

Major instruments available at ETI

Total Organic Analyzer (TOC). *Model TOC-L from Shimadzu*

Total Nitrogen Analyzer. (TN) *Model TOC-L (TN unit) from Shimadzu*

High Pressure Liquid Chromatography (HPLC). *Model LC-2030 plus from Shimadzu*

Auto-Analyzer. *Model AA500 from Seal Analytical*

Scanning Electron Microscope (SEM). *Model Vega II SBH from Tescan*
Microscope with camera. *Model Axioscope 5 from Zeiss*

Fluorescence Spectrometer. *Model Cary Eclipse Fluorescence from Agilent Technologies*

Flow Cytometer. *Model Accuri C6 Plus from BD*

Real Time Polymerase Chain Reaction (qPCR). *Model Aria Mx from Agilent Technologies*

Gas Chromatography / Mass Spectrometer (GCMS). *Model QP2020 NX from Shimadzu*

Atomic Absorption Spectrometer (AA) *Model 200 series & GTA 120 from Agilent Technologies*

Inductively Coupled Plasma Mass Spectrometer (ICPMS): *Model Nextlon 2000C from PerkinElmer*

Drone. *Model DJI Matrice 100 from DJI*

3 D printer. *Model PRUSA i3 MK3 from PRUSA Research*

Scientific Instruments at ETI

Total Organic Carbon (TOC): Model TOC-L

www.Shimadzu.com

To measure total organic carbon and total inorganic carbon in water, we have the TOC-L from Shimadzu. Both seawater and freshwater can be analyzed on this instrument.



Total Nitrogen (TN): Model TOC-L (TN unit)

www.shimadzu.com

To analyze for Total Nitrogen in a solution, ETI has obtained a TNM-L instrument from Shimadzu. This system can accurately measure all nitrogen in a solution. From this analysis, and together with nitrate and nitrite analysis, one can even calculate Kjeldahl nitrogen.



High Pressure Liquid Chromatography (HPLC): Model LC-2030 plus

www.shimadzu.com

Our high-performance liquid chromatography is the LC-230 plus from Shimadzu. It is a state of the art chromatography system. This HPLC can accommodate six analytical columns, and it has a dedicated six positions valve to switch between them. The system is one of the best research grade HPLC available.



Atomic Absorption Spectrometer (AA): Model 200 series & GTA 120

www.Agilent.com

Our AA is from Agilent Technologies. ETI lab is equipped with both flame and graphite. The system is completely automated, and can even run simultaneously.



Inductively Coupled Plasma Mass Spectrometer (ICPMS): Model Nextlon 2000C

www.perkinelmer.com

The NextION 2000C is our new ICPMS. It is from PerkinElmer. This is one of our newest instruments, and it is available at the end August.



Nutrient Analyzer (Auto-Analyzer): Model AA500 from Seal Analytical
www.Seal-Analytical.com

To analyze large number of samples for nutrients , ETI has an AA 500 from Seal Analytical. It can be used for nitrate, nitrite, ammonia, and phosphate analysis.



Flow Cytometer (FCM): Model Accuri C6 Plus

www.BD.com

From bacteria counting to blood analysis, our Accuri C6 Plus from BD can be used. It has a small footprint, but has large capability.



Real Time PCR (qPCR): Model Aria Mx Real Time PCR

www.Agilent.com

Our real time PCR is the AriaMx from Agilent Technologies. It can be controlled by a computer or can be operated with the touch screen on the instrument.



Fluorescence Spectrometer: Model Cary Eclipse Fluorescence

www.Agilent.com

ETI Fluorescence Spectrometer is the Cary Eclipse from Agilent Technologies. It can be used with 1 cm cuvette or 96 well plate.



Gas Chromatograph Mass Spectrometer (GCMS): Model QP2020 NX

www.Shimadzu.com

ETI GC/MS is the GCMS-QP2020 from Shimadzu. It is a high – end single quadrupole system.



Scanning Electron Microscope. Model Vega II SBH from Tescan

www.Tescan.com

We have a scanning electron microscope in our lab. It is from Tescan, and is equipped with Denton Vacuum system for material preparation. The system is great for use with materials that contain no water. Some materials need to be prep using our Denton Desk V system.



Microscope with camera. Model Axioscope 5 from Zeiss

www.zeiss.com

ETI is equipped with a state-of-the-art microscope from Zeiss. The Zeiss Axioscope 5 is loaded with the AxioCam 705, computer and software.



Aside from the above major instruments, ETI is equipped with all necessary research lab equipment; from large and small centrifuges to large temperature enviro-shaker. Below are some of the few available equipment.

-80 degree C freezer- Thermo Fisher

For storing bacteria and molecular molecules, we have a -80 degree Centigrade freezer. This helps in the preservation of life molecules for later use in experimentation.

Autoclave – Tuttnauer

We have a small autoclave for sterilizing lab materials. It is small unit, but works well for preparing media and materials for microbiological uses.

Centrifuges – Thermo Fisher

We have three centrifuges for chemical separation. They are from Thermo Fisher; ST16R, ST8, and Micro 21R. The three centrifuges make up the complete lab centrifuge system.

Temperature controlled Shaker – Thermo Fisher

We have a large floor model temperature control shaker that can be used for microbiology study, and for chemical reaction at constant temperature. The system is a large size shaker, thus can help in experiment that requires large size and number of samples.

DNA and Protein image System – Azure Biosystem C200

Our gel imaging system is from Azure Biosystem. This system is good for use in DNA and protein applications. It can image almost any molecular gel produced in the lab.

Quantifying Biomolecules such as DNA, RNA, and protein in microliter sample size-Thermo
Fisher Nano Drop One/One

Our lab is equipped with Nano drop technology. With a few microliters of sample, we can quantify the concentration of biomolecules in the sample.