**12th International Meeting on NMR Spectroscopy**
**UMIST, Manchester, 2-7 July 1995**

The 12th International meeting on NMR spectroscopy organised by the Royal Society of Chemistry and the UK NMR Discussion Group took place at UMIST in Manchester from Sunday 2nd July to Friday 7th July. Despite some typical Manchester rain to coincide with the opening of the scientific sessions on Monday 3rd July, the weather was warm and dry for the rest of the week. The meeting was organised along what has now become traditional lines with poster presentations avoiding the use of parallel sessions and with the oral presentations comprising invited lectures and shorter contributed talks grouped into half day symposia on specific themes.

The first session was on experimental techniques and was chaired by J. Keeler (University of Cambridge) with invited lectures from M. Levitt (University of Stockholm, Sweden), G. Wagner (Harvard Medical School, USA) and A. Shaka (University of California, USA) who described new developments in techniques, principally in NMR pulse sequences. The second symposium was on NMR of biological macromolecules and was chaired by M. Williamson (University of Sheffield). Here the invited speakers were M. Clore (NIH, Bethesda, USA) and G. Varani (LMB, Cambridge) who were concerned with the use of NMR to study protein-protein and protein-nucleic acid interactions and structures. The Tuesday sessions started with the biomedical spectroscopy symposium chaired by J. Nicholson (University of London) with invited lectures by P. Kuchei (University of Sydney, Australia) on the measurement of diffusion of molecules inside cells and by D. Leibfritz (University of Bremen, Germany) on the study of metabolic pathways in brain cells using NMR.

The next session was concerned with the application of NMR to inorganic chemistry with K. OrreII (University of Exeter) as chairman. The invited lectures in this session were given by B. Wrackmeyer (University of Bayreuth, Germany) on the use of heteronuclear chemical shifts and by W. McFarlane (University of Newcastle-upon-Tyne) on the use of 2-dimensional NMR for molecular structure and dynamics in organometallic and coordination chemistry.

One of the highlights of the week was the Tuesday evening session chaired by L. Sutcliffe (University of Surrey) in which six postgraduate students gave oral presentations of their work. All were extremely professional and enthusiastic with excellent audiovisual material and this bodes well for the continuation of NMR research.

Solid state NMR was the subject of the next symposium and this had J. Klinowski (tJniversity of Cambridge) as chairman. D. Weitekamp (California Institute of Technolory, USA) gave a fascinating talk on ultra-sensitive solid-state NMR using various techniques to enhance sensitivity with the ultimate aim of NMR of a single nucleus. The other invited lecture in this session was given by I. Farnan (CNRS, Orleans, France) on high temperature NMR of glasses in the solid and liquid states, with high temperature being regarded as >2000°C.

The Thursday symposia started with NMR in physical chemistry with J. Emsley (University of Southampton) as chairman. In this session J. Kowalewski (University of Stockholm, Sweden) was the first invited speaker describing experimental and theoretical simulation studies of paramagnetic relaxation of nuclear spins. This was followed by D. Grant (University of Utah, USA) who gave a lecture on the measurement and applications of chemical shift tensors, principally 13C. This was followed by E. Oldfield (Unversity of lllinois, USA), the winner of this year's RSC Award for Spectroscopy, on prediction and use of chemical shifts in proteins as €m aid to refinement of the 3-dimensional structure.

The penultimate symposium was chaired by K. Packer (University of Nottingham) and was on NMR imaging. The first invited talk was by P. Callaghan (Massey University, New

Zealand) on rheological characterisation of complex fluids using very high resolution NMR imaging, the second invited lecture was from G. Nesbitt (KoninklUke/Shell, Amsterdam, The Netherlands) on information obtainable on catalyst systems by in-situ NMR and the final talk was from E. Randall (University of London) on the use of the stray field available with all NMR magnets to obtain images.

The final symposium, chaired by M. Chippendale (Zeneca Specialities), was on application of NMR in organic chemistry and the first invited speaker was H. van Halbeek (University of Georgia, USA) who described NMR pulse methods for analysing the complicated spectra which arise from complex carbohydrates and who showed applications in a number of areas. The final invited lecture of the whole meeting was given by a local speaker, G. Morris (University of Manchester) who described ways of improving spectrometer performance and the use of diffusion coefficients for aiding molecular assignments.

In addition to the invited speakers and the six postgraduate presenters, there were 16 other oral contributed talks and 128 posters. These posters were displayed all week and two formal viewing sessions were incorporated into the programme so that poster presenters could defend their work and this provided the usual lively debate.

The whole meeting was complemented by an active social programme, exhibitions of books and equipment and the opportunity to investigate the NMR-equipment manufacturers' latest developments in a relaxed setting.

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