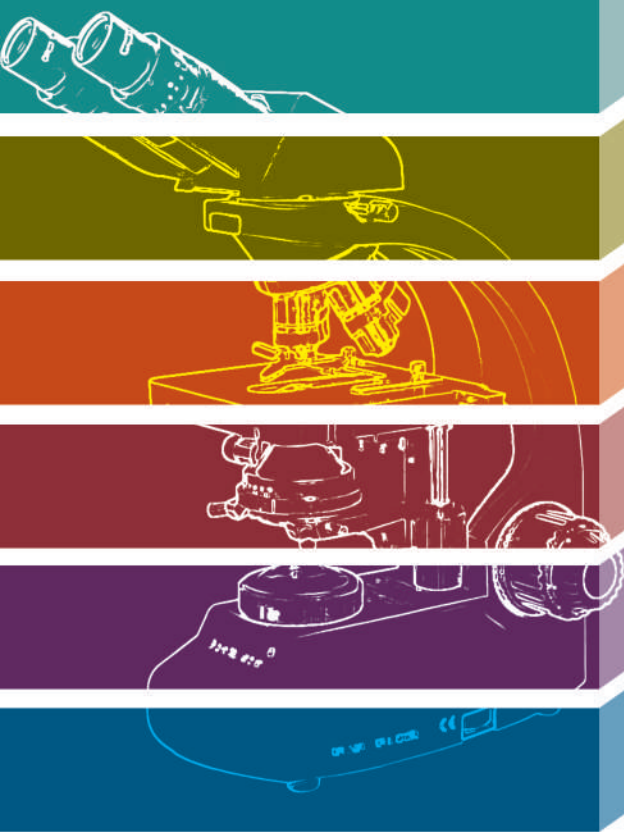
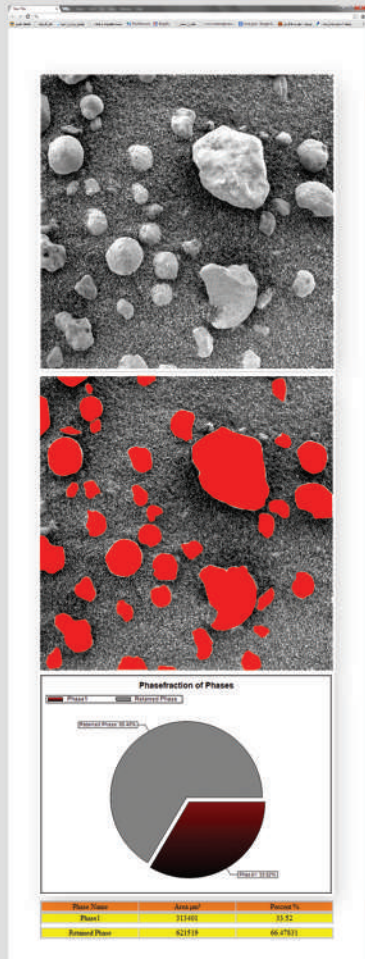


**MIP<sub>4</sub>**



NAHAMIN PARDAZAN ASIA . CO

[www.metsofts.com](http://www.metsofts.com)

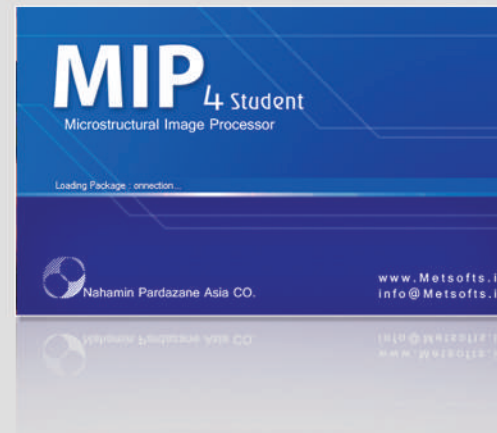


### Software features:

- ◆ -User-friendly
- ◆ -Importing numerous number of Images with different formats
- ◆ -Image editing
- ◆ -Image calibration
- ◆ -Creating and using Macro
- ◆ -Different operation for Image correction
- ◆ -creating HTML report
- ◆ -reporting detailed information of examined Micro-structures
- ◆ -Potential of creating additional packages base on cusomers

### Introduction

Microstructural Image Processing (MIP) is an image analysis software for measuring the quantitative parameters of microscopic Images (electron microscopy and light microscopy) that is designed and produced by Nahamin Pardazan Asia Co.



This product can be utilized in the broad range of application such as; Metallurgical, Chemical, Electrical and Mechanical engineering. Medical; Histology. Pharmacy, Veterinary and Agronomy; Medical plant, Argology. Basic Sciences; Biology, Geology, Biotechnology.



