

# TechnoReport

an e-magazine published by IEEE Gujarat Section



February-2010

Section  
**SAMPARK 2010**

**31 January, 2010**

Sampark has been an endeavor towards establishing a formal structured launch pad to promote new ideas and to address concerns and issues of IEEE student members of Gujarat Section which do not receive the required attention for the lack of such a forum. The section believes that any student body grows professionally through collaborative student activities, interactive sessions, meeting with experts and leaders and bouncing ideas back and forth. As the name Sampark suggests, this whole activity revolved around networking, sharing, communicating and appreciating. Sampark is the brain child of the then Chair, Mr. Deepak Mathur, started in 2006. This year it was organized in Science City, Ahmedabad on 31 Jan, 2010. More than 200 student members from all the ten student branches and the Executive Committee members of the section participated in this full day extravaganza of techno-social programs. The newly approved student branch of LDRP Institute of Technology and Research took the responsibility of organizing this event under the able leadership of Prof. Gunvantsinh Gohil, the branch counselor and Mr. Sonwane Vikas, the branch chair.

The day started with a very useful session of Open House where students shared their ideas and raised their concerns. The same were addressed by the IEEE Gujarat Section Executive Committee officers Mr Arup Dasgupta (Chair), Mr Deepak Mathur (Patron of Sampark), Dr Anil Roy (Past Chair), Dr. Suman Mitra (Secretary) and Dr. S K Sharma (Vice Chair) of Gujarat Section. It was emphasized that student should take lead in deciding the direction of the activities of the section and should maximize the advantage of their IEEE membership. It was further advised that students should plan activities to add value to their education and to their professional need. The session seemed to dispel doubts amongst students and even gave the incentive to students of getting directions towards materializing their ideas. On the whole, the session was a very fruitful experience. Students were told about various contests organized by IEEE at Section, Region and HQ level which they should participate in. Also several opportunities of getting sufficient support from IEEE for any promising project ideas were also discussed. Some success stories were shared in the forum to motivate the students in common.

In 2009 the section instituted two awards at section level for the best student branch (on membership growth) and the best student branch (on overall performance). It was announced by Dr. Mehul Raval, the Student Activity Chair, that DA-IICT student branch is the first recipient of the best student branch (overall performance) for the year 2009. The result of the second award could not be announced because no authentic data could be made available to the section by that date.

Also, it was interesting to observe how the student interaction grew, as was evident during the course of the day, especially, during the lunch and evening tea-break. As against the morning breakfast, where all were hesitant, by the end of the day, Sampark had sure created some links, established some contacts, and helped better interaction; and therefore served its goal in a big way. This provided an opportunity to students to share their experience and ideas about IEEE and reinforced their commitment to work as an active volunteer. It will help us achieve the goals and objectives of IEEE in a much more cohesive manner.

## **Humaoid Robotics workshop**

**4-7 Feb 2010**

IEEE Gujrat section recently sponsored a program called "HRWIE - Humaoid Robotics workshop" which is a part of the Synapse Technocultural fest of Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar on 4-7 Feb 2010.

HRWIE Workshop was motivated by the idea to provide a platform to enthusiast young undergrad students in basic Robot

design and vision algorithms. Module 1 of this event was focused on basic robot design, speech controlled robot, mobile controlled robot, wireless transmission and was conducted by ARK technosystem a Bombay based firm. Module 2 was focused on tracking algorithm, be it ball following robot, motion detection, skeletonization or KLT feature. This module was conducted by Embed automation, a Delhi based firm.

This workshop had provided an online registration system that attracted around 100 teams for both modules and 40 teams for module 1. Due to the constraint in resources and time, the final registration was restricted to 120 participants based on first come first serve. Participation was primarily from Charotar Institute of Technology, LD College of engineering, Indus Institute of Technology, Ahmedabad, Govt Engineering College, Gandhinagar, DA-IICT, LKCT Indore, FMCA Faridabad inter alia.

Participants were introduced to the need of robots and other basic electronics concepts like Hbridge, PCB, motors, Actuators, Sensors. It also paid attention on hands-on sessions for wired and wireless robots. One of the most interesting item was mobile controlled robots, pc controlled robots, speech controlled robots. They used VB2006 for writing code for these robots and they actually controlled these robots using pc and their speech.

Module 2 took its pace with introduction to matlab, image segmentation and basics of image processing as how is an image extracted and stored, image manipulation etc. It also covered corner detection, maximal stable extremum region, line detection and blob tracking.

## Call for Participation and Nominations for Student Contests and Awards

- PG & UG Student Paper Contests (Deadline: March 15)
- The R10 website contest (Deadline: March 31) [\[Announcement\]](#)
- R10 Outstanding Student Branch Award & Exemplary Student Branch Certificate (Deadline: March 31)
- Larry K. Wilson Award (Deadline: March 31)

[\[Detail\]](#)

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**ADIT**

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**DA-IICT**

## **FIRE 2010**

Reusable, large-scale standard test collections have great significance in Information Access research. An evaluation workshop that facilitates research by providing the data and a common forum for comparing models and techniques was organized as The Forum for Information Retrieval Evaluation (FIRE), at DA-IICT, Gandhinagar between 19-21 February 2010 .

