

#### NATIONAL ENGINEERING COLLEGE

(AN AUTONOMOUS INSTITUTION) K.R.NAGAR, KOVILPATTI-628503.



# IEUS EFFER

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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#### **STAFF ACTIVITIES/PUBLICATIONS/ACHIEVEMENTS**

#### **STAFF ACTIVITIES**

S.No.	Name of the Staff	Events/Guest Lecture	Topic/Event	Date	College/ Industry	
		yarajan, Professor	Neural Networks and Deep Learning	Oct 2018		
1.	Dr. M.Willjuice Iruthayarajan, Professor and Head		Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization	Nov 2018	Deeplearning.ai	
	and read		Structured Machine Learning Projects	Nov 2018		
			Life Skills for Engineers (Level II)	Nov 6 –Dec 20, 2018	CEMCA and University of Hyderabad	
2.	Ms.P.Jothsna Praveena, AP	Workshop	Energy Efficient solutions for smart Energy Systems	14 <sup>th</sup> – 16 <sup>th</sup> Feb 2019	SRM Institute of Science and Technology, Kattankulathur	
3.	Mr.M.Bakrutheen, AP	Coursera	Electric Power Systems	Jan 2019	SUNY, State University of New York	

#### STAFF PUBLICATIONS

#### **International Journal:**

- ✓ RaguRaman Lingamuthu, **Ravindran M**, "Power flow control of grid connected hybrid renewable energy system using hybrid controller with pumped storage", International Journal of Hydrogen Energy, Vol. 44, No. 7, pp. 3790-3802, 2019. Impact Factor: 4.229.
- ✓ S. Ajithapriyadarsini, P. Melba Mary, *M.Willjuice Iruthayarajan*, "Automatic generation control of a multi-area power system with renewable energy source under deregulated environment: adaptive fuzzy logic-based differential evolution (DE) algorithm", Soft Computing, Accepted for Publication 2019 Impact Factor: 2.367

#### **International Conference:**

- ✓ K.Gowthami, L.Kalaivani, "Fault classification of Induction Motor bearing using adaptive Neuro fuzzy inference system", International Conference on Electrical Energy Systems ICEES 2019, SSN College of Engineering, Kalavakkam, Chennai on 21<sup>st</sup> and 22<sup>nd</sup> Feb 2019. Accepted for Publication.
- ✓ S.Sivakumar, K.Seenivasaragul, C.Vikram, D.Vishnumoorthi, **K.Gowthami**, "*Design of an Isolated Boost Converter with Coupled Inductor for Electric Vehicle Application*", 2019 International Conference on Advanced Computing & Communication Systems (ICACCS), Sri Eshwar Engineering College, Coimbatore. Accepted for Publication.
- ✓ G.Shnumugalakshmi, R.V.Maheswari, B.Vigneshwaran, "A Comprehensive Study and Prediction of Flashover Voltage of 11kV Bushing with Various Pollutions Using Support Vector Machine", IEEE International Conference on Innovations in Power and Advanced Computing Technologies", i-PACT-2019, VIT, Vellore Accepted for Publication.
- ✓ E.Anitha, S.Arockia RanjithKumar, T.Ajithkumar, M.Gowthamaraj, "Servomechanism of BLDC Drive using Pole Placement Technique", IEEE International Conference on Recent Advances in Energy-efficient Computing and Communication (ICRAECC'19)", St.Xavier's Catholic College of Engineering, Nagercoil, 8<sup>th</sup> March 2019 Accepted for Publication.
- ✓ Sivakumar.T, Sankarakumar.S, Mahalakshmi.T and Hemalaxmi.P, "Design Optimization of Three Phase Squirrel Cage Induction Motor Using Evolutionary Algorithm", IEEE International Conference on Recent Advances in Energy-efficient Computing and Communication (ICRAECC-2019)", St.Xavier's Catholic College of Engineering, Nagercoil, 8<sup>th</sup> March 2019 Accepted for Publication.
- ✓ Muniraj.R, Abinaya.P, Amritha.S, Sivapalanirajan.M, "Performance comparison of MPC and PID controller for single input single output process", IEEE International Conference on Recent Advances in Energy-efficient Computing and Communication (ICRAECC-2019)", St.Xavier's Catholic College of Engineering, Nagercoil, 8<sup>th</sup> March 2019 Accepted for Publication.
- ✓ F.Antony Jeffrey Vaz, K.Kanika, V.Padmavathi, R.Nishanthi, S.Priyadharshini, "Intelligent Battery Power Optimizer for IoT Devices", IEEE International Conference on Recent Advances in Energy-efficient Computing and Communication (ICRAECC-2019)", St.Xavier's Catholic College of Engineering, Nagercoil, 8<sup>th</sup> March 2019 Accepted for Publication.
- ✓ Venkatasamy.B, Prabhu.S, Prakash.P.R, Shunmuga Sundaram.K, Naveen Kumar.A.G, Ranjith King Jimson.M, Sivasorna Ram.R, "Smart Security system for domestic application using GSM and cloud", IEEE International Conference on Recent Advances in Energy-efficient Computing and Communication (ICRAECC-2019)", St.Xavier's Catholic College of Engineering, Nagercoil, 8<sup>th</sup> March 2019 Accepted for Publication.

- ✓ Lakshmi Praba.N, **Kalaivani.L**, "Analyzing the performance for outer shed insulator with non-uniform pollution", International conference on Electrical Energy systems ICEES 2019, SSN College of Engineering, Chennai on 21<sup>st</sup> 22<sup>nd</sup> February 2019.
- ✓ Lakshmi.S, **Maheswari. R.V., Vigneshwaran.B**, "*Experimental study of electrical characteristics of high voltage bushing under single dry band conditions*", International conference on Electrical Energy systems ICEES 2019, SSN College of Engineering, Chennai on 21<sup>st</sup> 22<sup>nd</sup> February 2019.
- ✓ Sivaramalakshmi.V, **Ravindran. M, Willjuice Iruthayarajan.M, Bakrutheen.M,** "Aging performance of natural ester impregnated Nomex paper insulation", International conference on Electrical Energy systems ICEES 2019, SSN College of Engineering, Chennai on 21<sup>st</sup> 22<sup>nd</sup> February 2019.
- ✓ Uma devi. S, Senthil Kumar.S, "Investigation of the properties of sunflower oil with antioxidants and nanopowders", International conference on artificial intelligence, smart grid and smart city applications AISGSC 2019, PSG College of technology, Coimbatore on 4<sup>th</sup> and 5<sup>th</sup> January 2019.
- ✓ Pooraja.B, Willjuice Iruthayarajan. M, Bakrutheen. M, "Analysis of groundnut based bio modified liquid insulation for high voltage transformer", International conference on intelligent sustainable systems (ICISS'19), SCAD Institute of technology, Coimbatore on February 21<sup>st</sup> and 22<sup>nd</sup> 2019.
- ✓ G.Kannayeram, P.Eswari Prabha, N.B.Prakash, R.K.Gobiga, "Damping of Low Frequency Oscillations Using Controllability Measures of UPFC", IEEE International Conference on Recent Advances in Energy-efficient Computing and Communication (ICRAECC-2019)", St.Xavier's Catholic College of Engineering, Nagercoil, 8<sup>th</sup> March 2019 Accepted for Publication.

