BRITISH LIQUID CRYSTAL SOCIETY

LIQUID CRYSTAL NEWS

October 2008 - ish

GW Gray Medal for 2008
Professor Helmut Ringsdorf

Helmut Ringsdorf is this year's recipient of the George W Gray medal of the British Liquid Crystal Society. Throughout his career Helmut's pioneering research contributions have been widely appreciated; albeit mainly by the polymer science community. However, many of his major and most highly cited contributions lie in the fields of Liquid Crystals and Soft-Matter and, based on the concept of molecular engineering of functional polymers, molecular assemblies, and liquid crystals, his research interests were always centered on the attempt to bridge the gap between Materials Science and Life Science.

Starting in 1951, Helmut Ringsdorf studied Chemistry, Geology and Politics at the University of Frankfurt and the University of Darmstadt. He then moved on to the University of Freiburg (Breisgau), where he became the very last student of Hermann Staudinger in 1955 and completed his doctoral thesis in 1958. After being a post-doctoral research fellow with Overberger and Mark at the Polytechnic Institute in Brooklyn from 1960 until 1962, he moved back to Germany to the University of Marburg, where he was made Professor for Polymer Science in 1969. From 1971 until his retirement in 1994, Helmut pursued his research as head of an ever growing, vibrant research group and Professor for Organic Chemistry at the University of Mainz, Germany. Although now retired for 14 years, Helmut Ringsdorf to this date still has his own office on the ground floor of the 'new' Chemistry Department building in Mainz, and can be found there on three mornings a week by the inquisitive visitor or the student with a burning question. During his career and since his retirement Helmut has also held several positions as visiting professor and still takes every opportunity to interact with young scientists such as, for example, in his role as visiting scientist at the School of Pharmacy at the University of Cardiff.

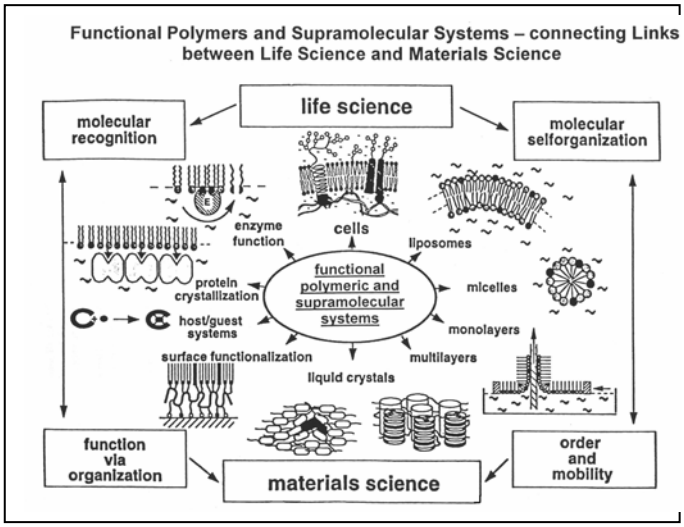
It is hardly possible to overstate the success of Helmut's multidisciplinary approach to his research and only appropriate to point out that he has made seminal contributions to the fields of polymer science, liquid crystals, organic chemistry, supramolecular systems, biomaterials, and pharmacology.

For example, Helmut's research into the *molecular architecture and functionalisation of polymeric liquid crystals* involves the synthesis, structure and property investigations of liquid-crystalline side-group and main-chain polymers. The mesogenic groups he deployed in these studies included both rod-like and disc-like systems, and with Finkelmann, the 2006 winner of the GW Gray Medal, he was the first to prepare side chain polymer liquid crystals. In addition, his work on polymers extended to dye containing and photoreactive functional systems for reversible information storage and non-linear-optic materials. Probably the best known aspect of Helmut's research in liquid crystals is that involving the synthesis and characterisation of discotic liquid crystals based on substituted triphenylenes. In addition, his work also included seminal studies on phase induction and phase variation of columnar systems via charge-transfer-interactions and metal complexation, and related photoconductivity.

