

Single Crystal X-ray Diffraction



Single crystal X-ray diffraction is a method of determining the arrangement of atoms within a crystal, in which a beam of X-rays strikes a crystal and causes the beam of light to spread into many specific directions. From the angles and intensities of these diffracted beams, a crystallographer can produce a three-dimensional picture of the density of electrons within the crystal. From this electron density, the mean positions of the atoms in the crystal can be determined, as well as their chemical bonds, their disorder and various other information.

The data will be measured with a new STOE StadiVari goniometer which is equipped with an ultra-fast and sensitive DECTRIS PILATUS pixel detector (300 K) and two microfoci X-ray sources (Cu- and Mo-radiation). The special characteristics of the detector (ultrafast readout and almost zero background) in combination with high power X-ray sources offer new dimensions in time and data quality especially in the field of molecule crystallography. The attached low temperature device allows for measurements of the crystals from 120 to 350 K in a stream of nitrogen. Required size of the single crystals: between 0.02 and 0.2 mm. The smallest dimension of the crystal should not go below 0.02 mm.

Contact

See KNMF website or contact the KNMF User Office.