



NOVEL LEAK DETECTION FOR SUSPECTED PIPELINE

A highly sensitive non-intrusive acoustic system for detecting leaks in gas pipelines

The Invention

The novel and patented technology is able to detect small and seeping leaks in a localized section of a gas pipeline using acoustic technology. The leak detection system (a tube of about 1 meter long with sensitive equipment) is to be fitted around a suspect section of pipe, providing environmental noise isolation and leak sound magnification functions. Results to-date have demonstrated close to 50% improvement in detecting leaks of various sizes, in gas pipelines.

Process

The technology is applicable in leak detection for gas pipelines. The process is as below:

- Stage 1: Identify the suspected or highly vulnerable section of a pipeline (or valve) based on corrosion monitoring or other prediction technologies.
- Stage 2: Use KFUPM leak detection system to detect leaks in the suspected section.

Competitive Advantage

- Ability to detect small leaks in gas pipelines.
- Economical and portable device.
- Non-intrusive, made to fit any pipeline.
- Most effective in high pressure gas pipes.
- Significant improvement in leak detection capability in the presence of external noise.

Intellectual Property

- IP protected in US, Patent no.: US 8539820

Readiness for Market

A prototype was built with an industry partner, Pipeline Technologies and Services (PipeTech) in Saudi Arabia, as shown in the Figure 1. The prototype implemented the technology protected in US Patent 8,539,820. The current prototype is capable of leak detection in straight

pipeline sections; however, variations such as leak detection at bends or tie-ins, and for various pipeline sizes, could be the scope of future system development work.



Fig.1: Prototype at PipeTech's testing facility in Al-Khobar, Saudi Arabia

Opportunity

KFUPM would like to hear from pipeline leak detection and/or leak repair companies interested in finding out more and potentially partnering in the further development of this technology.

About KFUPM

King Fahd University of Petroleum & Minerals (KFUPM) is a leading educational organization for science and technology. KFUPM Innovation Center is KFUPM's IP management and technology licensing office tasked with taking innovation from lab to market place.

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