However, *the* driving force behind Helmut's research was the desire to marry materials with *life science.* Consequently, much of his work has been related to biological systems. For example, he developed novel pharmacologically active polymers and the 'Ringsdorf Model' of polymeric drug delivery systems made possible

the systematic design of polymers capable of delivering drugs to specific locations in the human body and to control the rate of drug release at that location. He also investigated biological processes at interfaces and developed functional amphiphiles, which have been used to create polymeric monolayers and multilayers via Langmuir Blodgett techniques and Self Assembled Monolayers (SAMs) on various surfaces. His studies encompass liposomes, lipid membranes, mobile supported bilayers, H-bond induced band structures in water, organisation and recognition induced functionality, and multi-compartment polymer micelles. With this work on monolayers and artificial cell membranes he was able to show the potential of synthetic self-assembling and self-organising materials to mimic and enhance the activities of biological systems. Indeed it is in this area that Helmut's work has received the most citations.Helmut, thus, has shown a unique talent to be able to work at the interfaces of research areas, and then to link them together in a comprehensive way. His approach is epitomised by a figure he kindly provided, which is shown to the left.

With over 500 publications and so many seminal contributions to the field of supramolecular and polymeric systems, Hemult's scientific contributions alone make him a worthy winner of the 2008 GW Gray Medal. He motivated many others to break through the boundaries of the classical fields of liquid crystals and polymer science and his contributions were seminal in paving the way for emerging multidisciplinary areas especially in the newly developing area of liquid crystal bio-science. However, to those of us who know him well, his real contributions, like those of George Gray, lie in his abilities to teach, encourage and inspire young researchers in such new fields of science, that we call 'Soft-Matter'.



Helmut Ringsdorf's awards include the H. Staudinger Award (Germany), the H. Mark Award (Austria), the Polymer Award of the Japanese Polymer Society (Japan), the ACS Polymer Chemistry Award (USA), as well as honorary doctors from four universities in four countries. In 2000 his contributions to the field of liquid crystals were recognised in making him an Honored Member of the International Liquid Crystal Society for his 'fundamental contributions to bridge the gap between macromolecular chemistry, life sciences and the liquid crystalline state of matter'. We are very pleased that he has now been awarded the George W Gray Medal of our Society and it was great to see him at the BLCs meeting at UEA (pictured below).

John W Goodby and Verena Görtz

2008 Cyril Hilsum Medal: Sally Day

The 2008 Cyril Hilsum medal was awarded to Dr Sally Day for her work on liquid crystal modelling, characterisation and devices.

After graduating Sally studied at the Clarendon Laboratory Oxford, and in 1987 was awarded a D.Phil. for her thesis: 'Optical and Neutron Spectroscopy of Alkaline Earth Halides'. Sally then worked in the Chief Scientist's group at Thorn EMI Central Research Laboratories until 1989, when she moved to the Royal Signals and Radar Establishment (later DRA), Malvern, where she was a Senior Scientific Officer in the Optical Signal Processing and Display Science Division. In 1992 she became a Royal Society University Research Fellow in the Department of Electrical Engineering, University College London, to study Optical Signal processing using liquid crystals. In 1997 she was appointed to a lectureship in the same department, and in 2003 she was promoted to her current post of Senior Lecturer.

Dr Day's research activities have focused on the optical properties and applications of liquid crystals. At Thorn-EMI and RSRE she investigated methods for improving the switching times of STN displays and she started her long term interest in the use of liquid crystals as non-linear optical materials, both second and third order, using poled polymers and ferroelectric liquid crystals, in collaboration with University groups. Her last few months at RSRE were spent developing a programme, which continued to flourish after her departure, on the use of liquid crystals in spatial light modulators.

Since being at UCL Sally has largely focused her research on modeling, developing a range of computer codes for calculating both director profiles and the optical response of such director profiles for a range of liquid crystal device structures. This modeling has also included the complicating influence, often ignored, of ion motion within the liquid crystal layer. Most recently she has turned her attention to the extremely challenging problem of modeling both statics, and more impressively, hydrodynamics of the director behaviour in cells having nanostructured surfaces.

