PARTICLE SIZE ANALYSIS OF A CERAMIC MATERIAL

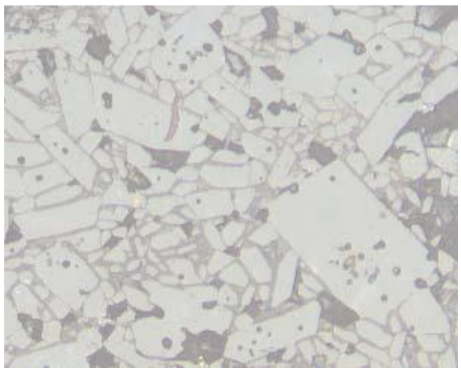


Figure 1: *Part of the original image.*

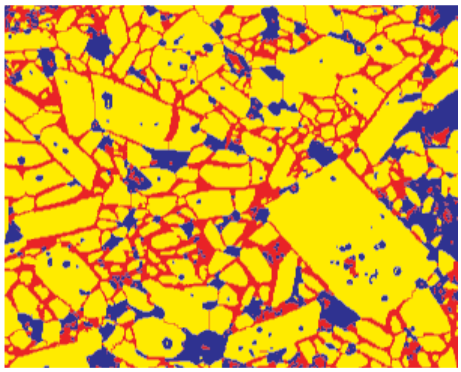


Figure 2: *Measured particles are shown in yellow, pores in blue and base material in red.*

Sample Description

Ceramic sample is submitted for analysis.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analysis system with particle size analysis module can detect the particles, pores and perform size measurements on them.

Procedure

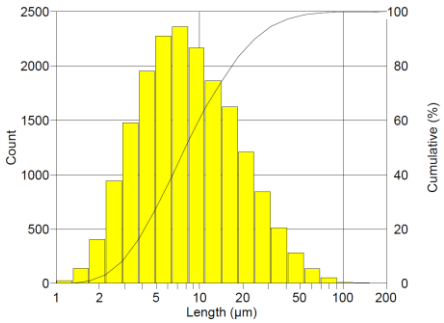
All particles were binarized into magenta bitplane and particles that were not connected were isolated into yellow bitplane. A separation tool was applied on connected particles and the disconnected ones were put with the other ones into the yellow bitplane and so on. Most pores were binarized in blue and remaining small ones were highlighted using a special tool and binarized as well. Base material was deduced from the two others and binarized into red bitplane.

Equipment

Image Analysis System:	Clemex Vision CORE
Microscope:	Leica DM LM
Camera:	Clemex L 1.3C
Calibration	0.4098 microns/pixel
Magnification:	200X
Motorized Stage:	Marzhauser EK32IM 75X50 mm

Results

Area, perimeter, length, width, ferret average, aspect ratio measurement Automated statistics and graph are generated and cumulated during the analysis of the sample. Final results can be printed directly from Clemex Vision Core. Raw data can be exported in Excel format.



Minimum:	1.281 µm
Maximum:	169.775 µm
Mean:	11.518 µm
Std Dev:	11.001 µm
Particles Count:	18305
Field Count:	12
D10	3.130 µm
D50	7.917 µm
D90:	24.114 µm

Figure 3: *The length distribution of particles and corresponding statistics.*