The workshop was inaugurated by Dr.S.C.Sahasrabudhe. Prof.Ganesh Devi,Dr.Prasenjit Majumdar (DA-IICT)and Dr.

Mandar Mitra (Indian Statistical Institute, Kolkata) gave an introductory talk on the workshop.

FIRE aims at developing a database of words in Indian languages through cross-lingual document retrieval. This would help security agencies to speedily decipher terror mails, conversations or pieces of information from other sources in any Indian language.

Besides being an aid to counter terrorism FIRE aims at developing technologies that could retrieve information in several local languages so that government schemes in rural areas could be better implemented. Also, these technologies could serve as a tool for promoting education in regional languages of the country.

The 3-day event saw participation from around the globe with speakers like Nicola Ferro from University of Padova, Italy, Gareth Jones and Paic Sheridan from Dublin City University, Ireland and Carol Peters, who is the transaction Editor-In-Chief of information Retrieval, ACM.

An odd 25 participants from India included those from MNIT, Jaipur, Anna University, Chennai, IIT Mumbai and IIT Kharagpur.

Retrieval of information is important for keeping the culture of a state alive. Why knowledge of English should be mandatory for higher education? If information is retrieved in local dialect, one can do research work without wasting much time on learning English, said Dr Carol Peters.

Nicola Ferro gave a talk on Evaluation campaigns: what should we do with our data? on the first day of the workshop. On the following day Gareth J.F. Jones presented The MultiMatch project: searching multilingual multimedia cultural heritage collections.

Kalervo Jarvelin, from the University of Tampere, Finland, spoke about Building test collections and associated evaluation metrics based on graded relevance. The event successfully concluded with Soumen Chakrabarti's speech on Querying the annotated Web.

The other invited speakers were Swaran Lata (DIT, Govt. of India), Iadh Ounis (University of Glasgow, UK), Prasad Ram (Google India), Ian Soboroff (National Institute of Standards and Technology, USA) and Tony Veale (University College Dublin, Ireland).

Multi-lingual document retrieval is being carried on for Indian languages like Hindi, Bengali, Marathi, Telugu, Tamil and Punjabi already. Gujarati is next in line and DAIICT is likely to be announced the nodal-centre for multi-lingual document retrieval in the language.

The co-organizers of the workshop were IEEE, Gujarat section, DA-IICT, ISI, Kolkata and Information Retrieval Society Of India.

The platinum sponsor for the event was Google while the gold sponsors were HP, SNLTR and YAHOO India R&D.

The overall co-ordinators were Dr. Prasenjit Majumder and Dr. Suman Mitra, DAIICT, Gandhinagar and Dr. Mandar Mitra, Indian Statistical Institute, Kolkata. DAIICT's IEEE Student branch was the organizing team.

-Aakriti Gupta

## The Future of Cars

Can you replicate the human brain on chips? Can we have the vision of the terminators? Can we make a steel rod feel?

These are some of the questions we humans are trying to answer for decades now and with recent breakthroughs in the fields of nano-science and sensing technology we may be at the precipice of a change... of getting closer to machines or getting machines closer to us.

Building autonomous bots has been a trend in the recent past and now we see a trend moving

on to interactive bots. Technologically this may not be a path-breaking change but we see this as a change in the process of thought of engineers today.

Over the years we have been coming closer to the mechanics of the world around us starting from fire to the wheel and today, to the closest replica of a self decision making machine: The Humanoid bot. With competition and eagerness driving engineers in on the field and the big economies now pumping into it, we see interactive bots and intelligent systems coming further into our daily lives.



The BOSS developed by Tartan Racing, the joint effort from Carnegie Mellon University and General Motors at Pittsburgh, USA is a fine example. The day is not far when ala Sci-fi movies we would sit back on the drivers seat naming our destination and our car taking us there.

BOSS has won the DARPA challenge, 2007. This event required teams to build an autonomous vehicle capable of driving in traffic, performing complex manoeuvres such as merging, passing, parking and negotiating intersections. BOSS navigated 56 miles of driving course through a RobotCity designed for this event through real time traffic, pedestrian pathways, 4 way intersections and a lot more.

Powered by the engine system of the Chevy Tahoe, BOSS makes its decisions on the calculations of 10 Dual-core processors punching numbers in the trunk. Cooled by the cars air conditioning systems, in the 90 deg. temperatures of the course it was a challenge not to let the processors burn out.



