

**Example: Particle Measurement**

This command is related to various measurements of a specific particle to be identified on the basis of its gray scale / intensity range. This has to be either defined by the user or can be automatically determined by the software on the basis of its preset limits. The objects need to have gray scale / intensities different than the background.

**Selection of Objects:**

Three options are provided to specify the gray scale/ intensity range that defines the objects to be identified and counted.

**MANUAL:** Select this option if you want to manually mark the intensity range in the count window.

**AUTO BRIGHT:** Select this option if you want the software to automatically set the gray scale / intensity range for the objects to be identified. This option will assume that these objects are brighter than the background.

**AUTO DARK:** Select this option if you want the software to automatically set the gray scale / intensity range for the objects to be identified. This option will assume that these objects are darker than the background.

**PROCEDURE:**

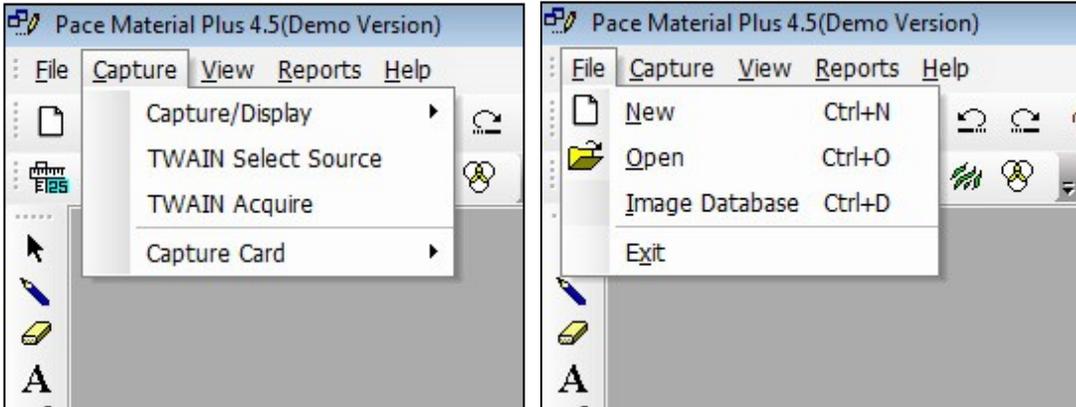
1. Load the image for particle measurements.
2. Select the appropriate saved calibration scales from the drop down list at the bottom of the Window
3. Click on the Particle icon  either from the Toolbar or from the Menu-bar
4. Choose "Automatic Bright" or "Automatic Dark" to select what to detect objects with the background being the opposite. Choose "Manual" if you want to manually threshold (fill with red color) the particles. A new platform with two scroll bars will appear. Move both the scroll bars till all the particles are properly pseudo colored (filled with the color red).
5. The moment the dialogue box opens dark particles are selected by default (in most cases Brightfield illumination is used to obtain the image)
6. Move the mouse to the object of interest. Click the left button on the mouse to obtain the results.
7. The procedure can be repeated an unlimited number of times to obtain the results on the other particles of interest.
8. The results are displayed in a grid. The available measurements are:
  - Length
  - Width
  - Area
  - Aspect ratio
  - Roundness
  - Shape
  - Orientation
  - Elongation
  - Equal circular diameter
  - Equal spherical volume
  - Centroid X
  - Centroid Y

- Major X
  - Minor X or Y
  - Box area
9. The color and font of the tagged numbers on the image can be changed in the palette box for “FONT & COLOR”
  10. To save the report to the report too, click on REPORT
  11. A sample information window will appear. Fill the required information. Click on “Save Data For Report Tool”
  12. Click on “TO EXCEL” to see the result in Excel.

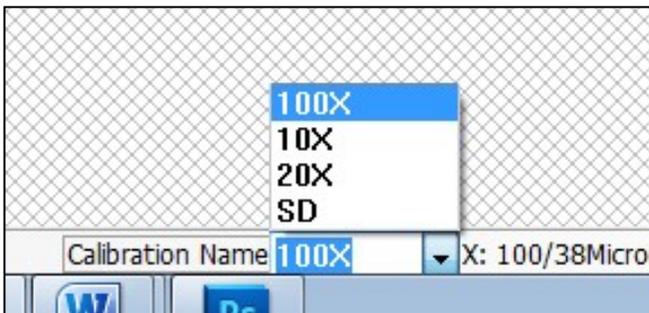
### EXAMPLE of Particle Measurement

Step 1:

File > Open (select image) or Capture > TWAIN Acquire (for live image)

