Embedded System Based Power Plant Monitoring and Controlling

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Article Info	ABSTRACT
	An embedded based power plant system is used for checking the environmental condition based on different sensor. The microcontroller is fixed inside the boiler which is a turbine, to monitor the status and the information is passed through GSM. In this project we proposed the main water tank supplies number of boilers. The water level is controlled by a water level sensor, each evaporator has two channels, one is delta other one is outlet and the channels' valves are controlled by some temperature sensors composed in each package. From the GSM modem, the user will get the present status of the boiler level by sending a radiator ID number as message. When the temperature inside the boiler exceed the threshold value it will indicate as a warning to the concerned authority person to take the immediate step.

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1.   INTRODUCTION

In this paper the described that the power plant related problems and solutions. Power plant quantity is one of most fundamental division in the business [1]. Power Consumption Modeling and Analysis of Integrated Optical-Wireless Access Network is discussed in [2]. In now a day's most of the peoples affected by power plant wastages, at the same time gas level is increased means totally the surrounding peoples are affected. In this paper overcome the drawbacks [3]. Sensor is a device used to sense the ranges of temperature, gas, water and pressure level [4],[5]. All the sensors are very accurate to find out the ranges. In this design is very flexible, easy to implement and low cost design [6]. Power plant related design mostly based on PIC microcontroller. A review of past, present and future of the offshore wind power technology has been discussed in [7]. Reactive power optimization using firefly algorithm in [8].

2.   WORKING PRINCIPLE

Main aim of this paper described that the power plant monitoring and controlling the gas level, temperature level and pressure level. A Power Quality Improved Bridgeless KY Converter Based Computer Power Supply is discussed in [9]. PIC microcontroller used for in this purpose.

And furthermore having the gas sensor measure the gas. Sensors are connected to PIC controller board. The microcontroller read the accessible information and handled. Every boiler has a temperature sensor, gas sensor and pressure sensor. LCD used to show the all the sensor values. Incase sensor esteem expanded means message caution send to specialist individual through GSM. Maximizing Energy Efficiency for Consumption Circuit Power in Downlink Massive MIMO Wireless Networks is discussed in [10].
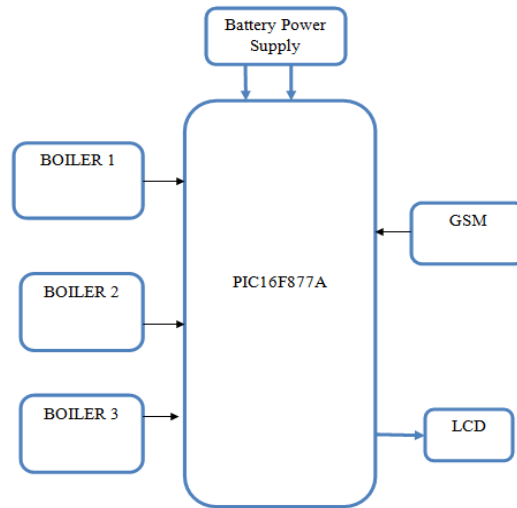
Figure 1. Block Diagram

3. RESULTS AND DISCUSSION

Power plant boiler automation has designed and implemented in simulation as well as hardware like temperature sensor, gas sensor and pressure sensor. Each sensor is monitored by microcontroller. GSM used to sending message.

Figure 2 shows the circuit diagram of power plant monitoring and controlling. Proteus software used to designing the circuit diagram. LCD interfaced by PIC microcontroller. LCD used for displaying purpose only.
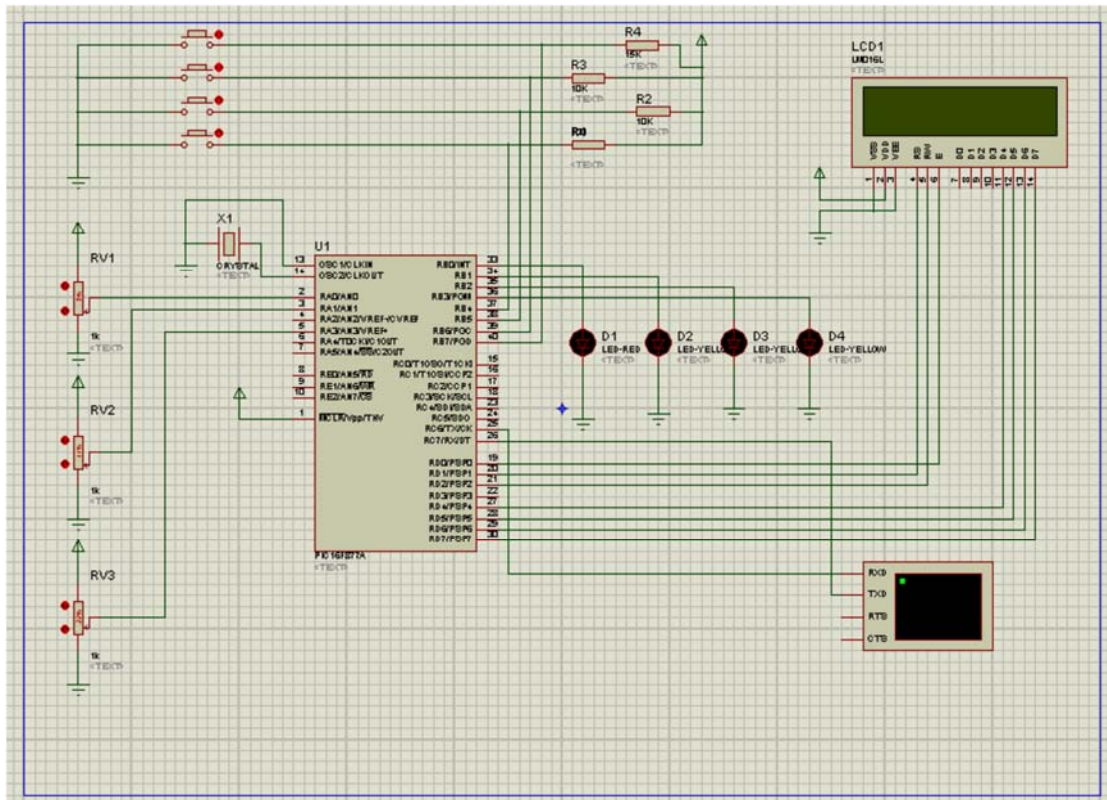