Compatibility of this Software with the various Imaging Systems Makes it capable to analysis quantitative parameters.



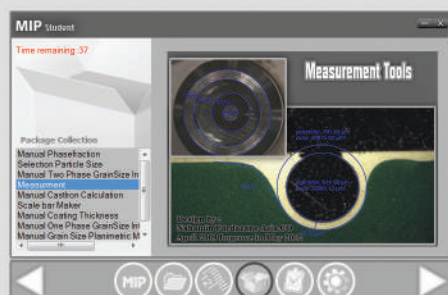
4. Measuring Quantitative parameters of particles such as; Diameter, Area, Perimeter, Sphericity percentage, Circular diameter.



5. Exceptional Cast Iron characteristic measurement function based on ASTM -247 standard.



6. Precise geometrical measurement package consist of drawing; Line, Circle, Square, Parallel Lines and etc.(Up to Nanometer scale).

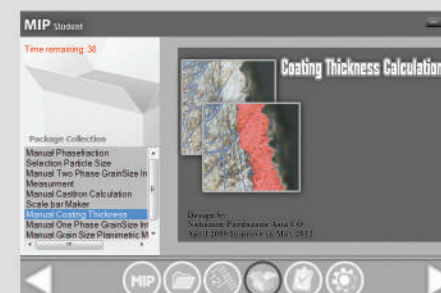


7. Scale-bar creating package.

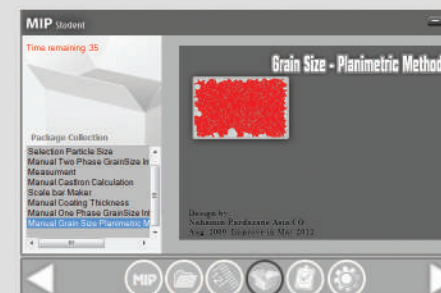
1.Measuring up to 15 different phase fraction of Metallographic Images either automatically or manually based on ASTM E-562 standard.



2.Quantitative metallographic function of Measuring Coating thickness based on ASTM B-748 standard.



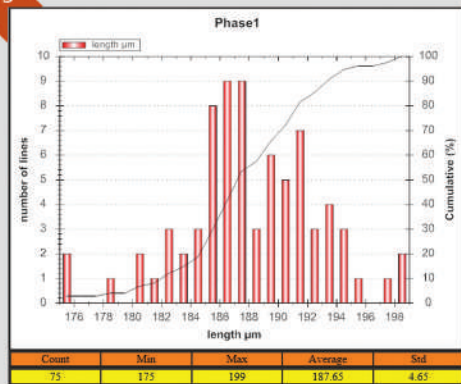
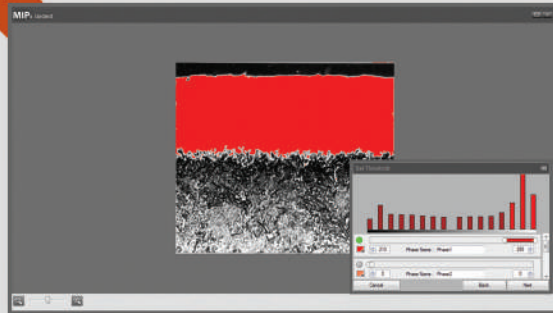
3. Grain size measurement application in accordance with Intercept and Planimetric methods based on ASTM E112, E1382 standard.



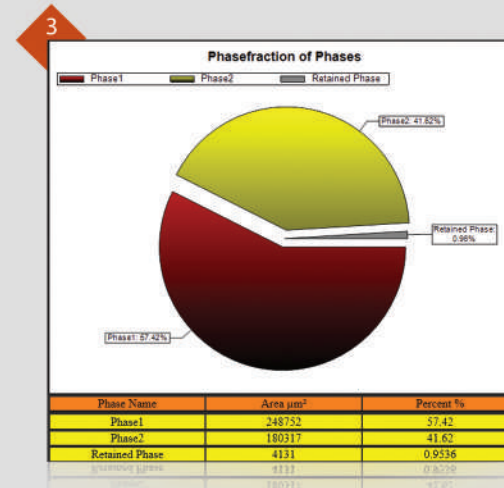
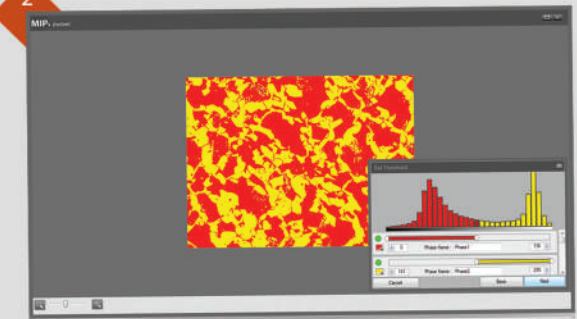
Coating Thickness



