Final Year Projects 2016

Editors:
Prof. Dr. B.S.Chowdhry
Prof. Dr. Wajiha Shah

Compilers:
Engr. Azam Rafique Memon
Engr. M. Zaigham Abbas Shah

Department of Electronic Engineering
Mehran University of Engineering & Technology,
Jamshoro

Message from Dean FEECE

These past years have seen an interesting development in institution building in the country and amongst all institutions, the bedrock has been the education institutions that impart practical, technical and research based knowledge. Electronics in particular and ICT (Information and Communication Technologies) in general have a direct and great impact on our life. Electronic Engineering artifacts have played and continue to play a major role in the evolution of mankind and culture. It is an increasingly important engineering discipline that significantly affects the other disciplines of Engineering.

I am delighted to learn that Department of Electronic Engineering, as an innovative and forward looking department, achieved laurels for imparting quality education with practical skills that has been at the forefront in the country and its graduates have risen to positions of great eminence. The success of the department owes much to collaborative efforts involving faculty, administration, students, students' alumni and the community as a whole.

It is a matter of immense pleasure and happiness to see that students have made such remarkable projects such as Energy Harvesting using Radio Frequencies, Self Driving and Driver Relaxing Vehicle, Earthquake Monitoring System using WSNs, Design And Development Of Yaw And Pitch Control Of Large Wind Turbines And Their Safety Mechanisms Using PLC Maximum Power Point Technique (MPPT) based Power Conditioning Unit (PCU) which have been funded by various external organizations and bodies. And also projects such as Automation and Controlling of Smart RO (Reverse Osmosis) at a Remote Distance and Condition Monitoring of Induction Motor which address real problems faced by the country. A significant achievement is that a three projects are funded by ICTR&D fund and two by prestigious research organization.

On this occasion, I would like to felicitate and express utmost appreciation to the Chairperson of the Electronics department, all faculty members and students for having kept up the standard of the department. The exhibition is indeed a matter of celebration for the university as well as for the country. The crux of the matter is that I am proud of department of Electronics Engineering and its performance.

Long live Mehran ! Pakistan Paindabad!

Prof. Dr Bhawani Shankar Chowdhry

Message from Chairperson

In today's era of technological advancement, technical education plays a pivotal role in the development of a country. The field of electronic Engineering has witnessed overwhelming importance in almost every sphere of our lives and infact it is the driving force behind the development of world's information technology. It has made revolutionary changes the way people interact with the outside world.

It has deeply penetrated in every field of our existence. Being one of the most dynamic and active departments in terms of arranging numerous curricular, extracurricular, and technical workshops related events, our department's envisages to be nationally recognized for high quality academic programs and research through focused activities and excellence of its faculty, staff, graduates and facilities.

We will achieve this vision through fostering the education of stellar students and contributing towards Electronic Engineering Research.

This department aspires that its graduates be able to face the challenges that many societies face today in such a diverse areas ranging from information Technology to healthcare.

Feeling an urge to develop and encourage a competitive environment, Electronics department, since few years have been organizing Project *Exhibition*, a platform to showcase Final year students' projects that not only polishes the technical skills of those who participate but always becomes an inspiration for students not only from this department but others also.

This time around, final year students of (12ES) of Electronic Engineering Department has put in their invaluable efforts and technical expertise in designing real life application-oriented projects like *Decentralized Multi-Robot task allocation*, *Maximum Power point technique MPPT based power conditioning unit*, *Urban air quality monitoring system* and *Design & Development of Hexa-bot using Nilinor* to name a few. To sum it up, they have done a commendable job.

Indeed, the provision of sound technical environment to the students bore fruits when various groups of students got their projects (due to their strong relevance with current industrial and societal requirement) funded by SUPARCO, one of Pakistan's top research agency and National grassroots ICT Research initiative.

I would like to express my gratitude to all faculty members who aptly played their part in mentoring and guiding students at every level.

Prof. Dr. Wajiha Shah

Table of Contents

Funded Projects

Funded Projects of 12ES:

Total Funding Amount: PKR 267,000

National ICT R&D Funded Projects:

1. Earthquake Monitoring System using WSNs

Funded by National ICT R&D (Funding Amount: PKR 93,000)

2. Self Driving and Driver Relaxing Vehicle

Funded by National ICT R&D (Funding Amount: PKR 90,000)

3. Energy Harvesting Through Radio Frequencies

Funded by National ICT R&D (Funding Amount: PKR 64,000)

SUPARCO Funded Projects:

1. Maximum Power Point Technique (MPPT) based Power Conditioning Unit (PCU)

Funded by SUPARCO (Funding Amount: PKR 10,000)

2. Design & Development of Yaw & Pitch Control of large wind turbines & their safety Mechanisms using PLC

Funded by SUPARCO (Funding Amount: PKR 10,000)

Decentralized Multi-Robot Task Allocation

Abstract:

Decentralized communication between robots is the main part of this project. The decentralized robot, inspired from nature, is a combination of intelligent and environment decision-making, which shows a great potential in several aspects. We have designed two Robots that will be able to communicate with each other and complete the assigned task together. Working together as a team will reduce their time to achieve the target. We address the problem of planning the motion of a team of mobile robots subject to constraints imposed by sensors and the communication network. The task assigned to Robots is to find a Specific colored box. Both the Robots will start from one location, will coordinate with each other. Once the box is found by any of the two robots, they will coordinate again and both Robots will meet at targeted location. Finding the location of other Robot was also a challenging task, we have discussed in this report. The Robots will communicate by inquiring the Bluetooth devices and then calculating and extracting the RSSI values. Our goal is to develop a decentralized motion control system that leads each robot to their individual goals while keeping connectivity with the other robot. We present experimental results with two Vehicular robots.

Designed By:

- Fatima Zareen   12ES20
- Bilal Athar   12ES54
- Marina Joseph   12ES51
- Sanjha Khan   12ES15
- Hima Zafar   12ES12
- Muneed Ahmed   12ES48

Supervisor: Prof. Dr. B.S. Chowdhry

Co-supervisor: Engr. Azam Rafique Memon

Design And Development Of Hexapod Using Nitinol Wire Actuator
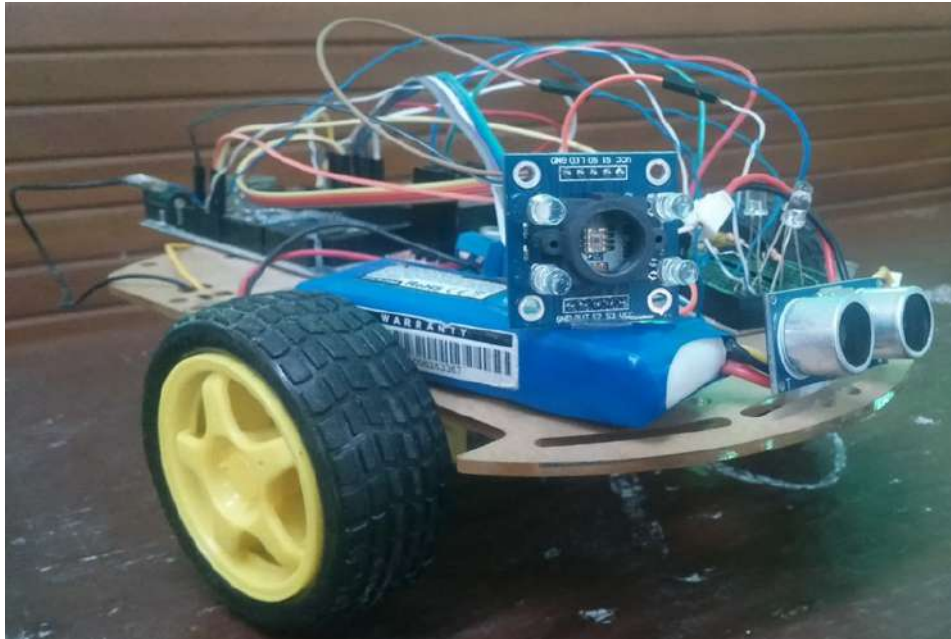
Abstract:

Hexapod robots have attracted considerable attention for several decades. Many studies have been carried out in research centers, universities and industries. This project involves the construction and working of small scale Hexapod robot. The Hexapod robot is a small, inexpensive, six-legged robot that is intended to replace huge and heavy robotic systems, containing solenoids and servo motors.

The first phase of the project involves the design and construction of the structure of Hexapod. Plastic was used for the construction of body and Nitinol actuator wires was used to drive the Hexapod's legs. Nitinol actuator wire acts as a muscle for each of the legs, providing a means of walking for the robot. With its unique ability to contract on demand, Muscle Wire (or more generically, shape memory actuator wire) presents many intriguing possibilities for robotics.

The final phase involves the Hexapod interfacing with Arduino to achieve the proper locomotion of the Hexapod. In particular, the proposed design procedure takes into account the main features, such as mechanical structure and leg configuration, actuating and driving systems, payload, motion conditions, and walking gait. It was found that compact, and lightweight Hexapod robot shows promise for use in space, medical, and other macro-robotic applications.

Designed By:

- Bushra Shaikh   12ES52
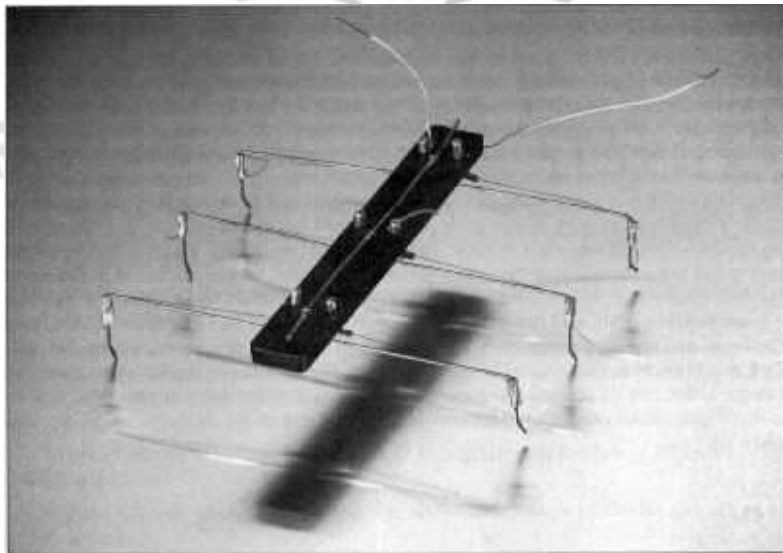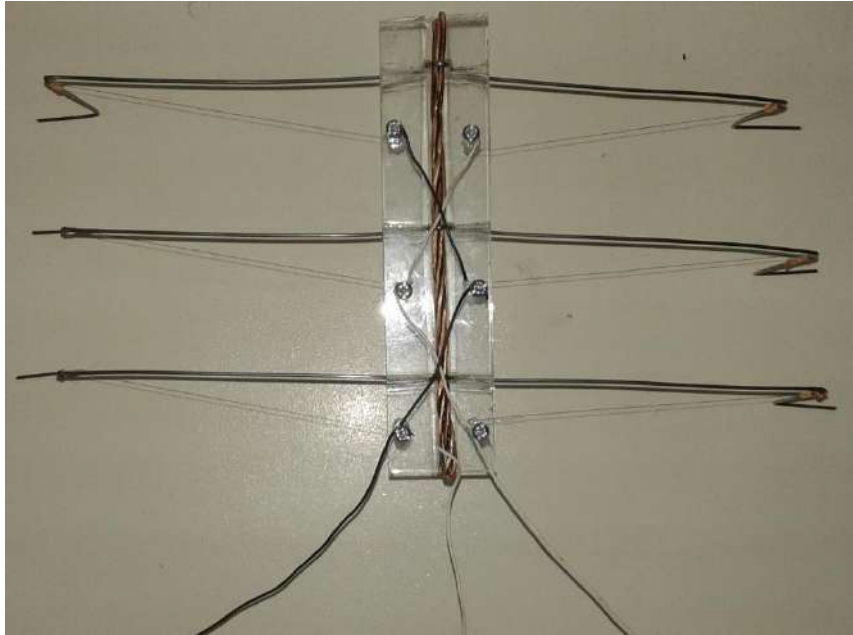- Bushra Shaikh   12ES50
- Priya Lohana   12ES17
- Ameet KN Maheshwari   12ES23
- Asadullah Rahu   12ES19
- Saad Memon   12ES29

Supervisor: Dr. Tayab Din Memon

Co-supervisor: Dr. Imtiaz Hussain Kalwar

Maximum Power Point Technique (MPPT) based Power Conditioning Unit (PCU)

Abstract:

The name of the project i.e. Maximum Power Point Tracking (MPPT) based Power Conditioning Unit (PCU), clearly shows that it contains a power conditioning unit which has MPPT algorithm implemented in it. In other words it can be said that the project aims to provide such a power conditioning unit which gives an optimum power at all the time using a specific MPPT algorithm. The MPPT algorithm chosen is Perturb and Observe algorithm, also known as Hill climbing algorithm. The algorithm takes the immediate/ instant power reading and then calculates the difference between present and previous power readings. And according to that difference changes operating point, so that maximum power is achieved. This whole project deals with implementation of algorithm by using additional hardware such sensors and DC-DC converters etc.

