



AATRAL

అత్తగారు



EEE Newsletter
Volume 02 | Issue 04
October - December 2016

contents	01
Engenia	02
Success Stories	03
Departmental Activities	04
Faculty Activities	05
Electricity and Students	

ENGENIA 2K16



Engenia 2016 witnessed the rampage of the EEE stalwarts where we took center stage to stun our fellow contenders. EEE dominated in several events where we took cultural activities to the next level in terms of creation and innovation. ADZAP remained our fortress where we defended our title for the 3rd year running. Western Music came in as a sweet delight thanks to our team of talented musicians who set fire to the stage by grabbing the runner-up, narrowly missing the title. Poster designing, Business ideas and cooking without fire were other events bagged by EEE. A new event, Case it, introduced this year was a grand success for EEE in which we won the title. Emerging talents from the first year, trained warriors from the second year and the wise and experienced third years joined hands to bring glory to EEE which will never fade away from the history of LICET.

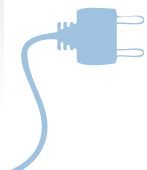
“You must be the change you wish to see in the world”
Mahatma Gandhi



Editorial Board

Editor in Chief
Ms A Inba Raxy [AP]

Technical Editors
 A.Muhammad Minna Noordeen[II]
 C.Abishek Joel[II]
 N.Shane Richard[II]
 A.Arulious Jora[II]
 Jeshua Varun Tracy[III]



SUCCESS STORIES



MS. P. JASMINE MARY ZANTHIYA
EEE Graduate from 2012-2016 Batch
Anna University Rank 32

It gives me immense pleasure in sharing my journey during the four fruitful years at LICET. First of all I would like to thank God for giving me this wonderful opportunity to do my graduation at LICET. Also I would like to

thank my parents for helping me to choose a well reputed institution. College life is a time filled with anticipation, anxiety, and wonderful discoveries.

College is not just a place where you'll learn answers to a lot of life's questions, but will make you question a lot of life's answers. Being at LICET I was able realize my latent potentials and grab the opportunities that were provided, the result of which I am shaped into what I am today.

I am indeed grateful to our Department for the various industrial visits and the hands on training from first year which helped us to gain more knowledge and experience. The constant support given by our Department HOD, Professors, Lab Assistants and also the friendly approach of all the staff members of LICET helped us to overcome the difficulty in learning the subjects each semester. The encouragement given by the staff of my Department and friends helped me to get a hat trick in receiving the academic topper award and also in securing 32nd Anna university rank among all the affiliated colleges in the Department of EEE for the year 2016. LICET proves to be a perfect launch pad for those who want to do their masters. Through TANCET 2016, I got placed in College of Engineering Guindy, Anna University, where I'm doing my post graduation in Power Systems Engineering discipline.

College days fill maximum colors in life's journey in the form of lessons. Work hard, chase your dream to the destination, glory awaits you at the finish line.

MS. S. SUBHALAKSHMI
EEE Graduate from 2012-2016 Batch
Anna University Rank 32



Down the Memory Lane, revisiting those incredible 4 years of my life (2012-2016) has always left me with tears of joy and ever filled enthusiasm in my heart. Thanks to God for having directed me to choose this temple of knowledge- an institution of values and discipline after my schooling. LICET offers a blend of learning, amusement and integration of enduring principles. The environment not only helped me in imbibing knowledge, but also in developing my overall personality, fuelling confidence in me. The entire study environment makes it easy for a student to learn and inculcate the spirit to stand out amongst the talented and hard working students. What amazes me is the plethora of extra curricular activities that the college offers, hence compelling every student to explore and pursue their extra talents. The college manages both the areas extremely well and a student always finds themselves in a pool of never ending opportunities, be it technical or non-technical. Another feather in the cap is the professors who impart quality education to their students. The college comes with high end infrastructure, some of the best faculty in the field and openness to learning unlike any other traditional engineering college. I'm carrying along with me beautiful memories of this place and will always cherish them. I am fortunate to be a part of this great college and I promise to enlighten the society with the flame of knowledge passed down to me from this auspicious place.

"SUCCESS IS LIKING YOURSELF, LIKING WHAT YOU DO, AND LIKING HOW YOU DO IT."

- Maya Angelou

MS. R. RITHIKA
EEE Graduate from 2012-2016 Batch
Anna University Rank 36

College life is that part of life to relive in our memories till we breathe!

