VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590010

PROJECT REPORT ON

"DESIGN OF AN AUTONOMOUS QUAD COPTER TO SERVE THE EMRGENCY COMMODITY USING ARM 32"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

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Under the Guidance of
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2019-2020

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ABSTRACT

Drones are unmanned aerial vehicles that are remotely controlled. Drones have recently become a promising solution for rapid parcel delivery due to advances in battery technology and navigation systems. Drones have inherited limitations in battery capacity and payload, which make their efficient operation and management a critical problem for a successful delivery system. Adopting modularity in the drone design can provide operational benefits to increase overall fleet readiness and reduce overall fleet size. The potential value of introducing modular design to a drone delivery system is being worked on. We propose an optimization method for the operation management of a modular delivery drones. The results show that a simple management strategy that can make a drone delivery system unstable with increasing demand on certain types of modules in the fleet. The results comparing modular and non-modular drone operation also prove that the proposed operation management method with modular drones can save delivery time, energy consumption and use an android mobile application during a delivery operation. However, it is not possible for all people to make use of smart phone.

This paper proposes a system that will help people to get served by the emergency commodity that is in need for them such as first aid box and petrol etc. The proposed system is a combination of drone and mobile application which will help the user to communicate with the source. People can easily access the mobile application and receive their emergency commodity at the earliest. The details of the user will be acknowledged by the source person and given to the drone such that it reaches the destination point. Any comments or message to be communicated by the user to the source person can be sent through the comment box that is available in the mobile application.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"ANTITHEFT SENSOR CONTROLLED HOME SECURITY SYSTEM"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

In day today life security plays one of the most significant role in the different fields which are commonly utilized for home security reason. As the security system has reached its level high in different aspect. Applications, for example, distinguishing unapproved passage into home, ventures, labs which made requirement for financially savvy home security framework. This framework comprises of 89S52 microcontroller board, IR sensor module, Remote camera to catch the picture of an individual, Vibration sensor on the off chance that somebody attempts to break the entryway or glass of the home, Micro switch, ASK transmitter and collector, Vicinity sensor which is utilized to detect the unapproved section, LCD to show the subsequent status and GSM module for the correspondence such sending message and missed call to the client and close by police headquarters in any crisis.

The user is notified by sending a simple text message or Short Messaging Service (SMS) which indicates the type of threat or problem detected by the sensors. This SMS is sent to the registered mobile number stored by the user at the time of installation. There is a connection between the microcontroller and the Global System for Mobile Communication (GSM) modem for sending the message to the owner. The aim of this project is to design an embedded system for remote monitoring of the domestic environment. Nowadays remote monitoring the domestic necessary for safety and security purpose, which also help us to know the environmental status of the home. The environmental parameters inside the home, unauthorized entry and illegal activities in the home can be detected using respective sensors, unauthorized entry and the sensed data are then transferred to the receiver with the help of transmitter, the output of receiver is interfaced to microcontroller and to GSM modem, which is installed on specified system to send SMS to authorized person and to display on LCD.

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VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DESIGN AND SIMULATION OF ACTUATED MEMS MICROMIRROR"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

Micromirrors are versatile devices which find ingenious application in the fields such as optical switching, display and in medical fields for non-invasive imaging. The concept of digital micromirror is that the device can create images by altering different light sources. The mechanical design of this micromirror is a silicon micromirror with a pair of torsion hinges. . Micro Electro Mechanical System (MEMS) micromirrors are devices used in optical systems to direct light from one position to another over a range of reflection angles. The reflection angle of a micromirror can be adjusted by an actuation mechanism that rotates and moves the mirror surface. Actuation mechanisms such as electrostatic, piezoelectric, electromagnetic and electrothermal have been exclusively used in micromirror designs. These are MEMS mirrors, which mean that their states are controlled by providing voltage between the two electrodes around the mirror arrays. MEMS have the ability to sense, control and actuate on the micro scale and generate the effects on the macro scale.

This paper proposes a system efficient micromirror for optical communication must have minimal surface distortion and highest lift off. COMSOL Multiphysics provides an environment for analysis as required for this work. The use of COMSOL Multiphysics is due to the flexibility in this particular Computer Aided Design (CAD) tool to prepare the mirror structure and the cantilever beams which need to be analysed in the structural mechanics module to obtain the results. The simulation also points out the places where the lift-off is high and show colour gradation in the figure with respect to that.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DESIGN & FABRICATION OF SEMICONDUCTOR DIODE USING PHASE CHANGE MATERIAL (GST) FOR NANOTECHNOLOGY APPLICATION"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

The formation of hetero-junction diode is obtained when a p-type material is deposited on n-type material. The n-type material used is Silicon. Silicon is most abundant compound in the earth's crust, commonly Silicon is found from ordinary sand. The p-type material used is GST (Ge2Sb2Te5 –Germanium, antimony and tellurium) because it is one of the best materials for optical phase-change recordings, and the film is widely utilized in commercial digital versatile disks. The feature of GST is fast (≤50 ns) and highly repeatable (≥106 times) phase changes upon optical heating. The process used for deposition of p-type on n-type material is PVD (Physical Vapor Deposition) or Sputtering. The doping requires sophisticated machines that have to be diffused or implanted some other material into silicon wafers, and then gives a boundary of the diode which acts as a junction. After making contact, the p-n junction diode can be realized. Then, Ellipsometer was used to calculate the deposited thickness. The metallization was done using evaporation method to make the Aluminum metal contact.

The GST material possesses the phase change phenomenon which was realized using the annealing process. In the proposed work, the two samples were prepared to observe the variations on electrical characteristics due to change in thickness. The I-V and C-V measurement were done on the prepared samples to observe the forward/reverse characteristics and interface properties of the device using Kiteley 4200 SCS (Semiconductor-Characterization-System) in order to compare the amorphous and crystalline phases of the GST material. The higher thicknesses gave the appropriate behavior of the diode while the earlier breakdown was observed in lower thickness. The CGST based device produces higher current than the AGST based device.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"Artificial Drying and Segregation of Coffee Seeds"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

Present unpredictable climatic condition and huge demand for labours have made the harvesting and processing of different spices much more arduous. Traditional way of harvesting and processing of spices is cost effective, time-consuming and requires large labour force. Traditional way do not pave a way in maintaining physiological and physiochemical characteristics of coffee beans such as colour, flavour and taste of coffee brew..

