



## **DEVELOPMENT AND IMPLEMENTATION OF A SENSOR NETWORK TO MONITOR FERMENTATION PROCESS PARAMETER IN TEA PROCESSING**

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*Submitted: Mar. 15, 2014*

*Accepted: July 22, 2014*

*Published: Sep. 1, 2014*

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*Abstract- Fermentation is extremely a crucial process which is primarily responsible for tea quality. It is an oxidation process where tea leaves change colour and smell. Relative humidity (RH) and temperature are two important physical parameters which play a crucial role in producing good quality tea. This work is an attempt to develop and implement a monitoring system for fermentation room of tea factory. Due to the larger dimension of the fermentation room, it requires several numbers of monitoring point for estimating average condition. Sensor node at each monitoring point is connected via RS 485 network which works with a protocol developed for this purpose. Each sensor node consists of sensors, signal conditioning, controller and RS485 transceiver. All these nodes are calibrated and the voltage level of RS 485 system is converted to RS 232 voltage level to make compatible with the COM port of the PC. Data acquisition software is developed with the help of NI Lab VIEW.*

**Index terms:** Tea Fermentation, Relative Humidity, Temperature, RS 485 Network.