The monitoring system for oil pipeline

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In this paper, we propose monitoring system for protecting oil pipeline using DAS (Distributed Acoustic Sensing) and FOC (Fiber Optic Cable). DAS and FOC are based on the fact that outdoor events could change the amplitude or speed of signal propagation and is based on the Rayleigh backscattered light. TPI (Third Party Intrusion) including oil pipeline theft produces an acoustic noise around the place of incidents.

In this proposed method, we installed FOC and oil pipeline the 150 cm underground. And when TPI occurs, it can detect the location of event location in real time and quickly.

This method can create a specific feather as well as a specific pattern in monitoring system.

One of this advantage can detect long distance monitoring system. It can be monitored up to 70km oil pipeline. This system might protect oil pipeline from oil theft as well as TPI.

DAS technology expands the applications for fiber optics use in the oil and gas industry.

Biography

Ahri Lee received the B.S. M.S. and PhD. Degree in Computer Science from the Kwangwoon University, Rep. of Korea, in 1994, 1996 and 2001, respectively. Since 1996, she has been a member of the teaching staff at Shinhan University and Seoil University, Rep. of Korea. Also, she has been at AP Technologies in Korea since 2016. Her research interests include image processing, pattern recognition, and DAS and DTS analysis.

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