

Image Analysis Report # 761

for
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Samples submitted

Two samples, one coating material held in custom holder, one sheet of filter paper 10 x 10 cm.

General analysis request

- 1) Measure Coating Thickness of three material sandwich in packaging material
- 2) Measure Pore Size on paper filter

Equipment used

- 1) Leica Microscope DM 2500 , 2.5X, 5.0X, 10X, 20X and 50X objectives, Xmit light only
- 2) Clemex Vision PE software version 5.0
- 3) 2.1 Mp Color CCD camera
- 4) 100x100 mm Motorized stage and Clemex ST-2000 Stage controller

Procedure, sample 1 for Coating Thickness

- 1) Sample was placed under microscope lens at 200X (20X objective) and illuminated by its bottom
- 2) Advanced MultiLayer function was used to stitch 20 images at every 0.5 mic Z position in order to create a perfectly focused image prior to measurements
- 3) 3 layers were detected and 51 measurements were made across the image.

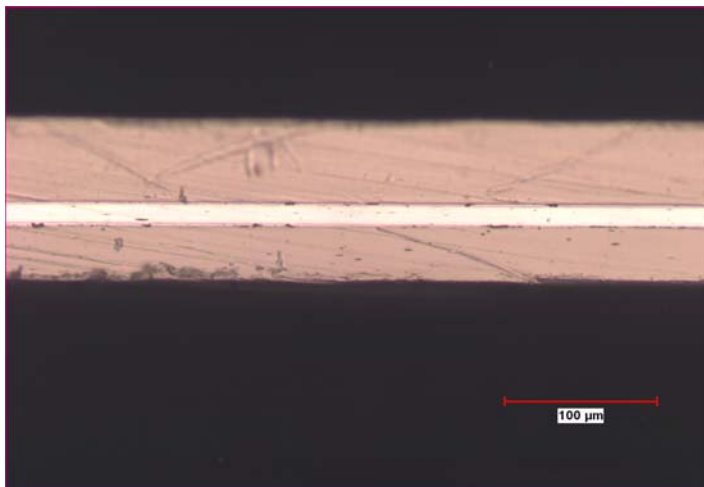


Fig 1: Original image 200X

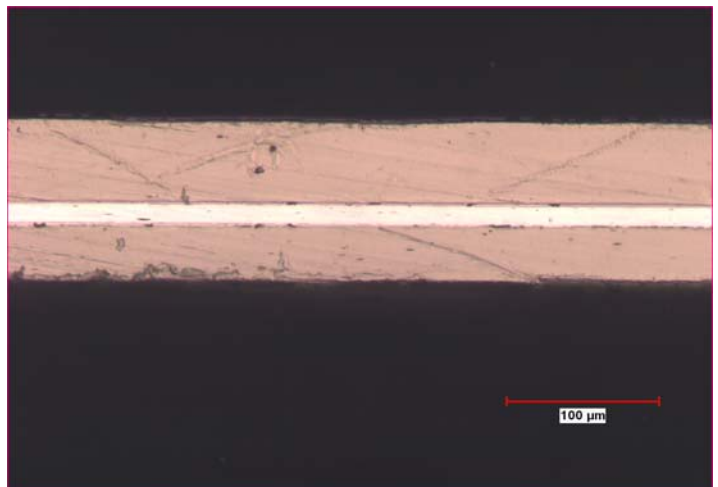


Fig 2: Multi Layered image 200X (20 layers)

