
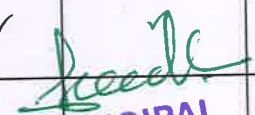


ACADEMIC YEAR (2021-2022)

		J K K Munirajah college of Technology, T.N.Palayam			Metric No 1.3.2	
S.No	Name of the course	course code	programme offering	Contents mapping to		Number of students
				project work	internship	
<b>(2021-2022) Regulation-2017</b>						
1	Project Work	EC8811	Electronics and Communication Engineering	✓	✓	14
2	Electronic Circuits- I	EC8351	Electronics and Communication Engineering	✓	✓	14
3	Electronic Circuits II	EC8452	Electronics and Communication Engineering	✓		11
4	Linear Integrated Circuits	EC8453	Electronics and Communication Engineering	✓		12
5	Microprocessors and Microcontrollers	EC8691	Electronics and Communication Engineering	✓	✓	14
6	Wireless Networks	EC8004	Electronics and Communication Engineering	✓		12
7	Embedded and Real Time Systems	EC8791	Electronics and Communication Engineering	✓		14
8	Satellite Communication	EC8094	Electronics and Communication Engineering	✓		14

  
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**J K K MUNIRAJAH COLLEGE**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**



**J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY**  
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)  
T.N.Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506



**Department of Electronics and Communication Engineering**

**ACADEMIC YEAR 2021-2022**

S.NO	REGISTER NUMBER	STUDENT NAME	PROJECT WORK	INTERNSHIP
1	731218106001	BABYSHALINI G		✓
2	731218106002	DEEPAKM	✓	
3	731218106003	DHARANI M		✓
4	731218106005	JAI SRI ADITHYA T	✓	
5	731218106006	JEEVITHA P		✓
6	731218106009	KEERTHANA T		✓
7	731218106012	PERIYASAMY T		✓
8	731218106013	PRIYA R	✓	
9	731218106014	PRIYA V		✓
10	731218106015	PRIYADHARSINI A	✓	
11	731218106016	RAMACHANDHIRAN G		✓
12	731218106017	SAKTHISUNDARAM D		✓
13	731218106018	SANTHIYA A	✓	
14	731218106301	MANIVEL M	✓	

**PRINCIPAL**  
**JKK MUNIRAJAH COLLEG.**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**



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T.N.Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506



**Department of Electronics and Communication Engineering**

S.NO	Name of the Course that Include Experimental Learning through project Work/Internship/Field Visit
1	Project Work
2	Electronic Circuits- I
3	Electronic Circuits II
4	Linear Integrated Circuits
5	Microprocessors and Microcontrollers
6	Wireless Networks
7	Embedded and Real Time Systems
8	Satellite Communication

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**OBJECTIVES:**

- To develop the ability to solve a specific problem right from its identification and literature review till the successful solution of the same. To train the students in preparing project reports and to face reviews and viva voce examination.

The students in a group of 3 to 4 works on a topic approved by the head of the department under the guidance of a faculty member and prepares a comprehensive project report after completing the work to the satisfaction of the supervisor. The progress of the project is evaluated based on a minimum of three reviews. The review committee may be constituted by the Head of the Department. A project report is required at the end of the semester. The project work is evaluated based on oral presentation and the project report jointly by external and internal examiners constituted by the Head of the Department.

**TOTAL: 300 PERIODS****OUTCOME:**

- On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.



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EC8004

**WIRELESS NETWORKS**

L T P C  
3 0 0 3

**OBJECTIVES:**

- To understand the concept about Wireless networks, protocol stack and standards
- To understand and analyse the network layer solutions for Wireless networks
- To study about fundamentals of 3G Services, its protocols and applications
- To have in depth knowledge on internetworking of WLAN and WWAN
- To learn about evolution of 4G Networks, its architecture and applications

**UNIT I**

**WIRELESS LAN**

9

Introduction-WLAN technologies: - IEEE802.11: System architecture, protocol architecture, 802.11b, 802.11a – Hiper LAN: WATM, BRAN, HiperLAN2 – Bluetooth: Architecture, WPAN – IEEE 802.15.4, Wireless USB, Zigbee, 6LoWPAN, WirelessHART

**UNIT II**

**MOBILE NETWORK LAYER**

9

Introduction - Mobile IP: IP packet delivery, Agent discovery, tunneling and encapsulation, IPV6- Network layer in the internet- Mobile IP session initiation protocol - mobile ad-hoc network: Routing: Destination Sequence distance vector, IoT: CoAP

**UNIT III**

**3G OVERVIEW**

9

Overview of UMTS Terrestrial Radio access network-UMTS Core network Architecture: 3GPP Architecture, User equipment, CDMA2000 overview- Radio and Network components, Network structure, Radio Network, TD-CDMA, TD – SCDMA.

**UNIT IV**

**INTERNETWORKING BETWEEN WLANS AND WWANS**

9

Internetworking objectives and requirements, Schemes to connect WLANS and 3G Networks, Session Mobility, Internetworking Architecture for WLAN and GPRS, System Description, Local Multipoint Distribution Service, Multichannel Multipoint Distribution System.

**UNIT V**

**4G & Beyond**

9

Introduction – 4G vision – 4G features and challenges - Applications of 4G – 4G Technologies: Multicarrier Modulation, Smart antenna techniques, IMS Architecture, LTE, Advanced Broadband Wireless Access and Services, MVNO.

**TOTAL:45 PERIODS**

**OUTCOMES:**

**Upon completion of the course, the student would be able to:**

- Conversant with the latest 3G/4G networks and its architecture
- Design and implement wireless network environment for any application using latest wireless protocols and standards
- Ability to select the suitable network depending on the availability and requirement
- Implement different type of applications for smart phones and mobile devices with latest network strategies



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**OBJECTIVES :**

- To give a comprehensive exposure to all types of amplifiers and oscillators constructed with discrete components. This helps to develop a strong basis for building linear and digital integrated circuits
- To study about feedback amplifiers and oscillators principles
- To design oscillators.
- To study about turned amplifier.
- To understand the analysis and design of LC and RC oscillators, amplifiers, multi vibrators, power amplifiers and DC convertors.