Throughout her career Sally has been active in the general scientific, liquid crystal and displays communities, serving on the BLCS and SID committees, scientific committees for international conferences and on IEE and EPSRC panels; she is currently Vice Chair of the UK Chapter of the Society for Information Display. She has over 60 publications, 3 book chapters and 4 patents in the area of Liquid Crystal materials and devices. She is also actively involved in promoting Women in Engineering and in outreach activities in schools.

Sally has had a productive research career, is an excellent teacher of engineering and has been a very active contributor to the organization and running of the scientific and liquid crystal community. She is a most worthy winner of the 2008 Cyril Hilsum Medal.

Peter Raynes
Roy Sambles

BLCS Editorial

Dear all most loyal members of the BLCS. Your humble newsletter editor wishes to offer his sincere apologies for the delay in sending out the 2008 newsletter. Whilst I would like to say it was entirely due to the dearth of articles to print that would only cover me until January. Since then the fault is my own inability to get myself organised. This does not bode well for the 2009 issue! Here is a picture of a kitten!

Tim W

Obituary: Professor Pierre-Gilles de Gennes

T he news of the death of one of the most charismatic physicists of our times, Nobel Laureate P.G. de Gennes, on May 18, 2007 brought sadness to the worldwide scientific community.

P. G. de Gennes was born in Paris, France, in 1932. He received his PhD in 1957 at Saclay on magnetism and subsequent postdoctoral training with C. Kittel at the University of California, Berkeley. He then set up at Orsay an activity on superconductivity with both theory and experiment. He made seminal contributions concerning in particular surface superconductivity. He authored the classic book entitled "Superconductivity of Metals and Alloys." In latter years, his research interests frequently shifted with time to different fields of condensed matter physics including liquid crystals, polymers, colloids, interfacial phenomena of wetting and adhesion, and most recently to granular materials and brain science. In each of these areas, he practiced the magic of pulling elegant physics from a collection of data that would appear to be incoherent. In 1968, he started his transformative work on liquid crystals. His famous analogy of the smectic-A liquid crystal with superconductors brought out the universal commonality between these diverse phenomena manifesting in chemically very different materials. After a few years, he authored another masterpiece monograph "The physics of Liquid Crystals" which shaped the future of the field of liquid crystals. Subsequently, he made critical contributions to the fields of polymers, colloids, and interfacial problems of wetting and adhesion. Particularly remarkable are his solution of the self-avoidance problem in polymers and the theory of reptation (describing the reptilian-like motion of entangled polymers). He had the uncanny ability of pulling complex physics out of simple observations and simple concepts out of a clutter of data.

P.G. de Gennes started his academic career as an assistant professor at Orsay in 1968 and became professor at the College de France in 1971. He served as the director of the École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI) from 1976 to 2002. Well known scientists, including Pierre and Marie Curie, Georges Claude, Paul Langevin, and G. Charpak have been historically associated with this prestigious research institution.

He was a member of the French Academy of Sciences, the Dutch Academy of Arts and Sciences, the Royal Society, the American Academy of Arts and Sciences, and the National Academy of Sciences, USA. P.G. de Gennes received multitude of prizes including the 1991 Physics Nobel Prize for Physics.

Satyendra Kumar
President, International Liquid Crystal Society,
taken from ***Liquid Crystals Today***

Royal Society of Chemistry Interdisciplinary Award

Professor John Goodby

Professor John Goodby was named winner of the 2007 Royal Society of Chemistry (RSC) Interdisciplinary Award for his contributions in the area of 'Liquid Crystals and Self-Assembling Materials'. Professor Goodby's award is one of only two given by the Society this year.

The Interdisciplinary Science Awards were established by the RSC in 1986, with the aim of drawing attention to the importance of interdisciplinary studies, particularly those of public interest, involving chemistry and other sciences and to enable chemists to work with scientists from different disciplines to be appropriately rewarded and publicised.

