2022: a year to celebrate Mineralogy

(Min2022)

Overviews and significance

Min2022 is intended to be a worldwide celebration of this discipline to highlight its importance in our everyday lives. Mineralogy is one of the oldest branches of science, it has played a key role in the deciphering of the structure of matter and in the development of science and technology.

Why 2022 ?

2022 will be the bicentennial of the death of René Just Haüy (born 1743) who is a father of modern mineralogy and crystallography. 1822 is also when Haüy's *Traité de mineralogy* and *Traité de cristallographie* were published.

Accidently breaking a crystal of calcite, Haüy discovered that broken fragments were consistently exhibiting the same shapes which led him to formulate his theory of crystal structure.

Mineralogy is a very active and rapidly evolving field (over 100 new mineral species every year) with a tremendous impact on many facets our society:

- *mineralogy* is the basis of geology, which underpins and supports the whole earth science system.
- *mineralogy* is closely related to crystallography, which directly applies the fundamental principles of crystal symmetry to the theory of specific minerals.
- *mineral* diversity and evolution is an indicator of planetary evolution including the apparition of life. Hence it is a key factor in planetary sciences including remote search for life in exoplanets.
- *mineralogy* is essential in searching for new sustainable resources (strategic metals, etc) either in natural deposits or from human-made products hence mineral sciences are going to play a central role in the development of sustainable and circular economy. The search for new natural resources represents a grand strategy for many developing countries hence education in mineralogy provides men and women with the tools to build the scientific infrastructure essential for the technical evolution.
- nobody in our days can imagine a world without ruby lasers, quartz watches, coltan (minerals of the tantalite-columbite group) used for mobile phones, computer chips, TV screens, aircraft engines, and for instance zeolites used for air and gas drying and purification, ion exchange or even for low-tech applications as cat litter.
- there is a growing interest for the interaction between the mineral world and the biosphere that biology influences the development of minerals and minerals facilitate the biological evolution, even with major implications on human health.
- *minerals* represents one of the most promising approach for carbon capture and storage which could help reverse climate changes.
- *minerals* affects environmental quality and control environmental pollution

Minerals are fascinating and this is a field where research scientists and young people can meet and share their efforts to protect the planet.

Goals

The major objectives of Min2022 are:

- to generate public interest for the science of matter and how it underpins most innovations and developments in our modern society
- through the fascination of natural crystals to attract young people to science
- to illustrate the universality of science
- to intensify the emergence of mineralogical societies in developing countries where ressources are exploited
- to foster international collaboration between scientists worldwide, especially by building North–South networks and South-South collaborations
- to promote education and research in mineralogy, crystallography and their links to other sciences
- to increase public awareness of the importance of natural resources

The International Mineralogical Association (IMA) is the world's largest organization promoting mineralogy. 39 national mineralogical societies or groups, including in the developing countries, are members of IMA. The IMA is member of the IUGS which adheres to the International Science Council (ISC) and maintains close contacts with UNESCO, in order to participate in long-term scientific programmes and projects. Here the IMA allies with the IUCr and places its initiative in a line of continuing actions like IYCr2014 in the first place, but also IYP 2005, IYPE 2008, IYA 2009, IYC 2011, IYL 2015.

Chanabayaite, $Cu_2(N_3C_2H_2)Cl(NH_3,Cl,H_2O,[])_4$, *is the* ***mineral of the year 2015*** *of the IMA. It has been near the village of Chanabaya in the Tarapac region of Chile*

Contact : Patrick Cordier (patrick.cordier@univ-lille.fr), IMA president