**UNIT I      FEEDBACK AMPLIFIERS AND STABILITY** **9**  
 Feedback Concepts – gain with feedback – effect of feedback on gain stability, distortion, bandwidth, input and output impedances; topologies of feedback amplifiers – analysis of series-series, shunt-shunt and shunt-series feedback amplifiers-stability problem-Gain and Phase-margins-Frequency compensation.

**UNIT II      OSCILLATORS** **9**  
 Barkhausen criterion for oscillation – phase shift, Wien bridge - Hartley & Colpitt's oscillators – Clapp oscillator-Ring oscillators and crystal oscillators – oscillator amplitude stabilization.

**UNIT III     TUNED AMPLIFIERS** **9**  
 Coil losses, unloaded and loaded Q of tank circuits, small signal tuned amplifiers –Analysis of capacitor coupled single tuned amplifier – double tuned amplifier - effect of cascading single tuned and double tuned amplifiers on bandwidth – Stagger tuned amplifiers - Stability of tuned amplifiers – Neutralization - Hazeltine neutralization method.

**UNIT IV     WAVE SHAPING AND MULTIVIBRATOR CIRCUITS** **9**  
 Pulse circuits – attenuators – RC integrator and differentiator circuits – diode clampers and clippers – Multivibrators - Schmitt Trigger- UJT Oscillator.

**UNIT V      POWER AMPLIFIERS AND DC CONVERTERS** **9**  
 Power amplifiers- class A-Class B-Class AB-Class C-Power MOSFET-Temperature Effect- Class AB Power amplifier using MOSFET –DC/DC convertors – Buck, Boost, Buck-Boost analysis and design

**TOTAL : 45 PERIODS**

**OUTCOMES:**

**Upon completion of the course, the student should be able to:**

- Analyze different types of amplifier, oscillator and multivibrator circuits
- Design BJT amplifier and oscillator circuits
- Analyze transistorized amplifier and oscillator circuits
- Design and analyze feedback amplifiers
- Design LC and RC oscillators, tuned amplifiers, wave shaping circuits, multivibrators, power amplifier and DC convertors.



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 GOBI (Tk), ERODE (Dt).**



**SOLAR POWER BASED SMART CROP  
PROTECTION SYSTEM FROM WILD  
ANIMALS**



**A PROJECT REPORT**

*Submitted by*

**DEEPAK.M**

**(731218106002)**

**PRIYA.R**

**(731218106013)**

*in partial fulfillment for the award of the degree*

**Of**

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY**

**T.N.PALAYAM-638506**

**ANNA UNIVERSITY;CHENNAI 600 025**

**JUNE 2022**

**PRINCIPAL**  
**JKK MUNIRAJAH COLLEGE**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**



**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report "**SOLAR POWER BASED SMART CROP PROTECTION SYSTEM FROM WILD ANIMALS**" is the bonafide work of


**DEEPAK.M**

**(731218106002)**

**PRIYA.R**

**(731218106013)**

Who carried out the project work under my supervision

  
SIGNATURE

  
SIGNATURE

**Dr. C.MURUGESAN.,M.E.,Ph.D.,**

**Mrs. R.KOKILA.,M.E.,**

**HEAD OF THE DEPARTMENT**

**SUPERVISOR**

Department of Electronics and

Department of Electronics and

Communication Engineering

Communication Engineering

J.K.K Munirajah College of

J.K.K Munirajah College of

Technology

Technology

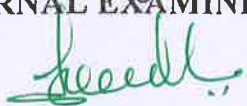
T.N. Palayam.

T.N. Palayam.

Submitted for the project Viva-Voce examination held on. 22.06.2022

  
INTERNAL EXAMINER

  
EXTERNAL EXAMINER

  
**PRINCIPAL**  
**JKK MUNIRAJAH COLLEGE**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
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## ABSTRACT

Agriculture has always been the primary and the most important sectors of Indian economy. Farmers are the back bone of one's country, so it is important for us to make sure he has the access to resources that are essential. Conventional methods like scare crows are used even today in an agricultural field to avoid birds and animals from feeding on growing crops. There are many loopholes in such ideas and so improvising agricultural security has become a major issue these days. Thus, this paper focuses on proposing a system which detects the intruders, monitors any suspicious activity and then reports to the owner of the field. It acts as an adaptable system which provides a practicable system to the farmers for ensuring complete safety of their farmlands from any attacks or trespassing activities. This is an **Arduino Uno based framework utilizing microcontroller.** This framework utilizes a PIR sensor to identify intruders close to the field and additional to it a smoke sensor **to identify the smoke produced from the fire** and a soil moisture sensor **to detect the volumetric water content in the soil.**



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## CHAPTER 6


### 6. CONCLUSION AND FUTURE WORK

#### 6.1 CONCLUSION

The problem of crop vandalization by wild animals and fire has become a major social problem in current time. It requires urgent attention as no effective solution exists till date for this problem. Thus this project carries a great social relevance as it aims to address this problem. This project will help farmers in protecting their orchards and fields and save them from significant financial losses and will save them from the unproductive efforts that they endure for the protection their fields. This will also help them in achieving better crop yields thus leading to their economic wellbeing.

#### 6.2 FUTURE ENHANCEMENT

In the future, there will be very large scope, this project can be made based on Image processing in which wild animal and fire can be detected by cameras and if it comes towards farm then system will be directly activated through wireless networks. Wild animals can also be detected by using wireless networks such as laser wireless sensors and by sensing this laser or sensor's security system will be activated.

  
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T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).

**OBJECTIVES:**

- To understand the Architecture of 8086 microprocessor.
- To learn the design aspects of I/O and Memory Interfacing circuits.
- To interface microprocessors with supporting chips.
- To study the Architecture of 8051 microcontroller.
- To design a microcontroller based system

**UNIT I THE 8086 MICROPROCESSOR 9**

Introduction to 8086 – Microprocessor architecture – Addressing modes - Instruction set and assembler directives – Assembly language programming – Modular Programming - Linking and Relocation - Stacks - Procedures – Macros – Interrupts and interrupt service routines – Byte and String Manipulation.