Artificial drying and segregation of coffee seeds is a conventional method, which can minimize the cost and labour force required for coffee production. By using the conventional method of processing, it is possible to meet the industrial standards of coffee production. Due to lack of standards and quality, plantation owners are facing huge crisis in the market for their products. Understanding the problems faced by the plantation owners all over the world, this paper aims at designing an artificial drying and segregation of coffee seeds to this issue.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DESIGN AND IMPLIMENTATION OF LOW POWER CIRCUITS USING ADIABATIC LOGIC"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

The power dissipation factor plays a critical role in VLSI designs, especially in the high performance applications. These power dissipations are mainly of three types they are Short circuit, Leakage power and Dynamic switching power dissipation. In a logic circuit, whenever there is a direct flow of current exists between VDD and ground it leads to Short circuit power dissipation. Leakage power dissipation is due to the sub threshold current in the transistor channel when it is turned off. Dynamic power dissipation refers to the power that is dissipated when the circuit inputs are high. Adiabatic logic designs a circuit in such a way that it avoids the occurrence of the condition that both the PMOS and NMOS gets OFF and hence there will be no direct current flow between VDD and GND by which we can avoid Short circuit power dissipation. Adiabatic computing decreases the Leakage power dissipation by restoring the energy at the nodes of the circuit. The power gating technique of adiabatic circuits which was done by shutting down the adiabatic units during idle states helps to reduce Dynamic power dissipation. Thus adiabatic logic circuits can achieve low power circuits by reducing all these kinds of power dissipations.

D Flip-Flop is the one that are responsible for the creation of frequency divider, counter, Microprocessors and FPGA appliances. In this project a D-Flip-flop has been designed by using the different logic like the adiabatic logic, domino logic and various other logic and there was a comparative study which was done between the proposed logic and the conventional logics. Since the counter is a digital circuit which is used for counting pulses in various applications. The proposed low power D flip-flop has been used to design the 4-Bit synchronous Johnson counter in cadence virtuoso 180nm technology, the obtained power to counter is lesser than the conventional circuits.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"MONITORING OF HONEY BEE HIVING SYSTEM USING SENSOR NETWORKS "

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

Honey bees have throughout history been a keystone species, pollinating an estimated 70 percent of all plants and underpinning some 30 percent of the global food supply. Because the viability of beehives is a critical predictor of the planet's future health and agricultural sustainability, reports of a precipitous decline in the number of colonies around the world have stirred considerable alarm. Since most of the prior contributions are focusing on data gathering, the approach to focus on the user's needs is central to take next steps in the field of using sensors for Beekeeping.

Beekeepers can be divided into beekeepers having bees as a hobbies and beekeepers that are professional, making a living of the beekeeping. Visualization and availability of data are key questions for user friendliness. Since there are no standards for measurement data from beehives, there are different manufacturers/contributors that have their own system. If a standard format would be available, it would make it easier to interconnect different devices for visualization in single user interface. If data is available as streams in standardized application program interface (API) a user can use whatever solution found for visualization. The majorities of beekeepers that non-professional, they will probably want to have the "relation to their bees", using too much technology is probably wanted, like having robots doing the actual beekeeping work.

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PROJECT REPORT ON

"DEVELOPMENT OF HUMIDITY SENSOR USING PVA/PULLULAN AND POLYANILINE BLEND"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTARCT

Humidity plays a significant role in every part of the earth in biology and automated industrial processes. To have desirable surrounding atmosphere, it is essential to monitor, detect and control the ambient humidity under different conditions ranging from low temperature to high or in mixtures with other gases by precise and provident sensors. Utilization of intelligent systems and networks as monitoring sensors to determine the soil moisture during irrigation in agriculture, for diagnosis of corrosion and erosion in infrastructures and civil engineering are among the applications of humidity sensors. In fact, the need for protection of environmental conditions has been leading to extensions in various humidity sensor developments based on the use of physical and chemical methods in presence of organic, inorganic or hybrid materials. Advancement of humidity sensory systems includes enhanced efforts in betterment of transducer performance such as sensing elements, structure design, principle of mechanism, and fabrication technologies.

On daily bases usually humidity Sensor is manufactured using inorganic materials like conducting metals like silver, gold, copper, aluminium, zinc and but we are going to use the organic materials like conducting polymers. According to our requirement while choosing the conducting polymers we use calibration process, instead of using conducting metal in humidity sensor. We use chemical deposition so that we can reduce the cost of the humidity sensor which must meet all the requirement in market. According to the survey there is more water vapour than any other greenhouse gas in the atmosphere. Humidity is an important aspect of the atmosphere because it affects weather and climate as well as global climate change.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"Animal Habitation Using Machine Learning and Robotics"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

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Under the Guidance of
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ABSTRACT

Living organisms, their physical environment and their interrelationship in this particular unit of space is the most important factor for life existence on Earth. An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are linked together through nutrient cycles and energy flows. A balanced ecosystem is necessary for the well-being of all living organisms including human. Habitat for a species is the place where it can find food, shelter, protection and mates for reproduction. But there are chances where species may reach a place where it is difficult for them to adapt with the temperature conditions and other physical conditions. Recent advances in technology have made it possible to support the organisms to maintain a balanced ecosystem. The solution we derived is a robotic system to guide the work.

In the proposed system a complete ecosystem with different species and habitats is considered. Here the robot will pick the species one by one which is not in its respective habitat. The animal is carried to its nearest habitat with the minimum possible time. This helps to save species from life threat and henceforth ensures a balanced ecosystem.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"SMART AMBULANCE AND TRAFFIC CONTROLLING SYSTEM"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

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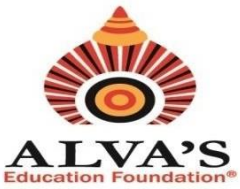

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ABSTRACT

In developing countries like India population is significantly growing. As the population grows, the number of vehicles on the roads are also exponentially increasing, which results in increase in road accidents and traffic jams. Specifically, when an emergency vehicle such as Ambulance or Fire engine gets stuck in traffic jam, saving the human life becomes difficult. Under such circumstances, a promising system which can clear the traffic congestions especially in peak hours and thereby providing a safe path for emergency vehicles is very much essential. In the existing literature, less focus is given towards the problem of providing a clear path for emergency vehicles during traffic congestions.

To solve these issues, an IR sensor and RFID-based system is proposed, which manages and regulates the traffic signals at junctions when the emergency vehicle approaches, by allowing the easy passage out of the traffic congestions. The proposed framework is modelled by means of an experimental setup using Arduino and LED's which simulates a real time traffic scenario. IR sensors are installed on the roads to manage the traffic efficiently. The simulation results illustrate the better performance of the proposed framework in terms of detection as well as management of emergency vehicle by providing passage out of traffic congestions during peak hours.

