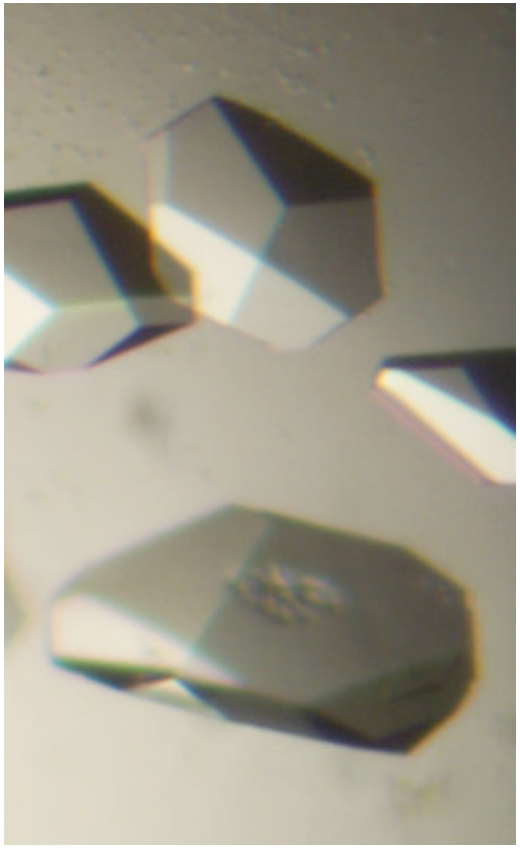
Working with the X-ray Lab

The Laboratory welcomes inquiries regarding X-ray measurements on a fee-for-service basis from the broader academic and industrial research communities. Volume discounts are available with an upfront purchase order for multiple measurements. We also welcome inquiries regarding academic collaboration and offer an academic discount on rates. For more information, please contact Dr. Jeffrey W. Bacon at 617-358-6943 or jwbacon@bu.edu.



About the CIC

The Chemical Instrumentation Center (CIC) is a core facility under the Department of Chemistry that offers analytical instrumentation and services to scientists both within and outside of BU. The Center is available to users on a 24/7 open-access basis upon completion of instrument training. Instrumentation available in the facility includes AA, CD, DSC, Fluorescence, FT-IR, GC-MS, HPLC, LC/MS, NMR, ESR, MALDI, UV-Vis, Polarimetry and Xray Crystallography.

BOSTON UNIVERSITY

Contact Us

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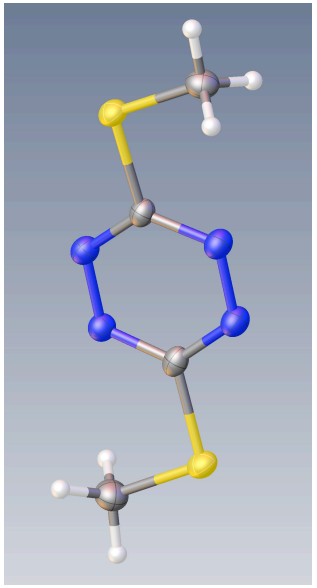
BOSTON UNIVERSITY

Department of Chemistry

Chemical Instrumentation Center

X-ray Crystallography



Serving the BU Community and Beyond

(617)358-6043

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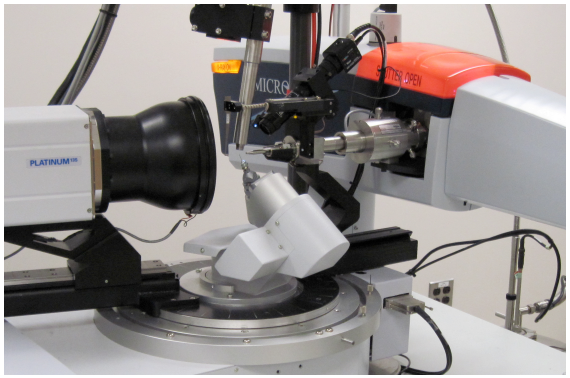
BU Chemical Instrumentation Center - X-ray Crystallography



