

Suresh S., H. N. S. Anusha, T. Rajath, P. Soundarya and S. V. P. Vudatha, "Automatic lighting and Control System For Classroom," *2016 International Conference on ICT in Business Industry & Government (ICTBIG)*, Indore, 2016, pp. 1-6.

doi: 10.1109/ICTBIG.2016.7892666

Abstract: Most of Colleges and Universities use the traditional lighting system where we have a switch to control the lighting. Most of us i.e students and faculty members are habituated towards leaving the class room without switching the lights, Fan, Aircon etc which leads to unnecessary consumption of energy for organization and paying huge amount of bill from their budget. Some of the lighting systems have come with Remote system towards controlling the lighting and fan similar to air conditioner which is being used in homes. But still there is challenge towards leaving the lights and fans unattended when person not in the room. So accordingly, we here in this research have developed Automatic lighting and control using Arduino for the efficient use of energy in Class room condition where we have divided the class room into grids. The system developed will control lighting in particular area of class room based on the presence of human using relay control compared to the one placed in ceiling which would switch on or off based on presence of human in room irrespective of position. In addition to relay control, we have also provide mobility and remote command execution to system using Android mobile App via Bluetooth to control lighting based on voice command.

keywords: {Bluetooth;building management systems;energy conservation;lighting control;mobile computing;relay control;Android mobile app;Arduino;Bluetooth;automatic lighting and control system;classroom;colleges;energy efficiency;relay control;remote command execution;universities;voice command;Bluetooth;Fans;Lighting;Lighting control;Relays;Switches;Android;Arduino;GSM},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7892666&isnumber=7892628>

B. N. P. Cooray, W. S. K. Perera and S. R. D. Kalingamudali, "Simultaneous control of multiple line-loads each connected separately in series with a designed unit control using Radio Frequency and a mobile device," *IECON 2016 - 42nd Annual Conference of the IEEE Industrial Electronics Society*, Florence, 2016, pp. 318-323.

doi: 10.1109/IECON.2016.7793144

Abstract: A unit which can be connected separately in series with each load to control multiple line-loads simultaneously using Radio Frequency (RF) and a mobile device has been developed during this study. Series connected remotely controllable regulators are not widely available commercially and the few available do not have the facility to control the multiple line loads using a mobile application along with a RF remote controller and also they are very expensive and even require an alternative wiring system. The designed regulator provides the convenience of controlling the current flow through appliances connected to a single line power supply. A triac is used to control the power supplied to the load, since it can control the current flow in both halves of an AC current. The gate terminal is triggered by using a diac. A Switch Mode Power Supply, powers the active components of the regulator using the voltage drop across the triac. The Bluetooth (HC-06) and RF (315 MHz RF receiver) modules are programmed to receive inputs from the user to switch ON/OFF or control the voltage supplied to appliances such as fans and light bulbs. The Graphical User Interface enables the user to control the appliances easily and much faster than in normal usage of mechanical switches. The timer which allows the user to define time intervals for predefined output levels, can set desired levels of outputs for the appliances. This feature is not currently available in normal regulators. The suggested method facilitate simultaneous use of RF and the mobile devices as well as the ability to control several appliances with a single unit enabling energy conservation and ease of use. The cost of designing the unit with discrete components being less than US\$ 17, it can be concluded that the model is cost effective since this method suggests two modes of control of the appliances along with timer settings. [1-9].

keywords: {Bluetooth;domestic appliances;fans;graphical user interfaces;lamps;mobile handsets;switched mode power supplies;telecontrol;AC current;Bluetooth;RF modules;RF remote controller;appliance control;current flow;diac;discrete component;energy conservation;fans;frequency 315 MHz;gate terminal;graphical user interface;light bulbs;mechanical switches;mobile device;multiple line-load control;radio frequency;regulator active components;series-connected remotely-controllable regulators;single-line power supply;switch mode power supply;triac;unit control;voltage drop;wiring system;Bluetooth;Fans;Home appliances;Radio frequency;Regulators;Smart phones;Switches;Android;Arduino;Bluetooth;RF;SMPS;mobile application;remote;smart phone;timer},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7793144&isnumber=7792929>