#### **STAFF ACHIEVEMENTS**

✓ Pooraja.B, Willjuice Iruthayarajan, M. Bakrutheen. M, "Analysis of groundnut based bio modified liquid insulation for high voltage transformer", International conference on intelligent sustainable systems (ICISS'19), SCAD Institute of technology, Coimbatore on February 21<sup>st</sup> and 22<sup>nd</sup> 2019 has been selected as **BEST PAPER** award.

#### **ACADEMIC YEAR 2018 - 2019**

S.NO.	FACULTY MEMBER / STUDENT DETAILS	TITLE OF THE PROJECT	PERIOD	FUNDING AGENCY	AMOUNT (RS.)
1	Dr. R.V. Maheswari, Prof./EEE	Biometric	2 Years	NewGEN	2,50,000.00
	S.A. Ashfaaq Mohamed, Pre	Based		– IEDC	
	Final Year	Water			
	P. Abdul Rahim, Pre Final Year	Dispenser			
2	Dr. L. Kalaivani, Prof./EEE	Pro Gas	2 Years	NewGEN	2,50,000.00
	Gandhi Muthu K, Pre Final Year	Stove		– IEDC	
	Arun Gomathi R, Pre Final Year				
	Ajay Karthick J, Pre Final Year				
3	Dr. S. Senthilkumar, AP	E-waste	2 Years	NewGEN	2,50,000.00
	(SG)/EEE	Paper		– IEDC	
	K.Rajkamal, Final Year	Collector			
	D.Sudharsan, Final Year	Pay Smart			
	C.V.Suryakumar, Final Year	Dust Bin			
	M.Velmurugesan, Final Year				
	V.Nalla Selva Prakash, Pre Final				
	Year				
4	Mr. F. Antony Jeffery Vaz,	Smart	2 Years	NewGEN	2,50,000.00
	AP/EEE	Trolley		– IEDC	
	Dr. N.B. Prakash, Asso.	Bag			
	Prof./EEE				
	Saranya.S, Pre Final Year				
	Priyadharshini.A, Pre Final				
	Year				
	Kanika. K, Final Year				
	Nishanthi.R, Final Year				
	Padmavathi.S, Final Year				
	Priyadharshini.S, Final Year				

# DEPARTMENT ACTIVITIES TWO DAYS TECHNICAL SYMPOSIUM ALTANZIA-2K19

The Electrical and Electronics Engineering Association of the department of EEE have conducted a two-day National Level Inter College Technical Symposium ALTANZIA-2K19 on 20th and 21st February 2019. The inaugural function was held at 10.00 a.m. in college Auditorium. The dignitaries on the dais were *Dr.Kn.K.S.K.Chockalingam*, Director, Dr.S.Shanmugavel, Principal, Dr.M.Willjuice Iruthayarajan, HOD/EEE and Dr.N.B.Prakash, Associate Professor, EEE. The welcome address was given by *Mr.C.V.Suryakumar*, Secretary, EEE Association. Presidential Address was given by *Dr.S.Shanmugavel*, Principal, NEC. Introduction to Chief Guest was briefed by Ms.K.Subash. Dr.S.Shanmugavel, Principal, honored the Chief Guest. The chief guest was Mr.Er.R. Venkatachalam, Alumni (2001), Architect, Automotive Process Division, Bosch, Coimbatore. He delivered the Inaugural Address. He gave a valuable speech and motivated the student. Dr.M. Willjuice Iruthayarajan, HOD/EEE, National Engineering College presented a Memento to the chief guest. Coordinators of the workshop are Mr.S.Sankarakumar, Assistant professor (SG) and Mr. F.Antony Jeffrey Vaz, Assistant professor. The inaugural function ended with a video launch. Around 140 students from various colleges like Government college of Engineering, Mepco Schlenk Engineering College, Velammal College of Engineering, Dr. Sivanthi Aditanar College of Engineering, Sree Sowdambika College of Engineering, Ramco Institute of Technology, St. Mother Theresa Engineering College, Unnamalai Institute of Technology, and Chandy College of Engineering participated in the symposium.





#### PAPER PORTRAYAL

Paper Portrayal was held in Hall H3, H4 and H5 from 10.30 to 03.45 pm. The judges were *Dr.M.Ravindran*, *Associate Professor* (SG), *Mr.M.Bakrutheen*, *Assistant Professor Ms.K.Gowthami*, *Assistant Professor*, *Mr.M.Sivapalaniraian*, *Assistant Professor and Ms.E.Joe Princilla*, *Assistant Professor*. The student volunteers who organized the event are Shameema Farhana, Krishnaveni, Jebshikai, Sindu Muhila, Mythili, Sindhu, Dhanushya, Sarjun, Sathish, Selvakumar, Meenachi, and Ranjith King Jimson. Totally 63 participants from various colleges attended the paper portrayal. First prizes on each venue go to Ishwarya Kokila Francis Xavier Engineering College, S.Sivasankar Veerasamy Chettiar College and Mahalakshmi and Saranaya of Mepco Schlenk Engineering College.





#### HIGH VOLTAGE WORKSHOP

High Voltage Workshop was held on in High Voltage Lab theory sections were held on research simulation lab. Resource persons for the laboratory session are *Mr.B.Vigneshwaran Assistant Professor and Mr.K.Kumar, Assistant Professor*. The volunteers who organized the workshop are Kathirvel Mari, S.Syed Mohideen Batcha, P.Kasirani, P.Vigneshwari, M.Vijaya Kumari and P. Abdul Rahim. Totally 85 students from various Engineering colleges attended the High Voltage Workshop.





