The next workshop, III SMWC, will take place 12–15 July 2004. The lecturers who have already confirmed are Angela Danil de Namor (U. Surrey), Javier de Mendoza (U. Auton. Madrid), A.P. de Silva (Queens U.), Luis Echegoyen (Clemson U.), Achim Müller (U. Bielefeld), Vincent Pecoraro (U. Michigan), Joszef Szejtli (Cyclolab), and Fritz Voegtle (U. Bonn).

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### Macromolecules

*by Jaroslav Kríz*

An interesting international conference on the Spectroscopy of Partially Ordered Macromolecular Systems was held 21–24 July 2003 in Prague, Czech Republic. It was organized, under the auspices of IUPAC, by the Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic as the 22nd of its annual discussion conferences on macromolecules. The program reflected increasing scientific interest in ordered systems in the fields of synthetic and natural macromolecules. Although its main scope is local and targeted on details of structure and its dynamics, molecular spectroscopy can and must deal with order on the semi-local or even larger scale. Nuclear magnetic resonance and vibrational (infrared and Raman) spectroscopy offer effective, and in a certain sense complementary, research tools in this field. This was clearly demonstrated by a number of leading scientists from Europe, the USA, and Japan who mostly presented inventive modifications of these methods.

Lectures covered both liquid and solid-state magnetic resonance spectroscopy. Christian Griesinger (Germany) presented an ingenious study of protein dynamics using dipolar couplings and cross-relaxation in various alignment media. Jacob Shaef er (USA) showed quite new applications of his REDOR technique in the investigation of local order in polycarbonate glasses. Isao Ando (Japan) demonstrated how a pulsed field-gradient NMR could be used to study the quite slow diffusion of rod-like polypeptides in a liquid-crystalline phase. Horst Schneider (Germany) investigated another aspect of liquid crystals: inspecting the main-chain orientation in siloxane polymers with liquid-crystalline side-chains by an original use of $^{29}$Si solid-state NMR. Daniel Canet (France) presented an ingenious and original NMR imaging technique using electromagnetic field gradients, which has the potential for widespread application. Interesting shorter contributions were presented by G. Jeschke (study of polymer dynamics using EPR) and I. Schnell (merging liquid and solid state NMR methods in the study of supramolecular systems), both of whom are from Germany. J. Kríz (Czech Republic) used multinuclear, multi-quantum NMR to study order in polyelectrolytes. Yu. Gotlib and V. Toshevnikov (both from Russia) devised theoretical methods to correlate dynamics with NMR relaxation in ordered systems.

In the field of vibrational spectra, Tim Keiderling (USA) elucidated deep connections between dichroism in electronic and infrared regions and infrared absorption or emission, usable for conformational and order studies of polypeptides. Liliane Bokobza (France) showed how FT infrared dichroism could be used in an effective study of molecular orientation in elastomeric networks. In a stimulating lecture, Heinz Siesler (Germany) presented a number of time-resolved mid-infrared and near-infrared techniques showing structural changes in solid polymers under external perturbations. Combining FT Raman spectroscopy with wide-angle X-ray diffraction, Yukihiro Ozaki (Japan) demonstrated relative order in some polymer blends. Michel Pezolet (Canada) demonstrated rather astonishing possibilities of polarization-modulated FT infrared spectroscopy in the study of polymer order, even in such subtle objects like spider silk. In shorter lectures, V. G. Gregoriou (Greece) tackled conformation changes in a polymer induced by stress or heating using both Raman and FT-IR. A study of polypeptide multi-layers by dichroic ATR-FTIR technique was presented by M. Mueller (Germany). H. Sato (Japan) presented a combined FTIR and WAXS study of a biodegradable polymer. An ingenious study of surface polymer layers by FTIR was presented by E. N. Vlasova (Russia).

The main and special lectures were further accompanied by a number of well-prepared and interesting posters. As a special feature, a panel discussion—moderated by C. Griesinger and T. Keiderling—was held on the complementary advantages of NMR and vibrational spectroscopy. In a lively discussion, the participants agreed that the time window of the respective methods gives the infrared spectroscopy
access to more immediate view of the objects, while NMR reflects a more time-averaged state. Also, more collective features of the system are naturally reflected by the infrared, while NMR has a typically local view. However, the participants rather disagreed when trying to decide if this difference leads to a serious limitation of any of the discussed methods. Apparently, both branches of spectroscopy keep developing various sophisticated modifications in striving to overcome their limitations. The discussion ended in a refreshing atmosphere of general optimism based on a number of rather astonishing examples of steadily improving sensitivity and performance of both types of spectroscopy.

The 23rd Discussion Conference, Current Trends in Polymeric Materials, will be held in Prague in July 2005.

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Spectroscopy

by Carmen Cámara and Luis Fermín Capitán-Vallvey

The Colloquium Spectroscopicum Internationale (CSI XXXIII) took place in Granada (Spain), from 7–12 September 2003. The conference was co-chaired by Profs. Alfredo Sanz-Medel (Oviedo University) and Javier Laserna (Málaga University).

About 514 participants from 40 different countries attended the event. After Spain (with about 200 participants), the countries with the highest representation were Germany (39 participants), the United States (29 participants), and Japan (21 attendees). The contributions (504) were presented in 97 lectures and 407 posters. In addition to the above-mentioned countries, Turkey and Brazil contributed significantly to the CSI with posters.

More than 30 internationally recognized scientists from the different fields of spectroscopy delivered plenary and invited lectures in different simultaneous sessions devoted to most of the branches of molecular and atomic spectroscopy.

A special additional feature of the conference was the presentation of five “Hot Topics” sessions covering some of the cutting-edge trends in applied spectroscopy. The sessions, which were organized by well-known experts in each Hot Topic, had a total length of about three and a half hours. The session titles, followed by the names of each organizer, are listed below:

- “Trace Analysis and Microanalysis with Lasers: Still the Ultimate Choice?”; Nicolo Omenetto (USA)
- “Modern Applications of NMR to the Study of the Structure, Dynamics, and Interactions of Biomolecules”; Jesús Jiménez Barbero (Spain)
- “Miniaturization, Chips, and Microfluidics for Chemical Analysis”; Andreas Manz (UK)
- “Mass Spectrometry in the Post-Genomic Era: Proteomics”; Ryszard Lobinski (France)
- “Chemical Imaging”; Renato Zenobi (Switzerland)

The CSI XXXIII award was given to Prof. Jim D. Winefordner (University of Florida, USA), “for pioneering work in developing analytical atomic and molecular optical spectroscopy from empirical approaches to fundamental physical approaches and for his contributions to the progress of spectrochemical analysis.” Prof. Winefordner received the award from Prof. J. Laserna in a special session, during which Ben Smith presented a history of Winefordner’s laboratory.

The conference also included an instrument exhibition featuring 14 instrument manufacturers and 3 spectroscopic publishers. The exhibition offered an opportunity for people from industry and academia to interact closely, exchanging ideas and experiences. Additionally a highly successful vendor session, chaired and organized by Dr. J. Brenner, was specially arranged for the conference. This workshop high-