Sardar Vallbhbhai Patel Institute of Technology, Vasad

Shri B.C.Patel
Chairman,
SVIT, Vasad

“The industry institute interactions, induced by GTU through its innovation council and innovation sankuls, the students are able to grasp the Engineering Approaches and get a great opportunity to observe and be a part of industries.

We, at SVIT, are always eager to contribute towards betterment of education.

Many Congratulations!!”

Sardar Vallbhbhai Patel Institute of Technology ,Vasad

Prof Ashok R. Pandya
Co-Chairman (Academic),
Innovation Sankul Vadodara-1,
GTU Innovative Council

"I feel very happy to convey my feelings of all-round satisfaction and fulfillment with the manner in which the innovation system was conceived, organized and executed with perfection and in totality with the cooperation of all the participants including the students, faculty and industries. It has achieved the primary objective of inculcating in the young minds the spirit of creativity and innovation. They have also learnt a lot in shaping their communication skills during their ***shodh yatra***. In the process, many thought-provoking ideas and useful projects have been developed. It is our mission to provide platform for innovative design and development of products at cost-effective price. If we continue this mission for long, that day would not be far away when India including Gujarat would be a super power to reckon with.

I congratulate them and give them my hearty compliments for their important contribution to the engineering fraternity, society and national economy. I express my gratefulness to all the participants including the office-bearers of the *Vadodara sankul* for their cooperation and dedication to the success of this Project.

To conclude, I would like to convey my sincere regards to honorable GTU Vice Chancellor Dr. Akshai Aggarwal and Mr. Hirenmay Mahanta, MD, Techpedia for the kind opportunity. A special vote of thanks to our honorable chairman Mr. Jagdishbhai Patel, for granting permission and resources and reposing faith towards various sankul activities. Last but not the least, special thanks to Ms. Avi Sabavala, VCCI President to honor us as co-chairperson of sankul and her kind cooperation. "

Sardar Vallabhbhai Patel Institute of Technology (SVIT) is a reputed engineering institute affiliated with Gujarat Technological University and approved by AICTE, established in the year 1997.

At present, we offer UG Engineering Degree Courses in 8 branches i.e. Mechanical, Electrical, Civil, Computer Engg., Information Technology, Electronics & Communication, Instrumentation & Control, and Aeronautical. We also offer PG Courses in MCA, Civil, Mechanical, Computer and Electronics & Communication Engineering. An Architecture college in the campus offers UG degree course.

In the academic year 2013-2014, 404 B.E. final year students of our institute are performing total 150 industrial defined projects (IDP) in various industries in Gujarat and total 245 students are performing total 110 User Defined Project (UDP). The summary detail of the same is as under.

Department	**IDP**		**UDP**	
	No. of IDP	**No. of Students**	**No. of UDP**	**No. of Students**
Instrumentation & Control	11	27	27	41
Mechanical Engineering	12	36	10	32
Civil Engineering	13	56	03	13
Electrical Engineering	14	42	07	20
Computer Engineering	18	69	33	37
Information & Technology	43	87	08	17
Aeronautical Engineering	03	08	19	54
Electronics & Communication	36	83	13	27
TOTAL	**150**	**404**	**110**	**245**

UDISHA (Universal Development of Integrated Skills through Higher Education) club of Sardar Vallabhhai Patel Institute of Technology (SVIT), Vasad had organized the expert lectures on “Patent Search Methodology” on 8th, November 2012 at main Auditorium of college. The lectures were conducted by an expert from GTU and IDP/UDP coordinator of the various departments.

UDISHA (Universal Development of Integrated Skills through Higher Education) club of Sardar Vallabhhai Patel Institute of Technology (SVIT), Vasad

had organized the expert lecture on "Patent Search Methodology and Analysis by Final Year Engineering Students" on 19th and 20th , September 2013 at college. The event was coordinated by Dr.V.R.Panchal, Principal and Patron of UDISHA club SVIT, Vasad and Prof.P.R.Gandhi, Asst. Prof.,Electrical Dept. and Coordinator of UDISHA club of SVIT, Vasad.

