

*D*ear comrades,

It's the month of celebration...**SEPTEMBER!!!**

We have the days, "TEACHERS DAY" and "ENGINEERS DAY". I thank every teacher for their contribution in making us a valuable stone in the society. I heartily welcome you to the fourth issue of volume 3 of EEE newsletter, September, 2015.

"Extensive reading expands your knowledge ", says an Iranian quote. I hope that you enlighten your mind and enhance your skill with the help of the newsletter and I vow you that it will be continuing. The newsletter is a humble initiative to set the budding minds free allowing them to roam free in the realm of imagination and experience to create a world of beauty in words. It's a platform to expose the skills and it has been stimulating tool for the students. Joyful moments are captured as memories and the memories are the crucial part of our newsletter.

The newsletter creates awareness among the students regarding various competitive exams, industries etc. It motivates the students and the staffs to nourish and thrive their knowledge in writing articles.

Any work won't be successful until it has queries and feedback. Anticipating your valuable feedbacks and queries.....

Happy reading!!!

Shanmugam.P

Final Year EEE

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STAFF ACTIVITIES/PUBLICATIONS/ACHIEVEMENTS**ACTIVITIES:**

S.No.	Name of the Staff	Events/Guest Lecture	Topic	Date	College
1	Dr.M.Ravindran, (Asso. Prof/EEE)	Keynote Address	Renewable Energy Sources	09.09.2015	Gandhigram Rural Institute
2	Mr.S.Senthil Kumar, (Assistant Professor)	Short term course	How to do a Good Research Thesis	03.08.2015 to 05.08.2015	Anna University, Chennai
3	Mr.B.Vigneshwaran, (Assistant Professor)	Guest Lecture	Introduction to COMSOL	02.09.2015	Kamaraj College of Engineering and Technology

DEPARTMENT ACTIVITIES

Special Interest Group – Control and Instrumentation

“HANDS ON TRAINING IN PLC PROGRAMMING, SCADA & HMI”



EEE Department Special Interest Group (Control and Instrumentation) organized a three day workshop on the topic “Hands on training in PLC programming, SCADA & HMI”. It is a joint venture program with First Logic Automation Pvt. Ltd., Chennai, conducted for 40 students from EEE (Pre final year and Final year) during 27th - 29th August 2015.

The program was inaugurated by **Dr.M.Willjuice Iruthayarajan, Prof & Head/EEE**, with the address of introduction and importance of PLC, SCADA and its usages in real-time application.

Staff Coordinators

Mr.R.Muniraj Assistant Professor (Senior Grade)/EEE

Staff Co-coordinators

Mr.M.Sivapalanirajan Assistant Professor/EEE

Ms.C.Nivetha Indumathi Assistant Professor/EEE

Resource Persons

*Mr.A.Ramesh Kumar and Mr.S.Balaji,
First Logic Automation Pvt. Ltd., Chennai*

Topics covered in 3 days are

- Introduction to PLC and uses of industrial automation and Delta PLC software simulation for basic ladder logic implementation
- Timers and Counter functions of Delta PLC and Siemens PLC demo on the trainer kit with S7-300
- HMI interface with Siemens PLC for sophisticated usage and SCADA interface and programming for industrial application



The valedictory function was honored by **Dr.S.Shanmugavel, Principal and Dr.M.Willjuice Iruthayarajan, Prof & Head/EEE**.

EEE ASSOCIATION ACTIVITIES

BASICS OF MATLAB



In continuation with a workshop held at 08.08.2015. Phase – III, “**BASICS OF MATLAB**” was conducted on 05.09.2015 by *Mrs.S.Divya, AP/EEE* at Research Simulation Lab was organized by EEE Association. Totally 20 participants from second years were participated this workshop.

BASICS OF COMSOL



EEE Association organized a workshop of “**INTRODUCTION TO COMSOL**” on 19.09.2015 by *Mr.B.Vigneshwaran AP/EEE* at Research Simulation Lab. Totally 40 students were participated in this workshop with two sessions. The class includes the basics of Electromagnetic field theory, with continuation to that capacitance model with single and multi dielectrics were practically designed and finally electric field and potential distribution were analyzed.

UNDERSTANDING BASIC CONCEPTS OF CRO AND DSO



EEE Association organized a workshop of “**UNDERSTANDING THE FUNCTIONS OF CRO & DSO**” on 19.09.2015 by *Mr.S.Thirumalai Kumar AP/EEE* at Applied Electronics Lab. With two sessions, Totally 40 students are participated in this workshop. In addition to the working principle of CRO & DSO, the functions of CRO & DSO were practically taught.

HUNT THE ANSWER

- *A. Anto Sharon Prakash & R.UmaMaheswaran, Final/EEE*

INTERACTIVE QUESTION

1. Construct a circuit to get 10V DC from 230V AC.
2. The recent past has witnessed a wave of shock and distress on the release of a photograph containing the image of a small boy named, Aylan Kurdi, has washed ashore off Syria.
 - i) What is the cause of the boy to be killed by getting drowned in the sea?
 - ii) Which country has refused the asylum for them?

Mail ID: neceeenewsletter@gmail.com

INSTITUTE OF ENGINEERS (INDIA) – 48TH ENGINEERS DAY



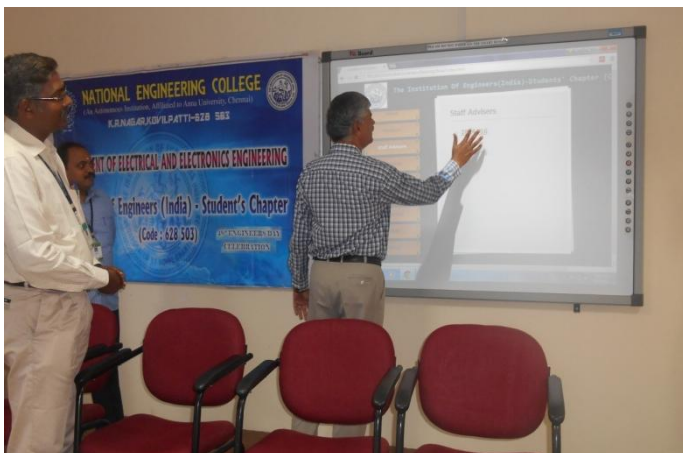
The Institute of Engineers (INDIA) student chapter of our college has celebrated the “48th Engineer’s Day celebration” on 15.09.2015 at EEE seminar hall. The function was presided over by **Dr.S.Shanmugavel, Principal** of our college. **Dr.M.Willjuice Iruthayarajan, HOD/EEE**, granted his solicit presence in the function. Mr.M.Arunkumar, Vice president of IE(I) presented the welcome address and special address for the occasion by Ms.K.Soundarya Executive member of IE(I). **Dr.S.Shanmugavel** our honorable Principal addressed the gathering by his presidential address. Our Principal launched the *official website of IE(I)*. The first poster was presented by our Principal to HOD/EEE. The prizes were given to the winners of paper presentation youth talk tech quiz contest organization as a part of IE (I) week.

Then complements were given to the Mr.Ranjith pre-final Civil and Mr. Jesuraj pravin pre-final EEE for video launch, Ms.M.Sathya for official website and Ms.P.Sathya for judging the paper presentation. Mr.V.Ramesh Executive member IE(I) pre-final EEE expressed his gratitude towards the vote of thanks. The function was successfully organized by the office bearers of IE(I) under the guidance of the IE(I) staff advisers Mr.M.P.E.Rajamani, AP(SG)/EEE and ,Mrs. R.Krishnaveni, AP/ECE, Mr. J. Janet paulin, AP/EIE, Mrs.. Venkadalakshmi, AP/Civil, Mrs. M.Stella Inba marry, AP/CSE and Mr.L.VadivelKannan, AP/Mech and Mr.V.Jackins, AP/IT.



Website Link:

[http://www.nec.edu.in/IE\(I\)%20STUDENT%20CHAPTER/index.html](http://www.nec.edu.in/IE(I)%20STUDENT%20CHAPTER/index.html)



SPECIAL INTEREST GROUP

HIGH VOLTAGE ENGINEERING



The seminar presentation on “**Flashover Performance on Solid Dielectrics**” was given by **Mr.K.Kumar (AP/EEE)** at lecture hall 1 for Special Interest Group members. The session was started with need of solid dielectrics for power transmission and distribution. Then method of polluting and flashover mechanism on solid dielectrics was discussed. Finally methodology about pollution testing in solid dielectrics was explained.

The objectives of the session are:

- To study the flashover performance on solid dielectrics
- To determine the flashover behavior of polluted high voltage insulators
- To know the methodology for pollution testing



The session was continued by **Mrs.G.Shunmuga lakshmi, AP/EEE**. She gave a brief description about “**Partial discharge**” in electrical power apparatus. Initially she started with the definition of partial discharge and mainly focused on different type of discharges, measurement techniques and condition monitoring.

The objectives of the session are:

- To detect and measure the partial discharge in power apparatus
- To monitor the electrical power apparatus more effectively

At the end of the session the students were taken to high voltage laboratory and explained about the generation and measurement of high voltage.

POWER ELECTRONICS AND DRIVES

A seminar on “Introduction to Power Electronics in Renewable Energy Sources” was conducted on 05.09.2015 by **Mr.M.Gengaraj, Assistant Professor /EEE** at Applied Electronics Laboratory for Special Interested Group (SIG) members. The objectives of the session are:

- Introduction about power electronics devices.
- Applications of Power converters in Renewable energy resources.

Initially he started with the properties of semiconductor devices and he gave a brief history about the power electronic converters. Then he discussed about the recent trends & ongoing research in power electronics field. He suggested some of the area in power electronics field for IV year project.

CONTROL AND INSTRUMENTATION

EEE department Control and Instrumentation Special Interest Group (SIG) conducted a technical seminar on the topic “**GENETIC ALGORITHM FOR ENGINEERING OPTIMIZATION PROBLEMS**” on 5th September 2015 in the EEE department Computer Centre. The resource persons for the program are *Dr.M.Willjuice Iruthayarajan (HOD/EEE)* & *Ms.M.Sathya (IV year EEE B)*



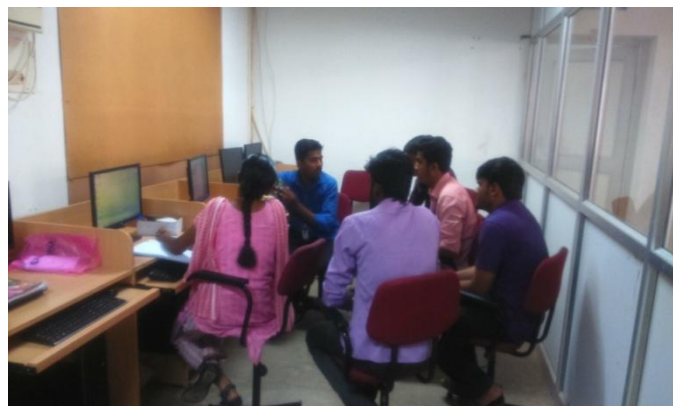
Dr.M.Willjuice Iruthayarajan, gave a brief introduction on genetic algorithm with its significance in control and instrumentation engineering and other engineering optimization problems. He extended the session with the recent developments in optimization techniques in the field of electrical engineering.



After having the introduction, student resource person *Ms.M.Sathya* gave a brief discussion in the principles of genetic algorithm and its applications. Then she guided the prefinal year students with the ideas, to focus their project design related to the optimization techniques.

19 number of prefinal year students of EEE attended the seminar for updating the knowledge in control and instrumentation. The technical seminar was concluded with the discussion of students and the resource persons.

EMBEDDED SYSTEM



An introduction to “**IMAGE PROCESSING ENHANCEMENT**” was given by *Mr.N.B.Prakash, Associate Professor/EEE* on 05.09.2015. Then the session was continued with an introduction to “**MPLAB SOFTWARE**” handled by *Mr.B.Venkatasamy, Assistant Professor /EEE* at Class Room H3 for Special Interest Group (SIG) members. The objectives of the session are:

- Introduction to Image Enhancement
- Image Enhancement techniques
- MPLAB Software Introduction
- Introduction to Proteus
- Hands-on session on Proteus

The session was started by 10.00 AM and completed by 12.30 PM.

SOCIAL AWARENESS CELL



Staff Coordinators:

Dr.M.Ravindran, Asso. Prof/EEE
Mr.N.B.Prakash, Asso. Prof/EEE
Mr.R.Madavan, AP/EEE

Social Awareness Cell of Department of Electrical and Electronics Engineering, National Engineering College organized a “**Social Awareness Program**” on “**Electricity Safety and its Awareness**” on 27th August 2015 at *Illathar Middle School, Puthugramam, Kovilpatti.*

The function was organized under the guidance of *Dr.Kn.K.S.K.Chockalingam*, Director, *Dr.S.Shanmugavel*, Principal. *Dr.M.Willjuice Iruthayarajan*, Head of Electrical and Electronics Engineering department and *Ms.Janaki*, Head Mistress of Illathar Middle School presided over the function. *Ms.Ratna Priya* of final year student/EEE welcomed the gathering. *Dr.Ravindran, Asso. Prof/EEE* delivered the lecture on electricity safety and its awareness to school students. *Mr.Pradeep, Mr.Rajkumar, Mr.Vartharajan and Mr.Gurusamy* of final year students/EEE presented about Generation of Electricity and its safety through video presentation. The function was organised by *Dr.Ravindran and Mr.Prakash, Asso.Prof/EEE and Mr.Madavan, AP/EEE. Ms.Akila* of final year student/EEE thanked the gathering.

SOFT SKILL PROGRAM



The presentation class on “Dos and Don’ts of paper presentation” for second year students was handled by *Ms.Sundara Kamalam, Soft Skill Trainer*, who taught all our students about the tricks to perform out-standingly in a paper presentation. Though we have completed one year of engineering, most of our students had various doubts about paper presentation. A presentation class was arranged by our HOD as a joint venture with the soft skill trainer to help our students. In this class, various concepts of paper presentation such as the background color choosing, selection of font size and color etc., were trained. The section also includes fluency, eye contact and body language. To aid this class, some real life examples from the life of *Ms.Sundara Kamalam*, were given which made the class more interesting and humorous. As a result of this inspirational class, many students have started to participate in paper presentation competition conducted by various colleges.

MINI PROJECT FORUM

Our department students are motivated to do *Mini Projects* from III semester onwards. Around 120 Second year students are the members in mini project forum of the EEE Department. In this connection a workshop was conducted on the topic of “**PCB preparation with software**” by *Mr.B.Venkatasamy, AP/EEE* at Seminar hall on **29.08.2015**. 70 students were participated in the workshop, hands on session also was conducted to do Printed Circuit Board (PCB) for a simple circuits. Students are encouraged to do such type of mini projects continually.



In continuation to **29.08.2015**. The students are doing mini project during working Saturdays in Microprocessor and Microcontroller lab. Around 20 students were actively participated to do mini projects on **19.09.2015** and completed some simple application oriented circuits.

EMOTIONAL INTELLIGENCE



Mr.Soma Valliapan a renowned Tamil writer, speaker, trainer, Economist and an expert in the areas of Human Resource Management, Personality development, and Financial Investments handled a two day class on emotional intelligence especially for EEE students of third year ‘A’ Section in EEE Seminar hall. The function was inaugurated by *Dr.Kn.K.S.K.Chockalingam, Director, Dr.S.Shanmugavel, Principal, Dr.M.A.Neelakandan, Prof & Head/S&H and Ms. Sundara kamalam, Soft Skill Trainer* of our college

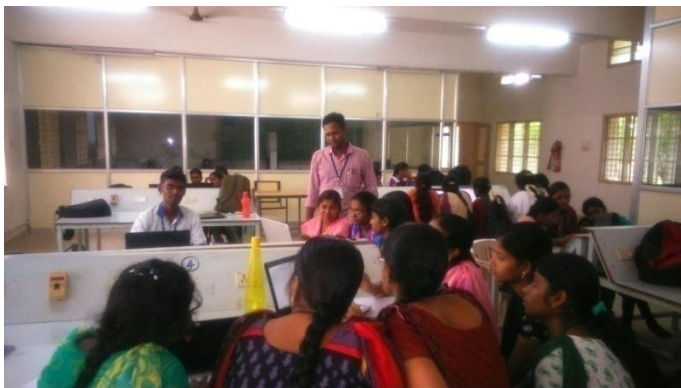
The first day class started with answering some couple of questions relating to the things that would happen in our day-to-day life. Then he handled the two main topics of emotional intelligence which are self respect and personality development.

The two day classes were handled so enthusiastically by him. He made a lot of interactions with us so that he maintains an energetic environment between the students. He carried out various methods to handle the class with fun and craze. Through this he is trying to capture the change of mind between the students before and after the emotional intelligence class.

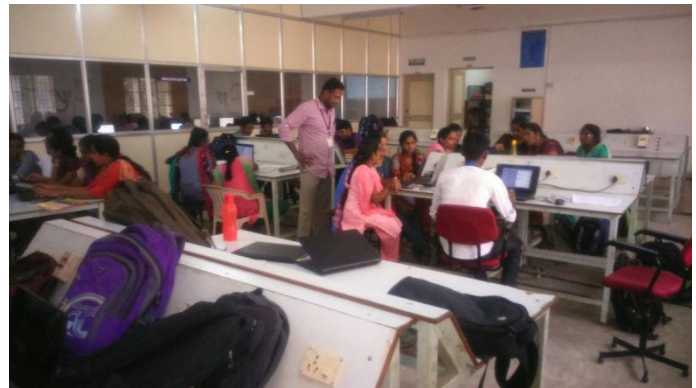
After this class, we are able to make decisions firmly in the correct time. It increased our presence of mind. Also our emotion quotient gets stabilized by his excellent examples.

LABVIEW – WORKSHOP

EEE department Control and Instrumentation Special Interest Group (SIG) is conducting short term training program in LABVIEW on the topic “**APPLICATIONS OF DIGITAL CIRCUITS AND INTERFACING MEASUREMENT INSTRUMENTS USING LABVIEW**” for 3rd year students of EEE. The course is planned to organize on every odd Saturdays of a month. It is been conducted from 05/09/2015 as a value added course in the control and instrumentation laboratory of EEE department.



DAY 1 (05/09/2015): Mr.R.Muniraj AP(SG)/EEE handled the first session with the introduction to LABVIEW. He explained the front panel and block diagram of the LABVIEW platform with its significance in the development and monitoring of the parameter variation. He extended the session with the tools available in the platform for the implementation of program idea. In the next session, the students were introduced with the programming in LABVIEW. **Mr.S.G.Sivaram (IV EEE)** contributed the session as student resource person. As he was trained in LABVIEW programming, he made his presence for guiding students in developing the program. 1 way traffic light indicator and full adder concepts were been developed as LABVIEW program.

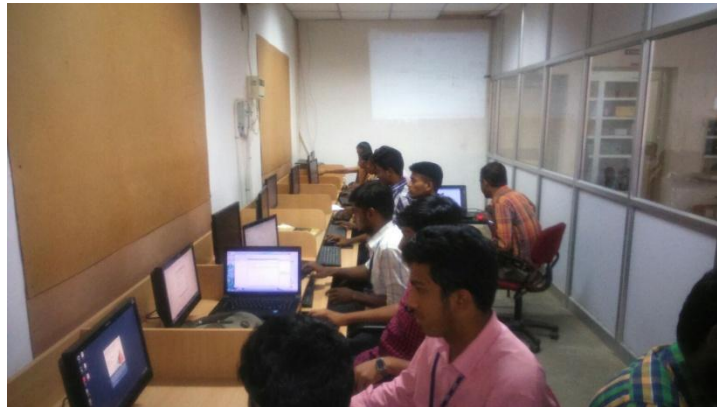


DAY 2 (19/09/2015): Mr.R.Muniraj AP(SG)/EEE conducted the first session with the programs related to the application of LABVIEW in level and temperature measurement. He put forward the basic tools useful for the development of a measurement model simulation.



Mr.M.Sivapalanirajan AP/EEE conducted the second session with the brief introduction of connecting LABVIEW platform oriented to the industrial application. He illustrated the development of seven segment display operation as a model in LABVIEW using case structure.

MATLAB workshop on Transmission and Distribution



The Special interest group **Power and Energy** of Electrical and Electronics Engineering is conducting short term training program on the topic “**MATLAB workshop on Transmission and Distribution**” for 3rd year EEE students. The course is conducted on every odd Saturday at Computer centre of Control and Instrumentation Laboratory and the course was started on 29/08/2015. Around 21 students have registered in the workshop.

On 05-09-2015 the course was handled by *Mr.G.Kannayeram, AP(SG)/EEE*. He gave an introduction to the components such as Electrical sources, Electrical Machines, Power Electronics and Electrical measurements blocks present in Simpowersystems of Simulink library browser. He also explained and simulated basic electrical DC series and parallel circuits and its associated measurements to familiarize the students to the Simulink platform and then the students simulated several DC circuits and verified the results.

On 19-09-2015 course was handled by *Mr.T.Sivakumar, AP/EEE*, 21 students of 3rd year EEE attended the session. He started the course with AC fundamentals and explained the terms like RMS value, peak value, and instantaneous value of sine waveform with the aid of MATLAB Simulink. Then he simulated and explained the phasor displacement of current and voltage waveforms for different loads. Finally he discussed about the Single phase circuit RMS, Peak value, Real, Apparent power and power factor measurements with the support of MATLAB Simulink. At last the students are asked to apply the concept learnt to different cases.

HOT NEWS - ONLINE SOURCE- *Bavithra.R – Third Year ‘A’***PLACEMENTS LINK**

Sample Placement Paper	http://placement.freshersworld.com/placement-papers/company_list
Gate Preparation	http://placement.freshersworld.com/power-preparation/GATE-Preparation-2016
Aptitude Preparation	http://placement.freshersworld.com/power-preparation/Aptitude-Preparation
Interview Preparation	http://placement.freshersworld.com/power-preparation/Interview-Preparation
Bank Preparation	http://placement.freshersworld.com/power-preparation/bank-preparation-tips

ARTICLES FROM ELECTRONICS FOR YOU (EFY)

Electrical 4 U	http://www.electrical4u.com/
Eee Cube	http://www.eeecube.com/
Electronics Hub	http://www.electronicshub.org/
El-Pro-Cus	https://www.elprocus.com/
Engineers Garage	https://www.engineersgarage.com/

FLOURISH YOUR SOFT SKILLS

COMMUNICATION SKILLS

Communication skill scores a crucial place under the roof of Soft skills. Being able to communicate effectively is the most important of all life skills. Communication is simply the act of transferring information from one place to another, whether this be vocally, written, visually (using logos, maps) or non-verbally (using body language, gestures and the tone and pitch of voice).

Core Communication Skills:

The core communication skills are nothing but the so called 'communication'. They include the skills which are always under lime light like,

- Verbal and Non verbal communication
- Effective speaking
- Conversational skills
- Listening skills etc.

❖ **Verbal Communication:** Effective verbal or spoken communication is dependent on a number of factors and cannot be fully isolated from other important interpersonal skills such as non-verbal communication, listening skills and clarification. The following are some of the important roots that builds up the verbal skill,

Opening the Communication: In verbal part, opening the communication is so important. The first few minutes of the communication impacts on the further communication.

Reinforcement: The use of encouragement and positive reinforcement can:

- Encourage others to participate
- Signify interest in what other people have to say
- Pave the way for development and/or maintenance of a relationship
- Allay fears and give reassurance
- Show warmth and openness.
- Reduce shyness or nervousness in ourselves and others.

R. Uma Maheswaran, Final year/EEE

Effective Listening: Active listening is an important tool of the good communicator yet many lag in it. To develop good listening the following plays major roles in both verbal and non verbal skills:

Verbal Part:

- Provide Feedback
- Defer Judgment
- Respond Appropriately

Non Verbal:

- Smile
- Eye Contact
- Posture
- Mirroring
- Distraction

*The above said will be seen in detail in the issue regarding with **Listening skills**.*

Questioning: The listener can demonstrate that they have been paying attention by asking relevant questions help to clarify what the speaker has said. Questioning can be used to:

- Obtain information.
- Start a conversation.
- Test understanding.
- Draw someone into a conversation.
- Show interest in a person.
- Seek support or agreement

Reflecting and Clarifying

Reflecting is the process of feeding-back to another person your understanding of what has been said. You can check that you have understood the message clearly.

- The speaker gets feedback as to how the message is received.
- It shows interest in, and respect for, what the other person has to say.

Closing the Conversation: Summarizing the concepts of the conversation and closing it makes the conversation to be successful. So apt and not a blunt closure is vital!!!

[Keep on flourishing.....]

TECHNICAL ARTICLE BY STAFF MEMBERS

Pulsed Electric Fields for Food Processing Technology

Mr.K.Kumar

Assistant Professor

Department of Electrical and Electronics Engineering

ABSTRACT

Processing foods with HV pulsed electric fields is a new technology to inactivate microorganisms and denature enzymes with only a small increase in temperature. For a given peak value of field intensity and amount of electric energy input, PEF inactivation of microorganisms is closely related to the waveform of applied pulses. This paper presents the effect of process parameters used in liquid food treatment. It is performed by using fixed R and C values and by varying L values in RLC network. From the measured output voltage and current waveforms the appropriate value of inductance is chosen which make the cell survivability minimum. Comparison is made out for the different types of liquid foods such as orange, Apple and Tomato juice respectively. By using this approach, the energy efficiency required for electrical sterilization can be improved.

INTRODUCTION

Pasteurization by heat is the conventional method used to inactivate microorganisms in liquid food to extend their shelf life. However, a heat treatment has several side effects like causing an irreversible loss of taste, colour, flavor and the nutritional value of the food. Therefore, there is a growing interest in non-thermal pasteurizing methods to treat liquid food. Use of the pulsed electric fields (PEFs) is considered to be one of the most promising non-thermal food-treatment methods for this application. PEF processing offers high quality fresh-like liquid foods with excellent flavor, nutritional value, and shelf-life. Since it preserves foods without using heat, foods treated this way retain their fresh aroma, taste, and appearance. It can be used for processing liquid and semi-liquid food products.

PRINCIPLE OF PEF

The basic principle of the PEF technology is the application of short pulses of high electric fields with duration of microsecond's micro- to milliseconds and intensity in the order of 10- 80 kV/cm. The processing time is calculated by multiplying the number of pulses

times with effective pulse duration. The process is based on pulsed electrical currents delivered to a product placed between a set of electrodes; the distance between electrodes is termed as the treatment gap of the PEF chamber. The applied high voltage results in an electric field that causes microbial inactivation. The electric field may be applied in the form of exponentially decaying, square wave, bipolar, or oscillatory pulses and at ambient, sub-ambient, or slightly above-ambient temperature. After the treatment, the food is packaged aseptically and stored under refrigeration. Food is capable of transferring electricity because of the presence of several ions, giving the product in question a certain degree of electrical conductivity. So, when an electrical field is applied, electrical current flows into the liquid food and is transferred to each point in the liquid because of the charged molecules present.

The equipment consists of a high voltage pulse generator and a treatment chamber with a suitable fluid handling system and necessary monitoring and controlling devices (Fig. 1.). Food product is placed in the treatment chamber, either in a static or continuous design, where two electrodes are connected together with a nonconductive material to avoid electrical flow from one to the other. Generated high voltage electrical pulses are applied to the electrodes, which then conduct the high intensity electrical pulse to the product placed between the two electrodes. The food product experiences a force per unit charge, the so-called electric field, which is responsible for the irreversible cell membrane breakdown in microorganisms. This leads to dielectric breakdown of the microbial cell membranes and to interaction with the charged molecules of food. Hence, PEF technology has been suggested for the pasteurization of foods such as juices, milk, yogurt, soups, and liquid eggs.

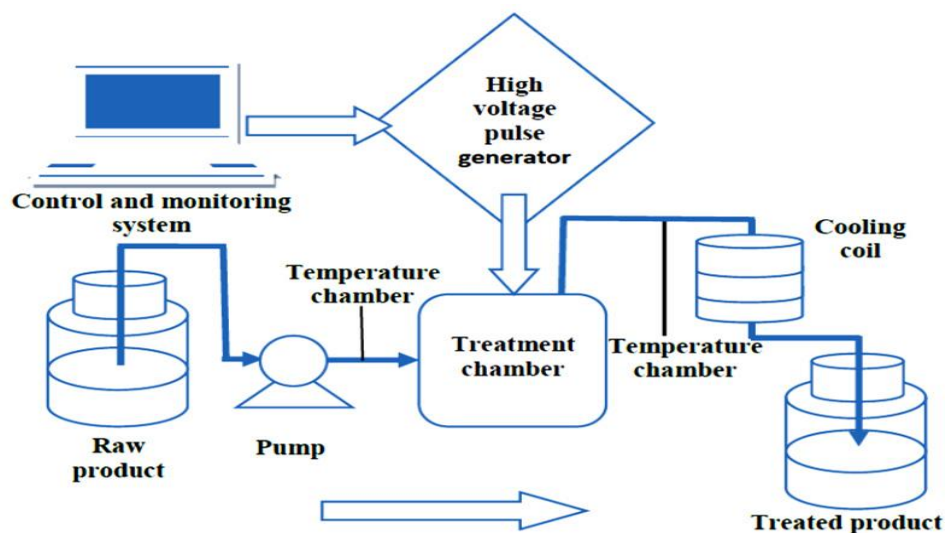


Fig.1. Flow chart of a PEF food processing system with basic component

SYSTEM COMPONENTS

A pulsed Electric Field processing system consists of a high-voltage power source, an energy storage capacitor bank, a charging current limiting resistor, a switch to discharge energy from the capacitor across the food and a treatment chamber. An oscilloscope is used to observe the pulse waveform. The power source, a high voltage DC generator, converts voltage from a utility line (110 V) into high voltage AC, then rectifies to a high voltage DC. Energy from the power source is stored in the capacitor and is discharged through the treatment chamber to generate an electric field in the food material. The maximum voltage across the capacitor is equal to the voltage across the generator. The bank of capacitors is charged by a direct current power source obtained from amplified and rectified regular alternative current main source. An electrical switch is used to discharge energy (instantaneously in millionth of a second) stored in the capacitor storage bank across the food held in the treatment chamber. Apart from those major components, some adjunct parts are also necessary. In case of continuous systems, a pump is used to convey the food through the treatment chamber. A chamber cooling system may be used to diminish the ohmic heating effect and control food temperature during treatment. High-voltage and high-current probes are used to measure the voltage and current delivered to the chamber. Fig. 2 shows a scheme of a pulsed electric field system for food processing.

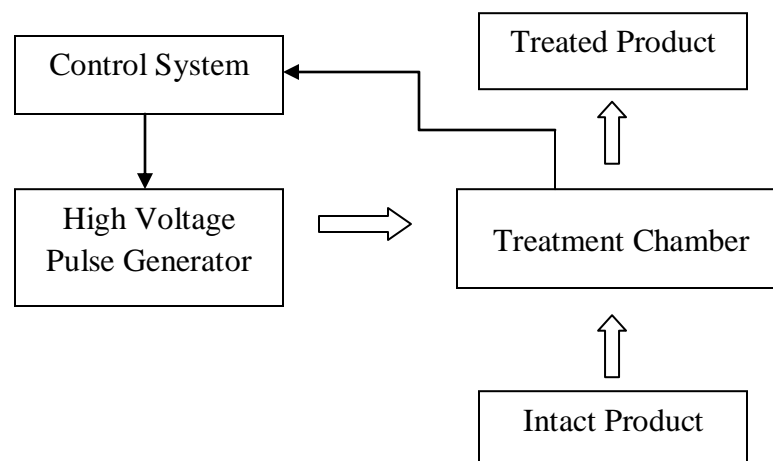


Fig.2. Scheme of a pulsed electric field system for food processing

APPLICATION OF PEF

Application of pulsed electric fields technology has been successfully demonstrated for the pasteurization of foods such as juices, milk, yogurt, soups, and liquid eggs. Application of PEF processing is restricted to food products with no air bubbles and with low electrical conductivity. The maximum particle size in the liquid must be smaller than the gap of the treatment region in the chamber in order to ensure proper treatment. PEF is a continuous processing method, which is not suitable for solid food products that are not pump able. PEF is also applied to enhance extraction of sugars and other cellular content from plant cells, such as sugar beets. PEF also found application in reducing the solid volume (sludge) of wastewater. PEF processing has been successful in a variety of fruit juices with low viscosity and electrical conductivity such as orange, apple, and cranberry juice.

CONCLUSION

The objective of food preservation technologies used by the food industry is to control microorganisms once they are contaminating foods. Food preservation technologies are based on the prevention of microbial growth or on the microbial inactivation. Pulsed electric field (PEF) is a potential non-thermal food preservation technique to replace conventional thermal processing. Research of pulsed electric fields technology is ongoing around the world. Most of the research conducted up until now has been in the laboratory and on a pilot plant scale level, and has shown promising results.

REFERENCES

- [1] Roodenburg, J.Morren and H.Prins, "Technology for Preservation of food with Pulsed Electric Field", IEEE 2002.
- [2] V. Gowrisree, K. Udayakumar and P. Gautam, "Application of High Voltage Pulses in the Preservation of Orange Juice", IEEE Indicon 2005 Conference, pp. 502-503, Dec 2005.

INDUSTRY PROFILES



ENERGY MANAGEMENT SOLUTIONS

ABOUT ENMAS INDIA

ENMAS, a unique brand name exists for more than 3 decades in Indian Power and Boiler Industry for various types of boilers with advanced technologies from global players. ENMAS O&M (Operation & Maintenance) was established as part of Resurgent Group during the year 2005, has created a niche for itself and has become a major player for operation and maintenance of power, steel, cement and process plants. Its exclusive strength is to take up the contracts on performance based turnkey O&M inclusive of chemicals, consumables and spares on long term basis (up to 15 years).

With the support of clients through dedicated professional services, ENMAS O&M augmented products supply viz. Process Boiler, Water Treatment Plants, Air Cooled Condensers, Power Plant Spares, Electrical & Instrumentation system through its business units / subsidiaries and associates with a value addition. **We also can offer all types of Energy Management Solutions as your preferred partners**

PRODUCTS & SERVICES

1. Power Plant Spares

We source, manufacture & supply spares for various power plant equipment's with stringent quality standards. Such as, Turbine, CHP(Combined Heater & Power) and APH(Air Pre heater) etc....

2. Boiler Spares

Pressure Parts

- Bed coil studded tubes
- Bank tubes
- Evaporator coils with headers
- Screen tubes
- Super heater coils both carbon steel and alloy steel
- Headers both carbon steel and alloy steel
- Water wall panels including roof panel tubes

Non-Pressure Parts

- APH Tubes
- Expansion bellows
- ESP collecting plates

3. Chemicals & Consumables

- | | |
|---|------------------------------------|
| <input type="checkbox"/> Antiscalant | <input type="checkbox"/> Hydrazine |
| <input type="checkbox"/> HCl | <input type="checkbox"/> Ammonia |
| <input type="checkbox"/> H ₂ SO ₄ | <input type="checkbox"/> TSP |
| <input type="checkbox"/> Morpholine | |

4. Transmission & Distribution

- Process study and commissioning services
- Utility Management with MIS
- Plant maintenance – prevention, break down maintenance & plant shut down planning and execution

5. Chemical Cleaning

- **Chemical Consultants deal with pre & post chemical cleaning of boilers and condensers for major power stations especially NTPC and other clients for the past four decades.**

6. Operation & Maintenance

- Plant start-up and commissioning services
- O&M training and development for our staff alone
- Outage services Operation Management with MIS
- Plant operation, control room and field Fuel management and water treatment
- Plant maintenance – prevention, break down maintenance & plant shut down planning and execution
- Maintenance planning, equipment history, CMMS
- Consumable planning, procurement and stores Asset management Flexible O&M staffing

7. Project management

Start-up and Commissioning Services Supporting client at final stages of,

- Erection
- Trial runs
- Commissioning of the plants

COMMUNICATION ADDRESS

III Floor, Guna Building Annexe
No:443, Anna Salai, Teynampet
CHENNAI 600 018, INDIA
Ph. + 91 44 4901 7050
marketing@enmasindia.com
marketing@enmasservices.com

CARRERS

ENMAS INDIA offers a challenging, energizing and Independent working environment where employees are encouraged to be innovative and rewarded for their contributions. Are you looking for an exciting and challenging workplace with career advancement in Power Industry then send your resume to below mail id.

Contact Person: R. PremKumar - HR

Mobile: +91- 9381719955

Resumes can be Mailed to :

hrd@enmasindia.com

premr@enmasindia.com

Industrial Visit – Academic Year 2015 – 16

S. No	Place of Visit	Date	Year	Staffs Accompanied	No. of Students
1.	Nuclear Power Plant, Kudankulam	29/06/2015	IV	Mr.G.Kannayeram, Mr.R.Muniraj Mr.S.Sankarakumar, Ms.S.Jayanthi & Ms.S. Divya	135
2.	Nuclear Power Plant, Kudankulam	10/09/2015	III	Dr. L.Kalaivani, Dr. R.V.Maheshwari Mr.G.Kannayeram & Mr.B.Venkatasamy	131
3.	Thenmalai ECO-PARK	15/09/2015	II	Mr.J.Sivadasan, Mr.A.Pandiyarajan Ms.C.Nivetha Indumathi & Ms.P.Subathra	130
4.	Kayaar Exports Windfarm, Kayathar	23/09/2015	II	Mr.N.B.Prakash, Ms.K.Gowthami Mr.T.Sivakumar, Mr.K.Kumar & Ms.P.Subathra	131



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TIME TO KNOW OUR ALUMNI

MR. RAJESH ANANTH. K, B.E.,

Contact: +91 9444111648

PASSED OUT: 1999

CURRENT WORKING STATUS:

Manager - Protection Applications, Alstom, Dubai



PROFILE SUMMARY

Present working environment:

- ✓ Working in **Alstom Grid SAS Dubai** as Manager Protection Applications from 11.05.2008 to till date.

Previous Experience:

- ✓ Worked as Asst. Manager – Training & Expertise in Areva T&D (Alstom) India Ltd., Pallavaram, Chennai from 01st July 2004 to 10th May 2008.
- ✓ Worked as Senior Executive – Electrical in E.I.D Parry Co-generation Power plant.
- ✓ Worked as Asst. Manager –Electrical in Reliance Industries Ltd- Jamnagar.
- ✓ Worked as Engineer- Electrical in MADRAS CEMENTS LTD (3.5 MTPA plant) as Commissioning & Maintenance Engineer.

Present role in Alstom Grid SAS- Dubai:

- ✓ Product approval & homologation in Middle East.
- ✓ Trouble shooting & application support for customers.
- ✓ Product selection & optimization support for tendering team.
- ✓ Technical training on Power system protection and Alstom Products to internal & external customers.
- ✓ Technical support on automation products for internal & External Customers.

Special training under gone:

- ✓ Experts training on the latest technology & Products in Alstom Grid Stafford UK.
- ✓ Training on “Power System network, quality & automation” conducted by IIT Madras
- ✓ “Train the trainer” program conducted by Alstom Dubai
- ✓ ETAP training conducted by KLG Systel in Chennai



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Alumni Achievements

Karkuvelraja. T
 Alumni: **Batch 2014**
Best Outgoing Student 2014
 Current Status: **Doyensys, Chennai**



It is our pleasure to inform all our fellow mates, that our paragon Alumni, **Mr.Karuvetraja. T** have participated and completed three marathons (10 km). The events are,

1. *Dream Runners Half Marathon 2015 - Chennai*
2. *SNJ Chennai Half Marathon 2015 - Chennai*
3. *Salem Marathon 2015 - Chennai.*



DOOR OF DESIRE



I could still remember my childhood hesitations to come up to the crowd. It was my 10th standard when something from inside kindled “Suriya just make a try for something else”. Until then I’ve climbed the stages only for dancing to the rhythm. Started to pen down my simple thoughts. **This gave a diamond opportunity to deliver my speech in front of 3187 student’s crowd in codissia- Coimbatore when I came second in youth talk in the National Level Competition.** People around me thought I would fail in my attempts. Only two things that ever I recalled to me is never to leave any opportunity and also pestered my buddies around to crack out their shells and come out. I’ve faced so many failures and shame in my path, still dared to face a new target. Failure will give you the courage and ways to do something with more determination. A short story which moulded me, ‘a designer once met our respected Kalam and said that he was one among the top 500 designers in the world. Kalam congratulated him and said be humble to hit the top 10’. And my dear friends this is my attitude towards my “DOOR OF DESIRE”. Keep striking tirelessly irrespective of what people say about you. We indeed have to undergo hard times as the diamond needs heavy pressure to bring such tremendous shine unto it. At this juncture, I wanted to shower my heartfilled thanks to my mother who is my sculptor when I just remained as useless clay. I thank my management and my Head of the Department **Dr.M.Willjuice Iruthayarajan** for their encouragement and support. Also, I thank my senior **Mr.P.Shanmugam**, final year EEE who gave me the lock and made me to search my key for success.

”Inorder to be irreplaceable be-unusual, unbeatable and unpredictable”.

Ms. S. Suriya, Second Year EEE

Students Achievements

Second Year A

S.NO	NAME	EVENT	VENUE	PRIZE	DATE
1.	Abdul hameed sharik.M	Gaming	ITECHFEST, Department of CSE, National engineering college	1 st	27.08.2015
2.	Deepa.N	Paper Presentation	Ramco Institute of Technology	2 nd	28.8.2015
3.	Bala Abirami.S Dhanushya.A		Renganayagi Varatharaj College of Engineering		25.9.2015

Second Year C

S.NO	NAME	EVENT	VENUE	PRIZE	DATE
1.	F.Sam Christopher Ponraj	Singing	Sivakasi (Rotary Club)	1 ST	27.09.2015
2.	S.Suriya	Youth Talk - ICTACT	Francis Xavier Engineering College	1 ST (Regional)	16.09.2015
			Codissia (coimbatore)	2 nd (National)	23.09.2015

Third Year B

S.NO	NAME	EVENT	VENUE	PRIZE
1.	Shivasankari.G Umadevi.K	Technical Quiz	IE, National Engineering College	Winners
2.	Soundarya.K Shanmuga Nithya.B			3 rd

Final Year B

S.NO	NAME	EVENT	VENUE	PRIZE	DATE
1.	P.Shanmugam	JCI Sports day 2015 Zone XVIII Cricket Tournament	Dr.G.U.POPE College of Arts And Science, Tuticorin	1 ST	13.09.2015

Students Activities

Second Year A

S NO	NAME	EVENT	VENUE	DATE
1.	Abdul kader riyaz.M	ICTACT YOUTH PRESENTATION	Ponjesly college of engineering-kanyakumari	11.09.2015
2.	Aswanth Navamani.M	Paper presentation	ITECHFEAST-CSE department-National engineering college	27.08.2015
3.	S.Chokkalingam K.Chellakili manokaran	Paper Presentation Quiz	ITECHFEAST, Department of CSE, National engineering college	27.08.2015
4.	D.Franklin	Paper presentation		27.08.2015

WORKSHOPS

S.NO	NAME	TOPIC	VENUE	DATE
1.	Abdul kader riyaz.M Abdul hameed sharik.M Abishek jeyanth.J.R Aswanth navamani.M Ashwin.R Aravind.S	Non Destructive Testing	Auditorium, National Engineering College	10.09.2015
2.	Aswanth Navamani.M	Photoshop and After Effect	Department of EEE, National Engineering College	19.09.2015

Second Year C

S.NO	NAME	EVENT	VENUE	DATE
1.	S.Vinoka Sanjeevini	Paper Presentation	Vaigai College of Engineering	04.09.2015
2.	M.Sri Jawahar T.Sathish L.Ramanarayanan @ Ramesh A.Sangeetha F.Sam Christopher Ponraj		Ramco Institute of Technology	27.08.2015

Final Year A

S.NO	NAME	EVENT	VENUE	DATE
1.	Mariappan M.Gurusamy K.Muthumanikandan M.Gopal Akila J.Anitha	Social Awareness Program	Illathar Middle School, Puthugramam, Kovilpatti	27.08.2015
2.	R.Muthu Karthik K.Arunkumar	Orphanage Visit	Tirunelveli	15.08.2015

S.NO	NAME	GAME	DATE
1.	R.Latchiya Bharathi	Football	12.09.2015
2.	I.Kaleeswaran	Cricket	17.09.2015

WORKSHOP				
S.NO	NAME	TOPIC	VENUE	DATE
1.	G.K.Archana Dharsini A.Anto Sharon Prakash S.Mohamed Suhail	Hands on Training in PLC Programming, SCADA and HMI	Department of EEE, National Engineering College	27.8.2015 to 29.8.2015

EVENT ORGANIZERS					
S.NO	NAME	ORGANIZED EVENT	CLUB	VENUE	DATE
1.	V.Amsaveni M.Gokul Sakthivel M.Gurusamy	Quiz	Institution of Engineers (India)- Students Chapter	Department of EEE, National Engineering College	9.8.2015

Final Year B

S.NO	NAME	EVENT	VENUE	DATE
1.	Sam Maxwell.M	Anna university zone XVIII football (Men) Tournament	National Engineering College, Kovilpatti	12.09.2015 to 14.09.2015

		2015-16.		
2.	Shunmugaraj. M Varatha Rajan. G Rathna Priya. M Ramkumaran. D Rama Subramanian. S Rajkumar. M Pradeep. M Shanmugam. P Sathyananthan. P Besil Bal Chandru. G	Awareness Program	Illathar Middle School, Puthugramam, Kovilpatti	27.08.2015
3.	Pranava karthikeyan.M.S	Business ID Meeting JCI CLUB	JCI Bhavan, kovilpatti	05.09.2015

WORKSHOP				
S.NO	NAME	TOPIC	VENUE	DATE
1.	Natarajan. S Pranava karthikeyan.M.S Praveen Balaji.A Sathianarayanan. M Santhoshkumar. S Selvam. P Subbiah. M Suresh kumar.P Rama Subramanian. S Ramkumaran. D Saravanakkumar.R.S Sivaramalakshmi. V Sneha. R	Hands on Training in PLC Programming, SCADA and HMI	Department of EEE, National Engineering College	27.8.2015 to 29.8.2015

EVENT ORGANIZERS						
S.NO	NAME	ORGANIZED EVENT	CLUB	ROLE	VENUE	DATE
1.	Besil Bal Chandru. G	Batch day-Launch Video		Designer	National Engineering College	09.08.2015
2.	Sathya.M Sivaram.S.G Shanmugam.P	Website	Institution of Engineers (India)-Students Chapter			15.09.2015
3.	Sivaram.S.G	LABVIEW Workshop		Resource person		05.09.2015

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