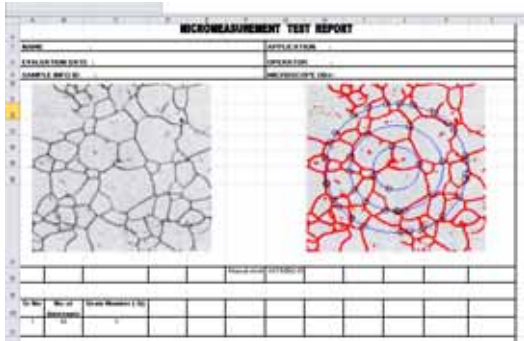


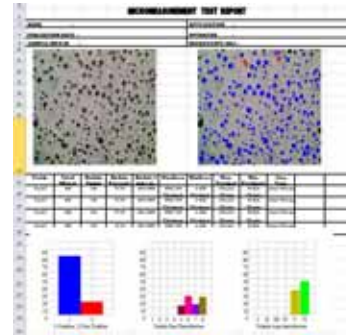
Metallographic Image Analysis

MATERIALS PLUS software

Materials Plus software is an image analysis package for measuring grain size, phases percentage, inclusions in steels, nodularity, porosity, decarburization, coating thickness' based on ASTM standards.

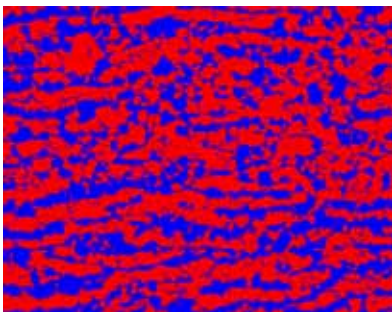


Grain size automatic circle measurement

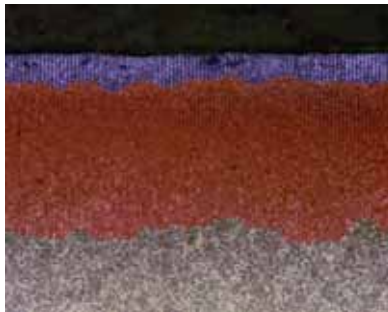


Graphite nodules (ASTM A247)

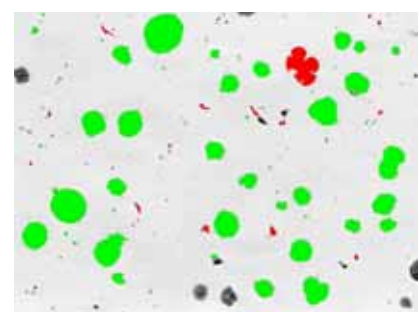
Description	Specification
Measurement Tools	Calibration, Length, Angle, Perimeter, Width, Radius, Area, Color, Counting
Grain Size Analysis (Manual and Interception Methods)	ASTM E112
Phase Analysis (Area %)	ASTM E566, ASTM 1245
Inclusion Rating in Steels (A, B, C and D - Thin & Thick) (Min, Max, Length, width, Apex ratio, Type, serverity level)	ASTM E454/ E1245
Nodularity (Count, maximum diameter, minimum diameter, area, percentage)	ASTM A247
Porosity (Field name, number of count, area %, diameter average, area average)	ASTM A276
Measurement of Pearlite Banding with average, maximum, minimum bandwidth and length	
Decarburization (Maximum, minimum and average of decarb level)	ASTM E1077
Coating Thickness (Min. Length, max. length, average length, min. height, diameter, area)	ASTM B487
Particle Measurement (Sr. no., length, width, area and apex ratio)	
Density (% black and white)	
Filters (Solarize, emboss, bright, sharpness, smooth, diffuse and contract)	
Invert	
Annotation	
Background Removal (very useful for phase analysis)	
Amagamation (merging two images together)	
Report (MS-Word, MS-Excel)	
Hardness Testing (area of indent)	
Gallery (saving images and reports)	



Volume fraction ASTM E562



Decarburization Depth (ASTM E1077)



Graphite nodules (ASTM A247)