The car makes its decisions based on a number of sensor inputs for object navigation hand-in-hand with the navigating abilities of a precise GPS system along with satellite tracking on its tyre-base, lest it loses its GPS link. GPS navigation provides a critical reference point for all of BOSS other sensors. Unlike a TomTom device, Boss relies on satellite data as well as an inertial measurement unit, which tracks the cars position by monitoring its wheels and acceleration (useful if the GPS signal is temporarily blocked). BOSS is preloaded with course-specific coordinates that a standard navigation unit wouldnt have.

The car uses the LIDAR system at both short and long range for object detection. LIDAR, or light detection and ranging, is essentially laser radar. An array of short, medium and long rangefinders sends out laser pulses and analyzes light that reflects back. BOSS LIDAR systems have a range of 150 meters and can read lane markers and stop lines with an accuracy of 5 cm. However, LIDAR can be confused by a sudden incline in the road, or blinded by dust or smoke.

BOSS also has two forward-facing optical cameras (similar to those found in production cars with lane-departure warning systems), with 45- and 90-degree fields of view. Theyre able to read lane markings at a greater distance than short-range LIDAR. The cameras biggest challenge is familiar to human driversfacing into a sunset or sunrise.

Armed with this arsenal, BOSS successfully completed the DARPA 2007 course with cruising speeds also up to 30mph.



Cars like BOSS on the production line has still a few years on its queue counter but forays into automated driving have already been initiated with Cruise Control being implemented as early as 1958 in the Chrysler Imperial. Now it has

become a standard accessory on the luxury car segment.

Other engineering feats for automation in other aspects of drive control are being implemented too like the Nissan Birds Eye view parking system and of course the famous Paddle-Shift by Honda.

I await the day when I dont have to honk my way through the city traffic following a standardised system made possible through automation.

-Pavas Kant

References:

[www.sciencedaily.com](http://www.sciencedaily.com)

## **My experience at Sampark 2010**

Newly installed as a part of the volunteer team, I was eager to take part in an IEEE event and this came in the form of Sampark 2010. I for once let my enthusiasm get the better of my sleep and assembled with other equally sleep-deprived members at 7:30a.m. at the gates of our campus.

A bus took us to the location of the event- Science City, Ahmedabad. During the journey we were prepped up by the seniors on how we were to build our communication or sampark during the event. On our arrival there was the regular registration and distribution of T-shirts. Thanks to the hosting party, we had some breakfast after the registration. Then was started the main event where the real purpose of Sampark 2010 was fulfilled.

Basically we were introduced to the executive committee of the Gujarat chapter. The various student branches gave their presentations on the events they had undertaken in the last year and what they plan to do in the coming year. The various student bodies showcased a variety of promising events. One of students of DA-IICT, Pallav Vyas launched a section of the Gujarat chapter website where the student bodies could upload their content.

Next, DA-IICT was declared the best student body of Gujarat section for the year 2009!! This session concluded with an open-house where many people in the spirit Sampark, shared a great many ideas which were debated extensively. The organizing party then arranged a lavish lunch following which we were left to ourselves to communicate and share ideas with the various student bodies.

Later in the day, we took a detour of the Science City which included a simulation of a trip to Mars! The hosts, who never let us stay hungry, soon served us tea. The last event of the day was a game we played, to increase interaction among the participants.

Well, finally it was time to leave. It was really a very fun-filled event and I am looking forward to attending the next edition of it!

-Aman Agarwal

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GCET

## MIND HUNT @ GCET IEEE STUDENT BRANCH

**IEEE GCET Student Branch (Branch Code-64821)** organized a technical-cum-aptitude quiz **MINDHUNT** as a part of 'membership development program' on 10th Feb 2010 at G. H. Patel College of Engineering & Technology, Vallabh Vidyanagar, Gujarat, India.

The quiz was organised for the students of 1st year, 2nd year and 3rd year BE. And a scholarship of **25%, 15%** and **10%** of IEEE membership fees was awarded to two students from both levels each, who stood 1st, 2nd and 3rd respectively.

The first round of the quiz comprised of MCQ based, technical and aptitude tests comprising of 10 technical question and 20 aptitude questions, followed by a presentation on the benefits they can enjoy on joining IEEE. The second round was a rapid fire round for the top five in both the levels. Top three out of the five were awarded the scholarship. The students who ranked 6-10 were given **Technicle 2.0(GCETs own publication)** as a consolation prize. Also to encourage the participants to join IEEE they were given the brochures of why to join IEEE.

Though other students who could not win the scholarship, they showed tremendous zeal to join IEEE and many of them joined at the same time.

The questions for the aptitude were common to both 1st level and 2nd level students. They were of the level for MBA entrance exams and placement interview exams. The technical questions were set same for all 1st year students. And in the second level for students of 2nd and 3rd year the questions were based on their particular departments so that a greater insight can be sought regarding their technical knowledge. Though this round comprised of questions from both #rd year and 2nd year curriculum one of the 2nd year students made it to the final and won the 3rd position.

