

The XX Congress of the International Union of Crystallography (Florence, 23–31 August 2005): A Report on a Most Remarkable Scientific Reunion

The XX IUCr Congress has been a huge success, as also testified by the numerous messages of appreciation received by the organizers after the event.

The congress had approximately 3000 participants from across 62 countries (200 were officially registered accompanying persons). This is probably a record participation for IUCr Congresses. About one fourth of the total participants were students and, of these, 450 persons were financially supported thanks to the generous contributions from various international organizations, such as the European Commission, the Organization for the Prohibition of Chemical Weapons (OPCW), the IUCr, the British and Italian Crystallographic Associations, and the local student support organization (ARDSU), which provided low-cost, yet comfortable accommodations. Last but not least, the resources became available by invited speakers and chairs, who agreed to participate at their expenses, have allowed the attendance of the many young or unprivileged researchers.

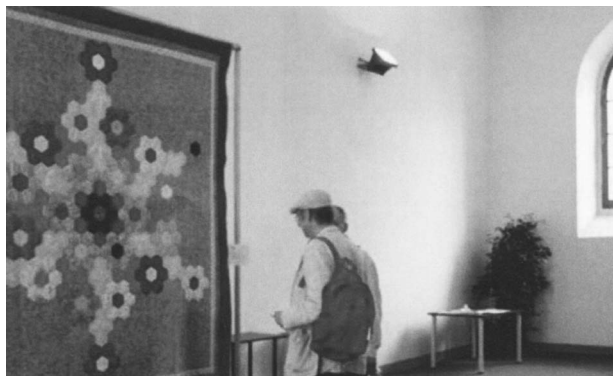


The quality of the program was very high thanks to the appointed international scientific committee. The agenda consisted of 527 lectures, among which three Nobel Laureates (R. Hoffmann, H. Kroto and A. Zewail) have been the highlights. Of the 98 microsytosia, 22 MS have dealt with Biological Macromolecules, 14 with Structural Chemistry, 9 with Crystallographic Computing and 9 with Powder Diffraction. Also, Mineralogy, High Pressure, Neutron Diffraction, Aperiodic Crystals, Small Angle Scattering, etc. had all their specific microsytosia. Other ad-hoc meetings dealt with special topics such as for example Crystallography and Forensic Science or those dedicated to the Art, of which the city of Florence is deeply permeated. For instance, the MS Art and Crystallography and Crystallography and Understanding of Cultural Heritage have received great attention as well as the Exhibition of scientific works in an artistic format. In such a cultural atmosphere, it is worth recalling the musical performances offered by young yet famous artists.

Furthermore, the banquet, attended by 1500 people, was held in the breathtaking scenario of Palazzo Pitti and the Boboli Garden, as a unique historical background.



The scientific program included about 1700 posters, presented over the seven working days of the congress. As many as eleven prizes from different organizations and companies have been awarded for the best contents in a variety of different research areas. All the awardees have received the prizes during the Closing Ceremony. To testify the richness of the scientific program, many events had to be organized during the midday breaks. These included for instance Open Commission Meetings, assemblies of national and international crystallographic councils, Computer Fayre, etc. A buffet lunch was offered every day to all the registered participants. This was an appreciated novelty with respect to the previous IUCr Congresses, which favoured the continuous present of the people in the congress and the exhibition areas and stimulated many informal contacts. The latter are fundamental to create long lasting friendship and collaborations. A remarkable interest has been developed around the commercial exhibition of the companies which supply industrial apparatuses, software, tools, books, etc. for the thriving of crystallography. Also, in this case, the organization has been deeply appreciated for the vast area available and its central location near posters and the lunch area.



The congress has also been an occasion to recognize the work and dedication of some people who have favoured the

development of science and of crystallography. In particular, a Gold Medal has been awarded by the Luigi Sacconi Foundation to the Nobel Laureate Roald Hoffmann. Professor Philip Coppens was awarded the 7th Ewald Prize during the Opening Ceremony and Prof. Lodovico Riva di Sanseverino (the founder of the Erice's School) was awarded, during the banquet, the first ever prize for an exceptional Service to Crystallography.



