



**IMA 2010  
BUDAPEST**

**BONDS AND BRIDGES**

**THE 20<sup>TH</sup> GENERAL MEETING OF THE  
INTERNATIONAL MINERALOGICAL ASSOCIATION**

**21-27 August 2010  
Budapest, Hungary**



# IMA2010 CONFERENCE NEWS

The daily newspaper of the 20th General Meeting of the International Mineralogical Association

**MONDAY**

## Today's Elements 5 talk

*From 12.20 to 13.00*

**Rod Ewing: The Nuclear Fuel Cycle: Role of Mineralogy and Geochemistry in the Safe Management of Nuclear Waste**

As renewed interest in nuclear power is characteristic in the past few years, its impact on environment is also in the focus of the scientific researches. However, more and more steps make the nuclear fuel cycle more difficult, so new scientific challenges are coming.

Mining uranium and final disposition of the nuclear waste are only two of the big tasks, which can be solved with the help of geologists. Research Needs workshops were organized by the Office of Science of the U.S. Department of Energy to identify the main research areas and they found, that mineralogists and geochemists could be involved in both the "front-end" and "back-end" of the nuclear fuel cycle.

The organization of the research agenda, and the biggest scientific challenges will be highlighted during the talk of Rodney Ewing (University of Michigan).



## Environmental mineralogy

*Theme of the day*

**Related programme in the North Building:**

12.20-13.00: ELEMENTS 5 talk by Rod Ewing (Plenary hall)

**Related programme in the South Building:**

8.30-10.30: Environmental / Bio-mineralogy, Health (general session) (S-B hall)

11.00-12.20: Bio-minerals / Biomaterials (S-B hall)

16.50-18.30: Mine waste / Contaminated soil (S-B hall).

*Keynote talk:*

Hudson-Edwards, K.A.: Mine waste: the good, the bad and the mineralogy

8.30-9.50; 11.00-12.00; 16.50-18.10: Nuclear fuel cycle: mineralogy, geochemistry (S-E hall)

## IMA 1<sup>st</sup> Business Meeting

**Councillors and Officers of Commissions and Working groups are elected during the Business meeting of the General Meeting of IMA, so now in Budapest.**

The "Parliament of IMA" has also presented the slate of the Councillors and Officers of Commissions, who will be elected during the 2<sup>nd</sup> Business Meeting on Thursday. The new slate was prepared as a transitional council between the past system in agreement with the 2006 constitution and a new one which would follow the modifications proposed to the 2010 constitution on the election of the council slate.

Reports of the IMA Executive Officers, the Medal Committee and other businesses were also discussed during the first meeting.



President Takamitsu Yamanaka and the audience during the 1<sup>st</sup> IMA Business Meeting.

## Today's plenary talk

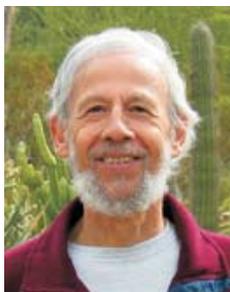
*From 16.00 to 16.50*

**Peter Buseck: 40 years of mineralogy on the nanoscale**

**Transmission electron microscopy was a technique used mainly by biologists, but four decades ago, after important developments, it evolved into a routinely utilized study method for solid-state scientists, including mineralogists.**

Transmission electron microscopes (TEMs) can be used to measure the crystalline structures and compositions of minerals at the micrometer to sub-nanometer scale. Many nano-scale goals can be achieved with modern TEMs, including high-resolution imaging, determining the compositions of inorganic materials on fine scales, measuring the abundance and oxidation state of elements heavier than Li, determining crystallographic structures, hygroscopic properties, volatilities, magnetic behaviour, 3D shapes...

In today's plenary talk, Peter Buseck (Arizona State University, USA) will give an overview of these study fields, well illustrated with geological examples.





**IMA 2010  
BUDAPEST**

**BONDS AND BRIDGES**

**THE 20<sup>TH</sup> GENERAL MEETING OF THE  
INTERNATIONAL MINERALOGICAL ASSOCIATION**

**21-27 August 2010  
Budapest, Hungary**



## Yesterday's plenary talk

Sunday's plenary lecturer was Robert Hazen, who talked about the importance of life on mineral formation and evolution.