**UNIT II 8086 SYSTEM BUS STRUCTURE 9**

8086 signals – Basic configurations – System bus timing – System design using 8086 – I/O programming – Introduction to Multiprogramming – System Bus Structure – Multiprocessor configurations – Coprocessor, Closely coupled and loosely Coupled configurations – Introduction to advanced processors.

**UNIT III I/O INTERFACING 9**

Memory Interfacing and I/O interfacing - Parallel communication interface – Serial communication interface – D/A and A/D Interface - Timer – Keyboard /display controller – Interrupt controller – DMA controller – Programming and applications Case studies: Traffic Light control, LED display , LCD display, Keyboard display interface and Alarm Controller.

**UNIT IV MICROCONTROLLER 9**

Architecture of 8051 – Special Function Registers(SFRs) - I/O Pins Ports and Circuits - Instruction set - Addressing modes - Assembly language programming.

**UNIT V INTERFACING MICROCONTROLLER 9**

Programming 8051 Timers - Serial Port Programming - Interrupts Programming – LCD & Keyboard Interfacing - ADC, DAC & Sensor Interfacing - External Memory Interface- Stepper Motor and Waveform generation - Comparison of Microprocessor, Microcontroller, PIC and ARM processors.

**TOTAL: 45 PERIODS****OUTCOMES:**

**At the end of the course, the students should be able to:**

- Understand and execute programs based on 8086 microprocessor.
- Design Memory Interfacing circuits.
- Design and interface I/O circuits.
- Design and implement 8051 microcontroller based systems.


**PRINCIPAL****JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY****T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).**



**SMART SHOPPING TROLLEY  
FOR AUTOMATION BILLING  
SYSTEM**



**A PROJECT REPORT**

*Submitted by*

**JEEVITHA.P**

**(731218106006)**

**PERIYASAMY.T**

**(731218106012)**

**PRIYA.V**

**(731218106014)**

*in partial fulfillment for the award of the degree*

*Of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY**

**T.N.PALAYAM-638506**

**ANNA UNIVERSITY:CHENNAI 600 025**

**JUNE 2022**

**PRINCIPAL  
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T.N. PALAYAM (Po)-638 506.  
GOBI (TK), ERODE (Dt).**



**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report " **SMART SHOPPING TROLLEY FOR AUTOMATION BILLING SYSTEM**" is the bonafide work of

**JEEVITHA.P**

**(731218106006)**

**PERIYASAMY.T**

**(731218106012)**

**PRIYA.V**

**(731218106014)**

Who carried out the project work under my supervision

  
SIGNATURE

  
SIGNATURE

**Dr. C.MURUGESAN.,M.E.,Ph.D.,**

**Mrs. R.KOKILA.,M.E.,**

**HEAD OF THE DEPARTMENT**

**SUPERVISOR**

Department of Electronics and

Department of Electronics and

Communication Engineering

Communication Engineering

J.K.K. Munirajah College of

J.K.K. Munirajah college of

Technology, T.N.Palayam

Technology, T.N.Palayam.

Submitted for the project Viva-Voce examination held on. **12.06.2022**

  
INTERNAL EXAMINER

  
EXTERNAL EXAMINER

**PRINCIPAL**

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OF TECHNOLOGY**

**T.N. PALAYAM (Po)-638 506.  
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## ABSTRACT

The modern age of technology in which most of the customer needs to wait in the supermarket for shopping because it is a highly time-consuming process. A huge crowd in the supermarket at the time of discount offers or weekends makes trouble to wait in long queues because of a barcode-based billing process. In this regard, the Smart Shopping Cart is proposed which consists of Radio Frequency Identification (RFID) sensors, Arduino microcontroller, Bluetooth module, and Mobile application. RFID sensors depend on wireless communication. One part is the RFID tag attached to each product and the other is RFID Reader that reads the product information efficiently. After this, each product information shows in the Mobile application. The customer easily manages the shopping list in Mobile application according to preferences. Then shopping information sends to the server wirelessly and automatically generates billing. This experimental prototype is designed to eliminate time-consuming shopping process and quality of services issues. The proposed system can easily be implemented and tested at a commercial scale under the real scenario in the future. That is why the proposed model is more competitive as compared to others.


  
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## CHAPTER 6

### 6. CONCLUSION AND FUTURE WORK:

#### 6.1 CONCLUSION:

In the aforementioned paper, the intended system design for automation of the shopping process by merging different technologies like Arduino Uno, RFID, and Android mobile application. That can be divided into two major categories Electronic components and Software components. In Electronic Components, Arduino Uno operating as an intermediary microcontroller, which controls the RFID technology and Built, communication between RFID technology and software components like android mobile application through Bluetooth module. In software components, there is an android mobile application in which customer's login to the proposed system by using different proposed methods that can secure customer privacy. The proposed system prevents the customer to get an expired or undesired product by providing an android mobile application. Customer directly interacts with the product information. This information affects the preferences of the customer about the product and helps them to get the best quality product. Shopping products can be displayed in a current shopping list of the customer that helps the customer to maintain its shopping list according to need or budget. That also helps to remind the remaining products to purchase. Besides, there is a server as a data center of the supermarket, which also connected with the smart shopping card. At the billing Counter the total bill data will be transferred to PC by zigbee



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## 6.2 FUTURE ENHANCEMENT:

In this study, we designed a smartphone shopping application that scans products' barcode and receives coupons nearby stores based on Beacon technology. Customers can shop at both online and offline with cheap price and manage the products on their own mobile shopping cart. Also they can check products with their eyes and get details quickly. Thus, enterprises can attract both the showrooming and the reverse showrooming at the same time. However, this application is not perfect yet and needs more online and offline store alliances. Therefore, the smartphone shopping application needs more improvement to release it.



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**T.N. PALAYAM (Po)-638 506.  
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**INTERNSHIP REQUISITION**

2 messages

**ELECTRONICS COMMUNICATION** <jkkmctece2013@gmail.com>  
 To: power supplies <gbro@gmail.com>

Mon, Mar 28, 2022 at 10:55 AM

Sir,

On behalf of J.K.K.Munirajah College of Technology, we wish to request for permission to do Project Internship training at your company Universal Power supplies.

