GRAIN SIZE CHARACTERIZATION IN ALUMINUM ALLOYS

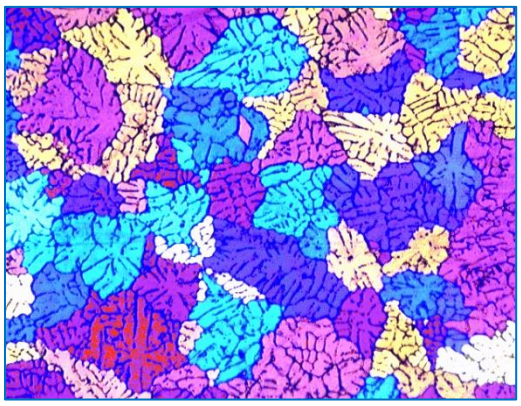

Figure 1: *Original image.*

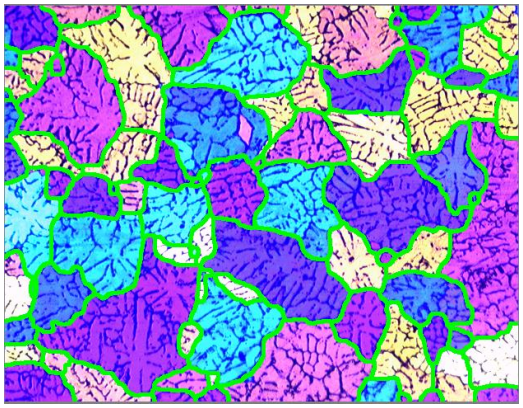

Figure 2: *Grains and boundaries detection*

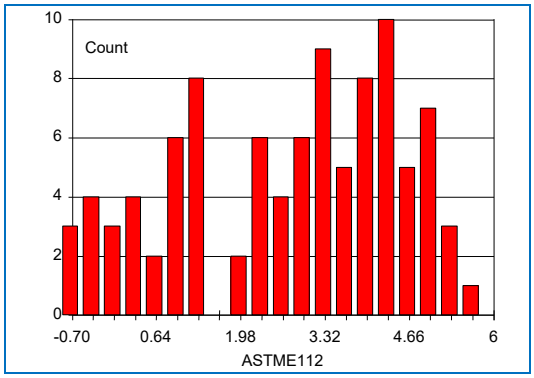

Figure 3: *Grain size distribution.*

Sample Description

One sample of anodized aluminum observed with polarized light.

Purpose of Analysis

Demonstrate the ability of the **Clemex Vision image analysis system** to discriminate all grains in the field of view, and perform grain size measurement.

Procedure

Color filters are used to eliminate the internal dark divisions of grains. A Color Gradient is applied to highlight grain boundaries prior to binarize them in red using Watershed instruction. The boundaries are inverted and spread to their full size using zone binary tool. Measurements are performed on solid grains.

Equipment

Image Analysis System:	Clemex Vision /Grain size module
Microscope:	Nikon Epiphot 200
Camera:	Sony RS170 RGB High (624X480) Color
Magnification:	50X
Stage:	Marzhauser EK8B-S1

Results

	Grain Size
Minimum	-0.68
Maximum	5.67
Rating	2.39