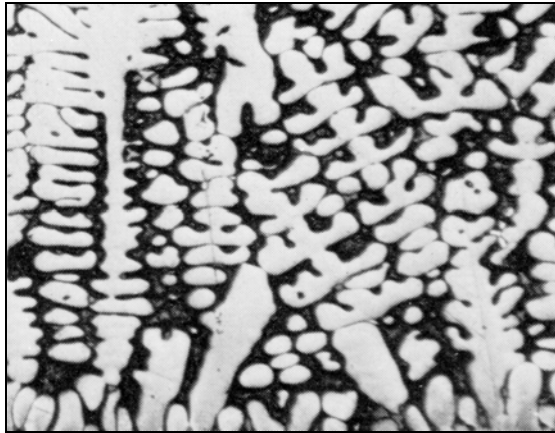




CLEMEX
Image Analysis Report

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Dendritic Arm Spacing in Copper Lead Alloy

Description of Sample

One image of dendritic copper lead alloy at 100X, in tiff format.

Purpose of Analysis

Measure the average dendritic arm spacing.

Apparatus

Image Analysis System: Clemex Vision 2.0 software

Procedures

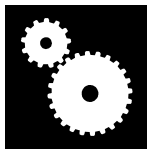


Figure 1 shows the original image with the matrix of lead (dark phase) binarized in blue. A *Pause Line* instruction was then executed allowing the user to draw a straight line through the spaces to be measured. Those lines are shown in red in Figure 2. A *Boolean* instruction was applied to keep only the part of the lines that crosses the lead matrix (blue). The resulting red lines were measured as shown in figure 3. Figure 4 shows the distribution of the length measurement on those red lines.

The most significant image modifications and final results are as follows:

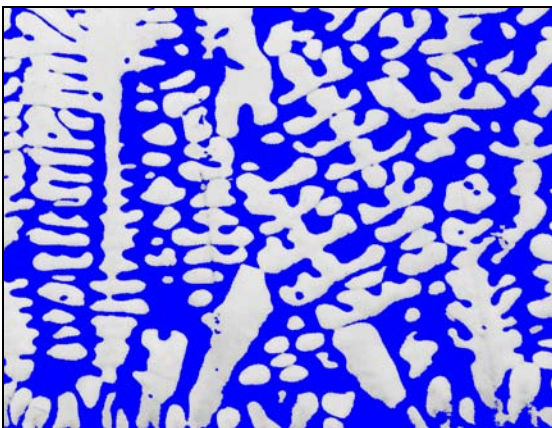


Figure 1: Binarization by *Thresholding* of the lead matrix in blue.

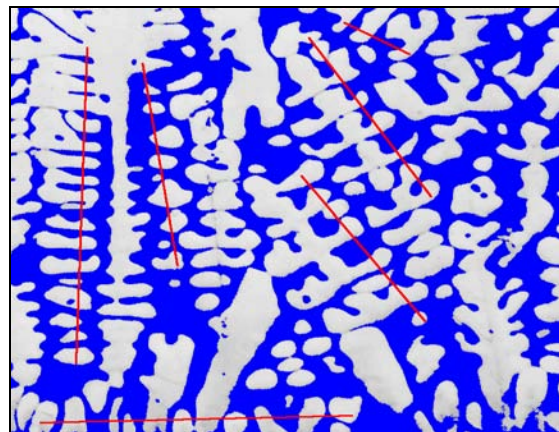


Figure 2: The user draws some straight lines through spaces to be measured.

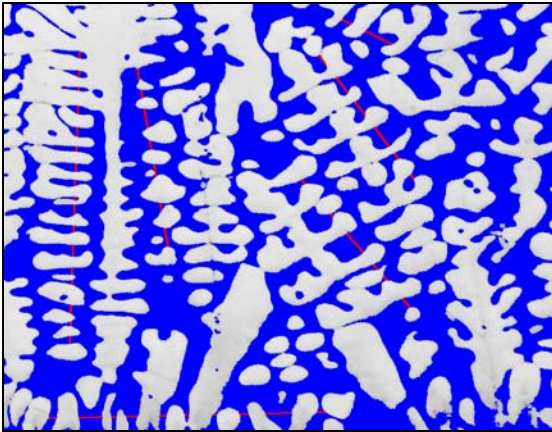


Figure 3: A *Boolean* instruction is applied to keep only the part of the lines that crosses the lead matrix (blue).

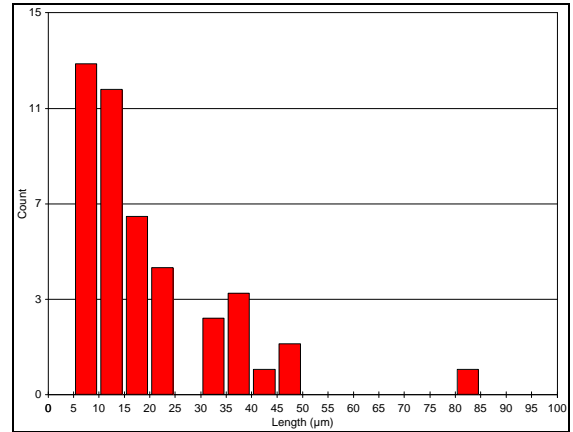


Figure 4: Distribution of the length measurement of the resulting lines.

Result Summary

	<i>Length</i> <i>(µm)</i>
<i>Minimum</i>	5.7
<i>Maximum</i>	80.8
<i>Average</i>	19.8
<i>Standard Deviation</i>	14.5

Discussion



The image analysis system can perform the requested measurements. On a real sample, several fields would be analyzed giving more representative results.

The *Data Browser* window gives the length of each object and allows to identify a specific object anywhere on the sample. Those results can be exported to Microsoft Excel format. Excel offers many valuable statistical tools and substantial graphical versatility.