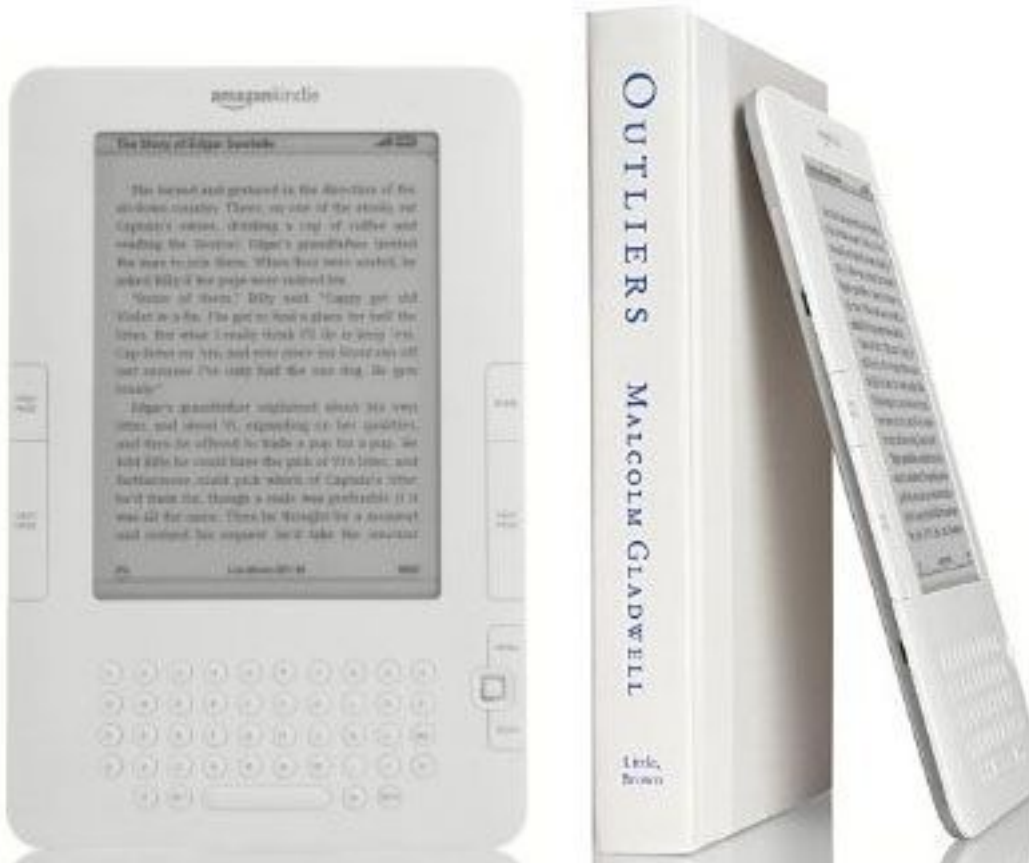
The quiz saw a total participation of 75 students which shows the awareness and willingness of the students of GCET to join IEEE.





## KINDLE BOOK OF E-BOOKS

Having used both Kindles 1 and 2, I thought it would helpful to list where the new Kindle excels and where it falters. The dead tree book will never die - I think it will even have more longevity and popularity than the boutique appreciation of vinyl records - but our generation will be the last to use books as our primary reading systems. Expect ebooks to hit colleges in perhaps five years and high schools and grade schools in about 7. That said, should you buy a Kindle now?



1. Its great if you travel. If you travel, the Kindle is a godsend. Im the kind of guy who stocks up books for even short trips, fully expecting to finish *War and Peace*, *Notes from Underground*, and four Clive Cussler novels on a plane trip from Pittsburgh to Columbus. With the Kindle you have a full complement of books available at any time.
2. You can put anything you want on it. You can easily email DOC, TXT, and PDF files to your own Kindle email address for conversion to the Kindle - but that costs 10 cents.
3. It looks great. The Kindle 2 is an amazing improvement over the Kindle 1. If every manufacturer took cues on build quality and product life cycles from Amazon, wed all be better off.
4. It feels great. This new version has excellent button placement and is thin enough to cut cheese. Its eminently portable.
5. Almost any book at any time. Except for a few esoteric reference books Ive found just about everything I need on the Kindle store. As more and more publishers go ebook - and I think an iPhone Kindle reader will truly blow the last bottlenecks out - this excuse will become ineffective.
6. It works in inclement conditions. I was in Mexico with the wife and kids and I wanted to test the Kindle out near the pool. Three books later and I felt like the laziest high-tech maven in the world. The ladies next to me brought twenty softcover novels with them and all of them got wet and messy. The Kindle worked like a dream.
7. The bookmarking and highlighting systems are vastly improved. The original Kindle had two methods for note-taking: you could select text and add a note or you could add a book mark. The new system refines those considerably and adds visual feedback whenever you take a note.
8. The dictionary is now in-line. When you move to a word, its definition appears at the bottom of the page. If you wanted a definition before, you had to pop out to a separate page.
9. You can *almost* see and understand the illustrations in 16 greyscale shades. Note the almost. However, its better than 4 shades, which was abysmal.

