

Alone we can do so little, Together we can do so much.

-Helen Keller



WORKSHOPS CONDUCTED

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INDUSTRIAL VISITS

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From HOD's Desk...

The department newsletter is one of the wonderful presentation of the department regarding the achievements and participation of the faculty members and the students. It is a great achievement that Volume 3, Issue 1 of the Newsletter is released by our EEE Department. The Newsletter gives all the details of the activities undergone in the Department during the Odd Semester of 2018-2019. I appreciate the faculty members, students and supporting staff for their tireless efforts and contributions to the various activities held in the Department.

All the best....

- HoD-EEE

From Editorial Board...

The various updates about the developments and achievements in the Electrical and Electronics Engineering department are published in this issue. It gives us great pleasure to know that the previous editions of our newsletter "VOLTZWAVES" had reached out to the students well and was a great success.

This issue of the newsletter also aims to cover the achievements, and partici-



pation of the faculty members and students in the department. The Readers can use this opportunity to take a look over the last semester achievements of the department. VOLTZWAVES has been a student team work entirely, thriving to bring out the best headlines.

Happy Reading!!!

-Editorial board

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

VISION:

To be a yardstick in the field of electrical and electronics engineering and allied fields with high quality teaching, learning and a centre of excellence for research activities to produce employable and disciplined professionals to serve the nation with competency measured by continuous and quantitative methodologies.

MISSION:

- 1.To provide high quality technical education in electrical and electronics engineering and allied areas.
- 2.To maintain state of art facilities to achieve continuous knowledge enhancement.
- 3.To have industrial collaboration to ensure industry relevant academic development and research activities.
- 4.To inculcate the discipline of lifelong learning in the students for successful career and employment and to serve society with ethics.

PROGRAMME EDUCATIONAL OBJECTIVES :

- 1.Have strong foundation, to be a successful technical professional in electrical and electronics engineering as well as interdisciplinary groups.
- 2.Be proficient in analysis, design, manufacturing and testing in the domains of electrical and electronics engineering.
- 3.Have the necessary skills to use modern computing techniques to arrive at efficient solutions for real world problems.
- 4.Demonstrate professional ethics, an aptitude for Engineering and passion for lifelong learning.

PROGRAMME SPECIFIC OUTCOMES :

The Graduates will be able to

- 1.Analyze, design and develop systems based on electrical machines, power, control and electronics and embedded technologies.
- 2.Develop proficiency in spice modeling and simulation to design, analyze and explore electrical and electronics systems.
- 3.Exhibit professionalism in their career.

PROGRAMME OUTCOMES (POs):

The Graduates will be able to:

- 1.**Engineering knowledge:** the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.**Problem analysis:** Identify, formulate, review

research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

3.**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4.**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5.**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6.**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7.**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8.**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9.**Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multi disciplinary settings.

10.**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11.**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi disciplinary environments.

12.**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

DEPARTMENT ACTIVITIES

WORKSHOPS CONDUCTED FOR STUDENTS

On 7th & 8th September 2018 a workshop on **“IoT system Design”** by **Texas Instruments University Program** was conducted. It was organized by Ms.P.Kalaivani, Asst.Prof and a total of 60 students from all departments of RIT [Mech-15, ECE-15, CSE-15, EEE-10, IT- 5] attended the programme. There were a total of four sessions that explained the entire process of IoT design and its implementation.



On 19th September 2018 a workshop on **“Autocad Electrical Software”** by **CADD SCHOOL Pvt. Ltd, Chennai** was conducted. It was organized by Mr. R. Elavarasu, Asso.Prof. She briefly introduced the necessities for AutoCAD Electrical software and its classification based on application. The workshop was delivered with effective presentation and the students had an effective interaction with the resource person.



On 7th & 8th September 2018 a workshop on **“Industrial Automation”** using PLC by **Zenmaq Automation Pvt. Ltd.**, was conducted. It was organized by Mr. R. Elavarasu, Asso.Prof. Thw workshop focused on teaching basics of PLC in industrial automation. The workshop also included the hands on training in designing a system that can be controlled using PLC.



On 7th & 8th September 2018 a workshop on **Hands on training in “Simulation of Arduino-Proteus software”** by **ABN Infotech solutions** was conducted. It was organized by Mr. R. Elavarasu, Asso.Prof. The workshop was informative and the students learnt the basics of simulation using the proteus software. The students were given hands on training on the software for simulating the Arduino microcontroller.



INDUSTRIAL VISITS

Sriperumbudur Substation for the students of third year was organized. Mr. R. Elevarasu, AoP/EEE accompanied the students on Aug 30th, 2018. The students spent the day learning the functioning and the electrical equipments used in a substation. They also learnt about the protection of such equipments.