Measuring thickness of coatings and different layers are significant in processing of metallographic microstructures. The merits of this function might be carried out in the following areas;  
Case Hardening like Nitriding, Carburizing and Nitrocarburizing. Corrosion and Erosion resistance coating. MIP software can be used either Manually or Automatically to measure Coating thickness



Ability to identify up to 15 different phases and their fraction in a Microstructure of Metals and Alloys which is undisputable need for Iron and Steel Industries. MIP is able to process multi-phase microstructures and report the phase fraction evaluations.



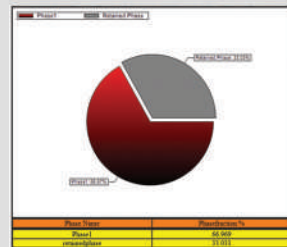
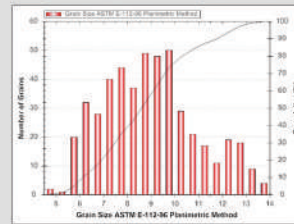
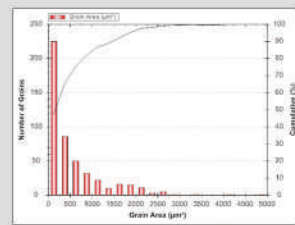
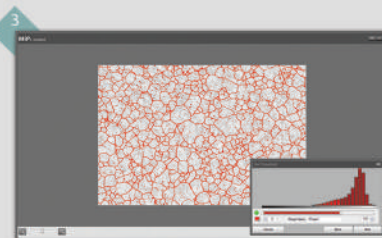
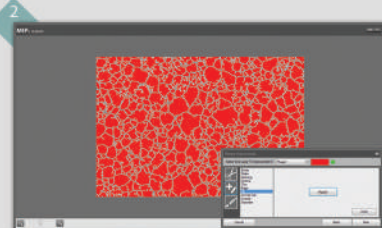
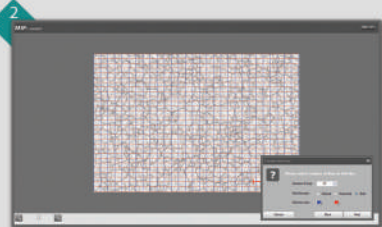


## Grain Size

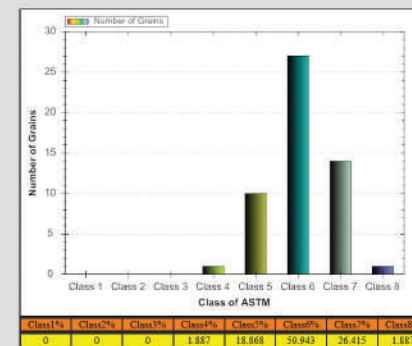
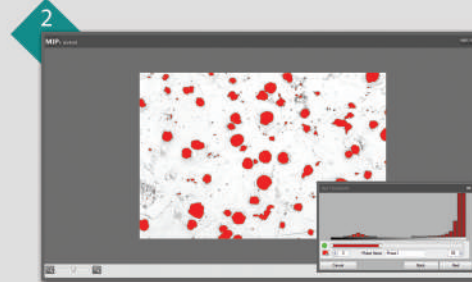
Importance of Grain size on properties of Materials such as physical and specially mechanical properties are indisputable fact.

MIP by carrying out Image processing analysis on the Micro-structures based on ASTM-A247-67 is able to evaluate Grain Size number and Grains distribution.

(Grain Size can be identified either by Intercept or Planimetric)



One of the most effective parameters for identifying Mechanical properties of Cast Iron is the shape, size and distribution of Graphite. Sphericity of Graphite particles and their distribution play a significant role in Ductile Cast Iron. MIP Software, not only is able to recognize the spherical shape Graphite in the micro-structure in accordance with ASTM-A247-67 Standard but also it is able to report the result as Histograms or Data-charts.



Class 1%	Class 2%	Class 3%	Class 4%	Class 5%	Class 6%	Class 7%	Class 8%
0	0	0	1.887	18.868	50.943	26.415	1.887

# Auto-Inclusion

Recognition and measurement the fraction of Inclusion in metals in terms of Chemical composition and thickness play a prominent function in quality control of metals.

