

## Overview

The YSciCore Microscopy Facility features a high-performance field emission microscope with high, low and environmental vacuum modes. The system is equipped with electron and ion sources to accommodate the widest range of modern industrial and academic research. This most versatile of any scanning electron microscopes, the Thermo Scientific™ Quanta™ meets imaging requirements for life sciences, materials sciences and industrial process control.

To determine key material properties, surface images are combined with detailed elemental composition information.

The Facility's Laser Scanning and Spinning Disk Confocal microscopes provide flexibility to address challenges of cell biology.

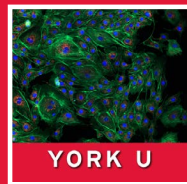
Get all the data in one place @YorkUMicroscopy

## @YorkUMicroscopy Services

Our electron and confocal microscopy capabilities cover the entire spectrum of imaging and elemental analysis:

- Surface topography at 2 nm resolution
- Dynamic characterization of phase transitions
- High resolution optical sectioning and 3D imaging
- Focus ion beam surface modification and nanofabrication
- Fast live cell imaging
- Energy dispersive spectroscopy
- Electron backscatter diffraction

## Contact Us



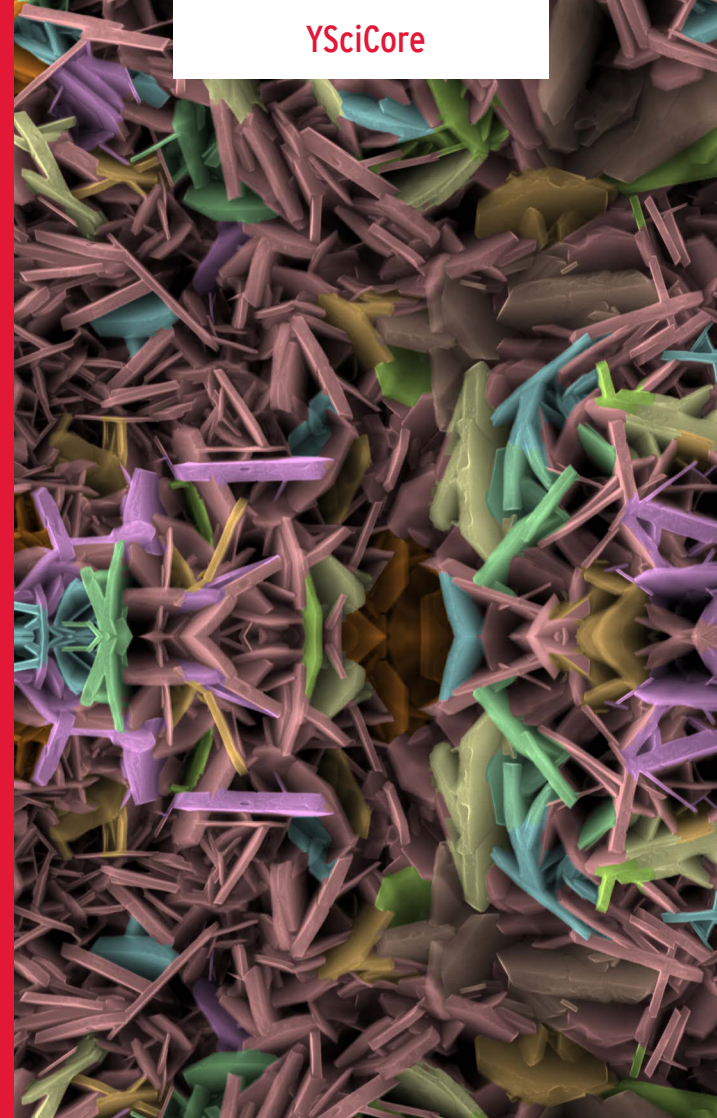
@YorkUMicroscopy

Magdalena Jaklewicz PhD  
Microscopy Specialist  
(647) 567-7295  
EM-LM@yorku.ca

or visit

[microscopy.info.yorku.ca](http://microscopy.info.yorku.ca)

