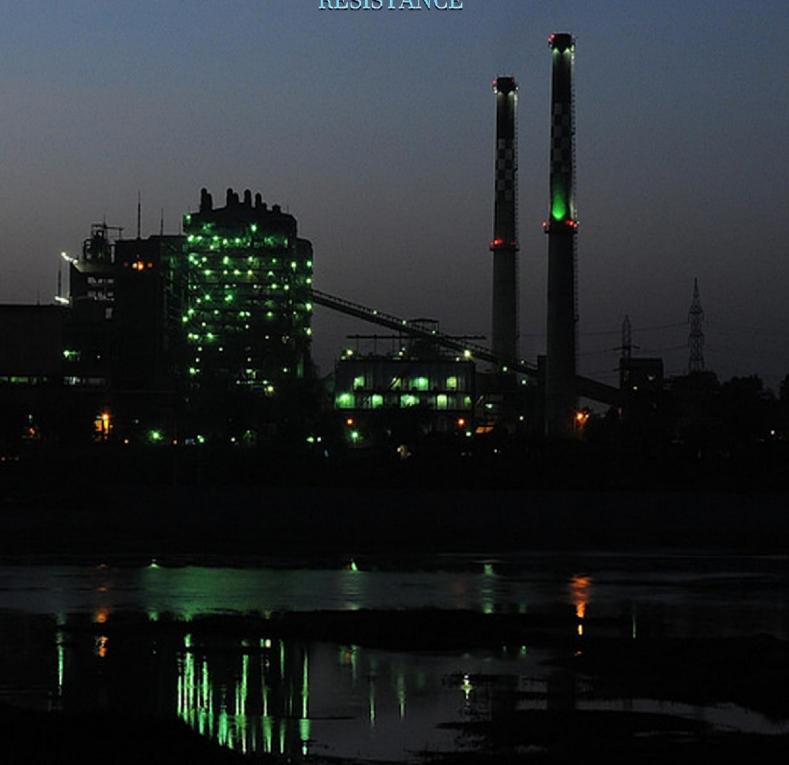


ELECTRI.CT

-WHERE IDEAS FLOW WITHOUT RESISTANCE



Jay-Veeru



To kahani shuru hoti hai ant se matlab end se,jahan sab kuch khatam ho raha hai.Veeru ka last day hai clg mai.Jay aur Veeru beth ke apni clg life ko yaad kar rahe hai



Veeru

~ Ek siddha saada ,bhola bhala aur dara hua junior ~ ek samajhdar aur hamesha help karne vala senior





To foster a learning environment for Electrical Engineering students with high technical skills, ethical values and overall global competence.



To provide high quality graduate program in Electrical Engineering so that it prepares student for

- ~ Better job opportunities, start ups and enterpreneurship.
- ~ A professional career beginning with essential technical and managerial skills.
- ~ Collaboration with industries through Research & Innovation.
- ~ Other avenues for Higher education.
- ~ Adapting to change in technology and applying the same for the benefit of society at large.



Generation

Generating capacity: 3600MW using coal based, gas based, and renewable power plants.

Distribution

Distribution over 3 million customers in cities of Gandhinagar, Surat, Dahej, SEZ. In Gujarat, transmission and distribution losses in its license areas is amongst the lowest in the country.





Transmission

Torrent Power operates 249km, 105km, 400kv, double circuit transmission lines implemented by it by evacuating power generated at SUGEN and DGEN plant to various off take centres.

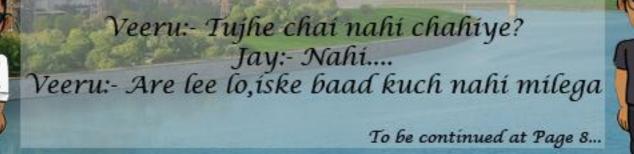
Cables

The cable units manufactured by "power and control cables" and its one the market leaders in HT power cable segments with a manufacturing capability of upto 132kV XEPE cables.

