RedEEEm

HIGHLIGHTS

- IIT Bombay Techfest Winners
- Neuralink - Skynet Made Real
- Internship

Volume 8
Issue 3

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FROM HoD's DESK

A new year has always been about new hopes, new beginnings, new opportunities and challenges.

I am happy to inform that a UK Company, ePropelled (http://epropelled.com/about/) have started their operation in our campus. Their focus is on electric propulsion, water pumps and motors. The company will work closely with our Department as we have considerable experience with EVs, to develop, test and validate product design. This will help us in the flow of technology, Knowledge and idea across borders.

I wish to inform that Prof Ganesh Samudra, National University of Singapore has joined our institution and started handling a course for our BE program. He has started interacting with faculty and students to improve the student outcome. His expertise will be useful for our department for further progress.

Dr.V.Rajini obtained in-principle approval for the product development under IIT-UAY project in collaboration with Tata Motors. This is a continuation of SIH 2019, where the first prize was bagged by team SSN.

I appreciate the students of EEE for having taken up internally funded projects seriously and obtained all three awards during the internally funded project completion certificate distribution function. I appreciate the efforts of Dr.V.Rajini and Dr.R.seyezhai towards their mentoring.

Two student teams led by Sai Prasanna K and Sai Eswari G respectively under the guidance of Dr V Rajini submitted a proposal for the Chhatra Vishwakarma awards instituted by AICTE and MHRD. The projects have been shortlisted for the National convention after two successful rounds of competition.

I congratulate Dr.G.R.Venkatakrishnan and Dr.D.Umarani for their successful completion of PhD public Viva-Voce examination.

I congratulate and appreciate the efforts of all the faculty and students who have contributed to the progress of the department.

Quote

AFTER ALL, "THE CONSTITUTION ONLY GIVES PEOPLE THE RIGHT TO PURSUE HAPPINESS. YOU HAVE TO CATCH IT YOURSELF".

- BENJAMIN FRANKLIN

EDIOTRIAL

Wishing all the readers a happy new year. As everything is becoming smart these days, we are forced to be smart in our mind.

Smart thinking is about reasoning, which is about the use and communication of knowledge. Researching, reading, analysing, testing, checking, planning, and writing all depend on understanding those interrelationships. Once you understand that knowledge consists of innumerable interrelations between small 'bits' of information, then you will be able to find, shape, and use knowledge for yourself.

All academic work requires the use of reasoning. You want to understand the content, to digest information, pick out the key issues to learn, grasp the underlying concepts, and come to terms with unfamiliar ideas: reasoning is the way to go. More importantly, by using smart-thinking skills to understand context—the situations in which we learn and communicate knowledge—you can understand the system you are in, the expectations and requirements on you, and then fulfil those requirements.

Smart thinking helps you at work. Work is, by and large, about decision making. It involves initiating change, coping with new and unfamiliar situations, finding better ways of doing things, finding out crucial information, understanding the people and institutions you work with, and solving complex problems. You use reasoning to accomplish these tasks, and if you have smartened up your thinking, then you will have more confidence in your abilities and succeed more often. In particular, the insights gained through smart thinking will assist in promoting more effective communication. Such communication is essential to successful business and professional life.

Life has the potential to become a song of bliss, but there is every possibility of missing it too. It depends: you can make it, you can destroy it. Majority of peoples destroy their song of bliss. Then their life is nothing but a cry, a scream of pain and agony. But they have chosen it that way; nobody else is ever responsible.

This is the first truth to be learned in life: that you are always responsible, nobody else. With that comes great freedom, because with that all alternatives are open. If you think that somebody else is responsible then you are a slave; then nothing is open. Then you have to be what you are. If your life is a tragedy then it has to be a tragedy because others are responsible; unless they change, nothing can be done about it. You don’t have any freedom.And that is the reason why millions of people live in misery: they think others are creating their misery. Nobody is creating your misery, nobody can create it, and nobody can create your bliss either. It is a totally individual phenomenon. It is just your work upon yourself. And the strangest thing is: to create misery is difficult and to create bliss is easy, but

people always choose the difficult thing because the difficult thing always gives them an ego-trip.

So the first truth has to sink deep in the heart: ‘I am always responsible for whatsoever I am. Bliss or misery, this is my choice. If I have chosen to be miserable, then there is no need to be sad about it; this is my choice and I am doing my thing’. Feel happy that you have succeeded in being miserable! If this is not your choice, drop it immediately, drop all those patterns that create it and start creating new patterns, new thinking, and new possibilities from where bliss starts flowing.

For example, the person who wants to be miserable has to think in terms of fighting with life. The person who wants to be blissful has to be a non-fighter, surrendered to life, in a kind of let-go. The person who wants to be miserable has to create great ideals, has to make impossible demands upon himself. Then only can you be miserable; otherwise you will not be miserable. You have to be this, you have to be that, and when you cannot be, frustration settles in.The man who wants to be blissful has no ideals at all, he is a non-idealist; he is a realist and lives moment to moment with no ideals. You cannot frustrate him because he has no expectations.

The miserable person always condemns himself because he is not rising high enough to fulfil the demands. He is a constant condemner; he lives in self-condemnation. The blissful person is very accepting of himself. He makes no demands. He is relaxed, at ease with himself; he loves himself as he is. So you have to watch: that which creates misery, drop it; and that which brings bliss like a flood, create it in you. So let your life become a celebration, and it is up to you!

The key is to find a way to be happy wherever you now are on your way to where you really want to be. It does not matter where you are; where you are is shifting constantly. Your present circumstances don't determine where you can go; they merely determine where you start. So it is up to us to turn our attention to where we want to go. And that's the difference between making the best of something and making the worst of something.

