

Premio Nardelli 2006 – Luca Bindi



Luca Bindi was born in 1971 in Prato, Italy. He studied at the Department of Earth Sciences of the University of Florence (1991-1996) and obtained the PhD in Mineralogy and Petrology at the same University (1998-2000). His research activity has been carried on with a post-doctoral research position (2000-2004) and subsequently as temporary researcher in Mineralogy (2004-2006). During this period he also had an active scientific collaboration with the scientists of the Division of Mineralogy of the Natural History Museum of Florence.

His activity has been mainly devoted to the structural complexity in mineral structures (i.e., incommensurate structures, superstructures, twinned structures), integrating together mineralogy and the most advanced fields of crystallography. His research covers also topics on the description and characterization of new minerals and on the physical and chemical conditions of minerals in the rocks of the mantle (his pioneering studies on K-rich clinopyroxenes had wide international resonance). His work on the characterization of metallic minerals in ore deposits is especially noteworthy among economic geologists.

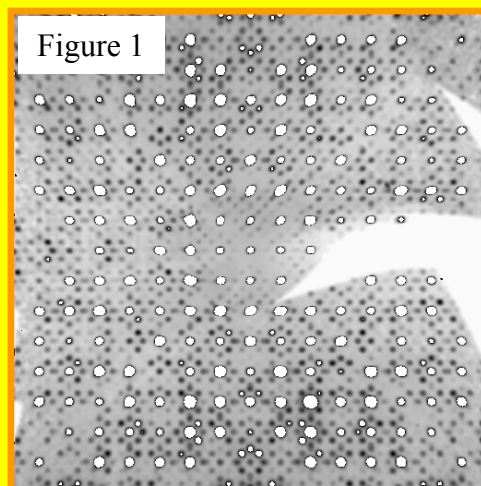


Figure 1

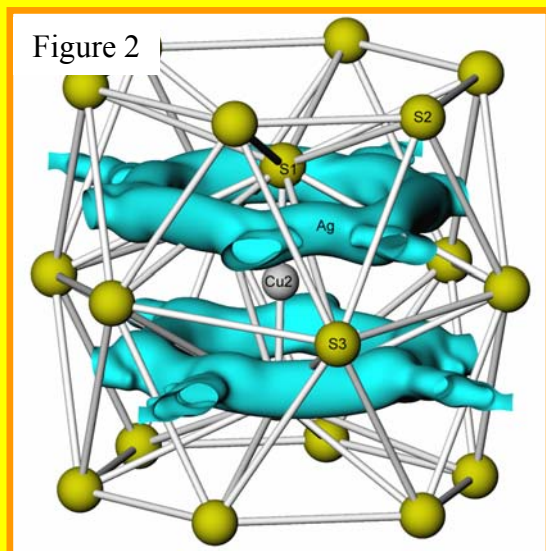


Figure 2

To specifically quote only a few of his more significant contributions, he carried out the first five-dimensional crystal structure refinement of a natural material (natural melilite) displaying a two-dimensional incommensurately modulated structure (Fig. 1); he demonstrated that some natural silver sulfosalts with simplified chemical formula $(\text{Ag,Cu})_{16}(\text{Sb,As})_2\text{S}_{11}$ (pearceite-polybasite group of minerals) are fast ionic conductors and as such may find important technological applications (Fig. 2).