

19th INTERNATIONAL MINERALOGICAL ASSOCIATION MEETING 2006, KOBE, JAPAN

The IMA 2006-KOBE witnessed nearly a thousand overseas and Japanese participants to 19th General Assembly and Science Meeting of the International Mineralogical Association held from 23-28 July, 2006 in Kobe, Japan. Kobe, one of the world's foremost port cities, is home for historic shrines, temples and rich Japanese cultural heritage.

IMA 2006 - KOBE was organized jointly by The Science Council of Japan (SCJ), the Mineralogical and Economic Geologists and the Society of Resource Geology. The aim of the Kobe Meeting was to assemble scientists and researchers in the field of mineralogy, geochemistry, petrology, resource geology, and related sciences from all over the world and to discuss recent progress and future trends. In consideration of the current and active topics around the Mineral Science, the catch phrase of the present science program was Nano, Bio, and Planetary Sciences. These IMA meetings held every four years are important events because they are the only international meetings devoted specifically to mineralogy and supported by subscriptions from 38 national mineralogical societies worldwide. IMA2006-KOBE provided participants with a wealth of outstanding scientific information and a great opportunity to interact with many colleagues in an excellent environment. Participants found a new paradigm for future mineral sciences.

Since last IMA held at Edinburgh in 2002, many important changes to IMA were witnessed. Prominent among them was the sad demise of one of the most distinguished council members, Prof. Werner Schreyer of Germany. His place on Council has been taken by Prof. Walter Maresch, also of Ruhr-University, Bochum. This year IMA 2006 welcomed the mineralogical societies of Uzbekistan and of India to the membership of IMA, which now has 38 supporting organizations. Another important event relates to the introduction of *Elements* magazine. Prof. Rod Ewing, of the University of Michigan, introduced the concept of a semi popular international magazine devoted to mineralogy, geochemistry and petrology, part thematic articles and part news-and-views, to the Mineralogical Society of America (MSA). Prof. Mike Hochella and Prof. Ian Parsons joined Prof. Ewing as scientific editors and Dr. Pierrette Trembly from Mineralogical Association of Canada as managing editor. The first issue of *Elements* appeared in January 2005. Anyone may view *Elements* at www.elementsmagazine.org which has been a great success within the international

mineralogical and geochemical community.

One of the most important roles played by IMA is the naming and classification of minerals. The dissemination of this information has been largely accomplished through journals. An exciting proposal to IMA would now be able to provide a new means to present and interact with mineralogical data and Mike Scott has offered funding through the RRUFF project to build a web site and database that will be associated with IMA. The database will present the complete list of minerals with experimental diffraction patterns, chemistry, spectroscopy and means to search and identify minerals.

If official numbers have anything to say then the total participants to this year's IMA Meeting were 955 (including 68 accompanying persons), and 479 oral presentations (including nine plenary lectures) and 389 poster presentations were made at the spacious International Conference Centre, Kobe. It may sound unbelievable but the popularity of IMA meetings can be gauged through the fact that these participants came from 51 countries across the world. The main attraction of the IMA 2006 meeting was the series of 9 Plenary Lectures delivered on beginning of each day of the session. These Plenary lectures were delivered by distinguished speakers who have excelled in their research field. The topics given below determine the blossoming future of mineralogy, geochemistry and wide spectrum of interdisciplinary material science as the foundation of Earth System Sciences.

1. "Microscopic properties to macroscopic behaviour: The influence of iron electronic state" **Catherine McCammon** (Univ. of Bayreuth, Germany).
2. "From fluid inclusion microanalysis to large-scale hydrothermal mass transfer in the Earth's interior" **Christoph A. Heinrich** (ETH, Switzerland).
3. "Sintered diamond multi-anvil apparatus and its application to mineral physics" **Eiji Ito** (Okayama Univ., Japan).
4. "Microbial metabolism and the size- and chemical environment-dependence of the structure and reactivity of nanoparticle products" **Jillian F. Banfield** (Univ. of California, Berkeley, USA).
5. "The nature of early solar system and presolar materials" **Lindsay P. Keller** (NASA, USA).
6. "Mineral growth in high and low pressure metamorphic

rocks" **Lukas Baumgartner** (Univ of Lausanne, Switzerland)