Sriperumbudur Substation for the students of second year was organized and accompanied by Ms.M.Monica, Asst.Prof. & Mr. M.Poomanirajan, Asst.Prof. on August 21st, 2018. The visit was informative as the students went on to learn about the working and the control of the substation.



Ampere Vehicles for students of second year and third year was organized and accompanied by Dr. C. Kamalakannan, Prof. & Head on 27th Aug, 2018. The students had a good interaction with the officials at Ampere Vehicles and learnt the work put into producing an electric vehicle.



"I didn't fail a 1000 times, but I've just found 1000 ways that won't work"

- Thomas A. Edison

FACULTY ACTIVITIES

Seminars Attended

Sl.No.	Name of the Staff	Title	Date	College Name / Organisation
1	Mrs.P.Kalaivani (Delivered)	Internet of Things	04.07.18	INR Technologies, Chennai
2	Dr.C.Kamalakaran	IOT NEXT	31.10.18	IESA,Banglore

FDP/Workshop Attended

S No.	Faculty Name	Title	Host Institution	Category
1	Mr.M.Poomanirajan	Mathematical Optimisation Methods for Power Systems	IISC,Banglore	QIP
2	Mr.M.Poomanirajan	Outcome based education & its attainment methods	RIT	-
3	Mrs.M.Monica	Recent Trends in Controllers for Renewable Energy Systems	VIT, Chennai	FDP
4	Mr. C. Jayaprakash	Introduction to Python Programming	Sri Sairam Institute of Technology	FDP
5	Mr. C. Jayaprakash	PALS lecture	IIT, MADRAS	

Achievements

Sno.	Faculty Name	Award Title	Awarding Agency
1	Mr.Sathishkumar S, AP/EEE	MENTOR	NPTEL CERTIFICATION FOR POWER SYSTEM ANALYSIS

Publications

S No.	Paper Authors	Paper Title	Name of the Journal	year
1	S. Sathish kumar	Improving voltage quality at EV charging stations by using smart - grid systems	International Journal of Pure and Applied Mathematics	June 2018
2	Mr.R.Elavarasu / Assoc.Prof	Cuk Converter Based BLDC Motor for Water Pumping System Using Solar Energy Source	Current signal Transduction Therapy,Bentham Science	June 2018
3	Mr.R.Elavarasu / Assoc.Prof	Simulation and Experimental Analysis of Hybrid DC-DC Converter for Electric Vehicle Applications	International Journal of Pure and Applied Mathematics	June 2018
4	Mr.R.Elavarasu / Assoc.Prof	DC-DC Luo Converter based Smart Street Lighting using Arduino UNO	International Journal of Innovations in Engineering and Technology (IJIET)	June 2018
5	Mr.R.Elavarasu / Assoc.Prof	Closed loop Fuzzy Logic Controlled Interleaved DC-to-DC Converter Fed DC Drive System	International Journal of Engineering and Technology(UAE)	June 2018
6	Mr.R.Elavarasu / Assoc.Prof	Solar Power Luo Converter based smart street lighting using Arduino UNO	International Journal of Pure and Applied Mathematics	June 2018
7	Mrs.Ranjitha K AP	Review on Load Frequency Control techniques in Distributed generation Power systems	International Journal of Pure and Applied Mathematics	June 2018

STUDENT'S ACTIVITIES

Parent Teacher Association Meeting

A Parent Teacher Interaction was organized by the department on 25th August 2018, to make the parents aware of the department activities and academic process. The interaction started around 10.00 am with the serving of tea and snacks to the parents. Dr.S.Selvaraju, Dean, Mechanical presided and started the interaction by quoting the current scenario of students after a generation with smart phones and digital media. Thereafter, Dr. C. Kamalakannan, HoD/EEE shared the achievements of the department like University rank holders, alumni and placements. He discussed on activities carried out for students to develop

his/her Professional skills like Industrial visits, Internships, Inplant training, Cocurricular etc., Few parents came forward to appreciate for arranging the interaction as it threw some light on the career of their ward.



Guest Lectures

On 4th August 2018, Mr. J.Satheesh Babu, Chief Manager, JK Tyres , Chennai delivered a lecture on the topic **"New Trends in Industrial Automation"**. It was organized by Mr.S.Sathish Kumar, Asst.Prof for a total of 53 Students of III year EEE. The class was interactive and informative for the students where the lecture focused on the latest and the upcoming trends in industrial automation.



