



2021 Virtual CCMPP Workshop

November 8, 2021

Clemex PSFilter 2 presentation

About Clemex



Founded 30 years ago

Creators of Vision PE image analysis software

Integrators of automated microscopy solutions

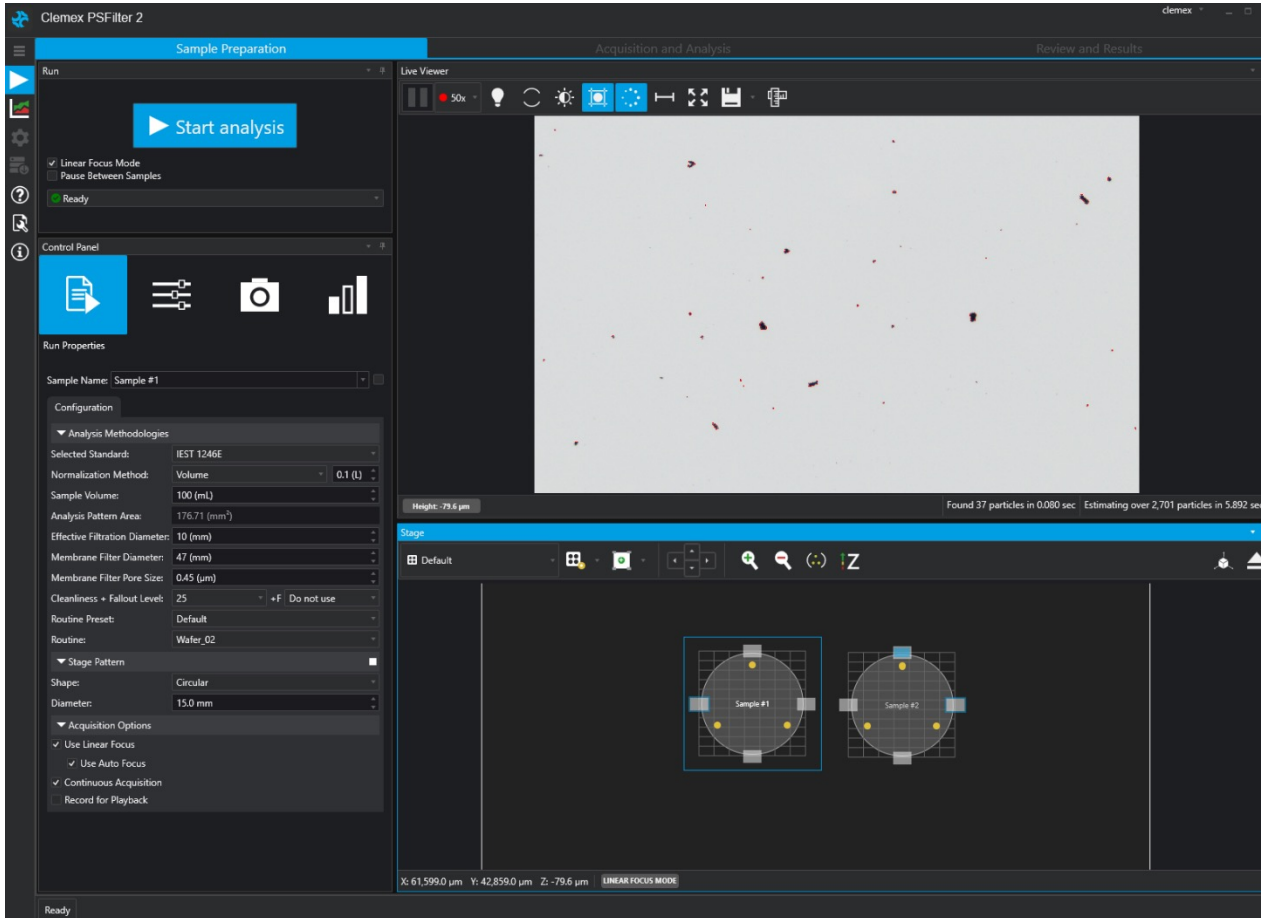
Specialists in image quantification

Product cleanliness and determination IEST-STD-CC1246E

Challenges :

- Simplified interface
- Consistency of the measurements
- Speed and efficiency of the analysis process
- Multiple samples to reduce handling time
- Accessibility to the results for the test review

PSFilter 2 setup



The screenshot displays the Clemex PSFilter 2 software interface, divided into three main sections: Sample Preparation, Acquisition and Analysis, and Review and Results.