Designed By:
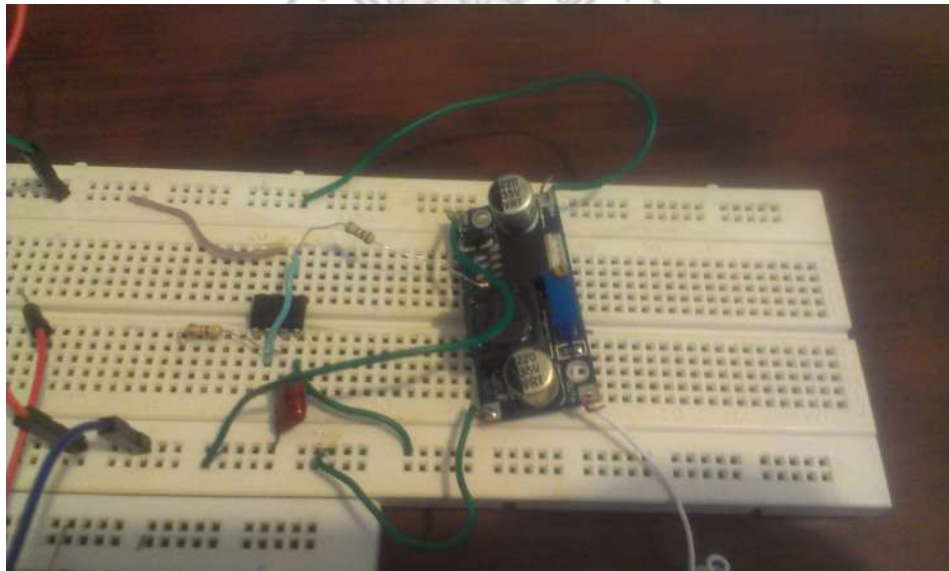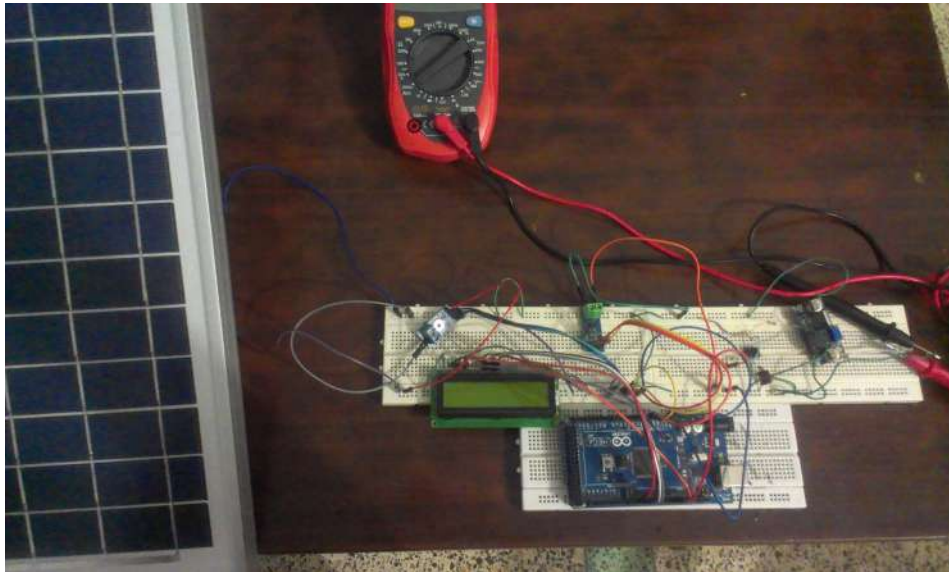
- Farheen Irshad   12ES41
- Aqsa Abbasi   12ES13
- Mahnoor Fayaz Memon   12ES10
- Muhammad Afzal Memon   12ES65
- Aunsa Shah   12ES25

Supervisor: Dr. Imtiaz Hussain Kalwar

Co-supervisor: Engr. Zaigham Abbas Shah

Self Driving and Driver Relaxing Vehicle

Abstract:

In this modern world, almost everything is provided for the ease of mankind. So we took a minor part of it and implemented on the basis of modern technology. Traffic on roads is increasing day by day and it is difficult nowadays in urban areas to move from one location to another. It takes hours to cover a distance of few kilometers. The peoples on vehicles or any vehicles have to move slowly in order to reach destination location and the driver has to take vehicle and move very slowly in heavy traffic jam, he has to continuously push and pull the break, accelerator and clutch.

To avoid this problem and relieve driver in that hard and tiring situations we are designing a "Self Driving & Driver Relaxing Vehicle" that will keep the pre-specified distance from front vehicle and move when distance is greater than specified threshold distance.

Another application of this project is to follow any of vehicles on road, if we implement our designed system in vehicles, one which will follow and other which is being followed.

Here one vehicle will follow another vehicle even if the vehicle is multiple kilometers ahead of following vehicle. The source vehicle will get help from Google maps and find route to destination location, which is moving.
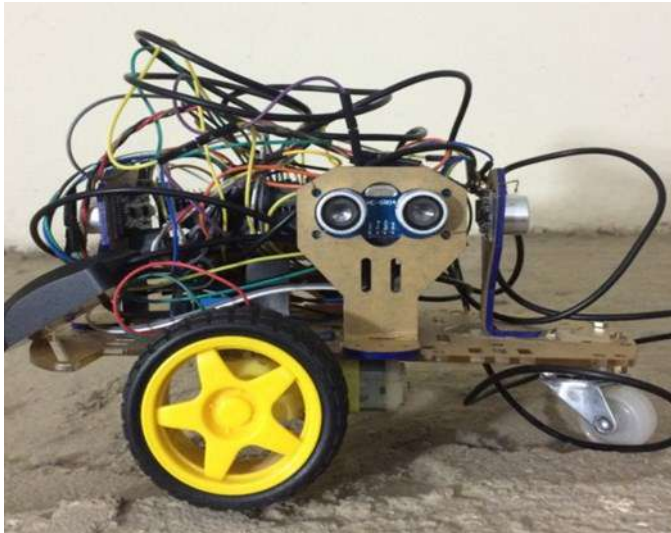
Designed By:

- Qudsia Memon   12ES40
- Muzamil Ahmed   12ES30
- Shahzeb Ali   12ES55
- Usama Qadeer   12ES01
- Ahsen Ahmed   12ES11

Supervisor: Dr. Wajiha Shah

Co-supervisor: Engr. Azam Rafique Memon

* Funded by ICT R&D

Earthquake Monitoring System using WSNs

Abstract:

In this project, an Earthquake Monitoring System Using Wireless Sensor Networks (WSNs) is implemented. A wireless sensor network (WSN) is a group of low cost, low power, multifunctional and small size wireless sensor nodes that cooperate together to sense the environment, process the data and communicate wirelessly over a large distance.

The aim of this project is to develop a prototype for monitoring of an inhabited area by placing sensor nodes. The main focus is on localization of sensor nodes on a particular grid in a dynamic environment. The localization and sensing algorithm proposed in this project is Wireless Sensor Network (WSN).

The core objective here is to Design and Develop sensor nodes, self-operating centralized system that may be planted at limited place, but set free wherever needed.

Improve the safety and health of humans in the places where secure human approach is at risk. Design and Develop a system that monitor the Earthquake wave and to inform about earthquake without delay.

The system is designed using vibration sensor, LabVIEW software, 3G internet connection and Arduino Support Package will be used to program the sensors.

Sensors sense data of environment like: Seismic wave and send to the computer through 3G, data is further analyzed/monitored using LabVIEW software.

Designed By:

- Muhammad Hanif Lashari   12ES43
- Bilal Hussain Abbasi   12ES24
- Lutuf Ali Shah   12ES14
- Sadam Hussain Rind   12ES18
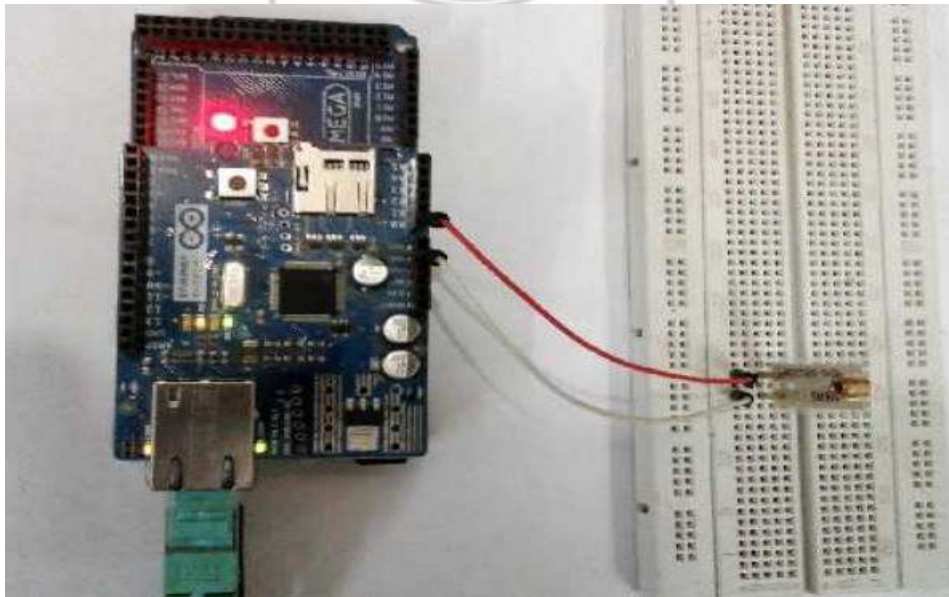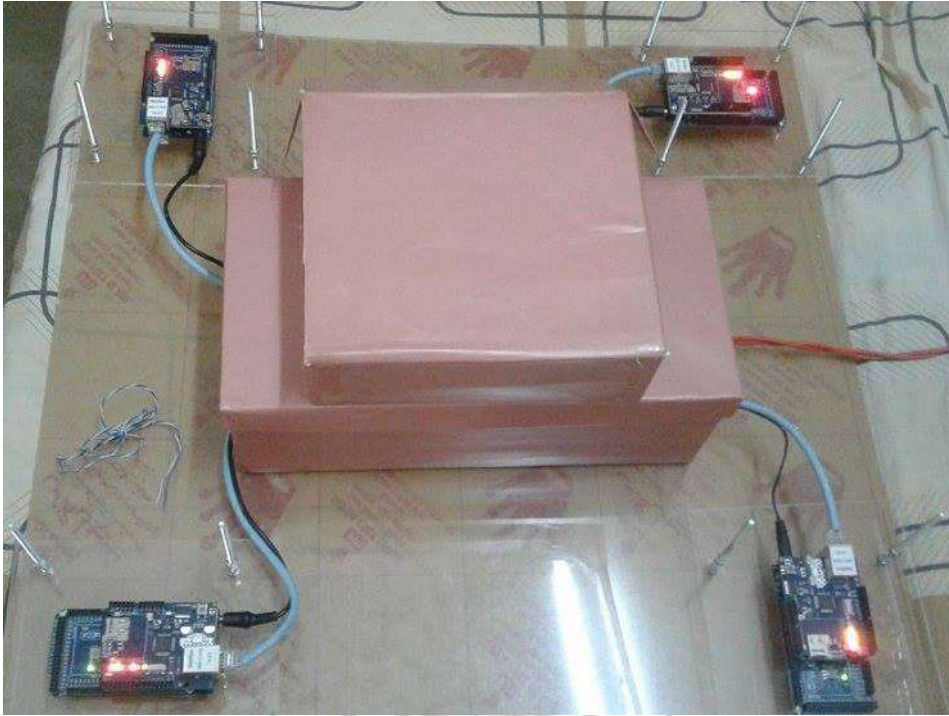- Fida Hussain Sahito   12ES63

Supervisor: Dr. Wanod Kumar

Co-supervisor: Engr. Zaigham Abbas Shah

* Funded by ICT R&D

Design & Development of Yaw & Pitch Control of large wind turbines & their safety Mechanisms using PLC

Abstract:

Electricity has more importance for our living requirements. so there are so many method by which we can get electricity i.e. from petroleum ,water ,coal etc .Energy from wind is one of the technique by which we can get easily energy without polluting the environment and easily availability of wind everywhere. Wind energy (K.E) can be converted into electricity with help of turbines known as wind turbines. To optimize energy we have control few parameters of it. In our project we have taken pitch control (change the angle of rotating blades) so as to get the safety of blades and other components of turbine at high speed of wind, the other one is yaw control (to change rotating angle of nacelle) so that we can maximize the energy by aligning the rotor of turbine with wind ,and safety mechanisms (twisting of cable ,temperature ,pressure ,vibration) of it.

These all phenomena are controlled with Programmable logic controller (PLC).

Designed By:

* Javaid Ahmed Tanwari   12 ES109
* Waleed Aslam kaimkhani   12 ES104
* Muhammad Awais Memon   12 ES91
* Shakeel Ahmed Samon   12 ES73
* Asif Nawaz Balouch   12 ES103
* Sarfraz soho   12 ES110

Supervisor: Dr. Imtiaz Hussain Kalwar

Co-supervisor: Engr. Azam Rafique Memon

Automatic Robotic Arm

Abstract:

Throughout the history humans have always found ways to make their life easier with one invention or another. In today's world there is an increasing need to create artificial arms for different inhuman situations where human interaction is difficult or impossible. They may involve taking readings from an active volcano to diffusing a bomb. In this regard humans have created inventions could be used as substitutes to humans to do tasks which require work in the hostile environment. One such invention is a robot.

