Contribution ID: **56** Type: **Poster**

Sample identification using RFID in macromolecular crystallography beamlines at the Photon Factory

At the Photon Factory macromolecular crystallography beamlines, sample exchange system PAM and PAM-HC have been installed and operated by the Structural Biology Research Centre. Most of the samples are brought in by Uni-puck, and information of the samples in the Uni-puck is described in the sample list file corresponding to each Uni-puck. The Uni-puck is automatically recognized by the sample exchange system by reading the 2D barcode on the pin placed in a specific position of the Uni-puck. However, since 2D barcode sometimes have reading errors and reading all barcodes is time-consuming, we are considering using RFID tags to identify samples. We have successfully read RFID tags embedded in Uni-puck in liquid nitrogen via an L-shaped adapter, but long-term stable operation has not yet been achieved. Therefore, we are proceeding with a two-step method of sample identification. First, before the L-shaped adapter containing the Uni-pucks is placed in the liquid nitrogen Dewar, the RFID tags of the L-shaped adapter and up to four Uni-pucks are read and recorded. Next, only the RFID tags of the L-shaped adapters are read in liquid nitrogen Dewar to determine the location of all Uni-pucks. We have tested each of the steps and so far have confirmed the usefulness of the two-step reading.

Primary authors: Prof. HIRAKI, Masahiko (Mechanical Engineering Center, KEK); Dr MATSUGAKI, Naohiro (Photon Factory, KEK); Dr YAMADA, Yusuke (Photon Factory, KEK); HIKITA, Masahide (High Energy Accelerator Research Organization); Prof. SENDA, Toshiya (Photon Factory, KEK)

Presenter: Prof. HIRAKI, Masahiko (Mechanical Engineering Center, KEK)