# REDEEM

Quarterly Newsletter Electrical & Electronics Department SSN College of Engineering

#### FROM HOD'S DESK

Faculty development is an important ingredient of a successful academic department. Our department periodically arranges seven days faculty development programme every academic year. I appreciate efforts taken by Mr.P.Saravanan to conduct FDTP programme on "Embedded System" in spite of heavy rain and cyclone during Dec 2016. Congratulations to Dr.S.Tamilselvi and Dr.K.Usha for obtaining guideship of Anna University.

Appreciation to Dr.Seyezhai for arranging a technical talk under the auspices of IEEE-PELS Madras chapter. Dr.Eliathamby Ambikairajan and Dr.R.Jayashree of University of New South Wales, Sydney, Australia delivered a talk on Signal Processing and interacted with faculty for further collaboration. This time, we obtained 16 internally funded student projects.

We feel a sense of pride when our students are being recognized for their achievements. Mukund Bharadwaj, Akshay Kumar and Mohammed Harris of third year, won second prize in 'Resemblance' event organized as a part of IIT-Bombay techfest. The objective of the event was to classify satellite image data into different geographical features such as slums, forests, water bodies etc.

Danfoss Ltd. has selected one student in ME (PED) for internship with stipend.

One of our ME (PED) student has gone to join with the start-up initiative of Swadha Energies, an IIT Madras incubated company, initiated in Chennai.

I wish to thank and appreciate all the faculty members and the students who have contributed to the progress of our Department.

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#### REDEEM

# PREFACE

I wish all the readers a happy new year. The foundation for passion as for any good quality is set in childhood. When children have learned through the love of their parents to feel valuable, it is almost impossible for the vicissitudes of adulthood to destroy their spirit. A sense of being valuable gives us clear access to the energy flowing within us, which can otherwise get blocked by self-doubt, fear, anxiety and negative circumstances. When we indomitably confront the circumstances that drain away our passion, we will triumph over it, and not only will passion return, it will do so with ten-fold force.

While life gives us both good and bad experiences, most of us tend to remember the bad experiences more frequently and intensely. When we recall an old failure, rejection or humiliation our calm and happiness goes for a toss in a moment. But when we are down, dwelling on a memory of achievement, being loved or appreciated does not seem to help much. In a recent study, researchers found that several areas of our brain show greater activity in response to stimuli that are more negative than positive. This could explain our collective preoccupation with the negative. Although this negativity bias may seem strange at the outset, it does seem to have a strong evolutionary basis. From the earliest days, man's existence depended on his ability to detect and keep himself safe from unpleasant events and danger. He lived in constant fear of animals. Therefore, our brain evolved such that it could pay better and more attention to all unpleasant stimuli. This tendency then seems to have generalized to all stimuli that evoke negative feelings. The media exploits this tendency and so we are more inclined towards negative things. The religious institutions exploit the fear of death for their existence. So, whenever there is anything negative in our life we focus on it with all our attention and energy and in the process develop an obsession towards it. Bad news makes news. Bad feelings and negative thoughts then engulf our mind leading to sadness and depression. Also nature's law is that: if you do not plant seeds in the land, it automatically fills the land with weeds. Similarly if you do not fill positives in your mind, automatically negative thoughts will crop up. It is stupidity to fight with the nature. We should accept the nature and respect it. All we can do is not to feed the weeds and try to consciously aware of the natural tendency of mind and instill positivity whenever possible.

However, does this imply that we make peace with our tendency to slip into negativity at the drop of a hat? Not really, because we are constantly in the process of an individual and collective evolution. If we have a burning desire and make sustained efforts then we can rewire our brain to be happier. Our brain needs to give up the tendency to focus intensely on the negative. Happiness already exists out there and we must train our brain to see and feel it more and more. The simplest way to do this is by cultivating gratitude. The first step is to register and record all the positives in our life by keeping a gratitude journal. One carefully records all the good things, events and feelings whether big or small that have come one's way during the day. This also includes attending to and appreciating positive aspects of life in general. Over a period of time, we will realize that the world is quite full of positivity. Once our brain learns to pay attention to the abundance of good things and rejoice, it will be able to ignore the frustrations that it often dwells upon. Happiness will then become a constant state of mind. Secondly, one should make repeated attempts to visualize how one's life would be without whatever one has at any given moment. This makes us value things, relationships and aspects of life that are often taken for granted. Thirdly, we should work on dissolving our ego. This can be done by repeatedly telling ourselves that individually we are too insignificant to be entitled to anything and whatever we have is through the grace of other sources. We must thank all those sources and make attempts to repay them. This attitude fills us with positive energy and makes our goals aligned towards the larger collective good. Although we are made in a certain way, the Divine has given us immense potential to rewire and transform ourselves.

One must be mindful of not letting passions block one's sense of rationality. While efforts should be applied towards pursuing one's passion, it's also equally important to be levelheaded and not get swayed so easily in that pursuit that one starts to compromise on other vital areas of life. You can truly enjoy the fruits of your passion when you're able to maintain a balance in life at the same time. We are truly relaxed when we drop the opinion of others. The more we work on ourselves, the less vulnerable we will be to outside forces that can dampen and destroy our passion. Neither failures, nor societal pressure, not discouragement or depression can affect us for too long. Through paying loving attention to all that arises, we learn to dissipate these forces and reclaim our true heritage of enthusiasm, confidence and commitment. Spirituality is really the journey of eliminating our false self and finding our true self. This means eliminating all the negative feelings that characterize our ego self and reclaiming our true nature of peace, love, joy, compassion and yes, passion.

