

JCNS Workshop 2015

**Neutron Scattering on Nano-Structured Soft Matter:
Synthetic- and Bio-Materials**

List of oral presentations and posters

JCNS Workshop 2015, Trends and Perspectives in Neutron Scattering
“Neutron Scattering on Nano-Structured Soft Matter: Synthetic- and Bio-Materials”
 October 5 - 8, 2015, Tutzing

Program

Monday, October 5, 2015

14:00 Opening of the workshop and welcome

Nanocomposites and Confinement

- 1 14:10 Arantxa Arbe, DIPC, Spain (invited)
Quasielastic neutron scattering and MD-simulations insight into the molecular dynamics of all-polymer nano-composites
- 2 14:40 Julian Oberdisse, Université de Montpellier, France (invited)
Contrast-matching gone wrong? A study of polymer conformation in nanocomposites
- 3 15:10 Karen Winey, University of Pennsylvania, USA (invited)
Morphology and dynamics in precise acid copolymers and ionomers
- 4 15:40 Margarita Krutyeva, JCNS, Forschungszentrum Jülich, Germany
Confinement effect on polymer structure and dynamics studied by neutron scattering

16:00 Coffee Break

Nanocomposites and Confinement (continued)

- 5 16:30 Wolfgang Paul, Martin Luther University, Germany (invited)
Relaxation processes in 1,4-polybutadiene in bulk and confinement: Insights from Molecular Dynamics simulations compared to scattering experiments and dielectric spectroscopy
- 6 17:00 Tadanori Koga, Stony Brook University, USA (invited)
Nanoscale structures and dynamics of polymer chains adsorbed on planar and curved solids

Complex Dynamics

- 7 17:30 Sebastian Gooßen, JCNS, Forschungszentrum Jülich, Germany
Cyclic polymers: From a lattice animal to a sensitive probe for polymer chain dynamics
- 8 17:50 Herwin Jerome Unidad, JCNS at MLZ, Forschungszentrum Jülich, Germany
Consequences of increasing packing length on the dynamics of polymer melts
- 9 18:10 Michaela Zamponi, JCNS at MLZ, Forschungszentrum Jülich, Germany
Hierarchical relaxation in star polymer melts

19:00 Dinner

Tuesday, October 6, 2015

Functional Polymers

- 10 8:30 Sebastian Seiffert, Freie Universität Berlin and HZB, Germany (invited)
Effect and evolution of nanostructural complexity in sensitive polymer gels
- 11 9:00 Wim Pyckhout-Hintzen, JCNS and ICS-1, Forschungszentrum Jülich, Germany (invited)
Supramolecular associations: Bridging different polymer architectures
- 12 9:30 Barbara Gold, JCNS and ICS-1, Forschungszentrum Jülich, Germany
Inspired by nature - tailoring the properties of polymers and networks by dynamic hydrogen bonds: A micro- and macroscopic approach
- 13 9:50 Giacomo Mariani, Friedrich-Alexander-Universität Erlangen-Nürnberg and Institut Laue-Langevin, Germany and France
Unveiling electrostatic self-assembly: Thermodynamics as a key to fundamental understanding of structure-directing effects
- 14 10:10 Marina Gonzalez-Burgos, Centro des Fisica de Materiales (CSIC-UPV/EHU), Spain
Dynamics of single chain nano-particles in solution

10:30 Coffee Break

Functional Polymers (continued)

- 15 11:00 Angel J. Moreno. CSIC-UPV/EHU , MPC and DIPC, Spain (invited)
Combining synthesis, simulations and scattering techniques for the design of single-chain soft nanoparticles
- 16 11:30 Hitoshi Endo, KEK and J-PARC Center, Japan (invited)
Mesoscopic structure of nanogels studied by small-angle neutron scattering and computer simulation
- 17 12:00 Nicolas Sanson, ESPCI-UPMC-CNRS, France
Topologic effects on the nanostructure of thermo-responsive hydrogels: Static and under uniaxial deformation SANS studies
- 18 12:20 Simona Maccarrone, JCNS at MLZ, Forschungszentrum Jülich, Germany
From slow to fast internal dynamics: electrostatic and hydrophobic effects in cationic microgels
- 19 12:40 Robert Luxenhofer, Universität Würzburg, Germany
Pseudo-polypeptide based biomaterials: Heavy-duty polymer micelles, polymer vesicles and responsive hydrogels

