

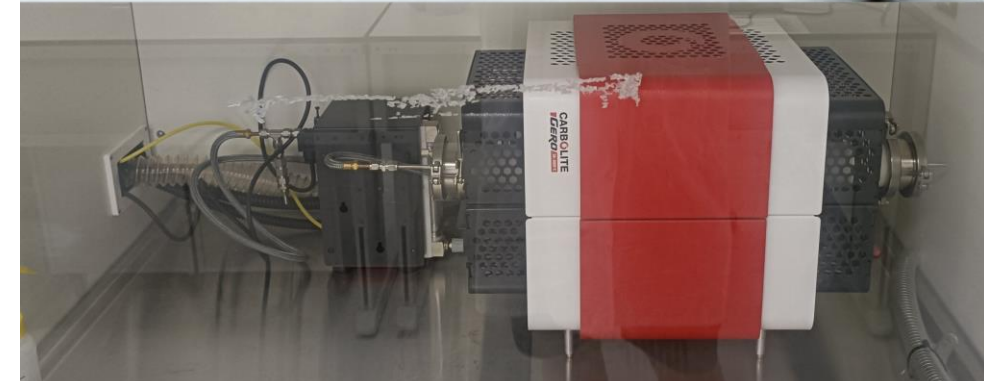
Diamond Active Materials Lab update

Fred Mosselmans
Diamond Light Source



AML Dry Lab

- 1200 C controlled gas furnace
- Anaerobic Dry glove box with microscope
- Anaerobic solvent tolerant glove box
- Pellet presses , one suitable for glove box use.
- Optical microscope
- Balances
- 200C lab oven



AML Wet Lab

- Recirculating fume hood
- Anaerobic Coy Chamber
- Centrifuge, micro-centrifuge
- Balances
- UV-vis spectrometer
- Fridge
- General Lab equipment
- Sluice sink for liquid waste disposal



