

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. Rother (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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Many of the presentations dealt with the rheology of modified systems or used the technique as a tool to establish structure-property correlations. In his oral presentation Morphology/mechanic-relations of organic/inorganic nanocomposites based on polypropylene Markus Gahleitner (Borealis) showed the effect of different factors (reactive modification of PP by styrene, filler type, chemical treatment of filler) on the morphology, rheological properties and impact strength of ternary nanocomposites, and found interesting correlations among the various characteristics. In the lecture Comparative study of the effect of addition of silica and silicate nanofillers on the properties of epoxy coatings J. M. Martín-Martínez (University of Alicante) discussed changes in the different rheological characteristics of filled epoxies as an effect of curing temperature, and investigated also the effect of nanofillers on the curing reactions of diglycidyl ether bisphenol A epoxy resins. H. E. Miltner (Free University of Brussels) and his coworkers developed novel methodology for the characterization of nanocomposites, which was presented in the lecture Polymer-filler interaction in EVA-based nanocomposites evidenced by quasi-isothermal crystallization and dynamic rheometry. The combination of the two methods provides an insight into matrix-filler interactions and offers information about changes in the segmental mobility of the polymer in the vicinity of different nanofillers. C. Roux (Ecole de Mines De Paris) studies the dispersion mechanism of silica in highly viscoelastic matrix submitted to shear by a transparent counter-rotating rheometer coupled to an optical microscope. The first results were presented in the lecture In-situ characterization of dispersion processes of silica in an elastomer matrix under shear.

Because of the high number of presentations the poster session was divided into two parts. The first dealt with composites reinforced by nanoparticles. Rheological characteristics were investigated and presented only in a few posters. One of them was displayed by T. Janecská et al. (TVK, Hungary):

Effect of coupling agent properties on the rheological characteristics of wood-fiber reinforced PP composites and another by Z. Dominkovics et al. (Budapest University): Quantitative characterization of the structure of PP/layered silicate nanocomposites at various length scales. N. H. Fithriyah et al. (University of Manchester) studied the polymerization of flexible polyurethane foams containing montmorillonite by real-time data acquisition and presented the results in a poster Polyurethane foam/layered silicate nanocomposites: rheological study. The preparation and properties of various particulate filled and reinforced polymers were presented in the second session. Among them J. Kovács et al. (IMEC, Budapest) estimated the extent of aggregation of CaCO₃ fillers in PP from changes in the average relaxation time of the melt as a function of composition and filler characteristics. He presented his results in the poster Detection of aggregation in PP/CaCO₃ composites by rheological measurements.

The oral and poster papers presented at the meeting proved that rheology is a powerful tool in the characterization of various heterogeneous polymer systems and offers considerable help in disclosing structure-property relationships in these materials. The next Eurofiller conference will be organized in Alessandria (Italy) in 2009.

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Left: Participants at the poster session in front of contributions from Hungary, India, and France.

Middle: J. M. Martín-Martínez during his talk about nanosilicate fillers.

Right: Markus Gahleitner discusses the morphology, rheological properties and impact strength of ternary nanocomposites.

