FIBER-OPTIC LONG-LINE POSITION SENSOR

TECHNOLOGY READINESS LEVEL: 5

KEY ELEMENTS HAVE BEEN DEMONSTRATED IN RELEVANT ENVIRONMENTS.

US PATENT # 7,329,857

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.

POTENTIAL APPLICATIONS

- Oil & Gas
- Minerals
- Water Wells
- Fuel Tank Measurement
- Hazardous Environments

TECHNOLOGICAL BENEFITS

- Does not introduce electrical energy
- Insensitive to electromagnetic interference
- Does not require fluorescent dopants
- Can operate over a wide range of wavelengths
- Provides continuous measurement
- Few moving parts

TECHNOLOGY INQUIRY?

For more information or licensing opportunities contact us at

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Refer to SD # 10001

or visit

https://ip.sandia.gov

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