

JCNS Workshop 2012

“Trends and Perspectives in Neutron Scattering for Soft Matter and Biophysics”

October 8-11, 2012, Tutzing

Program

Monday, October 8, 2012

13:15 Opening of the workshop and welcome

Functional Materials

- 1 13:30 Luigi Paduano, University of Naples "Federico II", Naples, Italy (invited)
Nanodevices for antineoplastic diagnosis or therapy
- 2 14:00 Michael Gradzielski, Technische Universität Berlin, Berlin, Germany (invited)
Structure and dynamics of polyelectrolyte/surfactant complexes probed by SANS and NSE and their relation to the rheological properties
- 3 14:30 Andreas Schönhals, BAM Federal Institute for Materials Research and Testing, Berlin, Germany
Neutron scattering to investigate the molecular dynamics of discotic liquid crystals in the bulk and in the nanoconfined state
- 4 14:50 Wim Pyckout-Hintzen, Forschungszentrum Jülich, Jülich, Germany
Topology and dynamics in cyclic polymers: a PEG case study
- 5 15:20 Paula Malo de Molina, Technische Universität Berlin, Berlin, Germany
Structure and dynamics of mixtures of microemulsions networks with end-capped star polymers of low functionality

15:30 Coffee Break

Soft Matter Materials for Energy

- 6 16:00 Mitsuhiro Shibayama, The University of Tokyo, Chiba, Japan (invited)
Structure and gelation dynamics of tetra-PEG ion gels
- 7 16:30 Volker Urban, Oak Ridge National Laboratory, Oak Ridge, USA (invited)
Neutron scattering for energy and the environment – light harvesting biofuels
- 8 17:00 Satoshi Koizumi, Ibaraki University, Hitachi, Japan (invited)
In-situ observation of operating polymer electrolyte fuel cells (PEFC) by neutron small angle scattering – contrast variation by using deuterium gas

- 9 17:30 Henrich Frielinghaus, Jülich Centre for Neutron Science, Garching, Germany
Dynamics of microemulsions confined by a planar wall
- 10 17:50 Sandor Balog, University of Fribourg, Marly, Switzerland and Paul Scherrer Institut, Villigen, Switzerland
Small-angle neutron scattering studies of graft-copolymer electrolytes (canceled)
- 11 18:10 Zhenyu Di, Jülich Centre for Neutron Science, Garching, Germany
Phase behavior of AB/BC diblock copolymer blends
- 12 18:30 Veerendra Kumar Sharma, Bhabha Atomic Research Centre, Mumbai India
The dynamical landscape in ionic micelles (canceled)
- 18:50 Dinner

Tuesday, October 9, 2012

Nanostructured Systems

- 13 8:30 Regine von Klitzing, Technische Universität Berlin, Berlin, Germany (invited)
Stimuli sensitive polymer coatings with different film architectures
- 14 9:00 Stephan Förster, Universität Bayreuth, Bayreuth, Germany (invited)
Structure of soft lyotropic crystals and quasicrystals
- 15 9:30 Ralf Köhler, Technische Universität Berlin, Berlin, Germany
Polyelectrolyte multilayers under mechanical stress: studying changes in structure, elasticity, and swelling behavior with neutron and x-ray reflectometry
- 16 9:50 Sylvain Prevost, Technische Universität Berlin, Berlin, Germany
Equilibrium between miscible pseudo-phases for theta-shaped surfactants
- 17 10:10 Fabienne Barroso-Bujans, Materials Physics Center, San Sebastián, Spain
Structure and vibrational dynamics of poly(ethylene oxide) confined in graphite oxide by inelastic neutron spectroscopy
- 10:30 Coffee Break

Nanostructured Systems (continued)

