Debris and Eutrophication Control for Industrial Environmental Moniter in Plan to Control Shut the Industries

GedelaDileepkumar
M.Tech
Embeded System
Department of E.C.E
Miracle Educational Society Group of Institutions
Vizianagaram, AP, India.

Mrs. A.Swetha
M.Tech
Associate Professor
Department of E.C.E
Miracle Educational Society Group of Institutions
Vizianagaram, AP, India.

Mr.Budireddi Siva Prasad
M.Tech, (Ph.D)
Associate Professor
Department of E.C.E
Miracle Educational Society Group of Institutions
Vizianagaram, AP, India.

Abstract

To monitor and maintain environment, the government has the department and they will maintain the environment. Here if any location has some unconditional parameters like airpollution. If there is only possible to way to inform the department is manual where human errors or neglects may occurs which leads to pollution out of control. Here we are using two sensors to detect the air pollution.

One is smoke sensor and another one is Co sensor. AT89S52 is our controller which is used to monitor an industry and there is also a wireless communication is being arranged, where human supervision is not necessary.This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

Block Diagram:
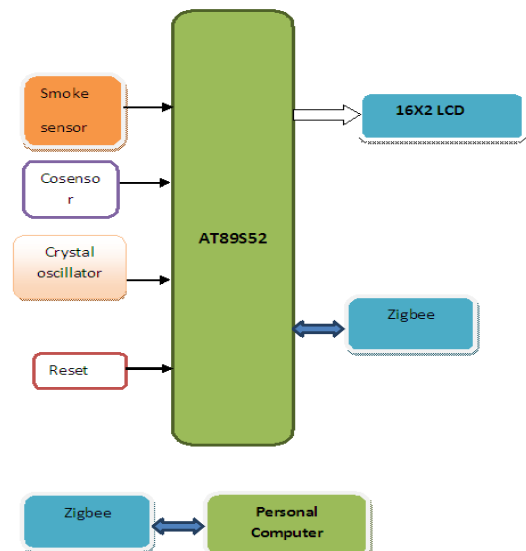
I.Introduction

To monitor and maintain clean environment, the government has the department and they will maintain the environment .Clean and green. Here if any location has some unconditional parameters like, water pollution and air pollution. The only possible to way to inform the department is manual and where human errors or neglects may occurs. Which lead to pollution out of control? Round the clock monitor and maintains is not possible. We have been developing wireless personal area network (WPAN) by grouping each and every individual water meter. A group of industries are monitored, so we go for networking. If any abnormal occurs, the server unit will send SMS to the authorized person.
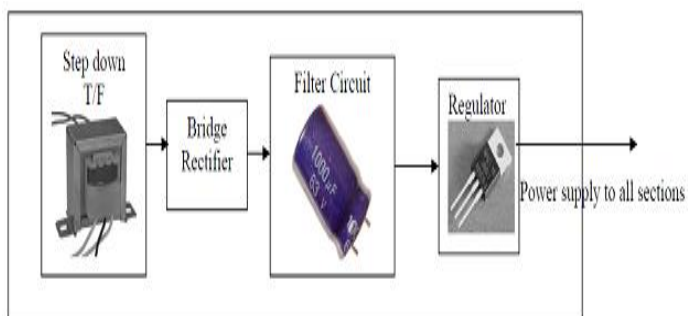
II. Existing Method

All processing industries generate waste. The quantities generated and their potential impacts depend on many factors, including the level of industrial development, the way in which wastes are managed, the existing state of the local environment and the capacity of the receiving media. The gases & fumes generated in the system are effectively controlled by the Pollution control Equipment's. The amount of Lead content emitted with these gases is being collected at every stage of pollution control equipment.

In many developing countries the bulk of domestic and industrial Co2 is emitted. To care our environment and thus by our health we should keep our environment. The traditional method of water quality testing is to collect samples manually and then send them to laboratory for analysis. However, it has been unable to meet the demands of water quality monitoring today. For that we need to appoint staffs to follow the industrial activities and also that not good method due to the absence of reliability.