Mine too was the best part like no other time in my life. I was quite anxious about the way the educational system worked here, the pedagogy and the peer culture. But it turned out to be one of my greatest

and most enriching experiences in terms of learning, skill development and skill diversification.

Throughout the course of my studies, I have been able to develop as a student by the knowledge acquired and as a person due to encouragement received by all. I would like to extend my heartfelt thanks to the entire faculty, friends and Management of LICET for effectively and sincerely helping me to grab the first ever opportunity that came into my life- placed at TechMand currently working at an OEM (Mahindra & Mahindra



automotive).

You create your own opportunities. Success is not final; Failure is not fatal: It's the courage that continues to count. Trust me, Engineering doesn't mean just slogging through the four years; it ensures a little enjoyment and a little mischievousness too!

I NEVER
DREAMED
ABOUT
SUCCESS
I WORKED
FOR IT. - Estee Lauder

DEPARTMENTAL ACTIVITIES

ENGENIA 2016

“The art world is a very prissy little thing over in the corner, while the major cultural forces are being determined by technology and science.”

Natalie Jeremijenko

In the midst of our hectic schedule of classes and examinations which tormented the students every now and then, Engenia 2016 came to our rescue adding a bit of colour to our college memories. Mr. Balasubramaniam inaugurated the off-stage events on the 17th of September, 2016. We had a chance to witness and participate in a lot of fun filled events. The off-stage events, starting from ‘Voice over’ where our students showcased their creative dubbing skills to ‘ADZAP’ which was the ultimate showdown proved to be a treat for the LICETians. Two weeks later on the 1st of October, we were in for another roller coaster ride of events the on-stage events. The minute one set foot on the first floor of Bertram’s hall, one could feel the vibrancy. Our students literally set fire to the stage with their phenomenal performance. We bagged prizes in various events like ADZAP, Potpourri, Business ideas, Western Music, Poster designing and many more! The climax of the event was the teaser launch by “Maaveeran Kittu” team featuring Vishnu Vishal, Sri Divya, and, not to forget Mr. Parthipan and Mr. Samuthirakani and Mr. Pa. Ranjith, director of Kabali. The event was diligently organized. There was a soul to it. A soul that was vibrant, contagious and exuberant. All credit goes to our Management, staff and students. To sum it up, Engenia 2016 will always remain a fairy tale in the minds of LICETians.

N. Shane Richard and A. Arulious Jora
II EEE

OUTREACH PROGRAM

3rd October, a team consisting of Mr Ajithkumar S, Mr Shyam Sridhar, Mr Naveen F, Mr Mouric infant J, Ms Aarthi, Mr Gowtham C, Mr Steve Roshan S, Mr Sriram Prasad S, Ms Disona, Ms Beulah, Mr Brittoalan M, Mr Selvajenner, Ms Nancy infant, Mr Vimalraj S, Ms Bibiana, Ms Ciana and Ms Jones Priya from 3rd year EEE went to St. Joseph Matriculation School, Susaipuram. The children of the school were happy to see us back and the most important thing was that they remembered the names of few volunteers who were there last time. This made the volunteers happy and they got attached to the children personally. We helped them with their school subjects, some volunteers taught Mathematics to the students of 9th and 10th classes. Few children had doubts in their subjects and we helped them. The children felt easier to communicate well since the volunteers were also students. Overall it was a great experience at school.

The school teachers appreciated the volunteers for their work which was an encouragement and the teachers wanted them to come to their school every week to conduct such programs.

Feedback:

At first when we went to the school we thought that the children don’t possess such a good knowledge or talents. But as we started communicating with them we understood that the students had immense talents which were not appreciated by the people around them. The children were lacking only in spoken English which can be improved by teaching them. But they excel very well in extra-curricular activities like Drawing, Karate, Poetry and Sports. We were astonished to see such talents from those children! If such outreach programs are conducted often, the children will develop themselves very well in all the aspects and can come up good in society.

