

New oil detection technique developed

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CSIRO scientists have developed a revolutionary technique for the rapid on-site detection and quantification of petroleum hydrocarbons (commonly derived from crude oil) in soil, silt, sediment, or rock.

Developed in collaboration with waste technology specialist, Ziltek Pty Ltd, the technique means that the presence of petroleum hydrocarbons can now be quantified simply by using a hand-held [infrared spectrometer](#) to take readings at the site of interest, without the need to take samples or perform any kind of processing.

The technique could be used for [oil](#) exploration purposes. It will also be particularly useful in assessing and monitoring contaminated sites such as coastal land following off-shore [oil spills](#) and industrial sites planned for urban redevelopment.

"Petroleum hydrocarbons are a valuable resource, but can also be pretty nasty environmental contaminants," says CSIRO scientist, Sean Forrester.

"They can remain in the environment for extended periods of time and can be harmful to wildlife, plants and humans. Better tools to detect them makes a rapid response possible."

The technique uses an [infrared signal](#) to detect the presence of petroleum hydrocarbons in samples.

By contrast, current methods use sampling and processing techniques

that are labour intensive, time consuming, require sensitive equipment and are not well suited to on-site analysis.

"The ability of this new technique to rapidly detect the presence of contaminants at the site has the potential to provide significant cost advantages, in terms of reduced testing costs and the avoidance of delays," Mr Forrester says.

"Rapid analysis allows immediate measures to be undertaken to prevent further contamination or to limit contaminant spread."

A significant portion of the time and financial costs involved in assessing and remediating contaminated sites is consumed by monitoring and analysis.

By decreasing analysis time and reducing costs this new technique can assist in the fast and effective identification of oil and other petroleum products in the environment, as well as treatment and protection of environmental assets threatened by petroleum contamination.

Provided by CSIRO

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