#### POWER ELECTRONICS WORKSHOP

Power Electronics Workshop has held in New Computer Lab The supervisors for the Power Electronics Workshop are *Dr.M.P.E.Rajamani*, *Assistant Professor* (*SG*) and *Mr.S. Sankara Kumar*, *Assistant Professor* (*SG*). The student volunteers who organized the workshop are G.Rajestr[Final Year), D.Sudharsan(Final Year), S.Amarnath(III Year), S.Amarnath and M.Vijaya Shanmugam(III Year). For this workshop about 23 student participants from various colleges.





#### PROTECTION RELAY WORKSHOP

Protection Relay Workshop was held in Seminar Hall, and laboratory session was held in machines lab. The supervisors for the Protection Relay Workshop are *Mr.S.Sankara Kumar*, *Assistant Professor* (*SG*) *and Mr.T.Sivakumar*, *Assistant Professor*. The student volunteers who organized the workshop are A.Nagaraj (Final Year), K.N.Nagaarjun (Final Year), S.saravakumar (Final Year) M.MariSelvam(III Year) and Murugan (IIIYear). For this workshop about 15 student participants from various colleges.





#### LAB VIEW WORKSHOP

Lab View Workshop has held in Seminar Hall, and laboratory session was held in machines lab The supervisors for the Lab View Workshop are *Mr.R.Muniraj*, *Assistant Professor*(*SG*) and *Mr.M.Sivapalanirajan*, *Assistant Professor*. The student volunteers who organized the workshop areR.Raguraman (Final Year), K.Seetha (Final Year), S.Arumugaraj (III Year) and P.BalaChandhran (III year). For this workshop about 24 student participants from various colleges.





#### INTERNET OF THINGS WORKSHOP

Internet of Things Workshop was held in Seminar Hall, and laboratory session was held in machines lab The supervisors for the Internet of Things Workshop are *Mr.B.Venkatasamy*, *Assistant Professor and Mr..F.Antony Jeffrey Vaz, Assistant Professor*. The student volunteers who organized the workshop are S.Gopinath (Final year), J.Saravanan (Final year), R.SivaSorna Ram (III Year), R.Naveen Kumar (III year) and M.Shunmugasundharam (III year). For this workshop about 32 student participants from various colleges.



#### **ELECT LORE**

Elect Lore was held on Hall3 the judges for the Elect Lore are *Mr.P.Samuel Pakianathan*, *Assistant Professor and Ms.S.Balakrithiha*, *Assistant Professor*. The student volunteers for conducting the event areM.Anandhi (Final year), I.Jebisha Gnanadeepam (Final year), G.Viswanath(Final Year), D.Sudharsan (Final Year), S.Saranya (IIIyear), J.Sheeba (III year), Gowthamaraj (IIIyear), Ajith Kumar(IIIyear), Lavanya Narayanan (II year), Niferlin (II year), Vathsala Priya (II year) and Ganapathy Subramaniyan(IIyear). Fifteen students from various colleges attended the non-technical event. Winners of first and second prizes are S.Anand, I.Imran, V.Karthikeyan from Sethu Institute of Technology and Aarthy and Priya from AAA College of Engineering and Technology.



#### PIRATES LAND

Pirates Land was held in Power Electronics Lab the judges for the Pirates Land are *Mrs.P.Jothsna Praveena*, *Assistant Professor and Mr.B.Vigneshwaran*, *Assistant Professor*. The student volunteers for conducting the event are N.Rishika (Final year), K.Sethana Devi (Final year), M.Karan (Final year), P.Gurusubramanian (Final Year), M.Sinduja (III year), M.Vinitha (III year), M.Sonia (III year), L.Malini (III year), A.Ashok (III year), A.PerumalSamy (II year), Raga Pratha (II year), Harish Kumar (II year) and Maheswari (II year). Twenty-three students from various colleges attended the non-technical event. Winners of first and second prizes are S.Vairamuthu of Mepco Schlenk Engineering College and M.Arumugam of Vins Engineering College Chunkankaddai.



#### **PUCG**

PUCGwas held in Elective Hall E4 the judges for the PUCG are *Mr.M.GengarRaj*, *Assistant Professor and Ms.A.M.Diffni Gomez*, *Assistant Professor*. The student volunteers for conducting the event areM.Kartheeswaran (Final Year), R.Aravindhan (Final Year), M.Ani Nithusha (Final Year), R.Nishanthi (Final year), S.Amarnath (III year), L.Siva Balaji (III year), S.Easwari Prabha (III year), Cherma Jaya (III year), Pandeeswari (II year), Pavithra (II year) and S.Praveen Kumar (II year). Ten students from various colleges attended the non-technical event. Winners of first and second prizes are Mohemed Husain, Government College of Engineering, Tirunelveli and Vijaya Raghavan Government College of Engineering, Tirunelveli.



#### **GOBLETS ALTANZIA**

Goblets Altanzia was held in Seminar Hall the judges for the Goblets Altanzia are *Mrs.E.Anitha Assistant Professor and Mr.N.Sankar Assistant Professor*. The student volunteers for conducting the event areR.A.Ranjitha (Final year), M.Mohammed Farook (Final year), K.Rajkamal (Final Year), Sindhu (IIIyear), V.Nivetha (III year), Iswarya (III year), C.Mugesh (II year), Hari Haran (II year), Karthikeyan (II year) and Aruna (II year). Fifty-five students from various colleges attended the non-technical event. Winners of first and second prizes are K.Nandhini and S.Sridevi of St.Xaviers Catholic College of Engineering and N.Nagaraj and P.Srinivasa of Chandy College of Engineering



#### **RISKY RAFFLES**

Risky Raffles was held in E2 Hall the judges for the Risky Raffles are *Dr.S.Senthilkumar*, *Assistant Professor* (*SG*) and *Ms.O.Supriya*, *Assistant Professor*. The student volunteers for conducting the event areD.R.Divya (Final year), B.Surendaran (Final year), S.Arun Kumar (Final year), Leela Nivashini (III year), Madhumitha (III year), A.Mythile (III year), V.NallaSelvaPraksh (III year), S.Karthikeyan (III year), Janani (II year) and Joseph Fransis(II year). Twenty-five students from various colleges attended the non-technical event.