College ka pehla din

It is Jay's first day in college.jay has not taken the refreshment given to the first year students during orientation. Veeru saw jay near the line of refreshment

- Torrent has the most stable network because of its underground network systems
- SUGEN mega power plant is the largest private sector gas based power project and also amongst first mega power projects in the country. It is located near Surat, South Gujarat.
- SUGEN has been awarded the prestigious "2012-Sword of honour" by british safety council UK in the recognition of its exemplary performance in health and safety management.





Principals Talk

Technical education is the backbone of every nation and being the principal of LDCE, I believe that the teachers and students have a responsibility to ensure that every individual has the opportunity to receive high quality education from technical to practical and beyond. Our motive has always been to contribute for sustainable development of nation through achieving excellence in technical education and research while facilitating transformation of students into responsible citizens and competent professionals. This exclusive departmental magazine is one such opportunity which will enable the students of electrical department to showcase their talents and exchange technical knowledge amongst themselves.

From HODS Desk

Dear Reader,

It is rightly quoted that "A positive attitude causes a chain reaction of positive thoughts, events and outcomes. It is a catalyst and it sparks extraordinary results". I am proud to say that the dedicated team of faculties and students made it possible to publish the 2nd issue of our departmental magazine 'Electri.ct-where ideas flow without resistance'. The magazine nicely reflects that we at Electrical engineering department, are committed to continuous and constant growth in tune with the vision and mission of our institute.

The achievements of faculties and students during the recent past are nicely included in the current issue. It is evident from the contents of this magazine that the faculties and students at L.D. College of Engineering Ahmedabad are really the gems in all aspects of life. I would like to congratulate Prof. N V Sinha, Prof U L Makwana, Prof H N Raval and Prof M R Vasavada who have mentored the enthusiastic team of students. The efforts put on by Muskan Biala, Shivangi Parmar, Shivani Pandey, Siddhi Shah, Harsh Shah, Zaid Shaikh and Vignesh Sengunthar in the publication of this magazine are worth to appreciate. I extend my warm wishes for consistent pubication of this magazine. we will be happy to receive feedbacks and suggestions from all the readers.



Faculty's Vision

"There are no secrets to success. It is the result of preparation, hardwork and learning from failure."

Education does not end merely with the acquisition of a degree.

It is rather a continuous process which aims to nurture a student with just the right balance of academics and creative experiencesin co-curricular and extra-curricular areas to produce an individual who is an asset to the society. Let no one forget that the hands which hold text books today will hold the reins of the country tomorrow.

Amidst the busy schedule of a semester, with exams, surprise tests and all those assignments that make us want to bang our head on the wall, we tend to lose track of other simple things that we are capable of things that bring us joy and satisfaction. This is an attempt by the Department of Electrical Engineering, LDCE, to help our students unleash their intellect and creativity and present a beautiful blend of technology and arts.

This second edition of Electri.CT gives a brief account of the important events held from Oct 2018 to Mar 2019.

Builders of ELECTR1.C7



Muskan Biala Managing-Editor



Shivangi Parmar Copy-Editor



Shivani Pandey Excecutive-Editor



Siddhi Shah Fact-Checker



Vignesh Sengunthar Editor-in-Chief



Zaid Shaikh Art-Director



Harsh Shah Head of Photography Department



Yash Panchal
Graphic Designer

Faculty's Achievement

~ Dr C D Upadhyay

- organized inauguration of Ahmedabad chapter of Power Engineering Society.
- organized STTP on "Electrical Vehical" during 11.3.2019 to 16.03.2019.

~ Prof. Jiten Chavda -

participated in "All india national level civil services power lifting weight lifting and best physique competition 2018-19" at Raipur from 26 Feb to 1 March 2019. He participated in power lifting competition for category of 74kg weight and best physique competition for 75 kg weight category.

~ A paper on 'Need for STEM Education n India"co-authored by Prof. N. V. Sinha, Prof. R.J. Patel and Prof. F. A. Macwan

was selected at the International Conference on STEM held under the aegis of Vibrant Gujarat 2019.

~ Dr. U L Makwana & . Dr. K B Kela worked as Jury members of Gujarat Hackathon 2019 Held at ITRAM during 19-20, Feb. 2019.