The IR sensor which is placed at a threshold distance from the junction calculates the vehicles density. This density is used by Arduino to regulate the traffic. The RFID receiver is also placed at a threshold distance from the junction. The RFID receiver informs the Arduino about the arrival of the emergency vehicle. The Arduino then takes the required measures to allow a safety passage for the emergency vehicle.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DESIGN AND SIMULATION OF RF MEMS SWITCH USING MICRO ACTUATORS AND CAPACITORS"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
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ABSTRACT

Miniaturized scale Electro Mechanical System (MEMS) is an innovation of micrometer-scale gadgets. MEMS is a blend of actuators, sensors, mechanical components and hardware on a typical substrate utilizing IC process arrangements and these are utilized in various applications, for example it can be used in sensor frameworks and optical systems. MEMS are exceptionally alluring for various applications on account of their size and weight. The size of the MEMS ranges from micrometers to millimeters. The RF MEMS switches are the particular smaller scale mechanical switches that are intended to work at RF to mm wave frequencies. MEMS switches are utilized in some mechanical development to accomplish a shut or open circuit in the Radio Frequency transmission lines.

This paper proposes a system that will help for the further innovation system in electronics for communication and also in many other application where size of the component matter by reducing size and increasing the performance helps in many ways. In this system by finding the displacement and capacitance for different voltages where by using conventional method we cannot change the voltages but in this it can be set to better voltage and other parameter it will be helpful for lower consumption, durability and so on.

.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi _ 590010

PROJECT REPORT ON
" AUTOMATED SHOPPING CART USING SMART TECHNOLOGY "

Submitted in partial fulfillment of the requirements for the award of degree

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IN
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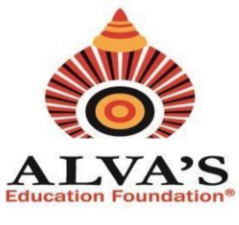

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ABSTRACT

The various items are purchase in shopping mall or markets with help of shopping trolley. This product acquirement is some difficult process. In customer convenience they have to pull the trolley for each time to collecting items and simultaneously. After purchasing, customer want to pay the bill for their purchasing.

This paper proposes a system that will help to solve the problem to wait in a long queue to get their products scanned using RFID reader with help of barcode Scanner and get their billed. To modify that and customer has to purchase in smart way in shopping mall. Each and every product has to place a RFID barcode to scan the product with RFID reader. The smart trolley will consist of a RFID reader, LCD display and IOT. When customer if want to buy any product is insert in the trolley. It will scan and read the product and display the cost and the name of the product in LCD. The total cost of all the purchased products will be added to the final bill, in that final bill will be saved in the Arduino is will be act as a memory. These are all performed in the transmitter side. In receiver side, it is wireless transmitting process. It is used to share the product information and final bill amount of the items are placed in the trolley will be transfer using an IOT(Thinkspeak) to the billing system. It is used to save the customer's time and also customer doesn't wait a long time and long queue. A new concept has been introduced which is the 'AUTOMATED SHOPPING CART USING SMART TECHNOLOGY'.

This paper proposes a system that will help not only elderly people for medication reminder but also person who is suffering from Alzheimer disease. Proposed system is combination of Smart watch and pillbox which will help user to manage complex medication regimes. Patients need not remember their medicine dosage timings as they can set an alarm on their medicine dosage timings. A led is placed in pillbox which blinks at particular time to take medicine. The alarm can be set for multiple medicines including time and medicine description.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"LOW COST MULTIFUNCTIONAL AGRIBOT FOR TOOR DAL"

Submitted in partial fulfillment of the requirements for the award of degree

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IN
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ABSTRACT

Agriculture is the foundation of monetary arrangement of any nation. As one of the patterns of advancement on mechanization and insight of farming apparatus in the 21st century, a wide range of agriculture robots have been examined and created to execute various agrarian creation in numerous nations. In present days we have numerous machines which are fit for seed planting however they are hand worked machines, so we are planning a multifunctional agribot which will bore the dirt and sow the seeds. This robot has two methods of tasks like auto mode and manual mode, in auto mode it moves in a specific network by help of sensors. This farming robot targets structuring a live robot which is equipped for performing fundamental rudimentary capacities like seed planting and performing activities like furrowing, seed administering and pesticide showering. The agribot can be controlled through Internet medium utilizing an Android advanced mobile phone. The entire procedure computation, handling, checking are structured with motors and sensor interfaced with microcontroller. It is intended to reduce the work of farmers, to enhance the speed and exactness of the work.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"SUBSTITUTE FOR AN AMPUTATED HAND USING A BIONIC ARM"

Submitted in partial fulfillment of the requirements for the award of degree

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

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ABSTRACT

For people who are physically challenged with the upper limb, performing daily activities, even simple basic tasks can be impossible or very distressing. People who have lost their arm frequently face traumatizing situations and often face difficulties even while walking due to body imbalance. Even though there are many bionic arms available these days, people often discard the idea of buying and using them due to their very high cost. People who earn average wage can't afford the bionic arms due to their complex design. They also give up on the idea of buying these prosthetic devices due to their complications in usage. Many arms require the users to know many complex steps in order to mount these arms onto their body. Due to many reasons, prosthetic arms are not as famous even though they are very helpful.

This project proposes a system that will help the physically challenged to use the bionic arm which is affordable, simple to use and is not a burden in terms of aesthetics. Using simple design tweaks, the number of components used in the bionic arm design can be significantly reduced. This reduction in the number of components drastically brings down the price of the prosthetic arm which is very affordable to a person who is earning an average wage. The reduction of components also reduces the delay in the bio – feedback system of the bionic arm thus giving a natural feel while using the prosthetic device. The device is also 3D printed thus increasing the adaptability and weighs less thus increasing the portability of the device. A portable power supply is also used thus increasing the portability of the prosthetic arm furthermore.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DESIGN AND IMPLEMENTATION OF LOWPOWER VLSI FinFET DYNAMIC LATCH COMPARATOR FOR ADC APPLICATION"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
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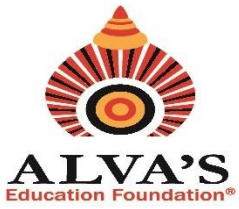

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ABSTRACT

Nowadays as the demand is increasing for portable battery devices, a major importance is given to the low power methodologies for high speed applications. The power consumption is minimized by using the process of smaller feature size. During this process the parameters and other variations are greatly affected by the overall performance of the devices. Comparators are widely used in analog to digital converters (ADC) which requires less power dissipation, high speed, less delay, less offset voltage, low noise, better slew rate, less hysteresis etc. In order to achieve these specifications, the building block of ADC i.e. comparator must be tightly constrained. Comparators have essential influence on the overall performance of high speed ADC. This project represents the comparison between different comparators using the FinFET technology. The simulation of conventional comparator using FinFET technology is done using the cadence tool.

