Program

Association in Solution III
Self-Assembly: From Bio-Colloids to Nano-Engineering

Bifröst University, Iceland

July 23-27, 2012

Conference Co-Chairs

Ulf Olsson
Department of Physical Chemistry, Lund University, Sweden

Norman Wagner
Department of Chemical Engineering, University of Delaware, USA

Engineering Conferences International
32 Broadway, Suite 314
New York, NY 10004, USA
Phone: 1-212-514-6760, Fax: 1-212-514-6030
www.engconfintl.org – info@engconfintl.org

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Monday July 23, 2012

16:00 – 17:00	Registration / Conference check-in
17:00 – 17:30	Coffee & tea
17:30 – 18:00	*Welcome and introductory remarks* Ulf Olsson and Norman Wagner

Thermodynamics & intermolecular interactions – *Chair:* Norman Wagner

18:00 – 18:30	*Self-assembly at steady state* Håkan Wennerström, Lund University, Sweden
18:30 – 19:00	*A general interaction potential for hydrophobic and hydrophilic interactions* Stephen Donaldson, University of California Santa Barbara, USA
19:30 -	Dinner

Notes

- *Technical sessions will be held in the Rauðbrók room*
- *Posters will be in the Hrifla room*
- *All meals will be in the Hátíðarsalur room*
- *Audiotaping, videotaping and photography of presentations are prohibited.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 5 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile phones to vibrate or off during technical sessions.*

Tuesday July 24, 2012

Colloids – *Chair:* Robert Prud'homme

08:30 – 09:00	*Charged rod-like colloids in electric fields* Jan Dhont, Forschungszentrum Jülich, Germany
09:00 – 09:30	*Total internal reflection microscopy measurements of low refractive index particles in polar solvent mixture* Johan Bergenholtz, University of Gothenburg, Sweden
09:30 – 10:00	*Tuning self-assembly, microstructure, phase separation and gelation with depletion interactions in suspensions of charged colloids* Anna Stradner, Lund University, Sweden
10:00 – 10:30	Coffee & tea
10:30 – 11:00	*Anisotropic microparticles on fluid interfaces* Kathleen Stebe, University of Pennsylvania, USA
11:00 – 11:30	*Assembling responsive nanoparticles* Peter Schurtenberger, Lund University, Sweden
11:30 – 12:00	Poster program presentation
12:15 – 15:30	Lunch and discussions/poster session
15:30 – 16:00	Coffee & tea

Emulsions and micelles – *Chair:* Reinhard Strey

16:00 – 16:30	*Why are hydrophobic/water interfaces negatively charged?* Kevin Roger, ESPCI Paris, France
16:30 – 17:00	*Tuning the shape and stoichiometry of self-assembled phospholipid nanodiscs* Lise Arleth, University of Copenhagen, Denmark

Peptide self-assembly – *Chair:* Masayuki Imai

17:00 – 17:30	*Self-assembled nanotubes in a model peptide system* Ulf Olsson, Lund University, Sweden
17:30 – 18:00	Break
18:00 – 18:30	*Functional nanotubes from the self-assembly of peptide/polymer conjugates* Sebastian Perrier, University of Sydney, Australia
18:30 – 19:00	*Engineering amyloid fibril structure and function via controlled protein aggregation* Raffaele Mezzenga, ETH Zürich, Switzerland
19:30 -	Dinner

Wednesday July 25, 2012

Surfactant self-assembly – *Chair:* Gregory Warr

08:30 – 09:00	*Dilute aqueous gel networks containing fatty alcohol and surfactant* Claudia Schmidt, University of Paderborn, Germany
09:00 – 09:30	*Phase behavior of microemulsions with weak and strong surfactants* Doris Vollmer, Max Planck Institute, Mainz, Germany
09:30 – 10:00	*How to make nanofoams* Reinhard Strey, University of Cologne, Germany
10:00 – 10:30	Coffee & tea