Professor Goodby's nomination was supported by the BLCS Committee who in their application stated, "John has for many years been a leading figure in the liquid crystal community. The successful development and application of liquid crystal materials relies strongly on an interdisciplinary approach and John has worked throughout his career with physicists, mathematicians, engineers and more recently biologists. His contributions have been not only through his excellent chemistry and materials design, but also to issues including structural studies (physics) and device engineering. Professionally, there is no question that John is an excellent organic synthetic chemist, but his significant scientific contributions to liquid crystals span several disciplines. The list of papers attached have been chosen from his more recent work to demonstrate his multidisciplinary activities and input. His ten most cited papers (attracting between 88 and 391 citations) are actually all cross-disciplinary and include work that contributed towards understanding ferroelectricity in liquid crystals, understanding alignment mechanisms in devices, and deducing novel structures, especially in frustrated phases.

John has played an important leadership role in the liquid crystal community, acting as Chairman of the British Liquid Crystal Society from 2003-2005, and President of the International Liquid Crystal Society from 2000-2004. In these roles he has been particularly inspirational to the early career researchers in the area of liquid crystals, emphasising the importance of working across the disciplines in this area of self-assembling materials. John is well-known for his interesting and stimulating lectures, as demonstrated by the award of the RSC Tilden Medal and Lecturership in 2002/3. The area of liquid crystals and self-assembly has played a vital part in the key technological advances in recent years, the exemplar of this being the huge success of the flat panel display. However, there is increasing interest in the liquid crystal phases and self-assembly of biological materials and John is leading research in this area."

John in full regalia at the ILCC – Korea.
Picture courtesy of Simon Siemianowski

Professor Goodby said: "I am indebted to Members of the British Liquid Crystal Society for their nomination, to all of the staff and researchers working in the liquid crystal group at the University of York, and to my many friends and research collaborators throughout the world. Their enthusiasm and passion for science have made this award possible".

As part of the award, Professor Goodby gave two lectures, one during the 2008 BA Festival of Science to be held in Liverpool and the second at a scientific meeting organised by the RSC.

Avtar Matharu
& Helen Gleeson

RSC | Advancing the Chemical Sciences

LC2CAM – Boulder, August 2008

The Boulder International Workshop on Light-Controlled Liquid Crystal Complex Adaptive Materials – (LC2CAM) took place at the University of Colorado at Boulder, USA from 6th – 10th August 2008. The Rocky Mountains provided a stunning backdrop to an excellent collection of presentations and posters on a diverse range of areas in the field of liquid crystals.

The workshop had a strong emphasis on providing opportunities for early career researchers to present their work and network with other post-docs and PhD students working in their field. Many participants benefited from the specialist hands-on outreach and career development sessions held prior to the start of the main meeting. In addition, early-career travel bursaries, provided through the University of Colorado, allowed a large number of PhD students and post-doctoral research fellows to attend from the USA, Europe and Asia giving the meeting a truly international feel. The BLCS community was well represented with oral presentations on tunable liquid crystal laser devices by Harry Coles and Philip Hands from the University of Cambridge, fluorescence confocal microscopy imaging of liquid crystal structures by Sharon Jewell from the University of Exeter and optical tweezers and spatial light modulators by Kishan Dholakia and Tomas Cizmar from the University of St Andrews. Other delegates back in the UK willing to stay up late into the night due to the GMT–6 hours time difference were also able to watch the talks and ask questions via an online live broadcast.