~ Kalpesh B Kela

an Associate Professor of Electrical Department of the institute with other two co-authors has published a paper with the title 'Reliability optimization of electrical distribution systems considering expenditures on maintenance and customer interruptions' in 'Indonesian Journal of Electrical Engineering and Computer Science', a Scopus indexed journal.

Shuruaat

Kuch dino baad college canteen mai veeru ne jay ko dekha aur uske paas jaake kaha

Veeru:- "Oyy junior tera number to de.... Jay:- Thik hai bhaiya 123456789

Veeru:- Kya naam haí tera ? Jay:- Jay....

Veeru :- Aree main veeru!! de taali.....Jay-Veeru

To be Continued at page 9



Light A Life

Vignesh Sengunthar, student of Electrical Department from Sem 6 was selected as the Team Leader for the Elixir foundations project with Tata Communication Ltd. in Chennai from 11-16 March, 2019. Under this project, Vignesh had to direct the employees of TATA in the construction of solar lamps.

This particular project "**Light a Life**", aimed to develop the society in 2 main ways-

- (a) To provide employment to the women belonging to rural areas.
- (b) Donate the solar lamps to the ones in need of it.

At the completion of the project, seeing his work and leadership qualities, TATA recommended Mr Vignesh Sengunthar for further projects.

- ~ Convener of Lakshya 2019
- ~ Vice President of GTU Innovation Council
- ~ Student Convener of AICRA(ALL INDIA COUNCIL OF ROBOTICS AUTOMATION).





Exam ka Funda

Junior ka pehla mid sem hai,aur vo bohot tension mai hai,to vo apne senior ke paas jata hai advice lene.

Jay:- Bhaiya mids agaye.Samajh nahi aa raha kya karu?..

Veeru:- Bhai......! tu techmax le

load na le

To be continued at Page 12...



Achie



#Dharmik Trivedi

- ~ Best actor (2nd prize) at vinavelinatya rang compition.
- ~ Monoact compition (1st) at Sahitya sarita.
- ~ IEEE core member.
- ~ Doing corporate shows of Standups & Mimicry.

#Jay Patel

- ~ Pre-event of GTU Central Tech fest 2019 (Run for green environment 7km run). Rank= 3rd [20000/-]
- ~ 1st Rank in Motifmarathon.





vers

7oppers of Electrical Department 2018

Sem 1



Joshi Jeet

Sem 3



Smit Solanki

Sem 5



Harsh Chandra

Sem 7



Amal Nair

Quiz Competition

- (1) Indian Meteorological Society Ahmedabad
 - ~ At ISRO
 - ~ 2nd Rank
 - ~ Team members:-Jeet Dhoriyani Renison Macwan





- (3) Sahitya Sarita 2019
 - ~ 2nd Rank
 - ~ Team members Vishal Chauhan Hardik Modi

- (2) SBI Zonal
 - ~ 5th Rank
 - ~ Team members Jeet Dhoriya Renison Macwan Tirth Mehta

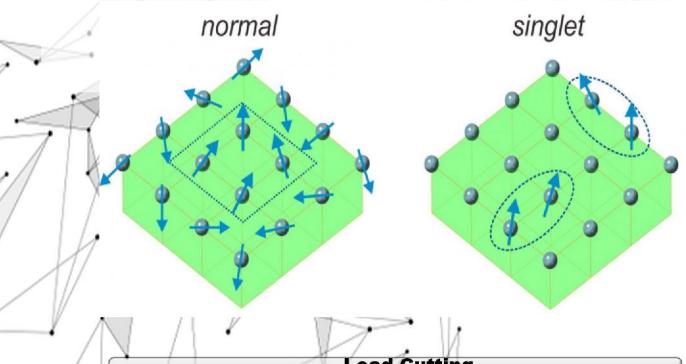




Singlet Based Magnet

A team of scientists has discovered the first robust example of a new type of magnet -- one that holds promise for enhancing the performance of data storage technologies. This "singlet-based" magnet differs from conventional magnets, in which small magnetic constituents align with one another to create a strong magnetic field. By contrast, the newly uncovered singlet-based magnet has fields that pop in and out of existence, resulting in an unstable force -- but also one that potentially has more flexibility than conventional counterparts. "Singlet-based magnets have a more sudden transition between magnetic and non-magnetic phases. You don't need to do as much to get the material to flip between non-magnetic and strongly magnetic states, which could be beneficial for power consumption and switching speed inside a computer.

