



**SIG12**

**Reported Period: 2011-2012**

**Report Date: 09/05/2012**

**Reported by: Julien Haines, Xavier Torrelles, Andrzej Grzechnik**

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

The present SIG 12 officers are on duty now since they were elected at the SIG12 meeting last August in Madrid. The main activities of the SIG team have been to prepare the Bergen ECM, to reactivate the mailing list and to begin to design a web site.

**2. SIG web site:**

SIG12: in construction

**3. Number of ECA individual members registered with the SIG according to**

(<http://www.xray.cz/eca/im-payment.htm>)

SIG12 Materials Science

163 (on 30/04/2012)

**4. Existence of a SIG mailing list: yes**

**Address of the mailing list:** [ecsig12@uhp-nancy.fr](mailto:ecsig12@uhp-nancy.fr)

**Number of members in the SIG mailing list: 27**

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

About 170 based on 3. and 4.

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

Title: 26<sup>th</sup> European Crystallographic Meeting, Darmsdadt, 29/08 to 2/09/2010 Germany

A member of SIG 12 participated in the general organization of ECM 26 as member of its Organizing Committee. A meeting of the members of SIG 12 was held during ECM26 to discuss the role of SIG12 and future projects.

Title: 26<sup>th</sup> European Crystallographic Meeting, Darmsdat, 29/08 to 2/09/2010 Germany  
microsymposium MS39 "Surfaces, Interfaces and Nanostructures "

Number of Participants: about 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

endorsed (SIG logo on the web page/leaflets)

Sponsored by ECA?

Yes

Other Sponsors/Organizers:



## Report of SIG 12 (cont.)

Short Description: (50 words max.)

A member of SIG12 participated in the organization of the microsposium "Surfaces, Interfaces and Nanostructures" at ECM 26. The state of the art in the study of the surface structure in single crystals in ambient conditions was presented. I would recommend to enlarge the size of MS (at least some of them) to enhance some thematic or topics in agreement with other SIGs.

SIG 12 also participated in proposing and in the organization of the following microsypmosia:

<b>Title</b>	<b>Proposed together with other SIGs</b>
<i>MS13: Complex metallic alloys</i>	Marc de Boissieu (F) & Grygoriy Dmytriv (UKR) SIG 3 - SIG 12
<i>MS14: New inorganic materials for technological applications</i>	M. Nespolo (I) & Mikhailova (D) SIG 5 - SIG 12
<i>MS18: Open structures and aperiodic crystals under in situ/non-ambient conditions</i>	Olga Degtereva (UK) & Vachev Petricek (Cz) SIG 11 - SIG 12 - SIG 13
<i>MS19: Structure and properties of functional materials at extreme conditions</i>	N. Dubrovinskaia (D) & C. Braun (D) SIG 11 - SIG 12
<i>MS32: Self-assembled functional materials: biomineralization, biomimetics and beyond</i>	Juan Manuel García Ruiz (Spain) & Fiona Meldrum (UK) SIG 7 - SIG 12

### 7. Prizes sponsored/coordinated

The European Crystallographic Association (ECA) and the European Neutron Scattering Association (ENSA) announced the call for nominations for the Third Erwin Felix Lewy Bertaut Prize in honour of the late Erwin Felix Lewy Bertaut. The prize is awarded to a young European scientist. The prize was awarded at ECM26 on Wednesday September 1, 2010 in the Spektrum A (Plenary Hall).

The fifteen best posters were awarded prizez at ECM 26. SIG12 officers participated in the jury, which selected the laureates. The poster prize "Umicore Poster Prize for Funtional Materials" was coordinated and promoted by SIG12. The posters covered several areas of physics, chemistry and biology.

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

IUCr2011 Madrid (Spain)

A SIG12 meeting was organized during the IUCr2011 congress in Madrid to discuss the change in SIG officers, propositions for microsypmosia and keynote lectures for the Bergen ECM meeting,



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Report of SIG 12 (cont.)

the organization of materials crystallography workshops in 2012, the creation of a web page, the reactivation of the mailing list and future SIG12 activities.

AUSE-V Valencia (Spain)

The Vth Meeting of the Spanish Association of Synchrotron Radiation Users (AUSE) was organized in Valencia from 6 to 9 of September 2011. The number of participants was close to 100. The SIG members involved in the event participated as lecturers and members of the organizing committee. The meeting was not sponsored by ECA. The main sponsors were the Spanish Scientific Research Council (CSIC), AUSE (Spanish Users of Synchrotron Radiation) and the Spanish Department of Research & Science (MICINN). The next event is scheduled to be organized in Barcelona in coordination with ALBA synchrotron and AUSE during 2013.

### 9. Future/Programmed Activities.

Title: Satellite workshop of the 27<sup>th</sup> European Crystallographic Meeting “Methods of high-pressure single-crystal x-ray diffraction” (Bergen, August 4-5, 2012)

Number of expected Participants: 50

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

endorsed

Sponsored by ECA?

Yes

Other Sponsors/Organizers:

Agilent Technologies, Stoe, Bruker, Incoatec, Scimed, Almax Industries, European Mineralogical Union

Short Description: (50 words max.)

The aim of this workshop is to demonstrate how to perform high-pressure single-crystal x-ray measurements in diamond anvil cells using home-laboratory and synchrotron facilities. The workshop will include both lectures and hands-on exercises. It will be suitable for researchers at all levels in physics, chemistry, biology, geosciences, and materials science.

Title: 5<sup>th</sup> European Workshop on Piezoelectric Materials

Number of expected Participants: 60

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

endorsed (SIG logo on the web page/leaflets)

Sponsored by ECA?

No

Other Sponsors/Organizers:

- Université Montpellier 2

## Report of SIG 12 (cont.)

Short Description: (50 words max.)

The European Workshop on Piezoelectric Materials is held every four years to present research results on the synthesis, structure-property relationships and applications of piezoelectric materials. This year a special session on crystallography and structure-property relationships in piezoelectric materials will be organized at the meeting by SIG members. This session will bring together the most renowned European crystallographers working on the subject.  
(10-13 July 2012, Montpellier, France)

Title: ECM27 Bergen

SIG12 proposed and will organize or co-organize two microsymposia for ECM27 in Bergen: “Ferroic and multiferroic materials” and “Materials in operando and in situ crystallography of materials”. SIG12 also co-proposed 4 microsymposia organized with other SIGs: “Energy related materials”, “Aperiodic, short-range ordered, and non-crystalline materials at ambient and non-ambient conditions”, “Electron Crystallography on functional materials” and “Structural complexity of minerals and inorganic materials”.

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

SIG 12 officers are actively involved in the conception, realisation and use of experimental stations and new sample environments at large scale facilities (e.g., ALBA in Barcelona, HASYLAB and Petra-III in Hamburg, FRM-II in Munich and ILL in Grenoble) to open new possibilities for the structural investigation of functional materials under *in situ* and *in operando* conditions. ALBA is currently in operation mode and it is already accepting beamtime proposals from both the spanish and international users communities in a competitive way in hard and soft condensed fields (<http://www.cells.es>).

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

SIG 12 is strongly involved in the organization of materials science related microsymposia at the Bergen meeting. SIG officers are also involved in the organization of workshops related to materials crystallography both at Bergen and elsewhere in material science meetings. The members of SIG 12 strongly participate in the development of methods at large scale facilities (e.g. at synchrotron and neutron facilities).



Report of SIG 12 (cont.)

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

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