This is the second time kural has organized an outreach program on 15th August. This time we visited a children’s home. 5 members from our team organized ourselves and we went to that home. We went there to conduct a program. The children felt happy to see some visitors. They were taken care of by two care takers. They welcomed us with warm greetings. It was a very long travel there but once we had such a warm welcome we did not feel the tiredness and we felt more enthusiastic to spend time with the children. There were 10 children who were of age 5 to 12. We asked to introduce themselves to us. Then as time passed we started to mingle with them well. Then we started playing few games and we also did some memory activities. Then we asked them to narrate stories to know how good they were in their speaking skills. At first they felt embarrassed to talk in front of us. But when one child started the shackles were broken and everyone started to narrate a short story they knew. We were happy to see children speak so boldly. Two students were hesitating to communicate with us and also they hesitated to take photographs. So we interacted with them personally. Finally we spoke about the person who inspired us to start this organization Dr. APJ Abdul Kalam and spoke about some inspiring life experiences about him.

Feedback:

We felt very happy to have visited such a children’s home. It was really a good learning experience. Overall it turned out to be a successful event.

Members:

Shyam Sridhar, S. Vimalraj, R. Sriram Prasad, C. Gowtham, S. Steve Roshan



FACULTY ACTIVITIES

“THE ONE EXCLUSIVE SIGN OF THOROUGH KNOWLEDGE IS THE POWER OF TEACHING”

ARISTOTLE

A teacher plays an integral part in a student's development. They toil, they suffer and they undergo a lot of excruciating pain in bringing order and discipline among the students with the hope of seeing them come out in flying colours. Our management and department encourages the faculty to undergo various training programmes and attend lectures which further enhances their skills.

Listed below are the various training programmes attended by the faculty of EEE department:

S. NO	Faculty Members attended	Name of the training	Location	Date	
				From	To
1.	Ms. A . Sharada	Glimpses on Effective Research and Proposal Writing	St. Joseph Institute of Technology	20/10/16	-
2.	Ms. S. Priyadarshini				
3.	Ms. A. Inba Raxy	Stem Cells and Regenerative Medicines	LICET	22/10/16	-
4.	Ms. M. Monisha Ann				
5.	Ms. S. Priyadarshini				
6.	Ms. A. Sharada				
7.	Ms. A. Inba Raxy	Advances in Bio-Fuels and Bio-Energy	ACT, Guindy	24/10/16	25/10/16
8.	Ms. J.S. Nancy Mary	Visit to Valeo India Pvt. Ltd.	Valeo IPL., R&D Centre, Chennai	08/11/16	-
9.	Ms. S. Sathya Bharathy				
10.	Ms. G. Annie Nancy				
11.	Mr. A. Infant Raj				
12.	Mr. M. Augustine				
13.	Ms. S. Priyadarshini				
14.	Ms. S. Sathya Bharathy	FDP of Learning Improvement Techniques	TLC, IIT-Madras	09/11/16	11/11/16
15.	Ms. M. Venmathi	Power Electronics in Renewable Energy	MNM Jain Engineering College	18/11/16	-
16.	Ms. A. Inba Raxy	Plastic Engineering	LICET	21/11/16	22/11/16
17.	Ms. J.S. Nancy Mary				
18.	Ms. S. Sathya Bharathy				
19.	Ms. M. Monisha Ann				
20.	Ms. J.S. Nancy Mary	Water Resource Management	Loyola College	24/11/16	25/11/16

FEEDBACK ON PLASTIC ENGINEERING WORKSHOP

TRAINER FEEDBACK

The faculty was very much cooperative, interactive with lots of questions. Also, helped me to learn a lot. Thanks. N. Krishnamoorthy

FACULTY FEEDBACK

- Very well organized and excellent content of the training regarding injection expertise with automobile applications
- This training gives us an industry exposure that is really needed from the faculty.
- Training was very complete and concrete: we learnt about plastic production processes, final products quality
- Training was very practical, the trainer brought real products and structured his training by showing real products. He used many examples and animations that made the session very understandable
- We learnt about products defects due to plastic injection and molding processes and how to solve the defects
- Training was very interactive, we could ask questions
- The training was highly technical. The trainer was able to translate the high technical language into vocabulary the faculty from various back ground could easily understand
- The trainer was highly professional
- We had a demonstration of the latest simulation software that helps the engineers to design high quality plastic products.



ELECTRICITY AND STUDENTS

Supervisory Control and Data Acquisition System (SCADA)

INTRODUCTION:

SCADA systems have been used in the utilities industry in the United States (U.S) since the 1960s. These systems are used to monitor critical infrastructure systems and provide early warning of potential disaster situations. One of the most important aspects of SCADA has been its ability to evolve with the ever-changing face of technology that is now referred to as information technology (IT) systems. SCADA has evolved from a monolithic architecture to a networked architecture.