Hazen started with explaining the meaning of mineral evolution and defined its main steps, with a detailed talk about the affecting factors. He talked about the Moon's birth as "pushing a reset button" on the complex process of mineral evolution.

According to Professor Hazen, the most important thing concerning the future, and the basic step for gaining further results, is placing the steps of mineral evolution (the evolution of mineral shape, structure, mineral alteration steps etc.) on time-plots and comparing all of these plots. This will ensure information on understanding not only Earth's but also other terrestrial planets' formation and development, so we will be able to study Earth's history with a new approach.

On the first plenary lecture of the conference the two auditoria was full of people and the audience was amazed by the impressive performance.



"The most remarkable and interesting result of this research is, that 2/3 of today's known minerals are the result of life."

## Yesterday's Elements 5 talk

Éva Valsami-Jones, the first Elements 5 speaker of IMA2010 conference, talked about phosphate minerals.

Phosphate minerals are not only scientifically amusing but very important for the subsistence of human beings, according to her opinion.

She explained the global phosphorus cycle and the fact, that phosphate minerals are the only source of this cycle. The abundance of phosphorus on Earth is low and its significant decrease in the last decades is a real problem.

The food resources of humans are depending on the phosphate minerals through the need of fertilizing plants and their importance in biomineralogy is uncontroversial.

Among other interesting uses of phosphate minerals, Professor Valsami-Jones also talked about her favourite subject, the phosphorus-containing nano-minerals in bones and teeth, and the factors influencing their variability, like a person's age or diet. According to her opinion, further development is possible and needed on nano mineral research.

Before talking about nano-solubility and studies on the structures of crystals, she quoted *Alice in Wonderland*: "For I was never so small as this before, never."

Those, who were not able to be in the auditorium, could follow the presentations through webcasting on the conference homepage..



Our Msc student reporter, *Krisztina* interviewed Robert Hazen, and the audience after the talks.

## Audience's reactions



On Robert Hazen's talk:

"It was a wonderful talk and a confident performance, and the research results are important in both in chemistry and mineralogy."

"I took part on an IMA field trip before and it was very good. I liked today's performances as well."

"The Plenary lecture was very nice. The Elements5 talk was a little bit hard to hear, but it was still interesting."

"Both lectures were very interesting and enjoyable."



**IMA 2010  
BUDAPEST**

**BONDS AND BRIDGES**

**THE 20<sup>TH</sup> GENERAL MEETING OF THE  
INTERNATIONAL MINERALOGICAL ASSOCIATION**

**21-27 August 2010  
Budapest, Hungary**



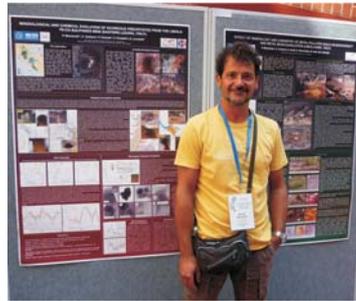
**Sunday - 22.08.2010 at IMA2010 - in pictures**



**IMA2010 Opening  
Ceremony**



**The first poster session of IMA2010**



Sunday was the day for poster mounting and for the first poster session. Results in the field of our “Theme of the day”, *Environmental mineralogy*, are showed in the southern building, where e.g. Pietro Marescotti from Genova (Italy) has presented two posters about inventions against environmental pollution.

**Exhibition area**



**DINNER, LUNCH - REQUEST OF THE CONFERENCE ORGANISERS**

**!** Dear conference dinner participants! If you are vegetarian, please indicate it at the registration as soon as possible. **!**

Dear conference participants! Lunch ticket is available at the registration for 1000 HUF (about 3,6€).