'And the day came when the risk to remain tight in the bud was more pain full than the risk it took to blossom'

# OVERVIEW OF ACTIVITIES DONE IN DEPARTMENT

#### WORKSHOP CONDUCTED

Department of EEE Organized a Hands on Workshop on "Introduction to Microcontroller" on October 19, 2016 under the banner of IEEE student branch. 18 students have been participated in this workshop and get benefitted with hands-on practice. The gathering was addressed by Dr. R. Ramaprabha, Associate Professor, SSN-IEEE Student branch counselor. The event began at 10.30 am and ended at 03.30 p.m. The details are,

Conveners: Dr. R. Ramaprabha, Asso. Prof./EEE & Dr. M. Balaji, Asso. Prof./EEE

Student Coordinators: Mr. D. Kavin

Number of Participants: 18

Speaker: Ms. G. Ramya (Full-time Research Scholar, EEE/SSNCE)



#### TECHNICAL TALK

The IEEE -PELS, Madras Chapter in association with the Department of EEE, SSN College of Engineering, Chennai organized the Technical talk on, "Signal Processing applications in Power Engineering" in the EEE Seminar hall on **27.12.2016** at 9.30 a.m. The talk was delivered by

Speaker 1:Prof.Eliathamby Ambikairajah,<br/>BSc(Eng.), PhD, CEng, FIET, CPEng, FIEAust, MIEEE<br/>Head of School, Electrical Engineering & Telecommunications<br/>University of New South Wales, AustraliaSpeaker 2:Dr.Jayashree Ravishankar

School of Electrical Engineering & Telecommunications

University of New South Wales, Australia

The program began with welcome address by Dr.V.Kamaraj, Professor & Head and Dr.R.Seyezhai, Associate Professor introduced the chief guests. The talk covered the basic aspects of digital signal processing and the significance of analog to digital conversion circuits. The algorithms and techniques adopted for signal processing was discussed in a detailed manner. The facilities available in South Wales university was explained by the speaker. Moreover, the application of signal processing for micro grids was elaborated. Design of power electronic converters and control algorithm for DC micro grid was dealt. Around 100 students participated in the event.



#### FACULTY DEVELOPMENT TRAINING PROGRAMME

Faculty Development Training Program on "EE 6602 - Embedded Systems" was organized by Mr P. Saravanan, Assistant Professor, EEE during 12/12/2016 to 19/12/2016 in Department of EEE, SSN College of Engineering. There were 20 faculty members from various colleges across Tamilnadu participated in the program. The details of the program is given below.

**Day 1 (12/12/2016):** The training program objectives were introduced to the participants by Dr. V. Kamaraj HOD/EEE. He explained the introduction of the embedded systems and build process for the same. He also explained about the structural units. In second session Mr.P.Saravanan explained the memory management and elaborated the selection of processors and memory management. Third session was handled by Dr.M.Balaji with examples of embedded system. A case study of washing machine was done by Dr.M.Anbu selvi in fourth session.

**Day 2 (13/12/2016):** The first and second session was handled by Dr. M. Balaji and explained Timer, counting devices and watch dog timer. Session 3 and 4 was handled by Dr. M. Senthil kumaran and explained embedded real time control of electric drives and the interfacing of the Xillinx with Matlab.

**Day 3 (14/12/2016):** Dr. Premanand Chandramani discussed the different protocols for the embedded networking in session 1 and 2. The session s3 and 4 was handled by Mr. Balaji nagavel from Vestion Technical Centre. He gave a broad vision of the embedded systems in the automobile industry.



**Day 4 (15/12/2016):** Dr.K .Rathna Kannan From Embedded system lab Anna University, presented the latest trends in Embedded systems and the reconfigurable processors in the first and second session. In third and fourth sessions Dr.M.Balaji discussed about the significance of ARM processors and controllers in embedded systems and interface with matlab.

**Day 5 (16/12/2016) :** The sessions 1 and 2 was handled by Mr.P.Saravanan and he explains the Basic concepts of RTOS and various scheduling algorithm in the RTOS. The session 3 and 4 the participants were given the hands on experience in xilinx nexys 4 board to motor control application by Dr.M .Senthil kumaran.

**Day 6 (17/12/2016):** Mr.Arun kumar from CTS explained the Firm ware and the device driver in the first session and he also explained the IoT security for the connected devices in session 2. The session 3 and 4 was handled by Dr.S. Meyyappan associate professor from Annamalai University discussed the Network protocol standards for embedded systems.

**Day 7 (19/12/2016):** In first session Mr.P. Saravanan explained the concepts of RTOS with Vx-Works,RT linux and  $\mu$ C/OS-II. The second session the applications of the embedded systems were explained with multiple case studies by Dr. M .Anbu selvi. The participants presented their experience with the FDTP and the SSN College of Engineering in the third and fourth session.

# PROUD MOMENTS

Dr. M. Pandikumar was promoted to Associate Professor in October 2016.