SCADA is an acronym for Supervisory Control and Data Acquisition. SCADA systems are used to monitor and control a plant or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining and transportation. These systems encompass the transfer of data between a SCADA central host computer and a number of Remote Terminal Units (RTUs) and/or Programmable Logic Controllers (PLCs), and the central host and the operator terminals. A SCADA system gathers information (such as where a leak on a pipeline has occurred) and transfers the information back to a central site, then alerts the home station that a leak has occurred, carrying out necessary analysis and control, such as determining if the leak is critical, and displaying the information in a logical and organized fashion. These systems can be relatively simple, such as one that monitors environmental conditions of a small office building, or very complex, such as a system that monitors all the activity in a nuclear power plant or the activity of a municipal water system. Traditionally, SCADA systems have made use of the Public Switched Network (PSN) for monitoring purposes. Today many systems are monitored using the infrastructure of the corporate Local Area Network (LAN)/Wide Area Network (WAN). Wireless technologies are now being widely developed for purpose of monitoring.

SCADA systems consist of one or more field data interface devices, usually RTUs, or PLCs which interface to field sensing devices and local control switchboxes and valve actuators. A communications system used to transfer data between field data interface devices and control units and the computers in the SCADA central host. The system can be radio, telephone, cable, satellite, etc., or any combination of these. A central host computer server or servers (sometimes called a SCADA Center, master station, or Master Terminal Unit (MTU)). A collection of standard and/or custom software [sometimes called Human Machine Interface (HMI) software

or Man Machine Interface (MMI) software] systems used to provide the SCADA central host and operator terminal application, support the communications system, and monitor and control remotely located field data interface devices.

SCADA OVERVIEW:

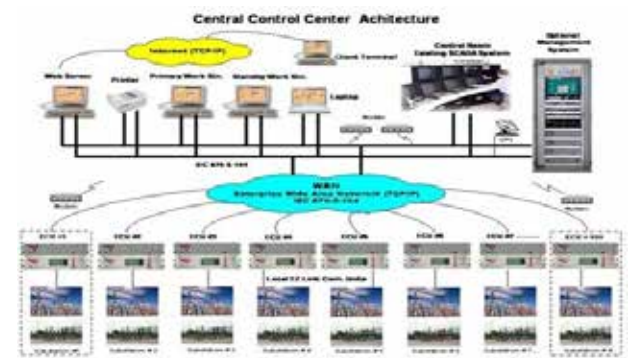
SCADA is an acronym for Supervisory Control and Data Acquisition. SCADA systems are used to monitor and control a plant or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining and transportation. These systems encompass the transfer of data between a SCADA central host computer and a number of Remote Terminal Units (RTUs) and/or Programmable Logic Controllers (PLCs), and the central host and the operator terminals. A SCADA system gathers information (such as where a leak on a pipeline has occurred), transfers the information back to a central site, then alerts the home station that a leak has occurred, carrying out necessary analysis and control, such as determining if the leak is critical, and displaying the information in a logical and organized fashion. These systems can be relatively simple, such as one that monitors environmental conditions of a small office building, or very complex, such as a system that monitors all the activity in a nuclear power plant or the activity of a municipal water system. Traditionally, SCADA systems have made use of the Public Switched Network (PSN) for monitoring purposes. Today many systems are monitored using the infrastructure of the corporate Local Area Network (LAN)/Wide Area Network (WAN). Wireless technologies are now being widely deployed for purposes of monitoring.

SCADA SYSTEMS CONSIST:

One or more field data interface devices, usually RTUs, or PLC's which interface to field sensing devices and local control switchboxes and valve actuators. A communications system used to transfer data between field data interface devices and control units and the computers in the SCADA central host. The system can be radio, telephone, cable, satellite, etc., or any combination of these. A central host computer server or servers (sometimes called a SCADA Center, master station, or Master Terminal Unit (MTU)). A collection of standard and/or custom software [sometimes called Human Machine Interface (HMI) software or Man Machine Interface (MMI) software] systems used to provide the SCADA central host and operator terminal application, support the communications system, and monitor and control remotely located field data interface devices.