13:00 Lunch

Tuesday, October 6, 2015 (continued)

Functional Polymers (continued)

- 20 14:30 Kell Mortensen, University of Copenhagen, Denmark (invited)
Small-angle scattering studies of self-assembled systems relevant for biology: From lipid bilayers to polymer hydrogels
- 21 15:00 Leonardo Chiappisi, Technische Universität Berlin, Germany
Biocompatible complexes of chitosan and alkylethoxycarboxylates: Rich structural variety and interesting potential applications

Nanostructured Complex Fluids

- 22 15:20 Joao T. Cabral, Imperial College, United Kingdom (invited)
Complex fluids in microflows: Opportunities for flow processing and phase mapping
- 23 15:50 Matthias Amann, JCNS and ICS-1, Forschungszentrum Jülich, Germany
Structure and phase behavior of C₂₈-PEO star-like micelles as soft colloidal model system studied by SANS
- 24 16:10 Peter Schurtenberger, Lund University, Schweden (invited)
Assembling responsive nanoparticles

16:40 Coffee Break

16:40 **Postersession**

19:00 Dinner

Wednesday, October 7, 2015

Nanostructured Complex Fluids (continued)

- 25 8:30 Thomas Hellweg, Universität Bielefeld, Germany (invited)
Non-NIPAM based microgels with unusual swelling behavior: Structural heterogeneities as seen by SANS contrast variation
- 26 9:00 Debora Berti, University of Florence, Italy (invited)
Smart lipid/DNA self-assemblies
- 27 9:30 Philipp Buchold, Technical University Berlin and Institut Laue-Langevin, Germany and France
The riddle of viscosity: A structure – property relationship of complexes formed by polyelectrolyte and oppositely charged surfactant

Membranes and Proteins

- 28 9:50 Frank Schreiber, Eberhard Karls Universität Tübingen, Germany (invited)
Tuning protein aggregation pathways and dynamics by charges
- 29 10:20 Sebastian Jaksch, JCNS at MLZ, Forschungszentrum Jülich, Germany
Targeted modification of phospholipid membranes
- 10:40 Coffee Break
- 30 11:10 John Katsaras, Oak Ridge National Laboratory, USA (invited)
Looking for nanoscopic lipid domains in model membranes and living bacteria
- 31 11:40 Lise Arleth, University of Copenhagen, Denmark (invited)
Using phospholipid nanodiscs as a platform for small-angle scattering based structural studies of membrane proteins
- 32 12:10 Jyotsana Lal, Argonne National Laboratory, USA
Modulation of hemoglobin dynamics by an allosteric effector
- 33 12:30 Alexandros Koutsoumpas, JCNS at MLZ, Forschungszentrum Jülich, Germany
Studying membrane proteins with small-angle scattering
- 12:50 Lunch
- 14:15 **Bus starts for the Excursion to Linderhof Palace, Linderhof**
- 18:30 **Workshop dinner in the restaurant “Alte Post” in Oberammergau**

Thursday, October 8, 2015

Soft Matter Materials for Energy Devices

- 34 8:30 Peter Müller-Buschbaum, Physik-Department, Technische Universität München, Germany (invited)
Nanostructured polymer films for energy harvesting applications
- 35 9:00 Henrich Frielinghaus, JCNS at MLZ, Forschungszentrum Jülich, Germany (invited)
Monitoring the structure of wood during pretreatment in ionic liquid/water mixtures
- 36 9:30 Andrew J. Parnell, University of Sheffield, United Kingdom (invited)
Neutron scattering and its role in understanding vertical structuring, mixing and crystallization in polymer thin film solar cell blends
- 37 10:00 Lin Song, Physik-Department, Technische Universität München, Germany
Films with hierarchical porosity assembled from ultra-small titania nanoparticles
- 38 10:20 Maria M. Schiavone, JCNS at MLZ, Forschungszentrum Jülich, Germany
Microstructure of polymer electrolyte membranes based on sulfonated syndiotactic polystyrene in the δ clathrate and γ phases