Figure 2. Circuit Diagram

Figure 3 shows the message received by authority person. LCD displays the value of all the sensors like temperature sensor, gas sensor and pressure sensor. In virtual terminal displays the comments based on sensors level. These displays are used to find out the levels of gas, temperature, pressure and water level. Finally sensors value send to the monitoring person through GSM. Analysis of Genetic Algorithm for Effective power Delivery and with Best Upsurge is discussed in [11].
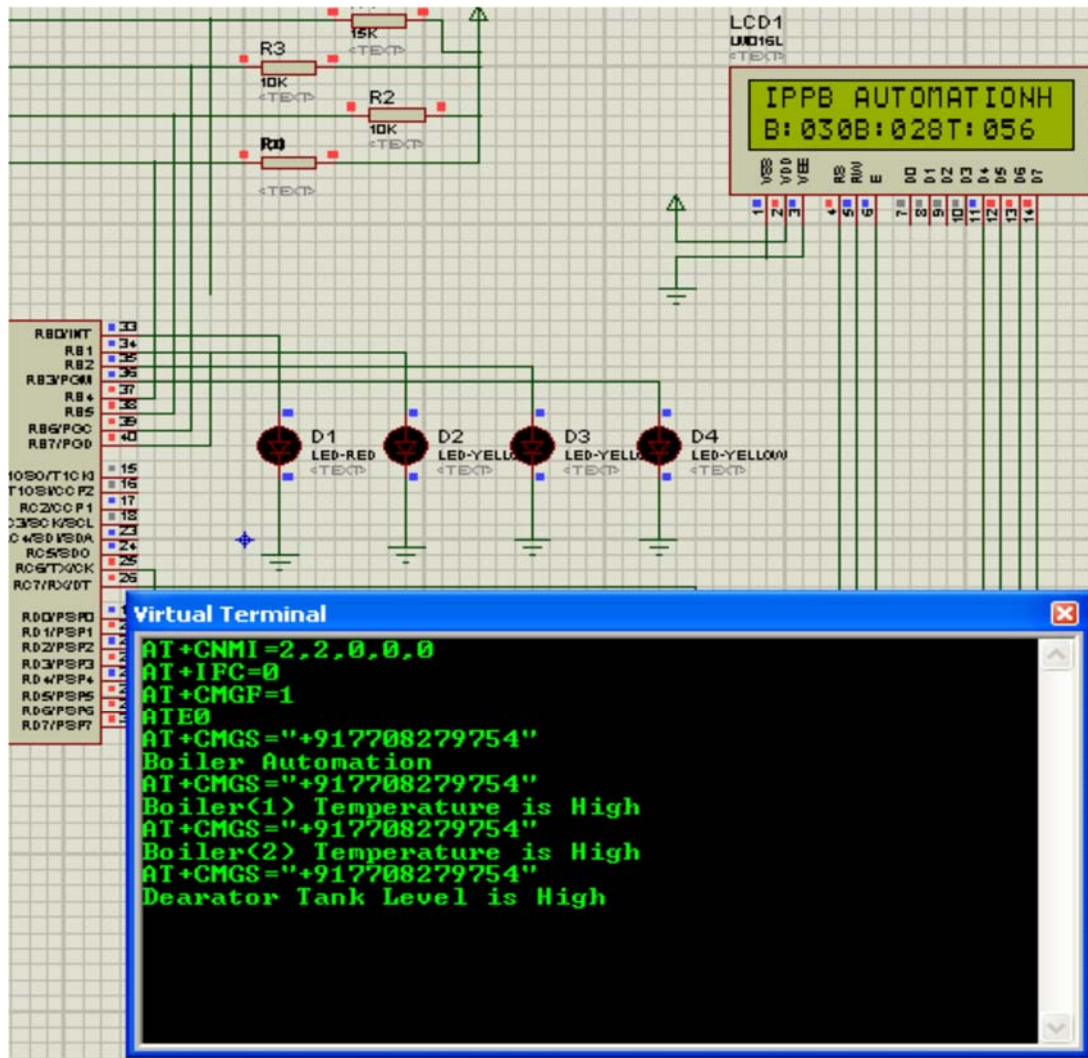

Figure 3. Monitoring the LCD and GSM Command

4.   CONCLUSION

This paper suggests effective modern power plant automation to various industries and agriculture and also it provides safety to human and environment. The graphical representation and sensor value displayed in mobile are easy to understand the boiler performance for authorities. In this paper design very useful for power plant. Main advantages of this design are monitoring the sensor levels. Incase sensor level increased means automatically the information send to the authority person through GSM.

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