Industries are increasingly relying on robotics due to their efficiency and their reliable productivity. Robots give us wide range of services from the simple lifting of items to the precision of surgery. These robots are more anthropomorphic and have like humans like features and functionalities.

One such robotic function is of Robotic Arm which is based on the essence of the human arm and is very similar to it. In simple words, it is similar to human arms yet made up of different parts such as open or closed kinematic chain of rigid links interconnected by movable joints. Consisting of few joints and at the end of it is an end effector which itself could consist of different tools or a gripper.

Here we design a simple pick and place robot which works at a certain workstation of an industry such as at an industry of auto parts where robotic arm picks up and places parts at desired location. All the various obstructions and scenarios have been considered which will be encountered during the loading and unloading process.

However, developing these applications for industries specific to countries like Pakistan, where cheap labor is available, becomes a major problem to be tackled in terms of cost.
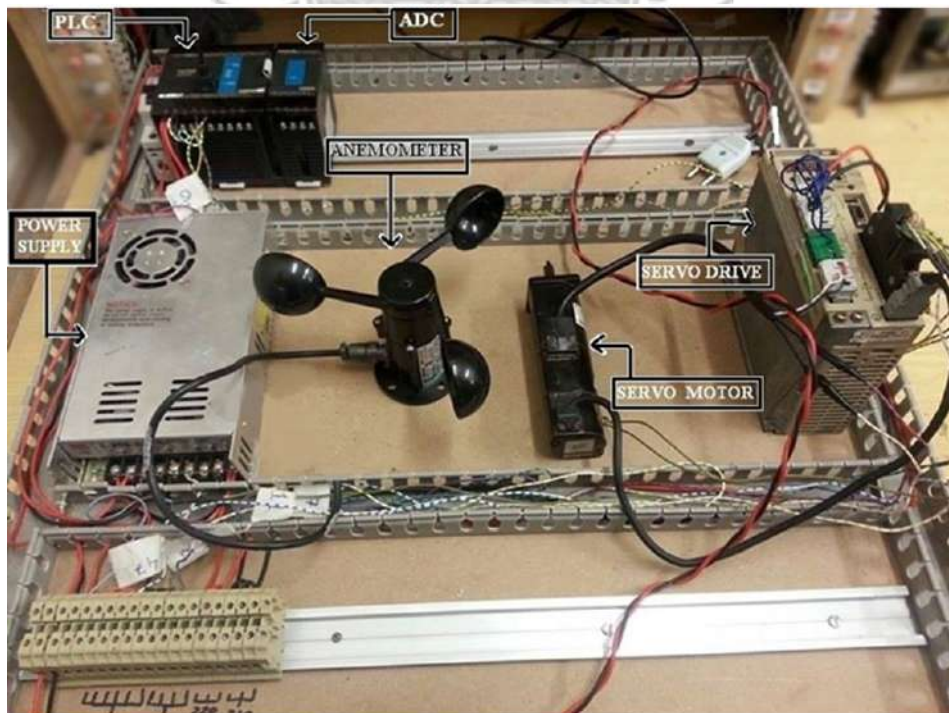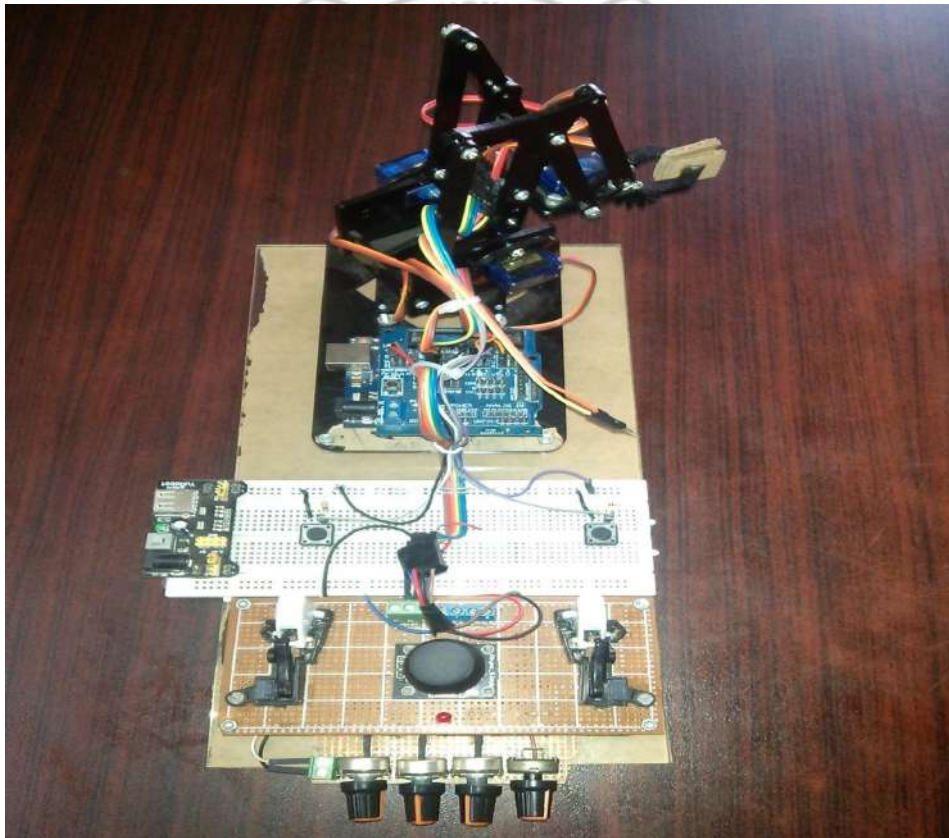
Supervisor:	Engr. Kamran Kazi
Co-supervisor:	Engr. Mansoor Teevno

Condition Monitoring Of Induction Motor

Designed By:

- Shahnawaz Khan   12ES22
- Asif Jalil   12ES56
- Aamir Khan   12ES26
- Allah Bux Faheem   12ES05
- Zubair Shahid   12ES32
- Afaque Ansari   12ES64

Abstract:

Induction motors are used worldwide as the "workhorse" in industrial applications. Although, these electromechanical devices are highly reliable, they are susceptible to many types of faults. Such fault can become catastrophic and cause production shutdowns, personal injuries, and waste of raw material. However, induction motor faults can be detected in an initial stage in order to prevent the complete failure of an induction motor and unexpected production costs.

In order to keep the induction motor in safe and faultless condition, we need to check it again and again.

For that purpose Condition monitoring of induction motor is done. Condition monitoring is a process of checking the state of motor.

Accordingly, this thesis presents two methods Model Based Approach and Signal Analysis Approach to detect induction motor faults. Signal Analysis Approach is best for condition monitoring of induction motor because It does not require dynamic model of the real process.

Designed By:

- Mohammad Azeem   12ES72
- Muhamamd Akram   12ES99
- Shakeel Ahmed   12ES113
- Shafique Ahmed   12ES102
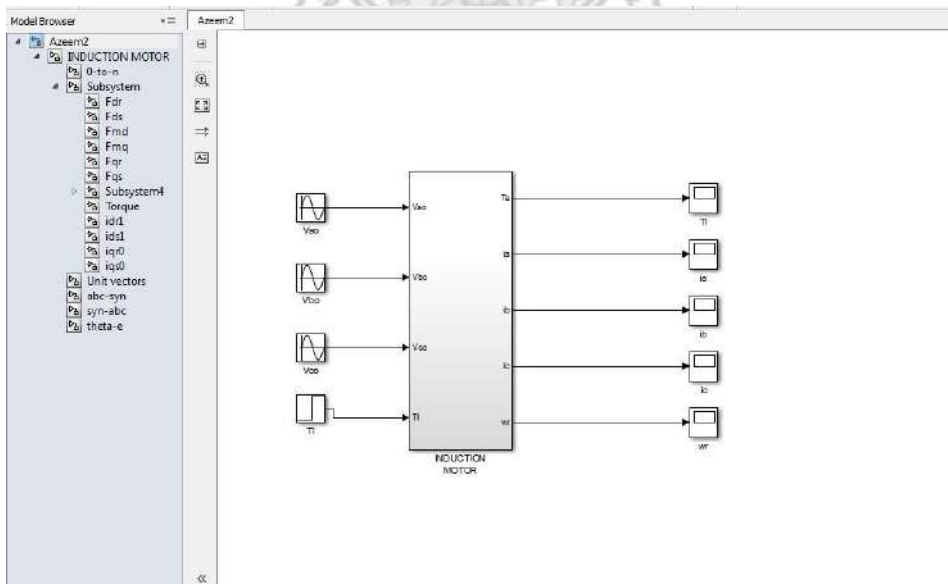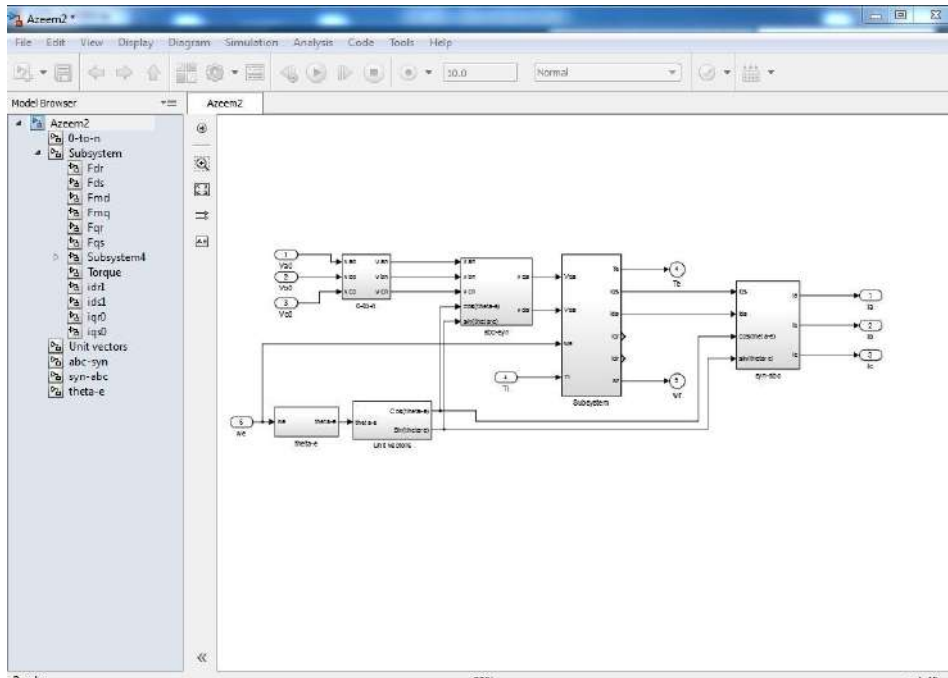- Farooq Ahmed   12ES121
- Harish Kumar   12ES66

Supervisor: Engr. Aamir Ali Patoli

Co-supervisor: Engr. Mansoor Teevno & Dr. Arbab Nighat

Automatic Signaling and Accident Preventation in Railway Transport

Abstract:

Railway transport is a very energy efficient means of transportation considered as life line of any country. It is different from road transportation in such a manner that in train transport the train are guided with the help of tracks. Many research and implementation work has been done in order to improve the railway transportation across the world because railway transportation is the second largest network used with in the countries for transportation.

Railway transport is a very cheap and easy way of travelling to the citizens but this transportation in Pakistan is not providing the safe journey to the passengers due to its manual system and mismanagement. The railway transportation has become really vast and automatic in other western countries This because we have worked to provide some concept on modernizing the railway system to automatic levels by which we can have less or no amount of accidents. As most of the accidents causes at level crossings due to human errors or mismanagement of signaling. For this we have worked to automate level crossing by using sensors. We have design a circuit in which the brakes of the train will work automatically if the railway track discontinued or broken. We have installed some sensors to detect obstacles in front of train through which the brakes will work automatically this will avoid accidents or collisions. These concepts will prove very beneficial if they are applied in railway system of Pakistan. They will surely decrease death rate or loss rate due to mismanagement of railway system and will provide safety to the citizens.

Designed By:

- Rehman Atta   12-11ES115

- Muhammad Awais   12ES60

- Shehryar Talpur   12-11ES122

Supervisor: Engr. Tufail Ahmed Waseer

Co-supervisor: Dr. Imtiaz Hussain Kalwar

Robotic Crack Detection System for Bridge Deck Maintenance

Abstract:

Structural Health Monitoring has become extremely important with the aging of critical infrastructures such as transportation structures, buildings etc. With the increased use of these structures, their maintainability and monitoring is essential to ensure public safety. Bridges are one of such public structures whose health monitoring with time is of vital importance so that it can sustain heavy traffic loads and to prevent them from becoming functionally obsolete as replacement of such structures could cause economic downturn. One of the major task in maintenance of bridges is to detect cracks over the bridge deck. So timely awareness of cracks could prevent from structural failure and collapsing of bridges. The traditional method of detection of crack is the job of human inspector who surveys the whole bridge to mark the cracks. It not only time consuming but its accuracy is low due to limited visual capability of human being. Moreover, every human being has distinct way of perceiving things. Monitoring has become feasible with the development of computers and necessary hardware .So we put forward the idea of crack detection system that uses a mobile robot with android phone having camera mounted over it. It will collect images from bridge deck and send them to the laptop using a Wi-Fi connection to find cracks from them through image processing in MATLAB. Our crack detection system mainly focuses on its purpose as a whole. We are assuming an indoor setup of concrete slab as a bridge deck in the hardware part of this project. Techniques for handling with shadow, paint, patches in captured images are not addressed. In real life applications, these issues should be considered while developing the image processing code. Other than that, we are using an obstacle avoidance robot to avoid any kind of obstacles faced by robot in a small concrete track. To determine the position of cracks, we are using dead reckoning algorithm in our indoor setup of concrete slab. The detected cracks will be marked on their respective positions. In that way, this overall system will be consisting of four parts, an obstacle avoidance robot collecting images with camera, sending them to laptop through Wi-Fi signals, finding cracks through them using MATLAB Image processing and finally determining the position of those cracks in bridge

deck.

