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European Powder Diffraction Conference (EPDIC 13)

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From 28 to 31 October 2012, the 13th European Powder Diffraction Conference, EPDIC 13, was held in Grenoble, France, home of the European Synchrotron Radiation Facility (Photo 1). Almost 400 participants were offered a wide array of lecture topics, spanning virtually all topics in powder diffraction. In addition, in sessions known as the "Lachlan's Software Fayre", organized by Vincent Fare Nicolin to honour the memory of Lachlan Cranswick, attendees could receive expert instruction on the features of a number of freely distributed software related to diffraction, including MAUD, TALP, GSAS II, PDFgui, Fullprof, and PM2K.

The programme began on Sunday with a satellite workshop presented by the International Centre for Diffraction Data (ICDD) (Photo 2) spanning topics from basic material identification to new procedures and specialized tools in the field of diffraction. Following this workshop, Pierre Bordet, the conference chair, together with Michela Brunelli, Gavin Vaughan, Thomas Hansen, and a huge crew of very helpful volunteers welcomed all participants to the snowy Grenoble.

The conference was opened with the EPDIC Award for distinguished powder diffractionist presented to Dr. Christian Baerlocher of the ETH at Zurich (Photo 3). In a talk titled "The Lucky Powder Diffractionist", Dr. Christian Baerlocher presented a history of his career in diffraction and of the contribution he gave to the improvement of the methodologies for the solution of zeolite structures.

On Monday the conference began with the plenary talk, "Total scattering techniques", given by Dr. David Keen, of the ISIS pulsed neutron and muon source at the Rutherford Appleton Laboratory. Two concurrent micro-symposia ran on Monday morning, following the plenary. One centred on methods combining structure solution and 3-D imaging, while the other featured talks on disorder as addressed by total scattering. Following lunch, the concurrent micro-symposia focused on both line profile analysis as well as diffraction that related to biological and molecular materials. Next, attendees could present their research in a poster session and chat with representatives from the event sponsors who always play a key role at the EPDIC. The academic events of the day concluded with the plenary lecture, "X-rays Nano-Imaging of Single Objects" given by Dr. Vincent Favre-Nicolin of Université de Grenoble-Alpe. Following the plenary, cocktails and hors d'oeuvres were served at Musée de Grenoble prior to a guided tour of the modern art exhibitions.

Tuesday commenced with the plenary lecture "X-FEL" given by Dr. Henry Chapman of DESY. Using resources at the European X-ray Laser Project, Dr. Chapman has been able to reconstruct reciprocal space intensity mappings by sampling selected area diffraction images from a micro-stream of organic crystals. Following this lecture, two parallel micro-symposia were held. The first was focused on *ab initio* structure solution, and the second on neutron structural and magnetic scattering. After lunch, talks were presented on structure and properties of functional materials as well as texture and residual stress analysis. Tuesday was wrapped up with a second poster session, and a plenary lecture, "Advances in Rietveld refinement: a review," given by Dr. Juan Rodríguez-Carvajal of Institut Laue-Langevin, France. Dr. Carvajal, creator of the Fullprof software package, discussed at length the progress made in structural refinement methods. Following this plenary, the attendees participated in a gala dinner at the beautiful Château du Touvet. They all enjoyed the great food, great wine, and great people!

The final day of EPDIC 13 began with the plenary talk "Hydrogen storage and energy related materials" given by Magnus H. Sørby of the Institute for Energy Technology, Norway. Wednesday morning featured two parallel micro-symposia, one related to *in situ*, in operando studies, and the other to progress in instrumentation. Following lunch, the



Photo 1. The Minatec Conference Hall.



Photo 2. Dr. Arnt Kern (Bruker) presenting the EPDIC Award for the distinguished powder diffractionist to Dr. Christian Baerlocher.

https://doi.org/10.1017/S0885715613000043 Published online by Cambridge University Press



Photo 3. Among the sponsors of EPDIC, the International Centre for Diffraction Data was well represented at the event.



Photo 4. Dr. Kenneth Beyerlein with the EPDIC Young Scientist Award presented by Dr. Martijn Fransen (PANalytical).

parallel symposia were centred around nano-materials, surfaces and interfaces as well as materials for sustainable development. The final plenary lecture, "Charge density analysis via powder," was delivered by Dr. Bo B. Iversen, of Aarhus University, Denmark. Here, Dr. Iversen was able to abandon the assumption of a spherical electron density and refine information regarding the degree of bond covalence, directly from diffraction data.

This year Dr. Kenneth Beyerlein, of Deutsches Elektronen Synchrotron (DESY), Hamburg, was presented with the EPDIC Young Scientist Award (Photo 4), sponsored by Panalytical. Dr. Beyerlein detailed his beginning as a diffractionist in a talk titled "At the limits of diffraction, from the very small to the very fast". Following Ken's talk, the conference came to a conclusion with the closing ceremony, where the winner of the poster competition was presented with his prize.

One of the images that most people remember will definitely be Serge Claisse armed with his camera that we warmly thank for the huge quantity of pictures he snapped, including those appearing in this contribution.

For those interested in the follow-up, EPDIC 14 will take place 15–18th June 2014, in Aarhus, Denmark. See you all there!

https://doi.org/10.1017/S0885715613000043 Published online by Cambridge University Press