Instrumentation in Chemistry

Prepared by
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Mass Spectrometry Facility

Bruker UltraFlex MALDI-ToF/ToF Mass Spectrometer

GC/MS, LC/MS and electrospray ionization MS instruments

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www.chem.upenn.edu/chem/facilities/msf.php
Regional Laser and Biomedical Technology Laboratories (RLBL)

2D Infrared Laser Resources

... protein conformational dynamics?
... electron or energy transfer?
... fast photobiological processes?
... single proteins or assemblies?
... IR, VIS or UV spectroscopy?
... Single molecule or particle tracking?
... spectroscopic & imaging developments?

Fluorescence decay times
Transient absorption spectra
Single molecule detection
Cell imaging applications

http://rlbl.chem.upenn.edu/resource.html
Wide-Field Video Microscopy

Single molecule localization in nm range
Single molec. wide-field imaging in vivo
Kinetics of surface diffusion, association and dissociation
Real-time single molecule and single particle tracking
Optical cross-sectioning by means of low-angle epi-illumination
Time-lapse fluorescence measurements
Differential interference contrast (DIC) measurements
High sensitivity fluorescence imaging

http://rlbl.chem.upenn.edu/resource.html
Small Molecule Facility

Rigaku RUH2R 12kW rotating anode generator equipped with Mercury CCD area detector and Rigaku X-stream 2000 Cryogenic Crystal Cooling System for low-T capabilities.

Data processing and structure determination

- Rigaku CrystalClear: processing area detector data
- Rigaku CrystalStructure: structure solution and manipulation
- SHELXL-97 - least squares refinement

http://macxray.chem.upenn.edu/about.html

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Nuclear Magnetic Resonance facility

- DMX300
- DRX500
- UNI500
- BIODRX600
- Cryo500

- DMX360
- UNI400
- BIODRX500
- AVLL500b
- ABSAV3500

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www.chem.upenn.edu/chem/facilities/nmr.php
**Glass Shop**
This facility, complete with an expert glass blower, maintains the Schlenk lines and many other glassware items in the lab.

Karen Knoepp-Carraro, *Scientific Glassblower*
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**Center for Molecular Modeling**
SGI (16-processor and 8-processor)
IBM (32-processor and 16-processor)
Located in LRSM. http://www.cmm.upenn.edu