

New sensors detect oil leaks in the presence of water

UK company Spectronic Devices Limited has developed a line of novel oil-leak detection products that offer high reliability detection of leaking oils without interference from any water or aqueous fluids that may be present. Being low-cost, low-power, intrinsically safe, easily installed “fit and forget” units that can be remotely interrogated, they can be deployed in sufficient numbers to offer full coverage of any situation where leakage of an oil is possible. Their design features make it easy to upgrade existing installations.



The sensors use optoelectronic detection of a reversible optical change that is induced by oils, hydrocarbons and liquid fats, but not by any water or other “hydrophilic” liquids that may be present. They can be monitored by connection to a telemetry system or via mobile phone or other wireless networks.

Originally developed for a major UK utility company that wished to detect leaks of oil into wet soil, the Model 1 Spectronic Sensor™ (see photo above) is robustly packaged to withstand burial in soil, sand, gravel and similar locations. Several hundred of these units have already been sold and the company is expecting demand to grow rapidly as its marketing gets underway.

Model 2 Spectronic Sensor™

From talking to potential users, Spectronic Devices' Managing Director Les Cronin recognised a requirement for a similar sensor specifically designed to operate in water-saturated soil and pools or larger areas of water. In these situations the oil concentrates at the surface of the water. The patent-pending Model 2 design ensures that the detector element is automatically located at this interface, creating a sensor with all the same desirable features, but which is applicable to a much wider range of locations.



A typical application would be in bunded storage areas, where it is desired to have early warning of oil leakage in the presence of much larger amounts of water that inevitably collect within the bund. This, for example, prevents accidental pollution through automatically emptying of rainwater from bunded tanks or, in more extreme circumstances, averts leakage developing into a serious environmental or safety incident.

The new sensor has already attracted strong interest from the garage forecourt industry even before it has been put into production. It has been recognised as innovative technology by its selection for the Venturefest Technology Showcase Exhibition held on 4th July in Oxford, UK.

Formed in 1999, Spectronic Devices (www.SpectronicDevices.com) develops and manufactures optoelectronic equipment. Products include line cameras utilising linear photodiode arrays, also low cost miniature spectrometers. Much of its output is used in instruments monitoring chemical content and environment pollutants. It can be contacted at info@SpectronicDevices.com, tel: +44 (0)1234 765185, fax: +44 (0)1234 767514.