

## **SIG12**

**Reported Period: 2021-2022**

**Report Date: 31/07/2022**

**Reported by: Manuel Hinterstein, Jerome Rouquette, Claire Colin**

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

After the pandemic normal operation is slowly coming back. Although the IUCr hybrid conference was organised really well, a SIG12 meeting was difficult to organise in a hybrid form. Still some summer schools, workshops and conferences were cancelled or postponed. The main activities of the SIG team have been to prepare the ECM33 in Versailles. The SIG12 representative to the program committee is Manuel Hinterstein.

### **2. SIG web site:**

SIG12: <https://ecanews.org/groups/sig-12-crystallography-of-functional-materials/>

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

SIG12 Materials Science

81 (as of 31/07/2022)

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

SIG12 communicates with its members via the ECA webpages <https://ecanews.org/groups/sig-12-crystallography-of-functional-materials/>

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

81 members registered on <https://ecanews.org/groups/sig-12-crystallography-of-functional-materials/>

### **6. Plenary and Keynote speakers suggested by SIG12 for the ECM33 in Versailles**

Plenary:

1. Prof. David Bish, USA, bish@indiana.edu (minerals, CheMin XRD/XRF on Mars)
2. Prof. Kerstin Volz, Germany, kerstin.volz@physik.uni-marburg.de (TEM, semiconductors, epitaxial growth)
3. Dr. Jose Antonio Alonso, Spain, ja.alonso@icmm.csic.es (metal oxides, electronic and magnetic properties, superconductivity, magnetoresistance)
4. Prof. Andrzej Katrusiak, Poland, katran@amu.edu.pl (high pressure crystallography, molecular ferroelectrics)

Keynote:

1. Ass. Prof. Nicole Benedek, USA, nbenedek@cornell.edu (nonlinear photonics, thermal transport, multiferroics, ferroelectrics) → selected for ECA Lunch Webinar Series

2. Prof. Phil Lightfoot, UK, pl@st-andrews.ac.uk (solid state chemistry, inorganic materials, ferroelectric, magnetic and multiferroic) → selected as Keynote speaker at ECM 33
3. Prof. Francesco Di Renzo, France, direnzo@enscm.fr (catalysis, texture, porous materials)
4. Prof. Thomas Armbruster, Switzerland, armbruster@krist.unibe.ch (order-disorder, mineral structures)

## **7. List of MS organized by the SIG at the ECM33 in Versailles**

SIG12 proposed the following microsymbosia with support from other SIGs:

- Operando and in-situ crystallographic studies (SIG5, SIG8)
- Structural Characterization of Functional Materials (SIG5)
- Materials for Energy Storage and Conversion (SIG8)
- Time-Resolved Diffraction and Scattering Techniques (SIG8)

SIG12 supported the following microsymbosia proposed by other SIGs:

- Minerals and Materials Under Extreme Conditions
- Mineralogical and Inorganic Crystallography
- Structure determination of new materials by multi-technique approach

## **8. Prizes sponsored/coordinated**

The STOE poster prize will be coordinated by SIG12 at ECM 33.

## **9. Past Activities other than Microsymbosia at ECM**

SIG12 supports the International School of Crystallography in Erice in 2022.

## **9. Future/Programmed Activities.**

Currently, the SIG12 representative, Manuel Hinterstein, participates in the organization of the ECM33 in Versailles as a member of the program committee.

SIG12 supports the International School of Crystallography in Erice in 2022.

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

Members of SIG 12 are also involved in the design and use of experimental stations and new sample environments at large scale facilities (Petra-III in Hamburg, FRM-II in Munich and ESRF and ILL in Grenoble) to open new possibilities for the structural investigation of functional materials under *in situ* and *in operando* conditions.

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

SIG officers are involved in the organization of conferences related to materials crystallography at material science and diffraction-related meetings. They participate in review and advisory committees in various European large-scale facilities. Due to the pandemic most meetings were cancelled or postponed.

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

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