



## GWL Cluster Meeting

20th July 2017

### **Digital Mineralogical Mapping of Rocks**

What is the value in mapping the world one micron at a time?

This presentation will take place in the Royal Cambrian Academy, Crown Lane, Conwy, LL32 8AN (located behind Plas Mawr) at 6:30pm. Refreshments from 6:00pm.

#### Speaker & Company Overview:

Alan R Butcher is a geologist with over 37 years' of experience in making maps of rocks at all kinds of scales. He started off his career in the 80's as a field geologist, first in the Scottish Hebrides where he re-mapped part of the Rum layered ultramafic complex, and then in South Africa where he investigated the extraordinary igneous features preserved in the Bushveld Complex. When he moved to Australia in the late 90's, he began mapping minerals and textures at progressively smaller scales, using a variety of techniques, and helped develop novel approaches to mapping ores and reservoir rocks at the micron and sub-micron scale with scanning electron, x-ray and ion beam technologies.

Alan is currently researching innovative ways to further image and analyse minerals, rocks and man-made materials in 2D, 3D and 4D, and he is doing this in his role as Professor of Geomaterials & Applied Mineralogy at the Geological Survey of Finland (GTK) – Europe's premier research organization in the assessment and sustainable use of Earth Resources (<http://en.gtk.fi/>).

Abstract on page 2, below



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We are currently celebrating the 40<sup>th</sup> anniversary of the advent of mineral analysis by automated scanning electron microscopy, a technique that can map a rock's surface, either polished or cut, and provide not only mineral data but textural information too at the micron-scale. This allows geoscientists to display what the rock is made of, how the minerals relate to one another spatially, and often leads to an improved understanding of a rock's life history. The technique has found applications in many different areas of geology, especially those where the earth materials concerned are commercially important. This talk will run through how the technique began life, where it sits today in the ever-increasing geo-analytical landscape, and where it might go in the future.

