



[www.sfmc-fr.org](http://www.sfmc-fr.org)

## Société Française de Minéralogie et de Cristallographie



### NEW FACILITY AVAILABLE SOON TO THE EARTH SCIENCES COMMUNITY IN FRANCE

SOLEIL, the new third-generation French synchrotron radiation source located near Paris, will be operational in 2007. This new national research facility will allow unprecedented opportunities for Earth sciences research. Our community has been well identified in the review committees for beamtime allocation. Two review panels cover our scientific areas: Physical chemistry/diluted matter/astrophysics/atmosphere, and Earth sciences (geophysics, geochemistry)/environment/archaeology/cultural heritage. This is a consequence of the implication of various mineralogy and crystallography laboratories in shaping the scientific requirements at several beamlines.

The ring will cover the entire spectral domain from infrared to hard X-ray, and the available techniques will include diffraction, spectroscopy, and imaging. The design of the beamlines has been driven by the scientific requirements. Among the 24 beamlines scheduled, seven should be very attractive to our community.

The AILES-SMIS project concerns two IR stations, one dedicated to far-IR spectroscopy and one to IR microspectroscopy and microscale imaging. These two beamlines will make possible IR investigations in several geological applications, such as studies of interstellar dust particles and identification of organic matter in fluid inclusions. With the GALAXIES beamline, XAS spectra of light elements can be obtained in intrusive sample environments, such as in a high-pressure cell, thanks to the high penetration depth of hard X-rays. The high-pressure beamline, dedicated to diffraction with hard X-rays, integrates a panel of cells, such as diamond-anvil cells with laser heating and large-volume cells. Research in environmental sciences will be supported by microXAS beamlines (LUCIA, SAMBA), and by imaging beamlines in the soft and hard X-ray domains (MICROSCOPIUM and STXM beamlines).

For more information, and especially if you are interested in an exciting experiment using SOLEIL, visit <http://www.synchrotron-soleil.fr/anglais/>

**Jean-Louis Hazemann,**  
CNRS Grenoble, France,  
[jean-louis.hazemann@grenoble.cnrs.fr](mailto:jean-louis.hazemann@grenoble.cnrs.fr)

### FINAL MEETING OF THE RESEARCH GROUP TRANSMET

Eighty persons participated in the final meeting of the Research Group TRANSMET (CNRS BRGM and IRD; M. Cathelineau, Director), held at Nancy (6–7 July 2007) with the support of SFMC. Several French laboratories participate in this group. Their two main scientific objectives are:

**1)** Understanding the origin of hydrothermal gold concentrations. Five approaches are used: (i) development of analytical techniques for fluid inclusions (LIBS, synchrotron); (ii) concentration and speciation measurements of gold both in the vapour and liquid phases using XANES and EXAFS spectroscopy; (iii) experiments on gold solubility in dacite melts; (iv) determination of the source of gold-bearing fluids using SIMS lead isotopes on sulfide-bearing minerals; (v) study of the relationships between granites and gold deposition in the Brues deposit (Galicia, Spain).

**2)** Understanding the dispersion of metals around natural deposits. Different forms of metal transport at low temperature have been investigated (dissolved species, particles, colloids). X-ray fluorescence, micro-EXAFS, and micro-XRD spectroscopy using a synchrotron source are essential techniques to precisely locate metals in neoformed minerals (oxides, clay minerals, etc.). Metal complexation and interactions with bacteria was also an important topic. A case study in New Caledonia showed that chromium is transported both as dissolved species and as particles during chromite alteration; thermodynamic modeling of the transformation of Ni-olivine to Ni-goethite was carried out. New complexes of uranium with humic acids and functional groups that allow metal trapping on colloids were discovered.

In conclusion, people from different disciplines (geochemists, geochronologists, experimentalists, ore geologists) have come together in this research group to study transport and deposition mechanisms involved in both the formation of ore deposits, —a permanent need of society—, and in the extraction of metals in the mining industry.

**Jean Dubessy,**  
G2R, Nancy, France  
[Jean.Dubessy@g2r.uhp-nancy.fr](mailto:Jean.Dubessy@g2r.uhp-nancy.fr)

### ACROFI-I MEETING

The first Asian Current Research on Fluid Inclusions meeting was held at Nanjing University, 26–28 May 2006. The meeting was organized by Professor Pei Ni from Nanjing University and Professor Zhaolin Li from Zhongshan University, with the support of three Chinese laboratories: the State Key Laboratory for Mineral Research (Institute of Geofluid Research, Nanjing university), the Research Division of the Earth's Interior Material and Geofluid Geochemistry Laboratory of the Chinese Academy of Sciences, and the State Key Laboratory of Marginal Sea Geology of the Chinese Academy of Sciences. ACROFI-I gathered scientists from 14 countries, including Sergey Smirnov, who chairs the IMA Working Group on Fluid Inclusions in Minerals.

A total of 163 presentations were made in seven sessions: (1) hydrothermal processes and ore deposits; (2) igneous processes; (3) metamorphic fluids; (4) sedimentary systems and oil geology; (5) fluid flow and defor-

mation and fracturing; (6) new developments in analytical and experimental techniques; (7) thermodynamics of geological fluids. The basics of the geochemistry of fluid inclusions were also covered, with the objectives of giving an important impulse to fluid inclusion research in China and other Asian countries and favouring scientific cooperation.

The meeting was attended by many young Chinese scientists or PhD students, showing that this field of research is expanding in China. It was followed by a field trip to the Yellow Mountains, a magnificently scenic granite massif shaped by erosion. Nobody will forget the sunrise at 5 a.m.! The meeting was friendly, the organization was perfect, and the excellent Chinese cooking deserves a special mention. Congratulations and many thanks to our Chinese colleagues for this initiative. The next ACROFI meeting will be in India.

**Jean Dubessy,**  
G2R, Nancy, France  
[Jean.Dubessy@g2r.uhp-nancy.fr](mailto:Jean.Dubessy@g2r.uhp-nancy.fr)