As part of OSTC activities, SVIT has organized workshop on **LaTex Software** on 6th February, 2014 during 2.00 P.M. to 4.30 P.M. for faculty members of college. Inaugural function was started on at 2.00 P.M. and completed at 2.30 p.m. Twenty two faculty members of the various departments of SVIT College have been participated in the workshop. Welcome speech and information regarding to OSTC club activity and spoken-tutorial was given by Prof. P.R.Gandhi. A Faculty member of IIT-Bombay had explained and discussed about spoken tutorial through via Skype.

Different activities during 2012-13 in various departments of SVIT, Vasad

Department	Conference	Seminar	Workshop
Instrumentation & Control	01	01	04
Mechanical Engineering			
Civil Engineering		05	03
Electrical Engineering	01	-	02
Computer Engineering			
Information & Technology	01	06	05
Aeronautical Engineering			
Electronics & Communication	01	05	

Different activities during 2013-14 in various departments of SVIT, Vasad

Department	Conference	Seminar	Workshop
Instrumentation & Control	01	02	01
Mechanical Engineering	01		
Civil Engineering	01	01	01
Electrical Engineering	01		01
Computer Engineering	01		
Information & Technology	01		05
Aeronautical Engineering			
Electronics & Communication	01		

Pedagogy Club activity

Department : Instrumentation & Control

	Sr.No.	Name Of Staff	Title
2012-13	1	Prof. Archana B. Yadav	International Conference on Advances in Technology and Engineering 2013 (ICATE-2013)
	2	Prof. Ankit K. Shah	Nuicone-2012
	3	Prof. Pooja Shukla	Workshop on Graphical Process Control Using LabView
	4	Prof. Jainam Shah	Workshop on Graphical Process Control Using LabView
	5	Prof. Janki N. Chotai	Workshop on Embedded system
	6	Prof. Archana	ILC on Control Automation mesurement and

		Yadav	Instrumentation
	7	Prof.Dipesh H. Shah	Computational method using MATLAB
	8	Prof.Dipesh H. Shah	Variable Structure & Sliding mode Control

2013-14	1	Prof Hardik R Patel	Design & Development of Automation using Lab view
	2	Prof. Dhruv M Patel	Design & Development of Automation using Lab view

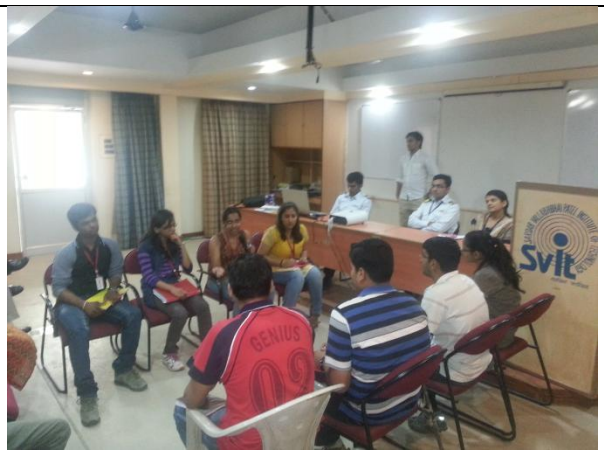
Department : Civil

Sr. No.	year	Topic name	Duration
1	2012-13	Resent trends in Urban transportation	2/2/2012
2		Resent trends in Geotechnical Engineering	9/2/2012
3		Urban water resources Management	5/3/2012
4		Advanced treatment technologies in industrial Pollution control	19/3/2012
5		National conference on Hydraulics and Water Resources	22/3/2012
6		International Congress of Environmental Research	29/3/2012
7	2013-14		4/1/2014

		Introduction to Base isolation	

ORGANIZED TECHNICAL EVENTS AT DEPARTMENT OF AERONAUTICAL ENGINEERING, SVIT VASAD

Air show, THIS IS AN EVENT WHICH GIVES FLIGHT TO OUR ANNUAL TECH-FEST AND RECIEVES MAXIMUM ENTRIES. Our staff and students organize this event and enjoy the flight of the micro-lite aircraft	 **Radio Control 3D Plane is Performing Aerobatics**  **Landing of a Radio Control 3D Plane**

