

Grain Size Analysis Image Analysis Report 417

Sample Description

Five stainless steel samples were submitted for analysis.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analyzer to discriminate, separate and measure grains.

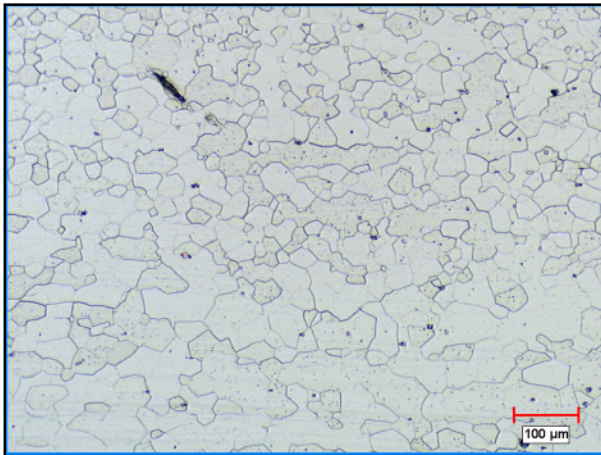


Figure 1: Original image at 100x.

Procedure

A Top Hat instruction was applied to isolate grain boundaries. The grain network was binarized using Gray Threshold. The binary plane was cleaned from artifacts and inverted. Objects were separated based on their convexity to reconstruct grains.

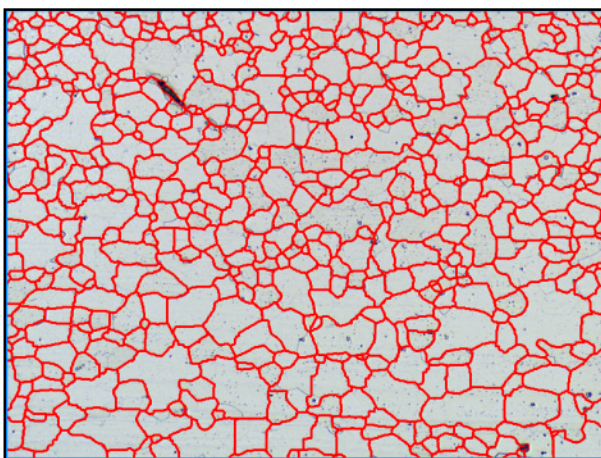


Figure 2: Outline view of grains binarized in red prior to measurement.

Results Summary

ASTM E112 grain size measurements were performed. Results were cumulated for automated statistics and graph generation. Final results can be printed directly from Clemex Vision. Raw data are linked to their respective objects and can be exported in Excel format.

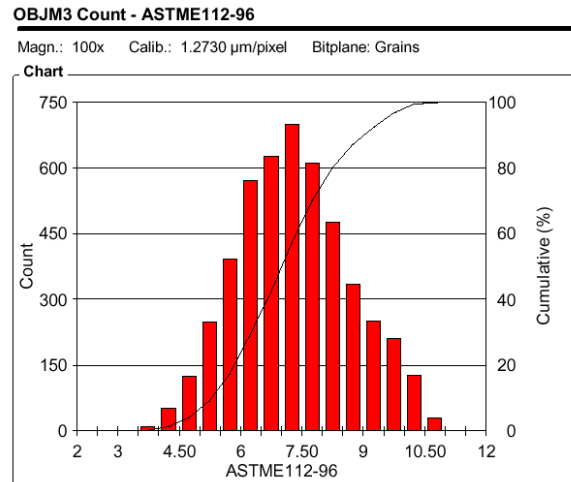


Figure 3: ASTM E112 grain size distribution.

No difficulties were encountered in analyzing grains without twins. Twinned grains were analyzed using a semi-automatic process based on the Heyn method.

Equipment

Image Analysis

System:	Clemex Vision PE
Camera:	Sony DXC-950P
Microscope:	Nikon Optiphot - 2
Stage:	Motorized Marzhauser 40x40 mm
Stage Controller:	Clemex ST-2000