Designed By:

- Mahenoor   12ES07
- Arsalan Ali Soomro   12ES16
- Mahin Gul   12ES35
- Amir Ali Samejo   12ES42
- Areeba Kainat   12ES53
- Sagar Lund   12ES21

Supervisor: Engr. Tufail Ahmed Waseer

Co-supervisor: Dr. Arbab Nighat

Urban Area Air Quality Monitoring System

Abstract:

In today's fast expanding world, air Pollution is a major problem for any urban city with high Vehicular density. This pollution can be in the form of harmful gas emission from vehicles or in the form of Particulate matter. This hazardous air has some serious and detrimental effects not only the living creatures but on the environment as well. Traditional air quality monitoring methods, such as building air quality monitoring stations, are typically expensive and generally less densely deployed. Proper handling of the problem is considered to be quite complex due to lack of accurate, up to date and organized data and analysis as well as lack of an integrated system for acquisition, storage, manipulation, retrieval, analysis, presentation and exchange of environmental data. Our aim is to develop a tool for real-time air quality monitoring, so as to take appropriate and timely decision by creating a generic and networkable system using various inexpensive sensors which capture the Air Quality data and display it on a GUI which allows us to monitor the current data and compare it with past data so as to provide the user with the ability to analyze the trends of the data at different time intervals. In this project, we present a interactive monitoring tool that allows knowing the concentration of polluting gases in various areas of the city by allowing users to monitor the area of their interest through deployed sensor nodes. In addition, they can also share the collected data through a social networking approach.

Designed By:

- Kashif Ali   12ES124
- Abdullah Qazi   12ES131
- Fahad Fatah Qureshi   12ES111
- Sajid Ali Soomro   12ES107
- Shahzaib Memon   12ES130
- Ahsan Memon   12ES88

Supervisor: Engr. Mansoor Ali Teevno

Co-supervisor: Engr. Kamran Kazi

Broadcasting of Sound Signal from Computer to Speakers

Abstract:

The goal of this project is to create a system to wirelessly broadcast a sound signal from a computer to a set of speakers using Wi‑Fi. This allows one to play music files from a computer and have the sound come out of any speakers that are in range of the wireless network. The ideal use case for this product would involve the ability to have a computer in one room processing music files while multiple speakers throughout the house are actually playing the music. This would be particularly useful in a party setting where one would like to keep a computer safe in a locked room while still being able to use it to play music. It may be used in public addresses where loud speakers are far away from the mike so Wi-Fi signal can easily be reached at all those speakers that are in the range of Wi-Fi signal. Additionally, if a party is there are sets of speakers in multiple rooms, they can all be synced to the same audio source.
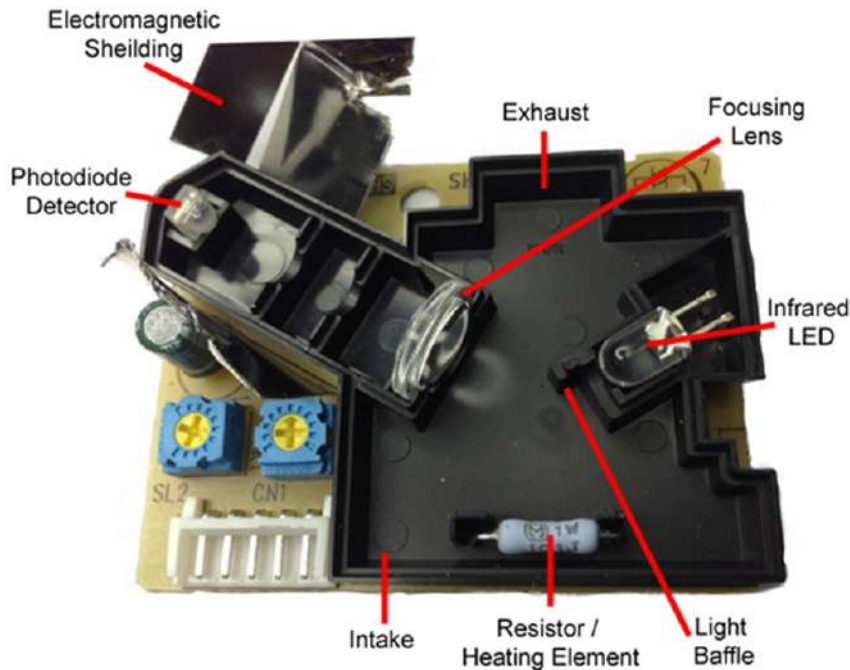
Designed By:

- Miqdad Hyder   12ES83
- Muhammad Ilyas   12ES70
- Junaid Ahmed   12ES105
- Ashfaque Ali   12ES69
- Muhammad Khan   12ES90
- Moti Ram   12ES120

Supervisor: Prof. Dr. Wajiha Shah

Co-supervisor: Engr. Mansoor Ali

Locator and Falls Detector for Dementia Patient

Abstract:

Falls are identified as a major health risk not only for the elderly but also for people with neurodegenerative diseases, such as dementia patients, and are considered as a major obstacle to independent living. Fast detection of falls would not only decrease the health risks by enabling quick medical response; but also make independent living a safe option for the elderly.

In this project, we propose a fall detector that uses the accelerometers and incorporates different algorithms for robust fall detection such as thresholding. We implemented our fall detector on a arduino based. We performed an extensive set of experiments for evaluating the performance of the implemented fall detector. To the best of our knowledge, although using smartphones for fall detection have been recently studied, evaluating the performance of robust algorithms, rather than thresholding, has not been explored before. Our experimental results show that compared to a simple thresholding algorithm.

Besides the fall detection capability, our implementation also provides location information using Google Maps about the person experienced the fall, using the available GPS interface on the smartphone/computer and a warning about the fall and the location information are transmitted to the users, such as alarm system (by means of online notification) which indicates that a person has gone out from specific area.
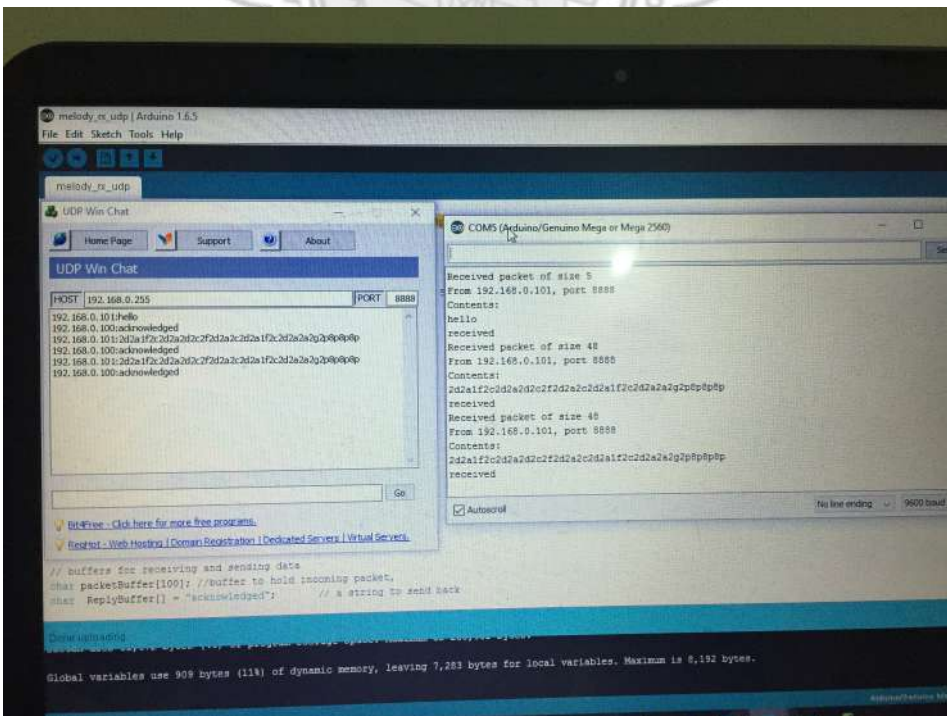
Designed By:

- Sadaf Bashir Memon   12ES02
- Sanam Saba Siyal   12ES37
- Parveen Shoro   12ES39
- Muntaha Shah   12ES46

Supervisor: Engr. Zaigham Abbas Shah

Co-supervisor: Engr. Aamir Patoli

FPGA Based Condition Monitoring of Industrial Motor

Abstract:

Overall system performance on a production line is one of the major concerns in modern industry where induction motors are present and their condition monitoring is mandatory. Preventive maintenance is one of the major concerns in modern industry where failure detection on motors increases the useful life cycle on the machinery. There is the necessity of low-cost instrumentation for condition measurement and analysis of current in the frequency domain, and this could be fixed to the machine for continuous monitoring to provide a reliable continuous diagnosis without needing trained staff. A noninvasive method based on the motor current has been analyzed here. The contribution of this work presents a methodology for single phasing fault detection in three phase induction motor. Signal spectrum of motor current enhance detectability for mechanically loaded and unloaded operating conditions of the motor. The proposed methodology is implemented in a low-cost field-programmable gate array (FPGA), giving a special-purpose system-on-a-chip (SoC) solution for condition monitoring of motor. Field-programmable gate arrays (FPGAs) are distinguished by being very fast and highly reconfigurable devices, allowing the development of scalable parallel architectures for spectrum analysis without changing the internal hardware.

Designed By:

- Shahbaz Pathan   12ES82
- Muhammad Yousif Wadhyo   12ES108
- Saifullah Memon   12ES74
- Ghulam Rasool Soomro   12ES79
- Muhammad Ali Jaffri   12ES87
- Shahid Noor Tunio   12ES96