Technical Debate Competition, THIS INCREASES THE COMMUNICATION SKILLS AND ALSO GIVES AN IMPETUS TO INTER-PERSONAL DEVELOPMENT	 **Debate Competition among students of Aeronautical Engg.**
EXPERT TALK, THIS AS WE KNOW TRIES TO ADDRESS THE ISSUES WHICH CO-RELATE INDUSTRY TO ACADEMICS	 **Capt. Jay Jani delivering an Expert Lecture**
MEETING WITH CAPT. JON A. MCBRIDE, PILOT AND ASTRONAUT OF NASA SPACE SHUTTLE STS-41G THIS PARTICIPATION GAVE A FIRE TO THE STUDENTS, DREAMING ABOUT NASA IS WHAT OUR STUDENTS ENJOY	 **Meeting Capt. Jon A. McBride at Vrajbhoomi International**

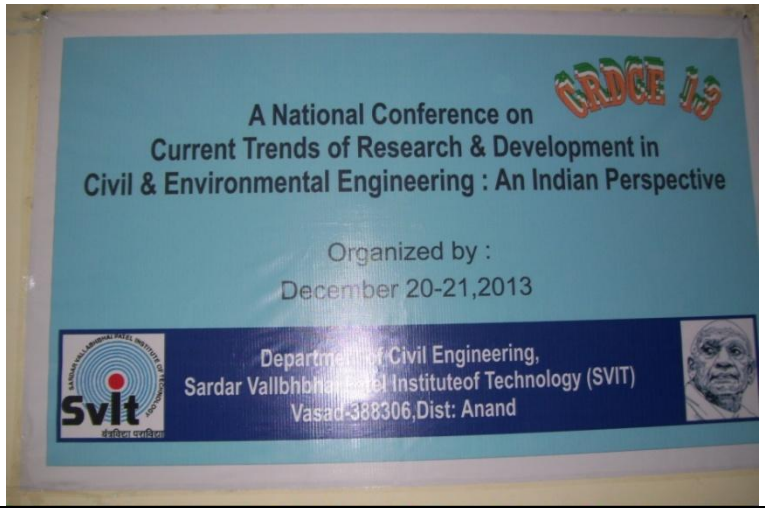
AN INDUSTRIAL VISIT AT AHMEDABAD AVIATION AND AERONAUTICS LTD. (AAA), AHMEDABAD AN AIRCRAFT TO SEE, STUDENTS ENJOYED WATCHING ALL MINOR TECHNICAL DETAILS	 **Visit to AAA, Ahmedabad.**
POSTER PRESENTATION THIS IS THE TRAINING THEY SHOULD HAVE, MAKING AND POSTER ON TECHINICAL TOPIC AND THEN SHARING THEIR VIEWS ON THAT TOPIC. FACULTIES JUDGE THESE PARTICPANTS AND AWARDS ARE DECLARED	 **Poster Presentation, Intra-departmental Event.**

Civil Engineering Department

Summer / Winter Schools/ STTP Organised

Sr. No.	Year	Name of the Workshop/ STTP	Duration
1	2011-2012	Structural Analysis and Design using STADD.PRO software	27th Feb.-2nd March ,2012
2		Three Day Workshop on urban Water Resource Management	20th-22nd July 2011

			
3	2012-2013	Advanced Treatment Technologies in industrial Pollution Control 	27th -29th July,2012
4		Recent Trends in Urban Transportation 	21st -25th November,2012
5		Recent Trends in Geotechnical Engineering	28th Nov.-2nd December,2012

			
6	2013-14	National Conference on Current Trends of Research & Development in Civil and Environmental Engineering: An Indian Perspective (CRDCE13) ISBN: 978-81-9234623-6 	20th -21st December 2013

SVIT ISHRAE Student Chapter

(Mechanical Engineering Department)

Installation: 31st August 2013

About ISHRAE: ISHRAE started at Delhi in 1981 and a Chapter was started in Bangalore during 1989. Between 1989 & 1993, ISHRAE Chapters were formed in all major cities in India and also in the Middle East. ISHRAE is an Indian Society of Heating, Refrigeration and Air-conditioning Engineers, is a building technology society. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry.

Through research, standards writing, publishing and continuing education, ISHRAE shapes tomorrow's built environment today.