FIELD DATA INTERFACE DEVICES:

Field data interface devices form the eyes and ears of a SCADA SYSTEM



DEVICE such as receiver level meter valve position transmitters & temperature, power consumption meter and pressure meter all provides information that can tell an experienced operator how well a water distribution system is performing in addition, equipment such as electric Transmitter, temperature transmitters, power consumption meter, and pressure valve actuators motor control switch bored, and electronic chemical dosing facilities can be used to form the hands of the SCADA system and asset in automating the process of distributing water however before any automation or remote monitoring can be achieved the information that is passed to any form the field data interface device must be converted to a form that is compatible with the language of the SCADA system to achieve this some form of electronic field data interface is required RTUs, also known as remote terminal units provides this interface they are primarily used to convert electronics signals received from field interface device into the language (known as the communication protocol) Used to transmit the data over a communication channel

The instructions for the automation of field data interface devices such as pump controls logic are usually stored locally this is largely due to the limited bandwidth typical of communication links between the SCADA central host computer and the field data interface device such instructions are traditionally held Within the PLCs connect directly to field data interface devices and incorporate programmed intelligence in the form of logical procedures that will be executed in the event of field conditions PLCs have their origins in the automation industry and therefore are often used in manufacturing and process plant applications the need for PLCs to connect to communication channels was not great in these applications as they often were only required to replace traditional relay logic systems or pneumatics controllers SCADA systems on the other hand have origins in early telemetry applications where it was only necessary to know basic information from a remote source the RTUs connected to these systems had no need for control programming because the local control algorithm was held in the relay switching

logic as PLC were used more often to replace relay switching logic control systems telemetry was used more and more with PLCs were used become desirable to influence the program within the PLC through the use of a remote signal this is effect the supervisory control part of the acronym SCADA where only a simple local control program was required it because possible to store this program the control within that device would allow the PLC report the state of the control program to a computer plugged in to a PLC or to a remote computer via a telephone line PLC and RTO manufactures therefore complete for the same market. As a result of these developments, in the line between PLCs and RTU has blurred and the terminology is virtually interchangeable. For the sake of simplicity, the term RTU will be used to refer to a remote field data interface device; however such a device could include automation programming that traditionally would have been classified as a PLC

COMMUNICATIONS NETWORK:

The communication network is intended to provide the means by which data can be transferred between the central host computer servers and the fields based RTUs. The communication network refers to the equipment's needed to data transfer different site the medium used can either be cable, transfer data to and from different sites the medium used can either be cable telephone or radio. The use of cable is usually implemented in a factory this is not practical for systems covering large geographical areas because of the cost of the cables conduit and the extensive labors in initially them. The use of telephone lines is more economical solution for system requiring online connection with the remote station this is the since the telephone line will be the dial-up stations line used can be updates at regular intervals. Here ordinary's telephone lines can be used the cost can dial a particular number of the remote sites get the reading and send commands remote get the reading the use radio offers an economical solutions radios modems are used conned the remote site to the cost line operations can also be implemented on the radios system for locations where the direct radios link cannot be established a radio repeater is used to links these sites historically SCADA networks have been dedicated networks however with the increased developments of office LANs and WANs as a solution for interoffice computer networking there exists the possibility to integrate SCADA LANs into everyday office computer networks the for most advances of this arrangement is that there is no need of invert to separate computer networks of the SCADA data with existing office application such as spreadsheet work managements

systems data history databases geographic information system

SCADA HARDWARE:

A SCADA systems consists of a number of remote terminal units (RTUs) collecting field data and sending that data back to a master station, via a communication system. The master station displays the acquired data and allows the operator to perform remote control tasks. The accurate and timely data allows for optimization of the plant operation and process. Other benefits include more efficient, reliable and most importantly, safer operations. This results in a lower cost of operation compared to earlier non-automated systems.

On a more complex SCADA system there are essentially five levels or hierarchies:

- Field level instrumentation and control devices.
- Marshaling terminals and RTUs
- Communications system
- The master station(s)
- The commercial data processing department computer system

The RTU provides an interface to the field analog and digital sensors situated at each remote site. The communications system provides the pathway for communication between the master station and the remote sites. This communication system can be wire, fiber optic, radio, telephone line, microwave and possibly even satellite. Specific protocols and error detection philosophies are used for efficient and optimum transfer of data. The master station (or sub-masters) gather data from the various RTUs and generally provide an operator interface for display of information and control of the remote sites. In large telemetry systems, sub-master sites gather information from remote sites and act as a relay back to the control master station.

SCADA SOFTWARE:

SCADA software can be divided into two types, proprietary or open. Companies develop proprietary software to communicate to their hardware. These systems are sold as 'turnkey' solutions. The main problem with this system is the overwhelming reliance on the supplier of the system. Open software systems have gained popularity because of the interoperability they bring to the system. Interoperability is the ability to mix different manufactures' equipment on the same system.

Citect and wonder ware are just two of the open software packages available in the market for SCADA systems. Some packages are now including asset management integrated within the SCADA system. The typical components of the SCADA system are indicated in the next diagram.

FEATURES OF SCADA SOFTWARE:

ACCESS CONTROL:

Users are allocated to groups which have defined read/write access

privileges to the process parameters in the system and often also to specific product functionality

MMI:

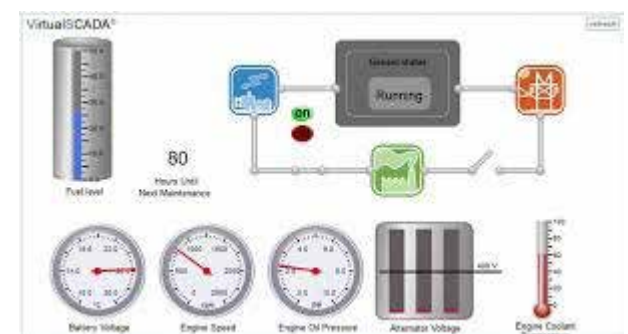
The product support multiple screens which can contain combinations of synoptic diagrams and text. They also support the concept of a "generic graphical object with links to process variables. These objects can be "dragged and dropped" from a library and include into a synoptic diagram most of the SCADA products that were evacuated decompose the process in "atomic" parameter to which a tag-name is associated the tag-name used to links graphical objects to device can be edited as required the products include a library of standard graphical symbols, many of which would however not be applicable to the type of applications encountered in the experimental physics community standard windows editing facilities are provides ; zooming re-sizing scrolling... on line configuration and customization of the MMI is possible for users with the appropriate links can be created between display pages to negative from one view to another view

TRENDING:

The products all provides trending facilities and one can summarize the common capabilities as follows The parameter to be trended in a specific chart be predefined or defined on-line a chart may contains more than 8 trended parameter or pens and an unlimited number of chart can be displayed real-time and historical trending are possible although generally not in the same chart.

ALARM HANDLING:

Alarm handling is based on limit and status checking and performed in the data servers more complicated expressions can be devolved by creating derived parameters on which status limit cheating is than performed the alarm are logically handed centrally the information's only exists in the place and all users see the same status and multiple alarm priority levels are supported. It is generally possible to group alarms and to handle these as an entity. Furthermore,



it is possible to suppress alarms either individual or as a complete group. The filtering of alarms seen on the alarm page or when viewing the alarm log is possible at least on priority, time and group.

However, relationship between alarms cannot generally be defined in a straightforward manner. E-mail can be generated or predefined actions automatically executed in response to alarm conditions.

T.C.G. Jaswanth Rajha
II EEE

EUDAIMONIA

‘Happiness Is Not Merely Transitory, But Transcendental’

From the origin of the human existence there is one big question that lingers in everyone’s mind that is: ‘What is my goal?’ this search has started in everyone but has not stopped in many. Down the centuries there were many attempts by spiritual persons, atheist, philosophers, scientists, ethnic groups and our own ancestors. I would say it is good that we poses this question in our mind which makes our life more meaningful and purpose-filled. If only you would have noticed every being get attracted or influenced by something/someone and thus takes a journey of a move towards it. Animals do it out of instinct rather homosapiens guided by reason. There existed a polymath who lived between 384-322 BCE in Stagira, Greek colony, near the coast of Aegean Sea, who is none other than the great philosopher ARISTOTLE. He tried to answer these questions of reality and brought out a quality work called ‘Nichomachaen Ethics,’ named after his son. Let us see a glimpse from his work through this article and try to infer a meaning filled life.

If u ask yourself that what is your ultimate end/goal of life finally we end up with a simple term: ‘EUDAIMONIA,’ means happiness. Yes, it’s true indeed. This is not achieved in a day or two for it is a process. The right way to approach it would be to involve in activity in accordance with virtue. This is where it becomes more anthropocentric by giving more importance to feelings and intellect because our ‘end should also justify the means,’ I think that should be the underlying motivation towards happiness.

Let me mention some of the key tools to achieve it. The first one on the roll is Theoria (contemplation or theoretical knowledge) and Phronesis (prudence or practical knowledge). The Theoria on one hand is abstract and intellectual in nature, it is concerned with universals and involves in deduction (from whole to parts). Whereas, Phronesis involves in both deduction and induction (parts to

whole). To understand this, for instance consider a carpenter. He has a Theoria to plan his work and Phronesis to complete his thought so these both are mutually supportive. Having only either one of them is merely useless. It is this what contributes to what we generally call as ‘maturity.’

Looking from the eyes of Aristotle our happiness is influenced not only by ourselves but also by socio-political scenariowhichshouldensurethewellness and harmony of the society in all the way possible. The death also plays a vital role in determining the improvement of an individual towards happiness and it is observed that it is for the funeral of an elderly person where more people attend because of the experience wisdom gained by that dead person. Whereas, for a youth’s funeral people come in less number and they mourn over for the tragedy that has spoiled the flourishing/happiness of the individual. He also adds that the it is the goal which regulates our life in a cyclic way though we attain it againandagain. Thoughwehaveultimate goal of attaining perfection/happiness/ God or whatever you may term it as, we also have sub goals like accomplishing a job, carrying forward our responsibility so on and so forth. It is by achieving these daily goals leads us properly to the ultimate goal that awaits us.

The wrong understanding that most of the people have towards happiness is that it comes from mere pleasure like food, drinks, drugs, pornography, films, money and what not. But the true nature of happiness/ Eudaimonia is ‘self-sufficiency. It means, that attaining it does makes us to crave for anything else to satisfy us, we already reach the state of fullness (God-like). For instance taking a drug or smoking cigarette may give a satisfactory feeling (pleasure) that is transitory and afterwards impels us to do it again and again in an unending manner. It is here where the paradox lies.

Coming back to Aristotle he says that having a better intellect is the only guide to the road of happiness. That is he insists on intellectual growth thus promoting education. It is education which leads to prudence. And it is the prudence which sets the way to maturity. Finally, it is the maturity which helps us to march towards happiness in the right direction and motivation. So let us seek for knowledge and continue to strive in the path of happiness in a more effective way.

Silvester Cyril
II EEE

SERVICE BEYOND KNOWLEDGE

“The purpose of human life is to serve, and to show compassion and the will to help others”

Albert Schweitzer



The Rotaract Club of LICET (RID 3230), installed on August 10, 2016 works under the Rotary Club of Madras North-West. Our Theme is “Live and let live”. This simple phrase, has kept its huge meaning shaped into it. By serving to the needy, we give our helping hands and achieve in our Community service.

In the place of problem, poverty and calamities, we serve the needs of the people, which will help to overcome their daily sufferings. Help can be provided by anyone at any time. But, the timely help makes the situations better in the most distressing period.

As a proud member of the Rotaract club of LICET, I had a great opportunity to help the visually challenged students studying in Loyola College. My work was to record the books of those students thus helping them to study for their exams. I managed to successfully record two books for them which are

- i. Sundharagandam
- ii. Tamil Ilakiya Varalaru

Using my mobile 24/7 was easier than recording these two books for a few days. But the sense of social responsibility helped me carry on and at the end of the day, it was really an amazing experience that filled me with pride for having served the specially gifted part of the society who face challenges in their day-to-day lives.

Social service is a great educational discipline. It lifts us out of our petty selves and elevates our minds, hearts and spirit. It is a spiritual training that makes our lives richer and fuller. It gives us profound spiritual satisfaction and makes us really and truly happy. There is no greater happiness than the happiness that comes to us through the happiness of others.

A.Arulious Jora
II EEE

The War of Currents

(Contd...)



In 1887 Tesla is introduced to Alfred S. Brown, director of Western Union & Charles F. Peck, a New York city attorney. He demonstrates his "Egg of Columbus" before them and convinces

them that Alternating Current is the future of electricity. He agrees to split his patents on a 50-50 basis in exchange for funding. Brown located a laboratory for him at 89, Liberty street and the company filed for its first patent by the end of the month.

In 1888 Tesla's motor draws the attention of George Westinghouse, a business magnate and entrepreneur who believe that he could make a vast fortune through electricity.

Since he has perfected his motor, he plans to sell his AC patents to George Westinghouse who kept immense faith in Tesla. The patents for the poly-phase AC system were sold for 75000 dollars and a royalty of 2.50 dollars for each Horse power sold by Westinghouse. This is the modern day equivalent of about 2 million dollars.

