

*Please, use only this template for your report*

**SIG:8**

**Reported Period: 2008-2009**

**Report Date:19 – June - 2009**

**Reported by: Jordi Rius (on behalf of SIG8 /the EPDIC Committee)**

=====

## **1. Introduction.**

The principal task of SIG-8 during 2008 was the organisation of the EPDIC-11 meeting in Warsaw (Poland) together with the associate satellite workshops. In the meanwhile, the editorial work for the publication of the proceedings has been ultimate. SIG-8 also proposed for the next ECM-25 the following microsimposia

1. Structure solution and refinement from powder diffraction data

Chair Fabia Gozzo

Co-Chair Jordi Rius

2. Microstructure of materials

Chair Jenő Gubicza

Co-Chair Matteo Leoni or Paolo Scardi

3. Texture analysis

Chair Kurt Helming

Co-Chair Udo Welzel

4. Correlating structure and function of materials

Chair Bob Cernik

Co-Chair Alex Gualtieri

and a keynote lecture to be held by Dr. Robert Dinnebier entitled '93 years after Debye & Scherrer: Powder Diffraction in the 21st Century (Chair: Jordi Rius).

## **2. Past Activities.**

**Title: 11-th European Powder Diffraction Conference Warsaw, POLAND 19-22 September 2008 (EPDIC-11)**

Number of Participants: 400

Sponsors/Organizers: Panalytical, Bruker-AXS, ICDD, The Committee on Crystallography of the Polish Academy of Sciences, ECA

Organiser: Prof. Bogdan Palosz

Short Description: The conference site was the main building of the Warsaw University of Technology. There were 6 plenary lectures, 15 microsimposia and around 180 posters. The exhibitors were: Anton Paar GmbH, Brokkhaven National Lab., Cambridge Crystallographic Data Centre, Crystal Impact, GE Inspection Technologies, HUBER Diffractionstechnik GmbH, Incoatec GmbH, INEL, Labosoft sc., Rigaku Corporation, STOE & Cie GmbH. This conference dealt with all topics related to powder diffraction including applied and industrial aspects. The inaugural session was organised jointly with E-MRS.

*Please, use only this template for your report*

*Please, use only this template for your report*

**Title: “X-ray techniques in investigations of the objects of cultural heritage”.  
Workshop held in Cracow (Poland). 18 September 2008**

Number of Participants: approx. 25

Sponsors/Organizers: EPDIC, BRUKER-AXS, PANANALYTICAL / Prof. Wieslaw Lasocha, Roman Kozlowski, Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, and the Faculty of Chemistry, Jagiellonian University.

Short Description: The aim of the Workshop was the development and application of X-ray techniques to objects of cultural heritage and to introduce scientists and conservators in the newest methods of investigation in this area. The Workshop was focused on historic materials like pigments, stone, mortars, glass, ceramics, metal alloys as well as on corrosion and deterioration processes in historic objects. The Workshop was good platform for sharing experiences between scientists and conservators.

**Title: “In the toolchest : Powder Diffraction Software Workshop”, 18th September 2008 Faculty of Physics, Warsaw University of Technology, Poland**

Number of Participants: 60

Sponsors: Bruker AXS, Panalytical /Organizers: R. Cerny, M. Leoni, B. Toby

Short Description: In this workshop the new advances in powder diffraction software are presented by the authors.

**Title: “In-situ studies including high pressure”, 19 September 2008, Faculty of Physics (Technical University of Warsaw).**

Number of Participants: 19

Sponsors/Organizers: Robert Dinnebier (MPI-FKF, Germany) ,John Evans (University of Durham, UK). Bernd Hinrichsen (Bruker AXS, Germany)

Short Description: From the beginning, the technique of powder diffraction has been used to follow structural changes in dependence of external variables like pressure, temperature, magnetism etc. Recently, the development of high resolution and fast 1D- and 2D- position sensitive detectors for laboratory and synchrotron radiation, the appearance of new micro-reactors, and the availability of sophisticated software for data reduction have revolutionized this field and cleared the way for various new applications. In this workshop a state of the art overview over this fascinating field including practical presentations using state-of-the-art software was given.

**Title: Application of powder diffraction in nanomaterials (18 September 2008, Faculty of Physics, Warsaw)**

Number of Participants: 20

Sponsors/Organizers: EPDIC / Paolo Scardi, Scott Misture

Short Description: This workshop focused on recent developments in nanomaterial modeling using atomistic simulations, and on the possibilities of diffraction and small angle scattering as effective analytical tools in the emerging research field of nanotechnology.

### **3. Future/Programmed Activities.**

**Title: 12-th European Powder Diffraction Conference, Darmstadt, Germany 27-30 2010**

Organizer: Prof. Harmut Fuess (Darmstadt University of Technology).

Short Description: This is now the major European powder diffraction conference

*Please, use only this template for your report*

***Please, use only this template for your report***

regularly attracting around 350 scientists. These are not just crystallographers but include many who would see themselves more as materials scientists, chemists or even engineers. There is a strong emphasis on applied or industrial themes and it is evolving in its philosophy. This time the EPDIC meeting will be held immediately before ECM26 to favour the interaction between both meetings.

**Title: Publication of the EPDIC11 Proceedings in a special issue of Zeitschrift für Kristallographie**

Editors: Bogdan Palosz, Jordi Rius and Udo Welzel.

Short description: This is an important development since it allows communicating the powder diffraction advances presented during the EPDIC conference to a wide audience.

**Organisation of two microsymbiosia in ECM-25 :**

Title: "Structure Solution and Refinement From Powder Diffraction Data" (FA5-Ms1a and Ms1b).

Chairs: Fabia Gozzo and Jordi Rius

Unfortunately, the rest of proposed microsymbiosia were not selected.

**4. Other matters.**

( 50 words max.)

**5. Five year 'overview', brief activity report (2005-2009)**

( 100 words max.)

(only compulsory for those who did not sent the 2004-2008 'overview')

**6. Estimated number of active members: 21**

**7. List SIG officers, name and e-mail, and specify their main function in the SIG:**

SIG8 chair: Jordi Rius, Barcelona, Spain (jordi.rius@icmab.es)

SIG8 co-chair I: Paolo Scardi. Trento, Italy (Paolo.Scardi@ing.unitn.it)

SIG8 co-chair II: Robert Cernik, Manchester, UK <[r.cernik@manchester.ac.uk](mailto:r.cernik@manchester.ac.uk)>

**Supplementary Materials.**

(List of all supplementary materials, if any, related to the SIG report)

- Addendum 1 to n (to be sent in separate files)

**NOTE: DO NOT FORGET TO SEND THE UPDATED LIST OF YOUR SIG OFFICERS**

***Please, use only this template for your report***