We congratulate him.



# HONOURS

Dr.S.Tamilselvi and Dr.K.Usha have obtained guideship of Anna University.

Dr.Ranganath Muthu Prof/EEE was appointed as member of the Syllabus Sub-Committee for framing the Curricula and Syllabi for M.E. Control & Instrumentation Engineering and M.E. Control and M.E. Instrumentation Engineering to be offered in PG degree Programmes under R-2017 by the Constituent Colleges and Affiliated Institutions of Anna University, Chennai under the Faculty of Electrical Engineering in accordance with the Choice Based Credit System (CBCS) on 14.10.2016.

Dr.R.Seyezhai Asso.Prof/EEE has been appointed as editorial board member for the International Journal of Science and Engineering Applications (IJSEA) on 15.10.2016.

Dr.R.Seyezhai Asso.Prof/EEE has been appointed as Member of the Syllabus Sub Committee for framing the Curricula and Syllabi for M.E. Power Electronics and Drives, M.E. Electrical Drives and Embedded Control to be offered in PG degree Programme under R-2017 by the Constituent Colleges and Affiliated Institutions of Anna University, Chennai on 19.10.2016.

Dr.V.Rajini Prof/EEE is appointed as the nodal officer for National Institutional Ranking Frame work for 2017 on 19.10.2016.

Dr.R.Seyezhai Asso.Prof/EEE has been appointed as editorial board member for the International Journal of Engineering and Technology, IJET indexed in SCOPUS on 26.10.2016.

Dr.R.Ramaprabha Asso.Prof./EEE received certificate of "Excellence in Reviewing Papers" as an appreciation for the contribution in reviewing papers from International Journal of Power Electronics on 06.11.2016.

Dr.R.Deepalaxmi Asso.Prof/EEE has been nominated as a national scientific committee member in first international conference on "Power Engineering Computing and Control (PECCON-2017)" to be organized by School of Electrical Engineering (SELECT), VIT University, Chennai during March 2017.

Dr.R.Seyezhai, Asso.Prof/EEE was invited as external expert member for PG viva-voce examination for Power Electronics & Drives at Kongu Engineering College, Prundurai on 28.11.2016.

Dr.V.Rajini Prof/EEE uploaded National Institutional Ranking Framework( NIRF) data in webportal for National Ranking on 29.11.2016.

Dr.V.Rajini Prof/EEE and Dr.K.S.Vijay sekar submitted National ranking framework data for 2017 Ranking on 01.12.2016.

Dr.V.Rajini Prof/EEE, received the "Distinguished Scientist Award " By Venus international Foundation on 03.12.2016.

Dr.R.Ramaprabha Asso.Prof./EEE was awarded "Outstanding scientist award" for her contribution in the field of Solar Photovoltaic Systems in Annual Research Meet (ARM) 2016 by Venus International Foundation (Estd. u/s 3 of the Indian trusts act 1882 / ISO 9001:2008 certified) at Le Royal Meridien hotel, Chennai on 03.12.2016

Dr.R.Ramaprabha Asso.Prof/EEE has been appointed as external examiner by Anna University for the conduct of viva-voce examination for M.E Embedded System Technologies, Project phase I (DEEE, CEG Anna University on 05.12.2016.

Ms.M.Venmathi (Full-time Research Scholar) of Dr. R. Ramaprabha Assoc. Prof./EEE was awarded "Best Women Researcher Award" for her contribution in the field of EEE by the PEARL Foundation for Educational Excellence (Reg. No. 101/2015 under Indian trust act) at Fortune Pandian Hotel, Madurai on 10.12.2016.

Dr.R.Seyezhai Asso.Prof/EEE acted as Ph.D. viva-voce examiner for the Ph.D. oral examination for the candidate Ms.Anuradha held at Anna University, Chennai on 16.12.2016.

The final list of contestants for "IEEE India Council Outstanding Student Branch Award 2015" was announced. There are a total of 11 colleges from India who made it to the final round. Sri Sivasubramaniya Nadar (SSN) College of Engineering was one among them. Then a detail report of branch was asked & submitted by Dr.R.Ramaprabha, Asso.Prof/EEE, IEEE SB Counselor on 12.12.2016. Our college won First Prize & communicated through mail on Dec 17, 2016 by Prof.Suryanarayana Doolla, Vice Chair (Awards), IEEE India Council.