SVIT ISHRAE Student Chapter is under by ISHRAE Vadodara Chapter, started on 11-03-2008

SVIT ISHRAE Student chapter team for year 2013-14

Faculty Coordinator	Student Coordinator
Dr. P V Ramana (Head ME)	Mr. Viky Gajjar (President)
Mr. S P Patel (Faculty, ME)	Mr. Umang Bhrambhatt (Secretary)
Mrs S K Shah (Faculty, ME)	Mr. Miten Shah (Treasurer)

Contact: hod.mech@svitvasad.ac.in

Total Members of SVIT Student chapter till September 2013: 90

Activities:

1 Expert lecture on "HVAC in Industrial practice", by Rajen Vyas on 31-07-2013

2 Expert lecture on "Alternative Cooling Technologies", by Dr. J R Mehta on 12-10-2013

3 Industrial visit to Cold Storage Plant, APMC Market, Vadodara is done with 2 staff members and 75 students members

Glimpses of chapter activities:

Inaugural Function

SVIT-ISHRAE Student Chapter Oath Ceremony

Expert lecture on “HVAC in Industrial practice”, by Rajen Vyas

Expert lecture on “Alternative Cooling Technologies”, by Dr. J R Mehta

Mechanical Engg. Dept. had organized one day awareness workshop on “Energy Conservation” on Tuesday, August, 13, 2013 in the IIPC auditorium for the students of Final Year Mechanical and Electrical branches. The workshop was conducted by experts from GEDA, Gandhinagar and Dev Engineers, Ahmedabad. In all three experts conducted the workshop on various topics related to Energy Conservation. The highlights of the workshop are

- Energy Conservation and its needs
- Energy Conservation tips for furnaces and boilers
- Energy Efficient Lighting
- Energy Audit
- Renewable Energy Resources

Almost 50 students from the Electrical dept., 122 students from the Mechanical department got benefited from the same. The workshop was quite interesting, informative and educative.

Expert lecture during one day awareness workshop on "Energy Conservation, by Mr. Snehal Dave, Dev Engineers

Sr. No.	**Date / Year**	**Names of resource persons**	**Back ground industry / academic / R & D**	**Topics covered**	**No. of Beneficiaries**
Invited Faculty					
1	31/07/13	Mr. Rajen Vyas	ISHRAE	Fundamentals and applications of Air Conditioning and Refrigeration	90
2	13/08/13	Mr. Snehal Dave & Cpt. Vijay	GEDA and Dev Engineers	Workshop on Ënergy Conservation	122 (Mech) 50 (Elec)

3	24/08/13	Mr. S K Singh	Quality, Lead - L & T Power	Power Piping and Various Testing Techniques	132
4	03/01/13 to 30/01/13	Professionals from ANSYS India	ANSYS India	17 Online Lectures on various modules of ANSYS 14	15

Industrial Visits:

Sr No.	Name of the Industry	Date of Visit	Semester
Acedemic Year 2013-14			
1	Nodule Cast	23/09/2013 07/10/2013	Fifth (M1) Fifth (M2)
2	Rajnil Forgings Ltd.	23/09/2013 07/10/2013	Fifth (M1) Fifth (M2)
3	C K Industries	08/10/2013 09/10/2013	Third (M1) Third (M2)
4	Deepa Industry	08/10/2013 09/10/2013	Third (M1) Third (M2)
5	Wanakbori Thermal Power Station	10-09-2013	Fifth(M1 & M2)

Two days workshop on "Accelero-Botix" organized during 26th and 27th April, 2013. in collaboration with Technophilia Systems, Mumbai in Mechanical Engineering Department at SVIT-Vasad. The total 46 students (undergraduate as well as postgraduate from various institutes of Gujarat) have been participated in current hands-on experience workshop

Winning Teams at “Accelero-Botix”

Pedagogical Club Activities:

Sr. No.	Date	Topic of the presentation	Faculty Name
2013-14			
1	**20/07/2013**	**Software's in Mechanical Engineering**	**Mr.H.R.DODIYA**
2	**20/07/2013**	**Software's in Mechanical Engineering**	**Mr. S.A BAN**
3	**07/09/2013**	**Challenges in dissimilar Welding**	**Mr. P.H.SHAH**
4	**07/09/2013**	**Optimization Techniques**	**Mr. D.D.PATEL**
5	**23/12/2013**	**Boundary Layer Measurement**	**Mr. J.M. Panchal**
6	**04/01/2014**	**Recent Practices in the Field of Renewable Energy**	**Mr. Chaudhari Vimal N**
7	**04/01/2014**	**Recent Practices in the Field of Renewable Energy**	**Mr. Yadav Chetan O**
8	**11/01/2014**	**New Product Development Tools.**	**Mr. Chaudhari Hetal I**
9	**11/01/2014**	**New Product Development Tools.**	**Mr. Yadav Chetan O**

