

Diamond Active Materials Laboratory

Introduction

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Project History

- Conceived 2014-2015
- Funded as part of NNUF 2 projects 2019
- Building built 2020-2021
- Lab equipment purchasing ongoing



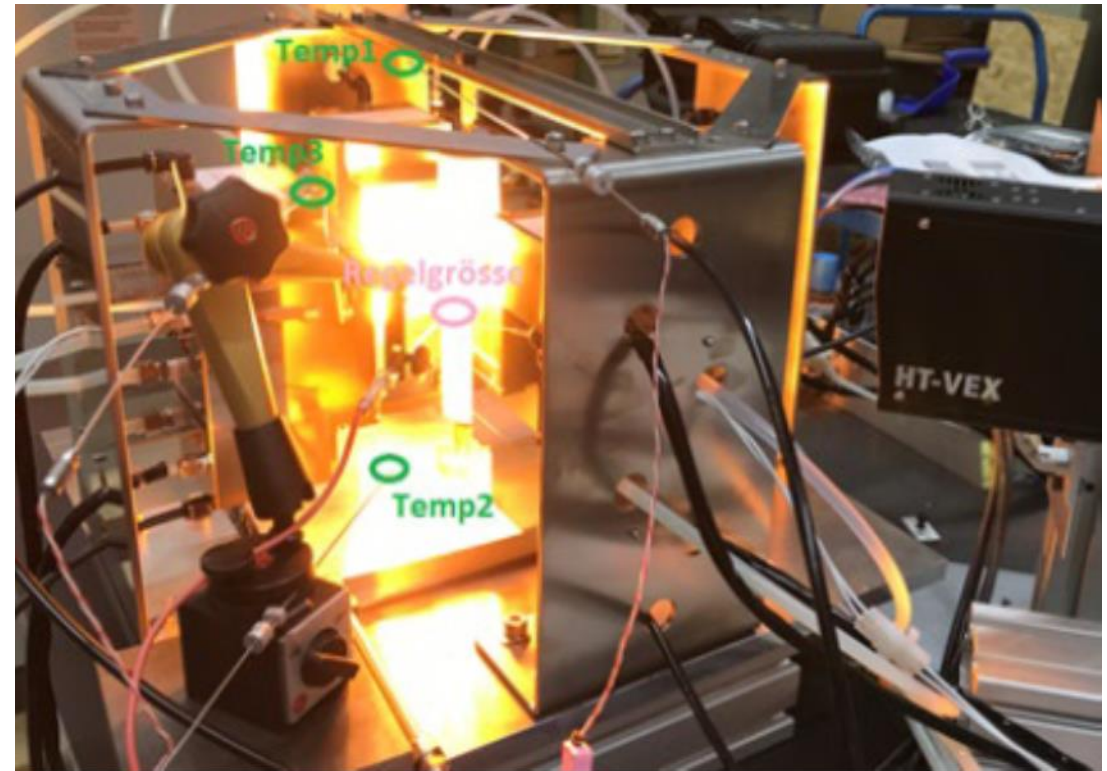
Purpose

- To enable experiments that are difficult or impossible if local sampling handling facilities are not available:
 - Mounting samples into experimental rigs
 - Setting up experiments on beamlines
 - Preparing short lived species
 - Possible long term experiments
 - Treating samples between measurements



Deliverables

- Laboratory at the synchrotron where active samples can be handled/ processed in a safe environment before putting them in an appropriate state to take to a beamline.
- A furnace and cells to fit on a torsional rig (TR6) on the high energy beamline I12 for in situ imaging / diffraction at temperatures up to 1000C in an inert atmosphere while under extension



Facilities

- Glove Boxes (1 here , 1 in March)
- 2 fume hoods (here)
- Centrifuge
- Anaerobic Coy Chamber
- 1200C Furnace (March)
- Pellet Press
- Portable beamline equipment like Raman and UV can be brought into the lab.



Measuring equipment

- Perkin Elmer Tricarb Spectrometer
- Mirion Gamma Spectrometer



Storage room

- Suitable for storing most active materials, lead lined safe, fridges, freezer, lead lined cabinet, safe



Furnace/Cells progress

- Both projects affected by pandemic
 - Furnace due to be delivered in the next two weeks
 - Cells within a month
 - However TR6 is not yet delivered
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- Getting the system working for active samples will take time and help.



Getting access

- For use with beamtime, access is available for any proposal that get through the peer review process (application deadlines end of March and September), you can indicate in the Diamond application system (UAS) you wish to use the AML
- For non-beamtime access, access is currently through the NNUF access call which is open every quarter
- For proprietary access to the lab/beamlines, discuss with our Industrial office.