#### REVIEWS

Dr. N. Pandiarajan Prof/EEE reviewed a paper, "Renewable Energy Intermittency, Coal as a Base load Energy Source, and Greenhouse Gas Emissions" titled for "Renewable Energy" - Elsevier Publishing Campus on 01.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled, "SOLAR HOME SYSTEMS IN HO CHI MINH CITY: A promising technology whose time has not yet come" for "Renewable Energy" - Elsevier Publishing Campus on 01.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled, "An approach for efficient assessment of the performance of double auction competitive power market under variable imbalance cost due to high uncertain wind penetration" for "Renewable Energy" - Elsevier Publishing Campus on 01.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled, "Measuring reliability of hybrid photovoltaic-wind energy systems: A new indicator " for "Renewable Energy" - Elsevier Publishing Campus on 01.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled "Focusing on the right targets: What drives nonhydro renewable energy transition?" for "Renewable Energy" - Elsevier Publishing Campus on 11.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled "GHG-mitigation oriented and coal-consumption constrained in exact robust model for regional energy structure adjustment - a case study for Jiangsu Province, China" for "Renewable Energy" - Elsevier Publishing Campus on 17.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled "The Importance of Facades for the Solar Potential of a City" for "Renewable Energy" - Elsevier Publishing Campus on 21.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper titled –"Comprehensive analysis of the factors affecting the impact in development of the wind power industry in China" for "Renewable Energy" - Elsevier Publishing Campus on 25.10.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper for "Renewable Energy" - Elsevier Publishing Campus. Topic –"Comprehensive analysis of the factors affecting the impact in development of the wind power industry in China" on 01.11.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper for "Renewable Energy" - Elsevier Publishing Campus. Topic –"An approach for efficient assessment of the performance of double auction competitive power market under variable imbalance cost due to high uncertain wind penetration" Review 1 on 02.11.2016.

Dr. R. Ramaprabha Asso.Prof./EEE reviewed paper for International Journal of Power Electronics (Inderscience Publishers) on 08.11.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper for "Renewable Energy" - Elsevier Publishing Campus. Topic –"Measuring reliability of hybrid photovoltaic-wind energy systems: A new indicator" Review 2 on 09.11.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper for "Renewable Energy" - Elsevier Publishing Campus on the topic –"Dynamic rating of overhead transmission lines over complex terrain using a large-eddy simulation paradigm" on 18.11.2016.

Dr. N. Pandiarajan reviewed Prof/EEE a paper for "Renewable Energy" - Elsevier Publishing Campus. Topic –"Determination of an Economically-Suitable and Sustainable Standalone Power System for an off-grid town in Western Australia" on 01.12.2016.

Dr. Mrunal Deshpande reviewed a manuscript for International Journal COMPEL on 08.12.2016, 14.12.2016 and 26.12.2016.

Dr.V.Rajini Prof/EEE, reviewed two papers for TIMA 17, international conference on 08.12.2016.

Dr. N. Pandiarajan Prof/EEE reviewed a paper for "Renewable Energy" - Elsevier Publishing Campus. Topic –"Wind-speed modeling with long-term horizon and high-resolution time interval using reanalysis data, Principal Component Analysis, Fourier and Non-linear autoregressive neural network (NAR)" on 17.12.2016.

# MEETINGS OR SEMINARS ATTENDED

Dr.V.Rajini Prof/EEE attended the Energy researchers meet held on 03.10.2016.

Dr.R.Seyezhai Asso.Prof/EEE attended the Doctoral committee confirmation meeting for two research scholars at SRM University, Chennai held on 08.10.2016.

Dr.V.Rajini Prof/EEE attended the review of internally funded project meeting held on 13.10.2016.

Dr.R.Ramaprabha Asso.Prof/EEE attended IEEE day on 15.10.2016.

Dr.R.Ramaprabha Asso.Prof/EEE attended DC meeting at RMK Engineering College, Chennai on 14.11.2016.

Dr.R.Ramaprabha Asso.Prof/EEE attended DC meeting at VIT University, Chennai on 15.11.2016.

Dr.R.Seyezhai Asso.Prof/EEE attended the Syllabus sub-committee meeting for M.E. (PED) & Electrical drives & control at Anna University, Chennai held on 17.11.2016.

S.Malathy AP/EEE attended the one day seminar " Role of Power Electronics in Renewable Energy Systems" at MNM Jain Engineering College, Chennai on 18.11.2016.

Dr.R.Seyezhai Asso.Prof/EEE attended the Facilitation workshop conducted by DST at St.Peter's Engineering College, Chennai held on 23.11.2016.

Thiyagarajan V AP/EEE, attended FDTP titled "EE 6603 – Power System Operation and Control", organised by Power System Division, Department of EEE, College of Engineering Guindy, Anna University, Chennai conducted during 23.11.2016 to 30.11.2016.

Dr.R.Seyezhai Asso.Prof/EEE attended the Doctoral Committee Meeting for confirmation at Sathyabama University, Chennai held on 30.11.2016.

Dr.M.Devesh Raj Asso.Prof/EEE delivered an expert lecture on "real power - frequency control" of PSOC – FDTP at College of Engineering, Guindy, Anna University Chennai on 24.11.2016.

M.Tamilarasi (full-time research scholar) under the guidance of Dr.R.Seyezhai Asso.Prof/EEE participated the poster presentation titled, " Implementation of HBMO algorithm" for the SSN Doctorates day held at SSNCE on 1.12.2016.

Dr. R. Ramaprabha Asso.Prof/EEE attended National Conference on "SMART SUMMIT – 2016" (Science, Medicine, Agriculture, Research and Technology) organized by the PEARL Foundation for Educational Excellence (Reg. No. 101/2015 under Indian trust act) at Fortune Pandian Hotel, Madurai and she was awarded "Best Women Researcher Award" for her contribution on 10.12.2016

Mr.Thiyagarajan V, AP/EEE and Dr.R.Ramaprabha Asso.Prof/EEE attended the Faculty developmenttraining program titled "EE6602 - Embedded Systems", organized by the department of EEE, SSN College of Engineering, Kalavakkam held during 12.12.2016 to 19.12.2016.