Winners of first and second prizes are R.Sabetha and S.Narmadha of PSR Engineering College and Second prize goes to M.Jeyaraj and K.Gopal of Francis Xavier Engineering College



#### **VINTAGE VISIT**

Vintage Visit was held in Hall3 the judges for the Vintage Visit are *Ms.E.Joe Priscilla*, *Assistant Professor*, *and Mr.F.Antony Jeffrey Vaz*, *Assistant Professor*. The student volunteers for conducting the event areB.Radha (Final year), K.N.Sakthi (Final year), M.Raja Lakshmi (Final year), S.Samivel Subash (IIIyear), Salomia Pauline (III year), Santhiya (III year), Boominathan (II year), Blessing (II year), Aarthi (II year), Suba Sree (II year), and Menaga(II year). Thirty-six students from various colleges attended the non-technical event. Winners of first, second and third prizes are Ganesh Rajan Government College of Engineering, A.Akarn of Francis Xavier Engineering College and third prize goes to Ganesh of Francis Xavier Engineering College.



#### TILT THE TROUBLE

Tilt The Trouble was held in Hall6 the judges for the Tilt The Trouble are Mrs. G.Shanmugalakshmi, Assistant Professor and Mrs.K.Gowthami Assistant Professor.The student volunteers for conducting the event are R.Pavithra (Final year), A.Nithya Sree (Final year), Ranjith King Jimson (III Year), A.Poorna Pushkala (III Year), S.Meenakshi (III Year), S.Karthik

(II Year), Gopinath (II year), Dhanapal Raj (II Year), Gomathi Prabha (II year), Gowsaalya (II Year) and Vignesh (II Year). Fifteen students from various colleges attended the non-technical event. Winners of first and second prizes are A.Nixon Bojo of GCE and K.Mohamed Yasin of Infant Jesus College of Engineering.



#### **ONLINE EVENTS**

Online Events was held in Hall 6 the supervisor for the Online Events *are Mr.K.Kumar*, *Assistant Professor*. The student volunteers for conducting the event areA.Sourabhi Krishna (Final Year), K.Logeswara Balan (III Year) and M.Pandaravel Kannan (III Year). Some students from various colleges attended the non-technical event.

The valedictory function was conducted in EEE Seminar Hall at 4.30 p.m. Many external participants have given valuable feedbacks. Then the certificates and prizes were distributed to the winners in all the events by *Dr.M.Willjuice Iruthayarajan*, *Head of the Department and Dr.N.B.Prakash*, *Associate Professor*. Then vote of thanks was given by M.Jothi Basu (Final Year) Treasurer, EEE Association. The function was concluded with the National Anthem.



## IMPLEMENTATION OF SOFT COMPUTING TECHNIQUES - ISCT '19

National Engineering College, Department of EEE and IEEE Computational Intelligence Society, Madras chapter (Technically sponsored) have jointly organized a two day workshop on "IMPLEMENTATION OF SOFT COMPUTING TECHNIQUES" ISCT '19 during 24<sup>th</sup> – 25<sup>h</sup>, January 2019. The scope of the workshop is wide to address all major aspects of Soft Computing Implementation Techniques using MATLAB to various Electrical Engineering applications. The function began with a preamble speech given by **Dr.M.Willjuice** Iruthayarajan, Professor and Head and he explained the scope of IEEE Computational Society and the role of soft computing techniques in the various field of Electrical Engineering.

Topics covered in 2 days are

- Introduction to MATLAB Programming
- Introduction and implementation of soft computing techniques using MATLAB toolboxes like Fuzzy Logic, Genetic Algorithm, Neural Network, ANFIS and PSO.
- Case Studies: PID Controller Tuning for SISO and MIMO systems, Economic Dispatch Problem, Speed Control of Drives, Medical Analysis, Pattern Recognition on Partial Discharges, etc.

The resource persons are *Dr. M. Willjuice Iruthayarajan Prof & HOD/EEE*, *Dr.L.Kalaivani Professor/EEE*, *Dr. R.V.Maheswari*, *Professor/EEE Dr.V.Gomathi*, *Professor & HOD/CSE and Mr.M.Gengaraj*, *AP/EEE*. Around 33 participants from various institutions have participated and benefitted by this workshop. Under the guidance of the Director, Principal and Head of the department, *Dr.L.Kalaivani*, *Professor/EEE*, Coordinator, and *Dr. R.V.Maheswari*, *Professor/EEE* and *Mr.M.Gengaraj*, *AP/EEE* have made elaborate arrangements for this workshop. The certificates were distributed to the participants at the valedictory function held on 25<sup>th</sup>, January 2018.











#### **SPECIAL INTEREST GROUP**

#### **HIGH VOLTAGE ENGINEERING**

A laboratory session on "Flashover Process and Leakage Current Characteristics of Insulator Model under various environmental Pollution" was conducted on 19.01.2019 by Mr. B.Vigneshwaran, Assistant Professor /EEE at Lecture H6 Hall for Special Interested Group (SIG) members. The objectives of the session were:

Initially he gave a brief history on High voltage insulators. Insulators play a vital role in transmission and distribution systems. In recent years, usage of composite insulators has been increased for outdoor applications because of its better electrical characteristics over conventional porcelain and glass insulators due to their surface hydrophobicity, light weight and high impact strength

Porcelain insulators can be easily degraded and fractured under polluted condition due to E-field stress at operating voltage. But the composite insulators made up of Silicone Rubber (SIR) and Ethylene Propylene Diene Monomer (EPDM) would overcome these drawbacks. HV insulator must have the ability to withstand both electric and mechanical stress. Among them, electrical stress is an important factor to be considered. High electric stress initiates corona, which will cause partial ionisation of surrounding atmosphere and will lead to surface modification (i.e.,) rupturing the molecular bonds on the surface. These rupture bonds are now free to attach any free radicals due to pollution and moisture exist in the highly active corona discharge environment. This results in the formation of surface discharge that leads to premature degradation. Due to this, flashover will occur in the insulator under polluted condition. So internal and external discharge activities were considered in designing a composite insulator

Then he explain about the various stress control techniques in the HV insulators

#### Various Stress Control, techniques in HV Insulators

- 1. Adding Grading materials inside the HV insulators
- 2. End fitting made of insulating materials
- 3. Proper change in the shed structure of the materials
- 4. Adding combination of porcelain and glass materials
- 5. Adding corona ring and arcing horn
- 6. Adding nano particles in the composite materials

After that he discussed about the recent trends and ongoing research in High voltage composite insulators. He suggested some of the area in solid dielectric for IV year project. The session was started by 11.00 AM and completed by 12.30 PM. Totally 8 students from third year were participated and got the relevant information.