In this work four circuits were proposed for the conventional comparator using FinFET technology out of which the proposed circuit New modified double tail conventional comparator gives better results in terms of power. This proposed circuit can be implemented on flash ADC circuit. The analysis for various comparators for power dissipation is carried out using GPDK 180nm technology.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DESIGN AND IMPLEMENTATION OF HYDROGEN FUEL CELL WITH MODIFIED PROTON EXCHANGE MEMBRANE"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

Hydrogen fuel cell having hydrogen and oxygen as fuel. The oxygen and hydrogen are converted into electricity and then the heat is produced, and the method also generates water. This is related in moderate words to the great variety of batteries we commonly use. The batteries contain all of the essential chemicals within, and when the chemical supply is reduced, they seize to function. The other hand fuel cell s remains. Proton membrane fuel cells (PEMFCs) are analyzed in the twenty century as a technology able to generate effective and safe power.

Proton exchange membranes (PEMs) are the main components of the fuel system. The researcher s focused on high proton conductivity, low electronic conductivity, low fuel permeability, low electro osmotic drag coefficient, good chemical / thermal stability, good power and low cost properties. These are classified into the "iron triangle" performance, durability and cost. Current PEMFC technology is based on expensive perflourinated proton exchange membranes (PEMs) that only operate efficiently under fully hydrated conditions. There is large application-interest in reducing the membrane costs.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"DIAGNOSING THE DISEASES IN PEPPER PLANT USING IMAGE PROCESSING TECHNIQUE"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

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Under the Guidance of
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ABSTRACT

Agriculture plays a vital role in means to feed to ever going population. Agriculture is the art and science of cultivating the soil growing crops and raising live stokes. Among the spices Black Pepper, the king of spices is the most important dollar earning crop which has a decisive role in our nation and state economies. Detection of pests in the crops is the major challenge in the field of agriculture, hence effective measure should be developed to fight the infestation while minimizing the use of pesticides.

The techniques of image analyses extensively applied to agricultural science and it provides maximum protection to crops which can ultimately lead to better crop management and production. Images convey relevant data and information in biological sciences. Digital image processing technique is used for fast and accurate disease detection of plant. Using different methodologies such as image acquisition, image pre-processing, and disease spot segment, extraction of features and classification of disease. Feature extraction technique helps to extract the infected leaf and also to classify the plant diseases with very less computational efforts the optimum results were obtained, also shows the efficiency of the proposed algorithm in recognition and classification of the leaf diseases. Another advantage of using this method is that the plant diseases can be identified at an early stage or the initial stage.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"DESIGN AND FABRICATION OF AMMONIA GAS SENSOR USING ELECTROSPINNING METHOD FOR INDUSTRIAL AND MEDICAL APPLICATIONS"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
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ABSTRACT

For the environment, there is a need to design and fabricate appropriate product and fabrication in VLSI is one of the most important process related to produce an appropriate sensor. Measuring the concentration of ammonia is very important for acute illness and long term conditions. In industries, due to use of vast amount of chemicals like ammonia. More concentration of ammonia might damage the environment and also can introduce the physical and mental illness due to the gases produced by harmful chemicals and may cause severe injury and burns. Contact with concentrated ammonia solutions such as industrial cleaners may cause corrosive injury, including skin burns, permanent eye damage or blindness. In such scenario, ammonia sensor is required for avoiding before it seriously affects health. Sudden high concentration is one of the problem, so there are several sensors designed for solving problem, such as electronic ammonia gas sensors, smart phone reminder applications and many more. However, it is not possible for all existing ammonia gas sensors to find the concentration at Room Temperature (RT) and for small concentration.

This work a sensor that will help not only in the laboratory and to the industries in the environment, but also a person who is suffering from Renal disease. Fabricated sensor will help user to find the high concentration of ammonia regions. People need not to worry about the present environment like place where they live or work as they can set an alarm on the concentration of ammonia. A sensor is usually placed in ventilation region, which blinks at particular time when the areas in a dangerous situation due to high concentration of ammonia the chemical gas so that people can evacuate the place. The alarm can be set for more than a certain concentration which can harm the environment.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DETECTION OF BLOOD GROUP,CANCER AND RBC,WBC COUNTING"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
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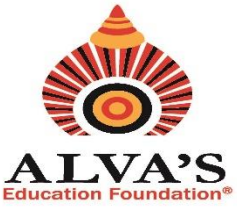

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

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PROJECT REPORT ON

"EFFICIENT CLASSIFIER FOR THE DETECTION OF SLEEP APNEA"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

Sleep disorders are the most common health condition that can influence various aspects of life. In many countries these kind of disorder is generally analyzed in sleep laboratories by the traditional detection process called Polysomnography. Most of the apnea disease are currently not analyzed properly because of high cost of the test and the limitations of overnight sleep in the laboratories, where an expert human observer is needed to work over night. The ECG analysis program can provide much information about cardiac disorder. Therefore, computer-based techniques is developed for ECG analysis and can used to train inexperience staff and pre diagnostic the ECG data. In this project, the ECG analyzing algorithm for sleep apnea detection is applied using MATLAB. Parameter used in this analysis is QRS complex. The detection of RR interval and conversion of RR interval to heart rate (minute by minute) are developed. ECG analyzing program is easy to use. This can be done by loading the ECG data to analyze the necessary value for apnea detection.

In present different techniques are used for detecting the minute based analysis of SA by Electrocardiogram (ECG) signal processing. Using the Physionet apnea ECG database, QRS complex is detected. Feature like Mean, Standard deviation and covariance is extracted from the output of the QRS complex and has been used to classify the apnea and non-apnea events from the features extracted. The software tool used for the detection of SA is MATLAB platform. In the proposed system a program is written to identify features from an ECG signal and detect apnea and non-apnea. To test the program, data files (in .mat format) taken from Physio Bank ATM of apnea ECG database are used. These files are loaded to MATLAB and loaded ECG records are been segmented into separate in minute by minute for further analysis. Then, signal is used to obtain the peaks of the signal. The peaks are marked using certain symbols. After the peak detection is done the index and the amplitude values of the signal are determined. Based on the values obtained the presence or absence of apnea is decided and the result is plotted using a MATLAB window. The classification algorithm is based on Support Vector Machines (SVM) and has been used to classify the apnea and no apnea events from the features extracted. The software tool used for the efficient classifier for the detection of sleep apnea is MATLAB platform.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"DEVELOPMENT OF DRONE TECHNOLOGY FOR ARECA NUT PLANTATION"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
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ABSTRACT

The purpose of drone is to develop a quad-copter which carries pesticides to spray all over the farm which reduces the work of farmers as well as it finishes his work soon .The application of pesticides and fertilizers in agricultural areas is of prime importance for crop yields. This is to develop a user friendly interface for the farmers .The Drone is a pesticide spraying quad copter for agricultural purpose which helps the farmer to spray the pesticides all over his land so that it reduces his work which can evenly spray all over his farm. Here the farmer can control the drone using an android app and he can connect to the app using Wi-Fi module which is interfaced in the drone. It will precisely route the land area of that particular farmer's land using GPS no matter shape of the field and type of the crop the pesticide spraying drone will get the job done. Here we have used the Arduino board which is the open source electronics prototype platform which is interfaced with the Wi-Fi module and GPS. To balance the directions and orientations.