Dr.R.Seyezhai/ASSP/EEE and Ms.D.Umarani/AP/EEE attended the short course on "Power Switch Modules for Sustainable Green Infrastructure" conducted by Distinguished Professor and Director (R&D), Prof. Krishna Shenai of NMAM Institute of Technology, Nitte as a part of the First International Conference on Sustainable Green Buildings and Communities (SGBC 2016) held at IIT, Madras on 18.12.2016.

# RESEARCH WORK

J.Anitha Roseline AP/EEE and Research Scholar (Reg No 1124399114) of Dr.V.Rajini submitted synopsis of her research work to Anna University on 04.10.2016.

Mr.V.Vasan Prabu, Research scholar of Dr.V.Rajini Prof/EEE, submitted synopsis of his research work to Anna University on 26.10.2016.

Dr.R.Ramaprabha Asso.Prof/EEE has presented her research activities and roadmap on 03.10.2016 at SSN Research center in Energy Researchers meeting.

Mr.A.Bharathi Sankar joined as Senior Research Fellow under the guidance of Dr.R.Seyezhai on 01.11.2016.

Ms.A.Chamundeeswari, research scholar of Dr.R.Seyezhai submitted her Ph.D. thesis on 10.11.2016.

Dr.R.Ramaprabha, Assoc. Prof./EEE has presented her research activities and roadmap on 28.11.2016 at SSN Research center in Energy Researchers meeting.

S.Malathy AP/EEE, presented the research activities in the Energy Meet at SSNRC on 28.11.2016.

Ms.Anitha Roseline AP/EEE, Ph.d scholar of Dr.V.Rajini Prof/EEE, submitted her thesis to Anna University on 09.12.2016.

Mr. K.J.Anoop, research scholar of Dr.V.Rajini Prof/EEE submitted his synopsis to Anna University on 15.12.2016.

Dr.V.Rajini Prof/EEE conducted Viva voce examination for Phase 1 Project of ME PED on 17.12.2016.

#### PAPER PUBLICATIONS

Mahadevan J, Venkatakrishnan G R AP/EEE, Rengaraj R Prof/EEE published a paper titled "Differential evolution algorithm with parameter adaptation strategy for optimal design of hybrid renewable energy system", Journal of Electrical Engineering, Vol.16, 3rd Edition, pp. 419 - 429, 2016. (Journal listed in Anna university Annexure I) Impact factor: 0.967 on 04.10.2016.

Siva Kumar A, Muthu Selvan N B Asso.Prof/EEE, published a paper titled, "Reduction of Source Current Harmonics in R and RL Load with Active Filter at Source End", Asian Journal of Research in Social Sciences and Humanities, Vol. 6, No. 10, pp. 298-310, October 2016. DOI NUMBER:10.5958/2249-7315.2016.01015.7, ISSN 2249-7315 on 12.10.2016.

P.Priya, G.Shabbeer Basha, S.V.Sujith Niranjan (III Yr.EEE, B) & Dr.R.Seyezhai, Asso.Prof/EEE, published a paper titled, "Investigation of SiC MOSFET Based Quadratic Boost Converter for Photovoltaic Applications", Int. Journal of Precious Engineering Research and Applications, IJPERA, ISSN : 2456-2734, Vol. 1, Issue 3,October 2016, pp.26-29 on 19.10.2016.

Murugesan Kullan Asso.Prof/EEE, Ranaganath Muthu Prof/EEE, Jebamalai Benny Mervin, Vijayenthiran Subramanian, published a paper titled, "Design of DSTATCOM Controller for Compensating Unbalances" in Journal of Circuits and Systems, Vol.7, No.9 July 2016, PP. 2362-2372 on 19.10.2016.

A.Bharathi Sankar (Full-time research scholar)& Dr.R.Seyezhai, Asso.Prof/EEE, published a paper titled, "Performance Analysis of Multilevel Inverter for BLDC drive application", Advances in Natural & Applied Sciences, 2016, special : 9 (7), pp.190-200, ISSN:1995-0772.(Indexed in SCOPUS) on 24.10.2016.

M.Praveen Kumar, M.Sudhakaran (Part-time research scholars), R.Seyezhai, Asso.Prof/EEE, published a paper titled, "Kinect Sensor based Human Fall Detection System Using Skeleton Detection Algorithm", International Journal of Electrical Engineering, SSRG, 2016, pp.22-27.ISSN No: 2348-8379 on 24.10.2016.

Dr.R.Seyezhai, Asso.Prof/EEE & M.Sudhakaran (Part-time research scholar), published a paper titled, "Modeling and Analysis of Variable Frequency Inverted Sine PWM Technique for a Hybrid Cascaded Multilevel Inverter", Journal of Circuits and Systems, July 2016,Vol.7, pp.2633-2650. (Updated Annex. -1) on 24.10.2016.

S.Hemapriya, M.Sudhakaran (Part-time research scholar), R.Seyezhai, ASSP/EEE, published a paper titled, "Implementation of Robust Industrial Machinery Predictive Maintenance and Control Using Modern Technology", International Journal of Electrical Engineering, SSRG, 2016, pp.22-27.ISSN No: 2348-8379 on 26.10.2016.

