

Preface

The History of the European Powder Diffraction Conference

As the Chair of the Organizing Committee of the first European Powder Diffraction Conference, EPDIC 1, I was invited by the Editors of the current Proceedings, on the occasion of my retirement from the EPDIC Committee, to write the Preface for the current Proceedings with a retrospective view back in time to the beginnings and the early-history of a common European Conference on Powder Diffraction.

Before the initiation of the EPDIC Conferences in 1991, exchange of knowledge and new developments in the field of powder diffraction was mainly taking place during dedicated sessions of the annual meetings of the national crystallographic associations, including also the European Crystallographic Association (ECA). Also the International Union of Crystallography (IUCr) organized a dedicated satellite meeting on powder diffraction every three years.

As some neighbouring countries in Western and Eastern Europe started organizing joined annual meetings, an increasing community of powder diffractionists proposed establishing a common meeting on powder diffraction in the late 80s. A view to the USA and the success of the “Denver X-ray Conference” (this conference series was initiated already in 1951 by the University of Denver with a one-day symposium on the application of X-rays to the study of materials) encouraged a group of European members of the “Joint Committee on Powder Diffraction Standards” (today International Centre for Diffraction Data - ICDD) in 1988 to give a start signal to organize an independent gathering of powder diffractionists in Europe. Important names in this context were Walter Eysel (Heidelberg, main initiator), Jan Visser (Delft, Scientific Chair of EPDIC 1), Daniel Louër (Rennes), Zbigniew Bojarski (Katovice), Vaclav Valvoda (Prague) and Herbert Göbel (Munich, Chair of the Organizing Committee of EPDIC 1). The opportunity to start was the offer of the German Crystallographic Association (DGK) of a combined meeting at the University of Munich planned for March 1991. The first circular was distributed in 1989, mainly through the channels of the national crystallographic associations and via the manufacturers of diffraction instrumentation.

Many details had to be determined during the organization of EPDIC 1: First of all the name of the Meeting/Conference and a suitable abbreviation. We received critical remarks from the ECA for naming the event a ‘Conference’, whereas the ECM held just a ‘Meeting’. However, Jan Visser insisted on the “C” in the abbreviation of EPDIC, because it was better to pronounce. The scientific scope of EPDIC and the procedures for the following EPDIC’s had to be clearly defined, to avoid conflicts with other conferences/meetings in the field of diffraction, but also to guarantee the continued success of this new forum.

During the organization of EPDIC 1 the “Iron Curtain” was taken down, so that also participants from all Eastern European countries could attend. Their contributions were an important enrichment both with respect to scientific developments and practical applications of powder diffraction. Many contacts between scientists from East and West were formed,

that resulted in common projects and sometimes partnerships and cooperations still existing today.

In total, EPDIC 1 was attended by 370 participants. More than half of them came from the unified parts of Germany and about 60 from Eastern Europe. The social event, an evening in one of Munich's famous beer halls during the "strong – beer" season of Lent, certainly is an unforgettable experience for all participants...

The large number of participants, the fact that most European Countries were represented by leading scientists in the field and the broad spectrum of applications of powder diffraction covered by the Conference attracted also the entire industry of equipment manufacturers in Europe and the world: A comprehensive exhibition of X-ray instrumentation took place during the conference.

The scientific program consisted of two and a half days of working sessions, comprising a honorary lecture of Professor H. Jagodzinski on "The Role of Munich for X-ray Powder Crystallography and the History of X-ray Powder Diffraction", 16 main lectures ("X-ray Diffraction Profiles Due to Real Polycrystals" by P. Klimanek, "Quo Vadis Quantitative Powder Diffraction Analysis" by J. Fiala, "Crystal Structure Analysis and Refinement by the Two-Step Method" by G. Will, "Neutron Powder Diffraction and Oxide Superconductors" by A.W. Hewat, "Applied Crystallography in Advanced Ceramics" by R.L. Snyder, "New Instrumentation in Powder Diffraction" by J. Ihringer, "New Detectors in X-ray Diffraction" by P. Tucker, "Energy Dispersive XRPD at High Pressure" by L. Gerward, "Glory and Misery of the Structure Analysis of Thin Polycrystalline Films" by V. Valvoda, "Characterization of Epitaxial Thin Films by X-ray Diffraction" by A. Segmüller, "Powder Diffraction Using Synchrotron Radiation" by M. Hart, "X-ray Absorption and Reflection in Materials Science" by B. Lengeler, "Preferred Orientation in Powder Diffraction" by H.-J. Bunge, "X-ray Stress Analysis" by J.M. Sprauel, "On the Use of Rietveld Refinements for Structural Studies" by P.-E. Werner, "Indexing of Powder Diffraction Patterns" by D. Louër), 120 poster presentations and 54 oral contributions. Two parallel sessions were held in order to accommodate a large number of talks.