- 7 "Operation of subduction factory and production of andesite" **Yoshiyuki Tatsumi** (JAMSTEC, Japan)
- 8 "Structural evolution, strain and elasticity of perovskites at high pressures and temperatures" **Michael A. Carpenter** (Univ of Cambridge)
- 9 "Nanomaterial research learning from mineralogy" **Sumio Iijima** (Meijo Univ, Japan)

There were several pre-meeting and post-meeting excursions circumspectly planned for rather small groups within Japan. The entire scientific program was extremely exciting and provided a wonderful show-case for current mineralogical research. The International and Local joint Program Committee had prepared 37 current and meaningful sessions to accommodate larger participation in IMA 2006. All the 37 sessions (enumerated below) reaffirm that their future rests with breaking the artificial barriers of science and working in an interdisciplinary environment.

A. Mineral Physics and High Pressure Mineralogy

(01) Phase transitions and thermodynamic modeling of minerals and rocks (02) Physical properties of minerals and rocks at high pressure (03) New applications of spectroscopy in mineral science (04) Computational study of mineral structures and properties (05) Mineralogy and dynamics of the mantle and core (06) Hydrogen, water and volatiles in the deep Earth (07) Kimberlites, diamonds, and mineral inclusions from the mantle **B. Structural Science of Minerals** (08) Crystal structure, topology and crystal chemistry (09) Structure and Physical properties of melts and glasses (10) Mechanism and kinetics of phase transformations **C. Crystal growth** (11) Application of novel techniques for "in-situ" observation of crystal growth and nucleation (12) Texture formation and crystal growth in geosciences (13) Nucleation and aggregation of macro- to nano- materials **D. Hydrothermal Processes, and Mineralization** (14) Sea -floor hydrothermal systems. Present and past examples (15) Precious and base metal deposits in magmatic arcs (16) Mineralogy of ore deposits (17) Fluid and melt inclusions **E. Petrologic Processes** (18) Metamorphism under extreme P-T conditions (19) Subduction factory and continental evolutions (20) Oceanic crust and mantle processes **F. Planetary Materials** (21) Primitive meteorites, interplanetary dust and sample return missions (22) Lunar and Martian rocks, differentiated meteorites and planetary missions (23) Physical and

chemical process and chronology in the solar system **G. Environmental and Applied Mineralogy** (24) Bio-Geo interface in minerals (25) Mineral-water interactions from microscopic to macroscopic aspects (26) Environmental and medical mineralogy (27) Clay and zeolites natural and synthetic materials (28) Crystals, ceramics and glasses with advanced physico-chemical properties (29) Process mineralogy **H. Mineral Heritage** (30) Mineralogical and Geological museums (31) New minerals and minerals classification (32) Natural and artificial gem materials **I. New Frontiers in Mineral Sciences** (33) New applications of synchrotron radiation in earth and planetary sciences (34) Frontier applications of neutron sciences to mineralogy (35) Micro-chronology of minerals (36) Minerals relating to the origin and distribution of life in the Universe (37) Recent progress of nano particle studies in earth and planetary science

The session 18, for which the undersigned was one of the conveners and chairperson, "Metamorphism under extreme conditions" started on 25th July and was continued till 26th July. The two day session was hectic as the UHT-UHP rocks generated lot of heat and interest among the participants. It was an exclusive experience to see how Japan, a country with limited land and resources is leader in the world with a unique combination of scientific innovation, research and technology. The International Conference Centre nestled in lush natural surroundings between the Rokko Mountains and Seto Inland Sea in the port city of Kobe provided the perfect ambiance for the event.

The next IMA marks its 50 years of foundation and the 20th General Meeting of IMA (http://www.univie.ac.at/Mineralogie/ima_2010/) will be held in Budapest from 21-27 August, 2010. The theme for the next multidisciplinary IMA meeting has been chosen as Bonds and Bridges Mineral Sciences and their Application. It will be organized by mineralogists from Austria, Hungary, Romania and Slovakia, under the chairmanship of Prof Ekkehart Tillmanns of the University of Vienna (ekkehart.tillmanns@univie.ac.at). IMA website (www.ima-mineralogy.org) has been developed which links not only to the websites of many of our supporting societies but also to those of many IMA Commissions and Working Groups.

*Geology Department,
Banaras Hindu University,
Varanasi - 221 005
Email: amohanbhu@yahoo.com*

ANAND MOHAN