Sample Preparation (Left Panel):

- Run:** A large blue button labeled "Start analysis".
- Configuration:**
 - Linear Focus Mode: (Pause Between Samples)
 - Ready: Ready
- Control Panel:** Includes icons for a document, a flowchart, a camera, and a bar chart.
- Run Properties:**
 - Sample Name: Sample #1
 - Configuration:**
 - Analysis Methodologies:
 - Selected Standards: IEST 1246E
 - Normalization Method: Volume (0.1 (L))
 - Sample Volume: 100 (mL)
 - Analysis Pattern Area: 176.71 (mm²)
 - Effective Filtration Diameter: 10 (mm)
 - Membrane Filter Diameter: 47 (mm)
 - Membrane Filter Pore Size: 0.45 (µm)
 - Cleanliness + Fallout Level: 25 (+F: Do not use)
 - Routine Preset: Default
 - Routines: Water_02
 - Stage Pattern:
 - Shape: Circular
 - Diameter: 15.0 mm
 - Acquisition Options:
 - Use Linear Focus
 - Use Auto Focus
 - Continuous Acquisition
 - Record for Playback

Acquisition and Analysis (Center Panel):

- Live Viewer:** A large window showing a grayscale image of a sample with several small, dark, irregular particles. The image is framed by a blue border. Below the image, it displays "Height: 79.6 µm" and "Found 37 particles in 0.080 sec - Estimating over 2,701 particles in 5.892 secs".
- Stage:** A diagram showing two circular sample stages, labeled "Sample #1" and "Sample #2", positioned on a grid. The "Sample #1" stage is highlighted with a blue border.

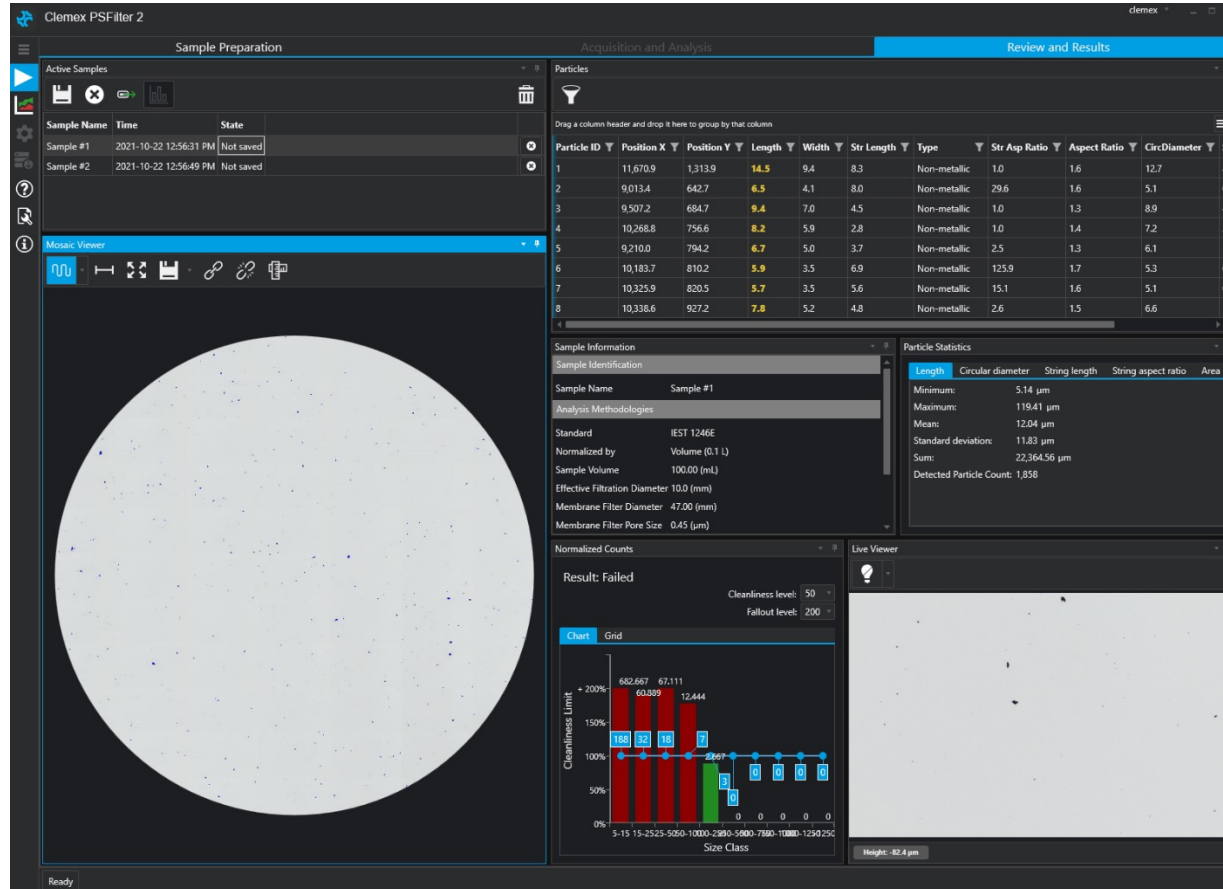
Review and Results (Right Panel):