Self-assembly kinetics – *Chair:* Michael Gradzielski

10:30 – 11:00	*Probing self-assembly proceses in bulk and at interfaces using synchrotron scattering techniques* Diego Pontoni, ESRF Grenoble, France
11:00 – 11:30	*Kinetic self-assembly of block copolymers during rapid precipitation* Robert Prud'homme, Princeton University, USA
11:30 – 12:00	*Kinetics in surfactant solutions studied by combining stopped-flow mixing with synchrotron SAXS* Jan Skov Pedersen, Aarhus University, Denmark
12:15 – 18:00	Lunch and excursions
18:00 – 19:00	Poster session
19:30 -	Dinner

Thursday July 26, 2012

Bio-membranes – *Chair:* Jan Dhont

08:30 – 09:00 *Reversible gelation of vesicles, colloidal particles and biological cells*
Srinivasa R. Raghavan, University of Maryland, USA

09:00 – 09:30 *Exploring the energetics governing cholesterol homeostasis*
Paul Butler, NIST, USA

09:30 – 10:00 *Anomalous lateral diffusion in a viscous membrane surrounded by viscoelastic media*
Shigeyuki Komura, Tokyo Metropolitan University, Japan

10:00 – 10:30 Coffee & tea

Bio-engineering – *Chair:* Alex Evilevitch

10:30 – 11:00 *DNA-lipid complexes: structure and Brownian motion*
Frederic Nallet, University of Bordeaux, France

11:00 – 11:30 *Short DNA (sDNA) stacking regulates a thermotropic cubic to hexagonal phase transition in sDNA-lipid assemblies*
Cecilia Leal, University of Illinois, Urbana-Champaign, USA

11:30 – 12:00 *Phospholipids and proteins as active components of transistors: Where soft matter and organic electronics meet*
Gerardo Palazzo, University of Bari, Italy

12:15 – 15:30 Lunch and discussions/poster session

15:30 – 16:00 Coffee & tea

Viscoelastic assemblies – *Chair:* Kathleen Stebe

16:00 – 16:30 *Non-equilibrium association between oppositely charged polyelectrolytes and surfactants in the absence and presence of different additives*
Róbert Mészáros, Eötvös Loránd University, Hungary

16:30 – 17:00 *Structure and dynamics of highly viscous polyelectrolyte-surfactant complexes*
Michael Gradzielski, Technical University of Berlin, Germany

17:00 – 17:30 *Structural signature of a brittle-to-ductile transition in self-assembled networks*
Christian Ligoure, University of Montpellier II, France

17:30 – 18:00 Break

18:00 – 18:30 *Lamellar-"onion"-lamellar transition with varying temperature under shear flow in nonionic surfactant/water systems*
Tadashi Kato, Tokyo Metropolitan University, Japan

18:30 – 19:00 *In situ large amplitude oscillatory shear (LAOS) experiments on rod-like viruses and colloidal platelets*
Pavlik Lettinga, Forschungszentrum Jülich, Germany

19:30 - Dinner

Friday July 27, 2012

Self-assembly in ionic liquids - *Chair:* Ulf Olsson

08:30 – 09:00 *Amphiphilic structure and solubility in ionic liquids*
Gregory Warr, University of Sydney, Australia

09:00 – 09:30 *Self-assembly of cationic surfactants and block copolymers in protic ionic liquids*
Norman Wagner, University of Delaware, USA

09:30 – 10:00 Coffee & tea

Colloidal Biology - *Chair:* Lise Arleth

10:00 – 10:30 *Lambda-phage DNA confined by lipid membranes: Soft strings against soft surfaces*
Carlos Marques, Institut Charles Sadron, Strasbourg, France.