On the topic **"Special electrical Machines"** was delivered by Mr. P. Rajesh, Core Research Group, Prolific Systems & Technologies Pvt Ltd on 11th September 2018, organized by Ms. M. Monica Asst.Prof. A total of 48 Students of IV year EEE attended the Lecture. The lecture was focused on the usage of electrical machines. He briefly introduced the necessities for automation and its classification based on applications.



STUDENT'S ACTIVITIES

WORKSHOPS & HANDS ON TRAINING ATTENDED

- Logeshwari V, Poorinimadevi M, Babu E, Pasupathi, Vignesh G, Mythili R of third year underwent a **Hands on training on Arduino, Node MCU, Raspberry** organized by Saveetha Engineering College on 21st September, 2018.
- Mukeshkanna B and Ranjith V of second year attended a workshop on **UTLP, Rajalakshmi Engineering College** organized by **WIPRO** in the duration 16-17th March, 2018.
- Pooja P of second year attended a workshop on **Artificial intelligence and Machine learning at SSN** conducted by Kurukshetra on 22nd September, 2018.
- Duvvuru Kishore of second year attended a **Hands on training on PCB layout design for using EAGLE, REC** organized by Prayatna'18 on 4th & 5th October, 2018.

INPLANT TRAINING

- Karthick M, Abinaya G, Vignesh.G, Vanmathi.M, Yegneshwar.R, Poornimadevi.M and Soundarya.P of third year attended an Inplant training at **Basin Bridge Gas Turbine Power Station** from May 25th to June 1st, 2018.
- Bharathi Laxmi, Uma Nisita, Vikraman, Naresh, Hrishikesh of third year attended an Inplant training at **Chennai Port Trust** from June 14 to 20, 2018.
- Babu.E, Jhona Prasannakumar, Vikraman, Naresh, of third year attended an Inplant training at **BSNL-Bharat Sanchar Nigam Limited** from June 4 to 8, 2018.
- Amarnath.V of second year attended an Inplant training at **Madhya Pradesh Electricity Board** from June 4 to 18, 2018.
- Aravintha raj V.E and Nithin Gopal of second year attended an Inplant training at **Tesla Mines** from June 4 to 8, 2018.
- Karthick M, Abinaya G, Vignesh.G, Vanmathi.M, Suruthi E, Poornimadevi.M, Gopinath.V and Soundarya.P of third year attended an Inplant training at **Kudankulam Nuclear Power Project-** from June 11th to June 15th, 2018.

STUDENT'S ACTIVITIES

SPORTS ACTIVITIES

- Amarnath V, Shreyesh S of third year secured the **third place** in the **Anna University Zonal Match Handball** on 21st September, 2018.
- Amarnath V of third year participated in the **Anna University Zonal Match Hockey** on 5th October, 2018.
- Vinson, Manohar of third year participated in the **Anna University Zonal Match Cricket** on 10th September, 2018.
- Mohandev, Vinson of third year participated in the **Sri Venkateswara College of Engineering Cricket (Zonal)** on 18th September, 2018.
- Sridhar of third year participated in the **Kabaddi (Zonal)**.
- Muhilan of third year participated in the **Volleyball (Zonal)**.

