

## 2023 RaDIATE Collaboration Meeting



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### **RaDIATE activities in the UK – an update**

*Monday, 26 June 2023 11:10 (30 minutes)*

There are multiple ongoing contributions to the RaDIATE materials science program from universities and public sector research establishments across the UK. Initial funding via the Hyper-K-UK project kick-started academic materials science projects, with new and outstanding research now being supported by the LBNF-UK project.

UK activities are co-ordinated by STFC at Rutherford Appleton Laboratory. The University of Bristol are focusing on graphite, whilst the University of Oxford are performing micro-mechanical studies of proton-irradiated titanium. The University of Birmingham operates the MC40 cyclotron for sample irradiation, and future irradiations are being designed as a collaboration between STFC and the University of Birmingham. Receipt and Post-Irradiation Examination of irradiated specimens will be performed at the Materials Research Facility at the UK Atomic Energy Authority.

This presentation provides an update on the activities from the UK. The motivation and strategy for the research is presented by STFC. Also presented is a sample environment for irradiation of titanium foils at the MC40 cyclotron in Birmingham, incorporating features for transport and remote handling in a hot cell. It is proposed to cool the specimens during irradiation with pressurised nitrogen gas, so an experimental setup has been produced to test this approach. Meanwhile, the University of Oxford has planned a series of experiments on the irradiated fatigue cantilevers currently held at the MRF. A summary is given of the latest investments and equipment development activities at the MRF.

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