Dear organizers, supporters and friends of the International Year of Crystallography 2014!

As president of the *International Mineralogical Association*, it is a great pleasure and privilege for me to extend a welcome to those attending this launching ceremony, and, above all, to offer a sincere thank-you to all those responsible for successfully preparing the IYCr2014 so that we can initiate this auspicious sequence of events today.

Crystallography and mineralogy – the historical connection:

We at IMA are well aware of the fact that *mineralogy* and *crystallography* are inextricably intertwined. At IMA, we are proud of the fact that *mineralogy* is the world's oldest natural science. Lists of minerals, their properties, uses and ways to identify them are found, for instance, in Indian literature at least as far back as 1100 BC. Mineral crystals make up rocks and rocks constitute our Earth, the meteorites and the Earth-like planets of our solar system.

Long ago it became clear that minerals can be chemically very similar or even identical and still show vastly different properties. Diamond and graphite are the most conspicuous example. However, contrasting crystal shapes, *i.e.* habits, are also common (Fig. 1). Consequently, about 350 years ago famous scientists such as Steno, Haüy, Seeber, Mitscherlich, etc., began to use ingenious observations and indirect reasoning to conclude from their external form that minerals must also be characterized by specific internal arrangements of their chemical components. Max von Laue and co-workers finally provided elegant proof in 1912 and firmly established *crystallography* as one of the indispensable pillars of *mineralogy*.

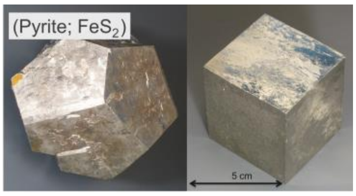

Fig. 1: Pyrite crystals with contrasting crystal habits.

Fig. 2: Intergrown crystals of subhedral feldspar and anhedral quartz, also biotite.

Many mineralogists study rocks (Fig. 2), which are simply aggregates of minerals, controlled in kind and composition by the laws of thermodynamics and kinetics. However, even if crystal faces may not develop fully (subhedral), or not at all (anhedral), the minerals are usually crystalline, and we need crystallography to understand their crystal-chemical properties. We cannot understand the role of a mineral in a rock without a knowledge of its structure, which can be quite complex. For example (Fig. 3), the very intricate structure of amphibole -- one of the commonest rock-forming minerals and occasionally a health risk -- was solved by Nobel laureate Sir William Lawrence Bragg and his associate B.E. Warren more than 80 years ago. On the other hand, the petrographic microscope, a simple classical mineralogical tool, shows us that even when intergrown in a rock, the beauty of minerals can be phenomenal (Fig. 4), and these need in no way take second place to the aura of an isolated single crystal.

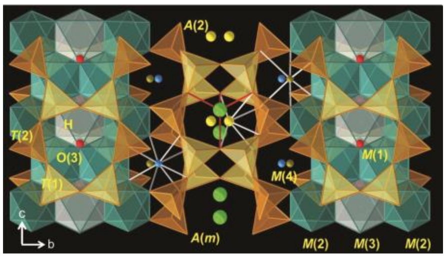

Fig. 3: Polyhedral representation (courtesy of R. Oberti) of amphibole, a very common mineral in many rocks. Occasional source of asbestos.

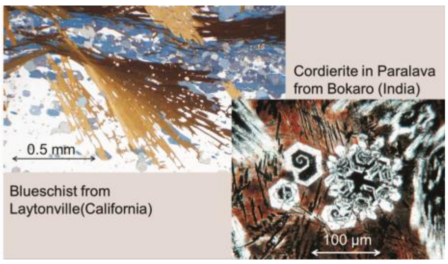

Fig. 4: Microscopic views of rock thin-sections

Crystallography and mineralogy – the modern connection:

Modern *mineralogy*, or better and more aptly called *mineral sciences*, has broadened vastly in scope. Thanks in large part to *crystallography*, *mineralogy* is now also a sophisticated *materials science*. Structural characterization of both natural and synthetic material uses both routinely established methods as well as cutting-edge technology developed in the field of *crystallography*. In return, minerals often provide structural examples not easily synthesized in the laboratory, and Nature made nanomaterials before man could walk. Minerals can provide structural templates for modern materials research.

Crystallography and crystal-chemistry have made our knowledge of minerals and our understanding of Earth's geological processes more accurate and quantitative. Increasing consideration of the fragility of our environment, and the sustainable use of Earth resources as well as their effects on health and human well-being, make *mineralogy* and the atomic-scale approach to the study of Earth materials and their synthetic analogues increasingly significant for the future.

Crystallography and mineralogy – the IYCr2014 connection:

For all the above obvious and important reasons, the *International Mineralogical Association* strongly supports the *International Year of Crystallography* and is convinced that this will be a resounding success. In our plans for "open laboratories" in IYCr2014 let us not forget that Nature provides an incredibly rich and usually quite accessible such laboratory in most parts of the world. As outlined above, modern *crystallography* and *mineralogy* grew out of Nature's version of such an open laboratory. Nature can therefore serve well as an initiation and training hub in developing countries. IMA's national societies in 38 countries are certainly ready to help in any way they can.

Welcome to this auspicious year!