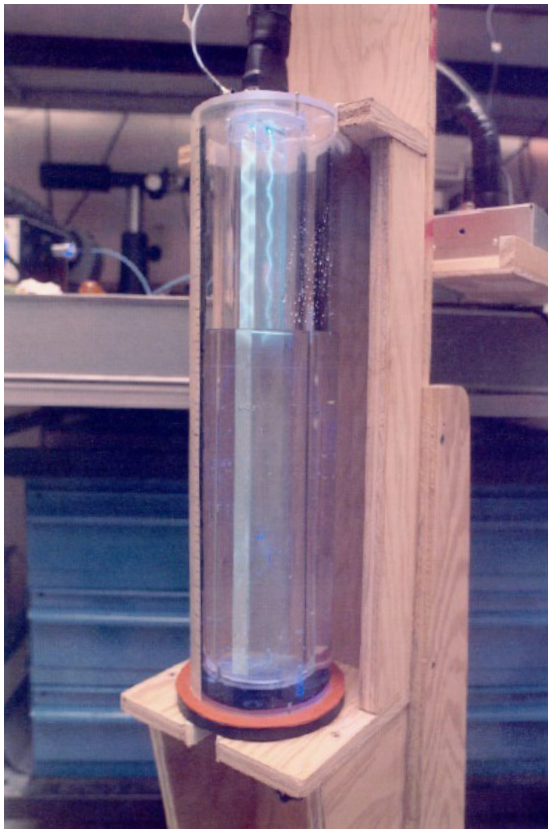
FLUID INTERFACE POSITION OPTICAL SENSOR

US Pat. No.: 6,172,377
Technology Readiness Level: 5
Key elements of the technology have been demonstrated in relevant environments

Sandia National Laboratories has developed a continuously monitoring fluid interface optical sensor. The method of determining the liquid level through a single immersed optical wave guide allows for a simple and mobile solution to fluid monitoring systems. Current technologies use monitored floating devices and require mechanical or magnetic coupling, which can pose problems for mobility and hazardous fluids. Current technologies employ a non-contact method for sensing transparency of liquid which lack the precision and safety of a single optical waveguide method.



The fiber optic technology of this Sandia inventions utilizes the principle of dual-fluorescence, where a primary and secondary fiber are used to compare emitted to absorbed light in the system and calculate the position of the interface between opaque and clear fluids.

TECHNICAL BENEFITS

- Mobile and simplistic
- No moving parts
- Continuous monitoring
- Safe for use with flammable or hazardous liquid
- Can operate over a wide range of wavelengths
- Response wave shape can be adjusted to provide more controlled measurements

INDUSTRIES & APPLICATIONS

- Measurements of hazardous materials or contaminations
- Crude oil levels
- Biofuels
- Wastewater treatment

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