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Contact: Sophie Docker
S.Docker@soton.ac.uk
0044-023-805-98933
[University of Southampton](http://www.soton.ac.uk)

Scientists develop new technology to detect deep sea gas leaks

A new ultra-sensitive technology which can monitor leaks from underwater gas pipelines has been developed by scientists at the University of Southampton.

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The research has shown that potentially environmentally and financially disastrous gas leaks from pipelines, and methane naturally leaking from the seabed, could in future be detected using changes in acoustic signals.

Using a simple set of underwater microphones to monitor these changes would provide a cost effective, unique detection system which would be one hundred times more sensitive than current monitors used by the oil and gas industry for remote detection with long deep sea pipelines.

"This new technology could save gas extraction and distribution companies millions in lost revenue. Severe leaks can also be dangerous to nearby oil rigs, shipping and for shore-based gas distribution facilities," comments Professor Tim Leighton of the University's Institute of Sound and Vibration Research who led the research.

He adds: "The technology would allow us remotely to monitor and potentially reduce the release into the atmosphere of gases from the seabed. This applies both to gas extracted by the petrochemical industries and to the methane which is naturally released from the seabed."

Natural leaks of methane gas can be damaging to the environment because it is a greenhouse pollutant.

The new acoustic technology, which is in early development, could also be used in future to monitor the structural integrity of carbon capture and storage facilities which are being developed globally. These facilities will trap carbon emissions, which scientists believe may be contributing to global warming. The UK government has just announced it is investing £1 billion in their development.

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The research was developed by Professor Tim Leighton and Professor Paul White and published today (Wednesday, 12 October 2011) by the *Proceedings of the Royal Society A*.

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