



Science and Technology

Facilities for Research and Development



Our award-winning facilities enable business to work alongside our cutting-edge researchers in a unique collaborative environment, developing and testing new products and processes for the global marketplace.

Access Facilities

Through working with our business partnerships teams, organisations are able to access Lancaster University facilities in a variety of agreements from one off usages to exclusive hire. All our facilities are supported by teams of experienced technicians. We can also provide access to facilities in other departments across campus.

Facility Examples

- Office space and hot-desks for up to 60 businesses
- Cyber laboratories and training suites and equipped with computing facilities
- Dilution refrigerators for the lowest temperature testing in the world
- High-resolution mass spectroscopy for environmental chemistry
- €1m wireless broadband laboratory donated by Aeroflex Limited, state-of-the-art suite of test equipment to design, test and verify different protocols and algorithms for LTE-Advanced 4G wireless devices and systems
- Electronics workshop and additive manufacturing facility, accessible as a technology demonstrator, learning resource and operational prototyping and manufacturing facility
- Computer aided engineering and analysis software, used from concept product development through to full manufacturing lifecycle management
- New £4m class 100 and class 1000 clean rooms equipped with devices for electron-beam, lithography machine, photolithography, plasma processing, thin-film deposition, scanning electron, and probe microscopy

"The assistance of the students (*developing a prototype tidal turbine, tested in Lancaster's tidal flume*) has enabled the development of a larger scale prototype to move forward far quicker than WASP could have achieved without the assistance. In addition areas that would have proved extremely difficult for WASP to resolve have been completed by the team with specifications, design and detail drawings enabling the order of components necessary for the trials."

Alan Newton, Managing Director, WASP (Cumbria) Limited.



Facility Examples (continued)

- Biophotonics laboratory, including a Fourier-transform infra-red (FT-IR) microscope, 2 attenuated total reflection FTIR microscopes, a Raman InVia microscope, and an atomic force microscope
- World leading noble gas instrumentation proton transfer reaction mass spectrometer, one of the first in the UK and an infra-red gas exchange instrument
- 10 walk-in controlled environment plant growth rooms and 15 glasshouses - including sample preparation rooms and high-grade containment facilities for research with genetically modified organisms and radionuclides
- A 50-100th scale wave tank, tidal flume and low head hydro test rig
- Standard weather observations plus solar irradiance with some datasets dating back to 1976
- AFC Energy's IQuantachrome ChemBET, a chemisorption analyser
- AFC Energy's laser drilling system capable of drilling several million holes in thin sheet metal substrates at a rate of over 600 holes / second

Benefits of Facilities

- Unique range of facilities due to our size and diversity
- Proximity to sector-leading experts
- Access to events and training
- One-off bookings to exclusive hire

Partnership Examples

Technology Development Through Facilities Use

Plant Impact Plc. is a developer and manufacturer of ecologically safe agrochemicals which improve crop health and crop quality. A former Lancaster Environment Centre (LEC) resident company, they have had a relationship with LEC since 2007, and have been working with LEC researchers Professor Nigel Paul and Dr Mike Roberts to investigate the physiology and molecular biology of crops grown under stress. They used the controlled environment plant growth rooms at LEC to develop a novel technology, alethea, which reduces crop losses caused by environmental stress, typically around 50% of crop yields. The technology is part of a new generation of crop enhancement products developed by the company that could have huge global benefits.

Prototype Tidal Turbine Developed Using Tidal Flume Facilities

A group of eight MEng students from Lancaster University's Engineering Department have been working with local company WASP (Cumbria) Limited on the development and testing of a prototype tidal turbine.

Working under the supervision of Dr Stephen Quayle of Lancaster University Renewable Energy Group, the team designed and manufactured the flotation platform, power-take off system and the associated control and instrumentation. Small-scale model testing was also completed in the tidal flume. The turbine was launched in Walney Channel in June 2013.

Support for Design and Rapid Manufacturing

Although identified as a key technology platform within the European manufacturing arena, additive manufacturing as a production solution remains in its infancy, with up-take restricted almost exclusively to large businesses. We have been at the forefront of providing access to over 150 small and medium enterprises in additive manufacturing expertise, facilities and bespoke design to support the development of a wide range of products and services.

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