PAPER PRESENTATION

1. A. N. Arvindan Prof/EE, M. A. Arshad Mohamed, and AravindKumar R, " Power Quality Analysis Of Six- And Twelve-Pulse Rectifiers As Series Cascaded Topologies Of The Three-Pulse Rectifier" research paper presented at the 2nd International Conference on Power and Embedded Drive Control, organized by EEE Department, SSN College of Engineering, Anna University, IEEE-ICPEDC'2017, pp. 372-379, held in August 21- 23, 2019, at Chennai, India.

2. R. Ramaprabha ASSP/EEE, S. Iyappan and M. Pandikumar, presented a paper titled "Implementation of Enhanced Converter Fed BLDC Drive Using Fuzzy Logic Controller" Renewable Energy Sources and Technologies, AIP Conference Proceedings 2161, 020019 (2019); https://doi.org/10.1063/1.5127610, Published Online: 02 October 2019.

3. S. Sangeetha, T. Divya and R. Ramaprabha ASSP/EEE, presented a paper titled "Design and Simulation of Developed Embedded Z-Source Inverter for Photovoltaic Interface" Renewable Energy Sources and Technologies, AIP Conference Proceedings 2161, 020018 (2019); https://doi.org/10.1063/1.5127609, Published Online: 02 October 2019.

4. S. Malathy ASSP/EEE and R. Ramaprabha ASSP/EEE, "Reliability and Performance Assessment of Reduced Component Count Multilevel inverter for PV Systems" Cite as: AIP Conference Proceedings 2161, 020017 (2019); https://doi.org/10.1063/1.5127608, Published Online: 02 October 2019.

5. Dr.S.Tamilselvi, ASSP/EEE has presented a Paper titled, "Optimized load frequency controller of two area hydro thermal reheat interconnected poly system", in an AICTE sponsored International conference on "Advanced Technologies in Electrical Engineering and Technology, at Kamaraj College of Engineering,Virudhunagar, during 4-5th Oct,2019.

6. Dr.S.Tamilselvi, ASSP/EEE, and Gayathri N (IV Year EEE-'B' Student) have presented a Paper titled, "Design of Multi Scale Controller using P/PID Tuning Methods", in an AICTE sponsored International Conference on "Advanced Technologies in Electrical Engineering and Technology, at Kamaraj College of Engineering, Virudhunagar, during 4-5th Oct,2019.

7. S. Devi Vidhya (Full time research scholar) and M. Balaji ASSP/EEE published a paper titled " Hybrid fuzzy PI controlled multi-input DC/DC converter for electric vehicle application"inAutomatika, Journal for Control, Measurement, Electronics, Computing and Communications, Vol. 61, no. 1, pp.79–91,2019.

8. S. Devi Vidhya (Full time research scholar) and M. Balaji ASSP/EEE published a paper" Failure-mode analysis of modular multilevel capacitor-clamped converter for electric vehicle application" IET Power Electronics, , Vol. 12 no. 13, pp. 3411-3421,2019.

9. Mr.G.Saravana Venkatesh, part time scholar of Dr.R.Rengaraj ASP/EEE, defended his thesis titled “Investigation of Wind Energy Assessment from the Historical Time Series Data of Various Landscapes Using Data Warehousing”

10. Dr. S. Malathy, ASSP/EEE and Dr. R. Ramaprabha, ASSP/EEE (2020) Shade Resilient Total Cross Tied Configurations to Enhance Energy Yield of Photovoltaic Array Under Partial Shaded Conditions. In: Hemanth D., Kumar V., Malathi S., Castillo O., Patrut B. (editors) Emerging Trends in Computing and Expert Technology. COMET 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 35, pp. 122–133, Springer, Cham. Doi: https://doi.org/10.1007/978-3-030-32150-5_13: Print ISBN 978-3-030-32149-9; Online ISBN 978-3-030-32150-5

11. Karthni Lakshmanan (IV year EEE student), Nishanth Thilagar (IV year EEE student), S.Tamilselvi, ASSP/EEE have published a Paper titled, "Two Step Algorithm Implementation for Intelligent Street Light System", in International Journal of Innovative Technology and Exploring Engineering, Volume-9 Issue-1, November 2019, DOI: 10.35940/ijitee.A6118.119119, ISSN: 2278-3075, Indexed in SCOPUS, B Impact Factor-5.54(2018)

12. Dr.R.Seyezhai, ASSP/EEE and Dr.A.Bharathi Sankar published a paper titled, “Super capacitor/Battery based Hybrid Powered Electric Bicycle”, WSEAS Transactions on Power Systems, Vol.14, 2019. (SCOPUS INDEXED)

13. Dr.A.Bharathi Sankar, Dr.R.Seyezhai, Dr.Mani Karthik, presented a paper titled, “Piezoelectric-Driven Charging Super capacitors For Bio-Medical Sensor Applications” in the international conference on Nano science and Nano Technology held at VIT, Vellore.

14. R.Ramaporselvi (Research Scholar), G.Geetha, Mrunal Deshpande ASSP/EEE, J.ShriSaranyaa(RA) published a paper titled

"Congestion Alleviation by Optimal Placing of Renewable Energy Generator in Power System Network using Stochastic Optimization Techniques" International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-9 Issue-2, December 2019 Scopus indexed.

15. R.Priyavasini, Shaik Tasneem and N.Srija (IV Yr EEE B students) participated and presented a paper titled "Design and Implementation of Speed Control System for 1-phase and 3-phase Asynchronous Motor Using PID Controller"in SSN UG Researchers day under the guidance of Dr.R.Deepalaxmi, ASSP/EEE.

16. Dr. R. Ramaprabha, ASSP/EEE and Dr. S. Malathy, ASSP/EEE "Selection of Renewable Energy Sources for a Developing Country using Analytic Hierarchy Process" Chapter 16, pp. 359-380, Sustainability Modeling in Engineering: A Multi-Criteria Perspective, ISBN: 978-981-3276-32-1,World Scientific Publishing Company Pvt. Ltd., Singapore, 2019. https://doi.org/10.1142/11157 (https://doi.org/10.1142/9789813276338_0016) – Book Chapter publication

17. Dr. S. Malathy, ASSP/EEE and Dr. R. Ramaprabha, ASSP/EEE, "Hybrid Algorithms to Track Peak Power in solar PV array under all Irradiation Conditions" 2nd International Conference on Power Engineering Computing and Control (PECCON2019) organized by School of Electrical Engineering, VIT (Chennai Campus) in association with Binghamton University (State university of New york) during 12-14, Dec 2019. – Presented by Dr. R. Ramaprabha.

