The main objective of the proposal is a study rare and discovery of new minerals, chlorine bearing silicates from pyrometamorphic rocks of the three localities (South Ossetia; Eifel, Germany ; Hatrurim, Israel). Preliminary results of research confirmed a presence of the following minerals: chlormayenite $Ca_{12}Al_{14}O_{32}[\square_4Cl_2]$,chlorkyuygenite $Ca_{12}Al_{14}O_{32}[(H_2O)_4Cl_2]$, wadalite $Ca_{12}Al_{10}Si_4O_{32}[Cl_6]$, eltyubyuite $Ca_{12}Fe_{10}Si_4O_{32}Cl_6$, rondorfite $Ca_8Mg[SiO_4]_2CI_2$, rusinovite $Ca_{10}(Si_2O_7)_3Cl_2$ and two potentially new minerals "chlorellestadite" $Ca_5(SiO_4)_{1.5}(SO_4)_{1.5}Cl$ and "albovite" $Ca_3SiO_4Cl_2$. These minerals are rare in nature, most of them were found only in the one locality in the world. In the scientific literature there is information about a presence of these minerals in other regions, however, they have anthropogenic origin. For this reason, there is limited data on these phases in the environment, however, there are numerous publications concerning to investigations of synthetic phases thanks to using of these mineral analogue in industry.

Fundamental research includes finding and description of new and rare minerals which can be used in industry, electronics and technological processes. In addition, similar mineral association is creating in processes related to anthropogenic fires of coal dumps, therefore data on these minerals studies can be used for solving ecological problems. Formation conditions of pyrometamorphic rocks are also similar to the ones of minerals in the interplanetary space, for this reason minerals typical to pyrometamorphic rocks were described in meteorites. Halogens, incorporating to rock-forming minerals, play an important role in the pyrometamorphic processes: kumtyubyuite $Ca_5(SiO_4)_2F_2$, rusinovite $Ca_{10}(Si_2O_7)_3Cl_2$, rustumite $Ca_{10}(Si_2O_7)_2(SiO_4)Cl_2(OH)_2$, etc., hereat detailed studing such minerals helps us to suggest a hypotesis about genesis of studied pyrometamorphic rocks.

The most perspective minerals from the studied group are minerals of the mayenite supergroup, which includs: chlormayenite $Ca_{12}Al_{14}O_{32}[\square_4Cl_2]$, chlorkyuygenite $Ca_{12}Al_{14}O_{32}(H_2O)_4[Cl_2]$, wadalite $Ca_{12}Al_{10}Si_4O_{32}[Cl_6]$ and eltyubyuite $Ca_{12}Fe_{10}Si_4O_{32}Cl_6$. Before discovery of mayenite in nature, it was known as a commonly occurring phase in Portland cements. The feature that makes this group so unique is its crystalline structure, which transfer into a quite unique chemical and physical properties. Due to the possession by mayenite a mobility of oxygen atoms, which is related with ionic conductivity, and catalytic properties, many researches in the world conducts research about usefull mayenite group as transparent conductors, which are used in solar cells and electronics, and as materials for ecological cements and in connection with the immobilization of chlorine in their structure.

Synthetic analog of rondorfite $Ca_8Mg[SiO_4]_2CI_2$ was described in 1985 by Ye & Wang, but in the nature, mineral rondorfite was described scarcely in 2004 in xsenolith from the Bellenberg volcano. Rondorfite occurs in association with the minerals from mayenite supergroup and ellestadite. Later rondorfite was found in xenoliths from the nearness of the mountain Lakargi (Russia) and in xenoliths from South Ossetia. Due to the presence in the crystal structure of rondorfite disorder position, it is considered as a potentially new phosphor material.

Another mineral included in the project - rusinovite $Ca_{10}(Si_2O_7)_3Cl_2$ - also was earlier known as a synthetic phase, whereas in natural conditions it had been established in 2011 in the calcium-silicate xenolith from the Upper Chegem caldera (Caucasus, Russia). A synthetic equivalent of this mineral is used as matrix for luminescent materials, because, as in the rondorfite case, its crystal structure also exhibit some degree of disorder.

Two potentially new minerals "chlorellestadite" $Ca_5(SiO_4)_{1.5}(SO_4)_{1.5}Cl$ - chlorine member of ellestadite group and "albovite" $Ca_3SiO_4Cl_2$, also are known as synthetic phase. The preliminary results confirm the high chlorine content in ellestadites from xenoliths from Ossetia. Synthetic analogs of ellestadites are tested for their use in the immobilization of sulfur. They are also studied by the cement industry. Both "chlorellestadite" and "albovite" can be considered as a cement material used for the immobilization of chlorine.

Considering fact, that number of discovered mineral is a quantitative indicator of success of mineralogical science in the country, this project can be regarded as extremely important from the point of view of polish mineralogy. Finding of the new mineral is an important and prestigious discovery in the field of natural sciences, which contributes not only to the development of mineralogy, crystallography, and geology, but also in other sciences such as chemistry, physics and materials science. Data compiled by the study of new minerals and their structures are eligible and they get to numerous databases - from mineralogical and structural to the technological bases. Each subsequent discovery of another mineral, which doesn't have its synthetic analogue, gives us the foundation to create innovative, better technologcal materials, which is relevant for modern industry. Synthetic analogues of minerals contained in this project are already widely used in the construction industry, but more importantly, these are tested for further use - along with the development of research methods and the discovery of properties of crystalline structures, giving the possibility of ion exchange - these phases have more and more numerous applications in electronics and environmental protection, replacing less efficient, often ecological materials with a better alternatives. Thus, the discovery in the field of chlorine-bearing minerals can contribute to the creation of functional eco - cements which will be able to immobilize chlorine pollutants from industry and municipal waste.