"A single spin exciton tends to disappear in short order, but when you have a lot of them, the theory suggested that they can stabilize each other and catalyze the appearance of even more spin excitons, in a kind of cascade", Wray explains.





Mids ke baad ek din rabdi pe
Veeru:- Oyy jayla....!! Paper kese gaye tere?
Jay:- Bhaiya paper to thik hi gaye,pata nahi marks kese aayenge..
Veeru:- Chal toss karte hai..

agar head aya to ache aayenge agar tail aya to bure aayenge

Heads aata hai...!

To be continued at Page 13





A Device integrating solar cell and battery

Scientists in the United States and Saudi Arabia have harnessed the abilities of both a solar cell and a battery in one device -- a "solar flow battery" that soaks up sunlight and efficiently stores it as chemical energy for later on-demand use. Their research, published in September 2018 in the journal Chem, could make electricity more accessible in remote regions of the world. While sunlight has increasingly gained appeal as a clean and abundant energy source, it has one obvious limitation -- there may be little sunlight per day, and some days are a lot sunnier than others. In order to keep solar energy practical, to use it after sunlight, it must be stored. Normally this takes two devices -- a solar cell and a battery -- but the solar flow battery is designed to perform like both.

"Compared with separated solar energy conversion and electrochemical energy storage devices, combining the functions of separated devices into a single, integrated device could be a more efficient, scalable, compact, and cost-effective approach to utilizing solar energy," says Song Jin, who along with his team developed the device in collaboration with Jr-Hau He, in Saudi Arabia.

The solar flow battery has three different modes. If energy is needed right away, it can act like a solar cell and immediately convert sunlight to electricity. Otherwise, the device can soak up solar energy by day and store it as chemical energy to deliver it later as electricity during night or when the sky is cloudy. The device can also be charged by electrical energy if needed, just like a typical battery. The most recent solar flow battery model is able to store and deliver electricity from solar energy more efficiently than any other integrated device currently in existence.

According to the inventors, these integrated solar flow batteries will be especially suitable as distributed and stand-alone solar energy conversion and storage systems in remote locations and enable practical off-grid electrification.

Manufacturing current solar flow batteries is still too expensive for real-world markets, but according to Jin; simpler designs, cheaper solar cell materials, and technological advances could help cut costs in the future. As the current model is comparatively quite efficient, the researchers have plans to further improve its design. It is also believed by the researchers that, with further research, solar flow batteries may soon be practical.

With the use of emerging solar materials and new electrochemistry, if efficiency could reach to 25%, without using the expensive solar cells, it should be quite competitive with other renewable energy technologies and commercialization could be possible.

K B Kela Associate Professor Electrical Department



Pehla kadam

Junior ki zindagi ka pehla interview hai aur vo pareshan hai,
usko pareshan dekh kar senior usse puchta hai......
Veeru:- Kya hua jay tujhe pareshan kyun lag raha hai?
Jay:- Bhaiya aj club recruitement interview hai bohot darr lag raha hai...
Veeru:- Jo darr gaya samjho marr gaya.
Chal coin toss karte hai,head aya to tu select ho jayega
tail aya to tu nahi hoga

Heads aata hai....

Departmental Events

ISTE

Electrical department has organized different technical events under National level ISTE convention during 29.01.2019 and 30.01.2019.

The events include-

- (1)Electrica Quiz
- (2)Electric Studio
- (3)Games Bug
- (4)Plugged In
- (5)Ad Mad

Student Convener of this National Level event was sem 6 student of Electrical Dept **Vignesh Sengunthar**Students from across the country participated in the events with great enthusiasm.



