**LEAKAGE DETECTION IN A GAS PIPELINE USING INTERNET OF THINGS**

**ABSTRACT:**

In this paper, a network-based method for leakage detection of a gas pipeline by using gas flow pattern is proposed. The pipe is divided in several segments and each segment is modeled by considering input/output pressure of the gas flow. The idea is to use a network based on Internet of Things (IOT) phenomena to gather all the required information for detection of the leakage point.The safe operation of these complex systems is of significant importance due to the intrinsic characteristics of gases such as: toxicity, flammability and explosion velocity. In this work, a real-time leakage monitoring model of the long distance natural gas pipeline is proposed. And a leakage detection and localization mechanisms based on the above model were studied. In order to process the acquired data from the pipeline, Practical data gathered from a real life pipeline is used to train the network to make sure that the proposed method is applicable real life projects.