18. Ms. T. Divya, FT Research Scholar and Dr. R. Ramaprabha, ASSP/EEE, "Mathematical Modelling of Embedded Switched Inductor Z-Source Inverter for Photovoltaic Energy Conversion" 2nd International Conference on Power Engineering Computing and Control (PECCON2019) organized by School of Electrical Engineering, VIT (Chennai Campus) in association with Binghamton University (State university of New york) during 12-14, Dec 2019. – Presented by T. Divya.

19. Dr. M. Pandikumar, ASSP/EEE and Dr. R. Ramaprabha, ASSP/EEE ,"Financial Analysis of Diesel and Solar Photovoltaic Water Pumping Systems" 2nd International Conference on Power Engineering Computing and Control (PECCON2019) organized by School of Electrical Engineering, VIT (Chennai Campus) in association with Binghamton University (State university of New york) during 12-14, Dec 2019. – Presented by Dr. M. Pandikumar

20. Dr.V.Rajini Prof/EEE,Gayathri(II MEPED), presented a paper titled,"Design and optimisation of DC inductor of Boost powerfactor

converter", in AICTE CSIR sponsored Third international conference on Renewable Energy andSustainable environment RESE2019 at Dr. Mahalingam College of Engineering and Technology, pollachi , December 12-14, 2019

21. Dr.V.Rajini Prof/EEE,ThariniPreethai(II MEPED), presented a paper titled,"Evaluation of active cell balancing Techniques for Lithion Ion batteries: ", in AICTE CSIR sponsored Third international conference on Renewable Energy and Sustainable environment RESE2019 at Dr. Mahalingam College of Engineering and Technology, pollachi , December 12-14, 2019

22. Dr.V.Rajini Prof/EEE,Magdaleneanadn(II MEPED), presented a paper titled,"Interleaved Split PI DC-DC Converter for Hybrid electric Vehicle application ", in AICTE CSIR sponsored Third international conference on Renewable Energy and Sustainable environment RESE2019 at Dr. Mahalingam College of Engineering and Technology, pollachi , December 12-14, 2019.

23. Dr.R.Seyezhai, ASSP/EEE and S.Harika (Full-time research scholar) &Dr.A.Jawahar presented a paper titled, “Investigation on DC fast charging Topologies for Electric Vehicle Charging Station”, in the International Conference TENCON 2019 organized by ieee region 10, IEEE, Kerala Section held at Kochi.

24. Dr.R.Seyezhai, ASSP/EEE and R.Sasikala (part-time scholar) published a paper titled, “Review of AC-DC power electronic converter topologies for power factor correction” International Journal of Power Electronics and Drive System (IJPEDS), Vol. 10, No. 3, Sep 2019, pp. 1510~1519, ISSN: 2088-8694, DOI: 10.11591/ijpeds.v10.i3.1510-1519. (Indexed in SCOPUS)

25. Pearl Nightingale (research assistant) and Dr Mrunal Deshpande ASSP/EEE, published a paper titled “Indoor Photovoltaics and It’s Applications”, in International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-9 Issue-1, 1st Nov 2019 Indexed in SCOPUS, B Impact Factor-5.54(2018)

PROJECT PROPOSAL

1. Dr.V.Rajini, Prof/EEE Submitted two proposals under " Viswakarma Awards 2019" of AICTE.

   A low cost zero energy- waste management system for soil enrichment- Team name :saturnus team leader: Sai Prasanna(IIIyrEEE)

   A low cost solar powered organic water purifier for communities"- Team name : posoidun, Team leader: Sai easwari. These two proposals have been shortlisted by AICTE for next round.

2. The following student's projects under the guidance of Dr. R. Ramaprabha, ASSP/EEE have been sanctioned through SSN student internal funding (Nov 01, 2019)
   1. E.Oliviya Joselin Komagal (II Year M.E. PED), "Implementation of diode assisted extended boost quasi Z-source inverter for photovoltaic interface", for Rs. 26,000/-
   2. N. Divya Sri, S. J. Indhra Pooja, A. Jaffrin, IV year B.E. (EEE), "Control and implementation of power conditioning system for PV based charging for plug-in electric vehicle", for Rs. 22,000/-
   3. AkshithaBlessy, Lekhashree Ravichandran, P. Meenakshi, IV year B.E. (EEE), "Design of converter-inverter for disturbance rejection in wind-solar integrated AC microgrid system", for Rs. 24, 000/-
   4. V. Jeevitha, S. Karan, V. J. Preethi, N. Vishalakshi, III year B.E. (EEE), "Implementation of capacitor assisted extended quasi Z-source inverter for photovoltaic interface", for Rs. 25, 000/-
   5. Aishwarya Srinivasan, Ashwini M, Deekshitha S, II year B.E. (EEE), "Global maximum power point tracking of PV array using hybrid grey wolf optimization - Fuzzy logic controller" for Rs. 25, 000/-
   6 .Harini C, Krithika R, Mythili M, Nithishri B, II year B.E. (EEE), "A control method for grid-friendly PV systems with hybrid storage units", for Rs. 26, 000/-.

3. PG students project proposals submitted under the guidance of Dr.V.Rajini Prof/EEE for internal funding is approved for the following students.1. Magdalene Anand 2. Gayathri swaminathan (II ME PED).

4. Dr V Rajini Prof/EEE Submitted the videos of prototypes of:
   1. A low cost zero energy- waste management system for soil enrichment
   2. A low cost solar powered organic water purifier for communities To AICTE for next round of evaluation of Viswakarma awards 2019- 2020.