L. Zhao and X. Zhu, "The development of remote monitoring system for cultivation environment of *Pleurotus eryngii*," *2015 IEEE International Conference on Information and Automation*, Lijiang, 2015, pp. 2643-2648.

doi: 10.1109/ICInfA.2015.7279731

Abstract: Aiming at the defects of the existing technology for *Pleurotus eryngii* cultivation environment monitoring system in Ningxia Pengyang County, such as: transmission of the data is not stable, small monitoring range and the sensors cannot move conveniently, only the environmental data in a fixed position within each mushroom shed can be collected, need to lay a lot of cables between the collector and the sensors, wiring difficulty, high cost etc., this system is designed a low-cost remote monitoring of digital information platform to automatically, accurately, and remote wirelessly monitor the environmental temperature, humidity, light intensity and carbon dioxide concentration in eight *Pleurotus* greenhouse simultaneously, based on single-chip, the integrated application of multi sensor fusion technology, Bluetooth wireless transmission technology, GPRS wireless remote transmission technology, combined with the wireless RF module NRF905 set up a tree network structure, the PC monitor centre was developed based on the software LabVIEW. The environmental control equipment heater, refrigerator, fan and shower facilities in each *Pleurotus* shed can be manually and automatically controlled remotely. The real-time environmental data can also be stored and managed as EXCEL files. This study provides effective technical support for establishing the growth model of *Pleurotus eryngii* and forming the control strategy of saving energy, so as to improve the quality and yield of *Pleurotus eryngii*.

keywords: {Bluetooth;agriculture;cellular radio;computerised monitoring;energy conservation;fans;greenhouses;humidity;quality control;refrigerators;sensor fusion;temperature;virtual instrumentation;Bluetooth wireless transmission technology;EXCEL files;GPRS wireless remote transmission technology;Ningxia Pengyang County;PC monitor centre;Pleurotus eryngii cultivation environment monitoring system;Pleurotus eryngii quality;Pleurotus eryngii yield;Pleurotus greenhouse;Pleurotus shed;digital information platform;energy saving;environmental control equipment heater;environmental temperature;fan;humidity;light intensity;multisensor fusion technology;refrigerator;remote monitoring system development;shower facilities;single-chip;software LabVIEW;tree network structure;wireless RF module NRF905;Base stations;Microcontrollers;Monitoring;Temperature sensors;Wireless communication;Wireless sensor networks;Bluetooth;LabVIEW;Pleurotus eryngii;Wireless RF module;remote monitoring},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7279731&isnumber=7279248>

H. R. Mallory, "An Experimental Low-Cost, Flashlight-Modulated Television Remote-Control System," in *IEEE Transactions on Broadcast and Television Receivers*, vol. 12, no. 3, pp. 167-170, July 1966.

doi: 10.1109/TBTR1.1966.4320008

Abstract: As compared with conventional ultrasonic and RF remote control systems, a less expensive, less complicated TV remote control system is quite practical using a compact modulated light flashlight in conjunction with a built in photocell-two transistor amplifier-resonant reed relay receiver to activate the tuner motor and volume control-on-off stepping relay. Whereas present ultrasonic systems may malfunction by the rattling of keys, coins, dog tags, etc., and whereas RF systems may malfunction as a result of lightning, interfering RF carriers, RFI, etc., the optical system is virtually free of malfunction. The writer wishes to acknowledge the inestimable assistance of Mr. William Otto, engineer with Mallory Timers Company, Indianapolis, Indiana, in the development of this system, especially with regard to the application of the Mallory Resonant Reed Relay. Also the many helpful suggestions and encouragement of Messrs. John Zaleski, Arthur Burns and George Sussingham of the Mallory Battery Company.

