SIG No: 4
Reported Period: 2017-2018
Report Date: 16.07.2017
Reported by: Mauro GEMMI
==========

1. Introduction. (50 words max.)
The aim of SIG#4 is to raise the awareness and acceptance of Electron Crystallography to a rank comparable to X-ray crystallography. Last achievements of the community are: a strong diffusion of the technique in molecular biology.

2. SIG web site:
SIG 4 url: https://ecaelectronsig.wordpress.com/

3. Number of ECA individual members registered with the SIG according to (http://www.xray.cz/eca/im-payment.htm)
SIG 4 electron crystallography 120

4. Existence of a SIG mailing list X Yes / O No
Address of the mailing list: ecaelectronsig@iucr.org
Number of members in the SIG mailing list : 45

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

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

MS-23 Advances in electron crystallography methods
MS-1 Micro & nano crystals in macromolecular crystallography (in collaboration with SIG01)
MS14 Combined approaches for structure characterization of modulated & complex structure (in collaboration with SIGs 03 + 05 + 12)
MS-24 Defect and disorder quantification at the nanoscale (in collaboration with SIG09)
MS-25 Combined approaches for the structure determination of new materials at the nanoscale structure (in collaboration with SIGs 03 + 05 + 12)

7. Prizes sponsored/coordinated

8. Past Activities other than Microsymposia at ECM

Title: **Workshop on 3D electron crystallography for macromolecular compounds** September 18-22 2017 PSI Villigen Switzerland.
Number of participants: 40

Level of involvement of SIG in the activity:
- SIG members involved in the organization
- ECA Individual Members registered with the SIG involved as lecturers

Financial support by ECA: No
Short Description: This workshop addresses crystallographers in the field of structural biology who want to expand their knowledge to electron crystallography. The list of speakers encompasses

experts in sample preparation, electron microscopy hardware, electron detectors, and methods from data processing, structure solution to model building.

Title: **Workshop on novel electron diffraction techniques in transmission electron microscopy** *JEOL*, Freising (Germany), November 2017.
Number of Participants: 60
Level of involvement of SIG in the activity:

- ECA Individual Members registered with the SIG involved as lecturers

Financial support by ECA: No
Short Description: Workshop organized by Jeol to illustrate the most recent advances in electron diffraction based techniques.

Title: **International Symposium on Cryo-EM symposium - past and future challenges**, December 9th, 2017 Stockholm, Sweden
Number of Participants: 120
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: The symposium, organized by Xiaodong Zou and colleagues, was in connection with the Nobel Prize in Chemistry 2017, and brought together world-leading experts, academic researchers, and industrial scientists to discuss ideas for further advancement in this exciting and rapidly evolving field. The speakers include pioneers in cryo-EM and MicroED, present/former collaborators of the Nobel Laureates, as well as young researchers in the field.

Title: **Physical properties of minerals : how and why to dive into their knowledge**, 12th-15th February 2018, Bressanone, Italy
Number of Participants: 100
Level of involvement of SIG in the activity:

- ECA Individual Members registered with the SIG involved as lecturers

Sponsored by ECA: no
Short Description: School organized by the Italian Society of Mineralogy and Petrology. The school was an overview on the techniques available to investigate the structure and the properties of minerals. Among those specific lectures were dedicated to electron diffraction.

Title: **ePDF mini workshop** 28th-29th March 2018, Ulm Germany.
Number of Participants: 45
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

Short Description:
This workshop was organized by Tatiana Gorelik and brought together 17 leading experts in ePDF from European and US Universities. The workshop dealt with the most advance and novel applications of the PDF analysis based on electron diffraction data.

Title: **51st International School of Crystallography on Electron Crystallography** 1st-10th June 2018 Erice Italy.
Number of participants: 76
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

Financial support by ECA: yes
Short Description: This is the international school in crystallography held every year in Erice that every 7 years is devoted to electron crystallography. There are teachers and students coming from all the world and is the reference school in the field.

9. Future/Programmed Activities.

10. Other matters. (50 words max.)

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

SIG#4 is always very active in organizing school to teach young crystallographers about the most recent developments of electron diffraction methods. We participated in the organization of microsymposia at ECM31 in Oviedo and are already involved ECM32 organization. We are especially interested in interdisciplinary microsymposia in order to disseminate knowledge of electron crystallography to other communities and also to a close collaboration with structural byologists and cryo EM scientists.

12. List SIG officers, name and e-mail, and specify their main function in the SIG:
Mauro GEMMI, Mauro.Gemmi@iit.it chair
Holger KLEIN, holger.klein@grenoble.cnrs.fr co-chair
Lukas PALATINUS, palat@fzu.cz secretary
Jérôme PACAUD, jerome.pacaud@univ-poitiers.fr, webmaster