We wish to undertake our students an **Project Internship** training at your company from 04.04.22 onwards upto two months to complete their project. As per the curriculum, the student needs to join a two month long internship and attain a certificate after satisfactory training. It will be a golden opportunity for the students as they will get to learn a lot of new things. We believe that your company will give relevant knowledge and training during this internship to complete their project.

The students P.Jeevitha, T.Periyasamy and V.Priya are intend to participate in this Project Internship. Please allow our students to do an Internship at your company and meet your skilled employee. Thank you in advance.

With Regards,  
 HoD/ECE

**ECE DEPARTMENT****ECLON WELCOMES U ALL..**


---

 INTERNSHIP.pdf

367K

**power supplies** <gbro@gmail.com>  
 To: ELECTRONICS COMMUNICATION <jkkmctece2013@gmail.com>

Tue, Mar 29, 2022 at 09:15 AM

Dear Sir,

With great pleasure we welcome the listed students from your attached letter, to do **project internship training** in our company on your convenient date.

Best Regards,  
 UPS



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**JKK MUNIRAJAH COLLEGE**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**

# UNIVERSAL POWER SUPPLIES

Department of R & D Centre,  
Varanapuram, Bhavani, Tamil Nadu 638301

Phone: 099421 07795

Website: www.gbro.in

Date: 28.05.2022

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student Ms. JEEVITHA P (Reg.No:731218106006) Department of Electronics and Communication Engineering Final Year from J.K.K Munirajah College of Technology, T.N.Palayam, Gobi, has satisfactorily completed her Internship during the period of 04.04.2022 to 28.05.2022.

She worked on the project titled "SMART SHOPPING TROLLEY FOR AUTOMATION BILLING SYSTEM" under our guidance.

During the above mentioned period her conduct and behavior remains good,  
We wish her all the best for future.



Project Manager

UNIVERSAL POWER SUPPLIES

Opp. Bhavani G.H.,

Bhavani - 638 301.

Contact : 88833 96669

For



Electronics R & D Manufacturing  
Universal Power Supplies



PRINCIPAL

JKK MUNIRAJAH COLLEGE  
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GOBI (Tk), ERODE (Dt).

Regd.Office: Varanapuram, Bhavani, Tamil Nadu 638301

Phone: 099421 07795 Website: www.gbro.in

# UNIVERSAL POWER SUPPLIES

Department of R & D Centre,  
Varanapuram, Bhavani, Tamil Nadu 638301

Phone: 099421 07795

Website: www.gbro.in

Date: 28.05.2022

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student **Mr. PERIYASAMY T** (Reg.No: **731218106015**) Department of Electronics and Communication Engineering Final Year from **J.K.K Munirajah College of Technology, T.N.Palayam, Gobi**, has satisfactorily completed his Internship during the period of 04.04.2022 to 28.05.2022.

He worked on the project titled "**SMART SHOPPING TROLLEY FOR AUTOMATION BILLING SYSTEM**" under our guidance.

During the above mentioned period his conduct and behavior remains good,  
We wish him all the best for future.



Project Manager

**UNIVERSAL POWER SUPPLIES**

Opp. Bhavani G.H.,  
Bhavani - 638 301.

Contact : 88833 96669

For



Electronics R & D Manufacturing  
Universal Power Supplies



Regd.Office: Varanapuram, Bhavani, Tamil Nadu 638301

Phone: 099421 07795 Website: www.gbro.in

**PRINCIPAL**  
**JKK MUNIRAJAH COLLEGE**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**

# UNIVERSAL POWER SUPPLIES

Department of R & D Centre,  
Varanapuram, Bhavani, Tamil Nadu 638301

Phone: 099421 07795

Website: [www.gbro.in](http://www.gbro.in)

Date: 28.05.2022

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student Ms. PRIYA V (Reg. No: 731218106014) Department of Electronics and Communication Engineering Final Year from J.K.K Munirajah College of Technology, T.N.Palayam, Gobi, has satisfactorily completed her Internship during the period of 04.04.2022 to 28.05.2022.

She worked on the project titled "SMART SHOPPING TROLLEY FOR AUTOMATION BILLING SYSTEM" under our guidance.

During the above mentioned period her conduct and behavior remains good,  
We wish her all the best for future.

For



Electronics R & D Manufacturing  
Universal Power Supplies

Project Manager

UNIVERSAL POWER SUPPLIES

Opp. Bhavani G.H.,

Bhavani - 638 301.

Contact : 88833 96669

PRINCIPAL  
JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY  
T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).

**OBJECTIVES:**

The student should be made to:

- Understand the basics of satellite orbits
- Understand the satellite segment and earth segment
- Analyze the various methods of satellite access
- Understand the applications of satellites
- Understand the basics of satellite Networks

**UNIT I SATELLITE ORBITS**

9

Kepler's Laws, Newton's law, orbital parameters, orbital perturbations, station keeping, geo stationary and non Geo-stationary orbits – Look Angle Determination- Limits of visibility – eclipse-Sub satellite point –Sun transit outage-Launching Procedures - launch vehicles and propulsion.

**UNIT II SPACE SEGMENT**

9

Spacecraft Technology- Structure, Primary power, Attitude and Orbit control, Thermal control and Propulsion, communication Payload and supporting subsystems, Telemetry, Tracking and command-Transponders-The Antenna Subsystem.

**UNIT III SATELLITE LINK DESIGN**

9

Basic link analysis, Interference analysis, Rain induced attenuation and interference, Ionospheric characteristics, Link Design with and without frequency reuse.

**UNIT IV SATELLITE ACCESS AND CODING METHODS**

9

Modulation and Multiplexing: Voice, Data, Video, Analog – digital transmission system, Digital video Broadcast, multiple access: FDMA, TDMA, CDMA, DAMA Assignment Methods, compression – encryption, Coding Schemes.

**UNIT V SATELLITE APPLICATIONS**

9

INTELSAT Series, INSAT, VSAT, Mobile satellite services: GSM, GPS, INMARSAT, LEO, MEO, Satellite Navigational System. GPS Position Location Principles, Differential GPS, Direct Broadcast satellites (DBS/DTH).

