

ROBOMET

INSIGHT BEYOND
YOUR EYESIGHT



ROBOMET

Material Evaluation System

_ROBOMET System

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.

_ROBOMET Analysis Services

We offer on-demand 3D Analysis. Our experts 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 the data generated.

_ROBOMET Integrations and Development

Robo-Met systems have been integrated with SEMs, as well as Laue XRD and SRAS. We have also developed and deployed high throughput systems for automated conventional metallographic analysis (Robo-Met.QC®).

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



OVERALL SYSTEMS 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	Voltage 220 VAC +/- 10% Single Phase: Neutral Required (L1, L2, N, G) Amperage (min): 30 amps
AIR	Pressure (min): 60 psi (0.41 MPa), MAWP: 100 psi (0.69 MPa) Flow Rate (max): 6 SCRM (0.17m ³ /min)
WATER	Pressure (min): 40 psi (0.25 MPa)
VENTILATION	600 SCFM (17m ³ /min) 8.0" (20.3 cm) Vet connection

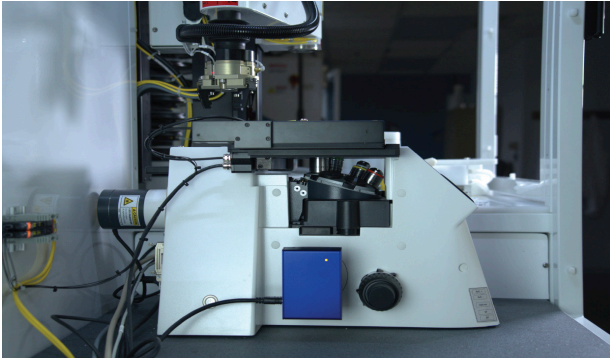


ROBOMET

INSIGHT BEYOND
YOUR EYESIGHT

ROBOMET

Material Evaluation System



SUB-SYSTEM DESCRIPTION

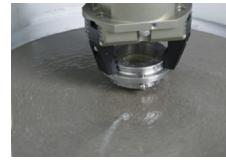
POLISHING	43.8" (1.11m) Width x 65.0" (1.65m) Depth x 80.5" (2.04m) Height
DISPENSING	~1950 lbs (885kg)
POSITIONING SYSTEM WASHING/CLEANING	4.0" (~100mm) thick granite slab to eliminate vibration Heavy-Duty leveling casters for mobility
IMMERSION ETCHING	3 Dip Wells for Etching, Washing, or Neutralizing 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

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



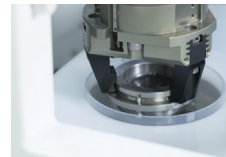
- > Configure recipes for up to 8 platens
- > Customize removal rates from submicron to tens of μm removal per section

ETCHING CYCLE



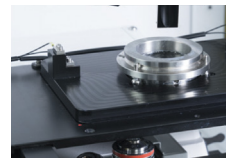
- > Immersion etching with stable etchant and neutralizer solutions
- > Up to 3 different dip wells available

ULTRASONIC BATH



- > Ultrasonic bath ensures specimen is properly cleaned
- > 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

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)
SECTION THICKNESS	Submicron to tens of μm removal per section
ETCHING	Automated immersion etching
OPTICAL ILLUMINATION	Bright field, standard. Polarized, DIC available