Dr.R.Ramaprabha, G.Ramya U.Ashwini and A.H.Fathima Humaira, published a paper titled, "Realization of a Photovoltaic Fed Sparse Alternating Current (AC)-Link Inverter", The Journal of Engineering Research (TJER) (ISSN: 1726-6009), Vol. 13, No. 2, pp. 149-159, TJER 2016. Scorpus Index: 0.15 on 02.11.2016.

Dr.R.Seyezhai Asso.Prof/EEE and V.Chamundeeswari (Part-time research scholar) published a paper titled, "An Approach towards Pulse Data Transmission Using Modified Negative Luo Converter (MNLC) for Telecoms", Circuits and Systems, 2016, 7, 2712-2728. (Updated List AU) on 10.11.2016.

Thiyagarajan V AP/EEE, published a paper titled "Comparative analysis of PWM techniques for Photovoltaic application with HERIC inverter" in Journal of Advances in Chemistry, Vol. 12, no. 16, pp. no. 4950-4955 on 10.11.2016.

Aashish Nikhil Ghosh, A. Ajay Rangan, Nikhil Mathai Thomas and Dr.V.Rajini Prof/EEE, published a paper titled, " A Novel Integrated Converter Based Hybrid System for Alternative Street Lighting" Proceedings of 2nd International Conference on Intelligent Computing and Applications, Advances in Intelligent Systems and Computing 467, Springer book series, pp 161-175. DOI 10.1007/978-981-10-1645-5\_14 on 12.11.2016.

Dr.V.Rajini Prof/EEE, Anoop J, published a paper on "Large Signal Modeling of DC-DC Converter with Multiplier Cells for High Voltage Generation" World Applied Sciences Journal 34 (10): 1414-1421, 2016,ISSN 1818-4952, DOI: 10.5829/idosi.wasj.2016.1414.1421 on 26.11.2016.

Dr.V.Rajini Prof/EEE, Abhitha memala, published a paper on "Parametric Method based Inter-Turn Incipient Short Circuit Stator Fault Detection of Induction Motor"Indian Journal of Science and Technology, *Vol 9(43), DOI: 10.17485/ijst/2016/v9i43/104668, November 2016* 

Nivedhitha, T., Sahithya, S., Vaishnavi, G. (passed out final year 2016 batch) and Dr.R.Seyezhai Asso.Prof/EEE published a paper titled "Investigation of High Gain Switched Capacitor DC-DC Converter For PV Applications", International Journal of Current Research Vol. 8, Issue, 11, , November, 2016.(ISSN:0975-833X) on 30.11.2016.

Dr.R.Seyezhai Asso.Prof/EEE, K.Deepak, R.Gowtham, T.Hariharan & Manimaran.(passed out final year 2016 batch), published a paper titled "Simulation and Implementation of e-cycle using BLDC drive", International Journal of Advanced research in basic engineering, science & technology, Vol.2, Issue-10, October 2016, ISSN -2395-695X,pp.1-12 on 30.11.2016. This paper received the best research paper award for the October issue and the project work was funded by SSN Institutions.

A.Bharathi Sankar (Research Scholar) & Dr.R.Seyezhai, published a paper titled "Implementation of adaptive fuzzy logic control based MPPT for photovoltaic based system", International Journal of U.e-service, Science and Technology, Vol.9, No: 10, 2016, pp.103-122. (Scopus Indexed) on 30.11.2016.

Aashish Nikhil Ghosh, A. Ajay Rangan, Nikhil Mathai Thomas and Dr.V.Rajini Prof/EEE, published a paper titled " A Novel Integrated Converter Based Hybrid System for Alternative Street Lighting" Proceedings of 2nd International Conference on Intelligent Computing and Applications, Advances in Intelligent Systems and Computing 467, Springer book series, pp 161-175. DOI 10.1007/978-981-10-1645-5\_14 on 12.11.2016.

Dr.V.Rajini Prof/EEE and Abhitha memala, published a paper titled, "Parametric Method based Inter-Turn Incipient Short Circuit Stator Fault Detection of Induction Motor" Indian Journal of Science and Technology, Vol 9(43), DOI: 10.17485/ijst/2016/v9i43/104668, November 2016 on 29.11.2016

G. Ramya, FT Research Scholar/EEE and Dr.R.Ramaprabha, Asso.Prof/EEE published a paper titled "A review on design and control methods of modular multilevel converter", International Journal of Power Electronics and Drive System (IJPEDS), Vol. 7, No. 3, pp. 866-873, 2016. (ISSN: 2088-8694) Scopus Index 0.24. on 03.12.2016.

Dr.R.Seyezhai ASSP/EEE and Ms.D.Umarani AP/EEE published a paper titled "Modeling and Control of Quasi Z-Source Cascaded H-Bridge Multilevel Inverter for Grid Connected Photovoltaic Systems", Elsevier Energy Procedia, Volume 90, Pages 250 – 259, DOI07-12-2016, ISSN: 1876-6102, SJR Factor: 0.38 on 07.12.2016.

