Details   Features /Specifications of   MaterialWiz

This software can be used in Steel plants, Metal forging industry, Oil & gas industry ,Material Science,

Mineralogy - metal and metal strength analysis

Cement (Klincker) quality control ,

and where ever Metallurgical microscope are used in laboratories. For
any Metallurgist it is very useful software.

It has two main toolbars 1) Measurement Tools 2)Metallography Tools.

1.Measurement Tools.

(A).Calibration :- This tools is used for calibrating through calibration scale. This is done only once when we used   with microscopes. How to do is given below(For all Tools) .

(B).Length:-   This is used for measuring length .It can measure any given length in the image. It calculates according to your selected calibrated scale name, choosen from the list.

(C).Angle:-   This is used for measuring   angles of three selected point.

(D).Perimeter:-   This is used for measuring perimeter of irregular shape.

(E).Width:-   This is used for measuring width .It will give Minor Width, Major Width and Average Width.

(F).Radius:-   This is used for measuring three points radius.

(G).Area:-   This is used for measuring area in Manual, Square, Rectangle, Oval and Circle.

(H).Color:-   This is used for changing color of line which you are making for measurements.

(I).Counting:-   This is used for automatic counting of particles. It has three intensity range for counting manual by selecting area, Automatic dark objects, Automatic bright objects. It Counts in Total Count, Max Dia, Min Dia, Max Area, Min Area, Percentage. It can be searched out with different colors. It shows labels with numbers on every particle. Label color can changed. It has five range to search . It may count length, width and Area. Label size can be changed.

2.Metallography Tools.

(A).Grain Size:- This is used for measuring Grain size No. It has two method Manual and Interception .In manual you can select with mouse. It will measure Mean Intercept, Diameter , Grain No., Avg, Grain Area(mm).It will measure according to ASTM E 112 method. In Interception method it is automatic.It will measure Mean Intercept, Diameter , Grain No., Avg, Grain Area(mm), Avg. Grain Area(mm).

(B).Phase:-   This is used for Phase Analysis. Thresholding can be done by different colors. Numbers of Phase can be drawn. Preview can be seen. It will calculate Area% and Area of selected Phase in different colors. Single Phase can be done by simple clicking on particular portions. Can be reset or deleted. It allows user to acquire, process , and analysis the images of the polished sections when it is necessary to estimate the area percentage of different phases. Right after the color or b/w (depending on the image)the program starts its processing.

The phases(e.g different minerals, inclusions in the metals, etc.) are thresholded. For phase thresholding the B/W or Color manual thresholding method is used. If you are not satisfied with their thresholding there is an ability to adjust it.

(C).Decarbization:-

This is used for Decarbization. It has two method Manualy and Automatic. In manualy you simply mark two different portion then it will calculate. In Automatic it has Percentage from 70 to 100, Pixel from 1 to 20. In this you Simply move the slider and click on Decarb it will calculate Max, Min and Average.

(E).Coating Thickness:-

It has two options Manualy and Automatic .In manually simply mark your Area for calculating then it will calculate. In Automatic simply mark your portion with the mouse it will be appeared in rectangular shape then click on calculate.It will give results in Min Length, Max length, Average length, Min height ,Max height and Average height.

(F).Nodularity:-

This is used for Nodules analysis. It has three intensity range for counting Manual by selecting area, Automatic dark objects, Automatic bright objects. It will Count in Total Count, Max Dia, Min Dia, Max Area, Min Area, Percentage. It will give results in Total Objects, Nodule count, Nodularity %, Nodules /mm sq , Max Dia, Min Dia, Max Area , Min Area.

(G).Porosity:-
This is used for Porosity Analysis. It has three intensity range for counting Manual by selecting area, Automatic dark objects, Automatic bright objects. It will Count in Total Count, Max Dia, Min Dia, Max Area, Min Area, Percentage. It can be Measured on selected Phase also by simple clicking on your sample images. It will give Results in Field Name, No. of count, Area %, Dia Average, Area Average.

(H).Particle Measurement:-

This is used for measuring particles by simply clicking on it . It has three intensity range for counting , Manual by selecting area, Automatic dark objects, Automatic bright objects. Labels in numbers , Color of label can be changed. It will give results in Sr. No.,Length, Width , Area and Ap. Ratio.

(I).Density:-
This is used for measuring density in Black & White images. It will give results in %.It can be done by simply dragging the mouse on the image as rectangular shape.

(J).Inclusion:-
Non-Metalic Inclusion rating can be done by **ASTM & DIN** standards.It will give results in Min, Max , Length, Width , Ap. Ratio., Type ,Severity level. It will give results for Type in **A Thin, A Thick, B Thin, B Thick, C Thin, C Thick, D Thin, D Thick.** For Severity level it starts from .5 , 1, 1.5, 2, 2.5 to 5.Results in %.

(K).Filters:-
It has various filter for improving image quality. It has **Solarize, Emboss, Bright, Sharpness, Smooth, Diffuse, and Contrast.** It can be done simply moving Slider.

(L).Invert:-
Image can be changed in Invert and can be saved with new name.

(M).Annotation :-

It has various options like you can write text on image, We can mark with arrow .
We can mark with pointer, We can draw square and rectangle on image. We can
change Line color, text color, Font color ,size, Font name, Bold, Italic ,Underline. These
All can be saved with new file name. It can be refresh if you have made any mistake.

(N).Back Ground Removal:-
It is used for removing background color , that is used in Phase Analysis. It is used when
an image is not cleared.

(O).Amalgamation:-
This is for merging two images .

Some more Features   from Main Menu are :-

(A).Save & Save As:-
This is used for images with different names.

(B).Report Preview:-
This is used for giving details reports like Name, Evaluation Date, Sample ID No.,
Application, Operator, Microscope Objective. After filling details, You can see reports
in MS-Word and MS-Excel formats ,It will generate reports with image ,data, various
other related information and all details results, and also with Histogram with different
colors. Reports can be generated with the company's logos and its name and address.

(C).Zoom:-   Image can be enlarged .

(D).Inclusion DIN:-
This is used for measuring Inclusion Rating as Per Din standards (50602). It will show
Graph, Min & Max, Length, Width, Aspect ratio, Polished Area in Six No., and with
SS, OA, OS, OG.

(E).DIN PER:-
This tool is used for Analysis of **Ferrite, Pearlite, Graphite, Carbide** and more.
We will get result in Min Value, Max Value, Area%.

(F).Hardness Testing:-
Micro-Hardness analysis can also be done. We can obtain knob, Vickers or Brinell.
Hardness measurement from identation image. This will give result of Hardness testing in
Veecker and Brinal values like d0, d1, Hv.

(G).Galery:-   In this features you can make album of your captured images for further use.
You can add new images into gallery, Delete old one, You can see with zoom view
and you can see the details of the images.

(H).Company Name:-
We can change the name of company like Address, City, State, Pin, Email
Phone, Fax, URL and logo.

(I).Delete Calibration:-
We can also delete unwanted calibration from combo box.

Note- Specifications are subject to change due to our continuous R&D programme