III.PROPOSED METHOD

In our system each and every individual water meter is been grouped by an individual network called Wireless Personal Area Network (WPAN). A group of industries are monitored, so we go for networking. If any abnormal occurs, the server unit will send the SMS to the authorized person. The system consists of multiple sensors of water quality testing, single -chip microcontroller data acquisition module, information transmission module, monitoring center and other accessories. Various parameters of water quality, air quality and soil quality are automatically detected under the control of single chip microcontroller all day.

The single chip gets the data, and then processes and analyzes them. It is convenient for management to take corresponding measures timely and be able to detect real-time situation of quality remotely. The system has realized the automation of quality monitoring, intelligence of data analyzing and networking of information transferring. It is characterized by advantages of shortcut, accuracy and using manpower and material resources sparingly.

In our system each and every individual water meter is been grouped by an individual network called Wireless Personal Area Network (WPAN). A group of industries are monitored, If any abnormal occurs, the server unit will send the SMS to the authorized person and also shutdown the industry. Microcontroller - PIC 18f45j11 is the microcontroller used in the project. It is used in the portable unit. The controller has peripheral features like inbuilt ADC, required to get the signals from the various sensors. PH ELECTRODES -In chemistry, pH is a numeric scale used to specify the acidity or alkalinity of an aqueous solution. It is the negative of the logarithm to base 10 of the activity of the hydrogen ion. Solutions with a pH less than 7 are acidic and solutions with a pH greater than 7 are alkaline or basic. MIWI MODULE - Wireless Transceiver used in the project.

Relay - To control power to industry, when the abnormal occurs.MQ2 / MQ7 - To find Co2. GSM – GSM is used when any abnormal occurs, the server unit will send the SMS to the authorized person.

IV.TECHNOLOGIES

Microcontroller – Peripheral Interface Controller (PIC) is microcontroller developed by Microchip, PIC microcontroller is fast and easy to implement program when we compare other microcontrollers like 8051. The ease of programming and easy to interfacing with other peripherals PIC became successful microcontroller.

GSM Modem - The GSM Modem is a device which is very similar in function to a conventional mobile phone. Like a mobile phone it can be used for making voice calls over any GSM network, and also send and receive SMS. The primary difference between a mobile phone and a GSM modem is in the nature of the user interface. A SIM900/300 is required for the GSM module. Relay control unit are used to shutdown the industry power. The overall cost of the board should not be too costly as the system is being aimed for low cost.

MIWI p2p wireless protocol -

The MiWi P2P protocol modifies the IEEE 802.15.4 specification's Media Access Control (MAC) layer by adding commands that simplify the handshaking process. It simplifies link disconnection and channel hopping by providing supplementary MAC commands. However, application - specific decisions, such as when to perform energy detect scan or when to jump channels, are not defined in the protocol.

Those issues are left to the application developer.

V.CONCLUSION

In this paper, we have shown the each system is been grouped by an individual network called Wireless Personal Area Network (WPAN). A group of industries are monitored, If any abnormal change in ambient of industries i.e change in air and water quality of industries with help of sensors the abnormal in industries are observed with help of MIWI modem the message will be sent to sever unit and to the authorized person by GSM modem then from server unit with the control unit the particular industries power is shutdown.

REFERENCES

[1]J. Ai and A. Abouzeid, "Coverage by directional sensors in randomly deployed wireless sensor networks," J. Combinatorial Optimization, vol.11, no. 1, pp. 21– 41, 2006.

[2] R. Boland and M. Donohue, "Marine debris accumulation in the near shore marine habitat of the endangered Hawaiian monk seal,"Marine Pollution Bull., vol. 46, no. 11, pp. 1385–1394, 2003.

[3] Crossbow Technology, MICA2, TelosB datasheets.