Sardar Vallabhbhai Patel Institute of Technology, Vasad
Mechanical Engineering Department
Academic Year: 2013 – 14 (Odd Semester)

Report of the project presentations of final year mechanical students

The Mechanical Engineering department organized project presentations for the final year students on 7th and 8th October, 2013, at the Seminar Hall, Second Floor, Mechanical Department. There are total 34 groups; hence, 17 groups presented their work on each of these two days.

The objective of the presentation was to do the review of work done by each group for their project (IDP/UDP) and to give them comments on the work done and suggestions for further work. Also, such presentation can help them cultivate presentation skills.

Invited guests from industries, Dr. P. V. Ramana (Head of the department), faculty members and all the final year students attended the presentations.

07th October, 2013

To get the inputs with someone who has vast industry experience, the following experts were invited:

- Mr. Mukund Chokshi
- Prof. Rajesh Choksi

(1) Seated in front: L-R: Dr. P.V. Ramana, Prof. Rajesh B Choksi, Mr. Mukund M Chokshi; (2) A group of students giving their presentation

8th October, 2013

For evaluation of project presentation on the second day session, following experts were invited:

- Mr. Ramesh Vaghela
- Mr. Vijay Soni

Mr. Ashok Pandya, Director (R&D, T&P), SVIT was also present and addressed the students.

(3) Dr. P.V. Ramana addressing the students, Seated: L-R: Mr. Ashok Pandya, Mr. Vijay Soni, Mr. Ramesh Vaghela; (4) Mr. Ashok Pandya addressing the students; (5) All the final year students attended the presentation; (6) One of the group doing their presentation

A glimpse of project topics/concepts is given below:

- Two of the groups are going to develop and improve the function of the two apparatus of HMT laboratory of the department.
- Desalination of sea water using the exhaust heat of the IC engine.
- Fabrication of a dump trailer that is capable of dumping material on rear as well as on sides.
- Hybrid system in vertical axis windmill
- A working model of a biogas plant using kitchen waste
- Developing a model that uses vibration produced in suspension system of automobiles for energy generation
- Analysis of stop log gate
- Development of a compressed air engine
- Design & development of carrier pusher for the ease of maintenance of conveyor system
- Design and analysis of current to pressure converter
- Rotodynamic analysis of Kaplan turbine shaft system
- Development of resistance heating based furnace for casting of aluminium metal composites
- Design of air ejector
- Implementation of pneumatic drive on manual hand press
- Implementation of solar energy with industrial heat recovery for electricity generation

- Modified design of windmill using nozzle
- Other topics are: Design and fabrication of fixture for drilling machine & CNC turning machine, design and analysis of pulveriser machine, Design & Analysis of dimple jacket of pressure vessel, Noise reduction in axial bearings, Drilling machine that can make holes of different shapes, Design of retention water tank as per ASME, development of a mechanism for manufacturing branch bend, Study of temperature distribution in friction stir welding, testing of finned tube heat exchanger, design & development of laboratory model of Stirling engine& Pelton wheel turbine, Improving plant layout, to reduce the welding defects in tube to sheet welding,

The experts appreciated the work done by the students and also they appreciated the efforts of the faculty members. Though, the experts mentioned that the presentation skill of some of the groups needs to be improved.
The students felt benefitted as they receive some valuable suggestions from the invited experts.
Overall, the program was successful, and we thank the management for the help extended towards us for the same.

Prof. Hetal R Chauhan
Asst. Professor & Students' Project Coordinator,
Mechanical Engineering Department

Dr. P. V. Ramana
H.O.D.,
Mechanical Engineering Department

Specific Innovative project work by ***SVIT*** students with photo:

➢ *Microcontroller based solar tracking and grid automation*

Guided by: Asst. Prof. P. R. Gandhi

Parth Jani: 080410109014

Dhara Shah: 080410109048

- **ABSTRACT**

The electricity scenario in rural India is still alarming even after 63 years of Indian independence. As per the statistics as of now more than 1 lakh villages are still deprived of basic electricity needs. And due to the staggering requirements of industrial and commercial sector the supply to present rural connections is also below standard. The availability, quality and the time schedule are the major issues when it comes to rural electrification. During our statistical research for this project we found out three main reasons for the dismal performance of our supply system.