AML Counting room

- Gamma spectrometer
- Liquid Scintillation Counter

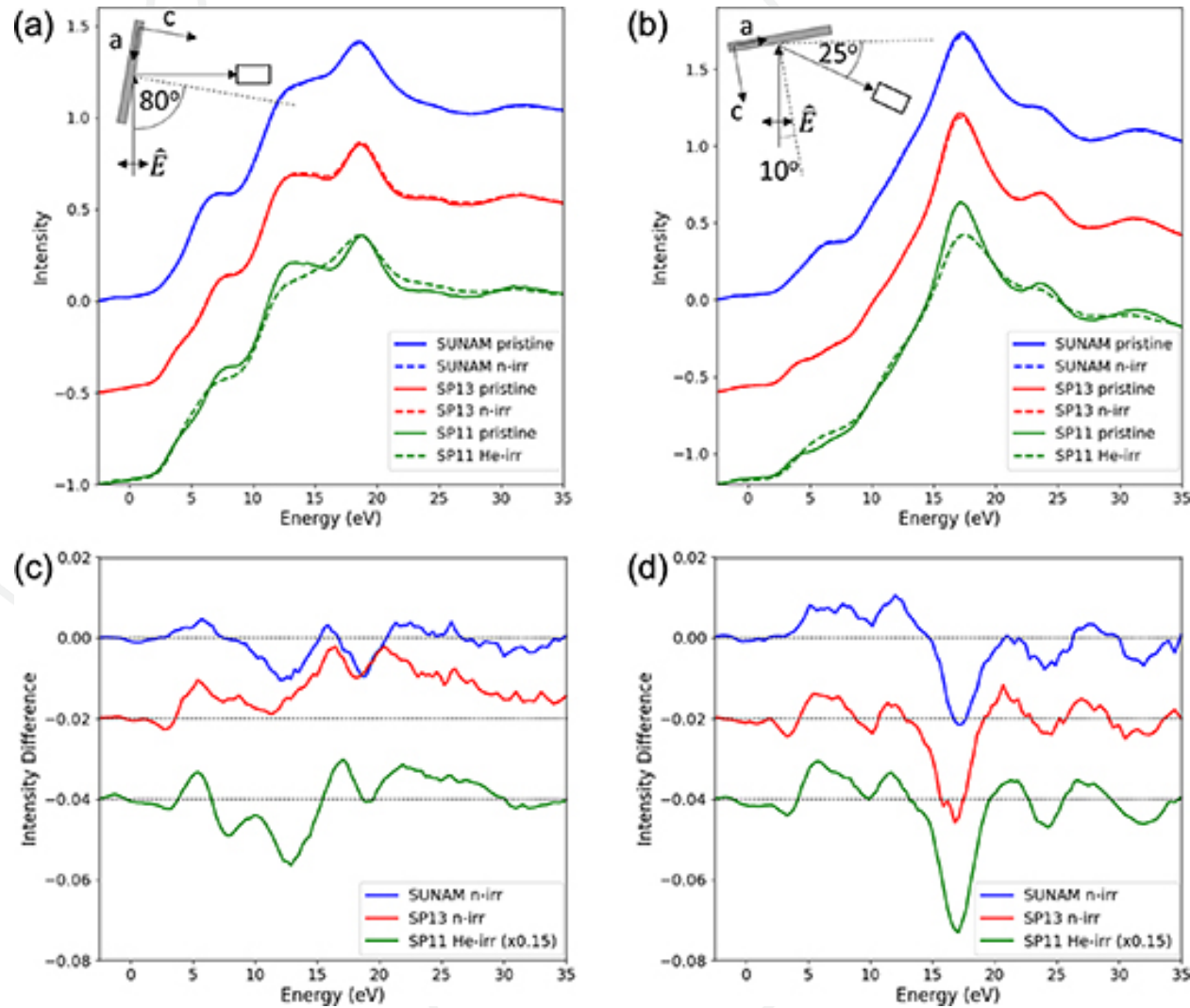
AML Secure storage room

