

Tatiana Karpenko
V.V. Ishkov, research supervisor
O.V. Syanova, language adviser
SHEI «National Mining University», Dnipropetrovsk

On Role of Ontological and Anatomical Studies of the Crystals in Mineralogical Mapping

Mineralogical mapping is hard to imagine without extensive genetic information contained in the features of the anatomy and ontogeny of minerals. Considerations of the evolution of individuals and units from the origin, and the sequence of the isolated nature of the relationship, morphology and anatomy of the mineral assemblages increase reliability, variety and volume of data, scientific and applied value of mineralogical mapping.

For example, evolution of anatomical structure of individuals on one of the magnetite skarn gold-magnetite deposits can be traced from the polygonal pattern of zoning tangential growth before fouling with corroded grains of edged flat-speed zoning polycentric growth in places of occurrence of gold-quartz mineralization. Then, in case when ores and skarns are overlapped with next gold-quartz-sulfide stage recrystallization and partial re-deposition of magnetite with the appearance of antiskeleton individuals with deep incoming corners on the outside edges and multiple overlapping pattern of polycentric growth zoning can be seen.

Areas where magnetites with a combination of two types of zoning or antiskeleton crystals with multiple overlapping zoning are developed are productive for gold. The inner parts of magnetite crystals in one of fields are characterized by scalloped rhythms zoning (growth - dissolution). Within the same field magnetite ores are superimposed with copper-tungsten mineralization and polygonal-zoned magnetite individuals covered with undulating zoning, which is replaced by a flat-closed.

Various combinations of interdigitation of morphological types of zonal growth, elements of dissolution and regeneration, plastic and brittle deformations, and structures of replacing with others minerals in minerals-indicators can be widely used in the practice of mineralogical mapping.

In the anatomy of "throughout" rock-forming and ore minerals the information is recorded concerning imposed processes, which are genetically related to other less common and more valuable minerals. Original elements of anatomy and their combination in the patterns of individuals acquire predictive value criteria.