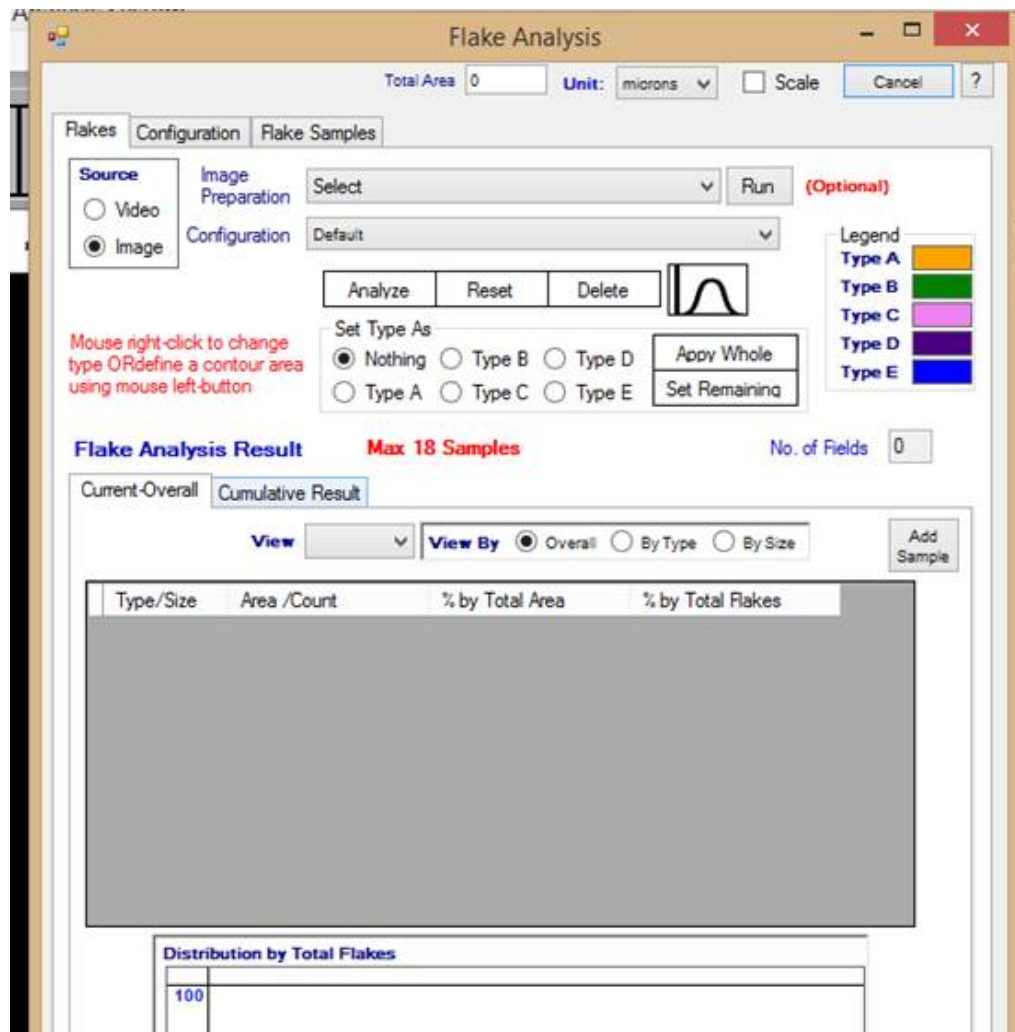


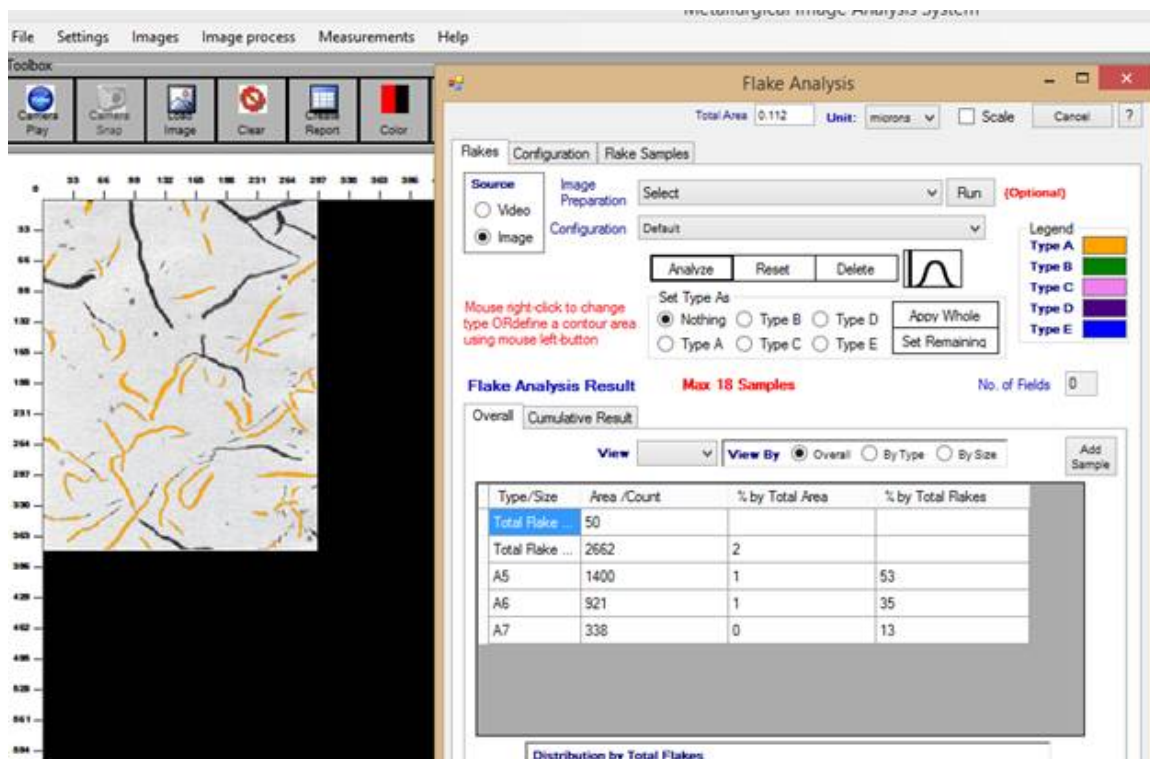
Flake Analysis

The steps for Flake analysis are explained below.

- Select Flakes option from “Measurements--> Flake Analysis”
- The window displayed will be as shown below
- Select the source – Video or Image. We recommend users to use image as the source, since any light variations or vibrations will not affect the analysis steps.
- Select Configuration. How to create Configurations is explained in next section. Default configuration is recommended
