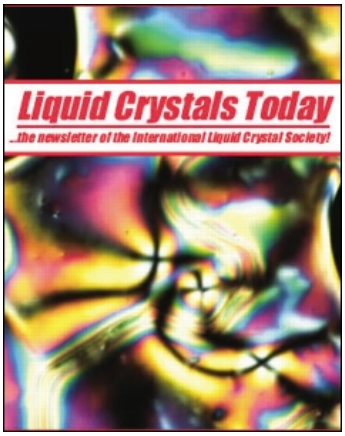

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On the 17th International Liquid Crystal Conference 19-24 July 1998, Palais des Congres, Strasbourg

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in which these resources could be used for the benefit of the Society membership. Various proposals were discussed, and it was agreed that limited support could be provided for the development of the electronic Liquid Crystals Today, and the ILCS web-site, with archive facilities now available for the Board members. The question of sending someone to perform office tasks for the Society to the next International Liquid Crystal Conferences was discussed. No satisfactory answer was found to the problem, and it was decided to continue the discussion by email. A majority of the Board agreed that support could be provided for an administrative assistant for the ILCS to attend the next international conference. The board agreed to implement the procedure to pay membership fees online via the web site of the Society.

Bylaws Review

Since the establishment of the Bylaws of the Society, a certain number of regulations have been approved in the last years by the Board of Directors: the Membership Secretary is an Officer that was introduced at the Board of Directors Meeting in Pisa 1992 (23 June, Tuesday, Minute 4). A new grade of Honoured Membership was established at the Board of Directors meeting in Budapest 1994 (7 July, Thursday, minute 19). The Board of Directors Meeting in Kent 1996 (25 June, Tuesday, minute 6) agreed that student members can vote, and the present Board of Directors approved the proposal to extend the term of the President and Vice-President to four years (instead of two years originally). The present Vice-President, J. W. Goodby agreed to take responsibility for the review and modifications of the ILCS Bylaws.

MEETING REPORT

on the 17th International Liquid Crystal Conference 19–24 July 1998, Palais des Congres, Strasbourg

Report by
Antoine Skoulis and Daniel Guillon

The 17th International Liquid Crystal Conference was held in Strasbourg, France from 19–24 July 1998. It was organized by all colleagues in Strasbourg involved in liquid crystal research with Antoine Skoulios as Conference Chairman, Daniel Guillon as Secretary, Stephane Méry and Paul Masson as Treasurers. This year, the ILCC attracted 897 participants, including 52 accompanying persons, from 38 countries. The largest representation of 130 delegates was from Japan, followed by 118 from Germany, 115 from France, 94 from the UK and 77 from the USA. The scientific activities were structured around 10 main topics divided between 3 parallel sessions and 841 posters. The scientific report which follows has been written by Professor G. W. Gray and contains most of the highlights which were indicated to him by different experts on each of the conference topics.

During the time of the Conference, several awards were made.

The International Liquid Crystal Society distributed four Glenn Brown Awards to young scientists for outstanding work during their PhD research. The recipients were **Dr Martin Bates** (Computer Simulation: An Aid to the Experimentalist), **Dr Eileen Korenic** (Colorimetry of Cholesteric Liquid Crystals), **Dr K. Miyachi** (Molecular Rotational Motion about its Long Axis and Antiferroelectricity in Liquid Crystals) and **Dr E. A. Soto Bustamente** (Achiral Antiferroelectricity in Liquid Crystalline Materials. A New Approach)

The IOG Multimedia Award established by IOG Inc. to recognize the best Web site devoted to liquid crystals was attributed to Dr Müller (Dr Heppke's group, Germany) for his home page describing recent advances in the research on liquid crystal materials with banana-shaped molecules.

The best poster prize established by Wiley-VCH Publishing was attributed to the poster 'Study of XB2 phase of banana-shaped molecules by dynamic light scattering' (by A. Rastegar, Th. Rasing, I. Musevic, S. Rauch and G. Heppke).

The ILCC98 was noteworthy as the occasion of the first induction of Honoured Members of the International Liquid Crystal Society. This new award recognizes outstanding contributions to liquid crystal science. The first scientists to be honoured were Professor S. Chandrasekhar, Professor P.-G. de Gennes, Professor G. W. Gray and Professor A. Saupe. Three of the new Honoured Members attended the ILCC98, and were presented with certificates at a ceremony during the Conference.

