

HELSINKI, FINLAND  
JUNE 7<sup>TH</sup> - 9<sup>TH</sup>, 2000

The 9th annual conference of the Nordic Rheology Society was held at the University of Helsinki's chemistry department close to the city centre and was organised under the direction of Dr. Heikki Tenhu. As always, the conference was open to all aspects of rheology, which was reflected by the papers presented, but the special theme this year was the rheology of polymers. Consequently, the invited speakers this year are respected specialists in this field, Professor Helmut Münstedt of the Institute of Polymer Materials, University of Erlangen-Nuremberg and Professor Siegfried Hess of the Technical University of Berlin.

Before the conference proper, a three day course was held on polymer rheology. Indeed the holding of such pre-conference courses has become a feature of the Nordic Rheology Conferences of late, and are seen as hugely successful by those taking part. This year was no different with very positive feedback being the order of the day. The course covered all parts of polymer rheology with a very broad and comprehensive 'introduction' being given by Dr. Søren Hvidt of the University of Roskilde in Denmark. His series of lectures certainly gave the delegates the foundation to build upon the topics discussed by the invited speakers, namely laser-doppler velocimetry and non equilibrium molecular dynamics (NEMD).

The conference was launched by the first plenary lecture given by Professor Münstedt, with a title of, "Flow properties of polyolefin melts as investigated by laser-doppler velocimetry". The lecture contained a wealth of information and conveyed to the audience, some of whom were not polymer rheologists, the subtleties and nuances of the subject. The presence of slow moving vortices around the entrance to the capillary led him to conclude that secondary flow characteristics were apparent. When questioned if this could actually be thought of as the onset of turbulence at very low Reynolds numbers  $\sim 10^{-5}$ , known as elastic turbulence in the literature, he remained sceptical of this explanation.

The rest of the day was filled with submitted presentations that focused on either polymer rheology or instrumentation. A selection of the titles is given below: "Macroscopic volume,

free volume and dynamic-mechanical properties of pressure densified polymer: Polymer property predictions" presented by Marcus Schmidt of the Department of Polymer Technology, Chalmers University of Technology, Gothenburg. "Transient extensional flow: Measurement in the filament stretching experiment" presented by Anders Bach of the Institute of Chemical Engineering, Technical University of Denmark. "Characterisation of long chain branching in metallocene catalysed polyethylene" by Anneli Malmberg, Borealis Polymers Porvoo, Finland.

The business part of the day was finished off with the Annual Meeting of the Nordic Rheology Society. 2000 represents an important year for the Society in that positions for the entire board were open for election. This took place without flaw and the names and addresses of the new board will be posted on the society's internet site, [www.nordicrheology.org](http://www.nordicrheology.org) once the positions take effect, typically in the later summer.

With business completed the new board and the rest of the delegates gathered for the conference dinner. Before settling down to eat the party were treated to a 45 minute sail from the harbour area of Helsinki to the island museum of Seurasaari. The site of the dinner, we were told, used to be an old eating house from which until relatively recently alcohol was banned! Around the roof of the house were many sayings and inscriptions which told of the evils of the demon drink. This was all found highly amusing, after which the delegates were reassured that wine was most definitely on the menu! The conference dinner though is not all fun and frivolity, it is the traditional venue for the handing out of the society's awards and general recognition.

The society's main award, the Carl Klason Rheology Award, which is presented to a person who has endeavoured to promote rheology within the Nordic countries was, this year, awarded to a deserving recipient. Over the years not only has he promoted rheology within the Nordic countries but also wider afield. He has been involved in development of rheological equipment and well as teaching the subject to numerous students. For all of the above reasons and because he has been somewhat of a found-

ing father and elder statesman of our society, the Carl Klason Rheology Award for 2000 was presented to Professor Ole Kramer of the University of Copenhagen.

The final day of the conference was opened by the second plenary lecture given by Professor Hess "Computer simulations of polymer rheology and shear induced structural changes". Again the lecture contained a vast amount of information and placed the arcane world of non-equilibrium molecular dynamics (NEMD) at the disposal of the audience. From his simulations he showed a polymer molecule being coiled at low shear and opened or 'stretched' at high shear and viscosity decreasing. When questioned on the matter relating to the possible presence of extensional forces in predominantly shear flow regions, he agreed this was true. Under a pure or predominantly extensional flow such unwinding of the polymer molecule could result in strain thickening or increasing viscosity as strain rate increased. Here however, the predominant force was shear flow but the question of evaluating extensional components from conventional rotational rheometers was raised.

The remainder of the conference continued with the submitted papers and covered further topics than that of the special theme. Selected

titles include "Alginic acid gels and Ca-alginate gels; what's the difference?" presented by Kurt Draget of the Norwegian University of Science and Technology, Trondheim. "Measurement of extensional flow properties in contraction flow" presented by Mats Stading of Chalmers University of Technology and SIK, The Swedish Institute for Food and Biotechnology, Gothenburg. A further interesting paper "Molecular weight distribution and property computations by the energy model of viscoelasticity" was presented by Tommi Borg of TomCoat Oy, Kuoppa-aho, Finland.

The conference then closed mid afternoon with the invitation to join the Nordic Rheology Conference 2001 at the University of Trondheim between the dates of June 13th - 15th. The special topic is to be on Mixed Systems and designed to cover synthetic and biopolymers, solutions and gels. Further details will be posted on the website throughout the coming year.

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#### ANNOUNCEMENT

#### INTERNATIONAL CONFERENCE ON BIORHEOLOGY & SCHOOL FOR YOUNG SCIENTISTS

SOFIA, BULGARIA  
18-22 October, 2000

**ORGANIZED BY:**  
Bulgarian Academy of Sciences  
Institute of Mechanics and Biomechanics  
Laboratory of Biodynamics and Biorheology

INVITED SPEAKERS	TOPICS
<b>O. Baskurt - Turkey</b> <b>H. Bäumlér - Germany</b> <b>Ya. Ivanov - Bulgaria</b> <b>M. Kameneva - USA</b> <b>Z. Lazarov - Bulgaria</b> <b>G. Mchedlishvili - Georgia</b> <b>Y. Nyashin - Russia</b> <b>P. Riha - Czech Republic</b> <b>M. Singh - India</b> <b>J.-F. Stoltz - France</b> <b>M. Tomita - Japan</b> <b>Velcheva - Bulgaria</b>	<ul style="list-style-type: none"> <li>✓ Hemorheology</li> <li>✓ RBC aggregation</li> <li>✓ Blood Cell Rheology, Cell Mechanics</li> <li>✓ Hemorheological factors and hemodynamics</li> <li>✓ Rheology of biological fluids and tissues ; biosurfactants</li> <li>✓ Biofluid dynamics</li> <li>✓ Biorheological instrumentation</li> <li>✓ Clinical applications</li> </ul>

**For further information contact the Secretary or visit the website:**

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