



DETECTION AND REMOVAL OF DUST PARTICLES IN PIPELINES USING 3-D MEMS

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Abstract- Currently, the detection of dust particles is realized through manual sampling. Thus it is desirable to develop an automated online technique. Generally, industries run with the help of pipelines through which liquid can flow. The main aim of the work is to detect the dust particles which are present inside the pipeline when liquid is flowing through it. Distributed Acoustic Sensing (DAS) is a recent addition to the pipeline security world. Opta sense system is designed to prevent the damage in pipeline by providing the advance warning to the concern department and make them alert. The dust particles are detected by using MEMS, which can sense in three axis (Heat, Vibration, Movement). It is identified by the IR sensor. The approach can also be simulated by using MATLAB.

Index terms: Micro Electro Mechanical System (MEMS), Distributed Acoustic Sensing (DAS), Renewable Energy Sources (RES), Opta sense interrogator unit (OIU).