- Lead lined Safe
- Safe
- Lockable Fridge, Freezer, -80C Freezer



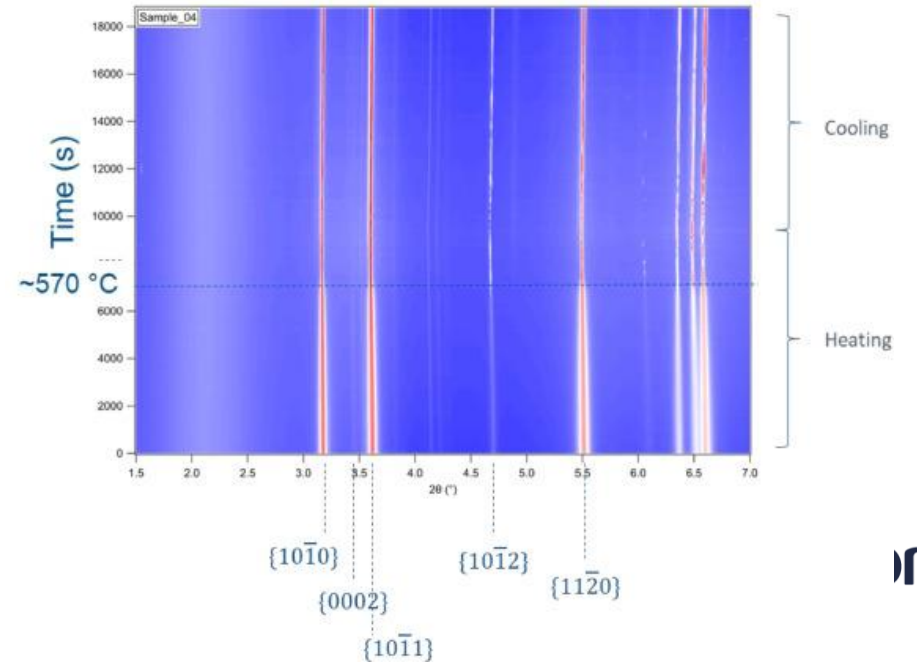
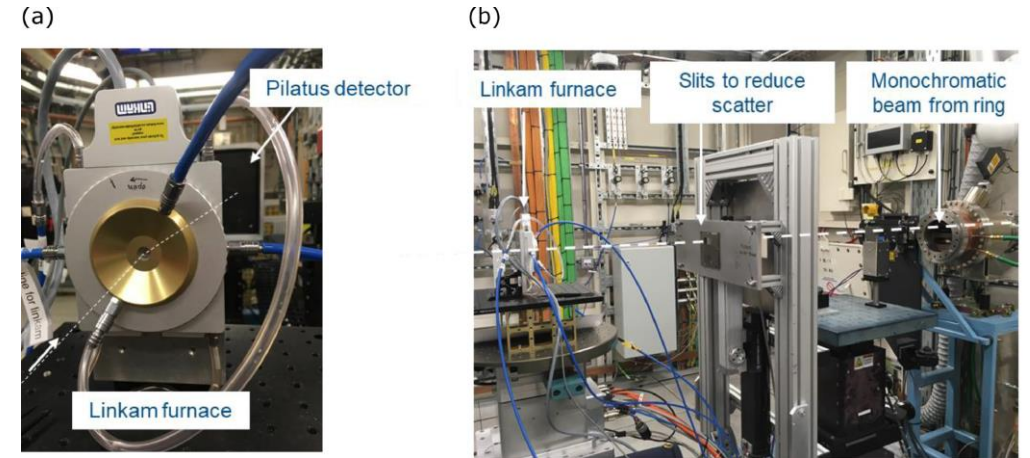
I20

