



Canadian
Light
Source Centre canadien
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synchrotron

Go beyond protein crystallography

www.lightsource.ca



Work with a team of accomplished CLS scientists to develop experiments that meet industry standards. Benefits to clients include:

- Clear intellectual property policies
- Remote data collection from anywhere in the world
- Rapid access to beamlines
- On-site data collection
- Mail-in service for staff to perform experiments
- Strong history of productive industrial relationships

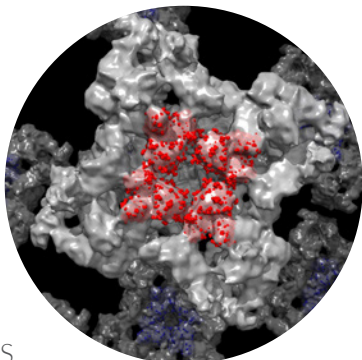
Single Crystal Diffraction

X-Ray crystallography is a primary means of determining the 3D structure of proteins. It is critical for drug design, process and characterization of medically important targets. The method can be used to characterize DNA, RNA, peptides and various small molecules.

Services:

Macromolecules (MX)

- Data collection, reduction and analysis: SAD, S-SAD, MAD, SIR, MIR, SIRAS, MIRAS



Small molecules (SM)

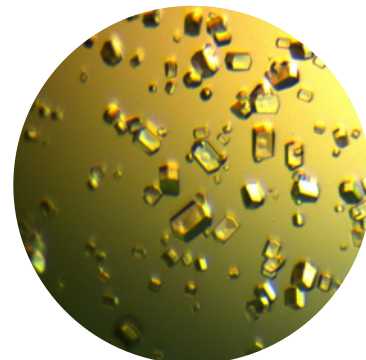
- Data collection and reduction
- Structure solution
- Structure refinement
- Twin refinement
- Disorder refinement
- Preparation of publication materials

Powder Diffraction

Powder diffraction is a valuable technique that can be used to rapidly analyze multi-component mixtures. This is useful for designing pharmaceutical formations and improving drug delivery methods.

Services:

- Pattern indexing
- Reitveld refinement: phase identification; peak fitting; quantitative analysis; amorphous phase quantitative analysis
- Structure solution from powder data



The Canadian Light Source (CLS) has a wide range of scientific solutions to answer the big questions in structural biology and drug design. At the CLS's Canadian Macromolecular Crystallography Facility, clients can access advanced capabilities using a highly-productive insertion device beamline (CMCF-ID) as well as a bending magnet beamline (CMCF-BM).

Canadian Macromolecular Crystallography Facility at the CLS



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Beamline CMCF-ID (08ID1) – this insertion device protein crystallography beamline is suitable for studying small crystals and crystals with large unit cells. Upgrades to the beamline coming in 2021 include new capabilities.

Current Capabilities:

Spectral Range: 6 – 18 keV, 2.1 - 0.69 Å

Flux on sample @ 12 keV (Ph/s):

>1 X 10¹² (50 µm pinhole)

Detector: Pilatus 3 6M, 423.6 X 434.6 mm
(2463 X 2527 pixels),
Read-out time: 0.95 ms

Future Capabilities (From Jan, 2021)

Spectral Range: 5 – 20 keV, 2.5 - 0.62 Å

Flux on sample @ 12 keV (Ph/s):

1 X 10¹² (5 µm focus, DCM),

1 X 10¹⁴ (5 µm focus, DMM)

Detector: Eiger X 9M, 233.2 x 245.2 mm
(3110 x 3269 pixels),
Read-out time: 3 µs

Beamline CMCF-BM (08B1) – complementing the CMCF-ID beamline, this bending magnet beamline is used for screening crystals, high-throughput crystallographic analysis of well-ordered crystals, and other more specialized analyses.

Spectral Range: 4 – 19 keV, 3.1 – 0.65 Å

Flux on sample @ 12 keV (Ph/s):

2 X 10¹¹ (200 µm pinhole, DCM),

4 X 10¹² (200 µm pinhole, DMM)

Detector: Rayonix MX300HE CCD, 300 X 300 mm
(4096 X 4096 pixels), Read-out time: 1s

Detector: Pilatus 3 6M, 423.6 X 434.6 mm
(2463 X 2527 pixels), Read-out time:
0.95 ms (from March 2020)

CONTACT US

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