**TOTAL:45 PERIODS****OUTCOMES:**

At the end of the course, the student would be able to:

- Analyze the satellite orbits
- Analyze the earth segment and space segment
- Analyze the satellite Link design
- Design various satellite applications


**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY**

**T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).**



**GSM BASED LED NOTICE**



**BOARD**

**A PROJECT REPORT**

**Submitted by**

**KEERTHANA.T (731218106009)**

**RAMACHANDHIRAN.G (731218106016)**

**SAKTHISUNDARAM.D (731218106017)**

**in partial fulfillment for the award of the degree**

**of**

**BACHELOR OF ENGINEERING**

**IN**


**ELECTRONICS AND COMMUNICATION ENGINEERING**

**J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY**

**T.N.PALAYAM-638506**

**ANNA UNIVERSITY: CHENNAI-600 025**

**JUNE 2022**

  
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**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**



ANNA UNIVERSITY: CHENNAI-600 02

**BONAFIDE CERTIFICATE**

Certified that this project report "**GSM BASED LED NOTICE BOARD**" is the bonafide work of

**KEERTHANA.T**

(731218106009)

**RAMACHANDHIRAN.G**

(731218106016)

**SAKTHISUNDARAM.D**

(731218106017)

Who carried out the project work under my supervision.

  
SIGNATURE

**Prof.C.MURUGESAN.,M.E.,Ph.D.,**

**HEAD OF THE DEPARTMENT**

Department of Electronics

and Communication Engineering

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T.N.Palayam.

  
SIGNATURE

**Miss.S.ABINAYA.,M.E.,**

**SUPERVISOR,AP/ECE**

Department of Electronics


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JKK Munirajah college of Technology

T.N.Palayam.

Submitted for the project Viva-Voce examination held on-----

22/6/22

  
INTERNAL EXAMINER

  
PRINCIPAL

  
EXTERNAL EXAMINER


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i

ABSTRACT

In our day-to-day life, we use many such appliances at home, office and public places for our comfort a convenience. The use of embedded system in communication has given rise to many interesting application GSM based control system implements the emerging application of the global system for mobile communication . So, by adding wireless communication interface such GSM to these systems, we can overcome their limitation. This project is remote notice board with modem connected to it , so if the user wants to display some messages, he will send the messages in SMS format. The SMS is deleted from the SIM each time it is read, thus making room for the next SMS. This project can be used mainly for police or army to display something crucial within a matter of seconds so keeping mind we are designing a new display system. We can access remotely, thus utilizing GSM technology. In this case it solves the problem of instant information transfer in the campus.

  
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## CHAPTER 06

### CONCLUSION AND FUTURE WORK

#### 6. 1. CONCLUSION

The prototype of the GSM based display was efficiently designed. The SMS is deleted from the SIM each time it is read, thus making room for the next SMS. The major constraints incorporated are the use of \* as the termination character of the SMS and the display of one SMS as a time. These limitations can be removed by the use of higher end microcontrollers and extended RAM. The prototype can be implemented using commercial display boards. In this case, it can solve the problem of instant information transfer in the campus. Multilingual display can be another added variation of the project.

#### 6.2. FUTURE ENHANCEMENT

- ❖ This feature can be added by programming the microcontroller to use different encoding decoding schemes in different areas as per the local language. This will ensure the increase in the number of informed users.
- ❖ Adding more functions like “No New Notice”, “Getting New Notice Ready” etc., will only make the system Flexible for industrial use.
- ❖ External memory like RAM and higher end microcontroller can be used to display much longer characters so that longer messages can be conveyed by system.



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# CERTIFICATE

OF

## Appreciation



Date: 28.05.2022

THIS CERTIFICATE IS PROUDLY PRESENTED TO  
**D.SAKTHISUNDARAM,**

Dept Of ECE, J.K.K Munirajah College of Technology  
has completed his internship on **GSM BASED LED NOTICE BOARD**  
from 04.04.2022 to 28.05.2022 at ETS ACADEMY, ERODE.

*Seedh*

PRINCIPAL

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ETS Academy is registered under the  
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OF

Appreciation



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Authorised signature



**MSME**  
MICRO, SMALL & MEDIUM ENTERPRISES  
सूक्ष्म, सान्छु एवं मध्यम उद्यम

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**Skill India**  
दीक्षित भारत - कौशल भारत



**Microsoft**  
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**PMKVY**  
PRADHAN MANTRI KAUSHAL YOGA

IT-ITeS-SSC  
NASSCOM



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**MSME**  
MICRO, SMALL & MEDIUM ENTERPRISES  
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CERTIFICATE ID: A002834

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Registered Microsoft Partner



**PMKVY**  
PRADHANMANTRI KALSHAL VIKAS YOJANA

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**OBJECTIVES:**

- To understand the methods of biasing transistors
- To design and analyze single stage and multistage amplifier circuits
- To analyze the frequency response of small signal amplifiers
- To design and analyze the regulated DC power supplies.
- To troubleshoot and fault analysis of power supplies.

**UNIT I BIASING OF DISCRETE BJT, JFET AND MOSFET 9**

BJT- Need for biasing - DC Load Line and Bias Point – DC analysis of Transistor circuits - Various biasing methods of BJT – Bias Circuit Design - Thermal stability - Stability factors - Bias compensation techniques using Diode, thermistor and sensistor – Biasing BJT Switching Circuits- JFET - DC Load Line and Bias Point - Various biasing methods of JFET - JFET Bias Circuit Design - MOSFET Biasing - Biasing FET Switching Circuits.

**UNIT II BJT AMPLIFIERS 9**

Small Signal Hybrid  $\pi$  equivalent circuit of BJT – Early effect - Analysis of CE, CC and CB amplifiers using Hybrid  $\pi$  equivalent circuits - AC Load Line Analysis- Darlington Amplifier - Bootstrap technique - Cascade, Cascode configurations - Differential amplifier, Basic BJT differential pair – Small signal analysis and CMRR.

**UNIT III SINGLE STAGE FET, MOSFET AMPLIFIERS 9**

Small Signal Hybrid  $\pi$  equivalent circuit of FET and MOSFET - Analysis of CS, CD and CG amplifiers using Hybrid  $\pi$  equivalent circuits - Basic FET differential pair- BiCMOS circuits.