Comparing neutron and helium ion irradiation damage of $\text{REBa}_2\text{Cu}_3\text{O}_{7-\delta}$ coated conductor using x-ray absorption spectroscopy K Adams et al Supercond. Sci. Technol. 36 2023 10LT01



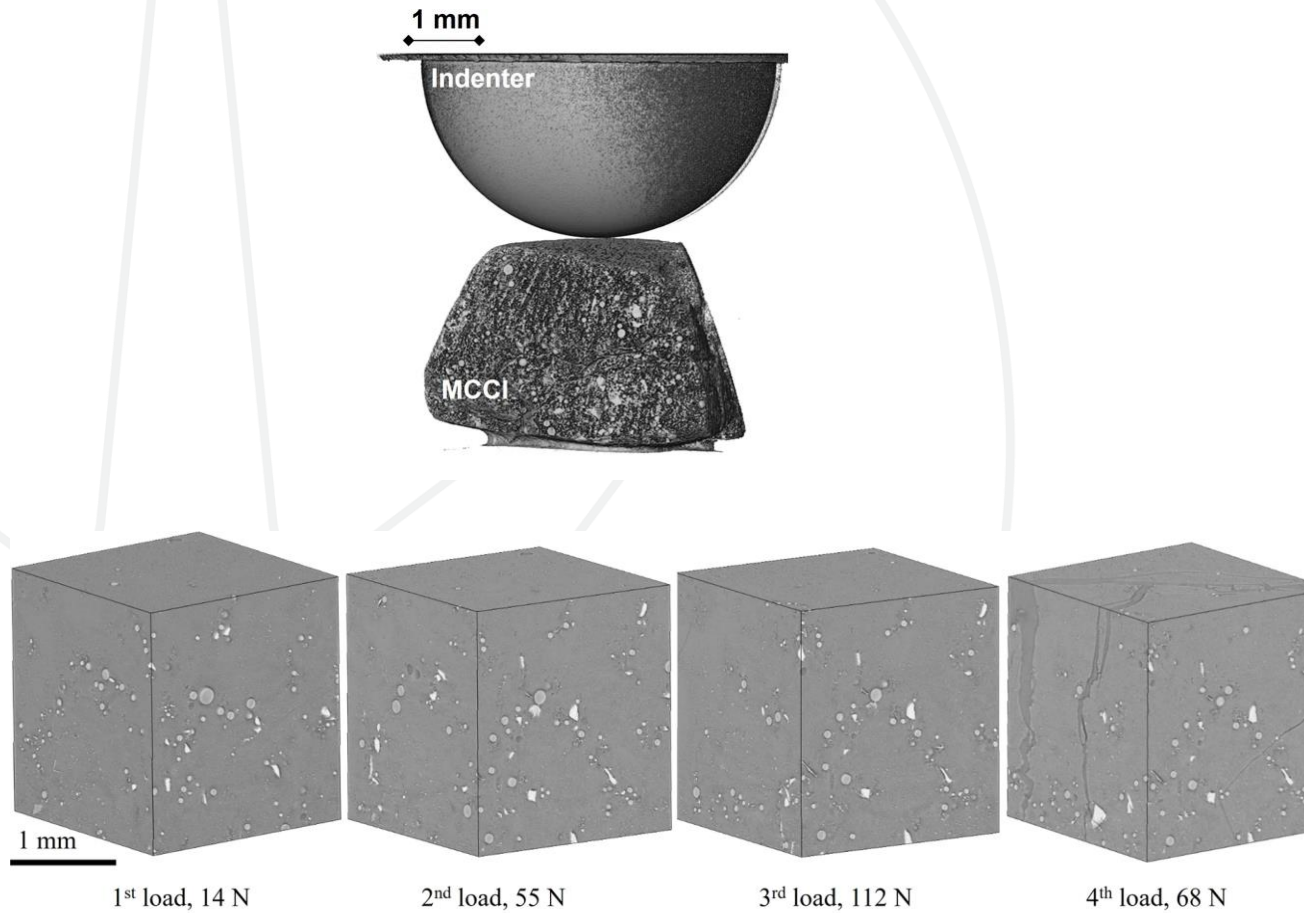
I12

Measurement of hydrogen trapping in cold-work dislocations using synchrotron X-ray diffraction H. Swan, P. Styman et al, J Nucl. Mater. 571 2022 154012



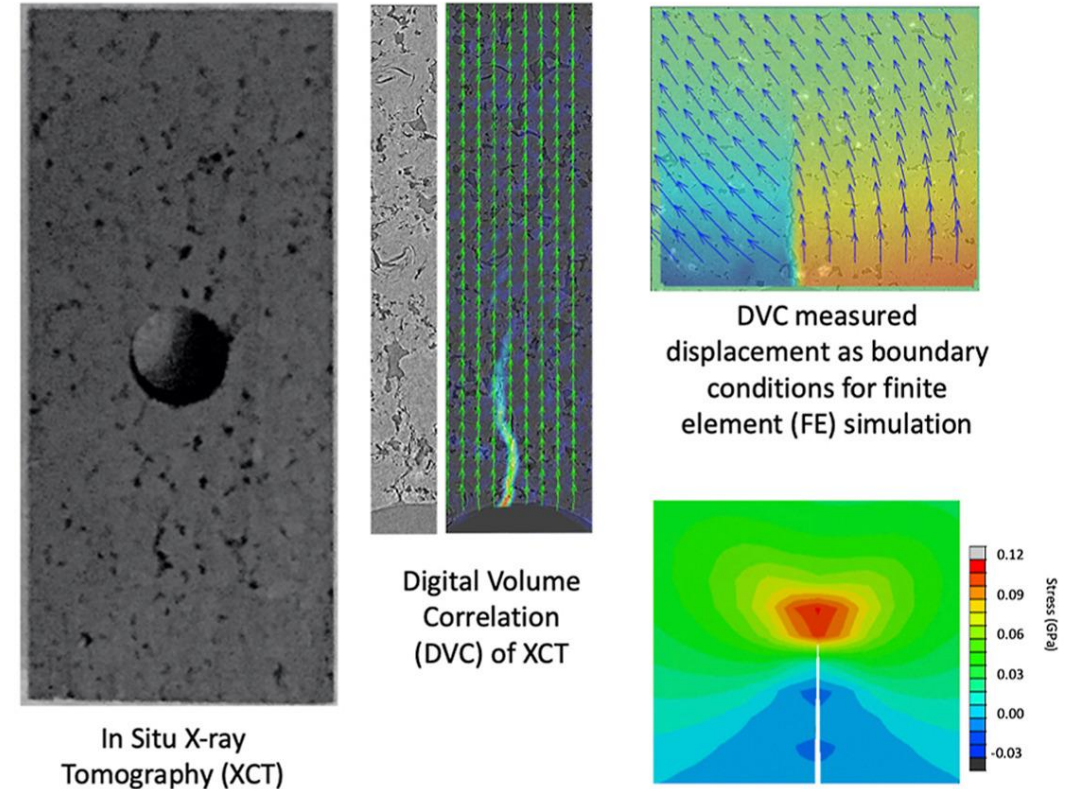
I12

Investigating the mechanical behaviour of Fukushima MCCI using synchrotron Xray tomography and digital volume correlation Paraskevoulakos, C., Forna-Kreutzer, J.P., Hallam, K.R. et al.. npj Mater Degrad 6 2022 55



