

Earth Sciences Seminar  
Tuesday 26th March, 16:00pm  
Earth Sciences Seminar Room

Studying new minerals: the nature and value of novelty

by Dr Mark Welch (DoES)

For many years a significant component of the research undertaken by the Department of Earth Sciences has been the identification and characterisation of minerals new to science. Such characterisation involves a comprehensive determination of atomic-scale structure, composition and diagnostic physical properties. Apart from their novelty, new minerals offer the chance to develop models of structural hierarchies in which major building principles are uncovered by relating these minerals to others. Time and again new minerals provide insights into perplexing mineralogical problems that often bear upon wider geological or technological issues, such as the possibilities for effective storage or immobilisation of toxic elements, transformations between environmentally radical and benign minerals, new directions for preparing new synthetic analogues of technological materials such as nanoporous and microporous catalysts and molecular sieves.

In this talk an outline of the new-mineral research currently undertaken by the DoES will be given, describing the experimental techniques involved in characterising new minerals. A few examples illustrating how the study of new minerals has provided fertile ground for wider scientific research will be described.