Pesticide application using UAV is gaining momen- tum as a possible crucial technical approach to control insect, diseases and weeds population on the field. To prevent large-scale spread of dissociation or pathogen, a drone can be used not only to record and determine the disease scale, but also for repressing further attack and spreading of diseases. In order to achieve the control of diseases and efficiency of the pesticide application, a pesticide deposition must reach destination target at maximum quantity. Adequate and even uniform pesticide application will increase the efficiency of the application. Deposit quantification analysis was done initially with water-sensitive paper. This method provided coverage data, but not the exact amountof the product that reached the targeted surface due to problem with reading in software. By using tracers,a quantification of the amount of pesticide that has reached the target is achieved.Inthis case, drone sprayer with flat fan nozzles have been used to test deposition quality of tracer in exchange for pesticides. Maximum deposition was recovered almost 31% of total spraying norm.

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PROJECT REPORT ON

"DESIGN AND FABRICATION OF GAS SENSOR USING SOL-GEL SPIN COATING TECHNIQUE FOR THE DETECTION OF ETHANOL"

Submitted in partial fulfillment of the requirements for the award of the degree

BACHELOR OF ENGINEERING
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ABSTRACT

Sensors plays a vital role in an integral part of our daily life. Sensors have found their application in the field of medical science, industries and to analyse the parameters of atmosphere such as temperature, humidity, pressure, toxic gases etc. Gas sensors are one of the groups belongs to the category of sensors, are often used to detect the presence of toxic gases in the environment usually used as a part of safety system. Most of the industries produces ethanol as one of their biproduct, impacts skin irritation and causes allergy for the people working in industries and alcohol abuse affects user's behaviour which intensifies violence and accidents in the society. The major share of ethanol is present in alcoholic beverages therefore, there is a need to monitor. Due to significant uplift in nanotechnology over a period, gas sensors are preferred to detect such kind of gases because of its simple and robust construction. The device can be considered as a sensor only when it encounters the change in environment, this change should be monitored. In this paper zinc oxide thin film has been designed and fabricated using novel sol-gel spin coating technique to detect ethanol vapours at RT. The thin film deposition can be achieved by two ways i.e., physical vapour deposition (PVD) and chemical vapour deposition (CVD). CVD is favoured has it deals with chemical solution which influences low cost. Structural and morphological characteristics has been analysed using Scanning Electron microscope (SEM). Various sensing parameters such as recovery time, response time and sensitivity have been measured and sensor results in response of ~50% for 100ppm of ethanol at RT.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"ANTENNA DRIVE MECHANISM FOR SATELLITE TRACKING SYSTEM"

Submitted in partial fulfillment of the requirements for the award of degree

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ABSTRACT

Over the last decades, control system and its design have been advancing rapidly to respond to the competition and demand of the industrial world, which are the key element in defining new successes. Therefore, pilot plants were created to explore and examine the effects of changing the conditions of a process, especially to control unstable systems. To execute a similar process, this work is directed towards the design, development and implementation of an auto-tuning Proportional Integral Derivative (PID) Controller for Satellite tracking system. Auto-tuning PID controller was designed using MATLAB, Simulink as well as the optimization of PID controller without excessive mathematic calculations. In this project, the value of K_p (proportional gain), K_i (integral gain) and K_d (derivative gain) will be calculated using manual calculation while step response graph for each cases will be solved using Simulink.

For domestic or industrial works motion control is required. The systems that are employed for such controls are called drives. The closed loop systems overcome the problem for disturbances by measuring output response and feeding that through feedback system and comparing them at summing junctions. The performance of a DC motor controlled by a PID controller is analyzed. Overshoot appears with large settling time thereby confirming the behavior of a PID controller. Fuzzy logic based controller is used along with dc motor. In this project, the tuning method used for the proposed position control model of dc motor is Ziegler Nichols (ZN) tuning algorithm. Here, a computer based model (using MATLAB SIMULINK) is furnished. The focus of this project is to design a drive mechanism for satellite tracking system for controlling of antenna in real time tracking system, rate based control, position control, and automatic tuning system with step function and velocity function.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT ON

"MELANOMA SKIN CANCER DETECTION USING IMAGE PROCESSING"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
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in partial fulfillment for the award of BACHELOR OF ENGINEERING in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2019–2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Signature of the Guide	**Signature of the H.O.D**	**Signature of the Principal**
Mrs. Shruthi Kumari	**Dr. D V Manjunatha**	**Dr. Peter Fernandes**
	H.O.D. Dept. Of Electronics & Communication Alva's Institute of Engg. & Technology Mijar, MOODBIDRI - 574 225	PRINCIPAL Alva's Institute of Engg. & Technology Mijar, MOODBIDRI - 574 225, D.K

EXTERNAL VIVA

Name of the Examiners	Signature with date
1.....	.....
2.....	.....

ABSTRACT

Skin cancer is the deadliest form of cancers in humans. Skin cancer is commonly known as Melanoma. Melanoma is named after the cell from which it presumably arises, the melanocyte. Skin Cancers are of two types- Benign and Malignant Melanoma. Melanoma can be cured completely if it is detected early. Both benign and malignant melanoma resembles similar in appearance at the initial stages. So it is difficult to differentiate both. This is a main problem with the early skin cancer detection. Only an expert dermatologist can classify which one is benign and which one is malignant. The Artificial Neural Network based Classification methodology uses Image processing techniques and Artificial Intelligence for early diagnosis. Main advantage of this computer based classification is that patient does not need to go to hospitals and undergo various painful diagnosing techniques like Biopsy. In this Computer Aided Classification, dermoscopy image of skin cancer is taken and it is subjected to various pre-processing and image enhancement. The cancer affected region is separated from the healthy skin using Segmentation. In order to reduce the complexity of classification, some unique features of malignant and benign melanoma are extracted. These features are given as the input to the Artificial Neural Network Classifier. It classifies the given data set into cancerous or non-cancerous.

Human Cancer is one of the most dangerous diseases which is mainly caused by genetic instability of multiple molecular alterations. Among many forms of human cancer, skin cancer is the most common one. To identify skin cancer at an early stage we will study and analyze them through various techniques named as segmentation and feature extraction. Here, we focus malignant melanoma skin cancer, detection. In this, We used our ABCD rule dermoscopy technology for malignant melanoma skin cancer detection. In this system different step for melanoma skin lesion characterization i.e., first the Image Acquisition Technique, pre-processing, segmentation, define feature for skin Feature Selection determines lesion characterization, classification methods. In the Feature extraction by digital image processing method includes, symmetry detection, Border Detection, color, and diameter detection and also we used LBP for extract the texture based features.

