

ASTM E1268 BANDING ANALYSIS

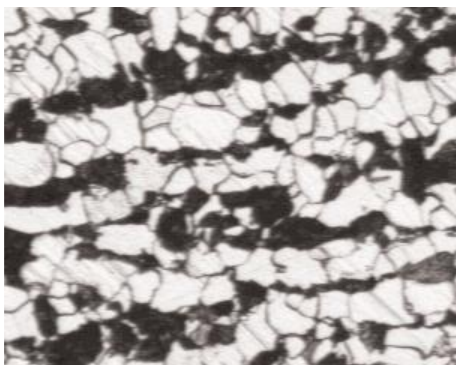


Figure 1: An enlarged section of the original image.

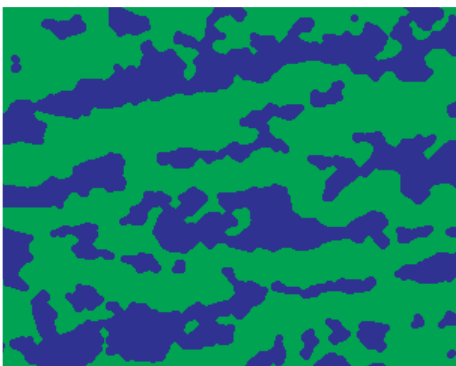


Figure 2: Outline of pearlite as measured in blue bitplane.

Sample Description

One steel sample showing banding dual phase structure is submitted for analysis.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analysis system and banding analysis module can distinguish and measure both phases and evaluate their banding according to ASTM E1268 standard.

Procedure

The phase to evaluate (dark) is binarized in blue using Gray Thresholding. Adjustable binary manipulations are made to join connect neighboring objects.

Artifacts are eliminated prior to measurements.

Equipment

Image Analysis System:	Clemex Vision CORE
Microscope:	Leica DM LM
Camera:	Sony DXC 950P
Magnification:	200X
Stage:	Marzhauser EK321M

Results

Area percentage is performed on both phases. Whereas, other measurements are performed on the phase of interest (Blue bitplane). Automated statistics and graph are generated and cumulated during the analysis of the sample. Final results can be printed directly from Clemex Vision. Raw data can be exported in Excel format.

Results of the measurements included in the analysis:

Area % of Evaluated Phase (Blue):	35.41%
Area % of Second Phase (Green):	64.59%
Anisotropy:	0.74
NLparallel:	0.0219 (1/μm)
NLperpendicular:	0.0295 (1/μm)
PLparallel:	0.0438 (1/μm)
PLperpendicular:	0.0590 (1/μm)
Anisotropy Index:	1.35
Degree of Orientation:	0.18
Mean Spacing:	33.9134 (μm)
Mean Free Path Perpend:	21.90 (μm)

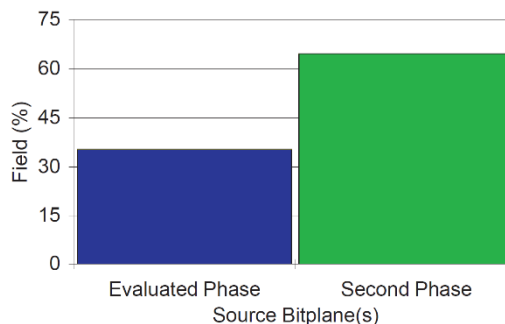


Figure 3: Area percentage of both phases.