#### **CONTROL AND INSTRUMENTATION**

EEE department Control and Instrumentation Special Interest Group (SIG) conducted a technical seminar on the topic "Mathematical Modeling of Rotary Inverted Pendulum" by Mr.M.Sivapalanirajan. AP and Dr.M.Willjuice Iruthayarajan, Prof&Head on 05/01/2019 in EEE department for third and final year EEE students of C&I SIG.



First session was handled by Mr.M.Sivapalanirajan on the mathematical modeling of Rotary Inverted Pendulum (RIP) model. The dynamics of the system is considered for the modeling and it is demonstrated for the students to understand the modeling and pursue projects related to the developed model. The outcome of the session includes the use of Newtonian based model and Lagrange based model in system modeling and the applications connecting RIP model available in market are elaborated.

**Dr.M.Willjuice Iruthayarajan**, **Prof&Head** gave a special note on the utilization of RIP model available in the C&I lab oriented to various control algorithms. He motivated the students to participate in product and project development in control engineering.

#### **HIGH VOLTAGE ENGINEERING**

A technical session on "Influence of Ultrasonic Wave on Viscosity of Liquid Insulation" was conducted by Mr. M. Bakrutheen, AP/EEE on 02.02.2019 at EEE Hall No. H3 for Special Interest Group (SIG) members.

The following topics were elaborated to our SIG members in the session.

- Introduction to Liquid Insulation
- Importance of Low Viscous Liquid Insulation
- Different Aspects on Research in Developing Low Viscous Liquid Insulation
- Ultrasonic Treatment for Viscosity Reduction in Liquid Insulation



The session was conducted for third year students. The session was started by 11.15 AM and completed by 12.45 PM. Totally 13 students from third year were participated and got the relevant information about the latest research topic.

#### **POWER ELECTRONICS & DRIVES**

A seminar on "Modeling of DC-DC Converter using MATLAB" was conducted on 19.01.2019 by M.Gengaraj, Assistant Professor / EEE at H4 Class for Special Interested Group (SIG) members. The objectives of the session are:

- Importance of Power converters with its practical applications.
- Modeling of DC-DC Converter parameters.
- Design of Buck, Boost and Buck-Boost converter in MATLAB /Simulink Platform.



He explained the various types of converters used for different kinds of applications. Then he discussed about the recent trends in converters and inverters in renewable energy application and also he illustrated the importance of DC-DC power converter in various industries and real time applications. Then he discussed about how to calculate the DC-DC converter parameters for designing the converters in MATLAB.

Later he provided the MATLAB session on designing the Buck, Boost and Buck-Boost converter and analysis of its performance. He has given some of the recent research topics based on the power electronics and then he motivated the SIG members to design various converters in MATLAB and present their work in the international conferences.



#### **POWER AND ENERGY**

A session on "*Smart Grid*" was conducted on 05.01.2019 by **Ms. O.Supriya, AP/EEE** at H6 for Special Interested Group (SIG) members.

The objectives of this session were

- To give an idea about the smart grid and the technological developments in the smart grid
- To discuss the effect of smart grid in the electricity market and how it differs from normal grid

Session (11.15AM -12.45 PM)

- At first I discussed the difference between the grid existed in the olden days and smart grid used nowadays
- Advantages of smart grid and the need for moving into smart grid was discussed briefly
- Then the impact of smart grid on the electricity market and tariff policies was also discussed
- The smart meters and software technologies used in the smart grid was discussed. And then how these advancements helps in the effective delivery of power to the consumers was explained briefly
- Finally the usage of renewable in the smart grid and how the growth of renewable makes the grid a reliable grid was discussed

Totally, 7 students from third year participated and got the relevant information.

#### **CONTROL AND INSTRUMENTATION**

EEE department Control and Instrumentation Special Interest Group (SIG) conducted a technical seminar on the topic "*Project ideas and Execution in MATLAB and LABVIEW*" by Mr.M.Sivapalanirajan and Mr.S.Abishek on 02/02/2019 in EEE department for third year EEE students of C&I SIG.





First session handled by was Mr.M.Sivapalanirajan AP/EEE on the topic LABVIEW based project implementation. Rotary inverted pendulum modeling and the controller design is elaborated to the students and motivated them to execute various algorithms in pendulum model. The outcome of the session also includes the hardware interfacing using ADC and signal processing through sensor. Finally working RIP model is demonstrated for the better understanding of students in LABVIEW platform.

Mr.S.Abishek final year EEE student gave a special note on their current project work on the twin rotor MIMO system model interfaced with MATLAB. He demonstrated the outline of the modeling and controller design based on genetic algorithm for the students. The session gave interest for the third year students to take up work based on the controller design for the TRMS model.

#### **PLACEMENT DETAILS**

On behalf of the Chairman, Managing Director, Director, Principal, Head of the Department and staff members, we heartily congratulate the final year students who got placed in the Campus drive in our campus during the month of January 2019 and February 2019.

Total No. of Students Placed: 17





R.A.RANJITHA



M.SUGASINI



K.SHENBAGADEVI



M.KARAN



M.MOHAMED FAROOK



J.SARAVANAN



M.VELMURUGESAN



**C.GURUNATHAN** 











D.MURUGAN

**D.SUDHARSAN** 

**B.SURENDRAN** 

**E.VEERAPUTHIRAN** 







S.PRIYADHARSHINI



L.STUWERT WILLIAMS

### Cognizant





**S.MUNIRAJ** 

A.SUNDARA RAJAN



M.GOWSALYA

#### **ALUMNI INTERACTION**



**Venkatachalam R** (2001 batch) interact with the second year EEE students ON 20/02/2019 during the time 11.00 AM to 12.00 pm; He discussed about the company Bosch (Automobile company). Then he asked about current technology to the students. Some says IOT, Machine learning, Deep learning, etc...,Then he asked some questions like "Who are interested in sports?", "who choose sports as an career?", Who are interested in Design, Arts, etc..., And he interacted with students. He shared his school life and college life to students. He said that to take our hobby as career. And also he said that he was working of 4% of what he had study.

After few discussions, one student asked the question about his college life. He answered that he was an backbencher, He do many mistakes in his college life, school life and His first starting salary was about only Rs.2,000. He used to bunk the class many times to go to cinema. Then another student ask question about his family situation. He answered that his uncle and neighbours asked like when you go to job?, and where you go to job?.

