## SIG No: 4: Electron Crystallography

Reported Period: 2012-2013 Report Date: 03.06.2012 Reported by: Holger KLEIN

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#### 1. Introduction. (50 words max.)

The aim of this SIG is to raise the awareness and acceptance of Electron Crystallography (EC) to a rank comparable to X-ray crystallography. This requires concerted efforts of groups and researchers in this field and external support. Our purpose is the realization of the full potential of electron optical methods in structural research.

## 2. SIG web site:

SIG 4 url: http://sig4.ecanews.org/

3. Number of ECA individual members registered with the SIG according to<br/>(http://www.xray.cz/eca/im-payment.htm)SIG 4electron crystallography6

4. Existence of a SIG mailing list O Yes / X No Address of the mailing list:

Number of members in the SIG mailing list :

## 5. Approximate total number of researchers involved in the SIG (please indicate the basis for the estimate)

39 researchers have participated in SIG meetings

## 6. List of MS organized by the SIG at the last ECM

MS20 Probing crystal structures at the nanoscale by quantitative electron crystallography

- MS37 Electron Crystallography on functional materials
- MS38 Structure solution of minerals and inorganics by electron crystallography

MS39 Electron diffraction and X-ray powder diffraction: getting the best of both worlds

## 7. Prizes sponsored/coordinated

ECM 28: 2 Poster prizes for young researchers in electron crystallography

#### 8. Past Activities other than Microsymposia at ECM

#### Title: IC International School joined with "Paolo Giordano Orsini" School: Structure, Microstructure, Nanostructure exploiting the potential of powder diffraction techniques Number of participants: 40

Level of involvement of SIG: ECA Individual Members registered with the SIG involved as lecturers Notes: the school was held in Trento Italy from 15 to 20 Sptember 2012. I gave two lectures one on structure solution with PED and ADT another on Texture analysis with TEM. Website: <u>http://2012.aicschool.org</u>

## Title: "Microscopy of materials"

Number of Participants: 25

Level of involvement of SIG in the activity:

ECA Individual Members registered with the SIG involved in the organizing committee

ECA Individual Members registered with the SIG involved as lecturers

Sponsored by ECA?

No

Short Description: (50 words max.)

The course "Microscopy of materials" is intended for graduate students and young researchers. It gives a general overview of electron-microscopic techniques used in material research. Both SEM and TEM techniques are covered, but emphasis is put on TEM techniques, in particular BF and DF imaging, HRTEM and diffraction techniques.

## 9. Future/Programmed Activities.

## Title: International Workshop on Powder & Electron Crystallography held in Patras Greece from 8-12 July 2013

Number of participants: 50-100

Level of involvement of SIG: ECA Individual Members registered with the SIG involved in the organizing committee and Individual Members registered with the SIG involved as lecturers Notes: web:<u>http://crystallographypatras.wordpress.com/</u> It is an intenational school directly sponsored by IUCR.

# Tilte: 1st join SIMP-AIC International School: "Crystallography beyond diffraction 2nd edition" held in Camerino Italy 4-8 september 2013

Number of participants: 40

Level of involvement of SIG: ECA Individual Members registered with the SIG involved as lecturers Notes: the school topics are: Stability and transformations of crystalline phases | Tensors and anisotropic physical properties of crystals | Vibrational properties | Microstructures and textures | Ab initio calculations | TEM | Electron diffraction | EBSD (Electron Back-Scatter Diffraction) | XAS Web site: <u>http://2013.aicschool.org/</u>

## 10. Other matters. ( 50 words max.)

## 11. Brief annual activity report (100 words max.)

In the relatively young field of electron crystallography one of the main activities of SIG4 is teaching. In order to promote electron crystallography as science for structure determination we organize each year several national or international schools (cf. more detailed descriptions above). We participated actively in the organisation of microsymposia at the ECM27 in Bergen, Norway. We also took an active part in the program committee of ECM28 in Warwick, UK. The microsymosia we organize jointly with other SIGs clearly show the interdisciplinary interest electron crystallography induces.

12. List SIG officers, name and e-mail, and specify their main function in the SIG: Holger KLEIN, <u>holger.klein@grenoble.cnrs.fr</u>, chair Mauro GEMMI, <u>Mauro.Gemmi@iit.it</u> co-chair Lousia MESHI, <u>Louisa@bgu.ac.il</u> secretary Andrew STUART, <u>stewarta@uni-mainz.de</u>, webmaster