

Mass Spectrometry Facility

Location: Science and Technology Building, Rooms 453 and 459

Established: 2006

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Greenville, NC 27858

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Overview: The Department of Chemistry at East Carolina University is equipped with two mass spectrometers (MS): an Agilent 6890 gas chromatograph (GC) coupled to a JEOL double-focusing mass spectrometer, and a Waters Acquity ultra-high performance liquid chromatograph (LC) paired with a Micromass Quadrupole/Time-of-Flight mass spectrometer. These two instruments are both high resolution mass spectrometers, and routinely, 30 ppm or better mass accuracies are obtained. The use of reference compounds (often called “lock masses”) can improve the mass accuracy to better than 5 ppm.

GC/MS specifications: Electron Ionization (EI) and Chemical Ionization (CI)
Mass range 1 – 1000 Da
Resolution ($m/\Delta m$) > 5000
Mass accuracy < 5 ppm
Suitable for volatile, low molecular weight compounds

LC/MS specifications: Electrospray Ionization (ESI) and Atmospheric Pressure CI
Mass range 50 – 20000 Da
Resolution ($m/\Delta m$) > 5000
Mass accuracy < 5 ppm
Tandem mass spectrometry (MS/MS) capabilities
Protein database searching tools available
Suitable for less volatile, high molecular weight compounds