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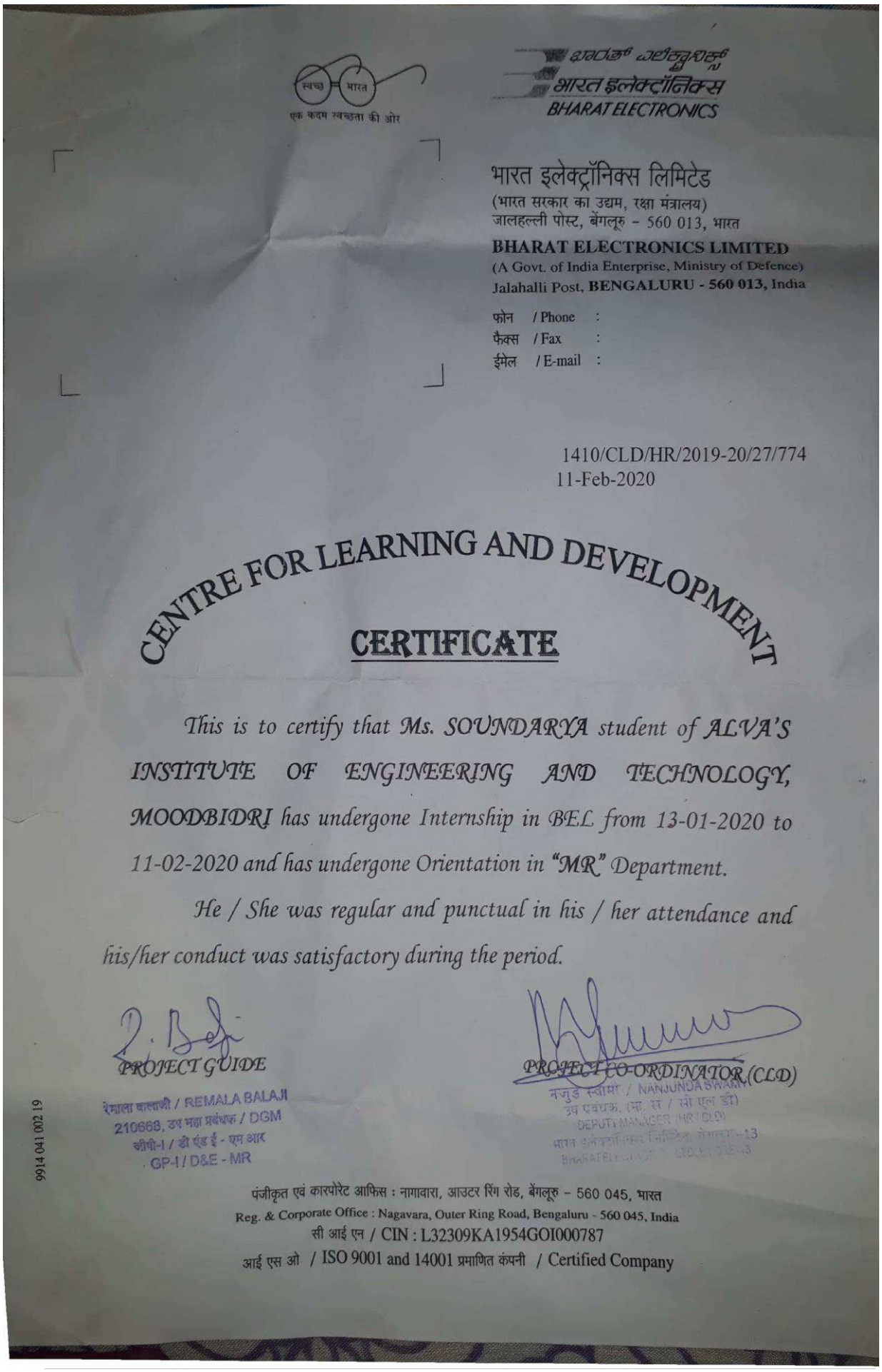

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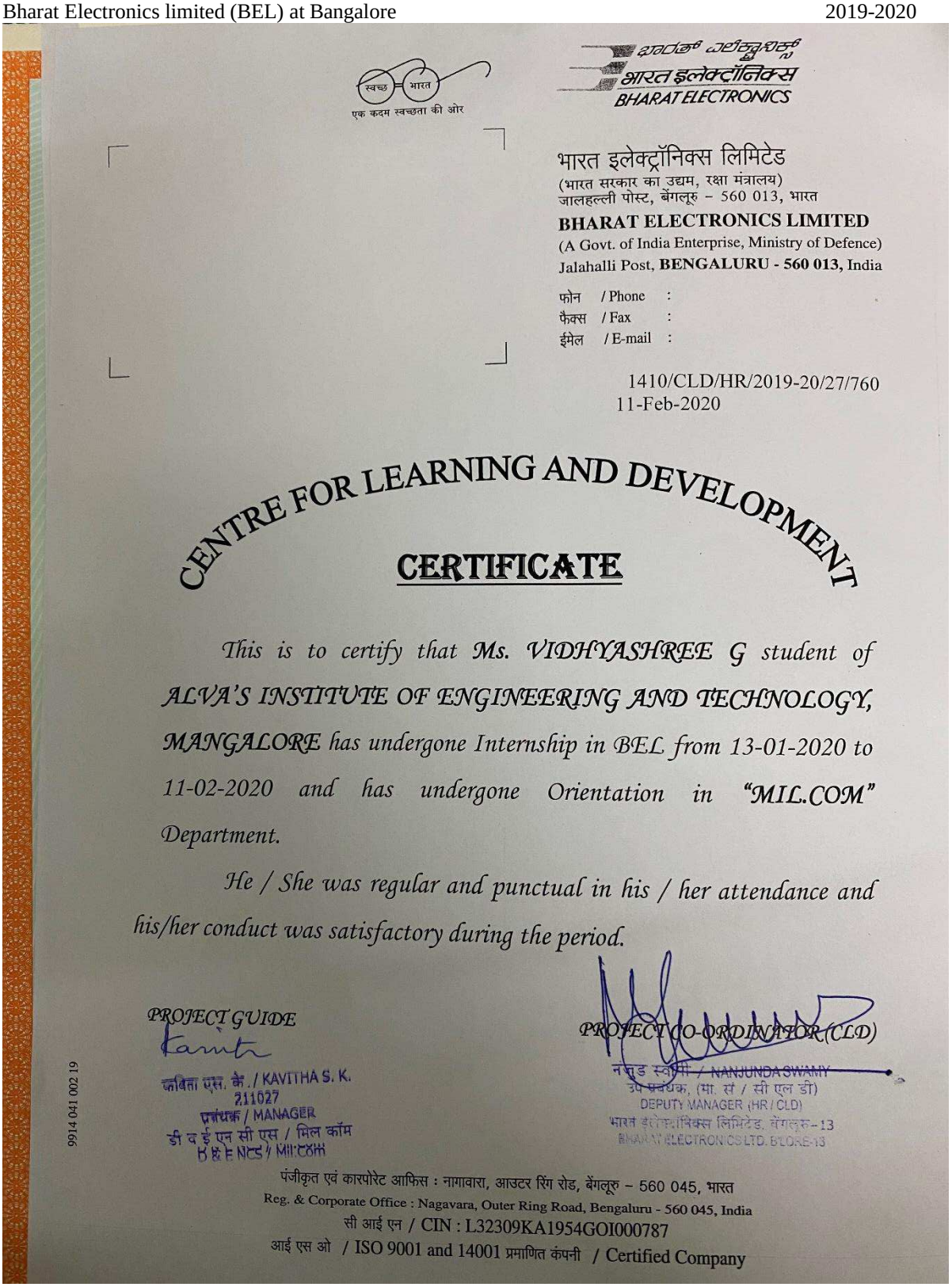