- Currently empty, showing a dark background.

Bottom Status Bar:

X: 61,599.0 µm Y: 42,859.0 µm Z: -79.6 µm LINEAR FOCUS MODE

PSFilter 2 Page result



The screenshot displays the CLEMEX PSFilter 2 software interface, divided into three main sections: Sample Preparation, Acquisition and Analysis, and Review and Results.

Sample Preparation: Shows two active samples. Sample #1 was acquired on 2021-10-22 at 12:56:31 PM, and Sample #2 on 2021-10-22 at 12:56:49 PM. Both are marked as 'Not saved'. A 'Monitor Viewer' is active, showing a circular field of view with a particle distribution.

Acquisition and Analysis: Displays a table of detected particles with the following data:

Particle ID	Position X	Position Y	Length	Width	Str Length	Type	Str Asp Ratio	Aspect Ratio	CircDiameter
1	11,670.9	1,313.9	14.5	9.4	8.3	Non-metallic	1.0	1.6	12.7
2	9,013.4	642.7	6.5	4.1	8.0	Non-metallic	29.6	1.6	5.1
3	9,507.2	684.7	9.4	7.0	4.5	Non-metallic	1.0	1.3	8.9
4	10,268.8	756.6	8.2	5.9	2.8	Non-metallic	1.0	1.4	7.2
5	9,210.0	794.2	6.7	5.0	3.7	Non-metallic	2.5	1.3	6.1
6	10,183.7	810.2	5.9	3.5	6.9	Non-metallic	125.9	1.7	5.3
7	10,325.9	820.5	5.7	3.5	5.6	Non-metallic	15.1	1.6	5.1
8	10,338.6	927.2	7.8	5.2	4.8	Non-metallic	2.6	1.5	6.6

Review and Results: Shows sample information for 'Sample #1' (Standard: IEST 1246E, Normalized by Volume (0.1 L), Sample Volume: 100.00 mL, Effective Filtration Diameter: 10.0 mm, Membrane Filter Diameter: 47.00 mm, Membrane Filter Pore Size: 0.45 µm). Particle statistics include: Length (Mean: 12.04 µm, Standard deviation: 11.83 µm), Circular diameter (Mean: 5.14 µm), String length (Mean: 1184.1 µm), String aspect ratio (Mean: 12.04), Area (Sum: 22,364.56 µm²), and a Detected Particle Count of 1,858. A 'Normalized Counts' chart shows a 'Result: Failed' with a Cleanliness level of 50 and a Fallout level of 200. The chart displays counts for various size classes, with a 'Cleanliness Limit' line at 100%.