Since the first EPDIC Conference, scientific progress reported during the Conferences has been registered in Conference Proceedings. Concerning the Proceedings the EPDIC community is indebted to Rob Delhez and Eric J. Mittemeijer for having taken care of the editorial work for the Proceedings for many years. Since EPDIC 9, the Proceedings are published 'open access' as supplement issues of the 'Zeitschrift für Kristallographie'. The free on-line accessibility in combination with the traditional publication of the Proceedings in the form of printed volumes strengthens the importance of these Proceedings as a medium for the publication of cutting-edge developments and compact state-of-the art overviews in the field of powder diffraction.

The last EPDIC conference. EPDIC 11, was attended by about 350 participants (nearly 60 coming from outside Europe) and, as for previous EPDIC editions, current hot research topics and the newest developments of powder diffraction were presented. Particular emphasis was laid on direct and reciprocal space methods in powder diffraction structure

determination, the ‘charge flipping’ algorithm, nanomaterials and total scattering analysis, to mention only a few of the topics treated in the conference.

Another important aspect was the search for new or improved forms of organization of the conference to make it more effective and attractive. Following the general trend towards the organization of small focused meetings, EPDIC workshops either preceding or following the main meeting have been organized during the last conferences. There is an increasing interest in this form of education and exchange of knowledge and expertise that also helps to promote scientific collaboration through the formation of personal links. At EPDIC 9 in Prague there was only one workshop, already three took place in Geneva at EPDIC 10, and now six workshops took place in Warsaw at EPDIC 11. For the future, a point deserving further attention would be the analysis of the circumstances that recommend treating a topic as a workshop rather than as a normal microsymposium.

Since EPDIC 3 in Vienna, it is a tradition to reward one young scientist, who contributed significantly to the field of powder diffraction, with the Young Scientist Award.

It was an unpleasant situation for the EPDIC Committee during each selection procedure of award candidates to exclude candidates not meeting the age limit (35 years) but having remarkable contributions to the field. The EPDIC committee therefore welcomes with great satisfaction the introduction of the EPDIC Award for Distinguished Scientist, which was awarded to Juan Rodríguez-Carvajal during EPDIC 11.

The next EPDIC Conference – EPDIC 12 – will be held in Darmstadt in 2010 as a joint meeting with the 26th European Crystallographic Meeting, ECM 26.

Looking back to the eleven EPDIC Conferences (see listing of previous conferences on the following page) and their impact on the field it can be concluded that the EPDIC Conference has developed as the leading conference dedicated exclusively to all aspects of powder diffraction.

Herbert Göbel
Munich

May 2009

EPD1C Conferences: The History and the Future

Previous EPD1C Conferences

EPD1C 1, Munich, Germany. 14-16 March 1991. Chairman: Dr. H.E. Göbel
EPD1C 2, Enschede, The Netherlands. 30 July-1 August 1992. Chairman: Dr. T.W. Ryan
EPD1C 3, Vienna, Austria. 25-28 September 1994. Chairman: Prof. A. Preisinger
EPD1C 4, Chester, UK. 10-14 July 1995. Chairman: Dr. R.J. Cernik
EPD1C 5, Parma, Italy. 25-28 May 1997. Chairman: Prof. G. Artioli
EPD1C 6, Budapest, Hungary. 22-25 August 1998. Chairman: Prof. T. Ungár
EPD1C 7, Barcelona, Spain. 20-23 May 2000. Chairman: Prof. J. Rius
EPD1C 8, Uppsala, Sweden. 23-26 May 2002. Chairman: Dr. I.G.R. Tellgren
EPD1C 9, Prague, Czech Republic. 2-5 September 2004. Chairman: Prof. R. Kužel
EPD1C 10, Geneva, Switzerland. 1-4 September 2006. Chairman: Dr. R. Cerný
EPD1C 11, Warsaw, Poland. 19-22 September 2008. Chairman: Prof. B. Palosz

Forthcoming EPD1C Conference

EPD1C 12, Darmstadt, Germany. 27-30 August 2010. Chairman: Prof. H. Fuess