[4] E. Cuervo, A. Balasubramanian, D. Cho, A. Wolman, S. Saroiu, R. Chandra, and P. Bahl, "MAUI: making smartphones last longer with code

offload," in The 8th Int. Conf.Mobile Systems, Applications, and Services (MobiSys), 2010, pp. 49– 62.

[5] J. Davies, J. Baxter, M. Bradley, D. Connor, J. Khan, E. Murray, W. Sanderson, C. Turnbull, and M.

Vincent, Marine Monitoring Handbook. Joint Nature Conservation Committee, 2001.

[6] U. Erdem and S. Sclaroff, "Automated camera layout to satisfy task-specific and floor plan-specific coverage requirements," Computer Vision and Image Understanding, vol. 103, no. 3, pp. 156–169,2006.

[7] C. Eriksen, J. Osse, R. Light, T.Wen, T. Lehman, P. Sabin, J. Ballard,and A. Chiodi, "Seaglider: a long-range autonomous underwater vehicle for oceanographic research," IEEE J. Ocean. Eng., vol. 26, no. 4, pp. 424–436, 2001.

[8] T. Gandhi and M. Trivedi, "Pedestrian protection systems: issues, survey, and challenges," IEEE Trans. Intell. Transp. Syst., vol. 8, no. 3, pp. 413–430, 2007.

[9] M. Hoffmann, M. Wittke, J. Hahner, and C. Muller- Schloer, "Spatial partitioning in self

- organizing smart camera systems," IEEE J. Sel. Topics Signal Process., vol. 2, no. 4, pp. 480 – 492, 2008.

[10] J. Illingworth and J. Kittler, "A survey of the Hough transform," Computer Vision, Graphics, and Image Processing, vol. 44, no. 1, pp. 87 – 116, 1988.

[11] A. Jain, Fundamentals of Digital Image Processing. Prentice Hall, 1989, vol. 3.

[12] S. Kako, A. Isobe, and S. Magome, "Low altitude remote - sensing method to monitor marine and beach litter of various colors using a balloon equipped with a digital camera," Marine Pollution Bull., vol. 64, no. 6, pp. 1156 –1162, 2012.

[13] N. Leonard and J. Graver, "Model - based feedback control of autonomous underwater gliders," IEEE J. Ocean. Eng., vol. 26, no. 4, pp. 633 – 645, 2001.

[14] T. Mace, "At - sea detection of marine debris: overview of technologies, processes, issues, and options," Marine Pollution Bull., vol. 65, no. 1, pp. 23 – 27, 2012.

[15] B. Priyantha, D. Lymberopoulos, and J. Liu, "Littlerock: Enabling energy - efficient continuous

sensing on mobile phones," Pervasive Computing, vol. 10, no. 2, pp. 12 –

15, 2011.

[16] M. Rahimi, R. Baer, O. Iroezi, J. Garcia, J. Warrior, D. Estrin, and M. Sri vastava, "Cyclops: in situ image sensing and interpretation in wireless sensor networks," in The 3rd Int. Conf. Embedded Net - worked Sensor Systems (SenSys), 2005, pp. 192 – 204.

[17] S. Richardson and P. Green, "On Bayesian analysis of mixtures with an unknown number of components," J. Royal Statistical Soc., vol. 59, no. 4, pp. 731 – 792, 1997.

[18] D. Rudnick, R. Davis, C. Eriksen, D. Fratantoni, and M. Perry, "Underwater gliders for ocean research," J. Marine Technology Soc., vol. 38, no. 2, pp. 73 – 84, 2004.

[19] Y. Shen, W. Hu, J. Liu, M. Yang, B. Wei, and C. Tungchou, "Efficient background subtraction for real - time tracking in embedded camera network," in The 10th Int. Conf. Embedded Networked Sensor Systems (SenSys), 2012, pp. 295 – 308.

[20] H. Solomon, Geometric Probability. Soc. for Industrial and Applied Math., 1978, vol. 28.