

Proceedings of the 2014 Australian X-ray Analytical Association Workshops, Conference, and Exhibition

This special issue of *Powder Diffraction* offers a selection of contributions presented at the Australian X-ray Analytical Association (AXAA) Workshops, Conference, and Exhibition on 9–13th February 2014 (AXAA-2014) in Perth, Australia.

The AXAA is a not-for-profit organisation comprised of a diverse group of scientists and technologists employed in mining and manufacturing industries, research and educational organisations, as well as instrument manufacturers throughout Australia and the Asia Pacific region. Details on AXAA can be found at www.axaa.org

The AXAA holds a National Conference and Workshop event every 3 years that provides a forum for technical meetings, discussions, and information interchange between workers in the fields of X-ray analysis, including X-ray diffraction (XRD), X-ray fluorescence (XRF), as well as synchrotron and neutron-based techniques of analysis.

AXAA-2014 encompassed a rich variety of topics ranging from XRF studies of iron ore to *in situ* XRD and neutron diffraction studies of batteries, in keeping with the theme of the conference, “From minerals to materials.” The approximately 200 registered participants were from over a dozen countries, including Papua New Guinea, India, China, and Japan. Plenary talks were given by the IUCr’s Commission on *Powder-Diffraction* Chair Dr. Pamela Whitfield (Oak Ridge National Laboratory), Professor David Bish (Indiana University), Professor Bill David (ISIS and Oxford University), Dr. Bob von Dreele (Argonne National Laboratory), and Dr. John Fowler (Intertek). For the first time in the event’s history, a public lecture was held, “The Mars Science Laboratory Experience,” given by Professor David Bish as a new and exciting opening.

Students and early-career researchers are the key to the continued vitality of the AXAA community, and student

prizes are a feature of the AXAA Conference and Workshop. AXAA-2014 provided the opportunity for four postgraduate students to attend the Denver X-ray Conference through prizes for the best oral and poster presentations in both the minerals and materials categories. These prizes were provided through the ICDD’s own Bob Snyder travel grants, and were also sponsored by PANalytical, Initiative Scientific Products, the Australian Nuclear Science and Technology Organisation (ANSTO), and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Thanks also go to Microanalysis Australia for providing the opportunity for student attendance at AXAA-2014 through bursaries. AXAA-2014 also saw the introduction of a new award, the AXAA Award for Excellence in Analysis by an Early-Career Scientist (<5 years since Ph.D. conferral). The inaugural award was given to Dr. Joel O’Dwyer (CSIRO) for his work developing a new XRD system, which uses energy-dispersive XRD for online analysis of mineral slurries in mineral processing, for the purpose of process optimisation and control.

AXAA-2014 demonstrated a continued interest in X-ray and related analytical methods, applications, and research in Australia and surrounds. The next AXAA Conference event will take place in 2017 (AXAA-2017).

The guest editors of this special issue of *Powder Diffraction*:

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