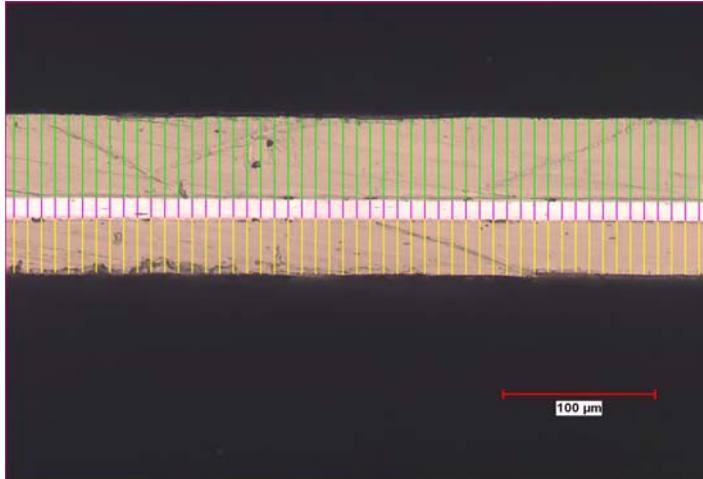


Fig 3: 3 Layers detected and measured

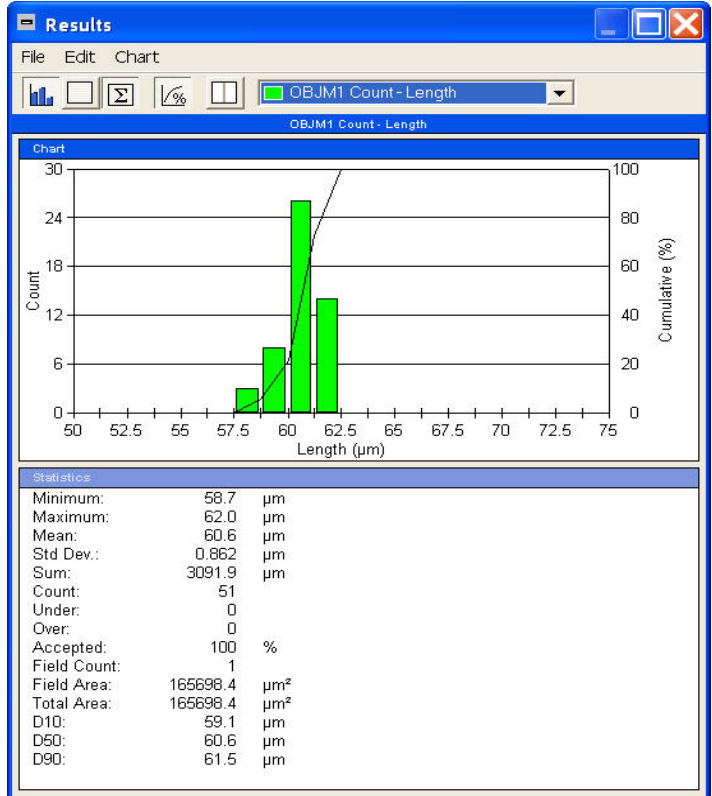


Fig 4: Top Layer, Average = 60.6 microns

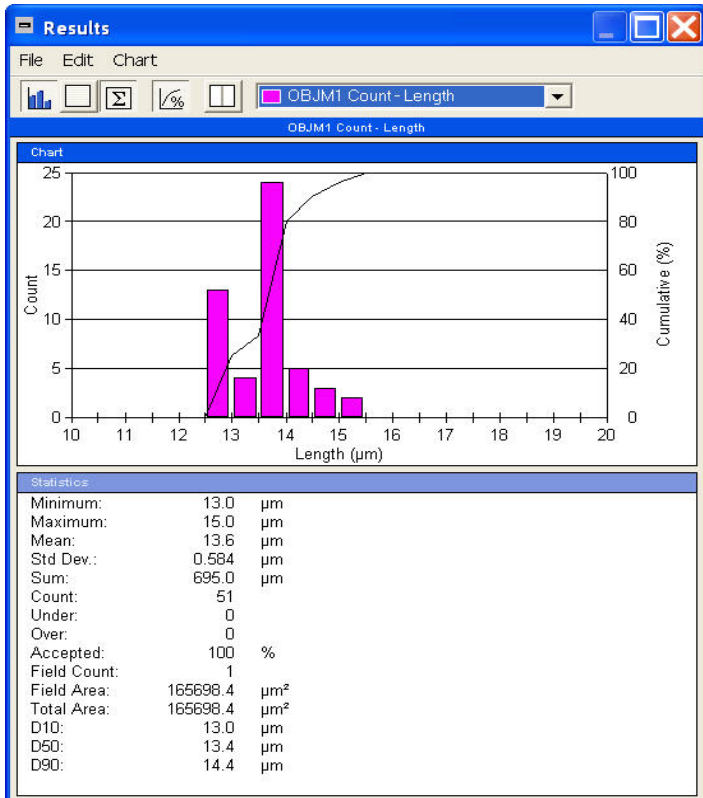


Fig 5: Middle Layer, Average = 13.6 microns

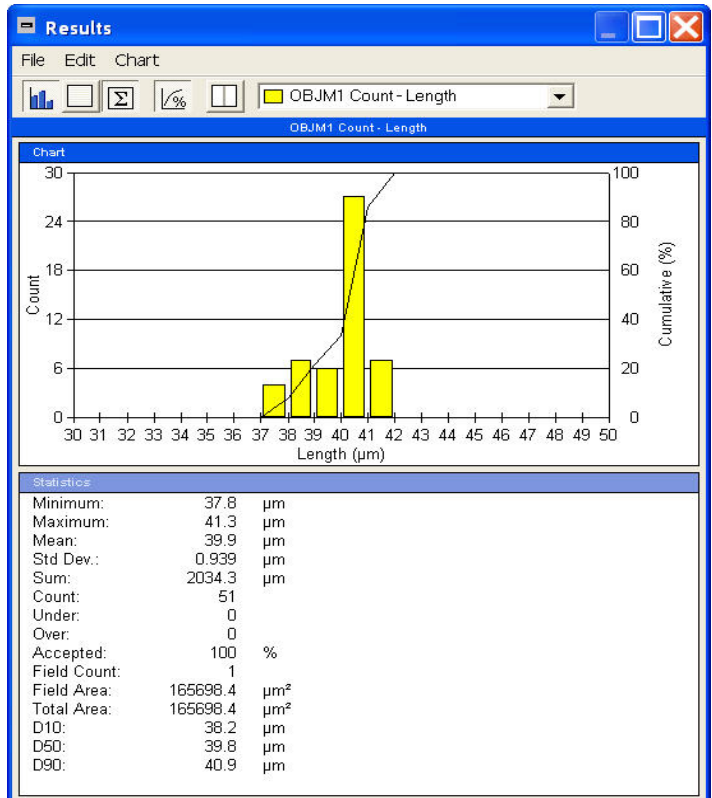


Fig 6: Bottom Layer, Average = 39.9 microns

Conclusion, Sample 1, Coating Measurement:

Top Layer is dead on. Two other Layers measure slightly less than predicted by user.