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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 measurements. It is useful for collecting data from crystals of inorganic compounds containing heavy atoms, such as technetium and rhenium, to minimize absorption-correction errors.

**Enraf-Nonius CAD4**
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 experiments where the crystal structure is to be determined and the crystal can illustrate, display, and apply the principles of crystallography. A CAD4 diffractometer requires little maintenance.

The low-temperature options immensely improve the flexibility of a diffractometer. When a crystal is cooled, the contrast of the data is increased, and the signal-to-noise ratio is higher than for data from a sealed tube; and thus smaller crystals may be used to collect data.

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