

RM RoboMet



Insight Beyond Your Eyesight



Advancing
the Future of
Science and
Technology

Products and Services Overview

UES' Robo-Met.3D® offerings continue to develop and evolve to support your Materials Science needs.

Robo-Met.3D

Robo-Met.3D is a user-programmable fully automated, serial sectioning system for three-dimensional microstructural investigations. Capable of evaluating materials from carbon pitch foams to high temperature ceramics, the system ensures repeatable and accurate data is collected in an efficient and cost-effective manner. Robo-Met can also be used to provide ground truth for other characterization techniques.

Robo-Met.3D enables you to create more time for data analysis and characterization by eliminating the drudgery of long days sitting at the polishing station and microscope



Robo-Met.3D Services

Get insights for your individual samples by taking advantage of our analysis services. When you only need a few samples analyzed, or you prefer to have us collect and process the data, get the materials insights you need through our materials analysis services. Our Robo-Met Services team will:

- Consult with you to plan the materials investigation
- Collect automated serial sectioning data with high precision
- Post-process the raw data
- Highlight your information of interest
- Deliver quantitative analysis
- Provide a comprehensive material analysis report in addition to the data generated

Robo-Met Integrations and Developments

Robo-Met systems have been integrated with SEMs, as well as Laue XRD and SRAS. UES has also developed and deployed high throughput systems for automated conventional metallographic analyses (Robo-Met.QC®). Visit [Robo-Met Integrations with Other Characterization Methods \(ues.com\)](https://www.ues.com/Robo-Met_Integrations_with_Other_Characterization_Methods) for more details.

Have an idea about something you don't see here? Contact us at robomet@ues.com and we will work with you.



For More Information, Please Visit:
www.ues.com/rm_resources

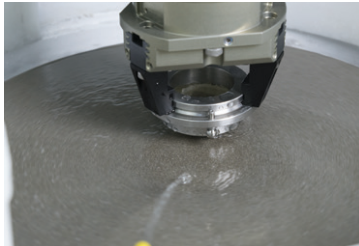
Robo-Met.3D[®] Process

Sample Preparation



- Works with most common metallographic sizes - 1" (~25mm), 1.25" (~32mm), 1.5" (~38mm), 2" (~50mm)
- Hot or cold mounts
- Multiple samples possible in mount

Grinding & Polishing



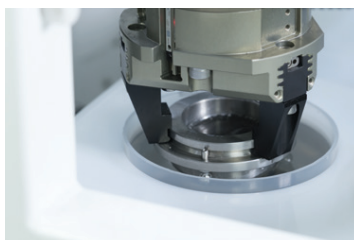
- Configure recipes for up to 8 platens
- Customize removal rates from submicron to tens of μm removal per section

Etching Cycle



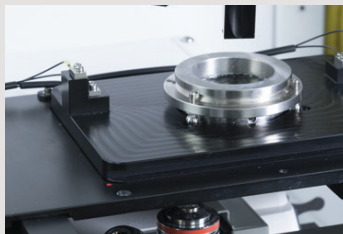
- Immersion etching with stable etchant and neutralizer solutions
- Up to 3 different dip wells available

Ultrasonic Bath



- Ultrasonic bath ensures specimen is properly cleansed
- Forced air drying

Image Acquisition



- Color or black & white images
- Image up to 5 regions of interest per section
- Mosaic or montage imaging available for large areas
- Autofocus and save files for later analysis

Specifications and Requirements

Overall System Specifications	
Dimensions	43.8" (1.11m) Width x 65.0" (1.65m) Depth x 80.5" (2.04m) Height
Weight	~1950 lbs (885kg)
Construction	4.0" (~100mm) thick granite slab to eliminate vibration Heavy-Duty leveling casters for mobility
Safety Features	Full steel / Polycarbonate enclosure door safety interlocks Emergency stop button on external control station

Utility Requirements	
Power Requirements	Voltage 220 VAC +/- 10% Single Phase: Neutral Required (L1, L2, N, G) Amperage (min): 30 Amps
Air Requirements	Pressure (min): 60 psi (0.41 MPa), MAWP: 100 psi (0.69 MPa) Flow Rate (max): 6 SCRM (0.17m ³ /min)
Water Requirements	Pressure (min): 40 psi (0.25 MPa)
Ventilation Requirements	600 SCFM (17m ³ /min) 8.0" (20.3 cm) Vent connection

Sub-System Descriptions	
Polishing	12.0" (30.5cm) Polishing Wheel 8 Platens with Automatic Platen Change Magnetic Platen Pads Platen Direction: Clockwise or Counterclockwise Platen Speed: 25-325 RPM
Dispensing	6 Solution Dispensing System Precision Flow Controls Platen Water Rinse
Washing/ Cleaning	2 Ultrasonic Baths 1 Compressed Gas Drying Station Sample Rinse with Water or Other Pressurized Fluid
Immersion Etching	3 Dip Wells for Etching, Washing, or Neutralizing 3 Peristaltic Pumps for Chemical Wells 1 Ventilation Discharge
Imaging	Zeiss AxioObserver with ZEN Software
Operation Modes	Manual, Automated
Robotics	3 Axis Motion: Z-Axis (Up/Down), Sweep, Sample Rotation
External Operator's Station	Control PC 27.0" (68.6cm) LCD Monitor Automated Stage Positioning System

System Capabilities	
Maximum Mount Size	2.0" (50.8 mm) Diameter
Maximum Total Sectioning Thickness	0.4" (9.5 mm)
Maximum Section Rate	20 Per Hour - 15min/per Section
Polishing Force	Min: 4.5lbf (20N) Max: 9.5lbf (42N)
Section Thickness	Submicron to tens of μ m removal per section
Etching	Automated immersion etching
Optical Illumination	Bright field, standard. Polarized, DIC available



For More Information, Please Contact:
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