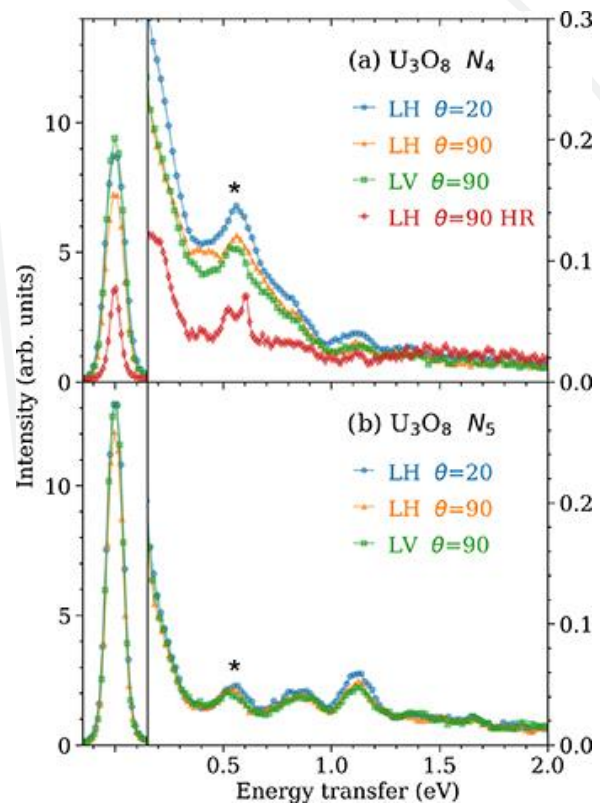
I13-2

Assessment of the fracture toughness of neutron-irradiated nuclear graphite by 3D analysis of the crack displacement field, X. Jin, J. Wade-Zhu, Y. Chen, et al. Carbon 171 2021 882-893



I21

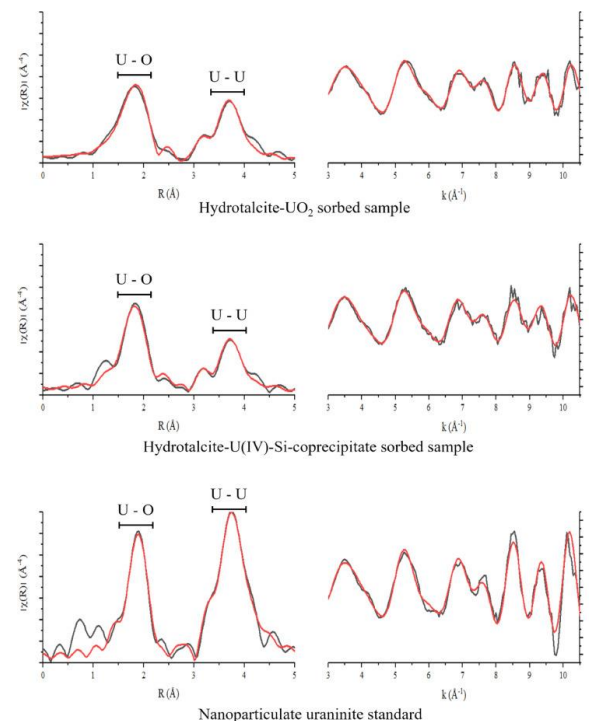
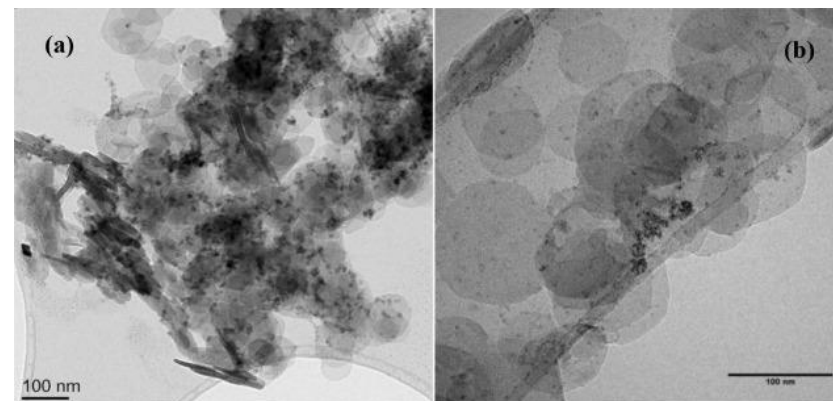
Resonant inelastic x-ray scattering from U_3O_8 and UN: E. Lawrence Bright et al J. Phys.: Condens. Matter 35 2023 1755