10:40 Coffee Break

Soft Matter Out of Equilibrium

- 39 11:10 Mitsuhiro Shibayama, The University of Tokyo, Japan (invited)
Fabrication and structural analysis of amphiphilic co-network gels
- 40 11:40 Reidar Lund, University of Oslo, Norway (invited)
Kinetics of self-assembled nanostructures studied by time-resolved small-angle scattering
- 41 12:10 Stefan Egelhaaf, Heinrich Heine University Düsseldorf, Germany (invited)
Flow into and through nanoporous matrices – neutron movies
- 42 12:40 Richard Campbell, Institut Laue-Langevin, France
Rich non-equilibrium structures in oppositely charged poly-electrolyte/surfactant mixtures at the air/water interface

13:00 Closing remarks, end of the workshop

13:10 Lunch

Poster Presentations

2015-1

Amaia Iturrospe, Centro des Fisica de Materiales (CSIC-UPV/EHU), Spain

Structure factor of single chain nano-particles in solution

2015-2

Thomas Zinn, University of Oslo, Norway

Crystallization in micellar cores – melting point depression and influence on exchange kinetics as seen by small angle neutron/x-ray scattering

2015-3

Nitin Saxena, Physik-Department, Technische Universität München, Germany

Hybrid thermoelectrics based on a polymer/nanoparticle composite

2015-4

Marina Khaneft, JCNS at MLZ, Forschungszentrum Jülich, Germany

Structure and proton dynamics in catalytic layer of HT-PEFC

2015-5

Oxana Ivanova, JCNS at MLZ, Forschungszentrum Jülich, Germany

Structural properties of PBI-based polymer membranes for high temperature polymer electrolyte fuel cells

2015-6

Bernhard Hopfenmüller, JCNS at MLZ, Forschungszentrum Jülich, Germany

QENS study of proton motion in H₃PO₄ doped PBI membranes for high temperature fuel cells

2015-7

Martine Philipp, Physik-Department, Technische Universität München, Germany

Phase-separating polymer solutions: Dehydration process and its impact on the volume expansion coefficient

2015-8

Indresh Yadav, Bhabha Atomic Research Centre, India

Probing nanoparticle-protein interactions and resultant structures using scattering techniques

2015-9

Bruno Demé, Institut Laue-Langevin, France

Specific role of glycolipids in the regular stacking of membranes reconstituted from thylakoid lipid extracts

2015-10

Ralph Biehl, JCNS and ICS-1, Forschungszentrum Jülich, Germany

Domain structure and dynamics of proteins observed by neutron scattering

2015-11

Tobias E. Schrader, JCNS at MLZ, Forschungszentrum Jülich, Germany

Change of fractal dimension during the nucleation phase of lysozyme crystallization

2015-12

Alexandros Koutsoumpas, JCNS at MLZ, Forschungszentrum Jülich, Germany

Squeezing vesicles on a supported lipid bilayer: a neutron reflectivity study

2015-13

Irena Levin, Technion, Israel

The conformation and density of block copolymer adsorbed on multi-walled carbon nanotubes in organic media

2015-14

Andreas Schönhals, BAM Federal Institute for Materials Research and Testing, Germany

Influence of a nanoscale confinement on the dynamics of a discotic liquid crystal

2015-15

Ezzeldin Metwalli, Physik-Department, Technische Universität München, Germany

Structural investigation of metal oxide-block copolymer hybrid thin films using TOF-GISANS

2015-16

Nicolò Violini, JCNS, Forschungszentrum Jülich, Germany

T-REX: A Time-of-flight Reciprocal space Explorer for the future ESS source

2015-17

Sofia Napso, Chemical Engineering, Israel Institute of Technology, Israel

Cellulose – coated oil-in-water emulsions

2015-18

Priyanka Biswas, Bhabha Atomic Research Institute, India

Nano-structured silica micro-granules: Synthesis, small angle scattering investigation and uptake proficiency