

Particle Analysis in Paper Filter Image Analysis Report 252

Sample Description

A 25 mm diameter paper filter mounted between two glass slides.

Purpose of Analysis

To analyze the largest possible area on the filter paper in order to count and measure the size of all particles over 20 microns and to highlight separately all particles over 100 microns.

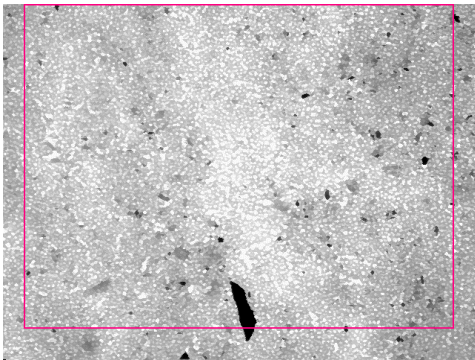


Figure 1: Original image (100X).

Procedure

Particles in the original image are detected in blue using *Gray Thresholding*. Particles under 20 microns are transferred into the red bitplane and those over 100 microns are transferred into the green bitplane.

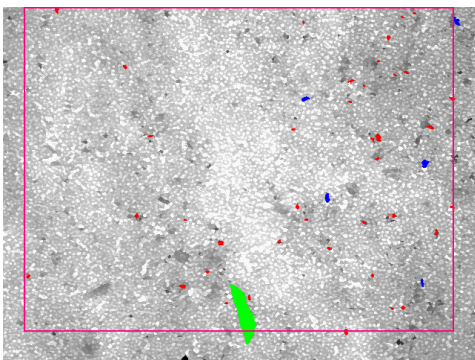


Figure 2: Automatic separation of particles:

- **Blue** 20~100 mic
- **Red** < 20 mic
- **Green** > 100 mic

Procedure (Continued)

Size measurements are carried out on the green (oversized) and blue (accepted) particles and presented as statistics and in raw data format.

Once the automatic analysis is completed, the operator can review any the particles with their respective related data, by simply clicking the results from the data spreadsheet. The motorized stage will return to the selected field and highlight the corresponding particle on the screen.

Results Summary

| | Length (microns) |
|---------------------------|-------------------------|
| Minimum | 20.1 |
| Maximum | 153.9 |
| Average | 28.4 |
| Standard Deviation | 10.9 |

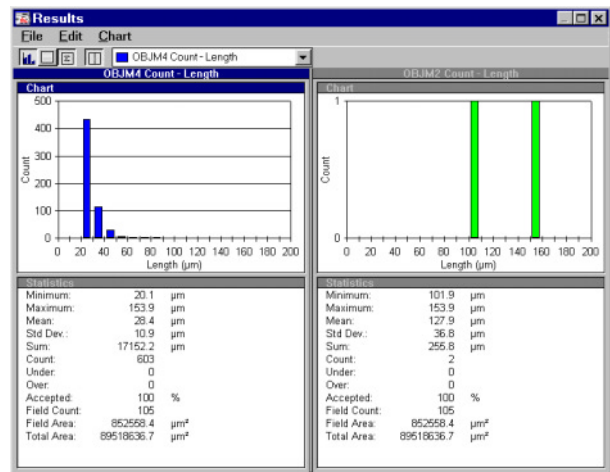


Figure 3: Count and size distribution of accepted (blue) and oversized (green) particles.

Equipment

Image Analysis

System: Clemex Vision SE
Camera: Sony XC 77CE, B/W
Microscope: Nikon Optiphot-2 (1.5, 5.0, 10, 20, 40X) with reflected light
Stage: Motorized marzhauser ek8b-s1 (100 x 100 mm) with auto focus drive