IMPACT: International Journal of Research in Engineering & Technology (IMPACT: IJRET)
ISSN(E): 2321-8843; ISSN(P): 2347-4599
Vol. 2, Issue 2, Feb 2014, 265-272

MODELLING OF SMART CAPACITIVE HUMIDITY SENSOR USING ANN

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ABSTRACT

This paper basically presents a modelling of smart capacitive humidity sensor in order to correct the non linear characteristics of capacitive humidity sensor (CHS). For surveillance in supply chain smart capacitive humidity sensor are integrated with RFID tag. Change in ambient temperature leads to non liner characteristics of capacitive humidity sensor. Under such condition to obtain correct humidity readout, several techniques have been proposed. To provide compensation and self-calibration artificial neural network (ANN) is proposed. A microcontroller unit based hardware experimental set up has been implemented and experimentally measured data has been used to train ANN. In this paper simulation results have shown. This model can estimate the humidity over temperature variation from 20 C to 50 C with maximum full scale error ±1%.

KEYWORDS: Smart Capacitive Humidity Sensor, Artificial Neural Network (ANN), RFID