10:30 – 11:00 *Physical chemistry of viral evolution*
Alex Evilevitch, Carnegie Mellon University, USA,
and Lund University, Sweden

11:00 – 11:30 *Molecular assembly to protocell*
Masayuki Imai, Tohoku University, Japan

11:30 – 12:00 *Concluding remarks*
Håkan Wennerström and Kathleen Stebe

12:15 – Lunch and departure

List of Posters

Colloids, Nanoparticles

1. *Fabrication of Silica Coated Magnetic Nanoparticles*
   Naz Atay, Bogazici University, Istanbul, Turkey

2. *Crystalline Nanoparticle Dispersions Do Not Ripen*
   Manja Behrens, Lund University, Sweden

3. *Intermediate Range Order in Proteins and Colloidal Suspensions*
   Paul Godfrin, University of Delaware, USA

Lipid Membranes

4. *Lipid Segregation Above T_m: The Case Against Holey Vesicles*
   Paul Butler, NIST, USA

5. *Insights into Membrane Thickness Fluctuations*
   Paul Butler, NIST, USA

6. *Self-Reproduction of Lipid Vesicles*
   Yuka Sakuma, Tohoku University, Sendai, Japan

7. *A Theoretical Approach to Phase Coexistence in Ternary Cholesterol-Phospholipid Mixtures*
   Jean Wolff, Institut Charles Sadron, University of Strasbourg, France

Emulsions and Foams

8. *Nano-Emulsification Through Surfactant Hydration: The PIT and PIC Methods Revisited*
   Kevin Roger, ESPCI, Paris, France

9. *Controlled Emulsion Droplet Solvent Evaporation for the Continuous and Consistent Production of Particles*
   Emily Chang, MIT, USA

10. *Nano-Foams by 'Continuity-Inversion' of Dispersions*
    Alexander Müller, University of Cologne, Germany

Shear Effects

11. *Flow Instability and Shear Banding in a Multi Lamellar Vesicle System*
    Luigi Gentile, University of Calabria, Italy

12. *Nuclear Magnetic Resonance and Rheology Investigation of Crystallization Phenomena in Vegetable Oils*
    Luigi Gentile, University if Calabria, Italy

13. *Rheo-NMR Observations of Complex Fluids*
    Stefan Kuczera, Victoria University, Wellington, New Zeeland

14. *Tuning Microstructure of Non-Ionic Micellar Networks: Rheology and Self-Diffusion Investigations*
    Gerardo Palazzo, University of Bari, Italy

15. *Deformation Hardening and Formation of Shear Bands Under Friction of Copper at Different Lubricant Conditions.*
    Alex Laikhtman, Holon Institute of Technology, Israel

Method development

16. *A Microfluidic Platform for Small-Angle X-Ray Scattering: From Nematic Alignment at the Liquid Crystal-Water Interface to Neurofilament Self-Assembly*
    Bruno Silva, University of California, Santa Barbara, USA

17. *Chemical Processing by Swarm Robotics*
    Jitka Cejkova, Chemical Robotics Laboratory, Institute of Chemical Technology, Prague, Czech Republic

Tuning Self-Assembly

18. *Towards Understanding Peptide Self-Assembly: A Model System Study*
    Çelen Cenker, Lund University, Sweden

19. *Lamellar Gel Networks Based on Anionic Surfactants and Fatty Alcohols: Study of Structure in Hair Colorants*
    Lauriane Lagarde, Institut Charles Sadron, University of Strasbourg, France and Procter and Gamble, Darmstadt, Germany

20. *Phase Behavior and Self-Assembly in the Lecithin/Squalane System.*
    Wataru Horie, POLA Chemical Industries, Yokohama, Japan and Physical Chemistry, Lund University, Sweden.

21. *Structure and Dynamics of Microemulsion Networks Linked by End-Capped Star Polymers of Varying Functionality*
    Paula Malo de Molina, Technical University of Berlin, Germany

22. *Tunable Complex Fluids by Cyclodextrin Inclusion Complexation*
    Robert Prud'homme, Princeton University, USA

23. *Non-Traditional Block Copolymer Directed Kinetic Self-Assembly*
    Robert Prud'homme, Princeton University, USA

24. *Computer Simulations of a Thermo-Responsive Polymer in Aqueous Solution*
    Eckhard Spohr, University of Duisburg-Essen, Germany

25. *Molecular Interaction and Microstructure of Cationic Polyelectrolyte-Anionic Surfactant Complex Systems: Effect of Polyelectrolyte Charge Density and Surfactant Alkyl Chain Hydrophobicity.*
    Norman Wagner, University of Delaware, USA