LN2 Cooling Development

D15.8 Cold Irradiations at Birmingham Cyclotron Facility

The LN2 cooling system is working exceptionally well. It can achieve a stable 120 temperature of -50 C in 30 minutes. The xy scanning robot then moves the sample mounted in the cold box through the proton beam to complete a cold irradiation. Issues with any annealing of sensors have now been solved (see B'ham presentations). [Bottom left image]

Resource efficiency has improved allowing parallel development with UoB irradiation programme activities. The second scanning system robot with liquid nitrogen cooling is completed. [Top right image]

Located within the new "Robotics Foundry" housed within the first series of new buildings at USFD. This new seven storey, 5355 m2 building is specifically for collaborative, inter-disciplinary research groups in this case, Sheffield Robotics

- Duplicate system completed
- Fully networked with UoB system to allow real-time software updates and trouble shooting / alterations
- Remote connection to UoB system 99% completed
- Tele-operation of the UoB system from Sheffield or the Sheffield system from UoB is now possible via remote connection
- UoB staff being trained on the use and development of the scanning system.

The current cold box is to be replaced with a new design, reducing area and payload on the scanning robot system ~ mid 2017

- Production of new cold box est end 2017
- UoB staff training during 2017
- Teleoperation of systems needs careful safety analysis.
- Networked support needs use and evaluation.

The new cold box design is completed. Waiting for a workshop slot to be available to being production. Due to the low level of funding from AIDA2020 and removal of a UK-ALTAS staff post at USFD, it is prohibited to request a production advancement at this time.