STUDENT'S ARTICLE

PORTRAITS



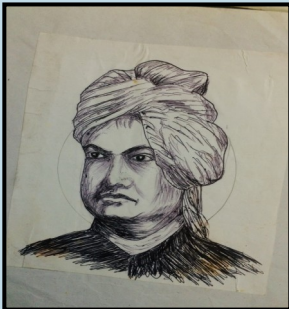
- R. Jagannathan, II year



- R. Jagannathan, II year



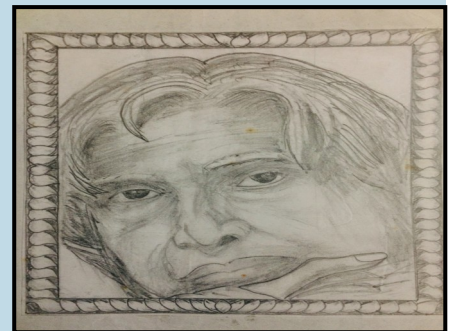
- S. Kamatchi Rajeswari, II year



- R. Santhosh, II year



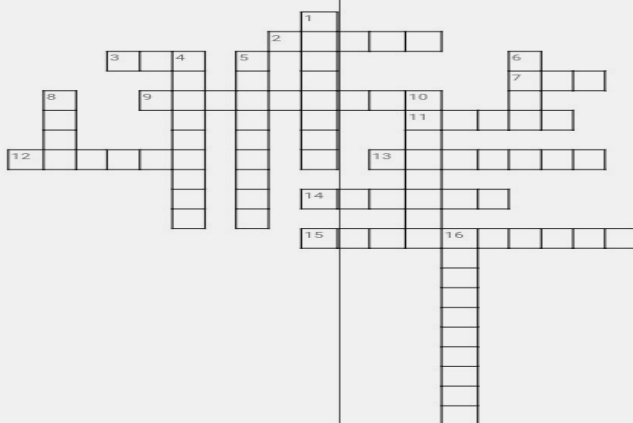
- K. Nithyakalyani, II year



- R. Santhosh, II year

CROSSWORD PUZZLE

Electrical and Electronics



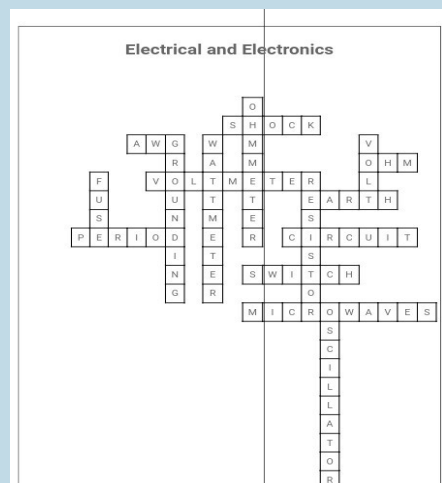
Across

- 2 passage of current through body
- 3 wiring size
- 7 a law
- 9 measures electrical potential
- 11 a type of ground
- 12 symbol 'T'
- 13 enclosed path of current
- 14 to turn on and off current
- 15 electromagnetic wave

Down

- 1 measures electrical resistance
- 4 reference point in an electrical current
- 5 measures electric power
- 6 symbol 'V'
- 8 protects against excessive current
- 10 electric component that transmits current
- 16 generates a continuous output waveform

SOLUTION

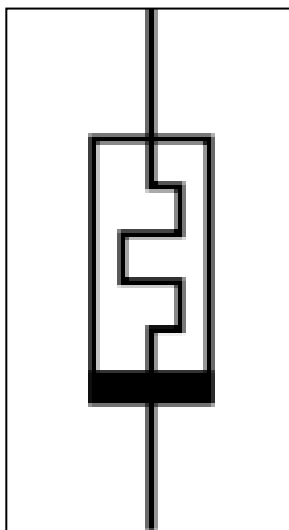
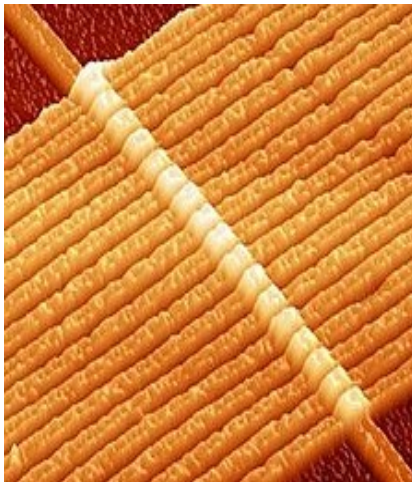


- S. Mohan Raj, II year

MEMRISTOR



- ♦ *Made of titanium dioxide*
- ♦ *Access time 90 ns*
- ♦ *The wire thickness is about 50nm or 150 atoms*



Symbol

WHAT IS A MEMRISTOR?

- An article by V. Udaya Kumar IV year

A memristor is an electrical component that limits or regulates the flow of electrical current in a circuit. It is a nonlinear, passive two-terminal electrical component that linked electric charge and magnetic flux. Especially based on resistance switching, which increases the flow of current in one direction and decreases the flow of current in the opposite direction. Memristors are important because they are non-volatile, meaning that they retain memory without power and remembers the amount of charge that has previously flowed through it.

When a memristor's power is shut off, the memristor retains its resistance value. This would mean that if power to a computer was cut off with a hard shut down, all the applications and documents that were open before the shut down would still be right there the screen when the computer was restarted.

Memristors, which are considered to be a sub-category of resistive RAM, are one of several storage technologies that have been predicted to replace flash memory. Titanium dioxide memristors built at HP Labs, imaged by an atomic force microscope. The wires are about 50 nm, or 150 atoms. Electric current through the memristors shifts the oxygen vacancies, causing a gradual and persistent change in electrical resistance.

APPLICATIONS:

1. Solid-state memristors can be combined into devices called crossbar latches, which could replace transistors in future computers.
2. Access time is about 90 nanoseconds, which is nearly one hundred times faster than the Flash memory. At the same time, the energy consumption was just one per cent of that consumed by Flash memory.
3. Memristor patents include applications in programmable logic, signal processing, neural networks, control systems, reconfigurable computing, brain-computer interfaces and RFID.

Kindly send your suggestions to: voltzwaves@ritchennai.edu.in