1. Less generation compared to the demand.
2. Transmission capital cost and losses.
3. Depleting fossil fuel reserves.

The main idea behind undertaking this project was to overcome the two main problems of present electrical grid in India.

Part 1:

The first part of the project deals with utilizing the available SOLAR POWER in the rural plains to generate electricity using photovoltaic cells as a standalone unit. This solar trapping will be done using a multi axis, stepper motor driven, solar tracker. The solar tracker will be controlled using MICROCONTROLLER 8052. The multi axis mode is the most efficient way of trapping solar energy round the year, as it tracks the daily as well as annual motion of the sun. The dual axis mechanism is carried out using LDR pair comparison circuitry. The trapped energy will be stored in batteries for its functioning tin the stage 2 of the project. This unit will provide a self-sufficient electrical supply unit that can power the average needs of the village household. This can be implemented where there is no electrical supply available at all.

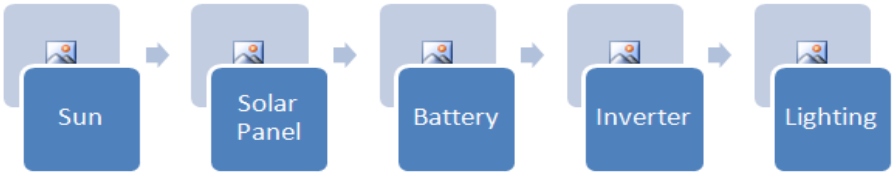
Part 2:

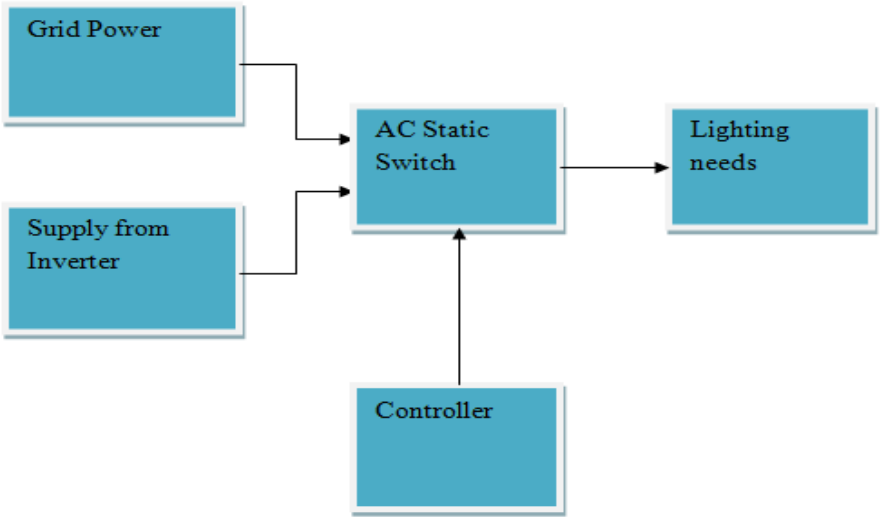
The main part of this project is the grid automation. This phase of the project is designed to be implemented in all those rural areas where there is grid supply available but not up to the mark. The microcontroller used for the solar tracker unit is used here for the function of grid automation encouraging SMART GRID concept. The grid automation will do intelligent switching between the available grid supply and the solar energy stored in the batteries. The switching action will take place under three conditions.

1. Normal condition supply from grid is given to load.
2. In case of power outage the battery will supply the trapped solar power to the load.
3. If there is no load requirement the stored energy will be transferred to the grid and net metering will be implemented.

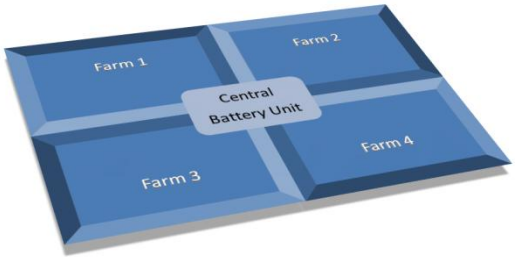
The switching will be implemented with the help of microcontroller 8052 the one being used for the solar tracking. This reduces the required hardware units. The signals will be constantly polled by the microcontroller using ADC interfacing and the algorithm will be designed to provide smart control of the system. Further the system can be made smarter by providing REAL TIME CLOCK to better the grid automation as well as solar tracking.

