Sandia National Laboratories

Fiber–Optic Long-Line Position Sensor

BENEFITS

Sensor does not introduce electrical energy and is insensitive to electro-magnetic interference

Does not require the use of fluorescent dopants

Can operate over a wide range of wavelengths at a reduced cost

Has very few moving parts

Provides continuous measurement

POTENTIAL MARKET APPLICATIONS

Oil and Gas

Minerals

Water Wells

Fuel Tank Measurement

Hazardous Environments

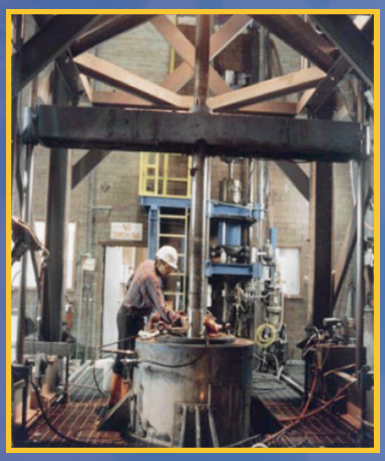
INTELLECTUAL PROPERTY

US PATENT #7,329,857
SD# 10001

TECHNOLOGY SUMMARY

Sandia has developed a side-emitting fiber optic position sensor and method of determining an unknown position of an object by using the sensor. Non-electrical position sensors like the one developed by Sandia are desirable for use in hazardous environments, e.g., for measuring the liquid level in gasoline or jet fuel tanks. This sensor is an attractive option because it does not introduce electrical energy, is insensitive to electromagnetic interference, has very few moving parts, and could provide continuous measurements.

Large-scale rotary drilling for oil and gas, minerals, and water wells have a need for measuring the depth of drill bits and pipe segments. Measuring the length of a cable played out is often inaccurate because the cable stretches under heavy loads. There is a need for a long-range position sensor that is non-contact, simple, cheap, reliable, compact, non-electrical, and robust. These and other features have been achieved in the present Sandia invention.



TECHNOLOGY READINESS LEVEL

Sandia estimates this technology at approximately TRL 5. Key elements of the technology have been demonstrated in relevant environments.

Licensing & Partnering Status:

Various licensing and partnering options are available. Please contact the Intellectual Property Department to discuss.

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National Nuclear Security Administration

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