During the Closing Ceremony, the Florentine organizers ideally handed over to chairpersons of the future Congress to be held in Osaka 2008. In particular, the baton was symbolically accepted by the newly elected IUCr President, Prof. Yuji Ohashi. To the latter go all the wishes of the crystallographic community for a successful mandate. As organizers, our special thanks go also to the IUCr Past President William L. Duax for the continuous encouragements during the years preceding the Congress. Finally, we have deep gratitude for all the people who made the conference possible with their hard work. Beside our Institutions, the University of Florence and the ICCOM-CNR, we wish to mention our closest collaborators (Andrea Ienco, Patrizia Rossi and Annalisa Guerri), the members of the local organizing committee, the institutional and commercial sponsors and the Organizing Secretariat (Newtours SpA), which has provided a highly professional service.

The XX IUCr Congress Chairpersons,
Paola Paoli and Carlo Mealli

British Crystallography Association Spring Meeting 2005

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The 23rd British Crystallographic Association (BCA) Spring Meeting took place at Loughborough University 11–14 April 2005. The meeting brings together all the BCA Groups covering Biological, Chemical, Physical and Industrial Crystallography for the annual meeting in the UK. A commercial exhibition of crystallography-related instrumentation, literature and software was an important feature of the meeting. For the first time, XRF was included in the scope of the meeting, as a strand of presentations and also in the exhibitors forum.

Satellite meetings took place prior to the start of the main programme; these were workshops on White Beam Radiation and CCP4, followed by user group meetings of the Daresbury and ISIS facilities.

Chick Wilson, BCA President, opened the Spring meeting with a welcoming address which was followed by the plenary lectures on the theme of In situ and non-ambient crystallography. The speakers were Phil Coppens, John Rafferty, Herbert Pullmann and Malcolm McMahon. The CCDC/CGC Prize Award was won by Anders Markvardsen, who then lectured on Probability, powders and pathways. The first day concluded with presentations from exhibitors; one session was on crystallographic instrumentation and the other on XRF instrumentation. In the evening, a buffet supper and wine reception was held in the exhibition hall, providing delegates with an opportunity to check out the commercial stands and read the 70 or more posters on display, as well as to socialise.

The second day saw the start of four parallel sessions. The XRF strand covered liquid samples, a workshop on awkward samples, applications of wavelength dispersive XRF and light element analysis. Topics covered in the other

strands were in-situ diffraction, which occupied the whole day, and modern techniques for crystal structure refinement. Half-day sessions on Photocrystallography and Crystallography in Industry were held as well as a short session on At and in the membrane. Roger Davey described how in-situ measurements using XRPD, FTIR and Raman have been used to understand the crystallisation of several systems. Simon Jacques lectured on the use of TEDDI (Tomographic Energy Dispersive Diffractive Imaging) to determine the distribution of the active ingredient in a tablet; this technique can be applied to amorphous as well as crystalline material. Peter Laggner described the use of a lab-based SAXS system to study changes in the inner surface of microspheres as they dissolve.

At the end of the second day, Andrew Leslie gave the BCA Prize Lecture, in honour of Alan Wonacott and Uli Arndt, reflecting on ... thirty-five years wandering in reciprocal space. In the evening the Conference Dinner took place and prizes were awarded for the best posters in each group.

The final (short) day had four more parallel sessions: XRF, phase transitions, high throughput crystallography/CCP14 workshop and non-ambient pharmaceutical studies. The XRF strand covered standards and calibrations, applications of energy-dispersive XRF and combined XRF/XRPD applications. Phase transitions started with a tutorial from Mike Glazer before moving on to presentations. The session on non-ambient pharmaceutical studies included talks on how variable temperature XRPD can be used to solve the crystal structure of a pharmaceutical (Jonathan Burley), understand hydrate formation (Steve Cosgrove) and study the drying of granules (Angus Forster).

The meeting finished mid-afternoon on Thursday. Reports of the XRF sessions are on-line at: <http://bca.cryst.bbk.ac.uk/bca/ig/XRF/xmeet.htm>. Meeting abstracts can be found at <http://www.chem.gla.ac.uk/bca2005/Viewing.htm>. Selected lectures will be published in a Special Issue of Crystallography Reviews in early 2006. The next BCA Spring meeting will be held at Lancaster University from 4–6 April 2006.