The workshop program provided a balanced mixture of research themes across the disciplines of physics, chemistry, biology and engineering. One of the dominant topics at the meeting was photosensitive azo-dye doped liquid crystals. Illuminating such materials at UV wavelengths causes a fast and reversible trans-cis isomerisation which results in the reorientation of the liquid crystal alignment. Notable examples of papers presented on this topic included recent work by Yue Shi from the University of Colorado at Boulder on the control of the formation of complex director distortions including spiral and ring structures through the illumination of azo-dye based aligning monolayers. The alignment properties of these layers were also discussed in an excellent invited talk given by Ophelia Tsui of Boston University, USA on photo-patterning of azodye layers to produce practical sized polarisation independent phase gratings. Another popular topic in the proceedings involved liquid crystals doped with nanoparticles and nanowires. Two contributions from the University of Colorado highlighted both practical and theoretical aspects of such systems. The first, by Dennis Gardner, was on the self-alignment and organisation of nanoparticles by defects formed during the isotropic to nematic transition before discussing the use of nanorods to stabilise blue phases down to room temperature. Nanorods also featured in the second presentation, given by Clayton Lapointe who demonstrated how “elastic lift” produced by controlling the twist in a liquid crystal cell can be used as a novel and elegant way to manipulate the position of 30μm nickel nanowires dispersed in a nematic liquid crystal.

A number of highlight presentations from the industrial sector were also included. Scott Davis from Vescent Photonics Inc., USA illustrated the latest photonics-related products available which incorporate a liquid crystal clad optical waveguide architecture for use in display, telecommunication and remote sensing industries. Commercial systems such as wide-angle optical beam-steerers, ultra-low power optical switches and miniature tuneable lasers were all discussed. An entertaining talk by Rachel Won from Nature Photonics also helped to enlighten the audience on some of the mysteries associated with the peer-review processes in journals.

Aside from the talks, the meeting also provided excellent networking opportunities through the well-attended poster sessions and evening social events. The workshop dinner and excursion to the Rocky Mountains were both particularly popular and were well appreciated by all those present. Thanks should go to the organisers, Noel Clark and Ivan Smalyukh and their numerous colleagues from the University of Colorado at Boulder for an exceptionally well organised and smoothly run meeting.

For anyone interested in watching any of the featured talks a video archive of the presentations is now available from the University of Colorado website

http://icam-i2cam.org/conference/lc2cam08/archive.html

Sharon Jewell
University of Exeter

Delegates attending the LC2CAM workshop in Boulder, Colorado
(*Photo courtesy of the University of Colorado at Boulder*)

BLCS Bursary report: ISLC

The 15th International School of Liquid Crystals (ISLC) workshop on Liquid Crystal Phases and Nano-Structures took place in beautiful mountain top village Erice, located in eastern part of the island Sicily in southern Italy. This edition of the workshop series had a special undertone since it was organised to celebrate Professor Claudio Zannoni's 60th birthday and commemorate ten years of the International School of Liquid Crystals. The workshop directors Dr. P. Pasini of Bologna and Prof. S. Zumer of Ljubjana had compiled an exciting program worthy of both of these great occasions. The scientific program included an inspiring mix of talks, with topics ranging from thermotropic biaxial nematics to controlling anisotropy in micellar solutions and from experimental optical studies to theoretical mathematical modelling. With speakers coming from all the way from Japan and USA, in addition to various European destinations.

The poster sessions took place during the coffee breaks and ran through the whole duration of the workshop. I presented a poster on a new simulation methodology: Statistical Temperature Molecular Dynamics (STMD) for self organising fluids. Where results were presented for the isotropic-nematic phase transition for two systems; single site soft-core spherocylinder and multi-site rod-rod diblock copolymer. These multiple poster sessions, with or without a cup of coffee, provided a valuable time for discussion of research ideas and general networking.

The conference was organised in the Ettore Majorana centre for scientific culture. Uniquely the lunches and dinners were organised in a number of local restaurants. In addition to the positive problem of choosing a restaurant twice a day, this gave a great possibility for further social networking over a glass of wine and delicious food. It was these occasion which I found both greatly enjoyable and exceptional value for making new contacts and deepening old ones in a relaxed atmosphere. Matters were not made worse by excellent sea food selection, Sicily being an island. It was soon learned that it seemed to be a season for swordfish. After the dinner the social program was further continued in the marsala room at the Ettore Majorana centre with aid of Marsala wine, a strong wine similar to port, typical to the region. On the last evening of the conference a festive dinner was held to celebrate professor Claudio Zannoni's 60th birthday.