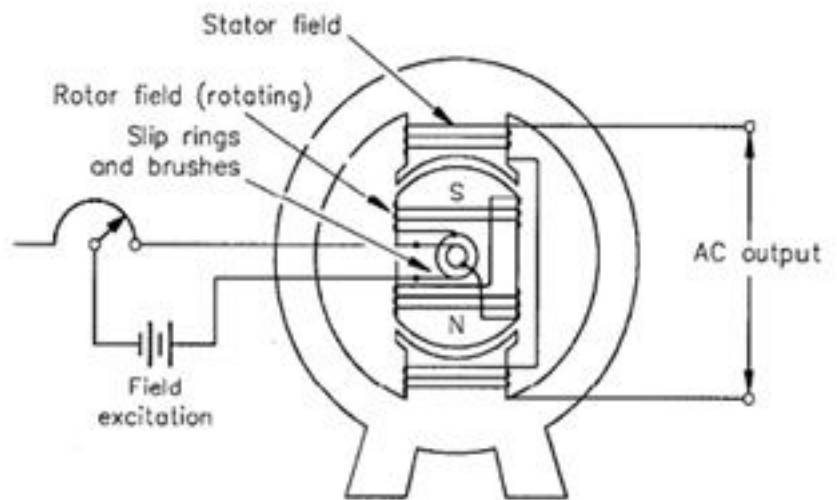
10. It is the future. Sorry, it is. Amazon nailed the ebook and theyre going to own the space for the next few years. Maybe theyll pull a Netflix and sell the software to OEMs, which is fine by me. But ebooks are what well be reading while we rocket to Mars in 2050. Or well have our robotic concubines read them to us.

**-MAITRIK PATEL, CHAIR PERSON, GCET IEEE STUDENT BRANCH (V.V.NAGAR).**



## Alternator Excitation System.

### THE ELEMENTARY AC GENERATOR



The elementary ac generator consists of a conductor (or loop of wire) in a magnetic field (usually produced by an electromagnet). The two ends of the loop are connected to slip rings and they are in contact with two brushes.

When the loop rotates it cuts magnetic lines of force, and hence an Electrical Voltage is induced in the conducting loop.

### EXCITOR BASICS

All the AC Generators (Alternators) require direct current to energize its magnetic field. The DC field current is obtained from a separate source called an exciter.

The exciter is the "backbone" of the generator control system. It is the power source that supplies the dc Magnetizing current to the field windings of a synchronous generator thereby ultimately inducing ac Voltage and current in the generator armature two basic kinds of exciters

Rotating

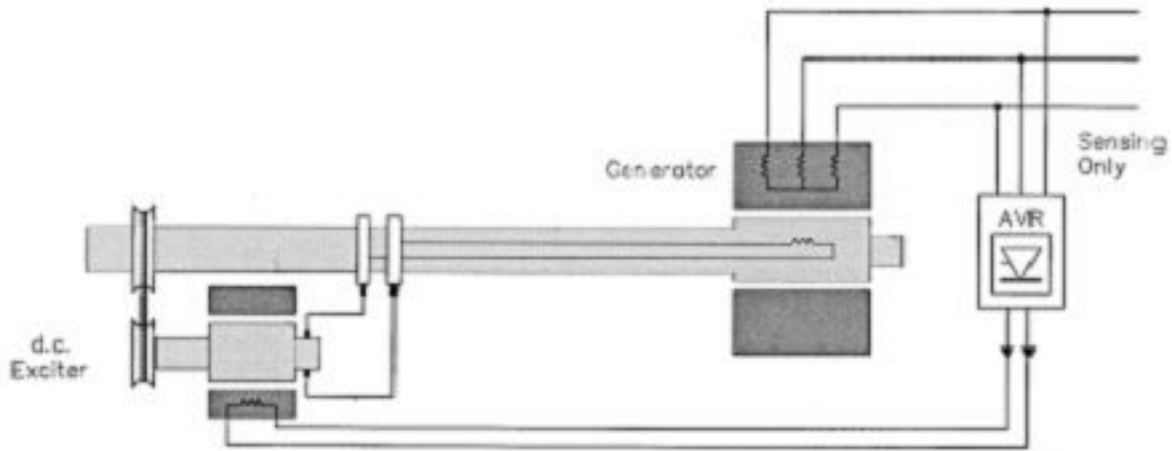
(Brush and brushless)

Static exciters

(Shunt and series)

The amount of excitation required to maintain the output voltage constant is a function of the generator load. As the generator load increases, the amount of excitation increases.

