JEOL JSM-6320F

Field Emission Scanning Electron Microscope (FESEM)

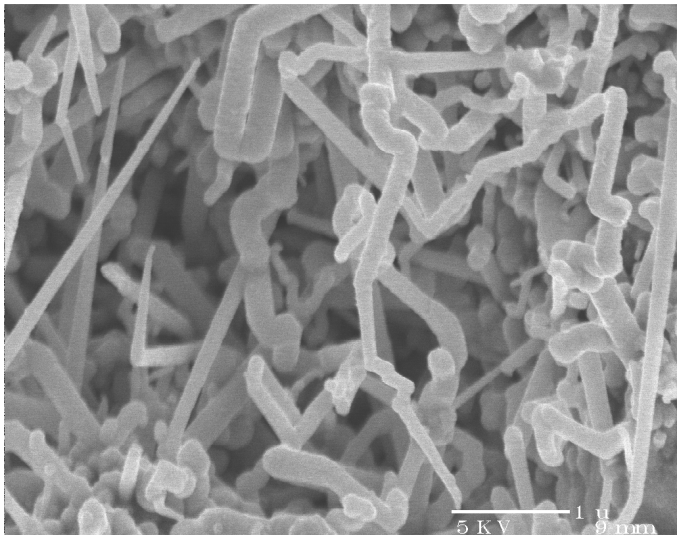
Location: Medical Sciences Building, E-32F

Description

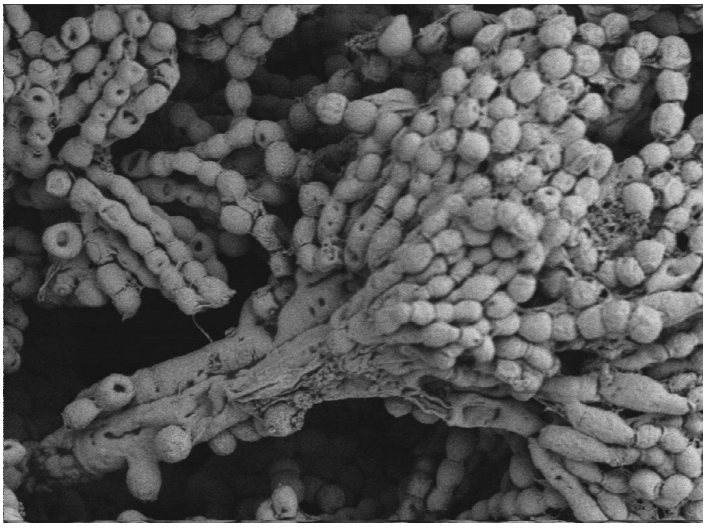
The Field Emission SEM, the JSM-6320F, is a high resolution SEM with a cold field emission source. High resolutions at low accelerating voltages are possible with this instrument due to its objective lens design. A secondary electron detector is integrated into the bore of the lens and the specimen can be bought up into the lens field. Working distances (WD) of as low as 2mm are possible.

The microscope is also fitted with a Noran Voyager EDX system with a light element X-ray detector (15mm WD) and an Autrata Back Scatter Detector. There is also a second conventional secondary electron detector below the lens, which gives better topographic images.

It was installed in 1997. Digital images are recorded using a JEOL Orion system reading into a Windows XP computer.



SiGe nanowires, 5kV



Pt/Pd coated cheese mold, 5kV

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Technical Specifications

- Accelerating Voltage 0.5-30kV
- Secondary Electron image resolution: 1.2nm (15kV), 2.5nm (1kV).
- Magnification: 500x ~ 650,000x.
- Imaging modes: Secondary, Backscattered.
- Specimen movements: 50mm (X), 70mm (Y), 24mm (Z).
- Tilt: -5 degrees - 45 degrees.
- Rotation: 360 degree.
- Maximum Specimen size: 32mm diameter, 10mm high.