Supervisor: Dr. Tayab Din Memon

Co-supervisor: Dr. Imtiaz Hussain Kalwar
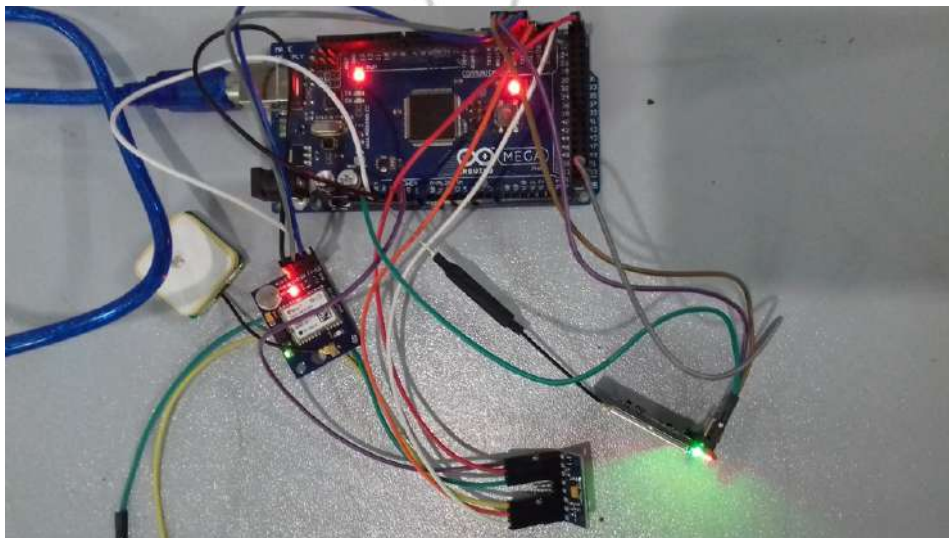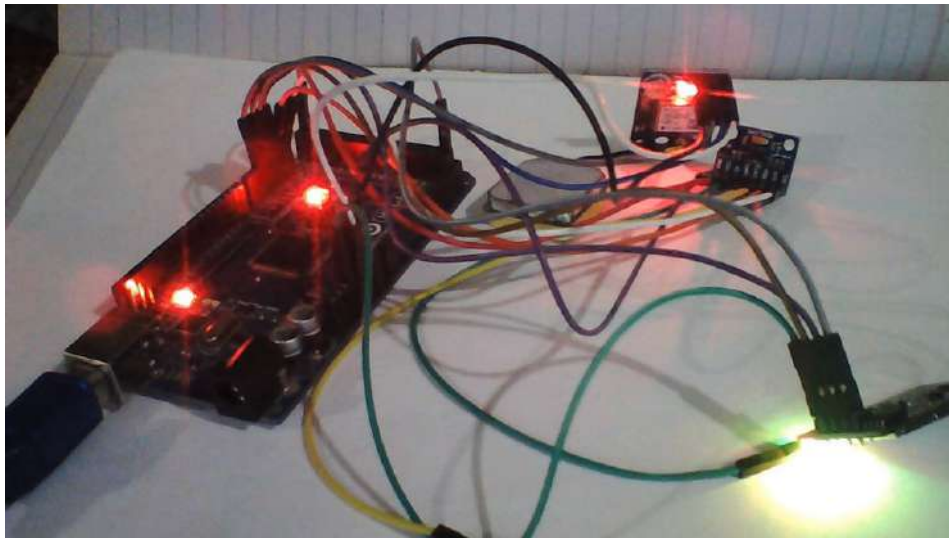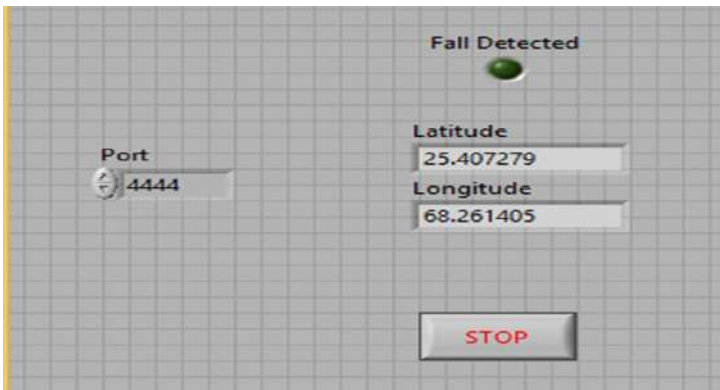
Design and Implementation of Electromyogram Acquisition System
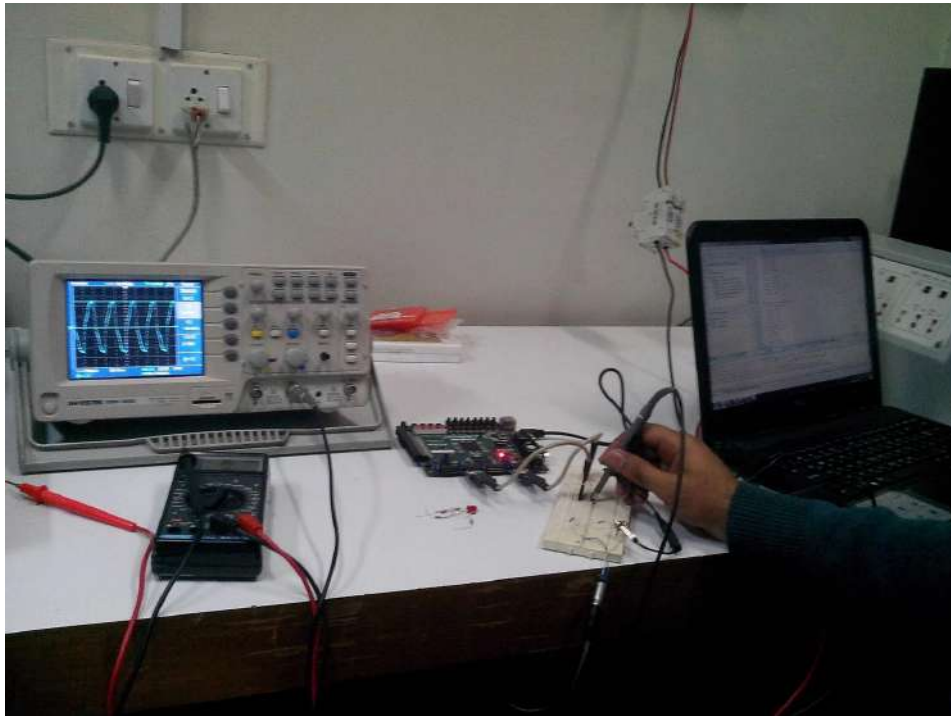
Abstract:

The aim of this project is to investigate Electromyogram (EMG) signals detected from human muscle. We have worked on the challenge of real time, non-invasive simultaneous acquisition and wireless transmission of human physiological parameters using easy and cost effective approach. The sensor is used to detect the signals from muscle. This signal will undergo modifications to eliminate low frequency interference, and establish an average profile which corrects for signal degradation. Before outputting this filtered signal by using EMG sensor. It also removes error and amplified to appropriate levels. The EMG signal from the bicep is then sent to computer for further processing. Our project is divided into two portions. First is the rotation of servo motor using obtained amplified EMG signal and the second portion includes the wireless transmission of obtained EMG signals using RF module. The design of hardware consist of muscle sensor, RF module, power supply, servo motor, microcontroller including arduino UNO and arduino mega 2560 and the LabVIEW software is used to interpret these signals. Electromyograph (EMG) signal detection and analysis can be utilized in various clinical and biomedical applications including generation of control signal for prosthetic tools.

Designed By:

- Arshad Ali Abbasi   12ES44
- Falak Naz   12ES47
- Pashma Habib   12ES06
- Pooja   12ES34
- Syed Deedar Shah   12-11ES18
- Zahid Malik   12ES33

Supervisor: Dr. Wanod Kumar

Co-supervisor: Engr. Hunain Memon

Energy Harvesting Through Radio Frequencies
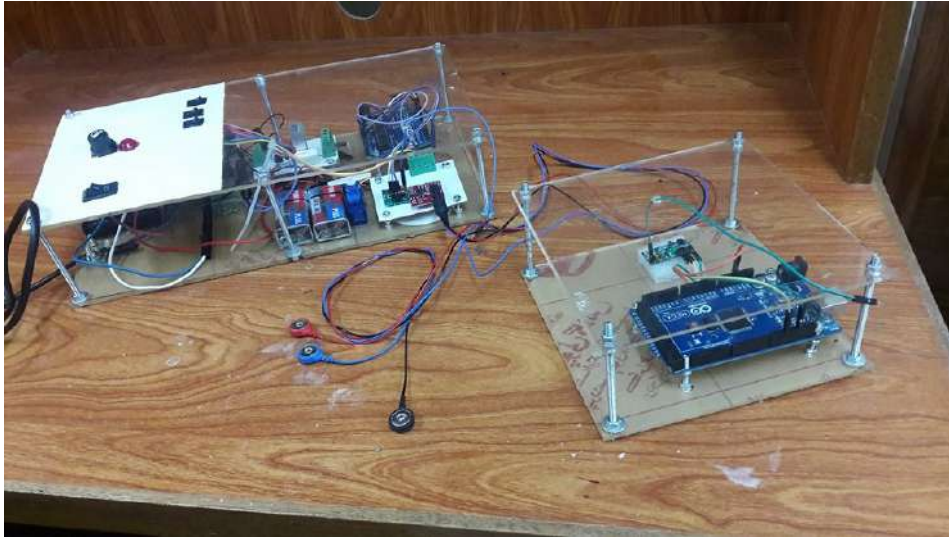
Abstract:

There is a strong need to produce more energy for our living. So we represent a more productive and useful way of energy production called "Energy Harvesting through Radio Frequencies". This project is funded by National ICT R&D. Energy harvesting can be used as an alternative energy source to supply energy to a primary power source and convert into a reliable electric output. Radio frequency energy harvesting, makes us able to recover energy from available RF electromagnetic sources (GSM, WIFI, CELL PHONES) to power wireless sensor nodes. This is a process that captures unutilized energy from environment that would otherwise be lost and uses this captured energy to run wireless communication systems. Energy Harvesting devices, efficiently and effectively capture, accumulate, store, condition and manage this energy and supply it in a form that can be used to perform a helpful task. With the detailed study of different antenna used for Energy Harvesting and some of them are tested, Microstrip patch is the best choice. This thesis book is based on designing of Energy Harvester Device which includes Capturing Energy from surroundings, Conversion into an Electrical Energy, AC to DC conversion, amplifying and Using Harvested Energy in our application.

Designed By:

- Junaid Ahmed Uqaili   12ES97
- Zafar Baloch   12ES94
- Shoaib Memon   12ES127
- Radika Manwani   12ES71
- Mahar-U-Nisa   12ES85
- Aisha Arain   12ES116

Supervisor: Prof. Dr. B.S.Chowdhry

Co-supervisor: Engr. Azam Rafique Memon
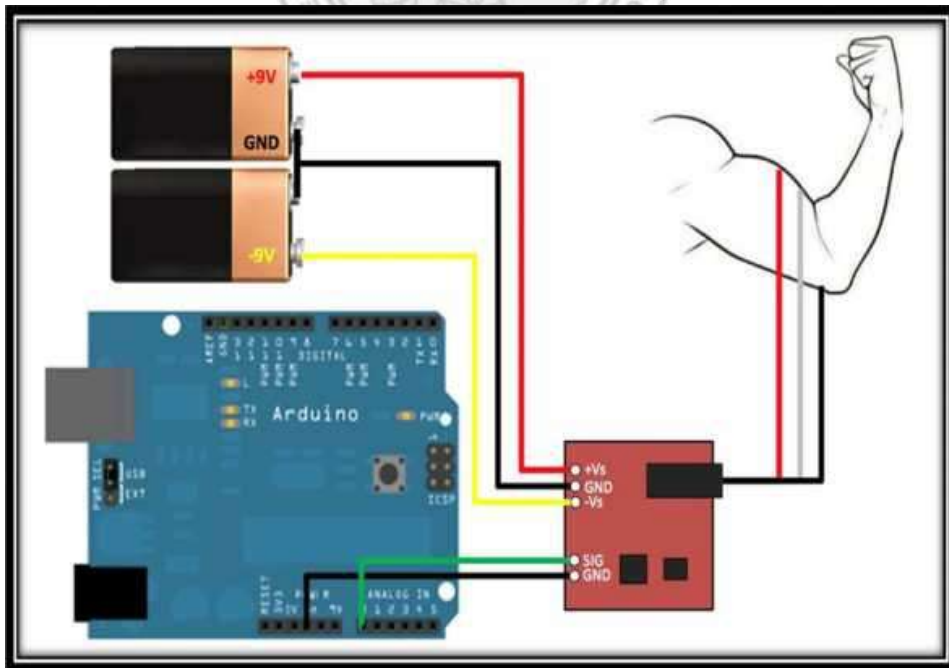
Smart RO (Reverse Osmosis) Plant
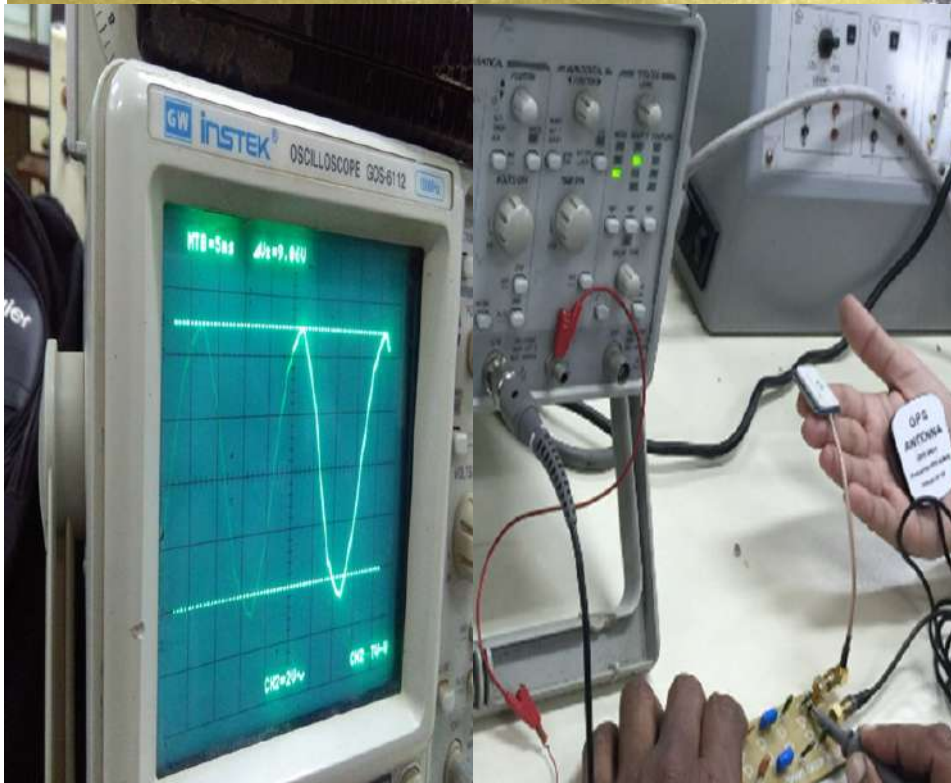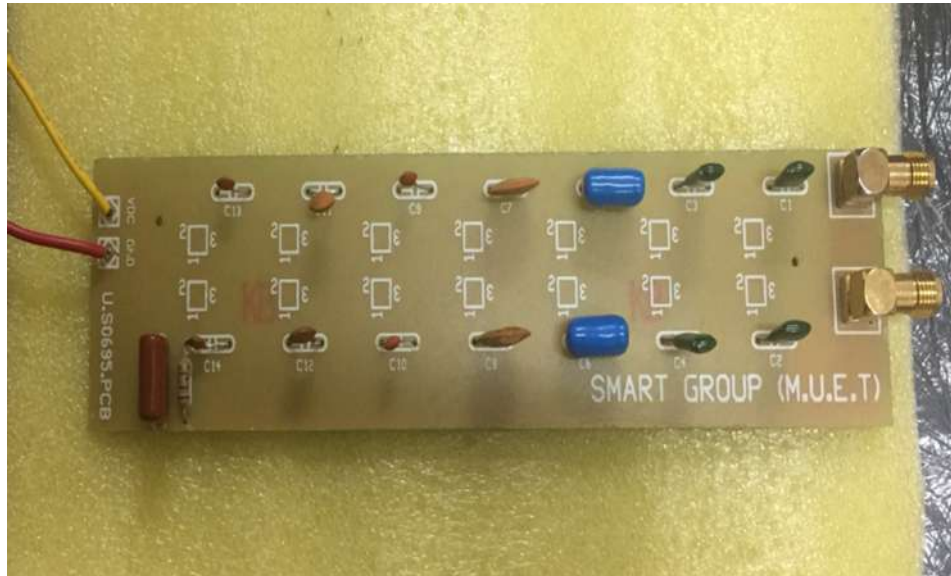
Abstract:

Now-a-days RO water treatment plants are becoming a widely used way of supply water to different areas due to the surge in global demand for water. Automation and monitoring is an important for RO (Reverse Osmosis) Plants especially in remote areas. An automatic system is needed to prevent difficulties when one does control and monitor the plant manually. In this system use Arduino microcontroller mega 2560 to control the system. Water level sensor to measure the water level in particular tank, water flow sensor to measure the flow of both product and reject water, pH sensor to check the quality of water and GSM SIM900D module to send and receive SMS. The system can measure the important parameters that influence the performance of system and give the measurement report upon requested message and also alert the user if any critical situation occurs at plant site. The system can placed at any location and can be controlled from single location.