- 18 11:00 Matthias Ballauff, Helmholtz Zentrum Berlin, Berlin, Germany (invited)
Small-angle neutron scattering – recent results on colloids and future trends
- 19 11:30 Sanat Kumar, Columbia University, New York, USA (invited)
Modeling polymer nanocomposite structure and dynamics
- 20 12:00 Dietmar Schwahn, Forschungszentrum Jülich, Jülich, Germany
SANS studies on the effect of organic matter on calcium-phosphate mineralization in order to elucidate the scaling of RO-membranes in desalination of wastewater

- 21 12:20 Ivan Krakovsky, Charles University, Prague, Czech Republic
Structural changes in epoxy-based gels induced by external stimuli investigated by small-angle neutron scattering
- 22 12:40 Jaques Jestin, Laboratoire Léon Brillouin, CEA Saclay, Gif/Yvette, France
Polymer-particle nanocomposites: influence of nanoparticles dispersion, of polymer chains conformation and of filler orientation on the macroscopic properties of materials
- 13:00 Lunch
- Physics of Life**
- 23 14:00 Alessandro Paciaroni, University of Perugia, Perugia, Italy (invited)
Elastic and quasielastic neutron scattering investigation of biomolecules in glassy environments
- 24 14:30 Ralf Biehl, Forschungszentrum Jülich, Jülich, Germany (invited)
Proteins in solution: determination of domain structure and dynamics
- 25 15:00 Tilo Seydel, Institut Laue Langevin, Grenoble, France
Protein self-diffusion in crowded solutions
- 26 15:20 Martin Weik, Institut de Biologie Structurale, Grenoble, France
Proteins need it wet. Do they?
- 15:40 Coffee Break
- 27 16:10 Maikel Rheinstädter, McMaster University, Hamilton, Canada (invited)
Frontiers in membrane biophysics
- 28 16:40 Federico Sebastiani, University of Perugia, Perugia, Italy
Collective dynamics in DNA hydration water and intracellular water in living cells
- 29 17:00 Melissa Sharp, European Spallation Source, Lund, Sweden
Domain motions in mercuric ion reductase - MerA
- 17:20 **Poster Session**
- 19:30 Dinner

Wednesday, October 10, 2012

Advanced Instrumentation for Soft Matter Research

- 30 8:30 Victoria Garcia Sakai, ISIS, Didcot, United Kingdom (invited)
Views from a soft matter neutron instrument scientist
- 31 9:00 Bernhard Frick, Institut Laue Langevin, Grenoble, France (invited),
New developments in neutron backscattering with applications in soft matter and perspectives for studies of slow dynamics
- 32 9:30 Nicolo Violini, Forschungszentrum Jülich, Jülich, Germany
Development of multi-spectral direct geometry chopper spectrometers for the future European spallation source
- 33 9:50 Aurel Radulescu, Jülich Centre for Neutron Science, Garching, Germany
KWS-2 – the high-intensity/wide Q-range small-angle neutron diffractometer with tunable resolution at the FRM II optimized for soft matter and biology
- 34 10:10 Olaf Soltwedel, Max Planck Institute for Solid State Physics, Stuttgart, Germany
NREX – neutron / x-ray contrast reflectometer
- 35 10:30 Clare Armstrong, McMaster University, Hamilton, Canada
Measurement of transient domains in biological membranes using coherence length dependent neutron diffraction
- 10:50 Coffee Break

Synergies Between Neutrons and Simulation

- 36 11:20 Juan Colmenero, Centro de Física de Materiales (CSIC, UPV/EHU) and Donostia International Physics Center, San Sebastián, Spain (invited)
Chain dynamics in un-entangled polymer blends with dynamic asymmetry. A generalized Rouse incoherent scattering function based on the GLE formalism
- 37 11:50 Matti Peltomäki, Forschungszentrum Jülich, Jülich, Germany
Scattering intensity of bicontinuous microemulsions from simulations at the mesoscale
- 38 12:10 Simon Poblete, Forschungszentrum Jülich, Jülich, Germany
Mesoscale simulations of multi-domain protein dynamics
- 12:30 Lunch
- 14:00 Excursion to the Franz Marc Museum in Kochel
- 18:30 Workshop dinner in the “Griesbräu” in Murnau