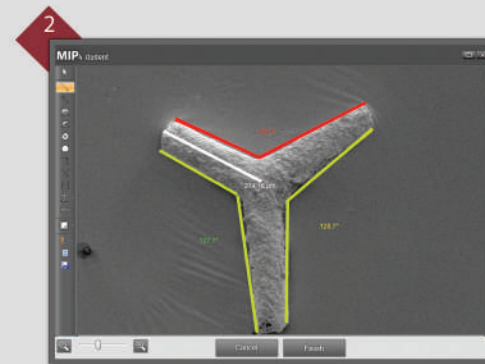
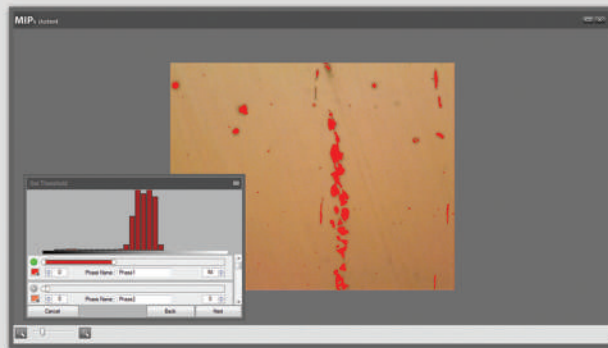
The capabilities of MIP in Inclusion identification are listed as below;

- Recognition of Inclusion in Metals.
- Determining size, distribution, number and types of Inclusion in specimens.
- Classification of Inclusions types based on Severity number into Sulfide and Oxide categories.
- capability of report making based on the following Standards;

ASTM E45, E768, E1122, E1245

DIN 5062

NF. A04-106



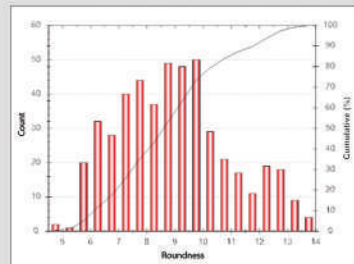
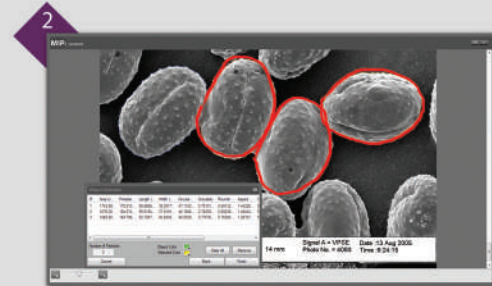
Measuring stereological parameters of metallographic Images such as dihedral angle, taking dimensions of area and perimeter of polygonal region, drawing perpendicular lines have an important impact on the industrial and scientific researches which MIP is able to measure these parameters with high accuracy and reveal the results on the final reports.



NANO

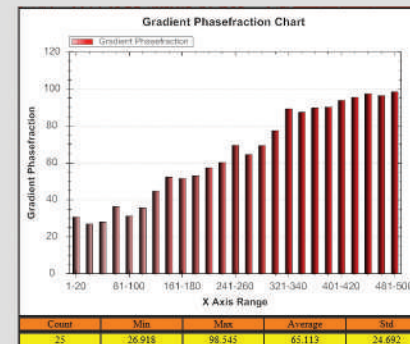
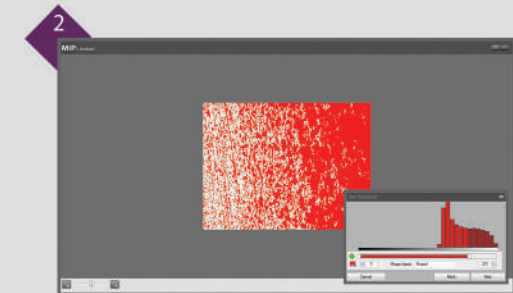


Nano package is one of the considerable capabilities of MIP in order to Nano scale measurement.



In the realm of Materials Science, Functionally Graded Material (FGM) can be introduced by gradually variation of composition and structure in the volume of material which causes profound changes in the properties of substance.

FGM Materials Package provides a particular aptitude for volume fraction evaluation of secondary phase through the selective region of matrix surface.





NAHAMIN PARDAZAN ASIA . CO

### Introduction to NPA

Nahamin Pardazan Asia Co. is a science based corporation, located in Technical and scientific park of Ferdowsi University of Mashhad. NPA Co. started its work with the aim of producing and developing Image analysis and welding inspection interpretation in accordance with Industries and researchers necessity.



This package provides liberty of manual measurement of geometrical parameters such as length, distance between two selective points and the angular measurement.

