Description of the Facility
Mission
The mission of the CUNY X-ray Facility is to perform single-crystal analyses for the structure determination of molecules, which make up a crystal. This technique is called single-crystal X-ray crystallography. It is the ultimate method for definitive determination of molecular structures at the atomic level for both organic and inorganic compounds. Its uses range from simple identification of compounds to various exotic configuration and conformational studies.
Instruments

Bruker-Nonius KappaCCD System

Capabilities: The KappaCCD, acquired in 2001, embodies the state-of-the-art technologies for rapid, precise, and accurate determination of crystal structures. It is especially useful for research involving inorganic compounds containing heavy atoms, such as technetium and rhenium, to minimize absorption-correction errors.

Enraf-Nonius CAD4
Instrument: Nonius CAD4 serial diffractometer, equipped with a scintillation detector and a liquid-nitrogen low-temperature device, on a Nonius Diffractis 586 X-ray generator with a copper sealed tube.

Capabilities: A serial diffractometer collects one diffraction spot at a time. This CAD4 is an excellent instrument for determining crystal structures. It is easy to use, requires little maintenance, and results in high-quality raw data.

The long 2theta-detector arm allows better resolution of diffraction spots for crystals with a long unit-cell parameter. The detector-to-source distance is large enough to produce a high signal-to-noise ratio, which makes it possible to use small crystals to collect data and to collect data even from low-intensity sources.

The low-temperature options immensely improve the flexibility of a diffractometer. When a crystal is cooled, the analysis of crystals is also possible.