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The 107th American Ceramic Society Annual Meeting

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The 107th American Ceramic Society Annual Meeting took place in Baltimore 10–13 April 2005. Baltimore, capital of Maryland and home of the Orioles and Ravens, offers a rich combination of culture, arts, and maritime heritage. The Baltimore inner harbor in particular, in recent years, has become an attractive place for tourists. The meeting hotel (Baltimore Marriott Waterfront) is located right by the Inner Harbor. The hotel has a superb meeting facility. Many attendees were fortunate to have rooms with a spectacular view of the ships and boats that sail through the harbor. One can explore the city's remarkable maritime heritage by taking a stroll through the Baltimore Inner Harbor. At the Inner Harbor one will find a great number of activities to do from the aquarium, museums, shopping, and dining to attending ball-games. Most of the attractions are located at the heart of the Baltimore Inner Harbor, and are all within walking distance from the hotel. Many of the harbor restaurants offer elegant gourmet cuisine, fresh seafood from Maryland's Chesapeake Bay, and ethnic foods from around the world. It was quite a pleasant experience to spend some time at the harbor front.

The theme of the 107th meeting was The World's #1 Ceramic & Glass Technology Celebration. The meeting was a great success. The program chair of the meeting was Michael J. Hoffmann who is from University of Karlsruhe, Germany. The program team working successfully brought together the world's leading ceramic authorities in ceramics, glass, cement and composites to the meeting. The meeting featured 28 symposia and divisional programs and had a great number of international participants. There were over 1000 papers that covered both parallel oral sessions and poster presentations. The symposia were divided into four subgroups, namely, nanotechnology (bioceramics; indentation and scanning probe microscopy; interfaces in ferroic materials and thin films; nanostructured materials), processing and characterization (new composites; ceramics, glasses and composites; crystalline and amorphous fibers; porous ceramics; surfaces, grain boundaries and interfaces), structural ceramics (low-friction coatings on glass and ceramics; bioceramics materials and applications; armor; ceramic matrix composites; polymer derived ceramics), and electronic ceramics (electronic ceramics for extreme environment; advanced dielectrics; advanced dielectrics for wireless communications; epitaxial growth of functional oxides, nitrides, borides and carbides). Division programs included papers from Basic Science, Cements, Glass and Optical Materials, Whitewares and Materials, and Art.

In addition to the annual meeting, the first International Conference and Exhibition on Ceramic Interconnect and Ceramic Microsystems Technologies (CICMT) that was orga-

nized by ACerS and the International Microelectronics and Packaging Society (IMAPS) also took place in parallel. Other important scientific programs included talks by several funding agencies about their programs and the opportunities of acquiring research funds. The industrial track program continued very successfully this year.

Several memorable plenary talks took place at the meeting. The keynote speakers included the NSF Director (NIST former director), Dr. Arden I. Bement, Jr. who gave the Rustum Roy lecture on Are the Plate Tectonics of Science Moving Faster than We Think? Peter Barnwell, Business Development Director at Custom Interconnect (CIL) gave the Edward Orton, Jr. Memorial Lecture on An Innovative Ceramic Technology Success LTCC from Laboratory to Electronic Applications in the Market Place. The Freidberg Memorial Lecture was delivered by Dr. Bonnie J. Dunbar who is currently the Assistant Director for University Research & Affairs at Johnson Space Center. She gave a lecture on the Development of the Space Shuttle Thermal Protection System (TPS) and Challenges for Orbital Repair. The Sosman Award Lecture which was entitled Mechanical Behavior of Porous Ceramics: A Critical Science for Optimizing Processing and Performance, was given by David J. Green of Pennsylvania State University.

Since students are vital to the future of the organization, ACerS schedules a series of student activities to ensure these young people have opportunities to mingle with each other, with other well-established scientists, to be recognized among their peers, and to learn leadership skills. These activities included Student Speaking Contest, Student Poster Contest, Student Professional Development & Networking Session, CEC Student Poster Contest, University receptions, and the Keromos Student Business Meeting, Annual Convocation, and Leadership Development Workshop.