- If configurations are not available, use Default Configuration, which is the recommended configuration.



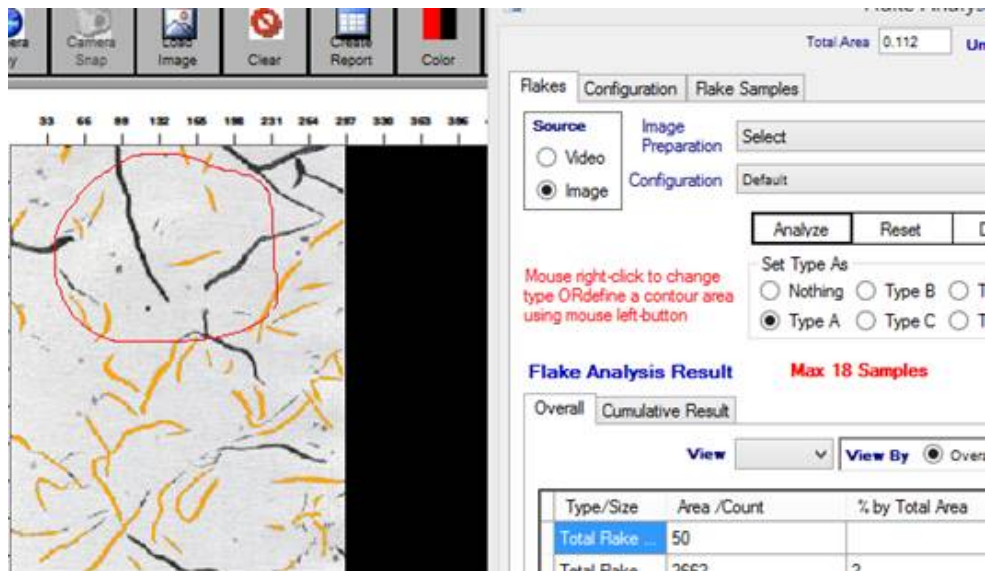
- Click Analyze Flake button. This process will take few seconds and the progress will be displayed through a progress bar
- The Flake result will be displayed below and the color of each features on the image will be modified as per the type (A, B, C, D, E) identified. The result has type and size (1 to 8). For example, the result A2 means type A and size 2. A sample result is shown below



