



The ESA Business Incubation Centre in Harwell, UK, started its operations in 2011 and is managed by the Science and Technology Facilities Council (STFC). It is located at Harwell Campus, a world leading science, technology and business campus based in South Oxfordshire with more than 4,500 researchers, engineers and innovators from over 150 high-tech organisations, and a focal point and cluster for the UK's rapidly growing high-tech space community.

Keit

Keit Is Developing A Spectrometer For Process Monitoring & Control in Manufacturing Environments



Website

Founded in 2013 by

- **Jolyon Tidmarsh**

Incubation period

01-05-2013 to 30-04-2014



space solutions

Alumni

About Keit

Keit Spectrometers is a spin-out company from STFC's RAL Space department. Keit has developed the IRmadillo™, a novel FTIR spectrometer using technology originally developed to measure vapour on Mars. Now the technology has applications here on Earth. The characteristics that made the instrument ideal for sending into space – ruggedness, low power, and compactness – have also made the Keit instrument uniquely suited for use in manufacturing environments.

Contact info

- - R71 RAL, Fermi Avenue
 - OX11 0QX
 - Harwell
 - UK
- enquiries@keit.co.uk
- +44 1235567167

The challenge

Manufacturers need to know what is happening in their production lines to better control their processes. Fourier Transfer Infrared (FTIR) spectroscopy is a well-established analytical technique in the laboratory to measure chemical components and help monitor those processes. However, conventional FTIR instruments are bulky and fragile: susceptible to vibration, temperature changes, and require flexible, lossy cabling to the reaction vessel. This makes them impractical to use on the manufacturing floor. Manufacturers are looking for better, faster ways to monitor their production processes regardless of the production environment – including outdoors - where standard FTIRs struggle.

The solution

Unlike standard systems, Keit uses a novel optical design with no moving parts. It is impervious to vibration, weather, and rough operating environments. The compact IRmadillo™ FTIR spectrometer tells production and chemical engineers about their processes at the time of reaction by being mounted directly onto their production

equipment. It eliminates the need for conventional analysis techniques that require stable environments or remote sampling. Keit's FTIR spectrometer offers manufacturing industries a more efficient way to monitor production processes of liquids with continuous, real-time analysis resulting in reduced waste, and better resource management.

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