

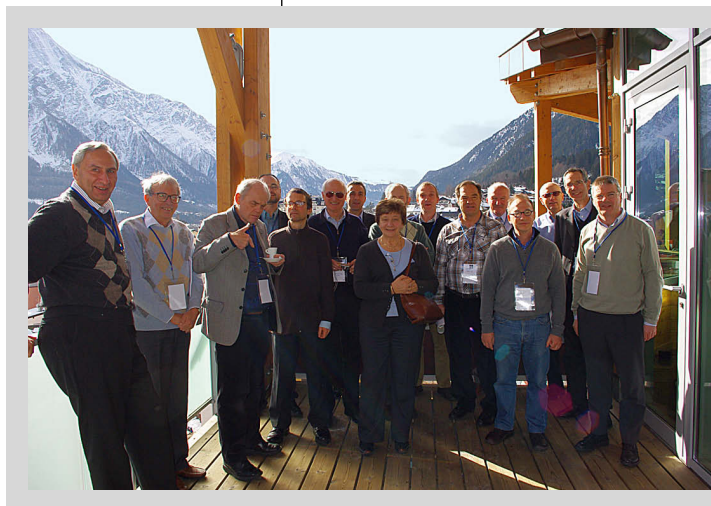
CHAMONIX, FRANCE
FEBRUARY 1 – 5, 2009

The French Group of Rheology, under the auspices of the European Society of Rheology, organized the de Gennes Discussion Conference, entitled: "From reptation to glassy materials: de Gennes pioneering work in rheology and recent developments". The organization of this conference strongly involved the French rheological community who wanted to pay tribute to Pierre Gilles de Gennes, for the new ideas he brought to this field, especially in polymer science and complex fluids. This conference was held in Chamonix (France), a nice city at the foot of the Mont-Blanc, as a reminiscence of our Nobel Prizewinner taste for mountains. Moreover the meeting was located a few kilometers away from "Les Houches", where a number of winter or summer schools with an international audience of scientists took place over the years, many of them involving courses given by this most eminent scientist. This place has also been the opportunity of both human and social meetings as well as strong scientific discussions.

Although the genuine "ambience" of "Les Houches" can hardly be transferred to another location, the organizers believe to have reached to a large extent, throughout the meeting, a very friendly atmosphere, probably coming from the kindness of the invited speakers as well as of participants who actively took part to the discussions. In addition, the sessions and the participants were hosted at the Hotel Alpina, a comfortable place with a panoramic delightful restaurant, delivering a nice view of the surrounding snow covered slopes. An open bar, kindly offered by TA Instruments on Monday evening, also participated to set-up the enjoyable social side of the meeting.

The format of the meeting was quite unusual, since it was based on invited lectures, given by distinguished experts in different fields (polymer melt rheology and dynamics, polymers in solutions, polymers at surfaces and adhesion, polymers and biology). Participants to the meeting were suggested to give a 4 minutes oral presentation of their poster, prior to the poster discussion. In addition, 3 industrial sponsors (Total, Saint-Gobain, L'Oréal) agreed to give an after dinner conference, emphasizing the importance of soft matter research in their companies. Besides 20 world renowned invited speakers, 64 participants took part to the meeting, presenting 42 posters. 15 countries were represented with large delegations from France, United States, United Kingdom and Japan.

Contributions on polymer melt rheology were given by Tom Mc Leish who reviewed the relaxation of branched systems from logarithmic relaxation to LDPE, Pino Marrucci who presented strongly non linear data on the shear behaviour of bimodal blends, Hiroshi Watanabe who described the dynamics in miscible polymer blends, Ole Hassager who convinced the audience of the interest of well designed extensional rheology of molten polymers, John Dealy who described wall slip and pressure effects and Manfred Wagner who presented an extension of the molecular stress function model to shear flow, Malcolm Mackley who reviewed historical and up to date ways of stretching polymer chains to end-up by Ludwik Leibler who showed us how supramolecular rubbers with fascinating properties can be obtained from renewable sources using appropriate stickers.



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Polymers at surfaces and adhesion were considered by Liliane Leger who explained the role of connector molecules in friction and adhesion at soft polymer interfaces, Elie Raphael who described the various regimes encountered in the dewetting of polymer films and Masao Doi who considered adhesion of very soft rubber.

Polymer and biology were the focus of the talks of Robin Ball who describes the translocation of a polymer chain through a membrane pore, Gerry Fuller who gave illustrations of the creation of oriented collagen substrates for cell growth, Steve Granick who showed us recent experiments on the motions of actin filaments and their analysis and Mike Cates who developed theoretical concepts on the swarming of bacterial suspensions. Mike Rubinstein illustrated on the basis of a practical application of muco-ciliary motion for lung clearance a molecular model based on many concepts and scaling laws of polymer physics. Ralph Colby gave a review of the compared rheological behaviour of unentangled neutral and polyelectrolytes polymers and Ron Larson gave a lecture on molecular dynamics models in relation to linear and non-linear properties of semi-dilute polymer solutions. Alexander Semenov proposed a theoretical modelling of the formation of a glass of thin molten polymer films.

Although the weather forecast was not optimistic, the week was definitely better than announced, allowing some of the participants to practice ski during the "ski, shopping or nap" afternoon on Tuesday. The conference received an acknowledged financial support from the following companies: ExxonMobil Chemical, Lafarge, L'Oréal, Michelin, Saint Gobain, Total; and the following institutions: CNRS, INRA, Paris-Tech, Université du Maine and the French Group of Rheology. They are warmly thanked by the chair persons and the organizing committee.

Philippe Coussot, Nadia El Kissi and
Jean-François Tassin (Chairs)

Ahmed Allal, Thierry Aubry, Jean-Louis Doublier,
Jacques Guillet, Christophe Lanos, René Muller,
Alain Ponton, Bruno Vergnes
(Organizing Committee)



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12th European School on Rheology

Laboratory of Applied Rheology and
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