**UNIT IV FREQUENCY RESPONSE OF AMPLIFIERS 9**

Amplifier frequency response – Frequency response of transistor amplifiers with circuit capacitors – BJT frequency response – short circuit current gain - cut off frequency –  $f_{\alpha}$ ,  $f_{\beta}$  and unity gain bandwidth – Miller effect - frequency response of FET - High frequency analysis of CE and MOSFET CS amplifier - Transistor Switching Times.

**UNIT V POWER SUPPLIES AND ELECTRONIC DEVICE TESTING 9**

Linear mode power supply - Rectifiers - Filters - Half-Wave Rectifier Power Supply - Full-Wave Rectifier Power Supply - Voltage regulators: Voltage regulation - Linear series, shunt and switching Voltage Regulators - Over voltage protection - BJT and MOSFET – Switched mode power supply (SMPS) - Power Supply Performance and Testing - Troubleshooting and Fault Analysis, Design of Regulated DC Power Supply.

**TOTAL: 45 PERIODS****OUTCOMES:**

**After studying this course, the student should be able to:**

- Acquire knowledge of Frequency response characteristics of BJT and FET amplifiers
- Analyze the performance of small signal BJT and FET amplifiers - single stage and multi stage amplifiers
- Apply the knowledge gained in the design of Electronic circuits

*Seedh*  
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# **MOVEMENT BASED STAIRCASE**

# **AND VERANDA LIGHTING**



**A PROJECT REPORT**

Submitted by

**BABY SHALINI.G**

**(731218106001)**

**DHARANI.M**

**(731218106003)**

in partial fulfillment for the award of the degree

of

**BACHELOR OF ENGINEERING**

IN

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**JUNE 2022**

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ANNA UNIVERSITY : CHENNAI-600 025

**BONAFIDE CERTIFICATE**

Certified that this project report "**MOVEMENT BASED STAIRCASE AND VERANDA LIGHTING**" is the bonafide work of

**BABY SHALINI.G**

**(731218106001)**

**DHARANI.M**

**(731218106003)**

Who carried out the project work under my supervision

  
SIGNATURE

**Prof.C.MURUGESAN,M.E.,Ph.D.,**

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Submitted for the project Viva-Voce examination held on 22-06-2022

  
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EXTERNAL EXAMINER



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**GOBI (Tk), ERODE (Dt).**

## ABSTRACT

Energy wastage is not ideal in our society because it increases electricity cost and even increase the means of maintaining electricity production. Most frequently, power wastage occurs through the bulbs fitted on the stair case in homes because its light is always ON even when not used. This constant light on the stair case increases electricity costs through non – conserved energy. This report presents the use of sensor based human detector to switch ON the stair case light only when the presence of human motion is detected on the stair case and also switch OFF the staircase light when human motion is not detected thereby increasing effective energy conservation and reduction of electricity cost. **Passive Infrared (PIR) sensor, BC547 Transistor, SPDT relay and other electronic components were employed to accomplish the construction of the device.** The device was tested and it functioned well.

  
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## APPENDIX

## SOFTWARE

## CHAPTER 6

## CONCLUSION AND FUTURE WORK


## CONCLUSION

The constructed sensor based human detector for lighting purpose presents one of the simplest and effective ways of saving energy automatically in any room of a building or organization. This was achieved by the application of the Passive Infra-red sensor and the relay as the major building blocks. A randomly selected test for duration of 3 hours using the module showed a 15% saving in the energy consumption. This is based on the premise that the manual control switches are operated with 50% accuracy. In this PIR Sensor Based human detector for lighting purpose on the stair case System, low power, low cost PIR sensor that are easy to interface with other components was used. By using this system, power consumption was reduced and finally it can also be used in car parking lots and in Street lighting system.

## FUTURE ENHANCEMENT

In the proposed system decision are taken based on presence of human but, here we can also interface LDR (Light Dependent Resistor) along with PIR sensor for better working of the system. This system can also be interfaced with the Bluetooth module so the whole system can be controlled from the mobile by just single click. Applications of this system are:

1. It can be used in college labs, schools, etc.
2. It can also be used in bathrooms, staircases, etc. in the house.

  
PRINCIPAL  
JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY  
T.N. DALAYAM (Po), 638 506



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**INTERNSHIP REQUISITION**

2 messages

---

**ELECTRONICS COMMUNICATION** <jkkmctece2013@gmail.com>  
To: Inno Mektronic <innomektronic@gmail.com>

Fri, Mar 4, 2022 at 10:14 AM

Sir,

On behalf of J.K.K.Munirajah College of Technology, we wish to request for permission to do Project Internship at your company **INNOMEKTRONIC**.

We wish to undertake our students **project Internship** at your company from 16.03.2022 onwards upto two months to complete their project. As per the curriculum, the student needs to join a two month long internship and attain a certificate after satisfactory training. It will be a golden opportunity for the students as they will get to learn a lot of new things. We believe that your company will give relevant knowledge and training during this internship to complete their project.

The students G.Baby shalini and M.Dharani are intend to participate in this Project Internship. Please allow our students to do an Internship at your company and meet your skilled employee. Thank you in advance.

With Regards,  
HoD/ECE

ECE DEPARTMENT

ECLON WELCOMES U ALL..

---

**Inno Mektronic** <innomektronic@gmail.com>  
To: **ELECTRONICS COMMUNICATION** <jkkmctece2013@gmail.com>

Sat, Mar 5, 2022 at 09:10 AM

*Congratulations! It is with great pleasure that we welcome your students to join as **Project intern** at our **INNOMEKTRONIC** in coimbatore. If you have any queries of require any further information, please do not hesitate to contact the human resources department. May we take this opportunity of wishing you a successful association with **INNOMEKTRONIC**.*

**WITH REGARDS**

**INNO MEKTRONIC**

**COIMBATORE**

**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY  
T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).**



**INNO MEKTRONIC**  
THE E.M.S. COMPANY

Date : 30.04.2022

**SUB:INTERNSHIP COMPLETION LETTER**

We are glad to inform you that G. BABY SHALINI - BE (ECE) from JKK MUNIRAJAH COLLEGE OF TECHNOLOGY, T.N.PALAYAM, ERODE has successfully completed her internship at INNOMEKTRONIC (E.M.S Company) Coimbatore from 16 MAR 2022 to 30 APR 2022.