5. A.S Vikram and team, final year EEE students presented their work related to publication in vienna rectifier during UG Researchers day

6. Dr.V.Rajini Prof/EEE submitted a proposal to Tata Motors for development of a MCU for IITkharagpur lab

REVIEWS

1. Dr.V.Rajini Prof/EEE conducted Viva voce examination for Ms. S. Krishnaveni. Thesis Title: Investigations on Pulsed Electric Field parameters for inactivation of Microorganisms in Liquid food.

2. Dr. R. Ramaprabha, ASSP/EEE reviewed 4 papers for ICEES2020.

3. Dr. R. Ramaprabha, ASSP/EEE reviewed 2 papers for COMPEL.

4. Dr.R.Seyezhai, ASSP/EEE reviewed a paper for ICEES 2020 to be held at SSNCE.

5. Dr. R. Ramaprabha, ASSP/EEE reviewed 3 papers for International Transactions on Electrical Energy Systems (Wiley Interscience).

EVENTS

1. The first Class Committee Meeting for the 5th semester, III year, B.E. (Electrical & Electronics Engineering) for the academic year 2019-2020 was held on 04.09.2019 (Wednesday) from 2.55 p.m. to 3.35 p.m. at the E.E.E. seminar hall (Ground, West Wing).

2. The second Class Committee Meeting for the 5th semester, III year, B.E. (Electrical & Electronics Engineering) for the academic year 2019-2020 was held on 25.09.2019 (Wednesday) from 2.55 p.m. to 3.35 p.m. onwards at the E.E.E. seminar hall (Ground, West Wing).
3. Dr.V.Rajini Prof/EEE &Dr.R.Seyezhai ASSP/EEE conducted the final project review for II Year M.E.(PED) students.

4. Dr.R.Seyezhai, ASSP/EEE conducted the third class committee meeting for II Year M.E.(PED).

5. Dr.R.Seyezhai, ASSP/EEE & team demonstrated their products in Renewable Energy Conversion lab during the visit by CEO of e-propelled company.

6. Ms.N.Shanthi (Part time research scholar of Dr.R.Deepalaxmi, ASSP/EEE) , delivered the research seminar on the topic " Analysis of High Gain Converters" in the Department of EEE, SSN College of Engineering, Chennai.

7. Dr.V.Rajini Prof/EEE conducted the viva voce examination of her full time research scholar R.B.Jeyapradha.

8. Dr.V.Rajini Prof/EEE Attended QS India summit at Goa along with the Principal and Dr. Vijaysekar

HONOURS

1. Dr.V.Rajini Prof/EEE acted as a panel member for the selection of faculty for EEE department , VIT Chennai.

2. Dr.V.Rajini Prof/EEE is nominated as Margadharshak for AVIT, by AICTE.

3. K.Kanchana, S. Krishnaveni ASSP/EEE and Alagu Dheeraj ASSP/EEE, PhdSholars of Dr.V.Rajini Prof/EEE, received their PHD degree from anna University.

4. R. Ramaprabha ASSP/EEE completed NPTEL online Certification Course on "Advance power electronics and Control" during Jan – Mar 2019 (NPTEL-AICTE FDP – 8 weeks – 1 FDP) –Funded by MHRD, Government of India

5. Dr. R. Ramaprabha, ASSP/EEE completed NPTEL online Certification Course on "Op-Amp Practical Applications: Design, Simulation and Implementation" during Aug-Oct 2019 (NPTEL-AICTE FDP – 12 weeks – 1½ FDP) - –Funded by Ministry of HRD, Government of India.
6. Dr.V.Rajini Prof/EEE, Prasanta Sarkar, Cheif Technical Officer, Tata Motors, Mr. Sandeep Mante, Techinical Officer, TataMotors and Dr. Tanmoy Bhattacharya,Associate prof, IITK participated in a skype meeting to discuss about the product development for IIT-UAY project by SSN. This is continuation of SIH 2019, where the first prize was bagged by team SSN

7. Dr.R.Deepalaxmi ASSP/EEE attendedSix daysAICTE Sponsored Short Term Course " Recent Trends in Condition Monitoring of Power Apparatus-adaptability to Smart Grid" Organized by Department of Electrical Engineering, Indian Institute of Technology Madras from 18/11/2019 to 23/11/2019.

INTERNALLY FUNDED PROJECT AWARD

1. S. Harika , Dr. R. Seyezhai, " Investigation of Interleaved voltage source inverter for Photovoltaic Application "awarded Best Internal funded project during 2017 (overall college first prize)

2. R. Subhitcha V. Sowmya R. Vasanthaselvam, Dr. R. Seyezhai, " Design and implementation of Micro-inverter for photovoltaic application " awarded Best Internal funded project during 2017 (overall college)

3. A.S.Vikram, Subhiksha Sivasubramanian, Shaik Heena Sulthana, Dr.V.Rajini " Design and Implementation of Three- Phase Improved Vienna Rectifier Systems for More Electric Aircraft" awarded Best Internal funded project during 2017 (overall college)

PLACEMENT DETAILS

S. No	Student Name	Company	Category	Package (LPA)
1.	Nandh Kishore	McDermott	Dream	5
2.	Harshini M	HCL	Bulk	4.75
3.	Akshaya MK	WOOD	Dream	4.2
4.	Kowshik	BA Continuum India Pvt Ltd	Dream	6
5.	Pachaiyamal	Infosys	Regular	3.6
6.	Pachaiyamal	BA Continuum India Pvt Ltd	Dream	6
7.	Patrick A Joseph	TCS	Regular	3.2
8.	Pratyusha Ravi	Mckinsey	Super Dream	12
9.	Praveen A	Infosys	Regular	3.6
10.	Praveen C	TCS	Regular	3.6
11.	Preeti Naidu Kodidala	MuSigma	Dream	8.3
12.	Prerana Augumbe	Mckinsey	Super Dream	12
13.	Privthirajan	Infosys	Dream	5
14.	Raghu R	TCS	Regular	3.6
15.	Ritika	Viasat	Super Dream	10.88
16.	Rohit Kumar K	Accolite software pvt	Super Dream	10
17.	Roopini A	Cognizant	Regular	4