Results consistent with present understanding of U_3O_8 as a localized $5f^1$ system, and represents the first direct spectroscopic observation of the level structure.

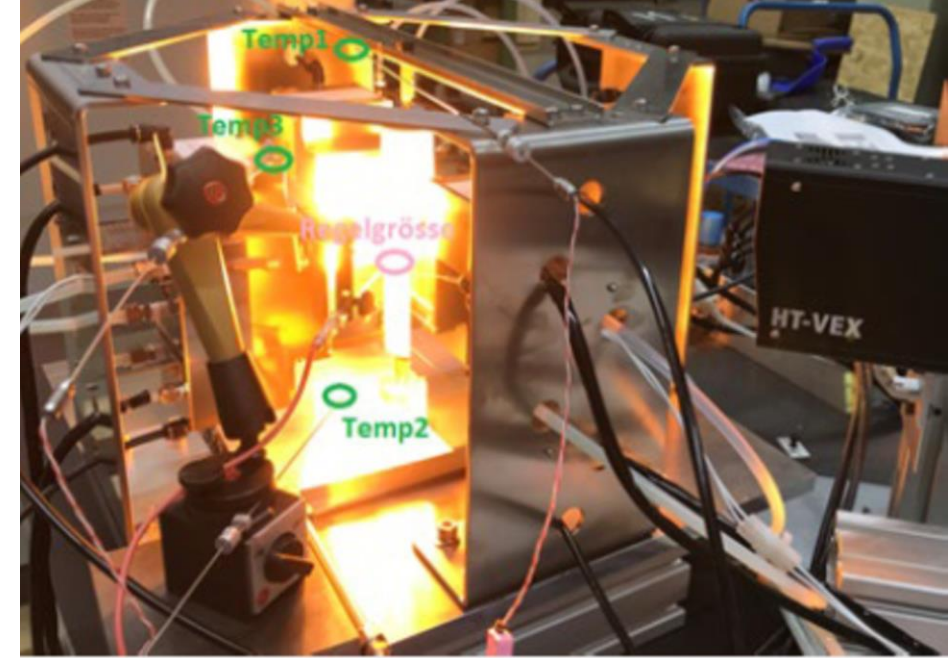
B18/I20

Investigating the interactions between hydroxalcite and U(IV) nanoparticulates, C. Foster, S. Shaw et al. J. Nucl. Mater. 582 2023 154482