During her internship, she worked on the project **MOVEMENT BASED STAIRCASE AND VERANDA LIGHTING** and she demonstrated self-motivation skills to learn new things. Her performance met our expectations, and she completed all tasks assigned to her on time.

We found her extremely inquisitive and hard working. She was very much interested to complete the project and also willing to put her best efforts and get in to the depth of the subject to understand it better.

Her association with us was very fruitful and we wish all the best in her future endeavors.

**INNOMEKTRONIC**

*[Handwritten Signature]*  
Authorized Signatory

Human Resource Department

*[Handwritten Signature]*

*[Handwritten Signature]*

**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY**

**T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).**



**INNO MEKTRONIC**  
**THE E.M.S. COMPANY**

Date: 30.04.2022

**SUB: INTERNSHIP COMPLETION LETTER**

We are glad to inform you that M. DHARANI - BE (ECE) from JKK MUNIRAJAH COLLEGE OF TECHNOLOGY, T.N.PALAYAM, ERODE has successfully completed her internship at INNOMEKTRONIC (E.M.S Company) Coimbatore from 16 MAR 2022 to 30 APR 2022.

During her internship, she worked on the project **MOVEMENT BASED STAIRCASE AND VERANDA LIGHTING** and she demonstrated self-motivation skills to learn new things. Her performance met our expectations, and she completed all tasks assigned to her on time.

We found her extremely inquisitive and hard working. She was very much interested to complete the project and also willing to put her best efforts and get in to the depth of the subject to understand it better.

Her association with us was very fruitful and we wish all the best in her future endeavor.

**INNOMEKTRONIC**

  
Authorized Signatory

Human Resource Department





**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY**

**T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt)**

EC8791

**EMBEDDED AND REAL TIME SYSTEMS**

L T P C  
3 0 0 3

**OBJECTIVES:**

The student should be made to:

- Understand the concepts of embedded system design and analysis
- Learn the architecture and programming of ARM processor
- Be exposed to the basic concepts of embedded programming
- Learn the real time operating systems

**UNIT I INTRODUCTION TO EMBEDDED SYSTEM DESIGN 9**

Complex systems and micro processors– Embedded system design process –Design example: Model train controller- Design methodologies- Design flows - Requirement Analysis – Specifications-System analysis and architecture design – Quality Assurance techniques - Designing with computing platforms – consumer electronics architecture – platform-level performance analysis.

**UNIT II ARM PROCESSOR AND PERIPHERALS 9**

ARM Architecture Versions – ARM Architecture – Instruction Set – Stacks and Subroutines – Features of the LPC 214X Family – Peripherals – The Timer Unit – Pulse Width Modulation Unit – UART – Block Diagram of ARM9 and ARM Cortex M3 MCU.

**UNIT III EMBEDDED PROGRAMMING 9**

Components for embedded programs- Models of programs- Assembly, linking and loading – compilation techniques- Program level performance analysis – Software performance optimization – Program level energy and power analysis and optimization – Analysis and optimization of program size- Program validation and testing.

**UNIT IV REAL TIME SYSTEMS 9**

Structure of a Real Time System — Estimating program run times – Task Assignment and Scheduling – Fault Tolerance Techniques – Reliability, Evaluation – Clock Synchronisation.

**UNIT V PROCESSES AND OPERATING SYSTEMS 9**

Introduction – Multiple tasks and multiple processes – Multirate systems- Preemptive real-time operating systems- Priority based scheduling- Interprocess communication mechanisms – Evaluating operating system performance- power optimization strategies for processes – Example Real time operating systems-POSIX-Windows CE. - Distributed embedded systems – MPSoCs and shared memory multiprocessors. – Design Example - Audio player, Engine control unit – Video accelerator.

**TOTAL: 45 PERIODS**

**OUTCOMES:**

At the end of the course, the student should be able to:

- Describe the architecture and programming of ARM processor
- Outline the concepts of embedded systems
- Explain the basic concepts of real time operating system design
- Model real-time applications using embedded-system concepts



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**OBJECTIVES :**

- To introduce the basic building blocks of linear integrated circuits
- To learn the linear and non-linear applications of operational amplifiers
- To introduce the theory and applications of analog multipliers and PLL
- To learn the theory of ADC and DAC
- To introduce the concepts of waveform generation and introduce some special function ICs

**UNIT I BASICS OF OPERATIONAL AMPLIFIERS 9**

Current mirror and current sources, Current sources as active loads, Voltage sources, Voltage References, BJT Differential amplifier with active loads, Basic information about op-amps – Ideal Operational Amplifier - General operational amplifier stages -and internal circuit diagrams of IC 741, DC and AC performance characteristics, slew rate, Open and closed loop configurations – JFET Operational Amplifiers – LF155 and TL082.

**UNIT II APPLICATIONS OF OPERATIONAL AMPLIFIERS 9**

Sign Changer, Scale Changer, Phase Shift Circuits, Voltage Follower, V-to-I and I-to-V converters, adder, subtractor, Instrumentation amplifier, Integrator, Differentiator, Logarithmic amplifier, Antilogarithmic amplifier, Comparators, Schmitt trigger, Precision rectifier, peak detector, clipper and clamper, Low-pass, high-pass and band-pass Butterworth filters.

**UNIT III ANALOG MULTIPLIER AND PLL 9**

Analog Multiplier using Emitter Coupled Transistor Pair - Gilbert Multiplier cell – Variable transconductance technique, analog multiplier ICs and their applications, Operation of the basic PLL, Closed loop analysis, Voltage controlled oscillator, Monolithic PLL IC 565, application of PLL for AM detection, FM detection, FSK modulation and demodulation and Frequency synthesizing and clock synchronisation.