## ROTATING EXCITERS

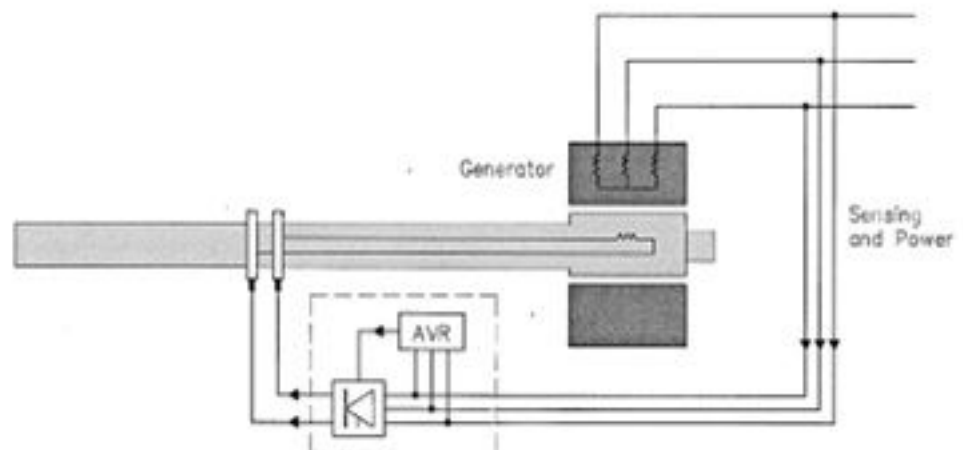


(a) CONVENTIONAL

**Brushless:** do not require slip-rings, commutators, brushes and are practically maintenance free.

**Brush Type:** require slip-rings, commutators and brushes and require periodic maintenance

## STATIC EXCITERS



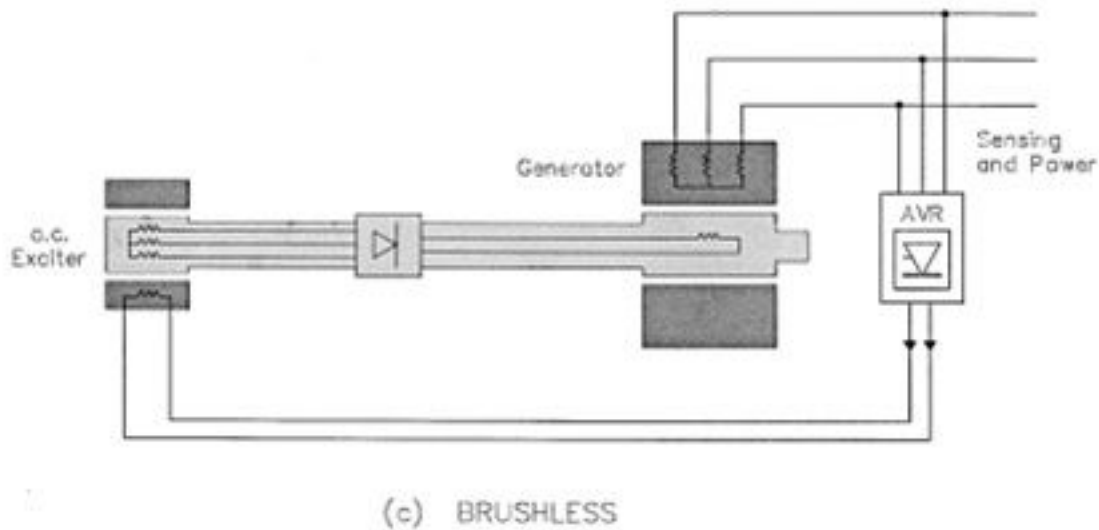
(b) STATIC

**Static excitation means no moving parts. It provides faster transient response than rotary exciters**

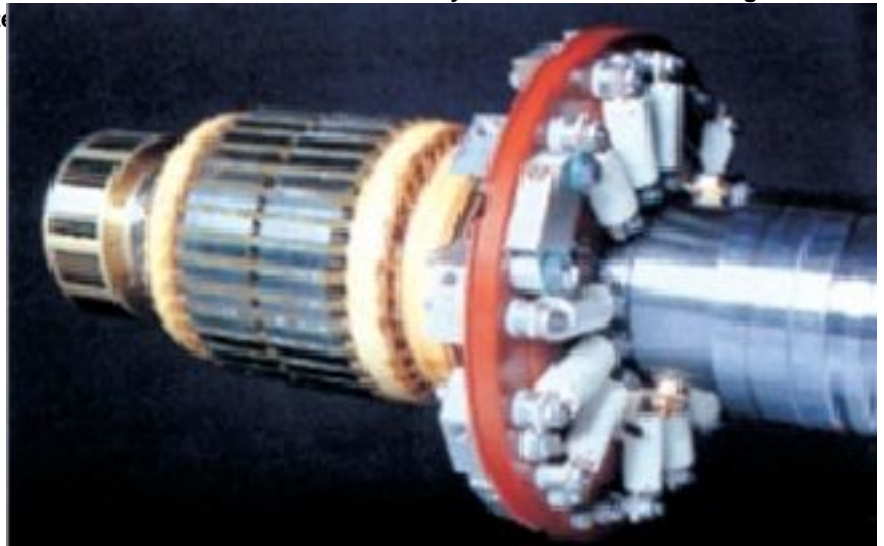
**Shunt Type:** operating field power from generator output voltage