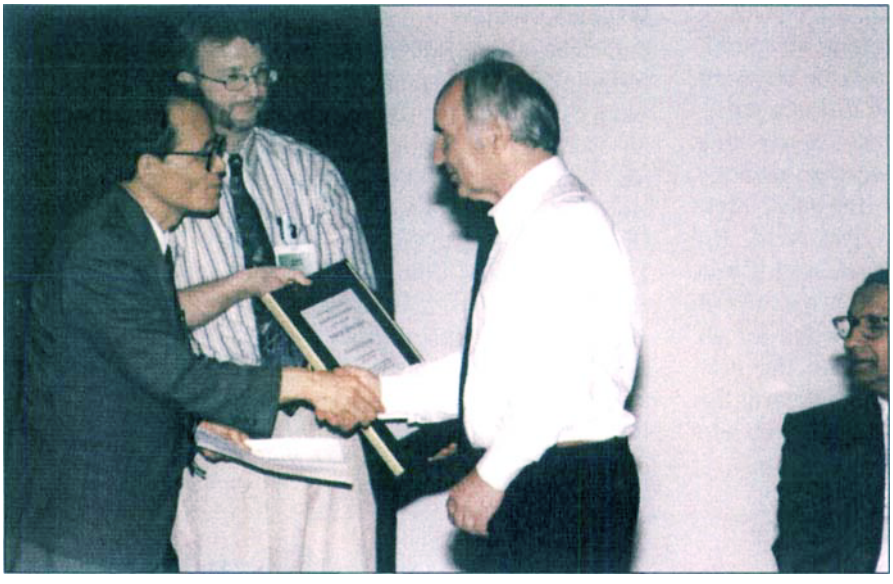
ILCC98-Scientific Review by George Gray

An important aspect of the Strasbourg Conference was the excellent ambience of the Conference Centre. There we had an abundance of circulation space, the posters were not crowded together, enabling ready access, viewing and discussion, and the provision of coffee bars with areas to sit and talk facilitated interaction amongst delegates. The preparation of an overview of the scientific content of the Conference was made difficult by the number of presentations. With close on 100 lectures held in three separate parallel sessions, an average of 210 posters presented on each of four days, and 4 Plenary lectures, I could only hope to give a very general impression of the science of the meeting, although in preparing this report I did seek reactions from a number of other delegates.

The quality of the Plenary and Invited Lectures was very high, and credit must be given to A. Skoulios and D. Guillon, the International Advisory Board and the Scientific Committee of the Conference for their choice of speakers. This high quality also extended generally to the posters, and the judges had a hard time choosing the best from 800+ poster presentations.

The meeting got off to a fine start with the opening Plenary Lecture by Nobel Laureate Professor Jean-Marie Lehn who spoke eloquently and informatively on Perspectives of Supramolecular Chemistry. This is an area of growing interest in the liquid crystal field as researchers probe the range of possibilities for molecular self-assembly of a supramolecular kind.

Following this excellent launch of the Conference, the three other Plenary Lectures given on subsequent days were memorable, and by their content reflected areas of burgeoning interest and activity of liquid



ILCS President Atsuo Fukuda (left) and Vice-President John Goodby present a certificate of Honoured Membership to Professor A. Saupe, watched by Professor S. Chandrasekhar (right).

crystal researchers. The Plenary Lecture by Professor Atsuo Fukuda was quite outstanding, addressing as it did Frustration between Ferroelectricity (chirality) and Antiferroelectricity (polarity) in Disordered Smectic C-like Phases of Liquid Crystals. This is an area of immense importance as the possibilities for antiferroelectric displays emerge, hopefully to overcome some of the many problems that have beset ferroelectric displays on the road to commercialization. This presentation was particularly valuable as it listed outstanding problems that still require clarification, and recommended that the original term 'thresholdless antiferroelectricity' might better be renamed 'frustrated electricity' or 'frustoelectricity'.

The Plenary Lecture by Professor C. R. Safinya on Aspects of Liquid Crystal Science Relevant to Biology was of much personal interest to me and to the growing body of researchers in the field who seek to move away from device oriented research and feel drawn by the wider and appealing study of the role of liquid crystals in the processes of life. Safinya's presentation certainly fired interest and enthusiasm, demonstrating through optical imaging experiments the clear role of liquid crystal structures in the biological mechanism of gene release from cell cytoplasm during the early stages of transfection.

