

## **Item 8 - List of 2008 meetings, Workshops and Short courses with the participation of IMA Commissions and Working Groups**

<http://www.ima-mineralogy.org/meetings.html>

### **8.1 - Organizations of scientific sessions in meetings**

#### **(1) 33rd IGC Meeting in Oslo: List of sessions**

##### **MPM Mineralogy**

**MPM-01 General contributions to mineralogy** *Kari Kojonen, Chris Stanley (IMA)*

This session is meant for various fields of the science of mineralogy dealing with naturally occurring elements and compounds, especially those which are not represented by some other symposium in the IGC 2008. These could include: New minerals species; Minerals in the human body; Toxic minerals; Minerals and health; Intelligent minerals; Energy minerals; Minerals for new materials; ColTan minerals; Ore minerals; Industrial minerals; Strategic minerals; Physical properties of minerals; Crystal structure of minerals; Modern analytical methods of minerals.

**MPM-02 Frontiers in quartz research: The genesis, crystal chemistry and economic importance of igneous, metamorphic and hydrothermal SiO<sub>2</sub>-polymorphs** *Peter M. Ihlen, Rune B. Larsen, Axel Müller*

Although quartz is a major constituent of the Earth's crust, relatively few attempts were made to use quartz for petrogenetic interpretations because the textures, the trace element concentration and lattice position were poorly resolved by common analytical techniques. The emergence of better and more affordable in situ microprobe techniques, together with the improvement of conventional methods (SIMS, LA-ICP-MS, EMP, SEM-CL) over the past decade, has provided an avalanche of new data on textures and trace elements comprising quartz. These analytical advances allow for high precision estimates of the abundance of trace elements in quartz, the micro texture, e.g. growth zoning, recrystallisation, preferred crystal orientation and the structural characterisation of defect centres in the crystal lattice. Therefore, the igneous, metamorphic and hydrothermal petrogenesis of quartz, as well as the quality and formation of economic quartz deposits can be better constrained. Accordingly, quartz may become important in the perception of both rock- and mineral deposit-forming processes. The entire spectrum of Earth scientists working on SiO<sub>2</sub>-polymorphs are cordially invited to share their results at this session where we hope to define the frontiers of quartz research.

**MPM-03 Metals in the Earth: From vital resource to environmental hazard** *David Vaughan, Dogan Paktunc, Kari Kojonen (IMA)*

Mineral resources are crucial for sustaining quality of life and economic development. Extraction of metals from ores, however, poses risks to human health and ecology. Preventing and reducing adverse impacts of metals in the environment require a comprehensive understanding of the full metal cycle including both natural and industrial processes involved in the formation and distribution of minerals, extraction of metals and disposal of wastes. The symposium aims to explore the links between the fundamental and applied aspects of research dealing with minerals and metals in mineral exploration, metals extraction and disposal of wastes. In consideration of the fact that not only human activities but also natural processes concentrate and redistribute metals and modify their forms in the environment, the symposium also aims to discuss releases of metals from natural sources. This will also help to improve long-term predictions on metal releases from the wastes. Presentations will include the following topics: 1. Geochemistry and mineralogy of metallic mineral deposits emphasizing the distribution of hazardous or toxic elements such as Pb, Zn, Ni, Co, As, Cr, Hg, Pd and Pt. 2. Weathering of metallic mineral deposits and mineral-water interactions at the Earth's surface (e.g. water and soil contamination from natural sources). 3. Releases of metals during mineral processing (communitation, beneficiation, flotation) and extractive metallurgy (smelting and refining) operations. 4. Geochemistry and mineralogy of mining and metallurgical wastes (waste rock, tailings, sludge, effluents, acid mine drainage, hydrometallurgical residues, and dust and stack emissions) with

emphasis on their stabilities. 5. Metals in the environment (background concentrations, natural vs.. anthropogenic contributions, water, soil and air quality around mine and metallurgical sites, bioavailability, human health and ecological risk assessment). 6. Sustainable development.

**MPM-04 Platinum-group mineralogy** *Andy McDonald, Kari Kojonen (COM)*

Due to major advances in the technological applications of platinum-group elements, associated exploration programs have recently attracted incredible attention. Ironically, relatively little is known regarding the true chemical formulae, atomic arrangements and chemical diversity that exist amongst platinum-group minerals. This session is devoted to expanding our current knowledge base of the crystal-chemistry of PGM. It invites contributions from participants working on one or more of the many aspects involved in studying PGM: mineral synthesis, crystal-structure determination, chemical variation, new data on poorly described species and the characterization of potentially new PGM. All workers analyzing PGM from the myriad of possible geological environments (reef complexes, magmatic and hydrothermally altered deposits, placers, laterites, etc.) are welcome to provide submissions. The principle goal of this session is to provide a means by which individuals researching PGM, and those involved in their exploration and beneficiation, can be exposed to the current state-of-knowledge of this geologically, economically and technologically relevant mineral group.

