

Device for Interrogating an Optical Signal

Aston University researchers have invented a low-cost and rugged optical fibre device for interrogating optical signals. Aston's Business Partnership Unit is now actively seeking commercial partners to license this highly useful technology.

Highlights

- High ruggedness and tolerance of mechanical vibration
- Low-cost and simple design
- In-line, in-fibre solution

Background

Many applications require interrogation of an optical signal propagating within an optical fibre. Such interrogations are typically made with bulk optic measuring devices, which determine the wavelength and power of optical signals. Bulk optic devices however are relatively large and expensive, and are sensitive to mechanical shock, misalignment and damage, so have limited ruggedness and tolerance of mechanical vibration. These characteristics make them undesirable as a solution.

The Technology

Aston University researchers have invented an optical fibre device that overcomes these problems. The device uses tilted chirped fibre Bragg gratings (FBGs) inscribed within optical fibre, coupled to one or more photodetectors to interrogate a propagating optical signal. The gratings are tilted to produce an edge filter such that the percentage of light outcoupled from the fibre core depends on the wavelength. The photodetectors are positioned to collect and measure the outcoupled light. The system can be used to monitor the lasing wavelength of a semiconductor and be incorporated easily into the laser package. It could also be used to monitor the output of a time division multiplexed FBG sensing system.

Intellectual Property Protection

This technology has been granted a US patent:

<i>Title</i>	<i>Granted Patents</i>	<i>Priority Claimed</i>	<i>Our Ref</i>
Apparatus for interrogating an optical signal	US 6,917,735	June 6, 2000	PAT-2004-057

Further Information

Further information can be made available and commercial discussions commenced on entering into a non-disclosure agreement.

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