LAKSHYA 2019



The most awaited Edu-Technical Fest of LDCE, Lakshya was organized from 14th Feb 2019 to 16th Feb 2019 at the college campus. The following Students of Electrical department played a key role in the successful organization of this Fest.

Muskan Biala-Chief Organiser
Shivani Pandey-Chief Organiser
Shivani Chaudhari-Head of Creative Team
Zaid Shaikh-head of LGT
Deepak Pal-head of LGT
Harsh Shah-Head of Workshop Dept
Harshit Vora-Head of Workshop Dept
Vignesh Sengunthar -Student Convener

3.TREE PLANTATION:

ISTE Student chapter L D Collage has organized tree plantation drive on 04.02.2019 at Electrical Engineering department.

4. .Seminar on SSIP

It was organised by the department, in which Prof Ragesh Kapadia motivated the students of electrical department on 1st March 2019. The seminar also involved the interaction of respected HOD sir with students which was attended by approximately 60+ students and 15+ faculties.







5.An expert session by Dr D P Kothari(Ex Professor, IIT Delh) was organised by the department on 8th March 2019, which was based on guidance for writing research papers, books, proposals for research projects.



SSIP

Prof. M R Vasavada is working as central committee member of SSIP cell of LDCE. **Prof. Vihang Dholakiya** is working as team member of State level SSIP cell at KCG, Ahmedabad. **Prof. B J shah**, **Prof C D Upadhyay** and **Prof. M R Vasavada** are departmental team members for SSIP work

Sneh of Electrical Department is overall student coordinator of "**ARAMBH**" cell under SSIP activity.

Name of Applicant	Name of Innovation / Start up	SSIP scrutiny Committee's Recommendations
Shivam Gothi LD/SSIP/Elect/P hase3/001	Compact Powerful Electron Beam	Approved with Maximum Rs. 26,000/- (Twenty Six thousand only) grant as expenditure
Divyansh Sharma LD/SSIP/Elect/P hase3/002	E-AIR	Approved with Maximum Rs. 70,000/- (Seventy thousand only) grant as expenditure
Sathvara Jay LD/SSIP/Elect/P hase3/003	Generic Mobile Case With Power Bank	Approved with Maximum Rs. 20,000/- (Twenty thousand only) grant as expenditure
Jaydip Prajapati LD/SSIP/Elect/P hase3/004	Auto Recloser ELCB	Approved with Maximum Rs. 25,000/- (Twenty five thousand only) grant as expenditure
Prince Dadhaniya LD/SSIP/Elect/P hase3/005	Plugtronics	Approved with Maximum Rs. 30,000/- (Thirty thousand only) grant as expenditure



E-AIR

The project basically improvises the performance of universal motors with the help of power electronic devices. The main aim is to increase the efficiency & performance, especially torque and power factor. The designed circuit is flexible because it will not change any design parameters of the currently available motor. The designed circuit can simply be plugged in the motor which is already available in the market. (Worst case -) As we all know that every power device has a life of 25 years so fortunately if motor is still working fine enough but if the available design is not able to full fill the requirements and satisfy the customer needs ,then in that case redundancy switch is make available which will be able to run motor in the same way as it originally works without the designed circuit. The main reason to take up this project was by looking into the current situation where we face many problems due to lagging power factor load. ,as it increases the electricity bill and decrease the power factor of the transmission line. So with the help of modified structure a solution is being provided to this problem as well.

AUTO RECLOSING ELCB

Currently the ELCB(Earth-Leakage Circuit Breaker) that is in use, works with Current Transformer. The main disadvantage of current transformer is aging effect and core saturation. Due to this, it causes nuisance tripping which affects the continuity of power supply. Hence in most of the cases, the ELCB is bypassed, which is severe to human as well as equipments. So, in order to solve the problem of nuisance tripping, the students proposed a new design which is totally based on electronics hence is more reliable. Another additional feature of autoreclosing is also provided if there is any kind of temperature fault, which will assure the continuity of power supply specially for critical loads.