keywords: {Control systems;Lighting control;Optical amplifiers;Optical modulation;Optical receivers;Radio frequency;Radio frequency amplifiers;Relays;TV receivers;Tuners},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4320008&isnumber=4319980>

Y. Dongmei and Z. Yuandong, "Intelligent home system based on ZigBee and CPS," *2017 29th Chinese Control And Decision Conference (CCDC)*, Chongqing, 2017, pp. 5971-5975.

doi: 10.1109/CCDC.2017.7978239

Abstract: Intelligent home system based on ZigBee and CPS is proposed in this paper after studying the structure and function of ZigBee protocol and CPS (Cyber-physical systems). The remote communication is done by GPRS network. ZigBee wireless network platform uses the low power microcontroller CC2530, which consists of a photosensitive sensor, combustible gas sensor, humidity sensor, infrared sensor and 12864 LCD screen. Home execution system is composed of music light cube, step motor, GPRS module, and fan etc., which can effectively improve the home environment. ZigBee protocol stack is used to design software in order to coordinate modules' tasks and effectively establish and maintain whole network. LabVIEW is adopted to achieve the dynamic data display and the realization of wireless opening lighting and fan, and selecting Home mode function. This intelligent home system is characterized by signal diversified information collection, diversified communication, friendly human-machine interaction and good tailoring and extensibility.

keywords: {Zigbee;gas sensors;humidity sensors;microcontrollers;packet radio networks;protocols;virtual instrumentation;CPS;GPRS module;GPRS network;LCD screen;LabVIEW;ZigBee protocol;ZigBee wireless network platform;combustible gas sensor;cyber-physical systems;home execution system;humidity sensor;infrared sensor;intelligent home system;microcontroller;photosensitive sensor;Communication system security;Cyber-physical systems;Ground penetrating radar;Protocols;Wireless communication;Wireless sensor networks;ZigBee;CC2530;GPRS;Intelligent Home System;ZigBee},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7978239&isnumber=7978054>

D. R. Akshay and K. U. Rao, "Low cost smart glove for remote control by the physically challenged," *2013 IEEE Global Humanitarian Technology Conference: South Asia Satellite (GHTC-SAS)*, Trivandrum, 2013, pp. 36-39.

doi: 10.1109/GHTC-SAS.2013.6629884

Abstract: Physically challenged patients or bed-ridden patients often have to rely on others to operate switches for light, fan, TV etc. Remote controls do help such people. But, certain illnesses will not permit the patient to operate even a remote controller, due to lack of flexibility in the movement of the hands. Paralytic patients are a typical example. The solution for these people, would be a gesture controlled device, worn on their hands, wherein with a small movement of the finger, a relay can be made to activate a switch. This paper presents the development of a low cost smart glove designed to help a physically challenged person to perform simple operations like switching on a light, switching on the fan, ringing an alarm in case of an emergency etc. These actions can be performed by just a simple gesture like folding a finger and mapping the gestures to a suitable action. The device can be implemented by anybody to help the patients.

keywords: {data gloves;gesture recognition;handicapped aids;human computer interaction;telecontrol;bed-ridden patients;low cost smart glove;paralytic patients;physically challenged patients;remote control;Microcontrollers;Radio frequency;Receivers;Sensors;Thumb;Transmitters;IR Sensors;RF transmitter;Smart glove;gesture recognition},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6629884&isnumber=6629874>

S. Dai and Y. Li, "Applied Research of the Intelligent Temperature-Controlled Speed Adjustable Motor in Radiator Fan," *2012 Second International Conference on Intelligent System Design and Engineering Application*, Sanya, Hainan, 2012, pp. 779-782.