Designed By:

- Bharat Lal   12ES106
- Farkhanda Aziz   12ES76
- Sandeep Sagar   12ES80
- Misbah Zulfiqar Arain   12ES77
- Raichand   12ES86

Supervisor: Dr. Wanod Kumar

Co-supervisor: Engr. Zaigham Abbas Shah

Implementation of Portable ECG Monitoring System

Abstract:

Heart disease is one of the major cause of death, especially for elderly population in many countries. During the heart attack, heart muscle became deprived of oxygen and will literally die if the arteries remains blocked. The first few hours are more critical in saving much of the dying heart muscle and preventing from permanent heart damage. Unfortunately, these symptoms varies and the most of the common reasons for such delays in medical treatment are due to the lack of early warning and patient's unawareness. The other reason could be the existing ambulatory ECG monitoring system that take a considerable amount of time and effort, record ECG signals in patients through long term hospitalization, and the ECG data have to be sent to the professionals for domestic analysis.

However, it is possible to detect the onset of the heart attack and eliminate patient error. In this thesis we present the idea of portable ECG monitoring system which provide a real time monitoring of heart diseases and can help medical decision making by detecting sporadic events of heart diseases as early as possible.

Although the conventional ECG monitoring devices helped the professionals to monitor and detect the heart diseases as quickly as possible but these devices are expensive and stationary along with that it had also a disadvantage, that patient had to undergo many tests and visit the hospitals many times. But with the portable device it is possible for a patient to perform these tests at home.

With this small portable device, it enables the people with abnormal heart conditions to perform measurement of activity of the heart anywhere and anytime and can take the results to their health care provider for evaluation. This device is convenient and easy to use and economical.

In our project the monitoring of portable ECG is equipped with batteries and small LCD. Its design mainly consist of two phases i.e. (i) Hardware (ii) Software. In the first phase we have used Electrodes, Amplifier, Filter, Microcontroller, and LCD display. In the second phase we have

gone through the Arduino programming which accepts the analog signal and then passes over to the TFT LCD interfaced with it for analyzing the ECG signal visually.

Designed By:

- Haresh Kumar   12ES84
- Bharti   12ES81
- Faraz Memon   12ES128
- Tayyaba Nawab   12ES45
- Haris Ali   12-11ES102
- Ali Ahmed   12ES03

Supervisor: Engr. Zaigham Abbas Shah

Co-supervisor: Dr. Syed Amjad Ali

Design & Development of Remote Power Monitoring System of Solar Panel using GSM Module

Abstract:

Energy crisis is the most important issue in today's world especially in Pakistan. Conventional energy resources are depleting as well as the prime factor for environmental hazards. Renewable energy resources are getting priorities in the whole world to reduce the dependency on conventional resources. Solar energy is attaining the focus as an important means of expanding renewable energy uses. Different methods are applied to increase the efficiency of the solar cell to reduce the cost. Solar tracking system is the most appropriate way to enhance the efficiency of the solar cells by tracking the sun accurately.

This proposed project presents the design and development of high-efficiency single axis solar tracking system with monitoring and controlling of energy extracted from a solar photovoltaic (PV) panel using AVR microcontroller platform in a highly secure environment. The main purpose of this project is to get the maximum exposure of sunlight to solar panel in order to increase efficiency with monitoring and controlling feature.

This research is divided into two stages, which are hardware and software development. Hardware development consists of movable solar panel, AVR microcontroller board, DC gear motor, a motor driver. Second phase which is Software Development is based on National Instrument Laboratory Virtual Instrument Engineering Workbench (NI LabVIEW) and it's interfacing with AVR microcontroller board. In which GUI interface for users is provided.

The proposed system not only extracting maximum energy from solar panels but also providing an effective and efficient method to real time control and monitor the progress of power generation and consumption within the system embedded in a highly secure environment. Although the monitoring interface uses real time measurement results to prepare the current and voltage graphs. This will also help to increase performance of the existing solar system also other alternative resources of energy such as wind energy and tidal energy. .In this

project monitoring feature includes power production, power consumption and power management with help of graphs and meters on GUI interface.

Controlling feature includes turn on/shutdown of solar system, increase or decrease energy consumption, generation and switching to other available system such as wind energy system etc. (in case failure of solar system). Security feature includes placing a movable camera which continuously monitors the place in which the system is installed. Camera moves automatically or manually as per requirement to provide a highly secure environment.

The proposed System is implemented in hardware. The algorithm and working prototype is developed. The experimental results show that the power generated by proposed Universal Solar Tracker increases as much as 14.5% in comparison with fixed angle or non-tilting solar panels. Results indicate that Universal Solar tracking system is reliable and efficient than stationary solar powers system.

Designed By:

- Vivek Rathi (G.L)   12ES68
- Rameez Iqbal (A.G.L)   12ES89
- Talha Ahmed   12ES123
- Ashfaque Khatti   12ES78
- Faraz Kachelo   12ES122
- Kassam Jan   12ES125

Supervisor: Dr. Tayab Din Memon
Co-supervisor: Dr. Arbab Nighat

Design & Development of Remote Power Monitoring System of Solar Panel using GSM Module

Our Previous Booklet
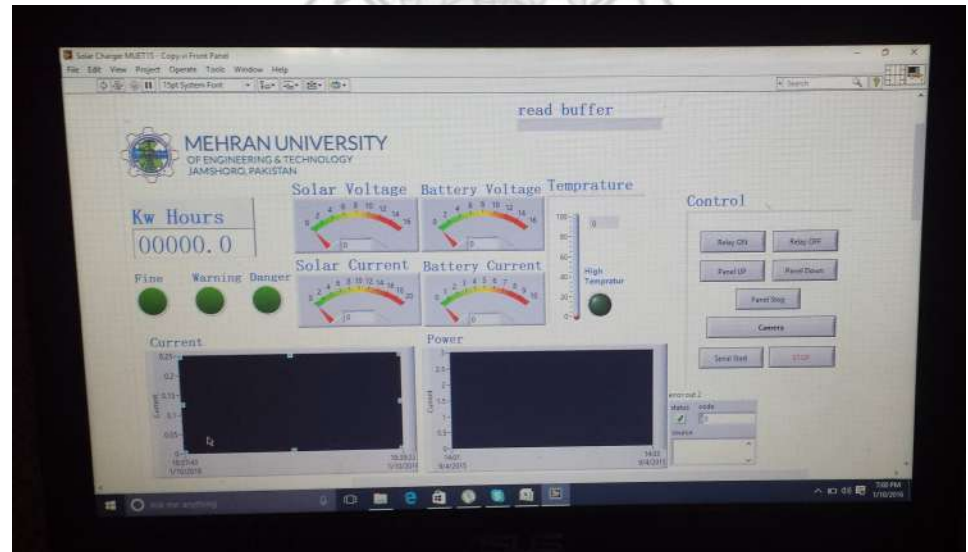
Personal Computer-Based Marine Engine Monitoring & Interactive Safety Control System
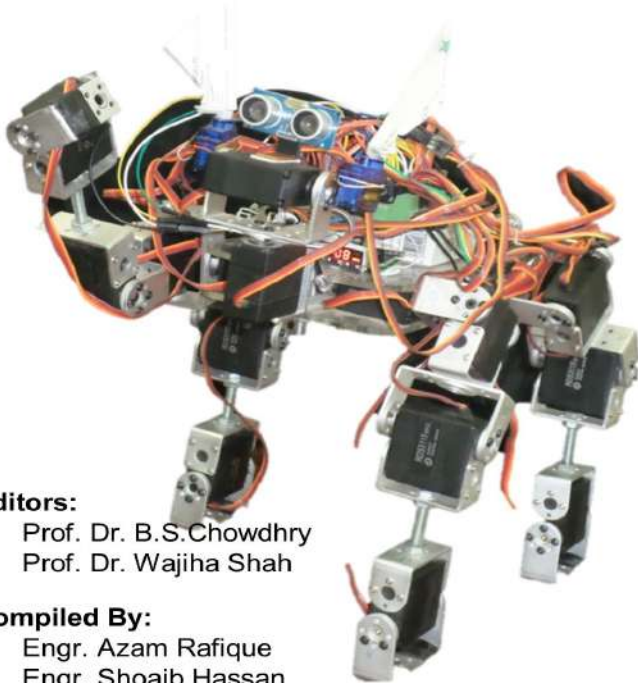
Abstract:

Engine Data acquisition (DAQ) is the process of measuring an electrical or physical parameters of an engine in real time such as voltage, current, humidity, temperature, pressure, or vibration with a control by computer.

Mostly the marine engine systems are huge and cover lot of space, so to keep track of engine's performance on regular time intervals is quite a tedious and complex task. Compared to traditional monitoring systems where staff workers had to check the changes in physical parameters again and again manually to keep track of engine's performance and engine anomalies, we have proposed a DAQ system with network of various sensors which would make this task of engine monitoring easy and less complex as compared to those traditional and time taking ways. PC-based Marine DAQ systems exploit the processing power, productivity, display, and connectivity capabilities of industry-standard computers providing a more powerful, flexible, and cost-effective measurement solution.

Remote Engine control is also of immense importance. We are needed to be warned about any unwanted and sudden changes in engine's performance which could give rise to problems and could also lead to engine failure and certain mishaps and accidents. So we have included a real time alarm indication system as a controlling element in our DAQ system in which each engine sensor parameter would be given desired ranges and set points, and then in case of any sudden changes or when data values are exceeded above desired set points, the alarm or buzzer would give the indication of these sudden changes so that we could turn off the system and rectify the problem before any kind of major failure or incident.

The Engine Data Acquisition System proposed in this project can also be modified and further designed for car engines, industrial machines, motor networks, train engines and aircraft engines etc.

Designed By:

- Raheel Qureshi   12ES118
- Dania Khan   12ES38
- Hozefa Husnain   12ES129
- Kundan   12ES101
- Anil Kumar   12ES75
- Irfan Ali   12ES67

Supervisor: Engr. Kamran Kazi

Co-supervisor: Engr. Aamir Ali Patoli
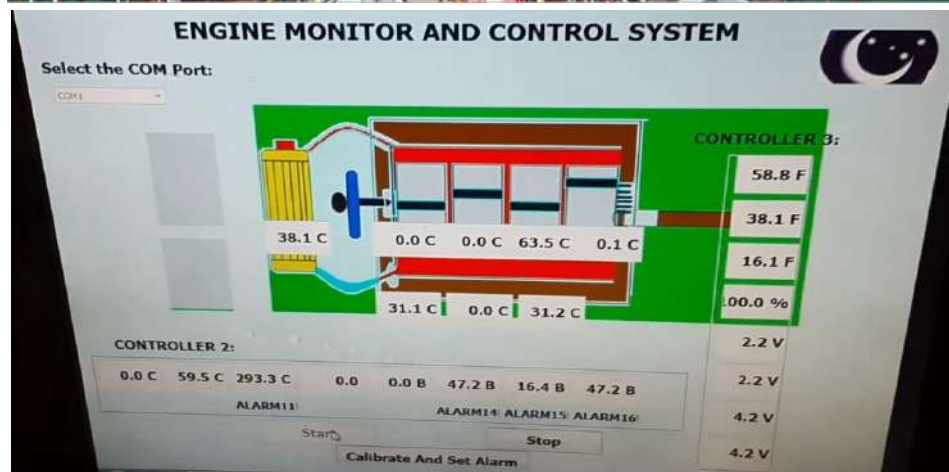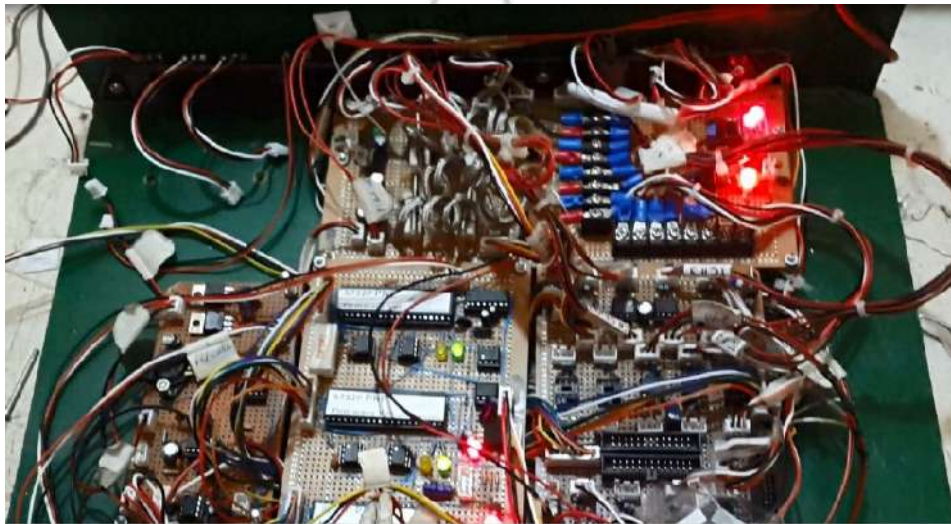
An Arduino Based Vehicle Tracking System

Abstract:

Most of the vehicle security or tracking system are useless once the vehicle has been stolen. You don't have any access to control the vehicle remotely. So there comes a need of the system which can locate your vehicle along with the option of controlling the vehicle remotely.