Faculty's Experience



1. **Dr. M C Chudasama** - worked as Nodal officer for Gujarat Hackathon 2019 held at IITRAM during 19-20, Feb. 2019. The event was meant for creating awareness among technical students about Industrial problems where the participants had given useful solutions related to problems. Delivered expert talk on "Research grants for Research projects" at STTP organized by Mechanical department of I DCF Ahmedabad from 11 3 19 to 16 03 19



2. **Dr. U L Makwana** - has delivered expert talk on "Restructuring of Power System" at L D R P Gandhinagar on 22.01.2019 UG Student.



3.**Prof. J B Modi** had attended one day workshop on "EPLAN efficiency days" on 12.12.2019



4.**Dr. C. D. Upadhyay** delivered one day expert talk on the Design of Electric Vehicles at GPERI,Mehsana.

5.Dr. D. P. Kothari, a veteran professor has visited the department and interacted with students of UG and PG both. He delivered a talk on "Sustainable Technology and its Environmental need in India" on 8th March, 2019.



6. **Prof. V R Patel** had attended STTP organized by Mechanical department of LDCE Ahmedabad on 11 feb to 16th Feb 2019 which was based on Research Methodology tools and techniques.



7.**Dr. D D Trivedi** -had delivered expert talk on "Latex for thesis writing "at STTP organized by Mechanical department of LDCE Ahmedabad on 11.03.2019 to 16.03.2019.

- 8. Dr. C. D. Upadhyay . Prof Irfaan Siddiqui & Prof T. R. Patel attended one day workshop on Solving Tomorrow's problem by Tektronixs at Ahmedabad on 20th February, 2019.
- 9. Dr.D D Trivedi &Prof Nupur Sinha worked as active member in Vibrant Gujarat 2019 held at Science city during 17-20 JAN. 2019.

All faculty members have participated in STEM conference at Science city on 17.01.2019



Chai pe charcha

Ek din rabdi pe
Veeru:- Jay tujhe engineering se koi comPLANe hai?
tu kyun kar raha hai engineerring?
Jay:- Shayad....sAPNO ke liye.....



Prime Movers



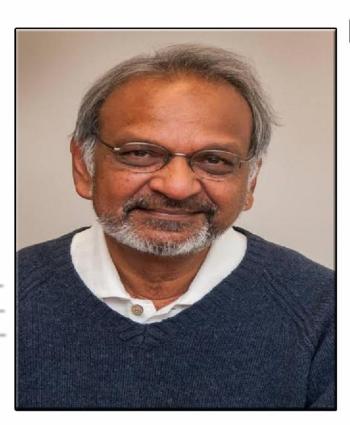
Dr. Prabha Kundur (1939-2018)

For over 40 years, Prabha S. Kundur has been at the leading edge of development and application of technology that has made the operation of large scale interconnected power systems more safe, secure and reliable.

Dr.Kundur's development and validation of comprehensive power plant models for dynamic analysis and control design have been incorporated in software packages

that address transient stability, small signal stability and dynamic reaction for large scale power systems.

Under Dr.Kundur's leadership, Ontario Hydro, Canada was one of the first utilities to develop instrumentation technologies and conduct fault tests toidentify and verify models and analytical tools being used for power system simulation. Dr.Kundur was an IEEE life fellow. In 2010 he received the IEEE medal in power engineering "For leadership in the development and application of analytical methods, tools and techniques for modeling, simulation and control of large scale interconnected power systems." He was the president of Kundur power systems solutions, Inc., Toranto, Ontario, Canada.



Prof.Dr.Ned Mohan (1946)

Ned Mohan is setting the new standard for electric energy systems education with a curriculum that recogonizes that many solutions to electric energy challenges lie outside the traditional boundaries of the field.

Dr Mohan has created renewed interest with course enrollments increasing 4-5 fold at the university of Minnesota, and

his curriculum has been adapted by universities worldwide.

His student-oriented approach integrates power systems, power electronics and power drives courses and laboratories and emphasizes renewable energy sources, reliable sources, reliable delivery and efficient end-use. Dr. mohan supports his curriculum with textbooks and laboratries he devloped himself. His teaching philosophy is based on treating students with the utmost respect and considering if new approaches will benefit not only their technical knowledge but their long term career-devlopment potentials.