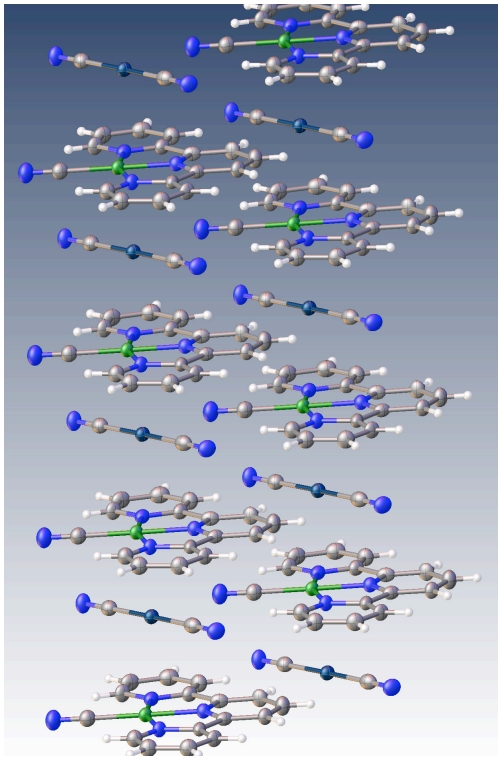
Instrumentation

The CIC maintains a state-of-the-art Bruker Proteum-R diffraction system with a copper rotating anode X-ray source. The system is configured for high versatility and can measure:

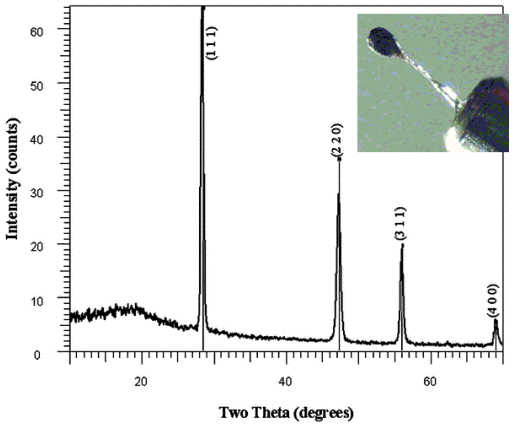
- Small molecule single crystal structures
- Macromolecular single crystal structures
- Cryocrystallography to 100K and
- Powder XRD on micro-to-nanogram sized samples

Services Offered

The instrument is available for walk-up use by trained users in the BU community. Diffraction services are available within BU and to external academic and commercial customers. The X-ray lab is staffed by experienced crystallographers who specialize in non-routine single crystal and powder diffraction measurements. Please contact us for information on rates and to schedule a free consultation.

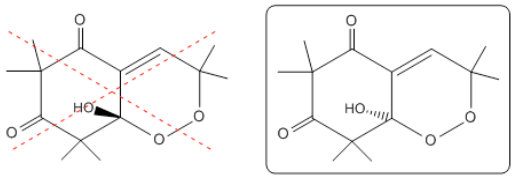


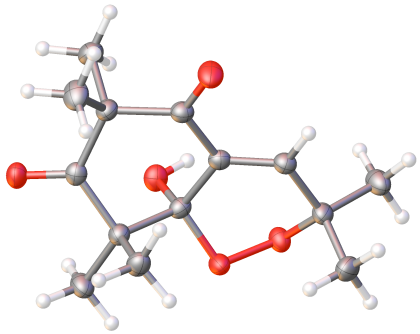
Above: Crystal packing of a Pt-Au double salt complex with metallophilic interactions resulting in a chiral extended structure.



Absolute Configuration

The Bruker Proteum-R uses a Bruker Microstar Cu rotating anode source. Copper radiation allows the determination of absolute configurations for compounds with atoms no heavier than oxygen. The bright, fine focus source also produces good quality data from very small or weakly diffracting crystals.





Microsample Powder Diffraction

Powder diffraction patterns can be measured for microsamples from about 1 microgram down to tens of nanograms, using a variety of sample holders. Other types of microsized samples such as fibers with microcrystalline coatings can also be analyzed.

At left: X-ray diffraction pattern of a 1 microgram sample of silicon powder, formed into a ball (inset) 100 microns in diameter (from Bhuvanesh, et al. J. Appl. Cryst. 36(6), 1480 (2003).