

BERLIN, GERMANY
FEBRUARY 25 – 26, 2008

The German Rheological Society (DRG) and the Division "Chemical Physics and Polymer Physics (CPP)" of the German Physical Society (DPG) organized a joint meeting in order to continue the scientific interaction between both societies. The title of the symposium was "Rheology, Structure and Dynamics of Complex Fluids," and it took place on February 25 and 26, 2008, in the Institute of Chemistry of the Technical University of Berlin. The symposium was part of the Annual Spring Meeting of the Condensed Matter Division of the German Physical Society and therefore embedded in an exciting, interdisciplinary atmosphere. The organizers of this joint symposium were Norbert Willenbacher, Klaus Mecke, Werner Mielke, Christian Wagner and Ulrich Handge.

The objective of the symposium was to bring together scientists working in the field of rheology and to present new results and ideas. Around 80 participants from academia and industry joined the DRG-DPG meeting in Berlin. The symposium "Rheology, Structure and Dynamics of Complex Fluids" consisted of three oral and one poster sessions with four invited and twenty contributed talks.

After the welcome and opening of the symposium by Norbert Willenbacher, Dimitris Vlasopoulos started the scientific part of the conference. In his elucidating lecture, he discussed the glass transition of colloidal star polymers. He focused on the vitrification and the rheology under different conditions by applying the cage picture of the mode coupling theory. The second speaker, Matthias Ballauff, considered a model colloidal dispersion near the glass transition and demonstrated that flow in concentrated suspensions is directly correlated to the glass transition. Anna Kozina discussed the phase separation and the kinetic arrest of a binary colloidal mixture (polystyrene microgel particles in a good solvent) using static light scattering. Dirk van den Ende investigated the macro- and micro-rheology of soft thermosensitive microgel suspensions and showed that the strain rate frequency superposition technique is consistent with the results of the soft glassy model. The keynote lecture of Christian Friedrich was devoted to the thermorheological properties of fiber networks. He convincingly showed that suspensions of carbon nanotubes in ionic liquids are extremely interesting model compounds in order to study the

fundamental structure of fiber solutions and networks. Jens Glaser applied the glassy wormlike chain model to the rheological properties of a glassy solution of semiflexible polymers. The extensional rheology of pom-pom melts was the subject of the talk of Manfred Wagner. In order to compare quantitatively the experimentally measured elongational viscosity with the predictions of the pom-pom model, he discussed the effects of dynamic dilution of the backbone, finite extensibility, the transition from chain stretch to tube squeeze at low strain rates and the dynamics of branch point withdrawal. Ulrich Handge focused on the rheological behaviour of blends of a styrene-butadiene block copolymer with a general purpose polystyrene in melt elongation and discussed the deformation of the morphology, in particular the alignment of the lamellar phase.

The first keynote lecture of the afternoon session was presented by Walter Richtering. In an inspiring lecture, he discussed different pathways of the size growth of multilamellar vesicles of a nonionic surfactant system in shear quench experiments by interpreting rheo-small angle neutron scattering and rheo-small angle light scattering results. In his lecture, Norbert Willenbacher discussed the shear properties of aqueous wormlike-micellar solutions using diffusive wave spectroscopy and mechanical small amplitude oscillatory shear rheometry in the frequency range from 10^{-1} to 10^6 rad/s. Both approaches agreed very well and could be interpreted in terms of a linear to branched micelles transition and were also used in order to determine the persistence length of the linear micelles. Ute Kessner investigated the thermorheological properties of several polyethylenes in the linear and nonlinear regime and correlated the activation energy to the molecular structure of the polyethylenes. She pointed out that the analysis of the thermorheological behaviour can be used in order to get insight into the branching architecture of polyethylenes. Silke Rathgeber combined time-resolved small-angle x-ray scattering and flow experiments in order to study bottlebrush polymer solutions in shear. Claus Gabriel elucidated in an inspiring lecture the relevance of magnetorheological fluids and their flow properties for technological applications. The shear-induced structure and rheological properties of ferrofluids were studied by Patrick Ilg using non-

equilibrium Brownian dynamics simulation techniques. Günter Auernhammer presented a novel setup consisting of a piezo actuator driven shear cell in a x-ray microscope in order to study shear-induced reorganization of magnetite particles in a matrix of a polymer melt. Finally, smoothed particle hydrodynamics was applied by Andreas Wonisch in order to simulate the thixotropic behaviour of complex fluids.

After the oral sessions of the first day, a poster session gave further possibilities to intensify the scientific discussions on the rheology and structure of complex fluids. Around 30 posters were presented in the gallery of the "Lichthof" of the main building of the TU Berlin.

The second day of the symposium was opened by a lecture of Wolfgang Pechhold who determined and discussed the rheology of blood using the Piezo Axial Vibrator (PAV). Manfred Wilhelm presented a new design for an in-situ combination of NMR and rheological measurements. Rheo-NMR can be also used in order to study shear-induced phenomena in liquid crystals which was shown by Claudia Schmidt and in order to study flow of water/oil emulsions which was the subject of the lecture of Ulrich Scheler. Christian Clasen determined the tribological properties using a sliding gap rheometer with a

well defined gap in the nano-to-micrometer range. Andreas Zell investigated the elongational properties of a dilute polymer solution using a Taylor-Couette cell. The diffusion of linear macromolecules and spherical nanoparticles in semidilute polymer solutions and gels was studied by Sebastian Seiffert using fluorescence spectroscopy. Finally, Marco Walz explained how he had applied grazing incidence neutron spin-echo experiments in order to explore the dynamics of complex fluids near interfaces.

In summary, the DRG-DPG symposium was a very lively meeting with stimulating oral and poster contributions. Since rheology and polymer physics share a large number of common research topics, the series of these joint DRG-DPG meetings will be continued in the future. The next conference which will be organized by the German Rheological Society will take place on March 19 and 20, 2009 in Berlin. This conference will be jointly organized with the subgroup "Rheologie" of the VDI-Society "Verfahrenstechnik und Chemieingenieurwesen" (GVC) and will be hosted by the Federal Institute for Materials Research and Testing (BAM) in Berlin.

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Eurofillers 2007

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS,
BUDAPEST, HUNGARY
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The Eurofillers conference was organized between the 26th and 30th of August, 2007 by the Laboratory of Plastics and Rubber Technology, Budapest University of Technology and Economics and the Institute of Materials and Environmental Chemistry, Hungarian Academy of Sciences in Zalakaros, Hungary. Around 200 participants arrived from 29 countries in the various parts of the world, including almost all countries of Europe, Brazil, Argentina, United States, South Korea, India, and others.

The high standard of the conference was ensured by the keynote lecturers invited including acknowledged scientists and representatives of

large companies leading innovation, like BASF and Borealis. The invited speakers of the meeting were R. Iden (Germany), L. Matejka (Czech Republic), I. Manas-Zloczower (USA), W. Posch (Austria), R. Rothon (UK), V.E. Sperber (Germany), E. Tombácz (Hungary), and R. Vaia (USA). Scientific and technological presentations focused on the theory and practice of particulate filled and reinforced polymers in the areas: preparation and characterization of fillers; organic/inorganic hybrids, nanocomposites and other nanostructured materials; properties, structure/property correlations; natural fiber reinforced composites; interfacial interactions; application of filled polymers.

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