**Series Type:** operating field power from generator output voltage & current

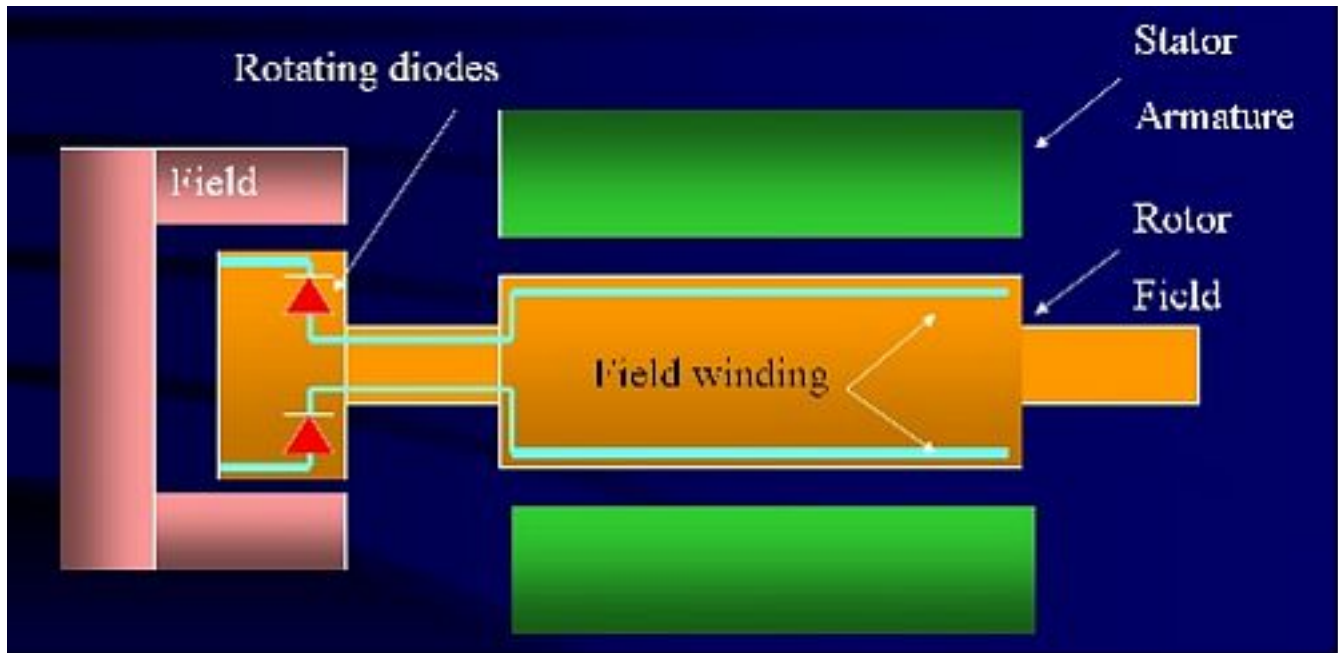
**Brushless Excitation System**



Brushless alternator is composed of two alternators built end-to-end on one shaft. Smaller brushless alternators may look like one unit but the two parts are readily identifiable on the large versions. The larger of the two sections is the main alternator and the smaller one is the exciter. The exciter has stationary field coils and a rotating armature (power coils). The main alternator uses the opposite



configuration with a rotating field and stationary armature. A bridge rectifier, called the rotating rectifier assembly, is mounted on a plate attached to the rotor. Neither brushes nor slip rings are used, which reduces the number of wearing parts.



Now with this configuration the Constant D C power from the Exciter is feds to the Field of the Main Generator through the common shaft on which the two are mounted. Obviously the bus carrying the current would be isolated from the shaft. The figure below shows the bus of the DC link from the exciter to the main field.

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## MSU

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### Nirma Institute of Technology

## Discover Yourself

Well friends you all are aware of GOOGLE. A search engine that has become part and parcel of our engineering lives. Apart from news, entertainment and gathering study related materials we all depend, usually, on GOOGLE to get ourselves acquainted and accustomed with the present scenario of our world. Sometimes we are so obsessed with GOOGLE that we utilize its power in doing simple calculations.

But the sad part is that we have forgotten to GOOGLE ourselves. Being obsessed with pursuing and showing our skills in obtaining materialistic gain most of us are using education as our medium to be able to win the competition. Most of us choose engineering not as our passion but as a source of security. Who among us can tell confidently that yes I wanted to be xyz engineer, not just because my parents advised, not just because the current scenario tells that it is the best field to have a career but it is because that I wanted to be XYZ engineer. Well hardly a few of us. This report does not want to convey and throw negative impact on our decision but it justifies that we would become an engineer but would be like a colorful flower with no fragrance in it. Have we ever thought why it is so? Friends it is because we can google the GOOGLE, but not ourselves.