The large-scale exhibit is always an important part of the meeting that compliments the scientific program. This year, there were a total of 65 exhibitors displaying their latest products and services. International exhibitors included equipment manufacturers, materials producers, book and journal publishers, database and software producers, scientific societies, and scientific consultants. The exhibit hall was a popular place to meet up with old friends, old colleagues, and meet new people. Members often strolled along different aisles to learn about new products, obtain information, chat with manufactures, pick up sovereigns, browse through new publications, and participate in new product demonstrations.

The social program was also well-organized and enjoyable. On Saturday, after the Town Hall meeting, the attendees were invited to a reception given by the Society President,

Dr. John Marra, in the Presidential Suite. During the welcoming reception on Monday night, the attendees had an opportunity to mingle with the society officials and the exhibitors. The society honored many awardees and the current president, and welcomed the incoming president during the Tuesday night banquet. The annual meeting also featured a rich companion program.

The 107th meeting was the last stand-alone annual meeting. Beginning in 2006, ACerS will join forces with TMS and ASM international (and others) to organize the Materials Science and Technology (MS&T) conference. The first such conferences took place in Pittsburgh in September 2005, where ACerS participated in a supporting role. Starting in 2006 ACerS will play a key role in the conference. There

will be many collaborative symposia featuring the state-of-the-art as well as traditional topics in science and technology that are co-organized by members from all the participating societies. This will be a large-scale meeting that is not to be missed.

The weather during the meeting was sunny and relatively warm for an April week. Many attendees had an opportunity for an enjoyable stroll outside the meeting hotel. In the future, the attendees can look forward to meetings co-sponsored by ACerS, including the 1st International Congress on Ceramics which will take place in Toronto, Ontario, Canada 25--29 June 2006, and the MS&T Conference and Exhibit which will take place in Cincinnati, Ohio, 15--18 October 2006.

Calendar of Meetings

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28 November–2 December 2005

International Conference on Neutron Scattering. Sydney, Australia. [Contact: Brendan Kennedy, School of Chemistry, Building F11, University of Sydney, Sydney, NSW–2006, Australia. E-mail: b.kennedy@chem.usyd.edu.au; Info: <http://www.icns2005.org>].

6–7 December 2005

Annual Meeting 2005 and General Assembly: Crystallographic Society of Japan. Himeji City, Hyogo Prefecture, Japan. [Contact: Info: www.sci.u-hyogo.ac.jp/crsj2005/index-e.html].

13–16 February 2006

PPXRD-5: Fifth Pharmaceutical Powder X-ray Diffraction Symposium. Somerset, New Jersey, USA. [Contact: Leah Mooney, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073, USA. Tel: 1 (610) 325 9814; E-mail: ppxrd@icdd.com; Info: <http://www.icdd.com/ppxrd>].

20–23 February 2006

6ème Colloque Rayons X et Matiere. Limoges, France. The official language will be French. [Contact: Bernadette Talabot, Secrétariat, SPCTS, Limoges, France; E-mail: rx2006@unilim.fr; Info: <http://www.impmc.jussieu.fr/afc/rx2006.html>].

20–24 March 2006

International Centre for Diffraction Data, Spring Meeting. Newtown Square, Pennsylvania, USA. [Contact: Linda Shertz, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073-3273, USA. Tel: 1 (610) 325 9814; Fax: 1 (610) 325 9823; E-mail: shertz@icdd.com; Info: <http://www.icdd.com>].

28 May–3 June 2006

9th International Conference on Synchrotron Radiation Instrumentation. Daegu, Korea. Co-hosted by the Pohang Accelerator Laboratory (Pohang, Korea) and the Japan Synchrotron Radiation Research Institute (Harima.) [Contact info: http://sri2006.postech.ac.kr/bottom_sri.htm].

9–13 July 2006

SAS2006 XIII International Conference on Small-angle Scattering. Kyoto, Japan. [Contact: SAS2006 Secretariat, A-Cluster, Katsura, Kyoto University, Kyoto 615-8510, Japan. E-mail: SAS2006@alloy.polym.kyoto-u.ac.jp; Info: <http://www2.scphys.kyoto-u.ac.jp/sas2006/index.html>].

