

International Centre for Diffraction Data

JOIN ICDD AT OUR FREE WORKSHOP

13th European Powder Diffraction Conference

Grenoble, France // Sunday, 28 October 2012

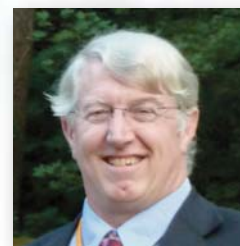
Workshop registration is via the EPDIC-13 registration page:
<http://www.floralis-evenements.fr/congres/register/?id=38>

**MATERIAL IDENTIFICATION –
X-RAYS, ELECTRONS, NEUTRONS & SYNCHROTRONS**

Fundamentals of Material Identification by Diffraction

T. G. Fawcett

International Centre for Diffraction Data, Newtown Square, PA, USA



Crystallite Size Analyses

M. Leoni

*University of Trento, Department of Materials Engineering & Industrial Technologies,
Trento, Italy*



Nanomaterial Analyses

T. Blanton

Eastman Kodak Company, Kodak Technology Center, Rochester, NY, USA



Synchrotron Diffraction Analyses

J. Kaduk

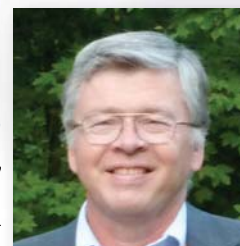
Illinois Institute of Technology, Chicago, IL, USA



Electron Diffraction Analyses

C. E. Crowder

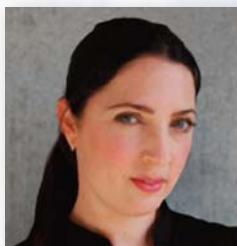
International Centre for Diffraction Data, Newtown Square, PA, USA



Neutron Diffraction Analyses

V. Peterson

Bragg Institute, ANSTO, Menai, New South Wales, Australia



Material Identification processes in diffraction are historically based on analyzing the crystalline lattice and resulting coherent scatter described by diffraction physics. In order to interact (diffract) with the atomic and molecular structure, atomic scale wavelengths are required. These can be produced from X-ray, neutron, electron or synchrotron sources. The process of material identification through the use of reference standards was originally applied to X-ray powder diffraction in the 1930s and was adapted soon thereafter to electron diffraction. The growth of international synchrotron and neutron facilities has established a need for a tailored identification process for these sources. In addition, global scientists are increasingly using both coherent and incoherent scatter to explore the boundaries, or lack thereof, between the amorphous and crystalline state.



The Powder Diffraction File is continuously evolving to adapt to the requirements of global scientists working in the field of diffraction. The evolution has included both changes in content and changing software capability. In the workshop, we will discuss the basic material identification processes used and common features in all diffraction analyses. Then we will discuss new procedures and tools that have been adapted for specific analyses. Finally, we are hoping to update all attendees on current capabilities and have a discussion on needed developments.

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For information, contact marketing@icdd.com

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