18.	Roopini A	TCS	regular	3.36
19.	Sakti Ganesh M	Wood	Dream	4.2
20.	Sanjay S	Transunion	Dream	6
21.	Sanjay S	TCS	Regular	3.5
22.	Selvaprashant	Bank of America	Dream	6
23.	Selvaprashant	Cognizant	Regular	4
24.	Selvaprashant	Infosys	Regular	3.6
25.	Sheik Heena Sultana	Cognizant	Regular	4
26.	Sheik Taseem	Condenast	Dream	7
27.	Shanti Priya	Cognizant	Regular	4
28.	Shivani JV	Transunion global technology	Dream	6
29.	Shivani JV	Cognizant	Regular	4
30.	Srihari K	Cognizant	Regular	4
31.	Shruti Sundar	Freshworks	Dream	4.8
32.	Subash K	Soliton	Dream	5
33.	Subha S	Technip FMC	Dream	5.8
34.	Subha S	CTS	Regular	4
35.	Subhikaran G	Soliton	Dream	5
36.	Soorya A	TCS	Regular	3.6
37.	Vasanthaselvam R	CTS	Regular	4
38.	Veena K	TCS	Regular	3.35
39.	Vigneshwaran KJ	BA Continuum	Dream	6
40.	Vishnu Ajith	MRF	Dream	4.8
41.	Vishnu Priya SS	Cognizant	Regular	4
42.	Vishnu Priya SS	Infosys	Regular	3.8
43.	Vungarana Muni Srinivasa Rohith	Cognizant	Regular	4
44.	Tryphena Prabhakaran	Tata elxsi	Dream	3.5

STUDENT ACHIEVEMENTS

WINNER'S WORDS

A person might have a problem; a nation might have a problem; but sometimes the entire world might have a common problem. These problems affect millions and a solution to this has a much greater impact on the human race. Our motto was to give real time solutions to real life problems.

Our project is Continuous Non Invasive Blood Pressure Monitoring system (CNIBP). The main challenge of this project was to measure the blood pressure for every heartbeat. During major surgeries especially those which are related to the heart and lungs there is a lot of blood loss which corresponds to higher blood pressure variations. If not monitored continuously, sudden rise or drop in the blood pressure might lead to stroke, kidney failure and sometimes even death.

The competition was open to students from10th standard to PhD scholars all over India and to make it to the finals, the quality of work required was humongous. The event was really competitive and our work progress was creditable. It was an arduous process to make it as a perfect product. It was our dream come true moment.

We would like to thank S4S club and Senthil Kumaran sir , Shajith Ali sir and Suganthi ma'am(BME)for motivating and guiding us through the entire process.
This is not a PROJECT, but a PRODUCT.

ALCHEMISTS,
S.SanthooshAravind
B.SaiPrashanth
S.B.Praveen

STUDENT ACHIEVEMENTS

VISHWAKARMA AWARD – REGIONAL CONVENTION DETAILS

Team Saturnus

Our team Saturnus,with team lead by Sai Prasanna K along with ,Vyshnav Menon,Ratish Kumar S and Shridhana M S under the guidance of Dr. V Rajini Professor EEE Dept, proposed project under the criteria “Waste Management” for the Chhatra Vishwakarma awards conducted by AICTE and MHRD, GoI. The project primarily dealt with providing a Low Cost Waste Management System for processing wet waste, organic waste and animal waste. The key aspects of the project included use of solar energy for drying, complete automatic system and also provide manure for soil enrichment. The project also included use of IoT for aiding monitoring system. After two rounds of scrutiny we were selected for Regional convention which was held on the 18th of DEC 2019 at Hindustan institute of science and technology, Padur. The panel of judges scrutinized the proposal and provided valuable suggestions for improving the proposed system. We were announced to be selected for the National convention which is to be held in third week of January at the end of event.

Team Poseidon

Our team Poseidon,with team leader Sai Eswari G along with, Vinay Joseph Govias, Pratig Ram R and Sakthi Praneetha P S,under the guidance of Dr. V Rajini Professor EEE Dept, proposed project under the criteria “Water” for the Chhatra Vishwakarma awards conducted by AICTE and MHRD , GoI. The project primarily dealt with providing a Low Cost Water Purifier System to purify water effectively. The key aspects of the project included portable purifier system , use of self cleaning facility and health monitoring system. After two rounds of scrutiny we were selected for Regional convention which was held on the 18th of DEC 2019 at Hindustan institute of science and technology , Padur .The panel of judges scrutinized the proposal and provided valuable suggestions for improving the proposed system. We were announced to be selected for the National convention to be held in third week of January and the end of event.

STUDENT ARTICLE

By
ABINANDHAN R
4th year EEE

SOMEHOW, I MANAGE

There is neither a definite answer nor a specific routine that ensures success in competitive examinations. Of course, hard work is the foremost thing that comes to mind when one aspires to crack such examinations. However hard work and determination, according to me, are merely tools required to ensure success in such examinations. Just as a carpenter sharpens his tools, one needs to sharpen his/her mind to improve the chances of success at such examinations. Scoring at the 96th percentile in the Common Aptitude Test is not something I consider ultimate. There are at least 8000 candidates who have bettered me at this venture and who are still in the race alongside me for admissions into some of the best B-schools in the country.

Working hard was never one of my strong suits and having to deal with voluminous engineering syllabus alongside my CAT coaching was in no way a walk in the park. Instead of inanely trying to ace both domains, I realized that the only way I could remotely excel at either was if I managed my time to the very second and handled my college academics delicately. It is only because of this and the enormous amounts of motivation and support from my family that I could even dream of getting such a score in this prestigious examination. The department too was very supportive of my endeavor by understanding the significance of the situation and providing needed support.

The CAT, by my opinion, is not the toughest to crack. In fact it is the easiest step in the entire admission process into a top B-school. In my experience writing mock tests and then the actual test, the state of the mind plays a huge role in cracking the examination. Since CAT deals with math, vocabulary and critical reasoning skills, the exam is attemptable by almost every college graduate in the world. However, understanding the fact that every question is not solvable is extremely crucial in ensuring success in this examination. Good amounts of rest starting a week prior to the exam was suggested to me by well-wishers and this ensured my mind did not waver during the time of the examination. One needs to understand that the fundamental objective of the examiner is to not test the knowledge of the candidate but to test his/her grit and attitude towards the test. All in all, I consider myself extremely lucky to stand where I am through this prestigious examination.

STUDENT ARTICLE

BY
THARUN R PRAKASH
2nd year EEE

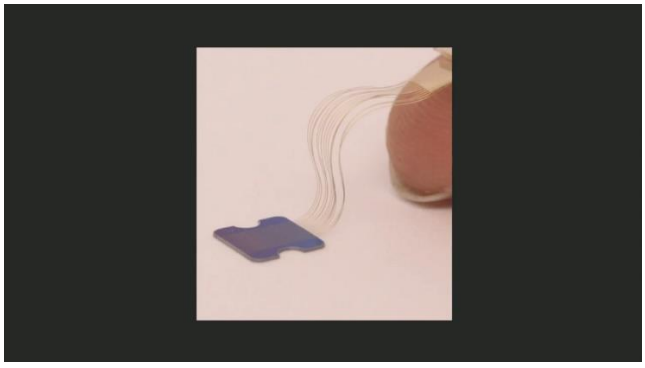
NEURALINK – SKYNET MADE REAL

2019 was a great year for technological advancements. Especially the one Elon Musk's been working on for years. Remember Skynet from Terminator which is a fictional artificial Neural Network – based Intelligent system? Elon Musk's been working on something similar to that. Not to take over the world but to make the world a better place.

He's building technology that will allow humans to access more of their brain functions and he's achieving this through NeuraLink – A company dedicated in developing interfaces between brains and machines. So Why do we think this is possible in this era? Well futurists like Ray Kurzweil, the author of "The Age of Intelligent Machines (1990)", have been talking about this for decades. He calls it "Singularity", the platform where Humans and machines merge. According to him, in a couple of decades or so, the convergence between Humans and machines will be inevitable and Elon Musk might just play the significant role.

For those who are uninitiated, Ray Kurzweil in 1990, predicted that internet would become the defining consumer technology of our generation and that seemed like crazy talk. For good measure, he even predicted the rise of cell phones and people reading out their peers with a tap of a button and they all came true.

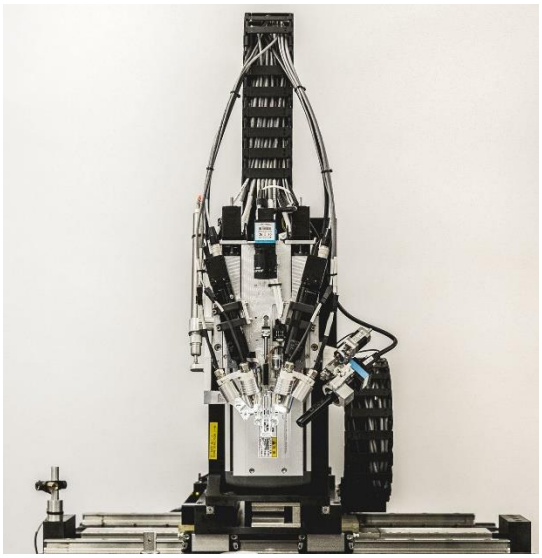
So how does Elon's tech work? Our sensory and motor functions are controlled by a series of electrochemical spikes in the brain. As neurons fire across our synapses, they send complex commands to our eyes, ears and limbs. Musk and his team at Neuralink want to build a brain-machine interface that interprets and controls those commands.



The Size of threads (Fingertip for Scale)

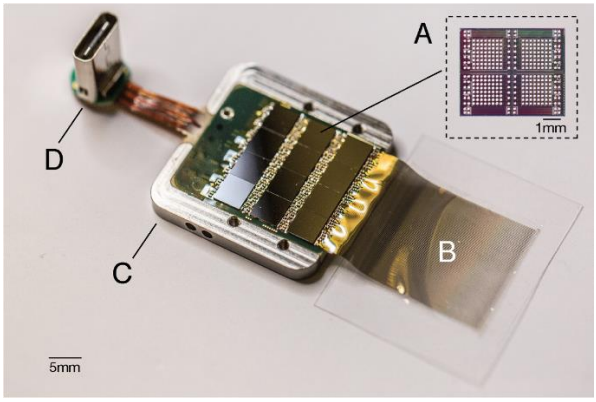
The first big advance are flexible "Threads", which are less likely to damage the brain than the materials that are currently being used in Brain-Machine interfaces. These threads, given their structure also create the possibility of transferring a higher volume of data which according to abstract notes is around "as many as 3,072 electrodes per array distributed across 96 threads."

The threads themselves are around 4 to 6 μm in width, which makes considerably much thinner than a human hair. The other big advancement is a machine that embeds them without human aid. Elon gave a big presentation in late 2019 about how the tech could be a game changer. For those questioning the possibility of such a vast idea, its not as far fetched as it seems. The basic technology already exists. Dr. Richard Norman, a bio-engineering professor at Utah developed the Utah array in 1997 which was a tiny piece of silicon with 256 electrodes that could be attached to the Central Nervous System to listen to neural activity. Patients with these devices were able to communicate with computers via their brains. Since then, the implants have only developed. Take Dr. Stephen Hawking for instance.



NeuraLink's machine for inserting the threads.

According to the researchers at NeuraLink, the finished chips will have around 1,000 threads. A single application might have around 10 threads. Utah Array can only communicate to computers with only 256 electrodes. One can just imagine the bounds with 10,000.