- **Basic block diagram of the system:**





- **Basic farm arrangement**:



- Agricultural land at present 1799000 sq. Km

- Available peripheral land per farm 5365.072 Km
- Average Indian farm size is 0.0133 sq. Km
- The peripheral land available per farm 0.4612 km i.e. 18157.48 inches
- Now if we consider 100 watts, 12 volts panel, the panel size will be 25×54 inches.
- No. of panels will be around 300 per farm (lengthwise)
- Solar panels have a life expectancy of 25 to 30 years or more

Advantages:

- The above system is particularly meant for agricultural sector, because it will remove the problem of supplying the power to far off places by generating the power at the location of requirement.
- Moreover the amount of energy converted will be sufficient to also support the adjacent rural areas and electrification of villages will become easier, cleaner and reliable.
- The NET METERING will not only help the farmers but also help the utility providers to manage the demand side problems that they face.
- The idea if implemented on a large scale will definitely revolutionise the concept of renewable resources and demand side management in rural areas.

References:

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➢ ***ELECTRICAL LOAD FORECASTING USING ARTIFICIAL NEURAL NETWORK***

Project by:

Abhishek Desai

Nikhil Menon

Ravi Unadkat

Guided by:

Prof. P. R Gandhi

ABSTRACT:

- Accurate load forecasting is very essential in power system planning. This will increase the efficiency of electricity generation and distribution while maintaining sufficient security of operations. Short term load forecasting, which focuses on short period of time, is important for several operational decisions such as economic scheduling of generating capacity, scheduling of fuel purchases, security assessment and planning for transmission.

- Because power generation relies heavily on the electricity demand, the consumers are also, practically speaking, required to wisely manage their loads to consolidate the power utility's optimal power generation efforts. Thus, accurate and reliable electric load forecasting systems are absolutely required. To date, there are numerous forecasting methods developed primarily for electric load forecasting. Some of these forecasting techniques are conventional and often less favoured. To get a broad picture of the problem at hand, a literature survey was first conducted to identify possible drawbacks of the existing forecasting techniques including the conventional one. Artificial neural networks (ANNs) approach for short-term load forecasting (STLF) has been recently proposed by a majority of researchers.

- **Our project is concerned with:**

1. Studying the conventional methods such as time series method and artificial neural network and proving why artificial neural network is more accurate than other methods.

2. We have concentrated on studying not only ANN model in detail but also 3 conventional methods which include Multiple Regression, Exponential Smoothing and ARMA model.
3. On understanding how these methods work we will compare the graphs obtained from conventional models with the graphs obtained from ANN model. This comparison is done with the help of programs that we have developed in Matlab software using the concepts of these models in mind.
4. Our aim is to prove that ANN model is better and more accurate than other conventional models.

Sardar Vallabhbhai Patel Institite of Technology – Vasad.
Electronics & Communication Engineering Department

Proposal No.: 1
(To be submitted to the R & D Cell – SVIT, Vasad)

Title: Android Based Wind Turbine Control System

Faculty Investigator

Dr. K R Bhatt

Note: Please find project details attached with this page.

Project Description:

