

ADVANCED MATERIALS CHARACTERISATION SUITE



CASE STUDY

User facility featuring state-of-the-art instruments for the characterisation of a wide range of material properties:



80 USERS

38 GROUPS



11 DIFFERENT DEPARTMENTS

8 UNIVERSITIES AND HEIS



2 COMPANIES

30 PUBLICATIONS IN PEER REVIEWED JOURNALS



IMPACT AND USER BASE

SUPPORTING RESEARCH

The Advanced Materials Characterisation Suite is a user facility for staff and students in the Cavendish Laboratory and other University of Cambridge departments. It is also open to users from other higher-education institutions and industrial partners. The user friendly and reliable systems serve very well as a user facility supporting research and development activities of both academic and industrial users.

The Suite is based in the Maxwell Centre, and has state-of-the-art instruments for the characterisation of a wide range of material properties:

- Quantum Design MPMS3-EverCool
- Quantum Design PPMS DynaCool 14T & 9T

CUSTOMISATION

The systems provide a very solid platform for developing further custom measurement hardware and software. We have developed special fibre-optic feedthroughs to enable photo-luminescence and photo-conductivity measurements on organic and perovskite samples in the PPMS-DynaCool. We have also developed custom probes to perform high sensitivity dielectric measurements, and anvil-type and piston-cylinder-type pressure cells for measurements in both the MPMS3 and PPMS-DynaCool.

SQUIDLAB

The built-in background subtraction feature of the original MPMS MultiVu software was sorely missed in the new MPMS3. So, our users and facility manager teamed up with QD engineers and developed our own MatLab-based software, SquidLab1, to process the raw data, perform background subtraction, and carry out dipole moment fitting, to successfully extract sample magnetic signals 1/10 the size of the overall background signal.



Quantum Design

UK AND IRELAND