Well with this resurrection, we the IEEE Student Branch of Nirma university, endeavored a unique non technical way of making our, teenage next gen, to break their illusions about a technical career by making them competent to be able to GOOGLE themselves in right direction, under the campaign **Discover yourself**.

The motto behind this campaign is to ignite each and every individual about their goals and dreams and to establish a gateway between dreams and reality.

Well, Charity begins at home. So in order to test our motto and vision we first conducted lectures in various schools of the city. Our main focus was on the students of standard 10<sup>th</sup> and 11<sup>th</sup>, 12<sup>th</sup> science stream since they are the one who have to take their decision to choose streams and disciplines. As expected the reaction was fabulous. So the branch committee segregated the work and different volunteers conducted lectures in various cities of Gujarat namely Gandhidham, Navsari, Rajkot, Patan and outside Gujarat in Bhilwara district of Rajasthan.

All most 700 students from the state and 100 students from other state were being addressed and we were able to establish a cordial relationship with them. The reason behind this fabulous success was that first of all we are the students-The Learner. So the mentality of the students was not affected by our brilliance as it would have been if any senior person conducted the event. Secondly, we all have recently passed from our schools and are more aware of the present scenario in the technical field and our experience emanated from our impromptu conversion to immature collegians from matured students also accounts itself.

The lectures that were conducted laid stress on providing the information regarding various fields and their scopes other than engineering/medical which are not advertised in the media, to be opted for after matriculating the higher secondary. Various examples were cited during the session which made it more interactive.

Well, sometimes it feels pity that our parents out of ignorance make brutal mistakes in taking decision regarding their child's career.

So our team has decided to conduct a special lecture for parents on career guidance and we have also decided to launch a website through which we can be in direct contact with the students and their queries.

To cut short, friends, it has been only 2 month duration since we have started conducting this activity. Most of us would be feeling unlucky of not having enough luck to have proper guidance from trustful source during our transience. But friends we can join hands to impart this knowledge to our juniors who can contribute much better because It is better to build a child then

to repair a man.

To conclude, it is an open invitation to all IEEE branches to contribute into this event DISCOVER YOURSELF.

Joyal G Shah

Editor-in-Chief

IEEE Student Branch

Nirma University

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### SCET

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#### U V Patel College of Engineering

IEEE-UVPCE wanted to do something different this time around. There was a repetition of same kind of workshops organized by different student branches, so we tried to break the monotonicity of the event calendar of a IEEE member. During a brain storming session in a member meeting, we came about the idea of organizing a workshop which would be technical but has sum creativity and art it in. Something that will force the attendee to jump totally out of the field of engineering and revive the artist within. So we introduced ...

## **ANIMATICS**

Animatics was a two day workshop on Photoshop and Flash, the two most used animation tools in the industry. The workshop was given by Mr. Pritesh, the president of the Toonz Academy Ahmadabad and his two associates. The workshop was attended by 40+ students (there were limited seats, we actually overshoot our limit).

### **Day 1**

The first day started off with a small greeting speech by our branch counselor Prof. K R Amin, and presentation of a bouquet as a token of welcome to the team from Toonz Academy.



After a small introduction of the faculty to the students, we got right down to business.



The first day was divided into 3 parts

1. Introduction to Photoshop: The workshop started with introduction to tools provided in Photoshop.
2. Advanced strategies of editing photos: The faculty taught us some tricks of the trade.
3. Hands on session: Although throughout the workshop people were working on there computers. Either editing photos or combining them. But the last 3 hours focused on combining the knowledge of the previous two sessions and making a beautiful picture of an angle.

## Day 2



The second day was focused on Flash, and followed the same framework.

1. Introduction to Flash: The second day started with introduction to tools in Flash.
2. Advanced Animating tricks: Again some tricks of the trade.
3. Hands on session: The last slot was used up in solving some doubts, and make something random of your own.



Animation is a combined form of art. It combined imagination with technique, creativity with intelligence and we hope we were successful in providing a solid base to the attendees in animation techniques.



In one recent meeting our current branch secretary Ashish Sharma proposed an idea of starting a new club. He proposed a new club, which would enable student from different branches to connect on projects. After much discussion we incepted the idea of a new club called ....



triEEE is a technical club which encourages students to make there own engineering projects and expand there knowledge by practical implementation of engineering concepts. It is seen often that there are very few intra-disciplinary projects by students. That is because, in our view, there is no general platform upon which engineering students can communicate and make teams.

## Club Objectives

- \* Provide students with a proper environment to peruse there project in.
- \* Provide them with as much as technical expert help as we can.
- \* Encourage students to present there projects in competitions.

Right now there has not been any advertising of the club, but the branch members have already started there own projects under this banner. Once we have something to show and a proper structure of the club, we would launch this club as soon as possible.

To support us, or see the progress, visit our website --> [trieee.livewireindia.org](http://trieee.livewireindia.org) (note: do not add a www.)