

Novel Metering System of a Three-phase Oil Flow in Horizontal oil Pipeline

Date: Tue. 19th Feb.

Time: 1:10 pm

Location: Building 59, Room 2016

Speaker:

Dr. Sharif Iqbal

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Abstract:

A novel technique will be presented to measure the oil, brine and gas contents and the flow-rate of a horizontal petroleum carrying pipeline. It is based on measuring the conductance and the capacitance in two different locations of the pipe. Each location requires two cylindrical conducting sheets, each covering half of the inner surface of the pipeline and is separated by small gaps at the top and bottom of the pipe. The measurement of the conductance is shown to be sufficient to determine the quantity of brine inside the pipe, while the measurement of the capacitance provides the oil flow rate. Experimental results are used to validate theoretical formulation and the numerical solution. Application of similar capacitive sensors to detect Red Palm Weevil infested date-palm trees are also presented in the seminar.

Bio:

Dr Sharif Iqbal Sheikh has completed his graduate degrees from University of Manchester (UMIST), UK and is currently employed as an associate professor in the department of Electrical Engineering, KFUPM. **He has received multiple awards in recognition to excellence in teaching and advising, efficient use of instructional technology, supervising student organizations and best antenna paper in an international IEE conference. His research expertise are in the field of micro-millimeter wave integrated/control circuits that resulted in 100+ scholarly publications in refereed journals, conferences proceedings, patents etc.** His research work is funded by academia (kfupm), government agencies (kacst, sabic) and local industry (Schlumberger, Saudi Aramco etc). He is a Fellow of IEE and Senior Member of IEEE.