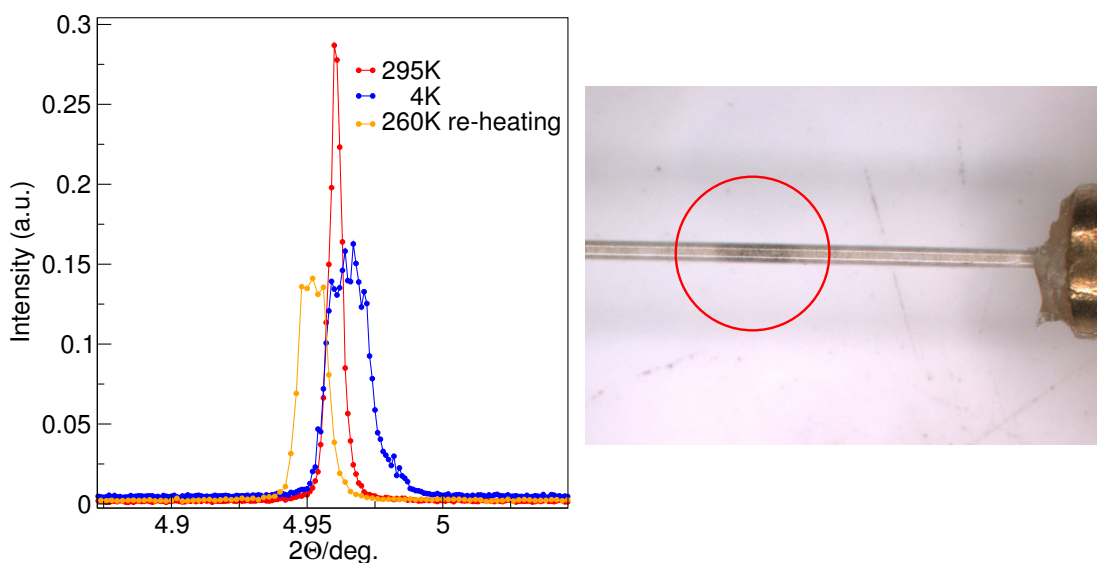


We observed a splitting of several peaks (e.g. around $2\theta=4.95 - 5.0$ deg, see Fig. 1, left panel) of the integrated powder pattern, appearing at low temperatures. This indicates a phase transition with symmetry change. – Unfortunately, however, the observed splitting is not reversible by increasing the temperature. After cooling down and heating back towards room temperature the splitting of peaks remains and is only shifted.

In conclusion, the indication for a phase transition has to be taken with care. We cannot exclude that the powder sample is damaged during experiment by the beam intensity. We observe a color change of the sample (see Fig 1. right panel) most likely related to decomposition or a chemical transition and not to an intrinsic structural transition. Due to the small amount of damaged sample, a lab investigation of the new material was unfeasible.



Left: Comparison of integrated powder pattern from XRD measurements performed at ID31 at different temperature.

Right: Capillary filled with $\text{Cu}_2(\text{PO}_3)_2\text{CH}_2$ powder sample during the ID31 experiment. The color change (marked region) of powder is most likely due to decomposition or reaction of the sample caused by the beam intensity, which damaged the sample.