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SYSTEM AND METHOD OF DISTRIBUTED CHARACTERIZATION OF DISPERSION PROFILE OF AN OPTICAL FIBER

Patent

ES2596260B1

Code

TIC_UAH_30

Application areas

- Information and Communication Technologies
- Industrial Manufacture, Material and Transport technologies
- Energy



Type of Collaboration

- Technical cooperation
- Commercial agreement and Technical assistance
- License agreement

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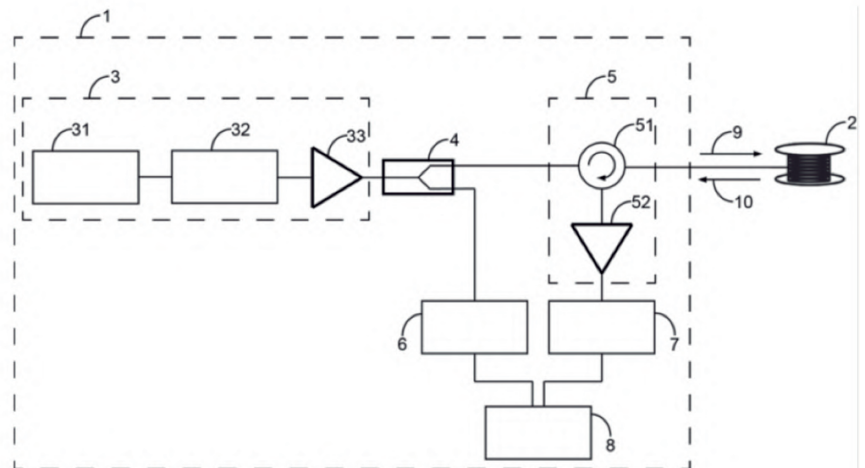
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ABSTRACT

It is a system and method of distributed characterization of optical fibers that provides an absolute measurement of the dispersion profile of the fiber. The present invention is applied to the field of telecommunications and, in particular, to the industrial area of sensing and distributed characterization of optical fibers. Comprises a system, a method and a computer program for the distributed characterization of optical fibers that provides an absolute measure of the dispersion profile (scattering) of the fiber, by comparing the phase and amplitude of a pulsed light and of the Rayleigh scattering generated by that pulsed light, being the Rayleigh scattering measured through, at least, a differential photonic detector.

ADVANTAGES AND INNOVATIONS

With the system, method and computer program of the invention, an absolute dispersion profile of high resolution and high sensitivity is provided. The measurement range is limited only by the intensity of the pulsed light, allowing the incorporation of distributed amplification systems. Additionally, the optical fiber under test is characterized in an absolute and continuous way, without comparing multiple states, and the results can be provided in real time. Distributed fiber optic characterization technique capable of measuring the absolute dispersion profile in a long sensing range with high spatial and temporal resolution. It takes into account the phase and amplitude of the signal and not only the intensity of the scattered signal. The optical fiber under test is characterized in an absolute and continuous way, without comparing multiple states and the results can therefore be provided in real time.