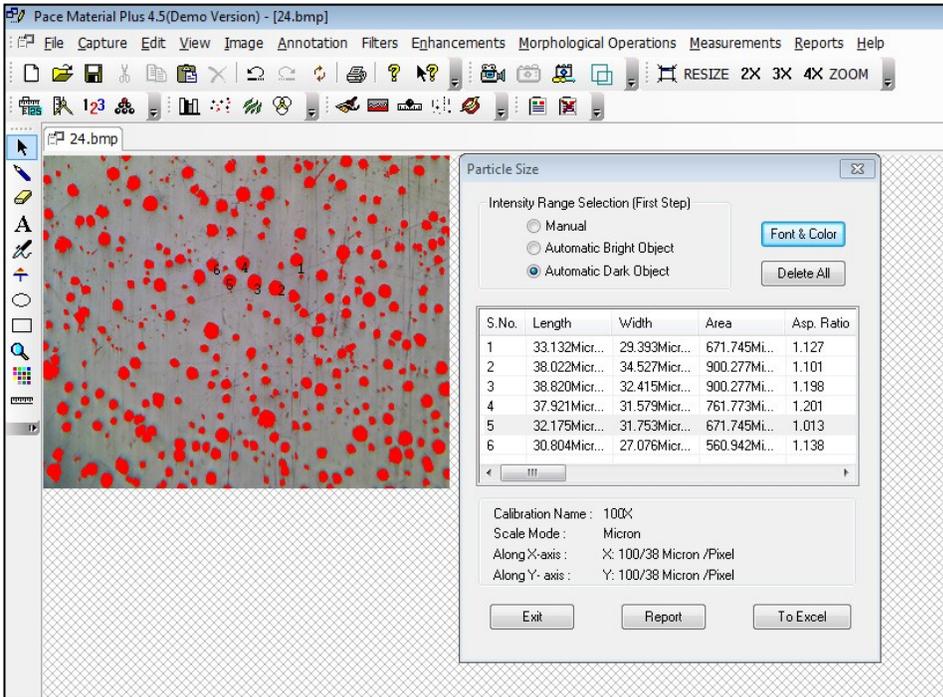


Step 2. Select Calibration scale at bottom of the Window



3. Click on the Particle icon  either from the Toolbar or from the Menu-bar
4. Choose “Automatic Bright” or “Automatic Dark” to select what to detect objects with the background being the opposite. Choose “Manual” if you want to manually threshold (fill with red color) the particles. A new platform with two scroll bars will appear. Move both the scroll bars till all the particles are prop-

- erly pseudo colored (filled with the color red).
5. The moment the dialogue box opens dark particles are selected by default (in most cases Brightfield illumination is used to obtain the image)
6. Move the mouse to the object of interest. Click the left button on the mouse to obtain the results.



8. The procedure can be repeated an unlimited number of times to obtain the results on the other particles of interest.
9. The results are displayed in a grid. The available measurements are:
  - Length
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  - Elongation
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  - Equal spherical volume
  - Centroid X
  - Centroid Y
  - Major X
  - Minor X or Y
  - Box area

10. The color and font of the tagged numbers on the image can be changed in the palette box for "FONT & COLOR"
11. To save the report to the report too, click on REPORT
12. A sample information window will appear. Fill the required information. Click on "Save Data For Report Tool"
13. 13. Click on "TO EXCEL" to see the result in Excel.

The screenshot shows an Excel spreadsheet titled "Grainsize3 [Compatibility Mod]". The spreadsheet contains a "MICROMEASUREMENT TEST REPORT" with the following fields:

- NAME
- EVALUATION DATE
- SAMPLE INFO ID
- APPLICATION
- OPERATOR
- MICROSCOPE OBJ

Two microscopic images are displayed side-by-side. The left image shows a dark matrix with light-colored particles, and the right image shows a light matrix with red particles.

Below the images is a data table with 6 columns (S.No., 1, 2, 3, 4, 5, 6) and 18 rows of parameters:

S.No.	1	2	3	4	5	6
Length	33.122Micron	38.022Micron	38.820Micron	37.920Micron	32.475Micron	39.804Micron
Width	29.282Micron	24.627Micron	23.415Micron	31.670Micron	31.752Micron	27.075Micron
Area	671.748Micron.Sqr	900.271Micron.Sqr	900.271Micron.Sqr	761.722Micron.Sqr	671.748Micron.Sqr	560.284Micron.Sqr
Area Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Roundness	100	82.222	82.222	89.222	100	100
Sphere	0.01	0.012	0.012	0.012	0.01	0.01
Per Area	671.748Micron.Sqr	900.271Micron.Sqr	900.271Micron.Sqr	761.722Micron.Sqr	671.748Micron.Sqr	560.284Micron.Sqr
Centroid X	240Micron	240Micron	192Micron	172Micron	160Micron	140Micron
Centroid Y	300Micron	110Micron	102Micron	92Micron	100Micron	90Micron
MassArea	2.122	2.122	2.122	4.222	2.121	3.719
Orientatlon	100	97	77	90	95	112
Circle Diameter	59.504Micron	67.720Micron	67.720Micron	62.202Micron	59.504Micron	52.462Micron
Sphere Volume	15133.450Micron.Cubo	23479.849Micron.Cubo	23479.849Micron.Cubo	19275.505Micron.Cubo	15133.450Micron.Cubo	11548.029Micron.Cubo
Minor Axis	33.122Micron	38.022Micron	38.820Micron	37.920Micron	32.475Micron	39.804Micron
Minor Axis	29.282Micron	24.627Micron	23.415Micron	31.670Micron	31.752Micron	27.075Micron
Thread Length	29.282Micron	29.103Micron	29.612Micron	36.182Micron	24.822Micron	24.822Micron
Thread Width	29.282Micron	29.103Micron	29.612Micron	24.822Micron	24.822Micron	29.282Micron
Fibre Length	59.578Micron	59.578Micron	59.578Micron	56.820Micron	49.817Micron	45.674Micron
Fibre Width	19.240Micron	15.422Micron	15.422Micron	19.402Micron	19.402Micron	18.241Micron
Min. Radius	11.769Micron	15.410Micron	15.453Micron	11.769Micron	11.769Micron	10.624Micron
Max. Radius						