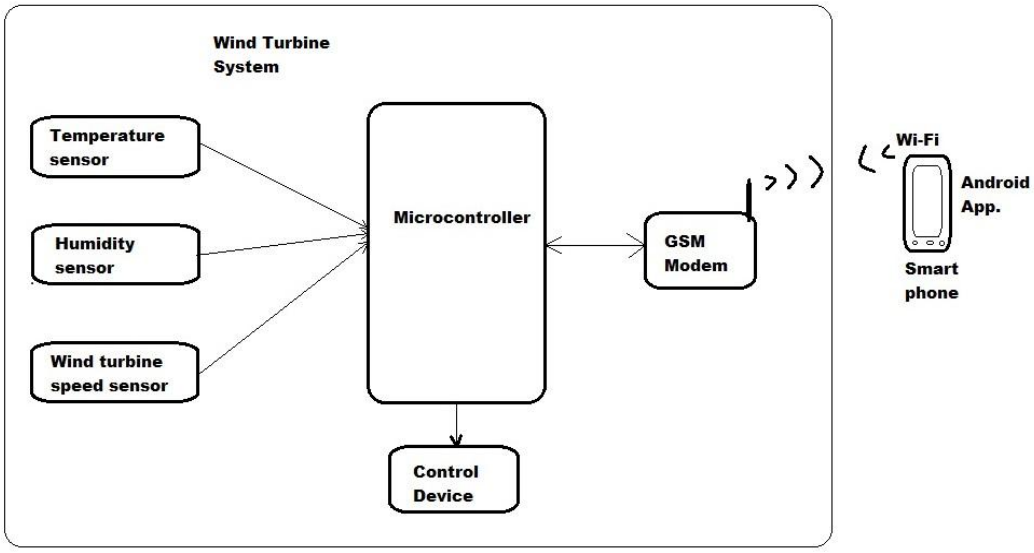
This project is based on the application of the virtual instrumentation. Wind turbine monitoring is mainly used for predictive maintenance reasons to find and fix a small problem before it progressively becomes worse. Monitoring is used heavily in control applications as well to employ the use of warning and safety features.

The wind energy industry faces a constant state of evolution because of challenges such as the pressure to be competitive with other types of energy production and the growing need to reduce operating and maintenance costs. Condition monitoring offers you a way to reduce the cost of ownership for these critical machines by predicting failures before they occur, which helps you effectively schedule proper maintenance.

Based on the applications we can monitor various parameters of wind turbine. Here we have chosen to monitor the temperature, humidity and wind speed. Sensors and hardware are used to acquire physical signals, and then software is used to analyze these signals into a meaningful machine condition and predict failure. This method of controlling the physical parameters through the software is very useful in the higher-level wind farm optimization control.

Here Android application is used for monitoring and controlling the physical parameters of the wind turbine.

Suggestive System Block Diagram:



- Parameters of wind turbine like temperature, humidity and wind speed are measured through the sensors and given to the microcontroller.
- Then microcontroller passes the data to the GSM modem, after which data will be sent to the Android Smartphone.
- In this Smartphone an Android application (Android GUI) will monitor the data of the above mentioned sensors.
- After that the data is given back to the microcontroller which will control the parameters through the control device.

Sardar Vallabhbhai Patel Institite of Technology – Vasad.
Electronics & Communication Engineering Department

Proposal No.: 2
(To be submitted to the R & D Cell – SVIT, Vasad)

Title: A portable Glove Based Sign Language Translator with LCD Display

Faculty Investigator

Dr. K R Bhatt

Note: Please find project details attached with this page.

Project Description:

Sign language is a language through which communication is possible without the means of acoustic sounds. Instead, sign language relies on sign patterns, i.e., body language, orientation and movements of the arm to facilitate understanding between people. Currently, in the United States, there are approximately one to two million signers. It is the sixth most spoken language in the America.Trudy Sugg's book describes sign language as sixth most spoken language in the world. The sign language translator we are trying to develop a glove fitted with sensors that can interpret the 26 English letters in American Sign Language (ASL). The glove uses flex sensors, contact sensors, and accelerometers in three dimensions to gather data on each finger's position and the hand's motion to differentiate the letters.

A sign language editing apparatus includes a glove-type sensor for converting movement of fingers in the sign language into an electrical signal to produce time series data of sign language words. A sign language word data editing device for adding predetermined additional data to the time series data inputted from the glove-type sensor to process the time series data. A sign language sentence data editing device for reading out the time series data of sign language words stored in the sign language word dictionary in accordance with the predetermined characters inputted from the input unit and accordingly character will be displayed.

Why do we need translation?

Our project bridges the gap between language used by disabled people (deaf & dumb) and normal people. To help people to communicate in a different language.

Applications:

1) Used as an application in i-phone and android
2) Good chances to become interpreter
3) Used for communication between deaf and normal people

Advantages:

1) Able to learn new language which is 6^{th} most spoken language in America
2) Able to learn about various components like flex sensor, accelerometer
3) We can use the glove in place of keyboard

Disadvantages:

1) Cost is very high
2) Non availability of components easily
3) Sensor on each finger makes the design somewhat complex

System Block Diagram: