



# The Institution of Engineers (India)

## KANCHEPURAM LOCAL CENTRE

Agni College of Technology Campus, off OMR Thalambur, Chennai - 600130  
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ISSUE 2

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# NEWSLETTER

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# Chairman's Desk



## Dr. R. Venkatesan FIE

Chairman IEI KLC  
Chair IEEE-OES India  
Vice-president NACE SZ  
Chair MTS India

The IEI Kanchipuram Local Centre has started getting recognition for the spurt of activates being undertaken in a short span of time. Thanks to our Honorary Secretary, our distinguished committee and IEI members for planning symmetrically to execute various activities in the interest of engineering profession.

I thank Mr Bharat Patel Chairman of IEI Computer Engineering Board to visit our Center and inaugurated our first seminar

Our maiden newsletter of IEI Kanchipuram was well received and would like to expand with new ideas from our members. We are closely working with the IEI Tamilnadu State Centre. One among them is the forthcoming National Seminar on Aeronautical Engineering to be held at the Sathyabama University from 3 to 4 November 2017. We also have to play very proactive role in organizing All Indian Engineering Congress in Chennai as desired by the Chairman of IEI TN State Centre.

We have a plan to show our collective expertise and to bring new ideas and opportunity to our IEI system As a first step it is proposed to prepare a status report on water bodies in Kanchipuram and I seek your suggestion and involvement in this activity

As I mentioned in the last newsletter we are doing IEI – KLC membership drive from Industries and educational Institutions, inaugurated IEI – KLC Office at Agni College of Technology Campus on 24th June 2017 and Opened website of IEI – KLC; Organized two Seminars/Workshop at Agni Institute of Technology and SRM University We have also inaugurated two student chapters in SRM University and honored committee members of new student chapter in Sai Ram Institute of Technology I request our members to bring one new member and would like to have active involvement of Industry

I invite you all to attend our first AGM hosted by Sai Ram institute of Technology on 24 October 2017

We are thankful to IEI Council for extending the tenure of IEI Chairman and Secretary of IEI KLC up to 2018 in view of delay in starting of activities of this local centre

Let me close this message to share with you about myself receiving the prestigious MTS Lockheed Martin Award at Anchorage Alaska USA on 20 September and first Indian to receive this International award

Thanks to everyone

With profound regards,

Venkatesan PhD FIE

Chairman, IEI – KLC

Mobile: 9444399829

# Honorary Secretary's Desk



Dear Fellow Engineers,

We are delighted to present this second issue of our IEI-KLC's newsletter. My sincere appreciation to all the fellow and budding Engineers who have shown lots of interest and enthusiasm in making this newsletter more informative through your articles. This is a useful platform for knowledge sharing and I sincerely encourage and recommend all of us to utilize the opportunity in an effective way.

IEI headquarters has extended the service period of office bearers till the end of session 2018. We have nominated 10 more new committee members under various divisions in addition to the existing 14 members along with a Joint Secretary for these sessions. With the guidance and support from our Tamil Nadu State Centre, Council members and the support of all our committee members, we are striving to reach all our fellow Engineers in the Industries & Academic Institutions to conduct various activities. During the last quarter of the IEI-KLC session a One day National seminar was conducted on "Ethical Hacking", The Institution of Engineers TNSC organized Ar F B Pithavadian Memorial Lecture on "Low Cost Housing", and IE(I) Student Chapter was inaugurated in SRM University. "Engineers' Day 2017" was celebrated at Tamilnadu State Centre in association with Kanchipuram and Thiruvallur Local Centers on 15th September 2017. Many Engineering College students participated in the paper presentation competition held on 14.09.2017 and the prize winners of this event were awarded with certificates.

It has been an absolute pleasure and I am sure all these are just a beginning and there is a lot more to be happening. I request all the fellow and budding Engineers to show your continuous support and active participation in the forthcoming sessions. We need to progress steadily and ensure that the engineers prove themselves to be not only well qualified engineers but also very responsible and ideal citizens of our country.

Let us progress together with our honest endeavors.

No	Members	Designation	Division	Meambership No.
1	 Dr. R. Venkatesan, FIE Scientist & Head, NIOT 9444399829 venkant@niot.res.in	Chariman	Mechanical Engineering	F11839-7
2	 Dr. S.R.R. Senthil Kumar, FIE Principal, Agni College of Technology 9445024081 srr_senthilkumar@yahoo.com	Hon. Secretary	Civil Engineering	F-119791-2
3	 Dr.G.Ranganath, FIE Principal Adhiyamaan College of Engg. 9443260071 vp@adhiyamaan.ac.in	IEI Chairmam TNSC Ex Officio Member IEI Counsel Member	Mechanical Engineering	F-111669-MC
4	 Mr.TM Gunaraja,FIE TMG College of Arts & Science 9444026120 tmgraja@live.in	Ex Officio Member IEI Counsel Member	Mechanical Engineering	F-017041-MC
5	 Er.R.Ramdoss, Hon.Secretary,IEI Tamil Nadu State Centre. 9444019091 ramdoss63@gmail.com	Ex Officio Member	Production Engineering	M139538-0
6	 Prof.K.Palanikumar, M.E.,Ph.D.,F.I.E., Professor and Principal, Sri Sai Ram Institute of Technology 9677053338 palanikumar_k@yahoo.com	Member	Mechanical Engineering	F-116936-6
7	 Dr.B.Justus Rabi, Principal, Shri Andal Alagar College of Engineering. 9894523063 bennisrobi@rediffmail.com	Member	Electrical Engineering	M-1452525
8	 Commodore Shekar, Ex Navy 9840936730 cmdeshekhar@gmail.com	Member	Marine Engineering	F-11143
9	 T.R. K. Suriyaprakash Executive Engineer - PWD O/D to HECE Department 9095444145 suri1960@gmail.com	Member	Civil Engineering	M-1396492
10	 Dr. R. Ramakrishnan Professor & Head Tamil Nadu Sports University 9444048854 ramkinr@yahoo.com	Member	Production Engineering	F-129169
11	 Dr. R. Shiva Shankar Assistant Professor Sri Sai Ram Institute of Technology 9840525502 shiva_master2005@yahoo.com	Member	Civil Engineering	M-1563496
12	 Mr.R.Sundar, Scientist, NIOT 9444041854 rsundar@niot.res.in	Member	Computer Engineering	M-14808107

No	Members	Designation	Division	Meambership No.
13	 Mrs. R. Illakiya Assistant Professor Sri Sai Ram Institute of Technology 9894365989 ilakkiya.it@sairamit.edu.in	Member	Computer Engineering	M-1563496
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15	 Dr. Srinivasan Alavandar Dean Academics Agni College of Technology 9994051191 seenu.phd@gmail.com	Joint Secretary	Electrical Engineering	M1585996
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17	 Dr. Dinesh Kumar, Principal Thangavelu Engineering College 9840678222 Dhinesh123@gmail.com	Member	Mechanical Engineering	M-132684-2
18	 Dr.K. ARUN VASANTHA GEETHAN Prof & Head of Mechanical Department St. Joseph Institute of Technology 9840009249 kavgeeth@gmail.com	Member	Mechanical Engineering	M 1592410
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20	 Prof.Ramamoorthy, Associate Prof & Head of Civil Department Agni College of Technology 9443457504 ramamoorthy.cvl@act.edu.in	Member	Environment Engineering	M-1585996
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22	 Dr.G.Thamaraiselvi Prof & Head of Electronics& Communication Sri Sai ram Institute of Technology 8754582229 hodece@sairamit.edu.in	Member	Electronics & Telecommunication Engineering	
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24	 Dr.Leema Rose, Asso Professor Valliammai College of Engineering 9443481752 leema_arose@yahoo.com	Member	Civil Engineering	

## Articles



### Top Open Source Softwares for Engineers

**Mr. Hithu Anand,**

Asst Professor - Department of Electrical and Electronics Engineering,  
Agni College of Technology, Chennai

Hi everyone, this article is an attempt to introduce open source software's focusing on engineering students as well as faculties in engineering field. I have been writing many articles with "open source for you" magazine. Hence I wish to include gist of those publications, by writing this article. A computation platform free from commercial soft wares will give us considerable degree of freedom. Now, having such platform with open source licenses like GNU general public license will give us any degree of freedom. The open source community has evolved beyond anyone's understanding. Many of us are still unaware of the technological advancement out there.

Let me introduce my platform. My PC is powered with Ubuntu-14.04-LTS operating system (OS), which is a debian based Linux OS. It can be freely downloaded and installed in any computer. I have been using Linux since 2009. Linux was first released by Linus Torvalds in the year 1991. He compiled it in GCC compiler with c programming. It was having only 10,239 lines of code. Now, it has more than 2 billion lines of code. We are not bothered about Linux as of now but, we are concerned about free and open source equivalent soft wares readily available for our daily usage. We prefer these open source soft wares instead of depending on commercially available soft wares. Some of the relevant soft wares are discussed below.

Scilab is a high level numerical computation platform which is an open source equivalent of Matlab. Scilab was created by researchers in 1990 from INRIA and ENPC, France. Learning Scilab is easy with <http://www.scilab.in> and with the initiatives taken by Prof. Kannan M. Moudgalya at the Indian Institute of Technology, Bombay. Power system lab experiments are readily available with the effort of FOSSEE project, link:[http://scilab.in/lab\\_migration/completed\\_labs](http://scilab.in/lab_migration/completed_labs). Many engineering textbook problems are also solved in Scilab, link: [http://www.scilab.in/Completed\\_Books](http://www.scilab.in/Completed_Books). Hence, engineering students can directly practice and get better understanding on their subject by using these readily available resources.

Many Scientists came up with their ideas by great imagination, it is said that Faraday used to imagine any complex diagram with accurate measurements and correlated them in his mind. To express one's imagination to others, visual interpretation is necessary. Hence, open source software for drawing called Inkscape can be used. It has many features, diagrams of scalable vector graphics (svg) can be easily developed with this software.

Latex is an important companion of anyone who wishes to write anything using a computer. With Latex, you can write a journal or conference paper without worrying about its alignment. Latex is capable of aligning books, your thesis or even your presentation slides. Useful software is zotero. Researchers should give valid citations or bibliographies to support their claims. There are numerous bibliography management software packages available. Zotero is free and open source, adequate for almost all of your citation needs. Further, we are all helplessly dependent on Microsoft Office. But the MS Office package comes with a price. MS Excel is the favorite of many engineers. Its equivalent is LibreOffice Calc, which helps in managing data adequately. Its limitations can be overcome with programming skills. Slide preparation and writing is bypassed by Latex.

Simulating complex power system network is another task for engineers. Gridlabd is used for simulating smart grid network. Gridlabd was developed by the US Department of Energy (DOE) at Pacific Northwest National Laboratory (PNNL) under funding from the Office of Electricity. While writing this article, the source code for Gridlabd was not available in Ubuntu (am presuming you're a Debian user). So the available Red Hat package manager (rpm) has been converted to Debian (Deb). Gridlabd is the first simulation platform in which modern energy systems are inbuilt. Time series simulation and load modelling become easier with Gridlabd from sub-station to customers (residential load). Gridlabd is an open source tool freely available to anyone. It encourages collaboration with industry and academia. The BSD-style

licence allows us to add or extract our own modules without compromising the internal intellectual property. The Web portal <http://www.gridlabd.org/gldportal> has a GUI for quick real-time hands-on operation of Gridlabd.

Simulating emergent behavior is favorite of pioneers who use nature inspired methods in solving real world problems. Net Logo is GNU-GPL licensed free software, designed by Uri Wilensky, director of Northwestern University, in 1999. It is a JVM based cross-platform multi-agent simulation platform. Net Logo doesn't require much of coding knowledge or any other prerequisites. It is designed for a broad audience. So anyone from secondary school students to graduates can make use of this software to study their field of interest.

There are still many useful open source softwares, we were discussing only those which are not familiar to us. Unknowingly, we use open source softwares daily. Whether it is Firefox browser or android phone or an ATM machine. If anyone is interested to know more on open source softwares focused on engineering, articles relevant to above discussion is available online, link: <https://opensourceforu.com/author/hithu-anand/>

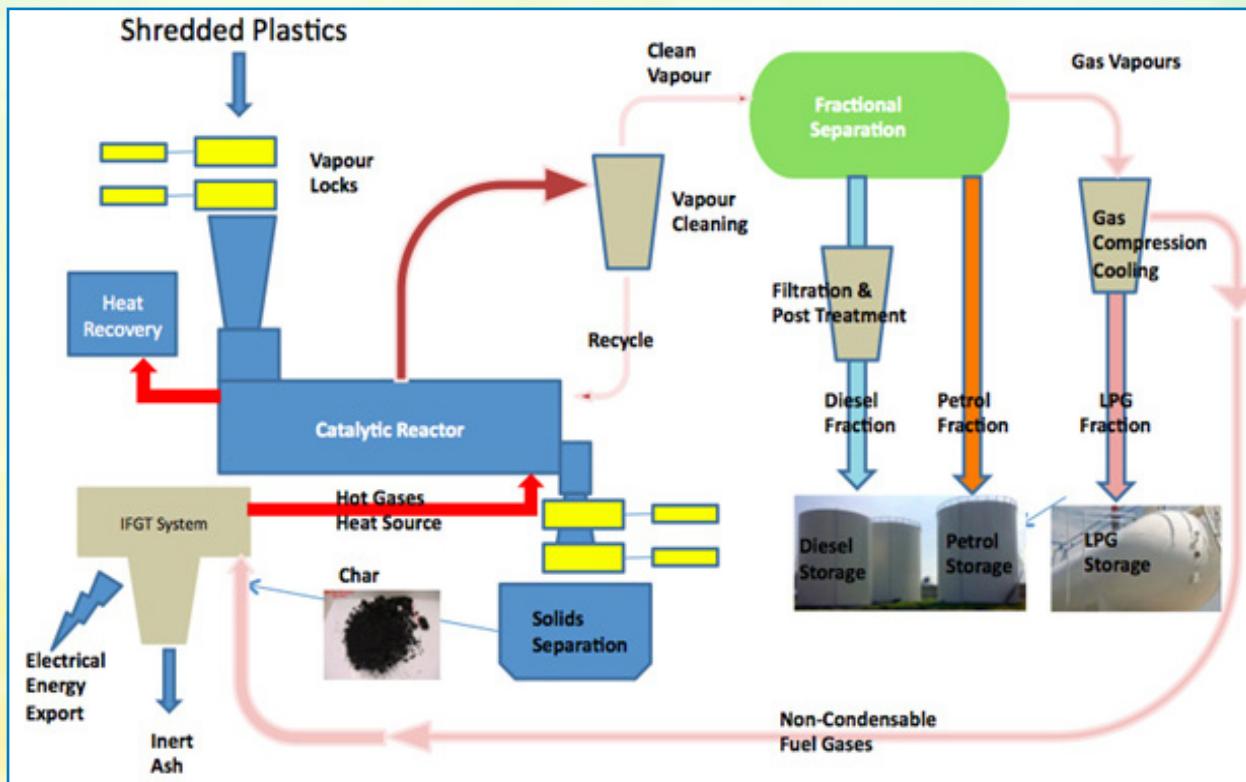


## Fuel from Plastics

**Dr. R. Karthikeyan,**  
HoD, Mechanical Engineering  
Agni College of Technology

Waste Plastics are believed to be the future energy source, as it has good fuel properties and its abundant nature. Basically Plastics are the polymerized products of hydro-carbon chain. They have the ability to be synthesized easily in the Chemical Industries. Compared to natural fuels, Plastic Fuels are cheaper and have the ability to run the existing internal combustion engines like petro – fuels.

Thermal – cracking or Pyrolysis is a basic chemical process involved in the production of plastic fuels. This is a process in which the waste or used plastics are heated and vaporized. The vapours will in turn be condensed in the condenser to yield oils. In my view, I would suggest, instead of condensing, the vapour can directly be inhaled by the Engine, to power the Engine. Compared to condensation method, this method is more effective and more eco-friendly. The commonly used plastics such as, milk packaging covers, plastic containers and almost all thermo – plastics can be used for this process.



## **Sri Venkateswara College of Engineering**

### **1. Installation of rain water harvesting system by SVCE**

In spite of average rain fall of about 1150 mm in Kanchipuram district many institutes and residents are facing water scarcity. The main reasons for this are over exploitation of surface and ground water by local residents and transportation of water to Chennai district by water tankers for commercial purpose. Considering the social responsibility and sustainability of this area, Sri Venkateswara College of Engineering (SVCE) has invested towards construction of rain harvest system in their premises. Run off from 24,000 sq meters of roof area and 300,000 sq meters of land area is being conveyed to rain water harvesting system of about 41.25 lakh liters capacity. It is expected that due to this the ground water level in the area will increase considerably. It is also to be stated that SVCE is not having any bore well in the campus and the harvested water will benefit the local community in a big way.



**Dr.K.B.Sudhakar**

Professor, Department of Electrical and Electronics Engineering,  
Sri Venkateswara College of Engineering

### **2. Interdisciplinary Centre for Nanotechnology**

In July 2016, the Management of SVCE gave approval to setup a "Interdisciplinary Centre for Nanotechnology" through joint efforts from Department of Electrical and Electronics Engineering and Department of Biotechnology. In January 2017, the construction of 500 sq.ft of Class 10,000 type Cleanroom facility was completed under the able guidance and vision of our Respected Secretary Dr.M.Sivanandham, duly supported by the Principal and Dean (Research).

In February 2017, an intramural seed funding was released and Equipment worth of 7 lakhs has been procured and commissioned at the Centre. The major thrust areas of this centre include Micro and Nano electronics, Biotechnology, Optoelectronics, Nano materials, and solar cells.

Centre activities are currently being coordinated by Dr.K.B.Sudhakar, Professor of EEE, (MIE) and jointly coordinated by Dr.KR.Santha, Vice-Principal, and Dr. Nalinkanth Ghone, Professor of Biotechnology.





## Deepavali Celebrations Time to change the way towards Environmental Protection

S.Velmurugan

Assistant Professor, Department of Chemical Engineering  
Adhiparasakthi Engineering College, Melmaruvathur

### Major festival

Deepavali is one of the most significant festivals in India. Traditionally we are celebrating it with feelings of great warmth and intensity. On this day, people decorate their homes with lights and flowers. After worshipping, all family members will wear new dresses and send sweets and snacks to their near and dear ones. That spreads happiness and prosperity. Up to this event all activities will go in smooth manner. But in last few decades, the trend of bursting crackers has evolved. Just to celebrate happiness, we burn enormous money that brings devastating results as noise and air pollution.

### Union Minister's Campaign

This time Deepavali comes on October eighteenth. In this regard, the Union minister of Environment Shri. Harsh Vardhan launched the "Harit Diwali, Swasth Diwali" campaign in New Delhi. It means Green Diwali and Healthy happy Diwali. By this way it is time to create awareness about ill effects of crackers and to stop bursting crackers to save our environment.

### Adverse effects of crackers

Usually people say that pollution due to bursting crackers is only once-in-a-year event and so there is no need to worry about it. But bursting of fireworks increases the pollution level and its health impacts remain for several days.

Bursting of fireworks causes severe air and noise pollution which poses serious health hazards. The noise triggers annoyance, aggression, hypertension, high stress levels, hearing loss and sleep disturbance.

Fireworks are mainly composed of toxic chemicals like lead, aluminium and magnesium powder; potassium, strontium, barium nitrates; potassium chlorate; red phosphorous; zinc oxide; sulphur, chromium etc., and these chemicals and gases like carbon monoxide, nitrogen and Sulphur oxides are released during bursting of fireworks, which are harmful to humans, animals, birds, plants and overall environment.

### Some other negative facts about Firecrackers

- Waste of money for all
- Enormous amount garbage produced causing disposal problem.
- One Diwali night may causes as much damage to the ecology as regular pollution does over the span of a year.
- Unnecessary problem due to injuries because of firecrackers.
- Fire accidents due to improper bursting of crackers.

### Rules and Regulations

Central Pollution Control Board (CPCB) since last few years is monitoring ambient air and noise levels during Deepavali festival and it is observed that the noise levels are above the prescribed limits both during day and night times. The Explosives Rules, 2008, which govern the manufacture of firecrackers, has classified all firecrackers as either sound-emitting or light-emitting. Sound-emitting fireworks must generally not exceed 125 decibels (dB) while light-emitting ones must not cause sound measuring more than 90 dB. Fire crackers shall not be used at any time in silence zones, as defined by the Ministry of Environment and Forests. Observing that the 'Right to Sleep' is a fundamental right, the government of India has banned firecrackers between 10 pm and 6 am, on Deepavali.

### Role of Government on worker's life

At the same time we have to think about the workers and manufacturers of crackers. In our Tamilnadu, nearly 40,000 families in and around of Sivakasi town depends wages from fire work industries. So the central and State governments should take necessary actions like suggesting other trades and business for them and also providing financial help to start a new way.

### Pollution free celebration

Let's us celebrate eco-friendly Deepavali this year and save the environment from pollution. Deepavali not only marks bursting cracker, but the glittering lights, new dresses, boxes of sweets, freshly painted homes, exchange of gifts, family reunions.



## SAY NO TO CRACKERS

**Mr Sanjiv Mohanty**  
Sr.Asst Professor  
Civil Engineering Dept.  
Agni College Of Technology,Chennai

### Artesian aquifer

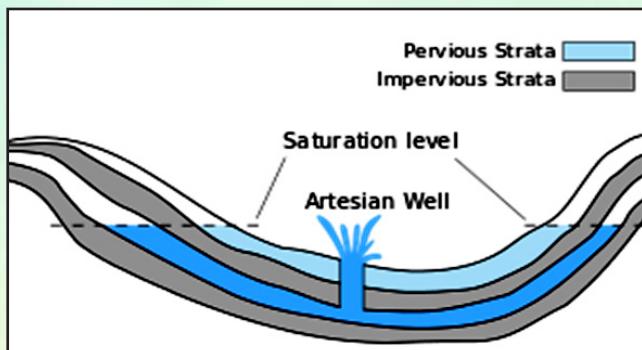
An artesian aquifer is a confined aquifer containing groundwater under positive pressure. This causes the water level in a well to rise to a point where hydrostatic equilibrium has been reached.

A well drilled into such an aquifer is called an artesian well. If water reaches the ground surface under the natural pressure of the aquifer, the well is called a flowing artesian well.

An aquifer is a geologic layer of porous and permeable material such as sand and gravel, limestone, or sandstone, through which water flows and is stored. An artesian aquifer is confined between impermeable rocks or clay which causes this positive pressure. Not all the aquifers are artesian (i.e. water table aquifers occur where the groundwater level at the top of the aquifer is at equilibrium with atmospheric pressure). The recharging of aquifers happens when the water table at its recharge zone is at a higher elevation than the head of the well.

Fossil water aquifers can also be artesian if they are under sufficient pressure from the surrounding rocks. This is similar to how many newly tapped oil wells are pressurized.

Artesian wells were named after the former province of Artois in France, where many artesian wells were drilled by Carthusian monks.



## Wireless Capsule Endoscopy

**Ms.Deepika K.**  
Assistant Professor/CSE,  
Agni College of Technology,

The pathological test CBC (Complete Blood Count) is used to analyse and study of various pathological disorders like infections, blood bleeding, tumour, polyps, heart diseases and etc., which needs more time and cost. The technology has emerging new trends in medical science, which is efficient to help physician to identify various disorders includes bleeding. The emerging technology is Wireless Capsule Endoscopy. It helps to diagnose gastrointestinal (GI) pathologies in jejunum and ileum, which can be the sites for bleeding, inflammations or in rare cases, tumours.



The capsule is in the size of 26mm x 11mm and consists of optical dome, a lens, several light emitting diodes, a semiconductor, transmitter, and an antenna. It also equipped with tiny camera, data recorder, sensor array, or electrodes, which are attached to the patient's abdomen and software to intercept with this device. The camera is capacity of takes 50,000-60,000 digital images per 8 hour.

The patient will take the capsule as per physician prescription. After the patient swallowing a small capsule, the camera

takes two images per second and transmits the images via RF (Radio Frequency) to an array of sensors attached over the patient's body. The images stored on the data recorder and then it downloaded to the computer and examined by the physicians.

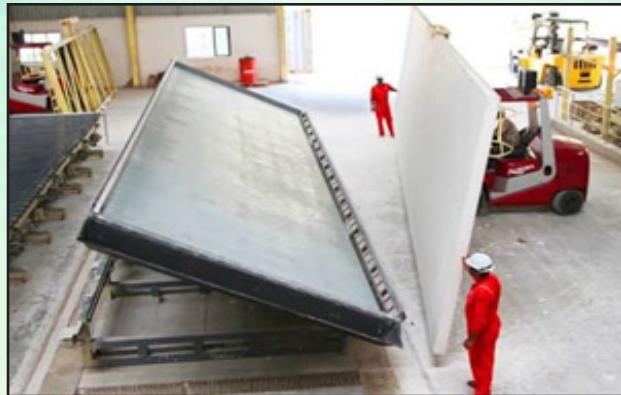
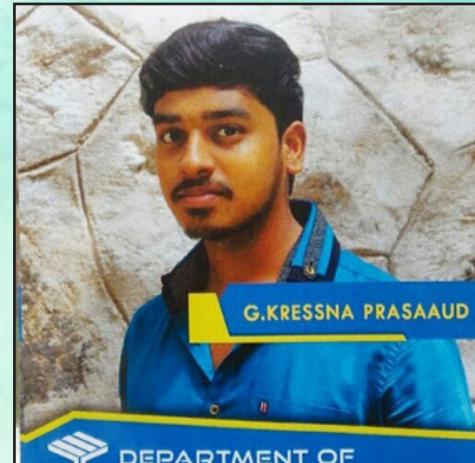
This will help in reducing the time and storage requirements while transferring the images from the data recorder to the computer and will make it a faster process. So that the inspecting physicians do not lose any relevant or contextual information as well. This technology will reduce the current screening procedures which leads earlier diagnosis of various disorders. The risk percentage of the retention of device is two to three percent. However the serious of research has been undertaken to ensure the efficiency and retention of the device

## Student Section

### GFRG PANEL

(GFRG – GLASS FIBRE REINFORCED GYPSUM)

Use of timely delivery of construction projects adopting fast methodologies and alternative building materials is necessary in India. Further, the construction has to be affordable and also sustainable. Conventional methods of construction lead to formation of huge amount of co2 increasing the chances of global warming. The construction technique proposed in this article, by making use of glass fibre reinforced gypsum (GFRG) panels to build homes, promises such a solution for rapid affordable mass housing in India. GFRG is an eco-friendly building material which can be manufactured out of either natural or industrial gypsum. In India, these panels have been manufactured from the fertilizer by-product waste.



Glass fibre reinforced gypsum is a new building material developed in Australia. Each panel is 12m long, 3m tall and 124mm thick. The panel costs Rs.1000 per square meter and one full panel 12\*3m costs 36,000. 10 panels are enough for a roof and walls of a house with a plinth area of 1000sq.ft. Every third cavities is alone filled with concrete and other cavities can be filled with materials like fly ash, quarry dust etc. to make it more cost effective. High speed of construction involving less labour is achieved by this technique.

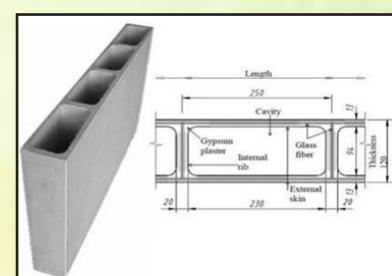
The building can be designed on the basis of design manual by a qualified structural engineer. Depending upon the customer requirements the panels are cut into different sizes as per the building plan and door/window/ventilator openings. The panels shall be placed erected over the RCC plinth beam and concrete is filled from the top. Filling the panels with concrete shall be done in three layers of 1m height with an interval of one hour between each layer. Smoother side is installed internally. These panels cannot be lifted by manpower since it is large in size and hence, it is lifted with the help of crane.

Research was done at IIT Madras by building a two storey building of 800sq.ft with the estimation of 10 lakhs has been successfully finished. They also used this panel for the ceiling and constructed within the campus. This panel is resistant to earthquake, fire, wind, corrosion, etc. No plastering is required.

The tests are conducted and approved by BMTPC (Building Materials and Technology Promotion Council).



These buildings can be completed within 30 days, it can withstand 1000 degrees for 4 hours and its life span is about 80years. It is 5 times stronger than conventional buildings. Though erection and placing of GFRG panels are a bit difficult, it is more economical compared to conventional buildings. If suitably designed, GFRG panels can be used with confidence as it has the potential for adequate strength, stiffness, ductility and energy dissipating capacity.





## RECENT ENGINEERING SUPPORT TO DEAFNESS

Leela R.  
IV year BME  
Agni College of Technology

The otosclerosis is a hereditary disorder causing progressive deafness due to the overgrowth of bone in the inner ear. The otosclerosis may be caused mostly due to the inherited disorder. However other independent causes also exist. The causes of the otosclerosis is often unidentified and it is still in the case of research. Some of the findings that causes this disorder is due to the hereditary genes, injury, abnormal bone growth and the hormonal changes in the body. There is no exact symptoms that can be identified and this disorder may be misclassified as the conductive hearing loss or the sensory hearing loss. The audiologist and the otologist have done various diagnosis to confirm whether the symptoms are corresponding to the otosclerosis or not.

The diagnosis methods that was adapted so far is the testing of the various frequency of sounds and various keywords and phrases that the patient can try to interpret and respond. The observations are made based on the audiogram and the tympanogram. The symptoms that the patient feels is that they are able to hear a strong background noise that others cannot hear and this might be considered as a psychiatric disorder but it is not. This condition is known as the tinnitus. Other mild symptoms that they get is the dizziness and head pain due to the improper conduction of the sounds by the auditory nerves to the brain. The solution that is applied till now is the use of the two procedures. They are the stepedectomy and stepodotomy. The stepedectomy is the replacement of the stapes by the implantation and stepedotomy is the hole made in the stapes by using the laser beam.

The stepedectomy is done using various implants. The implants that is used mainly are the metals, ceramics and polymers and alloys. Some of the alloys used are the Fluoroplastics, Nitinol, Platinum, Porous polyethylene stainless steel and Titan. The Fluoroplastics are polymers composed of carbon and fluorine atoms. They come from a variety of different resins and are used in a wide range of industrial, medical, and home applications. Teflon is the brand name of one of the more popular varieties of fluoroplastic. Fluoroplastics are highly regarded by otologists for their inertness, smoothness of texture, and biocompatibility. Fluoroplastic parts are molded, machined from rods, or formed from tubing and sheeting.

The Nitinol (Nickel-Titanium alloy) is a shape-memory metal alloy that has been used in medical applications for years. Since nitinol "self-fashions" with heat, the crimping maneuver is dramatically simplified. The Platinum is a highly corrosive resistant material and a very ductile metal that is well tolerated by the body. Devices made from platinum wire or ribbon can easily be adjusted or crimped by a physician, and will retain their formed shape without "spring-back." The Porous polyethylene (Plasti-Pore) is formed by sintering many individual polyethylene resin particles. It permits tissue growth into the interconnecting pores of the implant material. The base resin, polyethylene, is known to be a very inert material. The natural white colour is the only one used by Olympus.

The Stainless steel (ASTM F 138, Grade 2) is a special quality implant-grade steel that has long been in use in medical implants. It has a balanced corrosion resistant chemistry and an extremely clean microstructure. Stainless steel parts are machined from rods. Wire made of this material is also used for many other Olympus ENT products. The Titanium (ASTM F 136) is used in many medical implants. It has excellent corrosion resistance and is well tolerated by tissue. The material is light weight and MRI compatible.

The implant materials differ according to the distances between the stapes and the incus and between the male and the female. The length and the diameter of the piston varies according to these factors. The metal implants that are used are the gold, titanium , Teflon, platinum and gold band, titanium gold strip prosthesis and nickel titanium alloy. The success of the surgery depends upon various factors. They are the expertise of the surgeon, size of the fenestration and prosthesis, the technique that is employed, status of stapedius tendon, type of the pathology and design.

The stapedotomy is the laser assisted hole made in the stapes and this has various disadvantages that again made the condition even severe. These are the affecting of the nearby cells and these cells also get affected due to the laser surgery. This procedure can be done only as an alternative but this is not a longer existing procedure

# WORKSHOP ON “HANDS ON TRAINING ON ARDUINO BASED SYSTEM DESIGN

4-6 July 2017.



Two days' WORKSHOP ON “HANDS ON TRAINING ON ARDUINO BASED SYSTEM DESIGN was held at Sri Sairam Institute of Technology, Chennai from 04.07.17 to 06.07.17

Chief Guest : Mr.N.N.EKAMBARAM, project manager, innovate engineering solution and Delivered the address to the students.

**SAI RAM INSTITUTE OF TECHNOLOGY**  
(An ISO 9001 : 2000 Certified Institution)  
Sai Leo Nagar, West Tambaram, Chennai - 600 044  
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**Department of Electrical & Electronics Engineering**

*cordially invites you for a*

**IEI Students Chapter**  
**Workshop on**  
**Hands on Training on Arduino Based System Design**

**Date : 04.07.2017 to 06.07.2017**  
*in Seminar Hall (Second Floor)*

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R. IKRUTHIKA | Dr. M. JA.GADEESHI KUMAR | Dr. K. PALANI KUMAR | SAI PRAKASH LIBOMUTHU  
Coordinator | HOD / EEE | Principal | CEO

**Invitation**

**Sairam Group of Institutions**  
[www.sairamgroup.in](http://www.sairamgroup.in)



# SAI RAM INSTITUTE OF TECHNOLOGY

An ISO 9001 : 2008 Certified Institution

Sai Leo Nagar, West Tambaram, Chennai - 600 044



## Department of Electrical and Electronics Engineering



*Welcome you for*  
IEI Students Chapter



### Workshop on HANDS ON TRAINING ON ARDUINO BASED SYSTEM DESIGN

04.07.2017 to 06.07.2017



## INAUGURATION OF IE (I) SRM STUDENT CHAPTER 4th August 2017



The inauguration ceremony of the IEI-students was held on 4.08.2017 in the ESB conference hall from 10 AM. It started with Tamizh thai Vaazthu followed by the lighting of lamp by the H.O.D. and the honorable guests for the ceremony. Then, Dr. K. Vijayakumar, H.O.D of EEE Department welcomed the gathering and acknowledged the honorable guests.

After him, Dr. R. Venkatesan (Scientist & Head, NIOT Chairman, IEI KLC) gave a brief introduction on IEI. He spoke about entrepreneurship for student forum, which is a new plan set up by IEI to enhance the entrepreneur's spirit amongst the engineers. Er. R. Ramdoss (Honorary Secretary, IEI,TNSC.) started his speech by giving an introduction to IEI, its various programs aimed for the development of students and opportunities that IEI presents to its members. Then, Dr. S.R.R. Senthil Kumar (Honorary Secretary, IEI KLC) started with the various advantages of IEI-students chapter. He termed this IEI as an advanced network, which brings in, connects people from a diverse set of professionals, and allows constructive discussions to take place.

The dignitaries handed the IEI-Students Chapter Order to the Advisor Mr. C. Balaji (A.P/EEE). Then, Mr. C. Balaji proposed the vote of thanks to all the people present at the ceremony. The ceremony concluded by handing over the ID cards to all the members of IEI by the honorary guests and with that the IEI inauguration was successfully held with the aim of ushering into a bright future. The ceremony ended with the national anthem at 11.40 AM.

## One day workshop on practical skills training on measuring instruments

4th September 2017



One day Workshop on Practical Skills Training on measuring instruments under the Department of Electrical Engineering Division Board was held at SRM University Katankulathur-603203 on 4th September 2017

## Visit to Integral Coach Factory (ICF) by student members of SRM University

IEI Students Chapter SRM organized an industrial visit to Integral Coach Factory (ICF) on 15th September 2017. All the members were introduced to Mechanical Components of a train and Mechanism of the working of components. The Components included the Panto Assembly, the mechanism of yawning and pitching etc. Also the mechanism were taken to Electrical section where in got detailed insight of electrical components in a train system, trains circuitry, gear arrangements, transformers that fit underneath the train, switchgear etc. All had an opportunity to visit inside the engine room where we got to view the alternator or rather got a visual idea of the working of the electric lines that moves the train along the specified direction. All the students members thanked the IE(I) faculty Co-coordinator for having given than this opportunities to learn more from ICF.



## Events Conducted

### ONE DAY WORKSHOP ON “EMERGING TRENDS IN HIGHER EDUCATION”

24th June 2017



Office Building Inaugurated by Er. T.M  
Gunaraja Council member Website Launched by  
Dr.G.Ranganath, FIE, Chairman, IE (I),  
TNSC Imm. Past Chairman, IEI, TNSC



News letter released by Dr. K. Sivakholundu  
Vice Chancellor,  
Indian Maritime University, Chennai



A memento was presented to student section of  
sri sairam institute of technology

Institution of Engineers (India) Kanchipuram Local centre conducted a Workshop on “Emerging Trends in Higher Education”, Dr. Venkatesan, Chairman, Institution of Engineers (India) Kanchipuram Local centre Welcomed the gathering. Dr.K.M. Sivakholundu, Vice Chancellor, Indian Maritime University, Chennai, was the Chief Guest of the function. Dr.G. Ranganath, FIE, Chairman, IE(I), TNSC, Chennai, was the Guest of Honour. Workshop lectures were delivered by the Dr.K.M. Sivakholundu, Dr. G. Ranganath , Mr.Sujith Kumar, HR, Head Infosys an Er. T.M. Gunaraja, Council Member. Speakers emphasized that students of today have to enrich their knowledge and have to equip their technical skills to pursue higher education and to be placed in top most companies. Er. T.M. Gunaraja, Council Member, inaugurated the Local Centre’s Office building, Dr. G. Ranganath launched the website of Institution of Engineers (India) Kanchipuram Local centre and Dr. K. Sivakholundu released the first newsletter of the Institution of Engineers (India) Kanchipuram. Dr. S. R. R. Senthil Kumar, Honorary Secretary, IEI (KLC), proposed the Vote of Thanks. The function ended with National anthem.

## AR F B PITHAVADIAN MEMORIAL LECTURE ON “LOW COST HOUSING”

15th July 2017



The Institution of Engineers TNSC organised Ar F B Pithavadian Memorial Lecture on “Low Cost Housing” on 15th July 2017 at The Institution of Engineers (India), TNSC Auditorium, Chepauk, Chennai - 600 005.

Dr S R R Senthil Kumar, FIE, Hon.sec, IEI Kanchipuram Local Centre and Principal of Agni College of Technology, Chennai was the speaker for the occasion. He gave a lecture on Low cost Housing with lot of Case Studies. In his lecture various Low cost techniques and alternative materials for sub and super structure were discussed. More emphasis has been given for alternate techniques for the construction of wall and roof. Rat trap bond, Stabilized mud block, GFRG panel and Concrete block walling techniques were detailed with cost reduction advantages. Similarly Filler slab, hollow block roofing systems were discussed with its strength and cost point of view. It was well received by the audience and at the end many interactions took place.

Er. Ramdoss, Hon Sec, IEI, TNSC Welcomed the gathering. Er. Kumar presided over the function. About 100 fellow Engineers attended the program.

## ONE DAY NATIONAL SEMINAR ON “ETHICAL HACKING”

22nd July 2017



Technical Session – Dr.S. Geetha



Inaugural Session with banner of IEI



Address by Chief Guest Mr. Bharat S Patel



Felicitation Address by Er.P.Rajamani



Ms.Madhubala



Technical Session

One day National seminar on “Ethical Hacking” was organized by The Institution of Engineers (India) in association with the Department of Computer Science and Engineering, Agni College of Technology on 22nd July 2017. During the inaugural session, Dr.Venkatesan, Chairman, IEI Kanchipuram Local Centre (IEIKLC) welcomed the gathering. The seminar was inaugurated by Mr. Bharat S.Patel (Council Member of IEI & Chairman CPDB). His valuable address expressed the importance of ethical hacking in today's evolving IT sector. Followed by him, The Guest of Honour Mr.Prasad Kolisetty (Director, 3Edge Solutions) highlighted the need of the hour by his thought provoking speech. Er. P. Rajamani, Council Member and Chairman of Electrical Division of IEI felicitated the event. Dr. S.R.R. Senthil Kumar, Hon Secretary of IEIKLC proposed vote of thanks. The main aim of the seminar was to know the importance and create an in-depth knowledge about network security challenges faced by the IT industry.

After the inaugural session the first invited Lecture on “Kali Linux” was given by Ms. Madhubala, Livewire Technologies, she threw some light on the types of hackers, techniques and scenarios for penetration. She highlighted the hands on approach for phishing and honey pot exploitation.

The Second invited lecture on “Identification of Vulnerabilities in Wireless Network” was handled by Dr. S. SriKrishnan, HOD/CSE of Agni College of Technology. A Hands-on session in finding and exploiting the Vulnerabilities on a poor or improper system configuration was delivered by Dr. S. SriKrishnan

In the Afternoon session the first invited lecture on “Dynamic Malware Analysis” was given by Dr. Geetha, Professor, School of Computer Science and Engineering, VIT, Chennai. She gave an in-depth insight on types of Malware, System Recovery and the ways and means of analyzing a malware infection.

As a Second part of afternoon Session a GAMEX event was organized by Ms.C P Jetlin Ass. Prof of CSE Agni College of Technology and first and second prizes were awarded. The entire day was buzzing with activities and the interactive sessions which provided a hands-on approach to deal with the challenges in IT Sector and data privacy was soul stirring.

Er. R. Ramdoss, Hon Secretary of IEI-TNSC, and from Agni College of Technology, Dean of Academics Dr. Srinivasan Alavandar, Head of CSE Department Dr. S. Srikrishnan, Dr. L. Jani Anbarasi Asso. Professor of CSE department and various department HODs, Faculty members and Director of Placement graced the occasion with their presence. A total of 199 Participants from various institutions took part and got benefited from this seminar. The valedictory session started at 3.30pm and the certificates for the participants and prize winners were distributed by the Hon Secretary of IEIKLC. The program ended at 4.00 pm with National Anthem.

# 50th Engineers' Day

"Engineers' Day 2017 was celebrated at Tamilnadu State Centre in association with Kanchipuram and Thiruvallur Local Centres on 15th September 2017. Nearly 200 Fellow and budding Engineers participated in this event. Er. R. Ravishankar, Asst.VP - Marketing, Bharathi Cement Corporation Pvt Ltd, was the chief guest and gave thematic address on the theme " Role of Engineers in a developing India". Dr. Ranganath, Chairman, TNSC, welcomed the gathering. Dr. S.R.R. Senthil Kumar, Honorary Secretary of Kanchipuram Local Centre gave felicitation address. Many Engineering College students participated in the paper presentation competition held on 14.09.2017 and the prize winners of this event were awarded with certificates. Dr. Ramadoss, Honorary Secretary, TNSC, proposed vote of thanks"



## Forthcoming Events

- 1 One Day Seminar on "Complexity involved in the marine /defence engineering system for Submarines from Navy Foundation, Chennai, Veteran Submariners Association of Tamil Nadu and Marine Technology Society & TNSC by the department of Marine Engineering at TNSC,Chepauk Chennai
- 2 All India workshop on" physical Computing using Arduino" by the Department of Electronics & Telecommunication Engineering Division to be held on 5th & 6th October 2017 at SRM University Campus.
- 3 First Annual General Meeting of IEI Kanchipuram Local Centre on October 24th 2017 at Sri Sairam Institute of Technology, Chennai.
- 4 One Day Seminar on Data Science and Big data Analytics on 31st October 2017 ,under the Aegis of Computer Engineering Division at Jerusalem College of Engineering
- 5 All India Convention on Aerospace Engineering Division during 3rd& 4th November 2017, to be organised at Sathyabama University in association with IEI Tamil Nadu State Centre.
- 6 One Day Seminar on "Integration and Challenges on Renewable Energy System", on December 27th under the aegis of Electrical Engineering Division at Sri Sairam Institute of Technology.
- 7 All India seminars on Recent Trends in Renewable Energy on January 3rd & 4th October 2017,under the aegis of Electrical Engineering Division at Jerusalem College of Engineering.
- 8 One Day Seminar Intelligent control systems for Industrial Automation on January 17th 2017,under the Aegis of Electronics & Telecommunication at Jerusalem College of Engineering.
- 9 One Day Workshop on "An Overview of Substation Control System Engineering" on January 24, 2018 under the aegis of Electrical Engineering Division at Sri Sairam Institute of Technology.
- 10 All India workshop Integrating Climate Change Adaptation into Environmental Impact Assessment on January 29th 2017,under the aegis of Environment Engineering Division at Jerusalem College of Engineering.

# WELCOME TO NEW MEMBERS

Membership no.	Name	Address	code	Email id	Contact no	Division
M -158599-6	Dr. Srinivasan Alavandar	2B-13, dabc orchid polachery, mambakkam Navalur road	600127	seenu.phd@gmail.com	9994051191	EL
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M 1592410	Dr.Arun Vasanth Geethan	St.Joseph's Institute of Technology	600119	kavgeeth@gmail.com	9840009249	MC
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F-122984-4	Dr. G.Venkatachalam	kottivakkam	600041	Gopvenki@rediffmail.com	9994573900	MC
F-123020-0	Mr.N.Thangappan	Moulivakam	600125	Thangappan_n@yahoo.com	9884340286	CV

## WELCOME

**Best Wishes to the newly started IEI Student Chapter**

- 1 **IEI ACT student chapter(Agni College of Technology, OMR,Thalambur, Chennai-600130)**
- 2 **IEI SRM student chapter (SRM University, kattankulathur, Chennai- 603 203.)**

# CONGRATULATIONS



## GLOBAL HONOUR FOR MARINE SCIENTIST

Our Chairman IEI Kanchipuram Local Centre R.Venkatesan has won the Lockheed Martin award for Ocean Science & Engineering

Earlier this year, there was a tsunami Scare and National Institute of Ocean Technology's R.Venkatesan, who heads the Ocean Observation System at the Institute, Remained busy through the evening watching seven tsunami-warning buoys and making calculations. The night passed and there was no tsunami.

"Had I been wrong, I Shudder to think of what would have happened, "Who is also the chairman of the International Tsunami

partnership. Recently, he was chosen by the Marine Technology Society (MTS) USA to receive the Prestigious 2017 Lockheed Martin Award for Ocean Science and Engineering.

The award is presented for the highest degree of technical accomplishment in the field of marine Science, engineering or Technology.

He is reportedly the first Indian to be honored by this organization that was established in 1963.

### Cutting-edge tech

With 34 years of Experience in ocean studies-he initially worked with the National institute of Oceanography and joined the NIOT in 1997- and 2,500 days at sea, Mr. Venkatesan and his team have developed technology that is on a par with international standards and the data is shared with other countries.

"My team also manages buoys that monitor the weather. The equipment records 100 data points, including wave height, wind speed, relative Humidity and solar radiation .Even during cyclones tracking is done very minutely. During cyclone vardah, we were able to relay extremely accurate information with very minutes Details thanks to the buoys, the software for which has been developed in- house," he said.

Though it sounds easy, installing buoys and monitoring them is complicated. His team spends days together to moor the buoys carrying the sensors.

The buoys are anchored at depths of even 4,000 meters. Sometimes, if there is a problem in even one Sensor, the Whole thing will have to be hauled up. If the Seas are rough, then we cannot eat or sleep. And during the entire journey of a month or more, communication with our families is cut off. We work under tough conditions. In the Arctic, where also we work, we are given training to protect ourselves from polar bears, "he said, shoeing a certificate for one such program me that he attended. Currently, his team is working on adding more data points for better information the buoys.

They are also collaborating with other countries for sharing data. He will receive the award in Oslo in October



Our Committee member  
**Prof.K. Palani Kumar**  
received for Publons Peer  
Review Awards 2017.



## Publons Peer Review Awards 2017

Publons, in accordance with the recommendation of the Managing Director, hereby recognises

*Palanikumar K*

as one of the top 1 per cent of peer reviewers in  
*Engineering*

## NOTICE OF 1st ANNUAL GENERAL MEETING

Notice is hereby given that 1st Annual General Meeting of the Kanchipuram Local Centre on Tuesday the October 24th 2017 at 4.00 pm in Sri Sairam Institute of Technology, Sai Leo Nagar, West Tambaram, Chennai- 60004 to transact the following:

### AGENDA

- 1 To receive the Audited Accounts and the Annual Report for the year ended 31st March 2016-NIL Statement.
- 2 To appoint the Auditors for the year 2017-2018 and to fix their remuneration.
- 3 To report on the composition of the Committee for the sessions 2017-2018.
- 4 To report various activities conducted.

24th October 2017  
Chennai

Dr. S.R.R. Senthil Kumar  
Honorary Secretary



The Institution of Engineers (India)

KANCHEPURAM LOCAL CENTRE