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An overview of thermal mass flow meters applicability in oil and gas industry

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Measuring and modeling flow has played a central role in predicting its behavior and its effects on the surroundings. Flow measurement is the basis of trade between producers, transporters, process plants, state and public marketers. To improve transactional operation, thermal flowmeters could provide direct mass flow measurement of gases and vapors over a wide range of process conditions without the need for density corrections based on pressure and temperature. The flow meters are classified according to the domain in which they are used and their operating principle. The goal of this work is to provide an overview of using thermal flow meter in hydrocarbons industries. The applicability of thermal flow meters is discussed by a simulation using one-dimensional mathematical model of thermal flow sensor.

Keywords: flow, thermal flowmeter, dispersion flowmeter, hot wire anemometer, CTMF, ITMF.

Biography:

Bekraoui Amina, researcher at the Renewable Energies Research Unit in the Saharan Environment (URERMS), unit for the Development of Renewable Energies, CDER, Algeria. She holds a degree in Electronics Engineering from Adrar University, Algeria in 2010, and a Master's degree in Energy Physics from the same university (2014). Four years' experience in research, and 3 years as a vacant teacher at Adrar University. Her current interests include measuring and counting natural gas through thermal meters, studying the various counting systems used by Sonatrach (Algeria), modeling and simulation of energy systems, renewable energy, and thermal engine.