The actual chip that amplifies the signal and sends it to a computer.

So, who are the ones who'll be benefited with this Sci-Fi tech? The ultimate goal of this company is amidst paralyzed humans, allowing them to control phones or computers and paving a way for them to lead a normal life and carry day to day tasks without the aid of the others.

In the future, Musk says the procedure will be no more invasive than a Lasik Eye Surgery and the mandatory requirements involve wireless, practical amount of bandwidth and years of viability. His long-term goals may stretch beyond helping individuals with disabilities.

This idea has been fairly considered by other noted thinkers like Bill Gates and the late Astrophysicist Stephen Hawking. NeuraLink believes that the solution lies in designing an implant designed to use the full capacity of our brains. In his view, this might even eliminate the threat of AIs taking over, since we would merge with them.

INTERNSHIP

By
VISHALINI MARISWARI
2nd year EEE B

ELECTRIC VEHICLE CHARGING STATION

VISHALINI MARISWARI .S, EEE B, Second Year is doing an internship in GK Enterprises. The company's current project is EV charging station. As of now in the Indian market, electric vehicles (EV) are slowly getting their demand due to various drawbacks of the ordinary commercial vehicles. Hence many car manufacturing companies are developing electric vehicles to meet the demand.So this company has decided to produce EV charging station.

EV charging station is an infrastructure that supplies electric energy for the recharging of plug-in electric vehicles—including electric cars, neighbourhood electric vehicles and plug-in hybrids. These stations are needed while travelling and they support faster charging at higher voltages and current than they are available at residential EVSE's.

About the company: GK Enterprises started its business related activities in the year 2008 as a Sole Proprietorship firm. This company is operating its business operations from Chennai, Tamil Nadu (India).They are highly known in the market due to the outstanding quality of the products. The company makes sure that the operations are carried out in a perfect and systematic manner in order to attain set target of the organization.

The project has been aimed to complete by the end of March 2020. There are five major parts involved in this project - the design of Transformer, Converter , Rectifier , DSP and Charging gun. She is involved in the process of designing the Rectifier.

FACULTY ARTICLE

- கு.முருகேசன்

இணைபேராசிரியர்
மின் மற்றும்
மின்னுவியல் துறை

பணத்தின் மறுபக்கம்

பணமே!
நீ இல்லாத போது
மனிதன் பணம் சேர்க்கிறான்.
நீ அதிகமானால்
மனிதன் பலம் சேர்க்கிறான்.
அளவோடு பணம் இருந்தால்
அவசியமானதை வாங்குகிறான்!
அளவுக்கு அதிகமாக பணம் இருந்தால்
ஆடம்பரத்தை வாங்குகிறான்!

பணமே!
பணம் உள்ளவன்
பணம் கொடுத்தால் எதையும் வாங்கலாம்!
பணம் இல்லாதவன்
எதைக் கொடுத்து பணத்தை வாங்கலாம்!

பணமே!
நீ தொழிலாளியை முதலாளியாக்குகிறாய்!
ஏழையைப் பணக்காரணாக்குகிறாய்!
நீ பக்கமிருந்து ஆட்டி வைக்கிறாய்!
நீ விலகிச் சென்று அடக்கி வைக்கிறாய்!

பணமே!
பணக்காரர்களுக்கு பக்கமிருந்தே
பணிவிடை செய்கிறாய்!
ஏழைகளை எதிர்த்து நின்றே
ஏங்க வைக்கிறாய்!

பணமே!
முதலாளிக்கு முதலாகிறாய்!
தொழிலாளிக்கு கூலியாகிறாய்!
பணக்காரனுக்கு 'கார்' ஆகிறாய்!
ஏழைக்கு 'கால்' ஆகிறாய்!

பணமே!
நீயும் காவிரியும் ஒன்று
அரசியல்வாதிகள்
உன்னை விட மறுக்கிறார்கள்!
ஏழை விவசாயிகள் பக்கம்
நீ வர மறுக்கிறாய்!

பணமே!
உழைப்பைக் கொடுத்து
பணத்தை பெருபவனை
தொழிலாளி என்கிறோம்!
பணத்தைக் கொடுத்து
உழைப்பைப் பெருபவனை
முதலாளி என்கிறோம்!

பணமே!
ஒரு பக்கம் நீ இல்லாமல்
வாழ்க்கை கருப்பாய் இருக்கிறது!
மறுபக்கம் நீயே கருப்பாய் இருக்கிறாய்!

பணமே!
செல்லும்போதெல்லாம் செல்லாத நீ
செல்லாத போது செல்கிறாய்
வங்கிகளுக்கு!

பணமே!
அராஜகமாக சேர்த்தவனிடமிருந்து
அபராதமாக விட்டுச் செல்கிறாய்!
நீ ! யாருடன் கூட்டணி வைக்கிறாயோ!
அவனே! பணக்காரனாகிறான்.
உன் ஆதரவு கிடைக்காதவனே!
ஏழையாகிறான்.

ஓ மனிதா!
நீதான்! என்னை(பணத்தை) அச்சடிக்கிறாய்!
அடுத்தவனிடமிருந்து கொள்ளையடிக்கிறாய்!

சேர்த்துவைக்கிறாய்! அரவணைக்கிறாய்!
நான் உன்னோடு உள்ளபோதெல்லாம்
நீ காண்பது என் மறுபக்கம் அல்ல
உன் மறுபக்கம்.