Report format

Cleanliness Evaluation Report

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IEST-STD-CC1246E

SAMPLE IDENTIFICATION

Sample Name: Sample #1

METHODOLOGY

Analyst: clemex	Target Level: 100 (Failout: 300)
Date: 2021-10-22 1:11:59 PM	Sample Effective Area: N/A
Selected Standard: IEST 1246E	Sample Volume: 100.00 mL
Magnification: 50x	Analysis Pattern Area: 176.71 mm ²
Calibration: 1.1710 µm/pixel	Effective Filtration Area: 176.71 mm ²

RESULTS & STATISTICS

Global Result: FAILED	Particle Count: 1,790
Normalization Method: Volume (0.1 L)	UCL: 1,874.87
Particle Area Coverage: 0.1448%	LCL: 1,708.97

NORMALIZED COUNT CHART

Size Class	Count	Level
5-15	1,441	Pass
15-25	155	Pass
25-50	219	Fail
50-100	94	Fail
100-250	22	Fail
250-500	3	Pass
500-750	161	Fail
750-1000	0	Pass
1000-1250	0	Pass
>1250	0	Pass

NORMALIZED COUNT GRID

Size class	Result	Limit	Particle Count	Metallics	Non-Metallics	Fibers
5-15	Pass	1,519.00	1,441.00	4.00	1,437.00	0.00
15-25	Pass	219.00	155.00	0.00	155.00	0.00
25-50	Fail	94.00	161.00	0.00	161.00	0.00
50-100	Fail	22.00	29.00	0.00	29.00	0.00
100-250	Pass	7.00	3.00	0.00	1.00	2.00
250-500	Pass	1.00	0.00	0.00	0.00	0.00
500-750	Fail	0.00	1.00	0.00	0.00	1.00
750-1000	Pass	0.00	0.00	0.00	0.00	0.00
1000-1250	Pass	0.00	0.00	0.00	0.00	0.00
>1250	Pass	0.00	0.00	0.00	0.00	0.00

Cleanliness Evaluation Report

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IEST-STD-CC1246E

LARGEST PARTICLES

6.540733µm Metallic (#1426)

105.6552µm Non-Metallic (#1642)

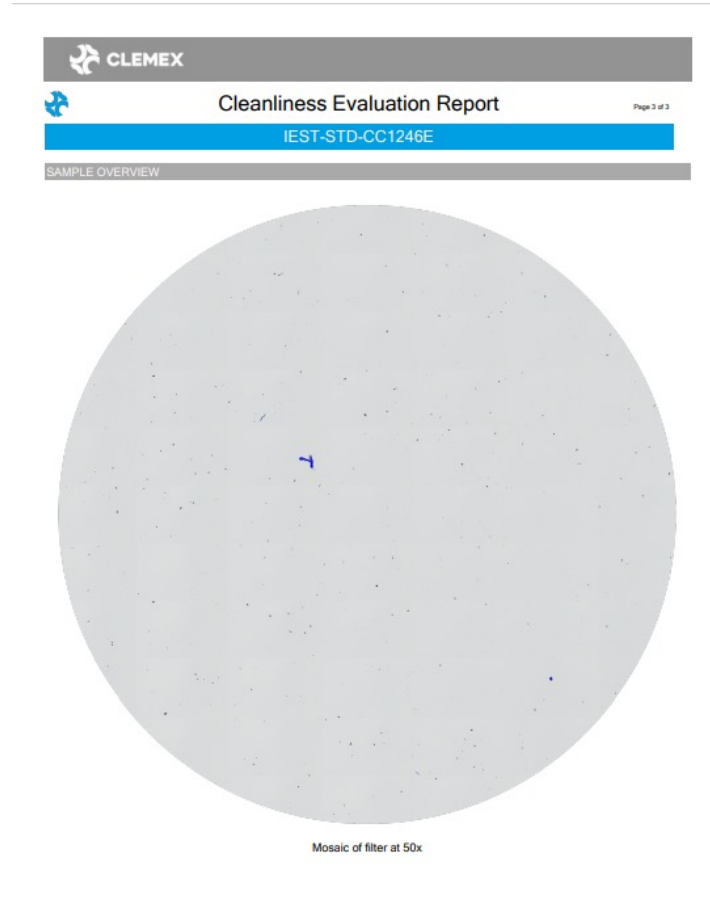
686.1926µm Fiber (#588)

5.922626µm Metallic (#1216)

95.64832µm Non-Metallic (#1532)

205.886µm Fiber (#515)

Report showing all the scanned area



We will now proceed with the live demo on 2 wafers



Thank you

www.clemex.com