

Fabric Analysis Image Analysis Report 407

Sample Description

Six samples of material from shirts and trousers of different colors and textures were submitted for analysis.

Purpose of Analysis

Demonstrate the ability of the Clemex Vision image analyzer to measure the thickness of material fibers.

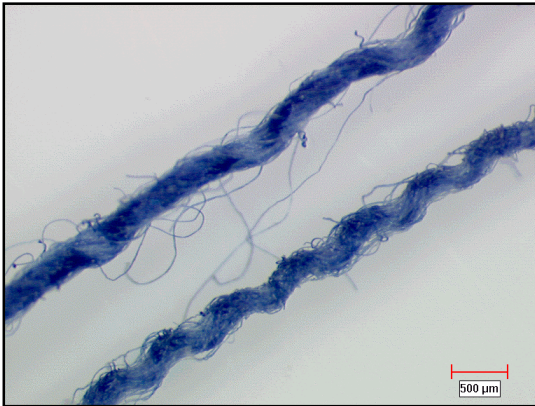


Figure 1: Original image showing fibers from sample #1(Dark blue trousers) at 20x. Calibration factor: 6.45 $\mu\text{m}/\text{pixel}$.

Procedure

The image was grabbed and Thresholded without any processing. The fibers were binarized using Color Threshold. A few binary operations were applied to eliminate thin fibers spreading out from the main fiber. Measurements were performed including average thickness, roughness and hue (color).

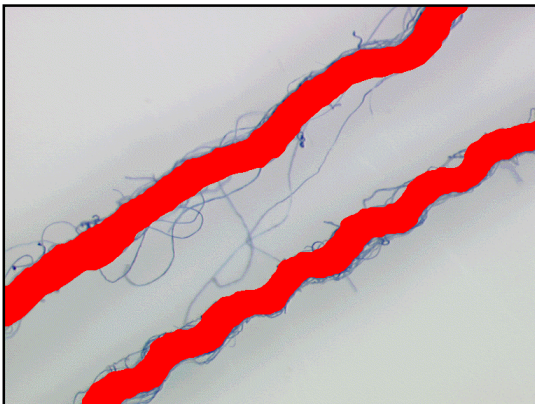


Figure 2: Fibers binarized in red (as measured).

Procedure (continued)

For the sample #1, 30 fibers were measured through 13 fields of view. Results were cumulated from field to field for automated statistics and graph generation. Final results can be printed directly from Clemex Vision. Raw data are linked to their respective object and can be exported in Excel format

There were no major difficulties in analyzing the material fibers. "Roughness" is used here to quantify the distinction between straight fibers and curvy ones (both present in each fabric). However, shirt (camisa) fibers were stretched before performing the analysis since they were very curly.

Results Summary

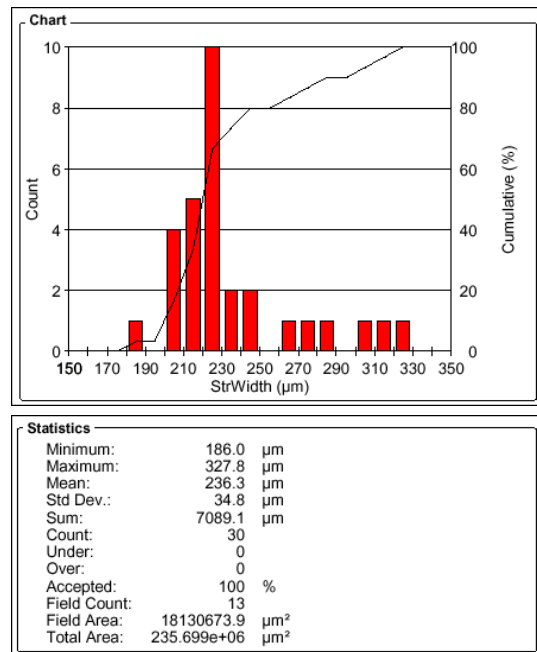


Figure 3: Cumulative graph and statistics showing average fiber thickness.

Equipment

Image Analysis

System: Clemex Vision PE
Camera: Sony DXC-950P (760 x 572)
Binocular: Nikon SMZ800
Objectives: Plan 1x, 10x eye pieces
Resolution: Zoomed 2x: Mag.: 20x (6.45 mic/pixel)