Boise State Center For Materials Characterization

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Materials Characterization

– Structural
  • X-ray Diffraction
  • Electron backscatter diffraction

– Chemical
  • Energy dispersive x-ray spectroscopy
  • Wavelength dispersive x-ray spectroscopy
  • X-ray fluorescence

– Imaging
  • Transmission electron microscopy
  • Scanning electron microscopy
  • Light microscopy
Transmission Electron Microscopy
- JEOL JEM-2100
  - Line resolution 0.14nm
  - LaB₆ source
  - Thermo Scientific EDS
  - Cryo holder
  - Heating stage
  - Orientation mapping

Electron Probe Microanalyzer (EPMA)
- CAMECA SXFive
  - 5 spectrometers (B-U)
  - Thermo Scientific EDS
  - LaB₆ source
  - Chemical mapping, lines
  - Quantitative analyses
Scanning Electron Microscopy

Hitachi S3400-N
- Variable pressure
- Tungsten source
- Resolution ~6nm
- Oxford Instruments
  - 50mm$^2$ EDS
  - WDS
- SE and BSE imaging

FEI Teneo
- Schottky field emission
- Variable pressure
- Low vacuum SE
- In column SE/BSE
- Beam deceleration
- STEM detector
- EDS and EBSD

NEW!
X-ray Diffraction

Bruker AXS D8 Discover
- -180°C – 1600°C
- Scintillation detector
- Hi-Star Detector
- Nickel filter
- Gobel mirror
- Germanium monochromator

Rigaku MiniFlex 600
- Fast, intuitive operation
- NaI scintillator
- 40kV, 600W
- Cu tube
X-ray Fluorescence
Bruker Tracer SD
- Handheld or desktop
- Rapid chemical analyses
- Vacuum operation

Optical Microscopy
Leica CTR6000
- Image stacking

Sample Preparation
- Mounting, grinding and polishing
- Ion milling
- Ion slicing
- Leica EM UC-6 Microtome
- Optical stereomicroscopes
- Plasma cleaners (TEM and SEM)
- Carbon coater
We provide services for Boise State University, outside universities, companies and national laboratories.

Micron Technologies
Acutus Medical Inc.
MJ3 Industries, LLC
NanoSteel Company
Nanolab Technologies
NxEdge Inc
Plexus Corporation
Quality Thermistor Inc.
Western Electronics
Surprise Valley Electrical Idaho
Industrial Development ISR
Capital Limited

BHS Specialty Chemicals
SGW Design Works
Photronics Inc.
Western Electronics
Fiberguide
Gold Hill Reclamation and Mining Corporation
End in Mind Inc.
MGM Targets
Reflok N.A. Inc.
Idaho Milk Products
Contact Information

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• Locations:
  SEM lab – ENGR108
  TEM lab – MEC 113A
  EPMA lab – MEC 105A

• Website: http://coen.boisestate.edu/bscmc/