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Soft Matter

www.softmatter.org

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IN THIS ISSUE

ISSN 1744-683X CODEN SMOABF 2(6) 437–528 (2006)

Cover
The carnivorous Venus Flytrap operates bistably enabling it to ensnare guest species. However, this ensnarement is seldom reversible, unlike for the depicted molecule, which can capture and release its guest reversibly. This and other dynamic processes in Langmuir films are described in the review.
Image reproduced by permission of Katsuhiko Ariga, Jonathan P. Hill and Takashi Nakanishi from *Soft Matter*, 2006, **2**, 465.

Inside cover
Soft particles, such as star polymers and dendrimers depicted here, are essential components of soft matter. The review article in this issue discusses various aspects of these systems from the point of view of theory, experiment and simulation.
Image reproduced by permission of Christos Likos from *Soft Matter*, 2006, **2**, 478.

OPINION

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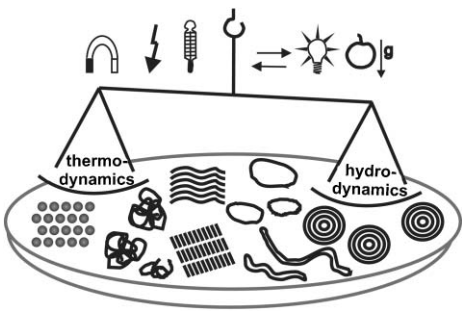

Time- and space-resolved recording in studies of soft matter dynamics

Doris Vollmer

Soft matter systems show a rich non-equilibrium behaviour that sensitively depends on external perturbations. This opinion discusses why significant progress in the understanding of their non-equilibrium behaviour is to be expected within the next few years.

HIGHLIGHT

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The spinning processes for spider silk

Xin Chen, Zhengzhong Shao* and Fritz Vollrath

It emerges that for the mechanical properties of silk fibres the spinning process is no less important than the composition of the ‘raw’ silk protein spinning solution.

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EMERGING AREA

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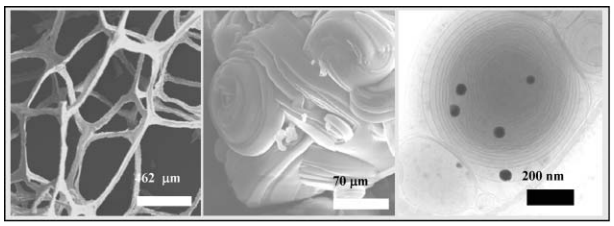
Combining soft matter and soft chemistry: *integrative chemistry* towards designing novel and complex multiscale architectures

Rénal Backov

There is a strong relationship between *soft chemistry* and *soft matter* and, with this in mind, the concept of *integrative chemistry* is proposed and its principle and main perspectives explored.



REVIEWS

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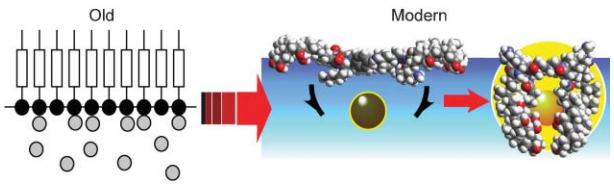
A paradigm shift in the field of molecular recognition at the air–water interface: from static to dynamic

Katsuhiko Ariga,* Takashi Nakanishi and Jonathan P. Hill

Molecular recognition at the air–water interface has now been shifted from "waiting" fashion to "catching" fashion.



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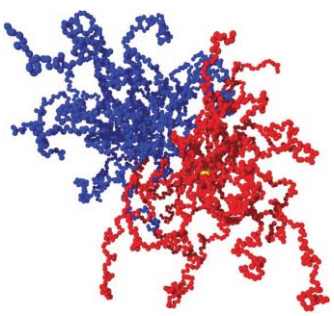
Soft matter with soft particles

Christos N. Likos

Star polymers and dendrimers are members of a distinct class of novel, ultrasoft colloids with unusual structural, thermodynamic and flow properties. Recent progress is discussed in this review article.



PAPERS

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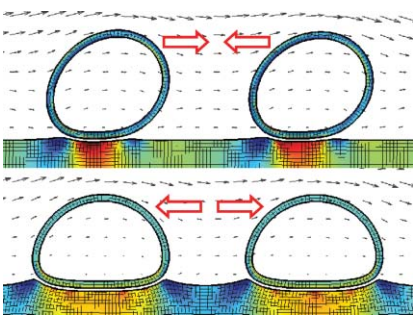
Modeling the interactions between deformable capsules rolling on a compliant surface

Alexander Alexeev, Rolf Verberg and Anna C. Balazs*

Using our new computational approach to examine interactions between two capsules rolling on an adhesive substrate in a host fluid, we show how to tune the compliance of the capsules and substrate to tailor the capsule separation.



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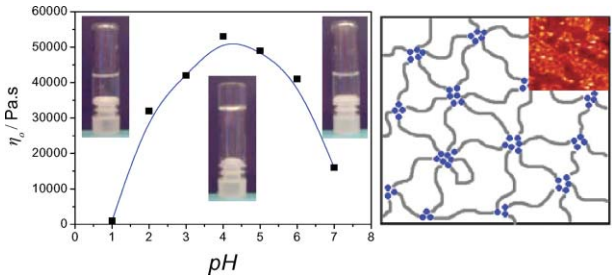

pH-Tunable rheological properties of a telechelic cationic polyelectrolyte reversible hydrogel

Frédéric Bossard, Thierry Aubry, Georgios Gotzamanis and Constantinos Tsitsilianis*

Cationic polyelectrolytes, end-capped by hydrophobic short blocks, form reversible hydrogels with pH-tunable rheological properties.

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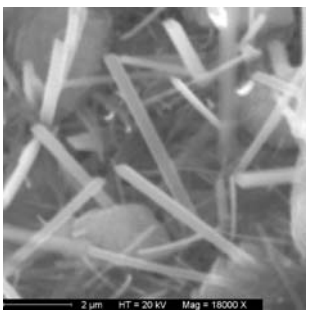

Ammonium lithocholate nanotubes: stability and copper metallization

Pierre Terech,* Neralagatta M. Sangeetha, Shreedhar Bhat, Jean-Jacques Allegraud and Eric Buhler

Ammonium lithocholate (NH_4LC) nanotubes can be copper-metallized in conditions where parasitizing formation of bundles is limited. Electron and optical microscopies and dynamic light scattering are used to support the characterization of the metallization procedure.

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