The aim of the Project is to design a system which can locate and control the vehicle remotely. When the user sends the SMS "Location" to the system, the system replies the location in the form of Latitude and Longitude values, which are input in the google maps by the user to find the Location of the vehicle graphically. The user analyze the situation and if founds the vehicle out of normal range or in an uncertain area then user has the ability to disable the vehicle by simply sending the SMS "Off" to the system. The user has also the right reserved to enable the engine again by sending SMS "On" to the system.

The system is based on four devices: Arduino Board which is the central processing unit of the system, GSM Shield responsible for building the remote communication between user and system, GPS Shield that locate the system position on the planet and finally Relay which is able to disable or enable the vehicle remotely by switching the circuitry inside vehicle ignition system.

Designed By:

- Saad Siddique Umrani   12ES08
- Sachal Rahoo   12ES28
- Sagar Menghwar   12ES59
- Dheeraj Brahman   12ES31
- Zain Memon   12ES04
- Faheem Bughio   12ES62

Supervisor: Dr. Arbab Nighat

Co-supervisor: Engr. Zaigham Abbas Shah

Brain computer Interface (BCI)
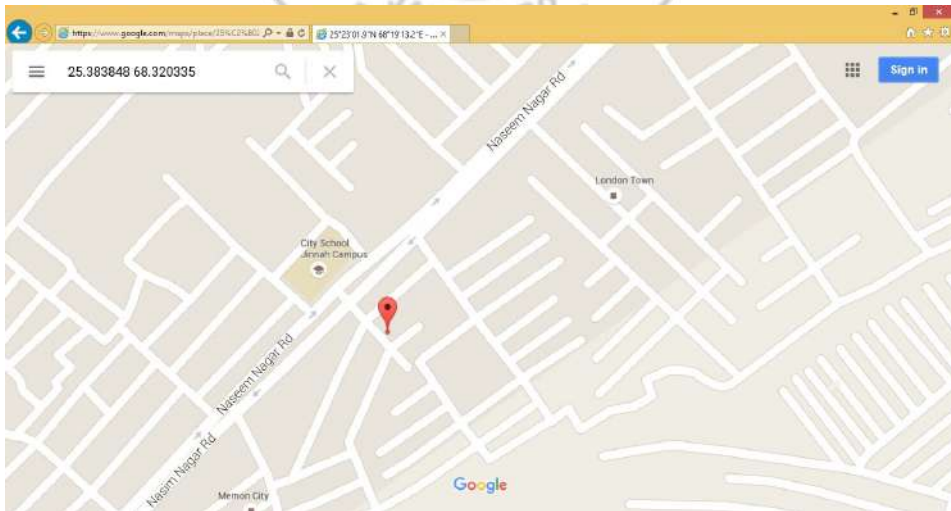
Abstract:

Brain-computer interfaces (BCIs) acquire brain signals, analyze them, and translate them into commands that are relayed to output devices that carry out desired actions. BCIs do not use normal neuromuscular output pathways. The main goal of BCI is to replace or restore useful function to people disabled by neuromuscular disorders such as damage cells of Motor movements which help them to perform tasks to control devices by means of electric impulses of brain. The initial demonstration based on Single-Channel Electro-Encephalography headset by Neurosky enables us to detect the Alpha waves and Beta waves and by concentrating and meditation we were able to visualize the waves. Further advancing the project we control gadgets using interfacing with Arduino microcontroller such as Turn on LEDs using eye blinks, turning ON the Television and control the Forward and Backward movements of an RC car.

Designed By:

- Attiq Bhayo   12ES93
- Elisha Nishwan   12ES126
- Hasnain Bhutto   12ES119
- Sajad Ali Katiar   12ES115
- Waqas Bhutto   12ES100

Supervisor: Engr. Khuhed Memon

Student's Profiles
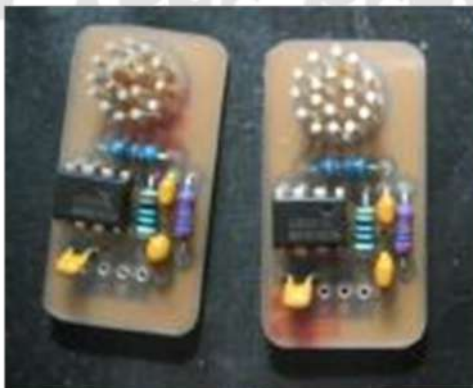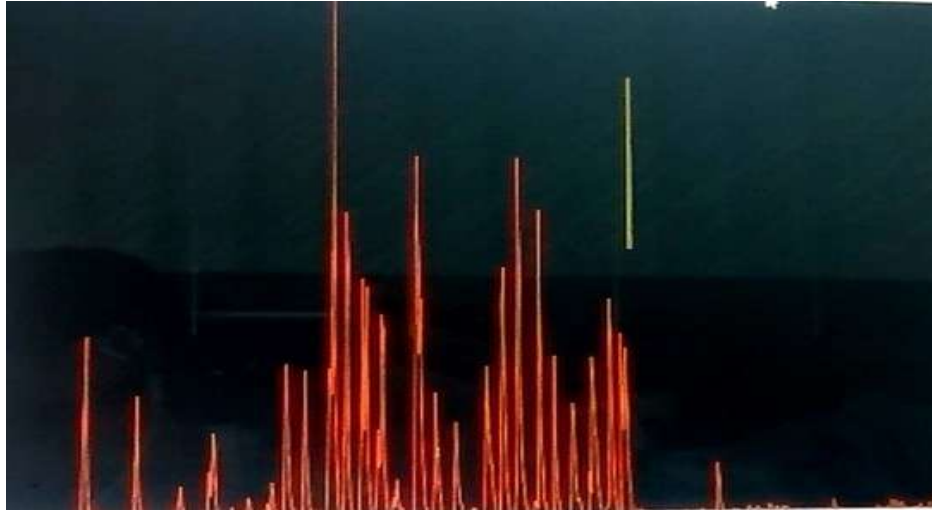
	Name:	Mr. Usama Qadeer
	Roll Number:	12ES01
	Email:	usamaqadeer@hotmail.com
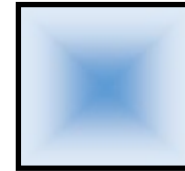
	Name:	Ms. Sadaf Bashir
	Roll Number:	12ES02
	Email:	sadafmemon1993@gmail.com

	Name:	Mr. Ali Ahmed Khan
	Roll Number:	12ES03
	Email:	ali.kk95@yahoo.com

	Name:	Mr. Zain Ali Memon
	Roll Number:	12ES04
	Email:	mehranian.student@hotmail.com

	Name:	Mr. Allah Bux Faheem
	Roll Number:	12ES05
	Email:	faheemahmed12es05@gmail.com

	Name:	Ms. Pashma Habib
	Roll Number:	12ES06
	Email:	pashmahabib@gmail.com
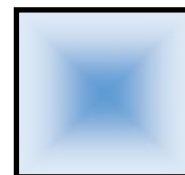
	Name:	Ms. Mahenoor
	Roll Number:	12ES07
	Email:	12electronics07@gmail.com

Student's Profiles

Name:	Mr. Saad Siddique
Roll Number:	12ES08
Email:	saadumrani@gmail.com

Name:	Ms. Maleeha Fatima
Roll Number:	12ES09
Email:	maleeha.shk@gmail.com

Name:	Ms. Mahnoor Fayaz Memon
Roll Number:	12ES10
Email:	mahnoormaymon@gmail.com

Name:	Mr. Ahsen Ahmed
Roll Number:	12ES11
Email:	ahsenshaikh12es11@gmail.com

Name:	Ms. Hima Zafar
Roll Number:	12ES12
Email:	muet12es12@gmail.com

Name:	Ms. Aqsa Abbasi
Roll Number:	12ES13
Email:	aqsaabbasi@rocketmail.com

Name:	Mr. Lutuf Ali Shah/Halar
Roll Number:	12ES14
Email:	lutufalishah@gmail.com

Student's Profiles

Name:	Ms. Sanjha Khan
Roll Number:	12ES15
Email:	sanjha16khan@gmail.com

Name:	Mr. Arslan Ali
Roll Number:	12ES16
Email:	12es16@student.muet.edu.pk

Name:	Ms. Priya Devi
Roll Number:	12ES17
Email:	priyalohana17@gmail.com

Name:	Mr. Sadam Hussain
Roll Number:	12ES18
Email:	sadam.rind18@yahoo.com

Name:	Mr. Asadullah
Roll Number:	12ES19
Email:	aasad_rahoo@hotmail.com.

Name:	Ms. Fatima Zareen
Roll Number:	12ES20
Email:	fatimahzareen@gmail.com

Name:	Mr. Sagar
Roll Number:	12ES21
Email:	12es21studnt.muet@gmail.com

Student's Profiles

Name:	Mr. Shahnawaz Khan
Roll Number:	12ES22
Email:	shahz.1992@gmail.com

Name:	Mr. Ameet Kumar
Roll Number:	12ES23
Email:	aklanghani@gmail.com

Name:	Mr. Bilal Hussain
Roll Number:	12ES24
Email:	bilalhussain_abbasi@yahoo.com

Name:	Ms. Aunsa Shah
Roll Number:	12ES25
Email:	aunsa_shah@yahoo.com

Name:	Mr. Aamir Khan
Roll Number:	12ES26
Email:	aamirmassan@gmail.com

Name:	Mr. Amir Ali
Roll Number:	12ES27
Email:	

Name:	Mr. Sachal Rahoo
Roll Number:	12ES28
Email:	sachal_rahoo@hotmail.com

Name:	Mr. Saadullah Memon
Roll Number:	12ES29
Email:	

Name:	Mr. Muzamil Ahmed
Roll Number:	12ES30
Email:	jalaliyasaajanali@gmail.com

Name:	Mr. Dheeraj Brahman
Roll Number:	12ES31
Email:	rajherau@gmail.com

Name:	Mr. Muhammad Zubair
Roll Number:	12ES32
Email:	

Name:	Mr. Zahid Ali Malik
Roll Number:	12ES33
Email:	zm63225@gmail.com

Name:	Ms. Pooja
Roll Number:	12ES34
Email:	poojalohana9@gmail.com

Name:	Ms. Maheen Gul
Roll Number:	12ES35
Email:	krazia94@yahoo.com

Student's Profiles

	Name: Ms. Sanam Saba **Roll Number:** 12ES37 **Email:** benazirsiyal@gmail.com
	Name: Ms. Dania Khan **Roll Number:** 12ES38 **Email:** khandaniaameer@gmail.com
	Name: Ms. Parveen **Roll Number:** 12ES39 **Email:** parveenshoro@gmail.com
	Name: Ms. Qudsia Memon **Roll Number:** 12ES40 **Email:** qudsiamemon@yahoo.com
	Name: Ms. Farheen Irshad **Roll Number:** 12ES41 **Email:** farheen.muet12@gmail.com
	Name: Mr. Amir Ali **Roll Number:** 12ES42 **Email:** 12es42@student.muet.edu.pk
	Name: Mr. Muhammad Hanif **Roll Number:** 12ES43 **Email:** haniflashari43@gmail.com

	Name: Mr. Arshad Ali **Roll Number:** 12ES44 **Email:** arshad.kalhoro44@gmail.com
	Name: Ms. Tayyaba Nawab **Roll Number:** 12ES45 **Email:** nawab_taiba@yahoo.com
	Name: Ms. Muntaha Shah **Roll Number:** 12ES46 **Email:** muntahashah46@yahoo.com
	Name: Ms. Falak Naz **Roll Number:** 12ES47 **Email:** falakpathan.47@gmail.com
	Name: Mr. Syed Muneeb Ahmed **Roll Number:** 12ES48 **Email:** muneeb042@gmail.com
	Name: Ms. Bushra Shaikh **Roll Number:** 12ES50 **Email:** bushra_shaikh23@yahoo.com
	Name: Ms. Marina Joseph **Roll Number:** 12ES51 **Email:** maggijoseph51@gmail.com