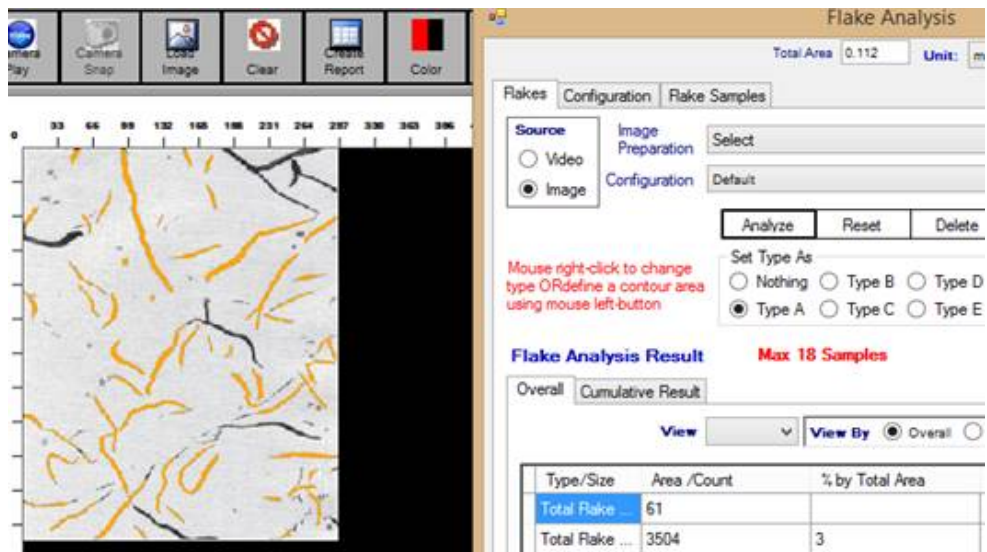
- There are three options to view the result- Over all, as shown above, By Type and By Size. If you select option “By Type”, the result will be displayed by type only. If you select option “By Size”, the result will be displayed by size only.
- If you move the mouse over a feature, it will display its type and size at the mouse tip
- You can manually override the result and change the type of a flake. For changing the type of a flake manually, select which type to set under “Set type as” and then mouse-right click the feature. This will change the type of that feature and the result will be updated accordingly

- You can also use “Apply whole” or “Set remaining” options to set the Flakes manually
- You can also set features to a particular type by defining a contour area using mouse on the image. Click (mouse left button) and define a contour area on the image around the feature(s) which you want to set to a particular type of change the type and then release the mouse button. The features enclosed by the defined contour shall be set to the new type selected. An example is as shown below

Define Contour



After defining Contour (you can see that the features inside the contour defined are set as Type A



- To set a feature to nothing, set as “Nothing” under “Set type as” and right click the feature, and the feature will be set as not any type of flake
- Click “Add Sample” to add the result to the final result. The final result can be seen under the tab “Cumulative Result”. A sample result is shown below

Flake Analysis Result By Size

Overall **Cumulative Result**

Overall By Type By Size

Type/Size	Area (sq mm) /Count	Perc by Total Area [%]	Perc by Total Flakes [%]
Total Flake Co...	19		
Total Flake Area	0.0437	7.66	
A4	0.0012	0.21	2.72
A5	0.0025	0.43	5.67
A6	0.0004	0.07	0.93
C2	0.0242	4.24	55.28
C3	0.0155	2.71	35.39

- To see the result of any particular specimen added to the current cumulative result, select “Overall” tab and select the sample from the drop down list “View Sample”. If you want to delete this sample, click the button “Delete Sample”
- You can have a maximum of 18 sample specimens added to the result
- Sample flake images for each type are given in the tab “Flake Samples”
- Reports in Excel can be generated by clicking on the “Report” button. A small window will be shown where user has the option (OPTIONAL) to enter details which will be displayed in the report along with the result.
- While generating report, user has the option to select the image to be displayed in the report. User can also select “All” images.
- You can also export the Flake analysis report to Phase analysis by clicking the “To Phase Analysis” button in Cumulative result tab

Configuration

The Create Configuration window is as shown in next page. User can create any number of configurations. The configurations will save time while doing the analysis – user can select the pre-defined configurations and do the analysis based on that. Follow the below steps for creating the configuration.

Flake Analysis

Cancel Total Area 0 sq mm Scale ?

Flakes Configuration **Flake Samples**

Flake Type Detection Order

Order No	Element	Select?
1	A	<input checked="" type="checkbox"/>
2	B	<input checked="" type="checkbox"/>
3	C	<input checked="" type="checkbox"/>
4	D	<input checked="" type="checkbox"/>
5	E	<input checked="" type="checkbox"/>

Up Down

Set Threshold Cut-to Image 0 128

Flake Angle Grouping 10 This value is used to group flakes by orientation for type B

Flake Defect Depth Ratio Cutoff 0.2

Type A Min Size 5

Type A Max Size 7

Type A Max Width 4

Type B Min Size 5

Type B Max Size 8

Max Type B Flake Distance 8

Max Type B Flake Count 8

Max Rosette Enclosing Circle Dia 500

Min type B Nearest Flake Count 2

Min type B Flake Cluster Circularity 0.6

Min Std Dev to Avg Ratio for Flake Distance 0.2

Min type B Star Width 15

Min type B Star Elongation 0.6

Max type B Flakes Area to Image Area Ratio 0.5

Min type B Star Arm Count 10

Type C Max Size 6

Type C Min Width 4

Type D Min Size 8

Type D Max Size 8

Type D Max Width 4

Type D Min Count 50

Type E Min Size 7

Type E Max Size 8

Type E Max Width 4

Thresholding Method

☒ Local ☐ Global ☐ Binary ☐ Adaptive

Include Global Threshold in Local ? ☒ Yes ☐ No

Configuration Name

Save