**IMA 2010  
BUDAPEST**

**BONDS AND BRIDGES**

**THE 20<sup>TH</sup> GENERAL MEETING OF THE  
INTERNATIONAL MINERALOGICAL ASSOCIATION**

**21-27 August 2010  
Budapest, Hungary**



*Leisure and pleasure at IMA2010*

### Social, music and sport events (Monday, 23 August)

- 10.30-11.00: Bartók Violin Duo (classical music in the Northern Building)
- 13.00-19.00: IMA2010 Basketball Shooting Challenge
- 13.00-20.00: IMA2010 Table Tennis
- 13.15-13.45: Mátyás Tóth Trio (jazz music in the Southern Building, or in case of nice weather, between the two buildings)
- 14.45-15.45: Capella Silentium (classical music in the Northern Building)
- 19.00-20.30: IMA2010 Conference Choir, rehearsal
- 19.00-sunset: IMA2010 Soccer Games

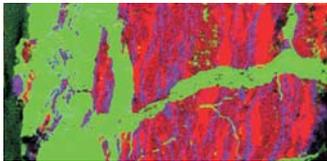
Information about the sport events, and registration for all of them will be at the Sport Help Desk, connected to the IMA2010 Information Desks.

*Exhibitors' seminar*

### Micro-XRF for element imaging

On Monday at 14.00 in the Exhibitor's seminar room (North Building) Dr Simon FitzGerald (HORIBA Scientific) will talk about the power of X-ray fluorescence microscopy for geological applications.

The modern bench top micro-XRF analyser provides an analysis spot size of 10 µm, for analysis of all elements from Na to U, and allows spot analysis for major, minor and trace elements, and imaging of element distribution. A working micro-XRF analyser is available on the HORIBA Scientific stand for analysis of your samples.



*Voices of the IMA2010*

### How is thank you written in...

 German: danke schön	Arabic: شكرا
 Croatian: hvala	Finnish: kiitos
 Czech: děkuji	Greek: ευχαριστώ
 Hungarian: köszönöm	Hindi: dhanyavaad
 Polish: dziękuję	Icelandic: takk fyrir
 Romanian: mulțumesc	Italian: grazie
 Slovakian: ďakujem	Japanese: ありがとう (a rig a toh)
 Slovenian: hvala	Portuguese: obrigado
 Serbian: хвала	Russian: спасибо
 Bulgarian: благодаря	Spanish: gracias

### IMArt

*IMArt Exhibition*

### an art exhibition inspired by Mineral Sciences

Minerals and rocks have always been an inspiration, not only for scientists, but also for artists. The IMArt exhibition displays the results of the enthusiastic work of several mineralogists during the whole conference.

"After two requests from mineralogical "artists" to display their artworks to IMA, it has been decided to create a special framework, within anyone can share his/her art with all the IMA participants. That's how IMArt event was born." told Luminița Zaharia, the conference organiser, who is responsible for this exhibition. "IMArt shows not only that science and art can be reunited, added Luminița, but more important, that the scientists are always artists, seeking beauty and inspiration even in the most hidden corners of mineral world."



"Definitely, the closest to my soul is the "Gold Miners" old photo reportage, due to the sensibility radiating from each image."

### MicROCKScopica

*IMArt Exhibition*

### Along its scientific side photomicrography can turn into an artistic form, as under a microscope rocks reveal an unthinkable variety of landscapes, colors and shapes.

The photomicrographs, printed on canvas, were taken from 30 micrometer thick petrographic thin sections, and their beauty is due to the power of polarized light, that enables interference colours to be disclosed.



Owing to the appeal of the images and to the interest of audience in them, the MicROCKScopica project was recently started ([www.microrockscopica.org](http://www.microrockscopica.org)), from which a small portfolio is showcased here, at IMArt. The photos were taken by Bernardo Cesare (University of Padova), during working on his research. He won several prizes, while displaying the pictures at different exhibitions and in galleries.

### Daily news

Editor-in-Chief: Gabriella Kiss  
 Text by: Gabriella Kiss, Krisztina Pandur, Judit Szegő, Judit Temes  
 Photo: Norbert Gergely, Gábor Horváth, Gabriella Kiss, Judit Szegő, Zoltán Szenek, Judit Temes  
 Layout: Gabriella Kiss  
 Editing closed at: 6 p.m. on the day before publishing  
 Printed in Budapest (Hungary), by *mondAe Ltd.*