

Target Fabrication Facility

The following gives guidance to the services and support provided by Target Fabrication for experiments in the CLF. You should discuss your target requests with Chris Spindloe (christopher.spindloe@stfc.ac.uk) prior to the submission of your proposal.

Overview

The Target Fabrication group has access to a wide range of facilities that are able to fabricate the most complex of targets for both the TAP and TAW high power experimental areas and also the Astra Gemini high repetition rate area. Through rigorous planning procedures we aim to deliver the highest quality targets in time for your experiment and to provide the flexibility during an experimental run that allow the maximisation of the time available on the facilities.

Current Target Fabrication Capabilities

Thin Film Coating

- Thin Film Coating of a range of metals (10nm-2000nm in-house and above 2000nm by arrangement) and plastics (Formvar, Polystyrene and Polyethylene, Parylene N and C).
- CVD production of DLC (Diamond-Like-Carbon).
- Amorphous Carbon foils from a few nm to a few microns.

Micromachining

- World leading micro-machining for the production of hohlraums, cones and other geometries
- Diamond point turning for high precision surfaces
- Laser micromachining for non contact processing of parts and complex 2D geometric cutting.

Low Density Materials

- Capabilities to produce foams and aerogels to specific requirements.

Medium Rep-rate technologies

- Array based foam target production and thin and ultra-thin targets for Astra Gemini
- Complex Tape Targets

Characterisation

Full suite of characterisation serves including

- SEM (including elemental analysis)
- AFM and White light interferometer for surface characterisation
- Confocal microscopy and high resolution optical microscopy.
- X-Ray tomography for sample analysis.

MEMS Fabrication

Access to the latest fabrication technologies for mass produced targets including micro-dots, thin foils, spokes and indents fabricated in large numbers for statistical studies.

Gas Targetry

- Gas filled targets for low-rep rate experiments