The fourth Plenary Lecture by Professor Heino Finkelmann on Liquid Crystal Elastomers: A Novel Class of Materials was very welcome, injecting hope of real technological applications in the field of liquid crystal polymers, an area that up to now has promised much, but given little by way of realization. Professor Finkelmann elaborated upon how the implantation of rod-like, disc-like or amphiphilic monomer units into network chains can induce the liquid crystalline state in elastomers and how the interplay between network chain conformation and liquid crystal phase structure creates novel elastomeric materials with remarkable combinations of properties.

These Plenary Lectures represented four major themes of the Conference, and there were many interesting and challenging lecture and poster presentations on areas related to them – the role of hydrogen bonding in self-assembly, supramolecular systems such as dendrimers, novel liquid crystal polymers, liquid crystallinity in biological systems and of course the challenging subject of the role of chirality in liquid crystal systems, with all its implications for new device modes – ferroelectric and antiferroelectric.

Professor Goodby's talk on Molecular Asymmetry in the Formation of Helical Macrostructures in Liquid Crystals brought two of the Plenary themes together and was highly instructive on just what chirality means to and does for liquid crystal systems. Many of the original questions in this area have now been answered and the plea was made very strongly by him that work on the physical properties of chiral mesogens should be coupled (but very rarely is) with a clear knowledge of the purity of the materials from the standpoint of their enantiomeric excess. Enantiomeric excess influences important aspects of physical behaviour and must be quoted alongside measured physical parameters.

The chiral behaviour of phases formed by achiral molecules was a very dominant topic. Here we are talking about banana-shaped molecules and the associated 'bananamania' which has developed. There is certainly much of great interest in the phases formed by such molecules and their properties, and this was reflected in lectures and very many posters on the subject. Perhaps now that the subject has been so well ventilated and the comparative simplicity of concept understood that explains the chirality of disordered layers formed by achiral banana-shaped objects, bananamania will calm down and be seen more objectively and simply.

Current LC devices are now of such quality that their replacement by a new type of LC device seems to many unrealistic; it would have to be an order of magnitude better to be commercially successful. There were many lectures and very many poster presentations on display devices, mostly concerned with improvements to and modification of existing device modes designed to make displays brighter, clearer, with improved viewing angles or better projectability. The impression in this area was mainly one of solid progress and refinement. One presentation in this area was however rather striking – that by Crawford and his colleagues on a New Application for PDLCs, involving lasing pixels. Using a PDLC as the loss element in an optically pumped, high gain laser cavity, a high output and on-screen contrast projection device with narrow spectral linewidth has been developed and seems attractive for a non-scanned laser projection system.

There was a strong input through lectures and posters on surface alignment and wetting and de-wetting phenomena, all highly relevant to display technology. The desire to move away from traditional rubbing techniques was reflected in presentations on photolithographic techniques, reliefs provided by AFM and the use of various optically controlled 'command surfaces'.

Other important areas reflected in the meeting were of course new phases and phase transitions and associated theories. The many new phase modifications associated with chiral disordered smectic C phases were well covered, together with new work on twist grain boundary phases and blue phases. The lecture by Anisimov, Agaya and Collings on the nature of Blue Phase III, alias the Blue Fog Phase, was very interesting.

This clarified the nature of the pretransitional behaviour at the BP III toisotropic liquid transition. Scaling theory involving mixing of temperature and entropy as field variables places the transition in the same universality class as the three-dimensional Ising model.

Professor George Gray presents his scientific overview of ILCC98

Other areas strongly represented were metallomesogens, new materials and synthesis, confined LC systems, free standing films, organosiloxanes, novel lyotropic systems, etc. In the latter area, the lecture by D. Gin from the field of templating and entitled Functional Nanostructures Composites and Catalysts using Polymerizable Lyotropic Liquid Crystals was of high interest. The extent of the influence of new techniques such as AFM, STM and computer modelling and simulation on the subject was also very obvious throughout the proceedings.

In general terms, the Conference has been marked by important but steady developments in most areas of LC science. There have been no resounding new announcements, discoveries or surprises and the impression is that we are in a consolidating phase of our history, with new results tending to cement the field together and many researchers looking further afield than displays for the application of LCs, e.g. in nonlinear systems, and their implications, e.g. in the biological sciences.

The quality of the science was unquestionably high and its presentation was also of a very good standard, matching the excellent organization of the Conference and its administrative management. The stewardship of the Chairman, Antoine Skoulious and the Secretary, Daniel Guillon, and the industry of their many anonymous Strasbourg colleagues behind the scenes, together ensured success for ILCC98. I hope I may now express deep thanks for their many months of hard and devoted work, on behalf of all 800+ delegates, none of whom will forget Strasbourg quickly.