The workshop was very well organised by the workshop directors and the staff of the Ettore Majorana centre for scientific culture. I can gladly recommend participation for my fellow Ph.D. students in a future ISLC workshop.

Juho Lintuvuori
Durham University

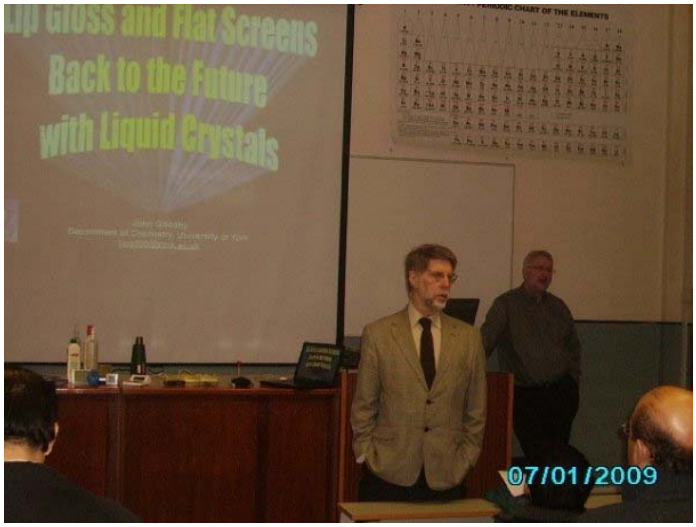
Liquid Crystals: Science meets Art

Ingo Dierking organised an exhibition of liquid crystal textures at the landmark venue of the "Weißer Turm", the "White Tower" of the city of Darmstadt, Germany. This venue is usually home to photography exhibitions extending over three levels of the tower. Darmstadt is the main site of Merck, which provides 60% of the world market liquid crystals. As such the choice of venue, which is located in the busy pedestrian shopping area of the city, was not completely coincidental. The basics of liquid crystals and their textures were also explained on posters, as were their functionality in displays and possible non-display applications. General physics that can be studied with liquid crystals, like optic effects, birefringence, polarisation, but also growth and coarsening phenomena, defect annihilation or effects of chirality was pointed out. The exhibition was open to the public from 6.-30.8.08.

The vernissage was sponsored by the publisher Wiley-VCH, and the introductory speech was given by Mario Müller (from the former Heppke group in Berlin). The exhibition attracted numerous interested people from the public and was very well received.

Ingo Dierking
Photographs by Theo Jansen

BLCS Winter Workshop 2008-2009



The British Liquid Crystal Society Winter Workshop was held in the Department of Chemistry at the University of Hull from lunchtime Wednesday 7th January to lunchtime Friday 9th January 2009. In previous years the Workshop was always held in December just before Christmas, however, the University terms dates dictated that the Workshop for this winter was held during early. Being after the holiday period meant both delegates and contributing staff were apparently much fresher, and I thought more enthusiastic than usual. Additionally, this time period is more suitable for students who leave early for the Christmas holidays and return early in the New Year. Hence the Workshop for 2009-2010 will be held at the University of Hull, Department of Chemistry from lunchtime on Wednesday 6th January to lunchtime Friday 8th January 2010.

As I am sure everyone is aware, the Workshop is designed for new entrants to the field of liquid crystals, particularly PhD students, but post-docs, technicians and industrialists also have much to gain from the event. Areas covered by the Workshop include a general introduction to liquid crystals, the synthesis of liquid crystals, identification of liquid crystal phases by optical microscopy, differential scanning calorimetry, and X-ray analysis, liquid crystal polymers, the physics of liquid crystals, liquid crystal devices, and modelling of liquid crystals. Theory and practical work is included, and there is ample opportunity for social activities. All participants are provided with notes from each of the topics covered.

