CLEMEX

Particle Sizing and Distribution Analysis

Image Analysis Report **446**

Sample Description

Pharmaceutical agent suspended in mineral oil.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analyzer to evaluate size and shape of several particles within an image field, and to separate agglomerated particles prior to object measurement.

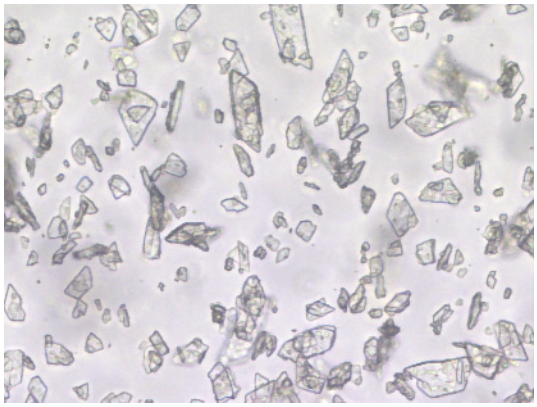

Figure 1: *Original gray image.*

Procedure

A pause was entered in the automatic routine to manually draw in purple overlapping particles (bitplane 7)

A first image processing of Top Hat on Black was applied to the image to increase contrast of the particle edges.

Green color (bitplane 3) was assigned to each particle using gray threshold.

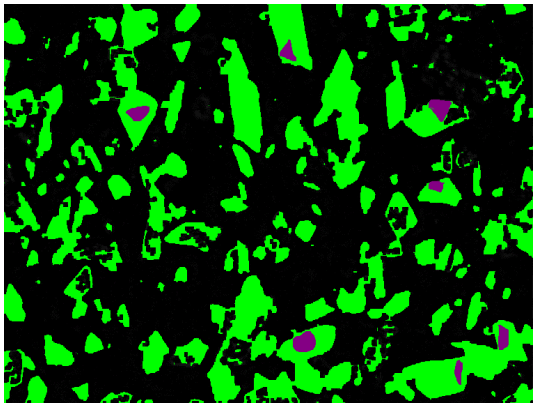

Figure 2*: Gray threshold in green bitplane following a top-hat binary operation on the original image.*

The binary operation *separate* was applied to clustered particles, in order to separate touching boundaries (see

Procedure (continued)

Area, length, and width measurements were performed on the green bitplane.

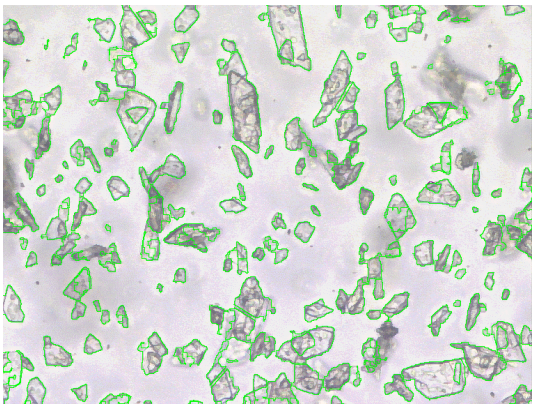

Figure 3: *Outline of detected particles overlaid against the original image.*

Results Summary

	Width um
Minimum	0.8
Maximum	16.3
Mean	5.63
Std Deviation	3.23

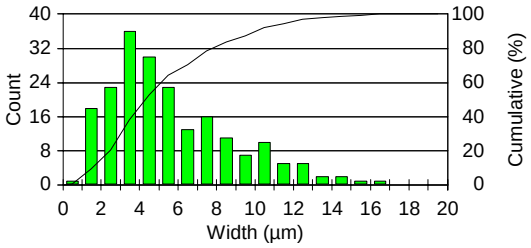

Figure 4: *Graph showing width distribution.*

Equipment

Image Analysis System:	Clemex Vision PE
Camera:	Sony DXC-390P
Microscope:	Nikon Optiphot 100
Objective:	Nikon 50x (Mag.: 500x)