16–23 July 2006

7th International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites. Socorro, New Mexico, USA. [Contact: Robert Bowman, New Mexico Institute of Technology, Socorro, New Mexico, USA. E-mail: bowman@nmt.edu].

22–27 July 2006

American Crystallographic Association Annual Meeting. Honolulu, Hawaii, USA. Held at the Sheraton Waikiki Beach Hotel. [Info: http://www.hwi.buffalo.edu/aca/meetingspg_list/futuremeetings.html].

23–28 July 2006

19th General Meeting of the International Mineralogical Association: Expansion to Nano, Bio, and Planetary Worlds. Kobe, Japan. The official language is English. [Contact: E-mail: 2006ima@congre.co.jp; Info: www.congre.co.jp/ima2006].

7–11 August 2006

55th Annual Denver X-ray Conference. Denver, Colorado, USA. Workshops on XRD and XRF (August 7–8). Invited and contributed talks (August 9–11). Contact: Denise Flaherty, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073-3273, USA. Tel: 1 (610) 325 9814; Fax: 1 (610) 325 9823; E-mail: flaherty@icdd.com; Web: www.dxcicdd.com.

6–11 August 2006

23rd European Crystallographic Meeting. Leuven, Belgium. Held at the Katholieke Universiteit Leuven (founded 1425). The official language of the meeting is English. [Contact: Organizing Secretariat Momentum, Grensstraat 6, B-3010 Leuven, Belgium. Tel: 32 (16) 40 45 55; Fax: 32 (16) 40 35 51; E-mail: info@momentum-pco.be; Info: http://www.ecm23.be/GeneralInformation.htm]

1–4 September 2006

EPDIC10 European Powder Diffraction Conference. Geneva, Switzerland. Held at the University of Geneva. [Contact: Radovan Cerny at Radovan.Cerny@cryst.unige.ch; Info: http://www.sgk-sscr.ch/EPDIC10/EPDIC10.html].

13–15 September 2006

ECRS7 Seventh European Conference on Residual Stresses. Berlin, Germany. [Contact: ECRS7 Secretary,

Frau Sonja Müller, AWT, Paul-Feller-Strasse 1, D-28199 Bremen, Germany. Tel: 49 (421) 522 9339; Fax: 49 (421) 522 9041; E-mail: awt.ev@t-online.de; Info: http://www.ecrs7.de].

25–28 September 2006

PNCMI 2006 Conference on Polarised Neutrons in Condensed Matter Investigations. Berlin, Germany. [Contact: BENSC—HMI Berlin, Glienickerstrasse 100, D-14109 Berlin, Germany; Tel: 49 (30) 8062 2046; Fax: 49 (30) 8062 2523; E-mail: pncmi@hmi.de; Info: http://www.hmi.de/pncmi2006/index.html].

21–26 July 2007

American Crystallographic Association Annual Meeting. Salt Lake City, Utah, USA.

26–31 August 2007

24th European Crystallographic Meeting. Marrakech, Morocco. Held at the Université Cadi Ayyad. [Info: http://www.ucam.ac.ma/fssm/ecm24/default.htm].

August 2008

21st IUCr General Assembly and International Congress of Crystallography. Osaka, Japan.

Short Courses & Workshops

5–6 December 2005

WINS2005 International Workshop on Inelastic Neutron Scattering 2005. Cairns, Australia. [Contact: Shin-ichi Shamoto, Japan Atomic Energy Research Institute; E-mail: shamoto@neutrons.tokai.jaeri.go.jp; Info: http://www.iucr.org/cww-top/mtg/wins2005.html].

9–13 January 2006

International Workshop on Crystal Growth and Characteristics of Advanced Materials. Chennai, India. Held at the Crystal Growth Centre, Anna University. [Contact: Dr. J. Kumar, Crystal Growth Centre, Anna University, Chennai-25, India. Tel: 91 (44) 2220 3573; Fax: 91 (44) 2235 2670; E-mail: marsjk@annauniv.edu; Info: http://www.iucr.org/cww-top/mtg.chennai.jpg].