Thursday, October 11, 2012

Kinetic Processes

- 39 9:00 Isabelle Grillo, Institut Laue Langevin, Grenoble, France (invited)
Recent applications of time resolved SANS combined with a stopped-flow equipment
- 40 9:30 Toshiji Kanaya, Kyoto University, Kyoto, Japan (invited)
Flow-induced polymer crystallization – effects of molecular weight and shish-kebab formation
- 41 10:00 Christine Papadakis, Technische Universität München, Munich, Germany
Kinetics of collapse and aggregation in micellar solutions of thermoresponsive triblock copolymers – a time-resolved SANS investigation
- 42 10:20 Sebastian Jaksch, Technische Universität München, Munich, Germany
Kinetics of collapse transition of poly(2-oxazoline)s in aqueous solution
- 10:40 Coffee Break

Kinetic Processes (continued)

- 43 11:10 Hideki Seto, High Energy Accelerator Research Organization, Tsukuba Japan
Formation of a multiscale aggregate structure through spontaneous blebbing of an interface
- 44 11:40 Debsindhu Bhowmik, Donostia International Physics Center, San Sebastián, Spain
Dynamics of polymer / polymer nano-composites
- 12:00 **Closing remarks, end of the workshop**
- 12:15 Lunch

Poster Presentations

Advanced Instrumentation for Soft Matter Research

2012-1

Oxana Ivanova, Jülich Centre for Neutron Science

The Jülich neutron spin echo spectrometer (J-NSE): Dynamics with depth resolution

2012-2

Jianqi Zhang, Technische Universität München

Solvent distribution in block copolymer thin films

2012-3

Tobias Schrader, Jülich Centre for Neutron Science

In-situ light scattering during small angle neutron scattering experiments: First results and lessons learned

2012-4

Vitaly Pipich, Jülich Centre for Neutron Science

Focusing mirror VSANS diffractometer KWS-3: merging nano- and micrometer worlds

2012-5

Michaela Zamponi, Jülich Centre for Neutron Science

The high resolution neutron backscattering spectrometer SPHERES

2012-6

Stefano Pasini, Forschungszentrum Jülich

Design of a spin-echo-spectrometer for ESS

Functional Materials

2012-7

Stefan Wellert, Technische Universität Berlin

Internal structure and dynamics of microgel films at solid interfaces

2012-8

Ana Brás, Forschungszentrum Jülich

Neutron scattering of self-healing model polymers

2012-9

Konstantinos Kyriakos, Technische Universität München

Cononsolvency in aqueous solutions of P(S-b-NIPAM) diblock copolymers

Kinetic Processes

2012-10

Thomas Zinn, Forschungszentrum Jülich

Exchange kinetics in aqueous dispersions of n-alkyl-PEO polymers by TR-SANS

Nanostructured Systems

2012-11

Margarita Krutyeva, Forschungszentrum Jülich
The influence of solid surface on the dynamics of polymer melt

2012-12

Guido Goracci, Donostia International Physics Center
Role of H-bonding on the structure and the dynamics of concentrated polymeric solutions

2012-13

Artem Feoktystov, Jülich Centre for Neutron Science
Detailed SANS contrast variation on toluene-based Co ferrofluid

2012-14

Barbara Gold, Jülich Centre for Neutron Science
Polymerdynamics in silicabased nanocomposites with attractive interaction

Sustainable Polymers

2012-15

Shyamal Kumar Kundu, Galgotias University
Shear induced brush deformation of soft colloidal mixtures

2012-16

Nino Ruocco, Forschungszentrum Jülich
Microscopic study of branched polymer systems

2012-17

Leonardo Chiappisi, Technische Universität Berlin
On the small-angle scattering curves arising from oppositely charged polyelectrolyte surfactant mixtures: the case of chitosan - alkyl ether carboxylates