T. Divya (PG Student) and R. Ramaprabha, published a paper titled "Switched LC Converter for Battery Backup Systems", Journal of Power Electronics and Devices, Vol. 2, No. 3, pp. 1-11 on 12.12.2016

M.Karthikeyan and Dr.R.Rengaraj ASSP/EEE published a paper titled, "Mutual Impedance based Protection Scheme for Series Compensated Transmission Line" Proceedings of the International Conference on Electrical, Electronics, Instrumentation and Computer Communication (E<sup>2</sup>IC<sup>2</sup>), 15<sup>th</sup> December, 2016, Page .no: 15-20 on 15.12.2016.

M.Karthikeyan and Dr.R.Rengaraj ASSP/EEE published a paper titled, "Fault Classification and Location of an UPFC Compensated Transmission Line using Extreme Learning Machine" Proceedings of the International Conference on Electrical, Electronics, Instrumentation and Computer Communication (E<sup>2</sup>IC<sup>2</sup>), 15<sup>th</sup> December, 2016, Page .no: 31-26 on 15.12.2016.

Dr.R.Seyezhai, ASSP/EEE & R.Mahalakshmi (II YR.M.E.,PED) published a paper titled, "Review of Integrated Power Factor Correction (PFC) Boost converter topologies for Telecommunication systems", International Journal of Advanced research in basic engineering, science & technology, Vol.2, Issue-1, November 2016, ,pp.13-23. ISSN -2395-695X on 20.12.2016.

Dr.U.Shajith Ali, Asso.Prof/EEE published a paper titled "Z-source DC-DC Converter with Fuzzy Logic MPPT Control for Photovoltaic Applications" in Elsevier Energy Procedia, Vol.90, pp. 163-170 on 20.12.2016.

A.Sivakumar and Dr. N.B. Muthu Selvan, Asso.Prof/EEE published a paper titled, "Harmonic Analysis in Induction Motor Drive with Boost Converter", International Journal of Printing, Packaging & Allied Sciences, ISSN: 2320-4387, Volume: 4, Issue: 2, December 2016. (Annexure 1 of Anna University) on 20.12.2016.

Augusteen and Dr.R.Rengaraj ASSP/EEE published a paper titled, "Economical Operation of Thermal Generator Involving Transmission Loss Using Noval Capra Optimization Algorithm", Journal of Electrical Engineering: Vol.16, No.4,2016, pg.no.179-189. (Journal listed in Anna University Annexure I) Impact factor: 0.967 on 26.12.2016.

## PAPER PRESENTATIONS

Thiyagarajan V., AP/EEE, presented a paper titled "Modified PWM technique to minimize THD for Cascaded H-Bridge Inverter" in "International Conference on Emerging Trends in Electrical, Electronics and Communication Systems (ICEEECS'16)" at Anna University (BIT Campus), Tiruchirappalli from 24.10.2016 to 26.10.2016.

M.Karthikeyan and Dr.R.Rengaraj Prof/EEE, presented a paper titled "Fault Location in Medium Voltage DC Shipboard Power Systems", 11th National Conference on Science, Engineering and Technology (NCSET'16), Nov 7 & 8, 2016, VIT University, Chennai, pg.no.337-342 on 07.11.2016.

J.Anitha Roseline AP/EEE, M.Senthil Kumaran Asso.Prof/EEE and V.Rajini Prof/EEE presented a paper titled "A New Slope Suppression Technique to Compensate for Voltage Unbalance in Multilevel Inverters" in IEEE TENCON 2016, Technologies for Smart Nation held at Marina Bay Sands, Singapore during 22-25 November 2016.

Dr.R.Seyezhai Asso.Prof/EEE and Mr.A.Bharathi Sankar (SRF) presented a paper titled "Reliability Investigation of Electric Vehicle", in the Third SRESA National Conference on Reliability and Safety Engineering (SRESA-NCRS 2016) jointly organized by Society for Reliability and Safety and Department of Mathematics, SSN College of Engineering, Chennai from 01.12.2016 to 03.12.2016. This received the Best Paper Award.

Dr.R.Seyezhai Asso.Prof/EEE and Ms.D.Umarani AP/EEE presented a paper titled "Reliability Assessment of Two Phase Interleaved Boost Converter", in the Third SRESA National Conference on Reliability and Safety Engineering (SRESA-NCRS 2016) jointly organized by Society for Reliability and Safety and Department of Mathematics, SSN College of Engineering, Chennai from 01.12.2016 to 03.12.2016.

Dr.R.Ramaprabha Asso.Prof/EEE, S.Malathy AP/EEE, R.Srinivas and Siddharth Mohan (UG Students), presented a paper "New Reduced Part Count Topology For Multilevel Power Conversion" in International Conference on Emerging Trends in Engineering & Technology (ICETET 2K16), Arunachala College of Engineering for Women, Manavilai, Vellichanthai, Kanyakumari, Dec 09-10, 2016.

Dr.R.Seyezhai Asso.Prof/EEE and Ms.D.Umarani AP/EEE presented a paper titled "Investigation of Reliability Aspects of Photovoltaic Quasi Z-Source Inverter", in the International Conference on Design and Manufacturing (IConDM 2016) organized by Indian Institute of Information Technology, Design and Manufacturing (IIITDM), Kancheepuram on 16.12.2016 and 17.12.2016.

The following full-time PhD scholars under the guidance of Dr. R. Ramaprabha (Assoc. Prof.) presented their papers in SSN Doctorate Scholars Day held on 01.12.2016.

