

HENRY
ROYCE
INSTITUTE



UNIVERSITY OF
CAMBRIDGE

PHYSICAL VAPOUR
DEPOSITION AND
CHARACTERISATION
PLATFORM

ROYCE

The Royce Physical Vapour Deposition and Characterisation Facility (PVDCF) is a national, state-of-the-art facility at the University of Cambridge. This PVDCF comprises a versatile set of equipment for the physical deposition, device fabrication and characterisation of novel materials with thicknesses in the range from micrometres down to a monolayer.

This nanotechnology platform supports the growth of metals and insulator-thin films as well as device fabrication.

The PVDCF, which is based at the Department of Materials Science Metallurgy, facilitates the research into energy-efficient materials for academic and commercial R&D. This research has applications ranging from novel batteries, information and communications technology to quantum technologies.

PHYSICAL VAPOUR DEPOSITION

Synthesis of epitaxial, polycrystalline and amorphous thin films from monolayer to hundreds of nanometres.

- High through-put RF/DC magnetron sputtering with 11 targets
- Ultra-high vacuum e-beam evaporator

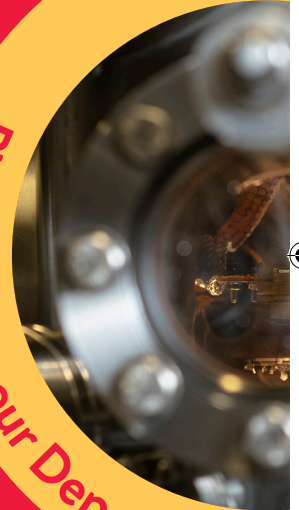


ELECTRONIC CHARACTERISATION

From room temperature down to 300 mK under applied fields of up to 9 T under vacuum or inert gas conditions.

- Cryo-probestation
- Transport measurements

Physical Vapour Deposition and



STRUCTURAL CHARACTERISATION

Interface, surface, crystallography and thin film quality measurements

- Atomic force microscope
- Magnetic force microscope

Additional equipment:

- X-ray suite for XRR, XRD and GAXS



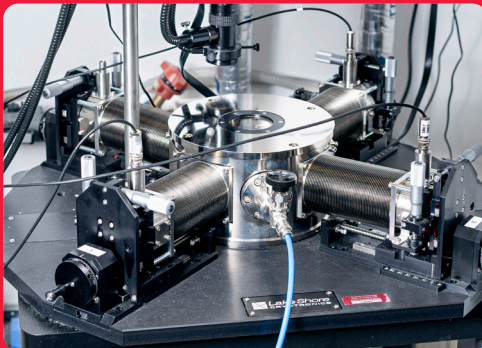
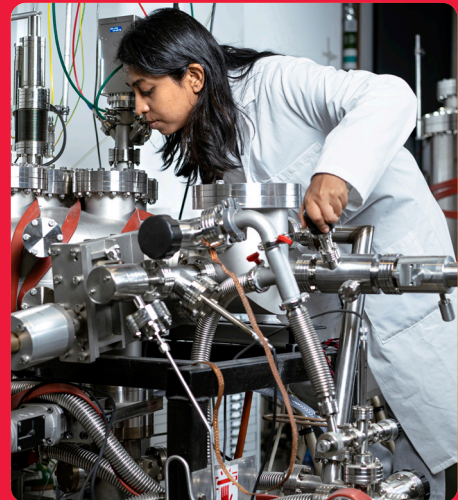
MAGNETIC CHARACTERISATION

Magnetic hysteresis as well as AC susceptibility from 400 K down to 300 mK.

- SQUID and VSM magnetometry

DEVICE FABRICATION AND PATTERNING

- Dual-beam focussed ion-beam
- 3" mask aligner
- UHV E-beam lithography



and Characterisation Facility

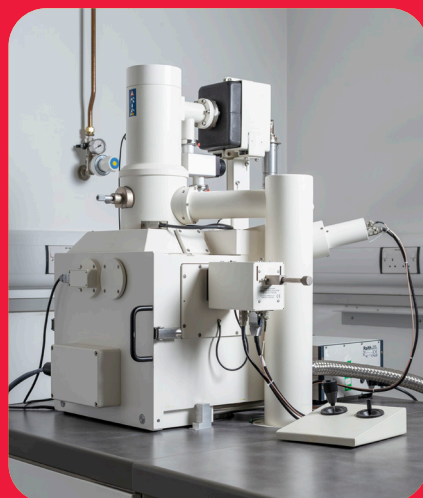


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