Poster Presentation

MS40.P06

SAD experiment using the wavelength of 2.7 Å or longer

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Single-wavelength anomalous dispersion (SAD) experiment with light atoms as anomalous scatterers has been carried out using longer wavelengths up to 2.3 Å. We have been developing a synchrotron beamline dedicated to the SAD experiments where wavelengths longer than 2.7 Å are available to enhance weak anomalous signals. Larger background noise due to the longer wavelength, which is one of the major problems in the experiment, is reduced by introducing a standing helium chamber surrounding both the whole diffractometer and the X-ray detector. The system allows to perform experiments with normal and long waveldngths under the same environment. Helium cold stream is fed into the chamber at the sample position and reused after removing contaminants to keep the temperature of the stream at 30 K or below economically. Capillary-top-mount method [1] was improved to further reduce the background noise and to accommodate with smaller or needle-shape crystals. Several results on de-novo structural solutions with sulfur-SAD phasing will be reported in addition to the current performance of the beamline and its future plan.

[1] *Kitago, Y., Watanabe, N. & Tanaka, I., Acta Cryst. 2005, D61, 1013*

Keywords: long wavelength, sulfur SAD, synchrotron beamline