

# Single Crystal X-ray Diffraction Facility (SC-XRD)

Sponsored by DST-FIST Program

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Department of Chemistry

School of Advanced Sciences (SAS)

Vellore Institute of Technology, Vellore

**Make: Bruker D8 QUEST**

**Manufacturer: Bruker AXS GmbH, Germany**

## ❖ Features:

- ❖ Mo I $\mu$ S 3.0 X-ray source.
- ❖ Fixed- Chi 3 stage Goniometer.
- ❖ Fast and fully-automated.
- ❖ PHOTON II detector with CPAD technology.
- ❖ APEX4: The most comprehensive software for crystallography.
- ❖ OXFORD 800 Cryo System: Low temperature data collection (80 K).

## ❖ Facilities in SC-XRD

- ❖ Unit cell determination.
- ❖ Variable temperature data collection (80 –400K).
- ❖ Structure solution, refinement, and interpretation.

## Contact Details

SC-XRD facility,

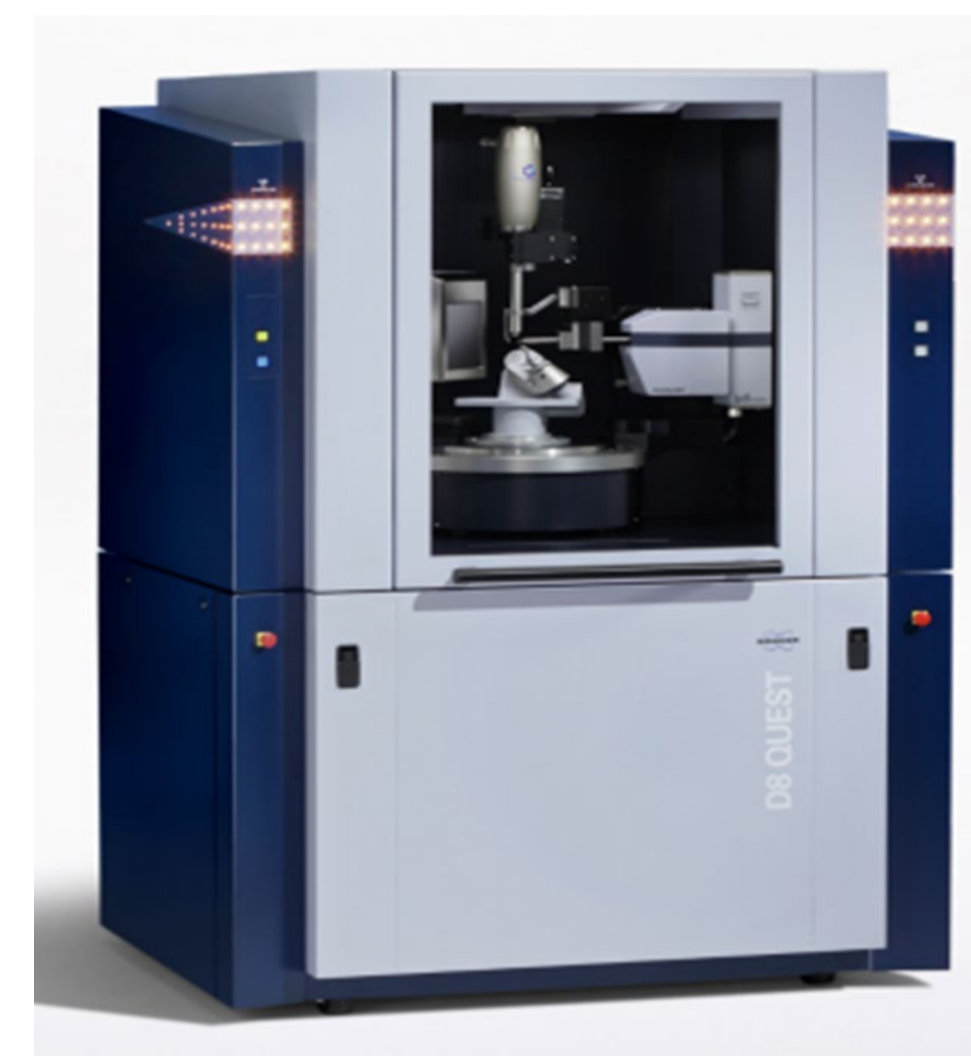
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## Applications of SC-XRD:

- ❖ Determination of molecular structure, atomic coordinates, molecular Orientation and packing of molecules in crystals.
- ❖ Precise information about internal Unit cell dimensions, bond lengths, bond angles and details of site ordering.
- ❖ Identification of newer materials, their crystal solution and refinement.
- ❖ Characterization of cation –anion coordination.
- ❖ Used to cover all typical single crystal applications from chemical Crystallography to structural biology.

## Faculty In-Charge:

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