He is an EEE Engineer, but his passion was based upon others. And he said that we have to withstand any situation in our life. Another student asked about his passion on childhood days, he replied that his passion was in photography but because of his family situation he didn't get. Then he said that many companies test students Smartness, Knowledge, how we react to serious situation, aptitude and Reasoning skill is very important for company. And he shared his college life that he didn't got fail mark in any subject. He came across many countries like china, Malaysia, etc..., for work. Many foreign country companies need minimum two language know person. Languages like Chinese, Japanese, German, etc...., He advised the students to learn many languages. His parents wish to study M.S and to write exams like TOFEL and Gate and to get job on foreign countries. But he overcomes that situation. Now his parents are happy.

He does his MBA on Supply Chain Management.

#### TECHNICAL ARTICLE – STAFF MEMBERS

Ms. O. SUPRIYA, M.E.,

Assistant Professor

Electrical and Electronics Engineering

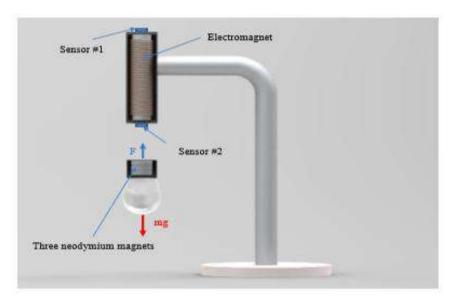
# LEVITATING LIGHT BULB USING WIRELESS ENERGY TRANSFER

Wireless energy transfer means transferring energy from one circuit to another wirelessly (through air). Our system does not need to transfer big amounts of power it only needs to transfer energy to power up few LEDs. For electricity transfer mostly inductive and capacitive coupling methods are used. Inductive coupling uses electromagnetic induction method to transfer energy. In this case power is transferred between coils of wire. The varying magnetic field of transmitter coil induces electromotive force across a receiver coil. Varying magnetic field in the transmitter coil is created by an alternating current. The current induced in receiver coil is also alternating. The transferred power depends on the frequency and mutual inductance. Since capacitive coupling relies on electric field, it becomes hard to use it, since there are multiple health issues associated with electric fields being harmful to human body. Also capacitive coupling is harder to implement and requires higher voltages. Those are the reasons why in case of this project inductive coupling will be used.



On electromagnet there are hall-effect sensors on top and on bottom. Three neodymium magnets are hidden inside the light bulb. In this setup light bulb can only move upwards and downwards. If electromagnet's height plus light bulb distance from electromagnet is big enough

then the magnetic field from neodymium magnets will not reach the sensor that is on the top. The basic idea of operation is that sensors read the position of the light bulb and feed that information to the microcontroller then microcontroller processes that information and outputs a current to the electromagnet



In wireless energy transfer energy is transmitted from the transmitting device to the receiver device without using any solid conductors. The power is transmitted over the air and the obstacles between devices, for example a hand or a fly, do not prevent energy from being transmitted. In our case the induction is used, that means that the energy is transferred using alternating magnetic fields. In this project resonant inductive coupling is used. That means that there are two coils, they are resonant RLC coils and are tuned to resonate at one frequency. The idea of using resonant RLC circuits is that when the energy is placed into circuits it dies away slowly. When the transmitter coil starts ringing with oscillating current the oscillating magnetic field is created. It is known from Faraday's law that changing magnetic field creates electromotive force that drives current. That means when the receiver RLC coil is placed into changing magnetic field of transmitter coil, the electricity is being induced in the receiver coil and because receiver coil is resonant RLC coil, the energy dies away slowly. The reason why resonant circuits or tank circuits act in this way is because of the inductor and capacitor elements. When charged capacitor is connected to the inductor the circuit starts oscillating. The electric field of the capacitor depends on the voltage and magnetic field of the inductor depends on current. That means when the charged capacitor is connected to the inductor, the current starts flowing through the inductor creating magnetic field reducing the charge and voltage of the capacitor. When the capacitor is empty the current of the inductor will remain as it was before because for it to change the voltage must be applied. At some point, since the current still flows the capacitor will acquire the charge of opposite sign and while it acquires the charge the voltage rises, since the current in the inductor is opposite to the voltage, the current in the inductor is falling. Once current is zero and the magnetic field is dissipated the capacitor is charged again but with opposite polarity. The current stops for a moment and then starts again. This is how the oscillations flow. This process would be infinite If there was no resistance, however wire has resistance, therefore this process dims with time

The problem with the setup is that if the operation of the system is suddenly stopped, for example electricity supply is cut off, the light bulb will fall down. This can result in the damaged light bulb. This problem has two steps of solving. First step is to make the light bulb as light as possible and the material must be fairly strong. Ordinary glass material that is used frequently in light bulbs is not suitable. Also the metal cap at the base can be substituted with other material like plastic. One of the possible solutions is to replace glass material with acrylic. The impact strength is higher than that of a glass, it can be compared to the impact strength of a tempered glass and it does not shatter. Also it should be noted that the acrylic material is lighter than glass. It is also easier to process. Second step is to prevent light bulb from falling onto rigid surface. There are multiple solutions to that as an example it is possible to place something soft underneath the light bulb. Even if there is a system that would prevent light bulb from falling the light bulb must be more durable and it must not shatter like glass bulbs, because the levitation system is not as stable as current alternatives. In order to prevent the light bulb from falling it is possible to have some backup systems, which would act when the electricity supply gets cut. For example the light bulb could be brought near the electromagnet, so that the permanent magnets would get attracted to the core and would hold the light bulb up using the force of attraction to ferromagnetic core. Other alternatives are connected with construction design solutions, like making special parts that would catch the falling light bulb. There are many options to that, starting from putting cushion below the light bulb ending with specially designed base. Example of such design can be seen in the below figure. Under the light bulb there is a pit that has cushion inside to make the fall softer.