**MPM-06 Melts and glasses in mineralogy and petrology** *Daniel Neuville et al. (IMA-CMP)*

Glasses and melts play an important role in the formation and evolution of the earth, as well as, in glass processing and for the storage of nuclear wastes. The structure and properties of glasses and silicates melts are becoming more well known but some aspects remain poorly understood; for example, the glass transition, and the relationship between short and medium range order. Contributions to this symposium are invited on diverse aspects of glasses and melts, in relation to properties, structure and dynamics.

**MPM-10 Fluids and melts in the Earth's mantle: From natural observation to HT-HP experiment** *Leonid L. Perchuk, Oleg G. Safonov (IMA-WGME)*

We expect contributions from researchers who provide petrological, geochemical, and experimental evidences for activity of alkaline deep-seated fluids and melts in the Earth,s mantle. Presentations that describe evidences for alkalic silicate, carbonate-silicate, chloride-carbonate liquids from mantle xenoliths from basalts and kimberlites, as well as from diamond inclusions, are highly solicited. A special attention is to be paid to experimental studies of alkali-rich melts and fluids at the HP-HT conditions, including equilibria of mantle minerals with alkalic liquids, synthesis and stability of specific alkaline HP phases, partitioning of major, trace and volatile components between minerals, melts, and fluids, diamond growth in the melts, physical and mechanical properties of the alkalic liquids at the mantle conditions, etc. The symposium is directed to create a tool for better understanding of the deep-seated processes such as mantle metasomatism, which provoke kimberlitic and carbonatitic magmatism.

**MPM-11 Phase transformations and geodynamics** *Taras V.Gerya, Leonid L.Perchuk (IMA-WGME)*

Phase transformations and geodynamics are inherently interrelated. On the one hand all large scale geodynamic processes involve and are strongly affected by various phase transformations in the Earth,s crust, mantle and core. On the other hand mineral reactions recorded by rocks are broadly used by petrologists for deciphering evolution of physical parameters (e.g. P-T-time-deformation paths) related to large scale geodynamic changes. Our intension is to organize a cross-disciplinary symposium involving observers, experimentalists and modelers in order to discuss three principal issues: 1. How phase transformations affect geodynamic processes at various depths and scales? 2. How natural observations and experimental data on phase transitions can be used for deciphering geodynamic evolution? 3. How can we include effects of phase transformations in numerical models of geodynamic processes and what can we gain out of this? We encourage contributions from

petrologists, structural geologists, geophysicists and numerical modelers discussing recent advances and problems in linking phase transformations and geodynamics.

**MPM-12 New developments in microbeam techniques** *Jan Kosler, John Hanchar, Martin Whitehouse*

Recent advancements in microanalytical techniques, including SIMS, laser ablation ICP-MS, laser assisted gas source mass spectrometry, electron and x-ray microbeam analysis, have opened new possibilities to study elemental and isotopic variations with previously unmatched spatial resolution, detection capabilities and analytical precision. Contributions are sought both in analytical technique development and new applications of microbeam analysis, including elemental concentration measurements, analysis of radiogenic and stable isotopes and use of microbeam techniques for studying spatial variations in chemical and isotopic composition of geological and environmental materials.

**MPM-13 Inclusions in minerals** *Sergey Smirnov, Pei Ni, Matti Poutiainen (IMA-WGIM)*

Minerals contain a variety of different phases that were entrapped in the course of their formation and than isolated as inclusions. All of them can be divided into three groups: mineral inclusions, fluid, and melt inclusions. Recently they are believed to be an important source of geochemical and petrological information. They give to geologists an opportunity to trace past geological processes from the nano- and microscale up to the rock formation scale. As isolated phases the inclusions frequently bring geological information that was erased from rocks by later overprinting processes. In spite of the fact that the inclusions were studied for more than 150 years, they still trigger hot discussions on their origin, properties and importance. On the other hand they proved their importance in revealing P-T-X conditions of mineral and rock formation from the Earth mantle depths to the surface of the Earth and even in the Solar system. The session is addressed to those who deal with inclusions in minerals for reconstruction of geological processes - magma evolution, metamorphism, ore formation, sedimentary basin evolution, etc. We invite papers that are dedicated to advances of the inclusion microanalysis, thermodynamics of the fluid systems, paragenetic analysis, use of inclusions for oil, gas and ore prospecting, and experiments with inclusions in minerals.

