

Merging Orbis Elemental Map Images

The elemental map merging tool available in the Spectral Utilities program, located in C:\edax32\UTL, is useful for merging maps acquired from adjacent regions of the sample. This is typically done by using a camera video field to define the region on the sample to be mapped. Then adjacent video fields, for example, a column or row of video fields or quadrants of a rectangular area, are mapped. This gives a sample video image using the full resolution of the sample video camera while having more flexibility in defining mapping areas.

The map merging utility also has the capability to increase the contrast of the maps while merging them. This process benefits weak intensity maps by improving the contrast of the maps. However, high intensity maps can be saturated, washing out the features of the sample. Therefore, it may be beneficial to merge the maps under a variety of contrast conditions and select the maps with best contrast.

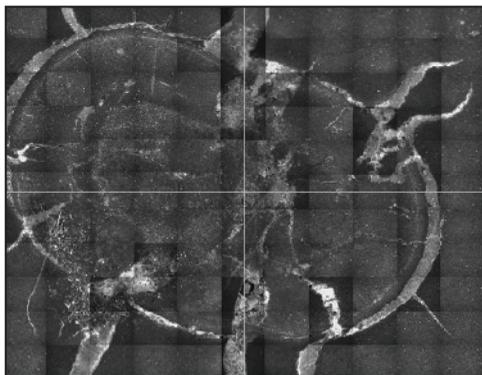


Figure 1. Sample video comprised of 4 high magnification montage images merged together. The individual video montages were collected as quadrants of a rectangle showing an inclusion in a geological sample. The overall, merged field of view is about 25 mm across.

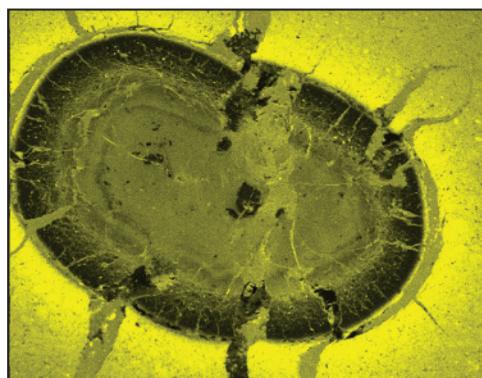


Figure 2. Mn(K) merged elemental map showing the inclusion is Mn poor.

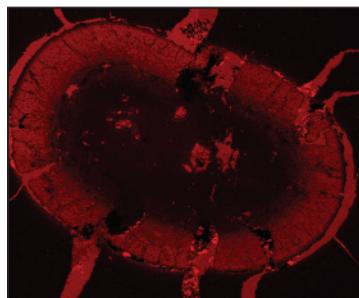


Figure 3a.

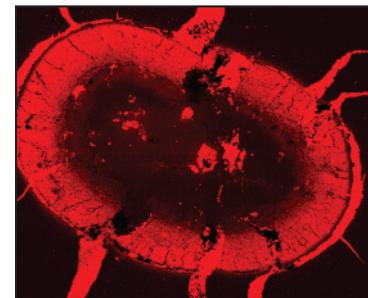


Figure 3b.

Ca(K) merged elemental maps under low contrast (a) and high contrast (b) conditions. The CaK map merged with higher contrast has improved visibility of various sample features.

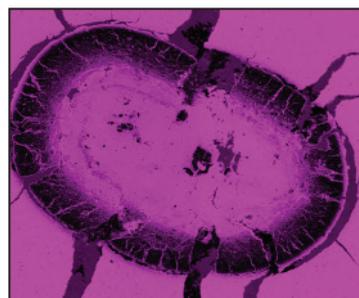


Figure 4a.

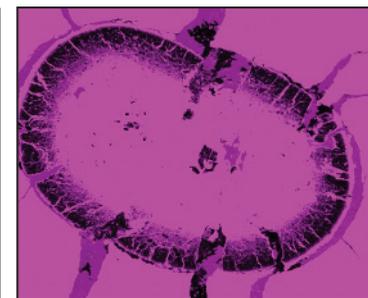


Figure 4b.

Fe(K) merged elemental maps under low contrast (a) and high contrast (b) conditions. The FeK map merged with low contrast has improved visibility by reducing saturation.

The EDAX Orbis Micro-XRF Elemental Analyzer combines multiple spot sizes and a coaxial video/X-ray design to provide users with a flexible, easy to use tool capable of non-destructive inorganic elemental analysis from powders and fragments to topographical samples.