#### STUDENTS ACHIEVEMENTS

Sl.	Dept /	Name of the	Event	Date	Organizer of the	
No	Club	student	Event	Date	event	
1	Sports	J.Kalyan kumar	District level Cricket Match – Under 23 Cricket Team III yr	11.02.2019 to 21.02.2019		
2	EEE	R.Pitchai Kumar Arun	IOT Workshop -	02.02.2019	Madras Institute of	
3	EEE	A.Mahadevan	III	02.02.2019	Technology,	
4	EEE	S.Manikumar			Chennai	
5	EEE	T.Aarthi	Image Processing			
6	EEE	G.Suba Shree	and Gesture	15.02.2019		
7	EEE	J.SteffiCranaff	Controlled	to	NIT, Trichy	
8	EEE	R.Sangeetha	Robotics	16.02.2019		
9	EEE	H.Selvadevi	Workshop II			
10	Sports	C.Rethish Kumar	Einstein Sports	01.02.2010	T:	
11	Sports	J.Vincent Dennis	League 2019 Men	01.02.2019	Einstein college of	
12	Sports	M.Dinesh Kumar	Football	to	Engineering,	
13	Sports	T.Ram Mohan	Tournament	03.02.2019	Seethaparpanallur	
14	EEE	M.Aswini				
15	EEE	V.Poorani	]		Madras Institute of	
16	EEE	P.Anukarthika	Workshop	25.01.2019	Technology,	
17	EEE	V.Nivedha	1		Chennai	
18	EEE	R.K.Gobiga				
19	Sports	V.Padmavathi	CM Trophy Ball Batminton Match	30.01.2019	SDAT Stadium, Tuticorin	
20	EEE	D.AngelinAnitha		31.01.2019	Madras Institute of	
21	EEE	V.AnishaSubashree	Workshop	to	Technology,	
22	EEE	P.Surya Ambika		01.02.2019	Chennai	
23	EEE	K.Swetha				
24	EEE	S.Praveen Kumar				
25	EEE	C.Mugesh	Paper	25.01.2019	PSR College,	
26	EEE	A.Venkadaramanan	Presentation	23.01.2019	Sivaksai	
27	EEE	J.Vincent Dennis				
28	EEE	M.Srinivasan		21.01.2019	Nicci Engineering	
29	EEE	D.Sudharsan	Training	to	Nissi Engineering Solution Pvt. Ltd.,	
30	EEE	E.Veeraputhiran	Programme	25.01.2019	Chennai	
31	EEE	B.Surendaran		23.01.2017	Chemia	

#### STUDENTS INTERNSHIP/INPLANT TRAINING

Sl. No	Name of the student	Organization Name	Period	Internship / Industrial /Inplant Training
1	S.Krishnan	P.M.K.Engineering Services, Madurai	19.12.2018 to 28.12.2018	Inplant
2	V.T.Vasanthakumar	National Institute of Wind Energy, Kayathar	24.12.2018 to 28.12.2018	Inplant
3	P.Vignesh	Keltron Equipments Complez, Thiruvananthapuram	24.12.2018 to 04.01.2019	Internship
4	S.Govinda Prasad	Keltron Equipments Complez, Thiruvananthapuram	24.12.2018 to 04.01.2019	Internship
5	C.K.Muthu Ram	National Institute of Wind Energy, Kayathar	24.12.2018 to 28.12.2018	Inplant
6	S.Muniraj	National Institute of Wind Energy, Kayathar	24.12.2018 to 28.12.2018	Inplant
7	P.Kasirani	TamilNadu Generation and Distribution Co.Ltd., Virudhunagar	14.05.2018 to 18.05.2018	Inplant
8	I.Jebisha Gnanadeepam	Nova Carbons India Pvt., Ltd., Tirunelveli	05.11.2018 to 30.11.2018	Inplant
9	M.Mohamed Amjith	P.M.K.Engineering Services, Madurai	17.12.2018 to 28.12.2018	Inplant
10	Kani	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
11	C.M.Mahidaan Chaiidh	P.M.K.Engineering Services, Madurai	17.12.2018 to 28.12.2018	Inplant
12	S.M.Mohideen Shajith	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
13	P.Arun Rajeswar	P.M.K.Engineering Services, Madurai	17.12.2018 to 28.12.2018	Inplant
14	F.Aiuii Kajeswai	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
15	P.Murugan	P.M.K.Engineering Services, Madurai	19.12.2018 to 28.12.2018	Inplant
16	S.Muruganantham	P.M.K.Engineering Services, Madurai	17.12.2018 to 28.12.2018	Inplant
17	5.iviui ugananulain	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
18	G.Ranjithkumar	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
19	G.Kanjiuikuiliai	P.M.K.Engineering Services, Madurai	17.12.2018 to 28.12.2018	Inplant
20	M.Parthiban	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
21	wi.Faiunoan	P.M.K.Engineering Services, Madurai	17.12.2018 to 28.12.2018	Inplant

22	S.Sivakumar	P.M.K.Engineering Services, Madurai	24.12.2018 to 08.01.2018	Inplant
23	G.Rajesh	Keltron Equipments Complez, Thiruvananthapuram	24.12.2018 to 04.01.2019	Internship
24	K.Seetha	TamilNadu Generation and Distribution Co.Ltd., Karaikudi	24.12.2018 to 29.12.2018	Inplant
25		Keltron Equipment Complex, Thiruvananthapuram	10.01.2019 to 21.01.2019	Internship
26		TamilNadu Generation and Distribution Co.Ltd., Karaikudi	24.12.2018 to 29.12.2018	Inplant
27	P.Kasirani	Keltron Equipment Complex, Thiruvananthapuram	10.01.2019 to 21.01.2019	Internship
28		Taminadu Generation and Distribution Co. Ltd., Virudhunagar	14.05.2018 to 18.05.2018	Inplant
29	G.R.Shankarganesh	National Institute of Wind Energy, Kayathar	24.12.2018 to 28.12.2018	Inplant
30	R.A.Ranjitha	Associated Transformers Pvt., Ltd., Dindigul	02.01.2019 to 12.01.2019	Inplant
31	R.Pavithra	Associated Transformers Pvt., Ltd., Dindigul	02.01.2019 to 12.01.2019	Inplant
32	N.Rishika	Associated Transformers Pvt., Ltd., Dindigul	02.01.2019 to 12.01.2019	Inplant
33	S.Abishek	Keltron Equipments Complez, Thiruvananthapuram	24.12.2018 to 30.12.2018	Internship
34	M.Srinivasan	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
35	M.Mohamed Farook	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
36	S.Saravanakumar	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
37	D.Sudharsan	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
38	G.P.Shiva	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
39	P.Mohamed Safeek	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
40	M.Jothi Basu	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
41	S.Murugan	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
42	M.Velmurugesan	Enmaass Power Solution Pvt., Ltd., Tenkasi	24.12.2018 to 04.01.2019	Inplant
43	L.Stuwert Williams	P.M.K.Engineering Services, Madurai	27.11.2018 to 07.12.2018	Inplant
44	M.Balakrishnan	Suzlon Global Services Ltd., Vellapaneri	14.05.2018 to 25.05.2018	Inplant

