PHOSFOS Fact Sheet – POF Sensor Interrogator

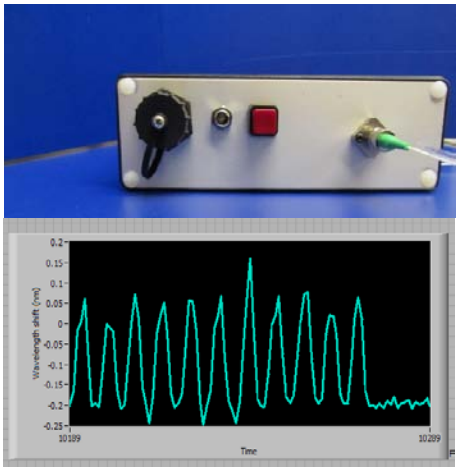
Introduction

Since its start in 2008, PHOSFOS has created a new paradigm for flexible optical sensors integrated with electronic modules and control circuitry. It aimed at developing a generic technology that offers an integrated solution to this increasingly important problem. The project is now reaching its end and has achieved several major breakthroughs in the field of optical sensing, flexible materials, embedding technologies and integration concepts which may be used in a wide range of applications.

Breakthrough

One of the limitations on the volume of commercial uptake of fibre Bragg grating (FBG) technology is cost. The PHOSFOS project consortium developed a new POF sensor interrogator designed to work with polymer optical fibres.

Technology



The sensor interogator (shown left) has been designed to operate at a wavelength around 850nm to match the low loss transmission window of POF and to reduce component costs.

It is designed to monitor multimode fibres which increases the optical power of the signal coming back from the sensors.

POF FBG sensors work well when monitoring exceptional high strains or with very flexible materials. In both situations you see large changes in the central wavelength of the FBGs.

The data shown is from a single POF sensor that was embedded in a PHOSFOS flexible skin. The skin was simply laid on top of a moving perspex plate to take the data.

Application

The technology enables the monitoring of POF FBG sensors in high strain applications. A variant can also be used for conventional silica FBGs and single mode systems. The software allows multiple sensors to be monitored at the same time and can output full spectral data or strain/pressure readings.

Contacts

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