GRAIN SIZE ANALYSIS IN STEEL

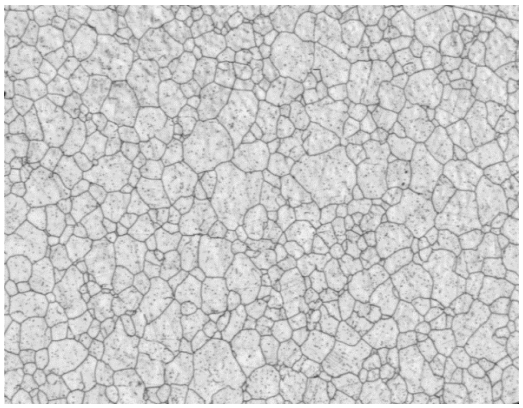

Figure 1: *Original image before Gray Thresholding.*

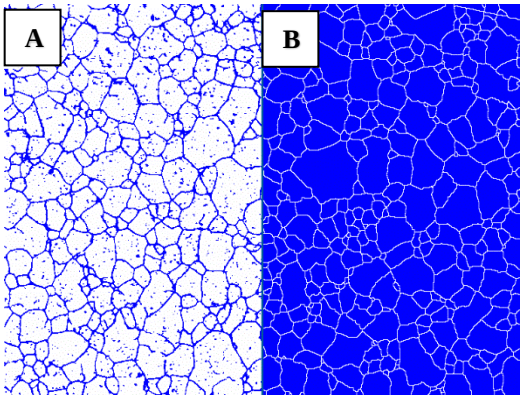

Figure 2: *(a) Binarization of the original image into the blue bitplane using Gray Thresholding; (b) Artifacts were removed and the network was inverted to obtain the grains. Touching grains were separated using Convex Hull, Separate and Zone binary transformations.*

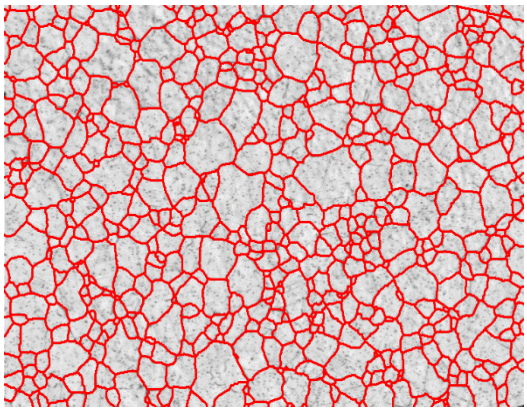

Figure 3: *Outline grain network overlaid against the original image.*

Sample Description

Sample of steel etched to reveal grain boundaries.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analyzer to discriminate all grains in the field of view and to produce a standard ASTM E112 rating.

Equipment

Image Analysis System:	Clemex Vision PE
Microscope:	Nikon Epiphot 200
Camera:	Sony XC-77 CE
Magnification:	100X

Results

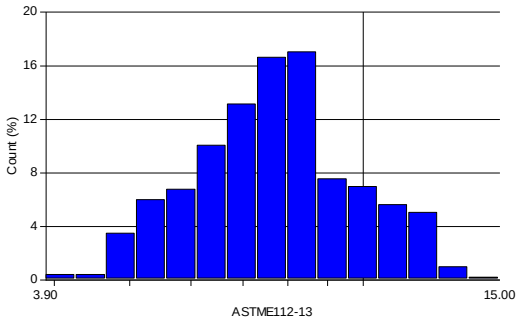

Figure 4: *Results window showing the ASTM E 112 distribution.*

	ASTM E 112
Minimum:	3.86
Maximum:	14.66
Rating:	6.96