FACULTY ARTICLE

- கு.முருகேசன்

இணைபேராசிரியர்
மின் மற்றும்
மின்னுவியல் துறை

பொன்மொழிகள்

1. வாளைவிட மிகவும் கூர்மையானது பேனா. – நெப்போலியன்
2. மூன்று அங்குல நாக்குதான் ஆறடி மனிதனையே வீழ்த்திவிடுகிறது. - ஜப்பான் பழமொழி
3. மக்களைப்பற்றி எழுதுவது மட்டுமல்ல மக்களுக்காக எழுதுவதும் இணைந்ததுதான் மக்கள் இலக்கியமாகும். -லெனின்
4. ஒரு பிள்ளை நாலுமுறை தப்பு செய்தால் ஒருமுறை கண்டிச்சி திருத்துங்கள். ஆனால் ஒருமுறை நல்லது செய்தால் நாலுமுறை பாராட்டுங்கள். – பழமொழி
5. ஒரு வகுப்பில் பலதரப்பட்ட திறமைகொண்ட மாணவர்கள் இருக்கிறார்கள். ஒரே தேர்வு அனைத்து திறமைகளையும் மதிப்பிட முடியாது. - ஐன்ஸ்டீன்
6. செல்லும்பாதை சரியாக இருந்தால் வேகமாக அல்ல மெதுவாகச் சென்றாலும் வெற்றிதான். – அறிஞர் அண்ணா
7. பிறரைத் தூக்கிவிட குனிபவனே உலகின் மிக உயர்ந்த மனிதன். – சுவாமி விவேகானந்தர்
8. பிறருடன் ஒத்து வாழ நம்மைப் பக்குவப்படுத்துவதே கல்வியின் நோக்கமாகும். - டாக்டர்.இராதாகிருஷ்ணன்
9. ஞானம் என்பது ஏதோஒரு குணநலன் தூக்கலாக இருப்பதால் கிடைப்பதல்ல. எல்லா குணநலத்தினுடைய சமன்பாடுதான் ஞானத்திற்கு வழி வகுக்கும். -கதே
10. ஆயிரம் பேரை ஆயிரம் தடவை யுத்தத்தில் வெல்வதைக் காட்டிலும் தன்னுடைய மனதை அடக்கி வெல்லுதலே மேலானதாகும். – புத்தர்

ALUMNI ARTICLE

BY
ANAND HARI NATARAJAN
EEE batch of 2019

Studying EEE and want to work on the frontier of cutting-edge technology and research? Then read up!

Engineering is the process of developing technology to benefit mankind. As one becomes more acquainted with modern engineering, it seems to be true that electrical engineering has become a kind of foundation for innovative technologies. This is because all contemporary technologies are either powered by some sort of electrical energy system or require electronics for fast switching and computation. This makes a bachelors degree in EEE a great introductory degree for a large plethora of job markets.

Engineering is the kind of field where the development is endless. We humans are great at figuring out how to use nature to develop new inventions to suit our needs. So, if one intends to work in engineering, one needs to acquaint themselves with modern developments. This of course means that in order to keep up, one must study further as new technology can not be developed with just the knowledge of a bachelor's degree.

In today's world, we are currently living in an era of a rapid paradigm shift in technology and engineering. The world has seen such paradigm shifts before and every time they happened, they changed the way we humans experience our lives forever. The invention of the steam engine in the 1700s led to the First Industrial Revolution in the 19th century. The 1950s saw the advent of semiconductor electronics that gave birth to the Digital Revolution in the 1970s. Now, the early 21st century is seeing the advent of quantum computers, nanotechnology, artificial intelligence, gene editing, nuclear fusion energy and many high tech innovations that seem more sci-fi than real.

With a foundation in EEE, opportunities are endless when it comes to creating new technology. Since all working technologies require knowledge of many diverse areas, it is important to develop a working understanding of many fields. Multidisciplinary research produces results that are useful for a large number of areas and hence recently, there has been a large boom in such fields.

Some exciting areas of multidisciplinary research for electrical engineers that could produce the next big shift in life as we know it are:

- Battery Engineering: Currently, all portable electronics like smartphones and laptops, electric vehicles, military and aerospace equipments and other modern equipments, make use of lithium-ion or Li-ion batteries. Research areas for Li-ion batteries include life extension, energy density, safety, cost reduction, charging speed and other areas.

- Human Computer Interaction (HCI): The Digital Revolution has brought to existence computers and smart phones into our daily lives which has kickstarted the Information Age. In today's world, information is readily available to anyone with a flick of their fingers. The next stage of HCI we are heading towards is the interface of the human brain with computers, or Brain-computer interface (BCI). Integration of human biology with computers aims to produce seamless integration of digital information with human thoughts.

- Embedded Systems: An embedded system is a computer system that has a dedicated function within a larger mechanical or electrical system. The current-world applications of embedded systems are numerous, ranging from washing machines to hybrid electric vehicles. The latest developments in embedded systems are many, ranging from AI to automation and smart technologies.

- Nanotechnology: Nanotechnology is the manipulation of matter at the nano-scale. Nanotechnology has already produced numerous remarkable technologies such as carbon nanotubes and gold nanoparticles among many. Next in line are NEMS and nano-robotics that could serve numerous applications ranging from medicine to defence.

- Photonics: Photonics is the optical equivalent to electronics. Photonics manipulate the transmission, amplification, and modulation of photons. They beat electronics with an energy demand that is lesser by a factor of a 1000. Upcoming technologies include Photonics Integrated Circuits (PICs, equivalent of ICs) and programmable photonics (equivalent of FPGA).

- Robotics: This is a growing field that is used in developing human-like machines that can replicate and even replace human action. This field is booming in the current times with the growth of Machine Learning, Deep Learning, Artificial Intelligence and Data Science. New frontiers in this field include prosthetics, exoskeletons, rescue robots, delivery robots among others.

- Quantum Computers: This technology revolutionizes computation with quantum bits or qubits. This involves making use of the quantum mechanical properties of matter, namely superposition and entanglement to achieve exponentially faster computational results. In the near future, quantum computing is expected to produce accurate models of quantum mechanics, predict weather and climate accurately, analyses stock markets accurately and produce super-strong encryption. This technology could be the successor to the traditional computers we all use today.

With such a rich assortment of opportunities available to us electrical engineers, we must make use of it and join the revolution to make our country, and then the world, a better place. So study well students! The world is within your grasp! Let's walk this journey together!

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