YSciCore



## Microscopy and Elemental Analysis

science



## Our Microscopes

### Thermo Scientific™ Quanta™

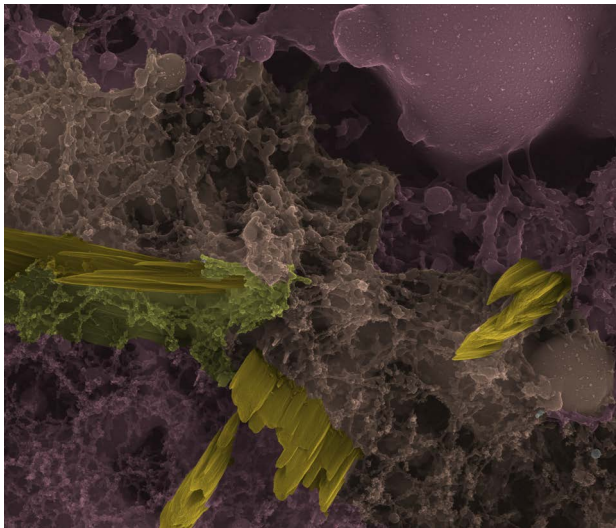
A field emission scanning-transmission dual beam electron microscope with beam deceleration, equipped with energy dispersive spectrometer and electron backscatter diffraction. Heating and cooling stages enable capturing of dynamic processes.

### Zeiss Cell Observer Spinning Disk

A confocal microscope employing spinning disk technology from Yokogawa CSU-X1 with motorized scanning stage, Z-Piezo inserts, stage-top incubation with O2 module for reducing the O2 concentration.

### Zeiss Laser Scanning Microscope LSM 700

A confocal microscope for precise optical sectioning; with high contrast and high resolution for quantitative imaging, equipped with incubator and definite focus.



## Our EDS/EBSD System

### EDAX Octane Elect

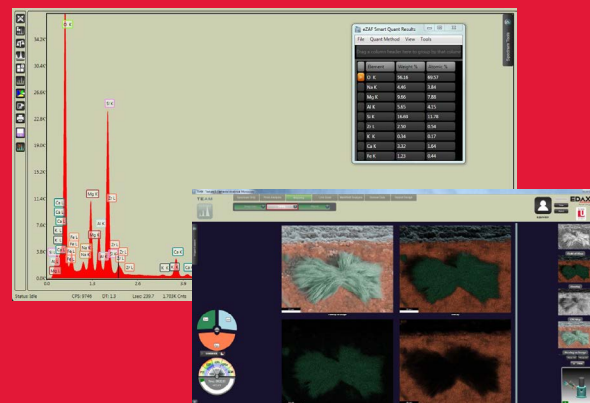
An enhanced Energy Dispersive Spectroscopy (EDS) platform with the latest advancements in Silicon Drift Detector (SDD) technology; the System provides excellent resolution and high throughput at an optimal value with remarkable low energy sensitivity for light element detection and low voltage microanalysis.

### OIM™ Electron Backscatter Diffraction (EBSD)

An EBSD System to correlate electron backscatter diffraction patterns with crystallographic orientation and phase information.

We provide instrumental support for a wide spectrum of elemental analyses:

- Qualitative and quantitative analysis of elements present in a material
- Elemental mapping
- Orientation mapping
- Phase identification and phase mapping



## Applications

### NanoCharacterization

- Metals and alloys, corrosion, fractures, welds, polished sections, magnetic and superconducting materials
- Ceramics, composites, plastics
- Films and coatings
- Geological sections, minerals
- Soft materials: polymers, pharmaceuticals, filters, gels, tissues, plant material, cells
- Particles, porous materials, fibers

### In situ NanoProcesses

- Hydration/dehydration
- Wetting behaviour/contact angle analysis
- Oxidation/corrosion
- Crystallization/phase transformation

### NanoPrototyping

- Ion beam lithography
- Electron beam induced deposition

