

## SCANNING ELECTRON MICROSCOPE (SEM)

Given sufficient light, the human eye can distinguish two points 0.2 mm apart. Imagine being able to distinguish 3.5nm to 50nm (sample dependent). Magnification: 15 to 100,000x.

### How It Can Help:

- Measure topographical features using secondary electron imaging
- Determine phase separation of metals and ceramics
- Image non-conductive materials without coating
- Determine elemental separation in non-homogeneous samples (EDS)
- Find weight and atomic percent composition down to 1% accuracy (EDS)

### Detail Description:

Specifications:

- Accommodates specimens up to 70mm diameter and 50mm thick
- 17.5mm X/Y specimen movement
- Approximately 1 minute pump-down time
- Magnifications up to 30,000x sample dependent
- Low-vacuum, charge-up reduction mode to decrease need to sputter samples
- 5 and 15 kV accelerating voltages
- SE, BSE and EDS modes possible
- ThermoFisher Pathfinder Basecamp EDS detector

### How Much Does it Cost:

- Typically \$41 per hour, plus assistance if needed.

### What Can I Expect:

The unit is located at MCE 1325 (110 Central Campus Dr, Salt Lake City, UT 84112). Schedule a time to use the equipment with the MCE Dept and request assistance if required.

### How to Get Started:

- Review training and contact rates at: <https://mcl.mse.utah.edu/equipment/hitachi-tm3030plus/>