doi: 10.1109/ISdea.2012.744

Abstract: Considering the characteristics of the temperature monitoring under complex working condition, this paper suggests a kind of practical, simple and low-cost control method for the intelligence motor. This method uses AT89S52 and a few periphery components as a control system, and has two control modes. In one mode, the control system takes a real-time monitoring on ambient temperature, and correspondingly changes the revolving speed of motor, providing efficient heat dissipation. And the other Mode 2 provides a way of using remote infrared control to manually achieve the same goal. Through the practical operation, this control system shows its effectiveness and stability. And because of its low cost, it can be used widely in radiator fans.

keywords: {cooling;fans;intelligent control;temperature control;velocity control;ambient temperature;heat dissipation;intelligent temperature-controlled speed adjustable motor;radiator fan;real-time monitoring;remote infrared control;Gears;Light emitting diodes;Relays;Temperature control;Temperature distribution;Temperature measurement;infrared remote control;intelligent temperature control;speed regulation},
URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6173322&isnumber=6173133>

B. Tas, N. Altıparmak and A. Ş. Tosun, "Low cost indoor location management system using infrared leds and Wii Remote Controller," *2009 IEEE 28th International Performance Computing and Communications Conference*, Scottsdale, AZ, 2009, pp. 280-288.

doi: 10.1109/PCCC.2009.5403833

Abstract: Many applications in wireless sensor networks can benefit from position information. However, existing accurate solutions for indoor environments are costly. RF based approaches are not suitable for some indoor environments such as factory floors where heavy machinery can cause interference. In this paper, we propose a low cost and simple location management system using the Wii remote controller and infrared leds. Proposed solution is motivated by the need to find the location of a mobile robot used for data collection in a wireless sensor network. In proposed scheme, Wii remote controller is placed on the mobile robot pointing upward and several IR leds are placed on the ceiling. Proposed scheme uses the resources efficiently and can cover a large area using a single Wii remote controller and multiple IR leds. Proposed scheme is easy to implement and requires minimal bandwidth for location management.

keywords: {indoor radio;light emitting diodes;mobile robots;telecommunication network management;telecontrol;wireless sensor networks;Wii remote controller;indoor location management system;infrared leds;mobile robot;multiple IR leds;position information;wireless sensor networks;Control systems;Costs;Floors;Indoor environments;Light emitting diodes;Machinery;Mobile robots;Production facilities;Radio frequency;Wireless sensor networks},

URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5403833&isnumber=5403797>

IEEE Draft Recommended Practice for Personnel Qualifications for Installation and Maintenance of Stationary Batteries," in *IEEE Unapproved Draft Std P1657 D26, Mar 2009*, vol., no., pp., 2009

Abstract: This document defines the areas of recommended knowledge for installers and maintainers of stationary batteries and related systems to the extent that they affect the battery. Design of the dc system and sizing of the dc battery charger(s) are beyond the scope of this document. This document covers only lead-acid and Nickel-Cadmium battery technologies. Its purpose is to provide an outline (not necessarily in training order) of the items that should be covered by those developing training programs for stationary battery installation and maintenance personnel. The IEEE will not be certifying trained personnel nor providing its own battery technician training programs.

keywords: {AED;AH;ANSI;ASTM;AWG;Ah;Aid;Ampamp;Antimony;Article;BOL;BOM;Bill;Cadmium;Calciumcadmium;Code;Commission;Copper;DLO;DLRO;DMM;EMC;EMI;EPA;EPO;ESD;EU;Effect;Faur;First;HV;Cd;Nickel;OJT;OSHA;Ohm;PBE;Plant;abnormal;abrasion;abrasive;absorb;abuse;ac;accept;access;accuracy;acid;acting;active;activities;adhere;adjust;admittance;adopted;advanced;age;agent;aging;aisle;alarmAGM flame;flammability;flammable;flash;flex;float;flooded;floor;flow;follow;footwear;force;form;fouet;frame;frequency;freshening;ft;fully;fundamental;fuse;gage;gas;gather;gel;general;generating;glass;gloves;goggles;g

URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4811185&isnumber=4811184>