An IEEE fellow, Dr. Mohan is currently the Oscar A. Schott Professor of Power Electronics and System at the University of Minnesota, St. Paul.

Departmental Amenities

Following laboratories are made available for the students after renovation work

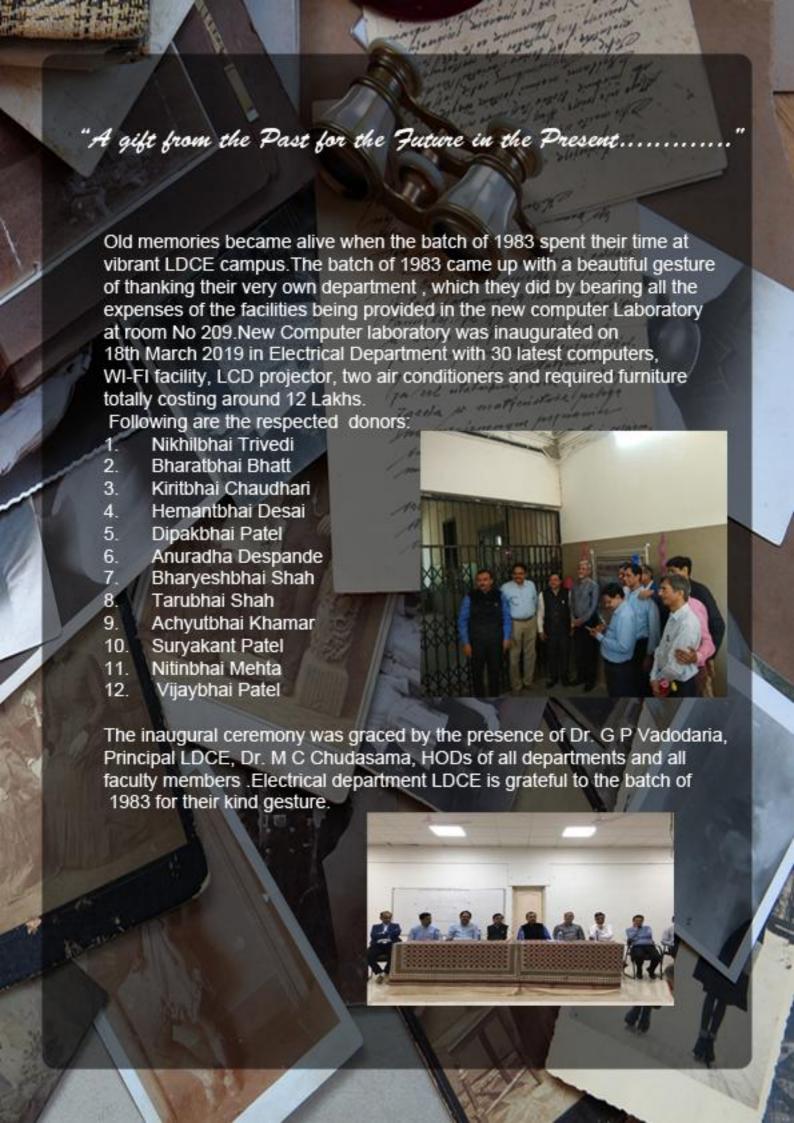
- 1. Machine Lab. Developed by
 - a. Prof. Mitul Patel
 - b. Prof. G B Buch
 - c. Prof. L K Katariya
 - d. Prof. TR Patel
 - e. Prof. Sajid Patel
 - f. Prof. B G Chaudhari
 - g. Dr. V J Upadhayay



- 2. High Voltage Lab.
 - a. Dr. U L Makwana
 - b. Prof. Gaurang Buch
 - c. Prof. M I Siddiqui
 - d. Prof. Dhaval Patel
 - e. Prof. Mitul Patel



- 3. Drives and CoE Lab:
 - a. Prof. Sajid Patel
 - b. Prof. T R Patel
 - c. Prof. B G Chaudhari
 - d. Prof. Mitul Patel



7ech News

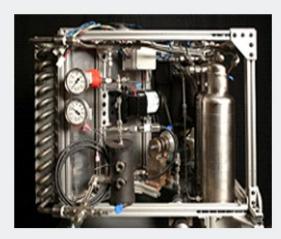
Automatic Solar Tracker



Automatic solar tracker begins to follow the SUN exactly from sunrise, all through the day, till sunset, and begins the work all over again from sunrise next day. On hazy weather day, it lingers motionless and grasps the SUN yet again as it peeps out of clouds. It does all this mechanically, by employing inexpensive and economical constituents, and is extremely accurate. Let us make out how all this is done.

