



# MATERIALS PLUS

## Grain Size - Automatic Circle

### Example: Grain Size Analysis - Automatic Circle Method

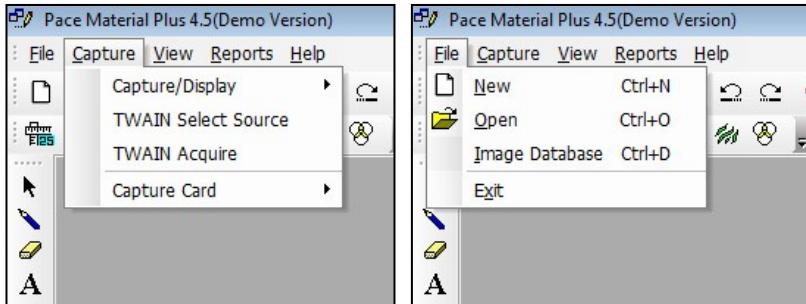
Automated Circle grain size analysis is a fast and convenient method for grain boundaries that are well defined through proper polishing and etching.

#### PROCEDURE:

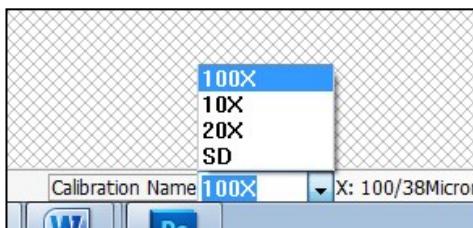
1. Load the image for grain size measurement.
2. Select the appropriate saved calibration scales from the drop down list at the bottom of the Window
3. Click on the Grain Size icon  either from the Toolbar or from the Menu-bar
4. Grain Size Measurement dialogue box will open. Select AUTOMATICCIRCLE ASTM method.
5. Click on SET THRESHOLD. A new platform with two scroll bars will appear. Move both scroll bars until all of the boundaries are properly pseudo colored (filled in red). Click OK.
6. Click on DRAW INTERCEPTS. Three circles of different radius (as per ASTM guidelines) are drawn according to the calibration selected. The software will automatically calculate the distance between interceptions on the three circles. The average grain number is calculated and displayed.
7. Click ADD to place in grid.
8. To save the report, click on REPORT.
9. A sample information window will appear. Fill the required information. Click on "Save Data For Report Tool"
10. Click on "TO EXCEL" to see the result in Excel.

#### EXAMPLE of Grain Size – AUTOMATICCIRCLE ASTM Method

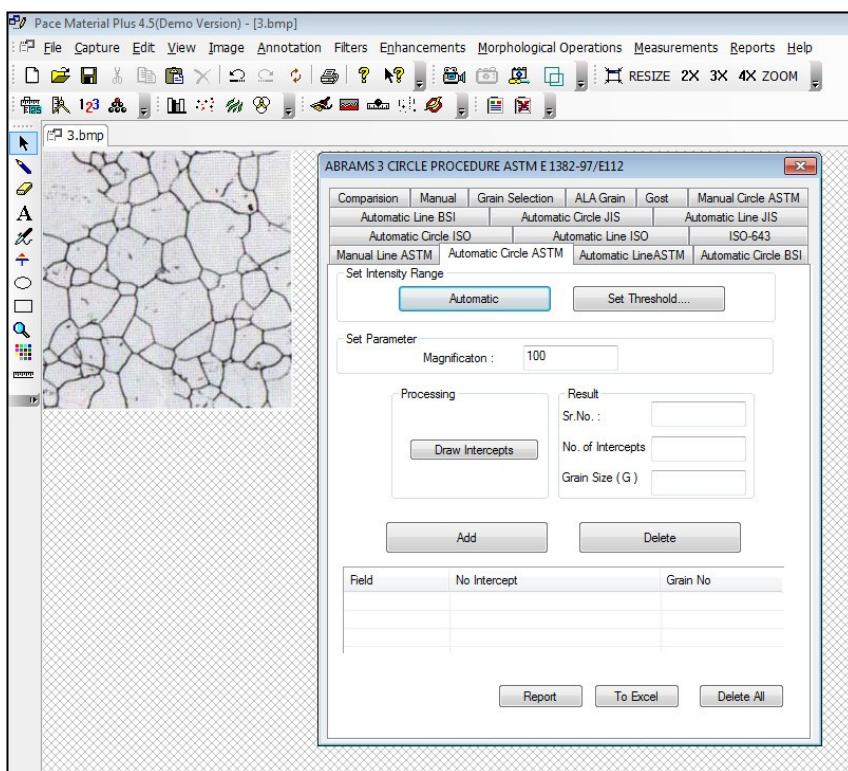
1. File > Open (select image) or Capture > TWAIN Acquire (for live image)



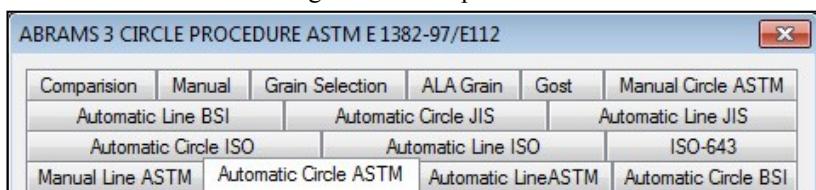
2. Select Calibration scale at bottom of the Window



3. Click on the Grain Size icon  either from the Toolbar or from the Menu-bar



4. Grain Size Measurement dialogue box will open. Select AUTOMATIC CIRCLE ASTM method.

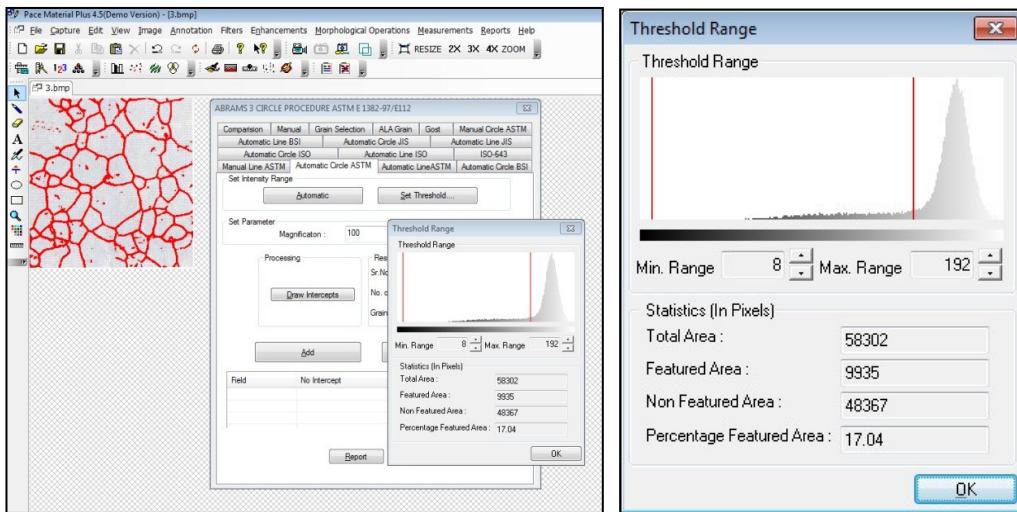


5. Click on SET THRESHOLD. A new platform with two scroll bars will appear. Move both scroll bars until all of the boundaries are properly pseudo colored (filled in red). Click OK.

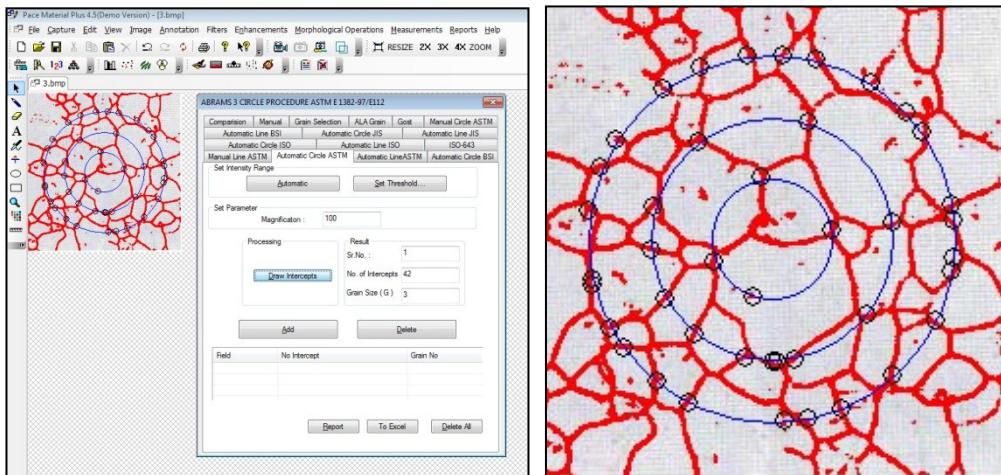


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6. Click on DRAW INTERCEPTS. Three circles of different radius (ASTM guidelines) are drawn according to the calibration selected. The software will automatically calculate the distance between interceptions on the three circles. The average grain is calculated.

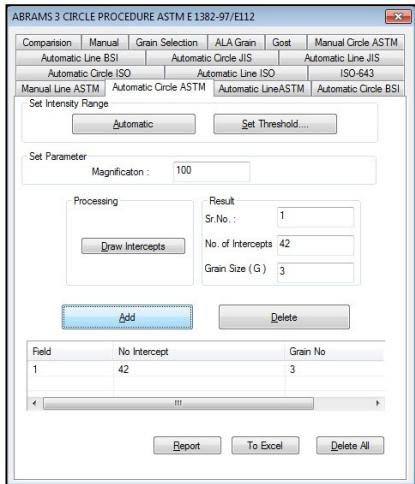


7. Click ADD to place in grid.



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8. To save the report, click on REPORT.
9. A sample information window will appear. Fill the required information. Click on “Save Data For Report Tool”
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