



## **Oxsensis and Siemens continue close R&D relationship with gas turbine combustion monitoring**

Oxford, UK, Oxsensis Ltd has supplied Siemens Energy with 12 Wave-Phire dynamic pressure sensors for use in their ongoing early stage R&D combustion programmes.

Oxsensis has worked closely with Siemens over several years to advance their Wave-Phire dynamic pressure sensor system for use in ultra-harsh environments\*. This relationship was formed via the European Union Framework Programme 6 funded project HEATTOP. Oxsensis utilised the valuable engine experience gained via that co-operative effort to implement design improvements to the Wave-Phire sensor range to make these sensors truly fit for purpose for the energy industry.

The relationship continued on beyond the HEATTOP programme, with Oxsensis supplying Siemens with a set of 12 sensors for use in their combustion early stage development programmes. These sensors have been installed in locations very close to the primary zone of a special test combustor designed to excite certain instabilities in order to provide precise data on combustion instabilities particularly at high frequencies. Traditionally, piezoelectric type sensors have been mounted either off the engine or on outer pressure casings due to their limited temperature operation ranges. As these are further away from the source of the combustion instabilities, this can lead to damping of particular tones, particularly those excited at higher frequencies. As the Wave-Phire sensor can be mounted at high temperatures and perform well under the high levels of acceleration, Siemens have taken advantage of this capability to accurately map their pre-development combustor equipment up to these higher frequencies.

In response to some of the initial R&D rig test runs Dr Andreas Koch, stated “We have run our most heavily instrumented combustion rig test ever and we were particularly pleased with the acceleration insensitivity of the sensor within this application”. Commenting after this initial testing was completed Martin Jay the Executive Chairman of Oxsensis added “We are pleased to continue our excellent research relationship with Siemens and are happy to learn that they have gleaned valuable data from incorporating the Wave-Phire sensors in their R&D tests. We will continue to support Siemens future R&D efforts and aim to deepen our commercial relationship with them”.

Ends

### **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)

**Notes for editors:**

\* 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 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 recently completed HEATTOP €8.8m European Union collaboration program, involving 16 other European organisations working together on a gas turbine programme.

**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.