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During this period her performance was good.

We wish her a bright future.

for HAL, Helicopter MRO Division

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During this period her performance was good.

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2. Her behavior & conduct during the above training period was Good.

3. We wish her all the best for future endeavors.

2-8-19

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मु.प्र(मासं) / CM(HR)

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During this period her performance was good.

We wish her a bright future.

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27/7/19

(A. FRANCIS JUSTIN)
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Dr. Praveen J
Program Coordinator

Prof. Mohammed Javed
Assistant Professor, IIIT Allahabad

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Principal
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Date: 14.08.2019

To whom it may concern

This is to certify that **Ms. Ankitha C C (Roll No: 4AL16EC004)** D/O Mr. Chandrashekar of Alva's Institute Of Engineering And Technology, Dakshina Kannada, Karnataka has successfully completed **Summer Internship Program** on the topic "**FABRICATION AND I-V CHARACTERISATION OF P-N JUNCTION DIODE from 11-07-19 to 14-08-19** at the **Department of Electronics and Communication Engineering**.

We wish her all the best for her future endeavors.

Sunny 14/08/2019

(Dr. Sunny Sharma)

Mentor

(Dr. Rajat Kumar Singh)

HoD-ECE

Head of Department
Department of Electronics & Communication Engineering
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ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY MOODBIDRI

ALVA'S
Education Foundation®

Certificate

This is to Certify that .....BHANUPRIYA..... *of Alva's Institute of Engineering and Technology, Moodbidri has Completed 25-Days Internship on* ***"DATA ANALYTICS&MACHINE LEARNING" Conducted by INDIAN INSTITUTE OF INFORMATION TECHNOLOGY (IIIT), ALLAHABAD*** *in Association with* ***ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY,*** *Moodbidri from 22nd Jan to 12th Mar 2020.*

Dr. Praveen J
Program Coordinator

Prof. Mohammed Javed
Assistant Professor, IIIT Allahabad

Dr. Peter Fernandes
Principal
AIET, Moodbidri

भारतीय सूचना प्रौद्योगिकी संस्थान, इलाहाबाद
Indian Institute of Information Technology, Allahabad
An Institute of National Importance by Act of Parliament
Deoghat, Jhalwa, Allahabad-211015 (U.P.) INDIA
Ph.: 0532-2922025, 2922067, Fax : 0532-2430006, Web : www.iiita.ac.in, E-mail : contact@iiita.ac.in

Date: 14.08.2019

To whom it may concern

This is to certify that **Ms. Rasika Patil (Roll No : 4AL16EC057)** D/O Mr. Basagouda of Alva's Institute Of Engineering And Technology, Dakshina Kannada, Karnataka has successfully completed **Summer Internship Program** on the topic "**DESIGN AND FABRICATION OF AMMONIA SENSOR USING ELECTROSPINNING PROCESS** from **11-07-19 to 14-08-19** at the **Department of Electronics and Communication Engineering**.

We wish her all the best for her future endeavors.

Sunny 14/08/2019

(Dr. Sunny Sharma)

Mentor

Rajat

(Dr. Rajat Kumar Singh)

HoD-ECE

Head of Department
Department of Electronics & Communication Engineering
Indian Institute of Information Technology Allahabad
Uttar Pradesh, India-211012

भारतीय सूचना प्रौद्योगिकी संस्थान, इलाहाबाद
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Date: 14.08.2019

To whom it may concern

This is to certify that **Ms. Rohini Halloli (Roll No : 4AL16EC060)** D/O Mr. Sadashiv Halloli of Alva's Institute Of Engineering And Technology, Dakshina Kannada, Karnataka has successfully completed **Summer Internship Program** on the topic "**DESIGN AND FABRICATION OF AMMONIA SENSOR USING ELECTROSPINNING PROCESS from 11-07-19 to 14-08-19** at the **Department of Electronics and Communication Engineering.**

We wish her all the best for her future endeavors.

Sunny 14/08/2019

(Dr. Sunny Sharma)

Mentor

(Dr. Rajat Kumar Singh)

HoD-ECE

Head of Department
Department of Electronics & Communication Engineering
Indian Institute of Information Technology Allahabad
Uttar Pradesh, India-211012

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Certificate

This is to Certify that SAFIYA BANU *of Alva's Institute of Engineering and Technology, Moodbidri has Completed 25-Days Internship on* ***"DATA ANALYTICS&MACHINE LEARNING" Conducted by INDIAN INSTITUTE OF INFORMATION TECHNOLOGY (IIIT), ALLAHABAD*** *in Association with* ***ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY,*** *Moodbidri from 22nd Jan to 12th Mar 2020.*

Dr. Praveen J
Program Coordinator

Prof. Mohammed Javed
Assistant Professor, IIIT Allahabad

Dr. Peter Fernandes
Principal
AIET, Moodbidri

भारतीय सूचना प्रौद्योगिकी संस्थान, इलाहाबाद
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Date: 14.08.2019

To whom it may concern

This is to certify that **Ms. Sangeetha S.V (Roll No: 4AL16EC064)** D/O Mr. S Venkata Setty of Alva's Institute Of Engineering And Technology, Dakshina Kannada, Karnataka has successfully completed **Summer Internship Program** on the topic "**DESIGN AND FABRICATION OF ETHANOL SENSOR USING SPIN COATING PROCESS from 11-07-19 to 14-08-19** at the **Department of Electronics and Communication Engineering**.