Student's Profiles

	Name:	Ms. Bushra
	Roll Number:	12ES52
	Email:	bushra_es52@yahoo.com

	Name:	Ms. Areeba Kainat
	Roll Number:	12ES53
	Email:	areebashaikh578@yahoo.com

	Name:	Mr. Bilal Athar Jawed
	Roll Number:	12ES54
	Email:	bilal.athar@hotmail.com

	Name:	Mr. Shahzeb Ali
	Roll Number:	12ES55
	Email:	shahzebmemon500@yahoo.com

	Name:	Mr. Asif Jalil
	Roll Number:	12ES56
	Email:	asif.jb@gmail.com

	Name:	Mr. Sagar Geno Meghwar
	Roll Number:	12ES59
	Email:	SagarDharmani59@gmail.com

	Name:	Mr. Muhammad Awais
	Roll Number:	12ES60
	Email:	qadir_awais@yahoo.com

	Name:	Mr. Hasnain Farooq
	Roll Number:	12ES61
	Email:	

	Name:	Mr. Faheem Ali Bughio
	Roll Number:	12ES62
	Email:	faheembughio4@gmail.com

	Name:	Mr. Fida Hussain
	Roll Number:	12ES63
	Email:	sahitofida63@gmail.com

	Name:	Mr. Aafaque Ahmed
	Roll Number:	12ES64
	Email:	

	Name:	Mr. Muhammad Afzal
	Roll Number:	12ES65
	Email:	afzalmemon1992@gmail.com

	Name:	Mr. Harish Kumar
	Roll Number:	12ES66
	Email:	harish3055@gmail.com

	Name:	Mr. Irfan Ali
	Roll Number:	12ES67
	Email:	

Student's Profiles

Name:	Mr. Vivek Rathi
Roll Number:	12ES68
Email:	vivekrathi93@hitmail.com

Name:	Mr. Ashfaque Ali
Roll Number:	12ES69
Email:	ashfaque.ali12es69@gmail.com

Name:	Mr. Muhammad Ilyas
Roll Number:	12ES70
Email:	m.ilyassamejo@yahoo.com

Name:	Ms. Radika
Roll Number:	12ES71
Email:	radikamanwani@hotmai.com

Name:	Mr. Muhammad Azeem Panhwar
Roll Number:	12ES72
Email:	engineer_azeem@yahoo.com

Name:	Mr. Shakeel Ahmed Samoon
Roll Number:	12ES73
Email:	shakil.samoon@gmail.com

Name:	Mr. Saifullah Memon
Roll Number:	12ES74
Email:	saifullah.muet@gmail.com

Student's Profiles

Name:	Mr. Anil Kumar
Roll Number:	12ES75
Email:	mr.kalai@hotmail.com

Name:	Ms. Farkhanda Awan
Roll Number:	12ES76
Email:	farkhanda-awan@hotmail.com

Name:	Ms. Misbah Zulfiqar Arain
Roll Number:	12ES77
Email:	misbah.a@hotmail.com

Name:	Mr. Aafaque Ahmed
Roll Number:	12ES78
Email:	khattiashfaque@gmail.com

Name:	Mr. Ghulam Rasool
Roll Number:	12ES79
Email:	grsoomro79@gmail

Name:	Mr. Sandeep Sagar
Roll Number:	12ES80
Email:	sagarsandeep026@gmail.com

Name:	Ms. Bharti Bai
Roll Number:	12ES81
Email:	nishalohana.1281@gmail.com

Student's Profiles

Name:	Mr. Shahbaz Ali
Roll Number:	12ES82
Email:	qazishahbazali@gmail.com

Name:	Mr. Miqdad Hyder
Roll Number:	12ES83
Email:	miqdadjunejo@yahoo.com

Name:	Mr. Haresh Kumar
Roll Number:	12ES84
Email:	hksachdev@ymail.com

Name:	Ms. Mahrau Nisa
Roll Number:	12ES85
Email:	maharunisa.memon@gmail.com

Name:	Mr. Raichand
Roll Number:	12ES86
Email:	rai12es86@gmail.com

Name:	Mr. Muhammad Ali Jaffri
Roll Number:	12ES87
Email:	mmuhammadali424@gmail.com

Name:	Mr. Ahsan Ali
Roll Number:	12ES88
Email:	ahsanalimemon@hotmail.com

Name:	Mr. Rameez Iqbal
Roll Number:	12ES89
Email:	rameez.iqbal26@gmail.com

Name:	Mr. Muhammad Khan
Roll Number:	12ES90
Email:	muhammad90khan@gmail.com

Name:	Mr. Muhammad Awais Memon
Roll Number:	12ES91
Email:	awais6681@gmail.com

Name:	Mr. Attiq-ur-Rehman Bhayo
Roll Number:	12ES93
Email:	attiq-b@hotmail.com

Name:	Mr. Zafarullah
Roll Number:	12ES94
Email:	zafarbalouch94@gmail.com

Name:	Mr. Bilal Ahmed
Roll Number:	12ES95
Email:	

Name:	Mr. Shahid Noor Tunio
Roll Number:	12ES96
Email:	shahidnoortunio@yahoo.com

Student's Profiles

Name:	Mr. Junaid Ahmed
Roll Number:	12ES97
Email:	junaid.uqaili@gmail.com

Name:	Mr. Muhammad Akram Solangi
Roll Number:	12ES99
Email:	akram.muet@gmail.com

Name:	Mr. Waqas Ali Bhutto
Roll Number:	12ES100
Email:	wickydemon@yahoo.com

Name:	Mr. Kundan Jaishankar
Roll Number:	12ES101
Email:	mr.kj94@ymail.com

Name:	Mr. Muhammad Shafique Soomro
Roll Number:	12ES102
Email:	shafik.soomro@gmail.com

Name:	Mr. Asif Nawaz
Roll Number:	12ES103
Email:	anb.149@gmail.com

Name:	Mr. Waleed Aslam kaimkhani
Roll Number:	12ES104
Email:	waleedaslam57@yahoo.com

Name:	Mr. Junaid Ahmed
Roll Number:	12ES105
Email:	junaid_12es105@yahoo.com

Name:	Mr. Bharat Lal
Roll Number:	12ES106
Email:	jessani106@gmail.com

Name:	Mr. Sajid Ali
Roll Number:	12ES107
Email:	sajidalisoomro11@gmail.com

Name:	Mr. Muhammad Yousif
Roll Number:	12ES108
Email:	muhammadyousif110@hotmail.com

Name:	Mr. Javaid Ahmed Tanwari
Roll Number:	12ES109
Email:	javaid_tanwari@live.com

Name:	Mr. Sarfraz Soho
Roll Number:	12ES110
Email:	sarfrazsoho@ymail.com

Name:	Mr. Fahad Fatah
Roll Number:	12ES111
Email:	fahad.fatah.qureshi@gmail.com

Student's Profiles

Name:	Mr. Shakeel Ahmed Jamali
Roll Number:	12ES113
Email:	shakeel113ahmed@gmail.com

Name:	Mr. Sajad Ali
Roll Number:	12ES115
Email:	sajjadalikatiar@yahoo.com

Name:	Ms. Aisha Bibi
Roll Number:	12ES116
Email:	sagitarious116@gmail.com

Name:	Mr. Raheel Javaid
Roll Number:	12ES118
Email:	rjfq93@gmail.com

Name:	Mr. Hasnain Ali
Roll Number:	12ES119
Email:	hasnain.bhutto@yahoo.com

Name:	Mr. Moti Ram
Roll Number:	12ES120
Email:	ramsoother@gmail.com

Name:	Mr. Farooq Ahmed Dahri
Roll Number:	12ES121
Email:	farooqueahmed121@gmail.com

Name:	Mr. Faraz Kachhelo
Roll Number:	12ES122
Email:	kachelofaraz@gmail.com

Name:	Mr. Talha Ahmed
Roll Number:	12ES123
Email:	

Name:	Mr. Kashif Ali
Roll Number:	12ES124
Email:	kashifnizamani@gmail.com

Name:	Mr. Kassam Jan
Roll Number:	12ES125
Email:	farooqueahmed47@yahoo.com

Name:	Mr. Elisha Nishwan
Roll Number:	12ES126
Email:	elishanishwan@outlook.com

Name:	Mr. Shoaib Ahmed
Roll Number:	12ES127
Email:	shoaib.memon40@yahoo.com

Name:	Mr. Faraz Memon
Roll Number:	12ES128
Email:	farazmemon.12es128@gmail.com

Student's Profiles

Name:	Mr. Hozefa Husnain
Roll Number:	12ES129
Email:	Hozefa.52@hotmail.com

Name:	Mr. Shahzaib Memon
Roll Number:	12ES130
Email:	shahzaib.sm26@gmail.com

Name:	Mr. Abdullah Qazi
Roll Number:	12ES131
Email:	abdullah.qazi92@gmail.com

Name:	Mr. Rehman Ata
Roll Number:	12-11ES115
Email:	rehman.atta2@yahoo.com

Name:	Mr. Shaheryar Talpur
Roll Number:	12-11ES122
Email:	devil_grave786@hotmail.com

Name:	Mr. Zain Ali
Roll Number:	12-11ES30
Email:	

Name:	Haris Ali
Roll Number:	12-11ES102
Email:	harislatif46@yahoo.com

The Steps to Getting Your Research Published

Most scientists do not get a formal training in scientific writing or manuscript preparation, although the publication of research papers is what differentiates scientists who succeed from those who don't. It is important to keep in mind the whole process and as you grow as a scientist, you'll see that writing articles and grants will actually take most of your time.

So what are the different steps that you need to take to publish scientific papers?

1) Obtain results. Of course, before you actually publish an article, you need to have significant results in the field you are investigating, otherwise what would you write about? Actually sometimes you can circumvent this requirement by publishing reviews or other types of articles, but the most typical original articles are based on the results of your work and projects and are usually also published in more important journals.

2) Define roles and authorship. Usually even before you start a project, you have to decide who are the people who are going to be involved in it. This is important all along the time course of the project but also to decide who are going to be the final authors of your paper.

3) Data and statistical analysis. The easiest way to start is to prepare the results of your project, through data and statistical analysis. This will permit you to perform also the next step, which is to prepare the tables and graphs for the manuscript.

4) Prepare the graphics. The tables and graphs are probably the most important of your article. This is where all your main results will be condensed and this is also sometimes the only part people will read. It is good to prepare them at the beginning of your writing process, because they serve as a guide for the elaboration of the rest of the article and will define the sections.

5) The first draft. Prepare a first version of you article including title page, introduction, material and methods, results, discussion, conclusions and references. Each part is really distinct in its format and purpose. Pay

close attention to other articles if you are not sure how to write or what to write in each part. You can also check journals' guidelines at this point to have an idea of the requirements for each section.

6) The abstract. This is the summary of your article. It is very important because that's what people will use to determine if your article is worth reading or not. It should contain 4 sections, introduction, material and methods, results and conclusions. In general, abstracts shouldn't be more than 250 words long. The information contained in the abstract should be the minimal and sufficient information to understand the totally of your article's content.

7) Editing and final review. Together with the other authors, review carefully your manuscript and make sure it does not contain errors. Make sure also that everyone feels comfortable with the content and listen to recommendations from other authors.

8) Choose a journal. You can choose between thousands of different journals for your publication, so take time to think about it carefully. You can check where studies similar to yours have been published, ask around you or check directly the scopes and impact factor or the journals in your field.

9) Format the manuscript. After choosing the journal, it is time to format your manuscript in concordance to the recommendations of the journal publisher.

10) Submission. Once you are ready to send your article, you can submit it directly online, through the journal's homepage to an editor who will start the revision process by sending your manuscript to 2 or more referees.

11) Revision. If the editor of the journal accepts to review your article, it will be sent back to you within a couple of months with the comments from the different reviewers. At this point, you will need to answer the comments point by point in order to satisfy totally the referees, who would then give a positive recommendation for publication to the editor of the journal.

12) Proofreading. This is the final step. Now you just need to make sure your article is perfect before it is published and printed.

Department of Electronic Engineering

Electronic Engineering is an increasingly important engineering discipline that significantly affects the other disciplines of engineering. It is in great demand in both developed and developing nations. Continual advances in electronic engineering in the areas of materials, processes, devices, and circuits have been leading to rapid advances, in the existing applications of engineering as well as in the emergence of new applications. To harness the full potential of electronic engineering developments and further advance the state of electronic technology, it is important to have strong programs to educate and train individuals in this key discipline of engineering.

Electronic Engineering artifacts play major role in the evolution of mankind and culture. Today, the Electronic Engineering profession and the education of engineers are challenged by the rapidly changing nature of those engineering systems which determine what is meant by 'modern technology'. The advent of Microprocessor Technology has probably made Electronic Engineering the exemplary technology of this century, along with emergence of new species, with higher levels of integration. The existing and potential uses and applications of Electronics are multitudinous. Indeed it is difficult to point to any industrial or commercial area which may not eventually be affected by this technology.

Address:	Department of Electronic Engineering, Mehran University of Engineering & Technology, Jamshoro
E-mail:	chairman.es@admin.muet.edu.pk
Phone:	+92-22-2771334