

Experimental determination of the behaviour of REE during hydrothermal alteration

The public is becoming increasingly aware of the central role of the rare earth elements (REE) in so many aspects of our daily life. They are also aware of the Chinese dominance of the REE market and the need to find new and stable resources. An important aspect of the search for such resources is an understanding of how the REE are concentrated into workable deposits. Perhaps the most important mechanism is enrichment by hydrothermal fluids – certainly the largest known deposits are of that kind.

Little is known about the mechanisms of how REE are partitioned between original host rocks and fluids. Empirical observations of natural sequences can provide guidelines but these do not provide quantitative models which can be used in a general sense. This project aims to provide data on the alteration of REE-bearing minerals generated under rigorously controlled conditions which will have fundamental physico-chemical meaning.

The project will involve the use of state of the art analytical equipment which will place Polish Earth sciences highly in a European context. It will also form strong bridge to a leading German research institute, acknowledging that front-line research is now an international undertaking.