13 February 2006

Workshop on Characterization of Pharmaceutical Solids: Crystal Studies and XRD Applications. Somerset, New Jersey, USA. Held in conjunction with **PPXRD-5 Fifth Pharmaceutical Powder X-ray Diffraction Symposium.** (Somerset, New Jersey, 13–16 February 2006.) [Contact: Leah Mooney, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073, USA. Tel: 1 (610) 325 9814; E-mail: ppxrd@icdd.com; Info: http://www.icdd.com/ppxrd].

24–28 April 2006

ICDD X-ray Clinic: Practical X-ray Fluorescence Spectrometry. Newtown Square, Pennsylvania, USA. Sponsored by the International Centre for Diffraction Data. A week-long session directed to both relative newcomers and to more experienced users wishing to broaden their understanding of fundamental concepts and established procedures. Held in the ICDD Headquarters building. The \$1,740 fee includes textbooks, laboratory notebook, use of computers, and daily lunch. [Contact: Leah Mooney, Education Coordinator, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073-3273, USA. Tel: 1 (610) 325 9814; Fax: 1 (610) 325 9823; E-mail: clinics@icdd.com; Info: http://www.icdd.com/education/xrf.htm].

5–9 June 2006

ICDD X-ray Clinic: I. Fundamentals of X-ray Powder Diffraction. Newtown Square, Pennsylvania, USA. Sponsored by the International Centre for Diffraction Data. A week-long session directed to both relative newcomers and to more experienced users wishing to broaden their understanding of fundamental concepts and established procedures. Held in the ICDD Headquarters building. The \$1,740 fee includes textbooks, laboratory notebook, use of computers, and daily lunch. [Contact: Leah Mooney, Education Coordinator, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073-3273, USA.

Tel: 1 (610) 325 9814; Fax: 1 (610) 325 9823; E-mail: clinics@icdd.com; Info: <http://www.icdd.com/education/xrd.htm>].

12–16 June 2006

ICDD X-ray Clinic: II. Advanced Methods in X-ray Powder Diffraction. Newtown Square, Pennsylvania, USA. Sponsored by the International Centre for Diffraction Data. A week-long session designed for the experienced user and focusing on computer-based methods of qualitative and quantitative phase analysis. Held in the ICDD Headquarters building. The \$1,740 fee includes textbook, laboratory notebook, use of computers, and daily lunch. The fee for both sessions I and II is \$3,150. [Contact: Leah Mooney, Education Coordinator, International Centre for Diffraction Data, 12 Campus Boulevard, Newtown Square, PA 19073-3273, USA. Tel: 1 (610) 325 9814; Fax: 1 (610) 325 9823; E-mail: clinics@icdd.com; Info: <http://www.icdd.com/education/xrd.htm>].

4–6 August 2006

Conference on Mathematical and Theoretical Crystallography. Leuven, Belgium. A satellite conference of the 23rd European Crystallographic Meeting. Organized as a work-

shop with alternating lectures and exercises/examples. Topics: magnetic symmetry, black-white symmetry, ordered magnetism, anisotropy of magnetic properties, graph theory fundamentals and applications to crystallographic problems. [Contact info: <http://www.lcm3b.uhp-nancy.fr/mathcryst/leuven2006.htm>].

19–22 September 2006

Polarised Neutron School. Berlin, Germany. Held just prior to **Conference on Polarised Neutrons in Condensed Matter Investigations** (Berlin, 25–28 September 2006.) [Contact: BENSC—HMI Berlin, Glienickestrasse 100, D-14109 Berlin, Germany; Tel: 49 (30) 8062 2046; Fax: 49 (30) 8062 2523; E-mail: pnemi-school@hmi.de; Info: <http://www.hmi.de/pncmi2006/index.html>].

7–17 June 2007

Engineering of Crystalline Materials Properties: State-of-the-Art in Modeling, Design, and Applications. Erice, Italy. The 39th crystallographic course at the Ettore Majorana Centre. The course directors are D. Braga (Bologna) and J. Nova (Barcelona). [Info: <http://www.crystalalice.org/2007.htm>].