

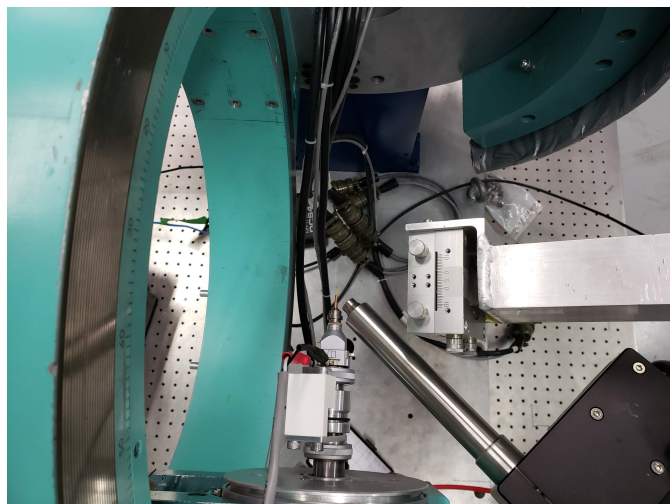
Cryostream #2

Beamline: BXDS

Contact: Beatriz Diaz Moreno

Provides sample temperature control from 80 – 500 K (-193 – +226 °C) by blowing dry nitrogen gas over the sample. The system is on a mobile cart and only requires a 110V outlet to run. The minimum temperature can be maintained for up to 4 days continuously on a full tank of liquid nitrogen.

The system is the same as Cryostream #1, except the transfer line is 3.0 m long instead of 1.5 m.



KNO_3 undergoes a phase transition from orthorhombic(I) to trigonal(II) phase at $T(\text{Lit})=129\pm1^\circ\text{C}$ (e.g. [3],[4]). Upon cooling down a metastable phase(III) forms at 120°C before conversion back to phase(I) takes place.

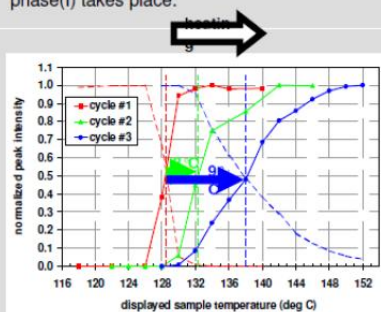


Fig. 1
Formation of KNO_3 phase(II) during three consecutive heating cycles.

The dashed lines show the decrease of phase(I) peak intensity.

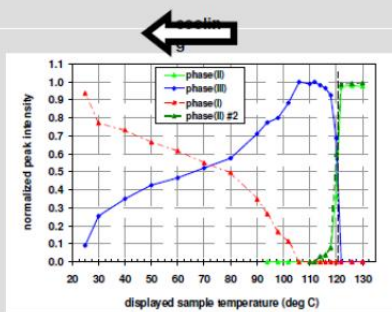


Fig. 2
 KNO_3 phase formation during cooling, starting with purely phase(II).

The dark green curve shows the transition of phase(II) \rightleftharpoons (III) for a second cooling cycle.