45	K.N.Nagaarjun	P.M.K.Engineering Services, Madurai	27.11.2018 to 07.12.2018	Inplant
46	A.Nagaraj	P.M.K.Engineering Services, Madurai	27.11.2018 to 07.12.2018	Inplant
47	M.Bala Krishnan	P.M.K.Engineering Services, Madurai	27.11.2018 to 07.12.2018	Inplant
48	G.Ajay Krishnan	P.M.K.Engineering Services, Madurai	27.11.2018 to 07.12.2018	Inplant
49	K.Kanika	Keltron Equipment Complex, Thiruvananthapuram	10.01.2019 to 21.01.2019	Internship
50	V Doonilronoiom	NLC Tamil Nadu Power Ltd., Tuticorin	29.01.2019 to 04.02.2019	Inplant
51	V.Deepikarajam	TNEB Ltd., Tirunelveli	24.12.2018 to 28.12.2018	Inplant
52	S.Lakshmi Brindha	Chiranjjeevi Wind Energy Ltd., Aramboly	27.11.2018 to 10.12.2018	Inplant
53	K.Vishnu Priya	Enthu Technology Solutions India Pvt., Ltd., Coimbatore	10.12.2018 to 08.01.2019	Internship
54	B.Radha	Enthu Technology Solutions India Pvt., Ltd., Coimbatore	10.12.2018 to 08.01.2019	Internship
55	V.Padmavathi	Enthu Technology Solutions India Pvt., Ltd., Coimbatore	10.12.2018 to 08.01.2019	Internship
56	A.Aasha	NLC Ltd., Neyveli	04.01.2019 to 31.01.2019	Internship
57	K.Yogesh	National Institute of Wind Energy, Kayathar	24.12.2018 to 28.12.2018	Inplant
58	M.Ramkumar	TNEB Ltd., Tirunelveli	19.11.2018 to 20.11.2018	Inplant
59	G.Suba Shree	Bharat Sanchar Nigam Ltd., Tirunelveli	26.11.2018 to 30.11.2018	Inplant
60	M.Mafin Rijoe	Aero Engineering, Bangalore	18.01.2019 to 20.01.2019	Internship
61	V.Nalla Selva Prakash	Aero Engineering, Bangalore	18.01.2019 to 20.01.2019	Internship
62	R.Vasanthan	Aero Engineering, Bangalore	18.01.2019 to 20.01.2019	Internship
63	P.Siva Sankar	Aero Engineering, Bangalore	18.01.2019 to 20.01.2019	Internship
64	K.Logeswarabalan	Aero Engineering, Bangalore	18.01.2019 to 20.01.2019	Internship
65	T.Mahalakshmi	National Small Industrial Co.Ltd, Chennai	03.12.2018 to 14.12.2018	Internship
66	P.Hemalakshmi	National Small Industrial Co.Ltd, Chennai	03.12.2018 to 14.12.2018	Internship
67	G.Siva Balaji	REN Info, Chennai	05.12.2018 to 12.12.2018	Inplant
68	J.Steffi Cranaff	Bharat Sanchar Nigam Ltd., Tirunelveli	26.11.2018 to 30.11.2018	Inplant
69	S.Subalaxmi	Bharat Sanchar Nigam Ltd., Tirunelveli	26.11.2018 to 30.11.2018	Inplant
70	M.Sathiskumar	P.M.K.Engineering Services,	24.12.2018 to	Inplant

		Madurai	08.01.2019	
71	71 T.Selvakumar	P.M.K.Engineering Services,	24.12.2018 to	Inplant
/ 1	1.5civakumai	Madurai	08.01.2019	прип
72		Tantransco, Kovilpatti	07.05.2018 to	Inplant
, –	J.Arulsudhanya		12.05.2018	<b>F</b>
73		Tantransco,	28.01.2019 to	Inplant
		M.Duraisamypuram	01.02.2019 24.12.2018 to	
74		TNEB Ltd., Tirunelveli	28.12.2018 to	Inplant
	-	NLC Tamil Nadu Power Ltd.,	29.01.2019 to	
75	S.Jamunadevi	Tuticorin	04.02.2019	Inplant
76		Tamilnadu Generation and	21.01.2019 to	T1
76		Distribution Co.Ltd., Tuticorin	25.01.2019	Inplant
77		Tamilnadu Generation and	21.01.2019 to	Inplant
11	M.Suganthi	Distribution Co.Ltd., Tuticorin	25.01.2019	приш
78	Wi.Sugantin	NLC Tamil Nadu Power Ltd.,	29.01.2019 to	Inplant
70		Tuticorin	04.02.2019	прип
79		NLC Tamil Nadu Power Ltd.,	29.01.2019 to	Inplant
		Tuticorin	04.02.2019	Прин
80	P.T.Soumiya	Tamilnadu Generation and	21.01.2019 to	Inplant
	-	Distribution Co.Ltd., Tuticorin	25.01.2019	
81		TNEB Ltd., Tirunelveli	24.12.2018 to	Inplant
			28.12.2018	
82		TNEB Ltd., Tirunelveli	24.12.2018 to 28.12.2018	Inplant
	V.Muthuvarathalaksh	NLC Tamil Nadu Power Ltd.,	29.01.2019 to	
83		Tuticorin	04.02.2019	Inplant
0.4		Tamilnadu Generation and	21.01.2019 to	
84		Distribution Co.Ltd., Tuticorin	25.01.2019	Inplant
0.5			24.12.2018 to	T 1 /
85		TNEB Ltd., Tirunelveli	28.12.2018	Inplant
86	P.Kavitha	Tamilnadu Generation and	21.01.2019 to	Inplant
80	r.Kaviula	Distribution Co.Ltd., Tuticorin	25.01.2019	приш
87		NLC Tamil Nadu Power Ltd.,	29.01.2019 to	Inplant
07		Tuticorin	04.02.2019	Inpiunt
88		P.M.K.Engineering Services,	19.12.2018 to	Inplant
		Madurai	28.12.2018	
89	K.Raj Kamal	TNEB Ltd., Tuticorin	21.01.2019 to	Inplant
	_		25.01.2019	Inplant
90		NLC Tamil Nadu Power Ltd.,	29.01.2019 to	
		Tuticorin Tamilnadu Generation and	04.02.2019	
91	A.Nithiyasree	Distribution Co.Ltd., Tuticorin	21.01.2019 to 25.01.2019	Inplant
		Distribution Co.Ltd., Tuticorin	23.01.2019	

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