**UNIT IV ANALOG TO DIGITAL AND DIGITAL TO ANALOG CONVERTERS 9**

Analog and Digital Data Conversions, D/A converter – specifications - weighted resistor type, R-2R Ladder type, Voltage Mode and Current-Mode  $R - 2R$  Ladder types - switches for D/A converters, high speed sample-and-hold circuits, A/D Converters – specifications - Flash type - Successive Approximation type - Single Slope type – Dual Slope type - A/D Converter using Voltage-to-Time Conversion - Over-sampling A/D Converters, Sigma – Delta converters.

**UNIT V WAVEFORM GENERATORS AND SPECIAL FUNCTION ICs 9**

Sine-wave generators, Multivibrators and Triangular wave generator, Saw-tooth wave generator, ICL8038 function generator, Timer IC 555, IC Voltage regulators – Three terminal fixed and adjustable voltage regulators - IC 723 general purpose regulator - Monolithic switching regulator, Low Drop – Out(LDO) Regulators - Switched capacitor filter IC MF10, Frequency to Voltage and Voltage to Frequency converters, Audio Power amplifier, Video Amplifier, Isolation Amplifier, Opto-couplers and fibre optic IC.

**TOTAL:45 PERIODS****OUTCOMES:**

Upon completion of the course, the student should be able to:

- Design linear and non linear applications of OP – AMPS
- Design applications using analog multiplier and PLL
- Design ADC and DAC using OP – AMPS
- Generate waveforms using OP – AMP Circuits
- Analyze special function ICs

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**FLOOD DISASTER INDICATER OF  
DAM WATER LEVEL MONITERING  
SYSTEM**



**A PROJECT REPORT**

**Submitted by**

**SANTHIYA.A (731218106018)**

**MANIVEL.M (731218106301)**

**in partial fulfillment for the award of the degree**

**Of**

**BACHELOR OF ENGINEERING**

**IN**

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**JUNE 2022**

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**ANNA UNIVERSITY: CHENNAI 600 025**

**BONAFIDE CERTIFICATE**

Certified that this project report "**FLOOD DISASTER INDICATER  
OF DAM WATER LEVEL MONITORING SYSTEM**" is the bonafide  
work of

**SANTHIYA.A**

**(731218106018)**

**MANIVEL.M**

**(731218106301)**

Who carried out the project work under my supervision

SIGNATURE

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**HEAD OF THE DEPARTMENT**

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T.N. Palayam.

SIGNATURE

**Mrs.U.SASIKALA., M.E.,**

**SUPERVISOR**

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T.N. Palayam.

Submitted for the project Viva-Voce examination held on **02-06-2022**

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## ABSTRACT

A flood disaster provides considerable losses to the people who live around the river. To mitigate losses of material due to flood disaster required an early warning system of flood disaster. For that reason, it necessary to design a system that provide alert to the people prior the flood disaster. And this paper describes development of a device for early detection system of flood disasters. This device consists of two ultrasonic sensors as a water level detector, and a water flow sensor as a water flow velocity sensor.

The wireless technology and GSM is used as an information medium. The system is designed based on water level conditions in the Dam. Characterization of water level detector showed that the device effectively works in a range of water level of 14-250 cm, with a maximum relative error of 4.3%. Meanwhile the wireless works properly as far as 75 m, and the SMS transmission time is 8.20 second.

  
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## APPENDIX

## SOFTWARE

## CHAPTER 6

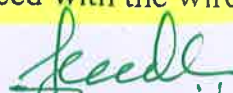
**6. CONCLUSION AND FUTURE WORK****6.1 CONCLUSION**

Effective early floods warning system can be beneficial to the community and act as a precautionary action for the victims in preventing loss of lives, trauma from disaster and property from damage. SMS is an effective alert communication tools that can disseminate the information to floods victim in a particular area. It is best for this system to add element of data mining and artificial intelligent, which could assist in analyzing water level data, thus produce extensive graphs for better analysis.

This outcome will help in future prediction of water level behavior. From the finding made, the objectives of the project are successfully achieved, where the circuit completely functioned. The data is finally been sent via GSM mobile, where it act as a modem for the system. All three float switch sensors are detecting all the water level that consist of alert level, moderate risk level and high risk level. Finally, data from input sensor and Arduino Uno microcontroller reached at the control center.

**6.2 FUTURE ENHANCEMENT**

For future improvement, the system can be upgraded with addition of the component in GUI with more button functions. The GSM modem for transmitting the data to the control center can be used as it is connected the co Additionally, the float switch sensor placed with the wireless sensor.

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**IOT BASED PARALYSIS PATIENT  
HEALTH CARE MONITORING  
SYSTEM**



**A PROJECT REPORT**

*Submitted by*

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*in partial fulfillment for the award of the degree*

*Of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

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**BONAFIDE CERTIFICATE**

Certified that this project report **"IOT BASED PARALYSIS PATIENT HEALTH CARE MONITORING SYSTEM"** is the bonafide work of

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INTERNAL EXAMINER

  
EXTERNAL EXAMINER

## ABSTRACT

The paralysis condition is a loss of muscle function in the body parts. It can affect any part of your body at any time, then probably you may won't feel the pain the affected area. Technical and Therapeutic innovations are there to improve the quality of life .Our goal is to develop a device which should be easy to use and should be affordable which consists of basic health care monitoring system with nursing care. We know that these people can't able to convey their messages or needs. To overcome this, we come up with the system that helps these patients to display messages by very simple motion. This device can be designed to be mounted on the finger or to be inbuilt in their clothes.



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## CHAPTER 6

### 6. CONCLUSION AND FUTURE WORK

#### 6.1 CONCLUSION:

This IoT based paralyzed patient monitoring equipment is a wearable device and serves as an efficient system for the paralyzed patients. The system is inexpensive and helps the patients notify their Care-Taker in case of any needs through their hand gestures. Also, the equipment monitors the vital framework of the patient such as heart rate and if the parameter goes from normal range to an unsafe range, the patient's relative/caretaker is immediately notified so that critical care can be given to the patient before he/she reaches a dangerous state.

#### 6.2 FUTURE ENHANCEMENT:

In future, Artificial Intelligence based patient idleness monitoring module along with a self-speech training module can be introduced in the patient's application to keep the patient aware of himself. Also, the patients can be directly linked with his doctor to track the activities of the patient to provide even more personal care depending upon the wants and the status of the patients health.



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