Tesla's chance couldn't have come at a better time. By late 1888, Edison's system was failing to meet the demands as the amount of power required arose quite rapidly. Still Edison wasn't wishing to give up and was determined to build his empire on DC. This is regarded as Edison's greatest weakness nowadays- his inability to change his mindset as the market changes. This was not because of lack of knowledge, but due to ego.

Tesla's AC system operated in high voltage in the range of 11kV. But this wasn't safe inside homes. Edison was willing to go to any extent to destroy AC and a cruel idea rose in his mind.

In order to make people realize the hazards of AC, Edison sponsored smear campaigns against George Westinghouse. H.P. Brown, an ally of Edison started manufacturing electric chairs operated by Westinghouse's system and began executing animal from the smallest to the largest publicly. That same year the state of New York convicted William Kemmler of killing his mistress with an axe and sentenced him to die in an electric chair.

Edison provided his staff to assist Brown in an effort to further damage Westinghouse's public image. The execution was a total disaster and Westinghouse suffered a great blow.

During this period, Tesla comes across

a device which could make his AC system more safe and feasible. If not for this device AC would never have been a reality. It's the transformer! It could step-up voltage to high ranges and step-down for distribution to users. In spite of the problem of safety being solved to some extent, Westinghouse needed a public victory to permanently establish AC.



In 1891, the Niagara falls Power Company is in need of a company to step forward to harness energy from the gallons of water from the falls every second. Edison meets with his board and puts forth his idea but he is in for a shock when his board has decided to switch over to AC behind his back. His investors accuse him for ruining the company which was once the forerunner in electric power generation and distribution. Even the name of the company is changed from "Edison Electric" to "General Electric". Hence, Edison is forced to witness the battle for the Niagara project from the sidelines. Meanwhile Tesla submits his idea to the committee. They are amazed to know that his system can transmit power to almost anywhere in the United States. Eventually Westinghouse gets the project and "The war currents" is ultimately won by AC.

But it comes a bit too late. Westinghouse explains Tesla that he has incurred a lot of debts and can no longer pay him the royalties he had promised. Tesla forfeits the royalties to his patents which was a costly move he made. Tesla spends the rest of his life as a mad scientist who never got the credits for his priceless contributions in electricity. He died on January 7, 1943 at a ripe age of 86 alone in room 3327 of the New York Hotel. His body was later found by a maid Alice Monaghan after she entered the room ignoring the "Do not disturb sign" he had placed 2 days earlier.

In spite of being credited as "The man of one thousand inventions", Edison had to accept the bitter fact that he had lost the war of currents to an unknown

genius who had once worked under him. As stated before, it was his attitude that gifted him his defeat. But he still went on and achieved laurels and accolades in other fields.

Looking at Tesla's life many nowadays regard him as a fool who failed to hold on to the vast fortune he had. But all he wanted was that his system to reach to all corners of the globe and create a new path in power transfer.

And now dear reader, I've put forth the facts that have been known for about a century. Now, it's up to you to decide who the real genius is. Two men who made two different contributions in the same field... Tesla or Edison? You decide.

N.Shane Richard
II EEE

SCIENTISTS DEVELOP MEMORY CHIPS FROM EGG SHELLS.

Eggshells might become the data storage of the future. A Chinese team showed that it can be used to create a greener Re RAM storage for computers.

A team from the Guizhou Institute of Technology hatched a plan: they went to the market, bought few random eggs, ground their shells for three hours to make a homogenous nano sized powder. After it dried the team mixed this powder into a solution and poured into a substrate.

Thus they ended up with part of the memory chip through which electricity actually flows- "ELECTROLYTE". But egg chips are not an item to see in chip factories, so how could it function as RAM? Well the team tested the egg paste to see if it changes its internal resistance when voltage flows through it. This property can be used to create memory chips of resistive random access memory (Re RAM) variety. There is a lot of interest in Re RAMs. It could be used to create faster, denser and more energy efficient storage media than traditional RAM or flash memory.

And it worked. The team was able to encode 100 bits of binary information into egg memory until it failed. It doesn't stack up billions of cycles life regular materials take, but as a proof that the concept is incredible. We are a long way off in seeing one of these devices in market. But the idea can be taken as a stepping stone for future applications and with enough development, could provide clean and sustainable alternative to the electrolytes used today.



Annie.K
II EEE