**(2) Goldschmidt Conference :**

*Commission on Physics of Minerals -*

Session 07f: "Diffraction and absorption spectroscopies at high temperatures and pressures".

Synchrotron and neutron based spectroscopic and diffraction techniques have become routine for investigating minerals, glasses and liquids under extreme conditions (high temperature/pressure). We invite contributions on recent experimental work, as well as from those using numerical simulations or other spectroscopies at high temperatures and/or pressures.

Convenors: Grant Henderson, Daniel Neuville, Eiji Ohtani.

*Working Group on Environmental Mineralogy and Geochemistry -* The WGEMG organized a session on Mineralogy and Geochemistry of Metalliferous Mine Wastes in honor of John Jambor,

**(3) ICAM**

CAM acted as a co-sponsor of the ICAM 2008 meeting. Informations of sessions organized by the CAM are on the ICAM website.

**(4) 6th Mineralogy and Museums Conference (see the M&M website)**

**(5) ACROFI II, 12-14 November 2008, Haragpur India - WGIM was a sponsor of sessions**

Conference includes 67 oral presentations, 3 pre-conference and 1 post-conference field trips. Oral presentations are organized in 10 sessions: Fluids in metamorphism, Fluid in deformation of rocks, New techniques and PVTX relationships, Auriferous ore fluids, Ore fluids in Granite-Pegmatite environment, Fluid inclusions in mineral exploration, Fluid inclusions in ore environment (PGE, U, base

metals), Fluid inclusions in ore environments (non metallic), Melt inclusions, Basinal fluids and hydrocarbon exploration.

Participants of this conference generally represent scientific communities of India, China, Russia, Australia and some important delegates from European countries.

(x) IUCr2008 in Osaka - Crystal growth session organized by the CMGIP, chaired by K. Tsikamoto and with J.L.Garcia Ruiz as the invited speaker.

## **8.2 Organizations of workshop and short courses**

Workshop sponsored by the CAM - The Quantitative Mineralogy workshop organized by Dogan Paktunc during ICAM2008 brought together the experts and professionals in mineralogy, mineral processing and metallurgy for a review of the applications, current state, progress and challenges in the fast emerging field of quantitative mineralogy. The workshop culminated with an action plan addressing the key gaps and future needs in this field and establishment of a network of expertise in quantitative mineralogy.

### Short courses sponsored by the CAM

\* Eric Pirard organized a Short Course in Lima during March 24-28 2008. The course, taught in Spanish, attracted about 20 professionals active in the mining sector and demonstrated the major interest existing for advanced characterization tools in mineral exploration and processing.

\* Eric Pirard organized a short course entitled " Introduction to mineralogical image analysis: from 2D to 3D" during ICAM2008.

\* Maarten Broekmans organized a two-day short course titled "Introduction to characterization of concrete materials" at the Cockrell School of Engineering, University of Texas at Austin and another short course on the petrographic assessment of deleterious alkali-aggregate reaction (AAR) for the governmental Building and Construction Authority (BCA) Academy in Singapore.

## **8.3 Forthcoming meetings, workshops and short courses.**

### Meetings

IMA General Meeting: COM has proposed four sessions for the 2010 IMA General meeting, CAM, 6, CPM and WGIM

2009 - WGSECE - A special symposium "Magma generation and evolution of global tectonics" - A symposium in honor of Peter J. Wyllie.

2009 AGU Spring meeting at Toronto, May: Daniel Neuvile will organize a glass and melt session.

SMEC Meeting, March-April 2009. Eiji Ohtani is organizing a core and core-mantle boundary session with Yingwei Fei of Geophysical Laboratory, CIW.

Japan Geoscience union (JPGU) annual meeting. It will be held at Makuhari, Chiba, Japan on 16-21<sup>th</sup>, May, 2009. CPM is organizing two sessions on Physics and Chemistry of Earth's Minerals, and one international session on dynamics of the Earth's interior.

### Workshops

CMGIP through JM Garcia Ruiz, will organize two workshops on "crystallization" in Granada, in 2009. The Second Symposium on Interface Mineralogy will be held in Sendai in march 2009, being organized by the CMGIP.

WGSECE - Three workshops are planned (see the WGSECE report).

### Short courses

Nigel Cook reported on plans to hold a COM short course in India in November 2009.

COM short course in Leoben (Austria) dealing with mineralogy, geochemistry and ore deposits of Platinum group elements (possible date: from 28<sup>th</sup> August to 1<sup>st</sup> September 2010 - after the IMA

General Meeting of Budapest) organized by Aberra Mogessie, Oskar Thalhammer and Federica Zaccarini.