We wish her all the best for her future endeavors.

Sunny 14/08/2019

(Dr. Sunny Sharma)

Mentor

(Dr. Rajat Kumar Singh)

HoD-ECE

Head of Department
Department of Electronics & Communication Engineering
Indian Institute of Information Technology Allahabad
Uttar Pradesh, India-211012

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Date: 14.08.2019

To whom it may concern

This is to certify that **Ms. Shilpa N. (Roll No: 4AL16EC071)** D/O Mr. Ningaiah V of Alva's Institute Of Engineering And Technology, Dakshina Kannada, Karnataka has successfully completed **Summer Internship Program** on the topic **"DESIGN AND FABRICATION OF ETHANOL SENSOR USING SPIN COATING PROCESS from 11-07-19 to 14-08-19** at the **Department of Electronics and Communication Engineering.**

We wish her all the best for her future endeavors.

14/08/2019

(Dr. Sunny Sharma)

Mentor

(Dr. Rajat Kumar Singh)

HoD-ECE

Head of Department
Department of Electronics & Communication Engineering
Indian Institute of Information Technology Allahabad
Uttar Pradesh, India-211012

यू.आर.राव उपग्रह केंद्र
अंतरिक्ष विभाग
भारत सरकार
विमानपुर पोस्ट
बेंगलूरु - 560 017

इसरो isro
Indian Space Research Organisation

U. R. Rao Satellite Centre
Department of Space
Government of India
Vimanapura Post
Bengaluru - 560 017

DATE : 09-07-2020

Certificate

This is to certify that Ms. Priyanka U
of Alva's Institute of Engineering & Technology (AIET) *has undergone*
Project training in Control And Digital Electronics Group *at this Centre*
during the period from 13/01/2020 to 30/04/2020.

COURSE	:	B.E (Electronics & Communications)
PROJECT TITLE	:	Antenna Drive Mechanism for Satellite Tracking System
PROJECT MEMBERS	:	1. Vidya N 2. Thanuja D 3. Veena S
PERFORMANCE	:	Excellent

(Basavaraj.S Akkimaradi)
Group Director PPEG, URSC

यू.आर.राव उपग्रह केंद्र
अंतरिक्ष विभाग
भारत सरकार
विमानपुर पोस्ट
बेंगलूरु - 560 017

U. R. Rao Satellite Centre
Department of Space
Government of India
Vimanapura Post
Bengaluru - 560 017

DATE : 09-07-2020

Certificate

This is to certify that Ms. Thanuja D

of Alva's Institute of Engineering & Technology (AIET) *has undergone*

Project training in Control And Digital Electronics Group *at this Centre*

during the period from 13/01/2020 to 30/04/2020.

COURSE	:	B.E (Electronics & Communications)
PROJECT TITLE	:	Antenna Drive Mechanism for Satellite Tracking System
PROJECT MEMBERS	:	1. Priyanka U 2. Vidya N 3. Veena S
PERFORMANCE	:	Excellent

(Basavaraj.S Akkimaradi)
Group Director PPEG, URSC

यू.आर.राव उपग्रह केंद्र
अंतरिक्ष विभाग
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विमानपुर पोस्ट
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इसरो isro
Indian Space Research Organisation

U. R. Rao Satellite Centre
Department of Space
Government of India
Vimanapura Post
Bengaluru - 560 017

DATE : 09-07-2020

Certificate

This is to certify that Ms. Veena S
of Alva's Institute of Engineering & Technology (AIET) *has undergone*
Project training in Control And Digital Electronics Group *at this Centre*
during the period from 13/01/2020 to 30/04/2020.

COURSE	:	B.E (Electronics & Communications)
PROJECT TITLE	:	Antenna Drive Mechanism for Satellite Tracking System
PROJECT MEMBERS	:	1. Priyanka U 2. Vidya N 3. Thanuja D
PERFORMANCE	:	Excellent

(Basavaraj.S Akkimaradi)
Group Director PPEG, URSC

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U. R. Rao Satellite Centre
Department of Space
Government of India
Vimanapura Post
Bengaluru - 560 017

DATE : 09-07-2020

Certificate

This is to certify that Ms. Vidya N

of Alva's Institute of Engineering & Technology (AIET) *has undergone*

Project training in Control And Digital Electronics Group *at this Centre*

during the period from 13/01/2020 to 30/04/2020.

COURSE	:	B.E (Electronics & Communications)
PROJECT TITLE	:	Antenna Drive Mechanism for Satellite Tracking System
PROJECT MEMBERS	:	1. Priyanka U 2. Thanuja D 3. Veena S
PERFORMANCE	:	Excellent

(Basavaraj.S Akkimaradi)
Group Director PPEG, URSC

सेमी – कंडक्टर लेबोरेटरी
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अंतरिक्ष विभाग, भारत सरकार
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टैलीफोन / Phone : (0172)-229-6000, 6100, 6200, 6300, 6400
फैक्स / Fax : 0172-2237410
वेबसाइट/ Website : www.scl.gov.in

150 YEARS OF CELEBRATING THE MAHATMA

SCL:HRDD:8001:June.2019:01
September 02, 2019

CERTIFICATE

This is to certify that Mr. Bhuvanesh M. (Enroll. No. 4AL16EC015) B.E.- Electronics & Communication Engineering student of Alva's Institute of Engineering & Technology, Mangalore has completed his Internship Training successfully as part of his B. E. curriculum, on the topic of **"Firmware Development of Memory Based Internet Security Gate"** from July 15, 2019 to September 02, 2019 at Semi-Conductor Laboratory.

(Ashwani Kumar Tuknayat)
Head-HRDD

अश्वनी कुमार तुकनायत
Ashwani Kumar Tuknayat
प्रमुख-मानव संसाधन विकास प्रभाग
Head-Human Resource Development Division
सेमी – कंडक्टर लेबोरेटरी
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50 YEARS OF CELEBRATING THE MAHATMA

SCL:HRDD:8001:June.2019:01
September 02, 2019

CERTIFICATE

This is to certify that Ms. Raziya Banu (Enroll. No. 4AL16EC058) B.E.- Electronics & Communication Engineering student of Alva's Institute of Engineering & Technology, Mangalore has completed her Internship Training successfully as part of her B. E. curriculum, on the topic of **"Firmware Development of Memory Based Internet Security Gate"** from July 15, 2019 to September 02, 2019 at Semi-Conductor Laboratory.

(Ashwani Kumar Tuknayat)
Head-HRDD

अश्वनी कुमार तुकनायत
Ashwani Kumar Tuknayat
प्रमुख-मानव संसाधन विकास प्रभाग
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