There are 3 Electronic sections to be elucidated. First is the parallel sensor section. It makes use of the 555 timer IC in the mono-stable approach. Pin 2 or trigger pin of 555 is hooked up with a power separator network. Pin 4 which can be reset is hooked up with an extra power separating network.

Monolithic Microscale Heat Pumps



Researchers led by Srinivas Garimella have developed a novel textbook-sized cooling system that operates on waste heat rather than electricity.

How it works: Extremely small passages are etched into thin sheets of metal with different areas representing different components. Working fluids flow in the same order as they would in a larger system, albeit in one space. The minimization of plumbing inlets and outlets translates into greater compactness — and lower price tags.

Since unveiling a proof-of-concept unit in 2009, the researchers have developed heat pumps with cooling capacities of one and two refrigerant tons efficiency and fabrication techniques have also been improved to enable mass production.

Sikke ka sach

College mai Job placement day hai. Hamesha shant aur tension free rehne vala humara senior aj kuch pareshan lag raha tha usko pareshan dekh kar junior ne usse kaha

Jay:- Kya hua bhaiya? kuch tension?

Veeru:- Bas placement ho jaye jay ek baar.....

Jay:- Chalo coin toss karte hai Heads aya to ho jayega placement.

Veeru:- Aur tails aya to?

Jay:- Nahi ayega bhaiya mujhe pata hai....

Veeru:- Acha.....tujhe kese pata chala,ke yeh khota sikka hai isme hamesha heads hi aata hai.

Jay:- Bhaiya.....Vishwas hamesha se aap pe tha coin pe nahi

Jay ki Zubaani...

AAYE THE PEHLI
BAAR IS JAGAH
HUM EK
KASHMAKASH LEKAR
JOSH THA MAGAR
KUCH KAR
DIKHAANE KO,...

KHWAAISHEIN THI BOHOT KUCH DEKHNE OR LOGO KO DIKHAANE KO.....

LOG MILTE GAYE
IS KAARWAN MEIN
SABNE KUCH NA
KUCH SIKHAAYA
ZINDAGI MEIN
APNANE KO....

HOTE THE MAYOOS
JAB BHI HUM TO
YAAR AA JAATE
THE DIL BEHLAANE
KO....

JEETNE PAR TO KHUSH HOTE HI THE HUM ISS SAFAR NE SABAK SIKHAYA HAAR MEIN BHI MUSKURAANE KO... KUCH PAL BAAKI
HAI OR IS SAFAR
MEIN
BANA LE KUCH
YAADEIN OR IN
PALON MEIN DUNIYA
KO SUNANE KO......
- Zaid Shaikh



Veeru ki Zubaani...

RASTO SE MAT DARR...

MANZIL SE MOHABBAT KAR...

VOH MOHABBAT HI TUJHE PAHUCHAEGI...

DEKHNA TERI KAHANI YUN BADAL JAYEGI...

FARISHTE AAYENGE TUJHE MILANE KHUD SE...
BAS PEHCHAN LENA USSEEE...
JISE HUMESHA KAM AANKA TUNE...
SHAYAD USS SAPNE KO PYAAR HAI TUJHSE!!

PHIR TU KYU KHUD SE DURR BHID MEIN BETHA HAI...
SUN USS DIL KI JOH HUMESHA YE KEHTA HAI..
KI...
TU KAR SAKTA HAI...
TU BAN SAKTA HAI...
HAAN, TU BADAL SAKTA HAI.....

- Shivani Pandey



"A Journey miles begins with