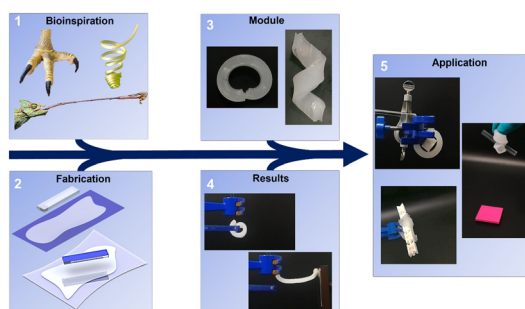
3002



Machine learning enables precise holographic characterization of colloidal materials in real time

Lauren E. Altman and David G. Grier*

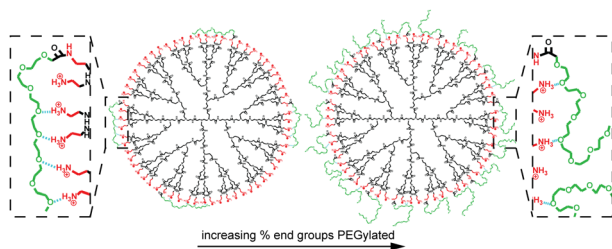
3015



Magnetically controlled bio-inspired elastomeric actuators with high mechanical energy storage

Mohammadreza Lalegani Dezaki and Mahdi Bodaghi*

3033



Charge shielding effects of PEG bound to NH_2 -terminated PAMAM dendrimers – an experimental approach

Brandon M. Johnston, Alan J. Grodzinsky and Paula T. Hammond*