The three-day format of the Workshop is now well established, and the popularity of the Workshop is being maintained at an excellent level. A total of 36 delegates attended the 2008-2009 Workshop (37 last year and 31 the year before), comprising of no industrial delegates (2 last year), 28 academic delegates (27 last year), and 8 non-residential academic delegates (8 last year). All delegates seemed to enjoy themselves, and I am sure that they all benefited from the wide and varied academic and social programmes.

This year was the third and final Workshop under the 3-year EPSRC funding, however, further funding has been applied for over another 3-year period. If successful, such financial support will cover a total of 3 Workshops, and enables the free attendance at the Workshop for all research students registered with a UK university (other academic delegates were charged £130 and industrial delegates were charged £240).

As mentioned above the Workshop for 2009-2010 will be held at the University of Hull, Department of Chemistry from lunchtime on Wednesday 6th January to lunchtime Friday 8th January 2010. Confirmation of the price structure will be provided when the outcome of the EPSRC funding proposal is known, hopefully by the end of the summer.

Mike Hird
Photos - Chin Fhong, Soon

BLCS Bursary report: ECIS - Krakow

The annual ECIS (European Colloid and Interface Society) conference took place this year in Krakow, Poland. The conference covers such fields as surfactants, polyelectrolytes and interface dynamics from both an experimental and theoretical perspective.

The talks covering liquid crystalline research were mostly of the experimental and applied variety, which can be useful for reminding students whose research is theoretical (such as myself) of the many varied uses of liquid crystals. I presented a talk on simulations of confined liquid crystalline phases, and received interest from experimentalists about the work. This helped to give me a better understanding of the links between simulation and experiments.

There were plenty of talks of interest on other subject matters, including a plenary lecture by Daan Frankel, which, as someone involved in computer simulations, was of great interest to me.

Outside of the conference, the organizers provided a free concert for delegates, a superb conference dinner, which took place in the city's museum, and included Polish foods and drink, and traditional dancing for the entertainment. We also found time to visit the famous Wieliczka Salt Mine, just outside of Krakow. The mine is over 300km long, and is no longer operational. The tour took us around 3km of tunnels and chambers that have had statues carved out pf the rock salt.

Overall, the conference was of great value to my research, enabling me to present my work at a large, international conference, and to meet many researchers from more diverse fields. It was also an enjoyable experience, and I would like to thank the BLCS for providing a bursary which enabled me to attend.

Matthew Dennison
University of Manchester

British Liquid Crystal Society
Registered Charity (328163)

Treasurer's Annual Report

The closing accounts reveal another successful financial year for BLCS. Cash at Bank rose by an exceptional 7.73% compared to modest growth for the previous two years. The Sturgeon Fund continues to increase as interest is added.

Growth is mainly due to considerable efforts made by Dr Gary Lester to re-coup revenue from BLCS 2005 (Exeter). Both a loan repayment of £1500 (issued in 2004) and a healthy profit of £1500 were returned. The total sum was deposited (16th July 2007).

Income from Membership remains in a healthy state, having received fees from both new and existing members. Thanks to Tim Wilkinson for encouraging Members to pay their fees.

Expenditure was as predicted with the costs going towards purchase of GW Gray and C Hilsum Medals and

recipient expenses. Two BLCS Bursaries were awarded to allow Members to present their research abroad.

For next year, the income sheet will show a return of £1645.18 from BLCS 2007, Sheffield. As the balance sheet remains healthy, I would encourage more Members to apply for Bursaries,

Finally, may I take this opportunity to thank all Members for their support during my first term in office as Treasurer of the British Liquid Crystal Society.