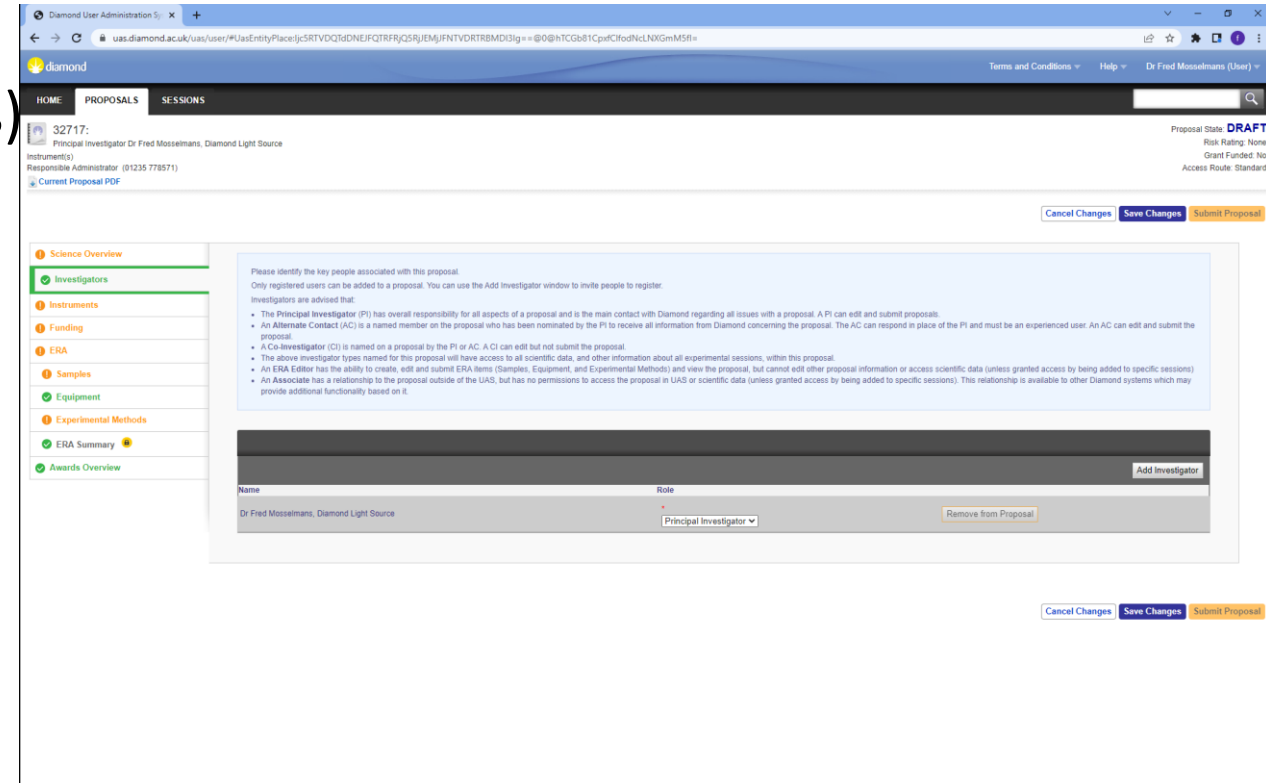
TR6 torsional rig furnace and cells

- Cells and Furnace on site since last year.
- Tested as far as can be without TR6 rig.
- TR6 eventually due on site September 2023 (original delivery date March 2021)



AML Lab access

- Access for use with beamtime via standard Diamond proposal route (next deadline **28/9/23**) (Proposal round every six months)
- Offline access also available
- All access is free for non-proprietary work and supported for beamtime work.
- All Enquiries to:
Diamondactivelab@diamond.ac.uk



The screenshot shows the 'Investigators' section of the Diamond User Administration web interface. The page title is '32717: Principal Investigator Dr Fred Mosselemans, Diamond Light Source'. The left sidebar contains a navigation menu with items: Science Overview, Investigators (selected), Instruments, Funding, ERA, Samples, Equipment, Experimental Methods, ERA Summary, and Awards Overview. The main content area displays a form for adding investigators. It includes a text box with instructions: 'Please identify the key people associated with this proposal. Only registered users can be added to a proposal. You can use the Add Investigator window to invite people to register. Investigators are advised that:'. Below this are several bullet points explaining the roles of Principal Investigator (PI), Alternate Contact (AC), Co-Investigator (CI), ERA Editor, and Associate. At the bottom, there is a table with columns for Name and Role. The table contains one entry: 'Dr Fred Mosselemans, Diamond Light Source' with the role 'Principal Investigator'. There are buttons for 'Add Investigator', 'Remove from Proposal', 'Cancel Changes', 'Save Changes', and 'Submit Proposal'.