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Reference

P-200902

Intellectual Property Rights

Granted patent (2012)

IPR Territory

Spain

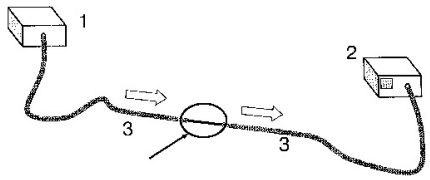

Fig. 1a

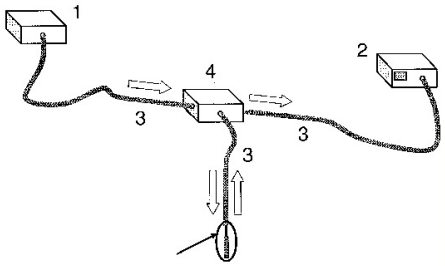

Fig. 1b

Schematic representation of the system in transmission and in reflection configuration when a broad-spectrum white light source is used as the emitting device.

Coated optical fiber sensors based on lossy mode resonance

Coated fiber optic sensors based on resonances originated by near cutoff lossy modes thanks to the use of a thin film of absorbent material placed on the fiber optic core.

Usefulness and innovative aspects

Coated fiber optic sensors based on resonance originated by near cutoff lossy modes thanks to the use of a thin film of absorbent material placed on the fiber optic core. This sensor combines the advantages of optical prism elimination compared to the Kretschmann configuration, in favor of a fiber optic design, portable, of small size and with the possibility of remote measurements and multiplexing. It also has the advantage of avoiding the need to use polarized light in TM mode, which is required with sensors based on surface plasmon resonance. Depending on the width of the thin film, it is possible to adjust the sensitivity of the device and generate multiple resonances in the electromagnetic spectrum, also allowing its use as an optical filter.

Applicability

- Optical field: refractometers, optical filters.
- Chemical or biochemical field: detection of species that are present in solutions in liquid or gas state.

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Offer porfolio

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Offer availability

Available for transfer by means of licensing