Balance Sheet at 18th March 2008

Description of Income

	£	**£**
1. Cash at Bank (opening balance, 18.03.07)		
General Fund	*13415.74*	
Sturgeon Fund	*6352.28*	
Total Cash at Bank		19768.02
2. Subscriptions		280.00
3. Exeter Conference Profit (2005)		1500.00
4. Exeter Conference Loan Repayment (2004)		1500.00
5. Interest accrued (2006-2007)		
General Fund	*339.44*	
Sturgeon Fund	*160.72*	
Total Interest		500.16
TOTAL INCOME		**23548.18**

Description of Expenditure

1. BLCS Young Scientist Prize		250.00
2. POBJOY Mint (GW Gray and C Hilsum Medals)		281.36
3. POBJOY Mint (GW Gray and C Hilsum Medals)		835.31
4. GW Gray Medal Recipient Expenses		356.29
5. BLCS Bursary (x2)		400.00
6. *Cash at Bank (closing balance, 18.03.08)*		
General Fund	*14912.22*	
Sturgeon Fund	*6513.00*	
Total Cash at Bank		21425.22
TOTAL EXPENDITURE		**23548.18**

Dr AS Matharu
BLCS Treasurer

Procedures for the Ben Sturgeon Award

Eligibility for the Award

1. Young Scientists or Engineers (under 40).
2. Must have made significant contributions to the displays field over the past 10 years.
3. Ideally the work they are nominated for should be in the liquid crystal display field (this includes all aspects of technology used in LCDs).
4. Under exceptional circumstances nominees from other display areas will be considered. In that case the international value of the work must be clearly demonstrated.

The Nominations

1. Letter of nomination clearly setting out the value of the nominees' work.
2. Additional letters of support are helpful but not essential.
3. CV for the nominee.
4. Publications (papers and patents) list.
5. Copies of key papers.
6. Nominations should be sent to the Chair of SID (UK).

The Role of SID (UK)

1. The SID (UK) Committee will appoint two of its members to the Ben Sturgeon Award sub-committee to review nominations for the Ben Sturgeon Award and make recommendations to the SID Committee.
2. The SID (UK) committee will publicise the award through the SID Newsletter, the SID (UK) Homepage, through EPSRC, DTI and through individual networking.
3. The Ben Sturgeon Award Sub-Committee is responsible for selecting the winner (s). The decision of the Sub-Committee will except in exceptional circumstances (e.g. where the Sub-Committee is unable to come to a majority decision) be approved by the SID (UK) Committee which is responsible for making the award. In any such exceptional case the SID (UK) Committee will make the final selection of the winner based on the information presented by the sub-committee, through a majority vote. In this case the vote will exclude the two SID (UK) nominees to the Ben Sturgeon Award sub-committee.
4. SID (UK) will present the award at their annual autumn conference (usually in association with EID) unless the recipient cannot attend that meeting. In that case SID will make the award at the next SID (UK) Technical meeting.

The Role of BLCS

1. The BLCS committee will appoint two members of the BLCS to the Ben Sturgeon Award sub-committee to review nominations and make recommendations to the SID (UK) Committee. This will allow the BLCS Committee to select the best-qualified people taking into account the candidates nominated. In practice the Sub-Committee members would be appointed from BLCS Committee members provided they have appropriate expertise.
2. BLCS will publicise the award through their Newsletter and the BLCS Homepage, through individual networking and other appropriate routes.

The Role and Constitution of the Ben Sturgeon Award Sub-committee

1. The sub-committee is constituted of two members from the SID (UK) committee and two members from the BLCS committee, selected by the BLCS.
2. One of the two SID (UK) Committee members will be appointed by the SID (UK) Committee as co-ordinator.
3. The SID sub-committee members are responsible for writing the call for nominations in consultation with BLCS.
4. The members of the sub-committee should individually review all nominations and then either meet or through other means come up with recommendations for the award. The recommendations should include a ranking of all the nominations and a justification.
5. In the exceptional case that the sub-committee cannot agree, individual recommendations (with justifications) should be made to the SID (UK) Committee. The Sub-Committee can also recommend two awards being made

Timetable

Nominate SID Sub-committee members	February
Write call for nominations	March
Issue call for nominations	March/April
Deadline for submission of nominations	June
Appoint BLCS Sub-Committee members	July
Review of nominations	July/August
Sub-committee recommendations	End August
Selection of award winner	Early September
Inform winner	Early/Mid Sept
Publicise Award ceremony (EID)	September
SID order plaque	Mid September
Award ceremony EID	November