



## Oxsensis Launch Multi-Measurand System

**Oxford, UK, January 2012. Oxsensis has launched the first ever sensor system that can measure dynamic pressure, absolute pressure and temperature from a single transducer whilst operating up to temperatures of 1000°C (1800°F).**

Since its founding in 2003, Oxsensis has been working closely with gas turbine OEMs in the Energy and Aerospace sectors, to develop novel fibre optic sensors. The new Multi-Measurand system is based around the Wave-Phire™ transducer, which operates in dynamic pressure applications such as monitoring combustion instabilities (also known as rumble/humming) and compressor rotating stall. In addition to the Wave-Phire™ transducer a new version of the i-Phire™ series of interrogators has been developed.

The i-Phire™ 240 like its predecessor, the i-Phire™ 120, has the capability of measuring the size of an optical cavity in a block of sapphire that varies with applied pressure. In addition to this, the i-Phire™ 240 measures a second cavity which only varies with temperature. This new capability provides the temperature of the sensor, directly resulting in a second measurand. The signal processing module in the i-Phire™ 240 then uses the temperature and raw pressure measurements to provide outputs for absolute pressure and dynamic pressure in addition to the temperature output, thus providing three measurands from the same transducer.

Oxsensis' Multi-Measurand instrumentation system contributes to the characterisation of combustor 'events' and hence the development of active control systems. This will lead to a competitive shift in gas turbine performance, operational flexibility and health monitoring. The i-Phire™ 240 unit is a 4 channel version, building on the experience gained via testing of single channel versions with three gas turbine OEMs. The i-Phire™ 240 is available for delivery from March.

Ian Macafee, CEO of Oxsensis, stated "This is a first in the industry. Oxsensis has demonstrated single channel variants of the i-Phire™ 240 to three different gas turbine OEMs and the results of these tests allow us to proceed with the full 4 channel product. This integrated solution allows the control of combustion systems in novel and advanced ways, addressing both OEM and gas turbine users' needs for performance improvement. This Multi-Measurand system will also accelerate our movement into adjacent market sectors and allows us to expand further as a sensor manufacturer."

**End**

## **Contact**

Oxsensis Ltd.

Ian Macafee

Tel: +44 (0)1235 77 8120

Email: [contact@oxsensis.com](mailto:contact@oxsensis.com)

Website: [www.oxsensis.com](http://www.oxsensis.com)

## **Further Information**

Oxsensis' sensor technology is based on the micromachining of super-resistant materials such as single-crystal sapphire (melting point >2000°C) together with innovative fibre optic interrogation techniques which give high sensitivity and immunity from electro-magnetic interference (EMI) effects, which are common in turbo-machinery such as gas turbines.

As part of their close ties working in the gas turbine industry, Oxsensis was part of the HEATTOP €8.8m European Union collaboration program, involving 16 other European organisations working together on a gas turbine programme. Other collaborators in the three year programme include Siemens AG, Rolls-Royce Plc. and Oxford and Cambridge Universities.

Oxsensis continues its close industry ties through two UK government funded programs. FRETSGATE, which involves Rolls-Royce and Siemens, aims to advance technologies available for gas turbine life optimisation, performance and condition monitoring through accurate high temperature engine measurements. As a result, gas turbine manufacturers will be able to reduce emissions, increase engine efficiency and reduce cost of ownership. This will improve the competitiveness of their products in global markets.

HEROS, which involves GE, will deliver high accuracy measurement of pressure and temperature in Oil and Gas downhole applications. Currently available electronic instruments have limited lifetimes at these elevated temperatures. Advanced sensor technology that can operate within this harsh environment will allow a higher percentage of the oil and gas in the reservoir to be economically extracted.

## **About Oxsensis Ltd.**

Oxsensis is a spin-out from STFC Rutherford Appleton Laboratory in Oxfordshire formed in 2003. The company is backed by Venture Capital from Albion Ventures, Carbon Trust, Frog Capital, Seven Spires Investments Ltd., Rainbow Seed Fund and Strathdon Plc., together with prominent individual investors.