Ms.M.Vijayalakshmi presented the paper titled "Integration of AC Architecture in DC Micro grid" –Oral presentation

Ms.SP.Chitra presented the paper titled "Development of Standalone Modular Interactive Solar Photovoltaic System" –Poster presentation

Ms.G.Ramya presented the paper titled "Investigation On MPPT Techniques Under Partial Shaded Conditions" –Oral presentation –*won best presentation appreciation* 

# PROJECT PRESENTATIONS

Dr. R. Ramaprabha Asso.Prof/EEE and S. Malathy AP/EEE presented the progress of the internally funded project titled "Design and Development of Efficient Building Integrated PV System under Partial Shaded Conditions" before the review committee on 13.10.2016.

Ms Alagu Dheeraj AP/EEE and Dr.V.Rajini Prof/EEE presented the progress of the internally funded project titled "Isolated Active Clamped Forward DC-DC Converter for Microprocessor" before the review committee on 13.10.2016.

# GUEST LECTURES

Dr Ranganath Muthu Prof/EEE delivered a Guest Lecture and was Judge for a Technical Session at the Two Day National Technical Symposium at Golden Valley Integrated Campus, Faculty of Engineering, Madanapalle, Andhra Pradesh on 21.10.2016.

Dr.R.Ramaprabha Asso.Prof/EEE delivered keynote speech and chairing a technical session in 11<sup>th</sup> National Conference on Science, Engineering & Technology (SET) at VIT University, Chennai Campus on 07.11.2016.

Dr.R.Ramaprabha Asso.Prof/EEE delivered an Expert Lecture on "Role of Power Electronics in Solar Photovoltaic Systems" in One Day Seminar on Role of Power Electronics in Renewable Energy Systems at MNM Jain Engineering College on 18.11.2016.

V.Thiyagarajan AP/EEE, delivered a guest lecture titled "Load Frequency Analysis of Two Area System" in a FDTP titled "EE 6603 – Power System Operation and Control", organised by Power System Division, Department of EEE, College of Engineering Guindy, Anna University, Chennai on 26.11.2016.

Dr.R.Seyezhai Asso.Prof/EEE delivered a Guest Lecture on, "Power Converters for Wind Energy Systems" for the FDP on Power Electronics for Renewable Energy Systems at GKM Engineering College, Chennai on 29.11.2016.

Dr.M.Devesh Raj Asso.Prof/EEE delivered an expert lecture on "Stand alone operation of fixed and variable speed wind energy conversion systems solar system-Grid connection Issues -Grid integrated PMSG" of Power Electronics for Renewable Energy Systems – FDTP at Velammal Institute of Technology on 08.12.2016.

Dr.R.Ramaprabha Asso.Prof./EEE delivered lecture as Resource person on 23.12.2016 in Faculty Development Programme on " EE 6009 –Power Electronics for Renewable Energy Systems" held during 22-24, 2016 at Rajalakshmi Institute of Technology, Chennai.

Dr.R.Seyezhai Asso.Prof/EEE inaugurated the Faculty Development Program on , 'Power Electronics for Renewable Systems" at Tagore Engineering College, Chennai and delivered a guest Lecture on, " Role of Renewable energy systems & solar PV" on 29.12.2016.

# INTERNALLY FUNDED PROJECTS

Internal Faculty funding for the project titled, "Design and development of switched reluctance motor drive with minimum torque ripple" has been sanctioned for Dr.Mrunal Deshpande Asso.Prof/EEE on 27.10.2016.

Internal funding for the project titled, "Embedded switched Z-source inverter for photovoltaic application" has been sanctioned for D.Kavin, B.Arun Prasanth and K.Agil (Third Year students) for the duration of a year under the guidance of Dr.R.Ramaprabha Asso.Prof/EEE on 27-10-2016.

Internal funding for the project titled, "Investigation on Performance of modified reduced switches 11 level inverter for standalone Photovoltaic system" has been sanctioned for M.Kanimozhi (Second Year ME) for the duration of a year under the guidance of Dr.R.Ramaprabha ASSP/EEE on 27-10-2016.

Internal funding for the project titled, "Controller implementation of single phase photovoltaic inverter for grid connected system" has been sanctioned for M.Mohana Krishnan (Second Year ME) for the duration of 9 months under the guidance of Dr.R.Ramaprabha Asso.Prof/EEE on 27-10-2016.

Internal funding for the project titled, "Curve tracer for photovoltaic panels using weighted resistive network" has been sanctioned for S.Priyadarshini, K.S.Swaathishree and S.Swathi (Third Year students) for the duration of 8 months under the guidance of Dr.S.Malathy AP/EEE on 27-10-2016.

Internal funding for the project titled, "A method to mitigate accidents by sensing heart beat rate of a person" has been sanctioned for B.V.Arjun, B.Mirudhulla, D.Nijandhan and R.S Pavethra (Third Year students) under the guidance of Dr.M.Balaji Asso.Prof/EEE on 27-10-2016.

Internal funding for the project titled, "Design and Implementation of Fault Tolerant Converter Topology for switched reluctance motor Drive" has been sanctioned for S.Bavani (Second Year, ME (PED)) under the guidance of Dr.M.Balaji Asso.Prof/EEE on 27-10-2016.

Internal funding for the project titled, "Analysis and design of soft-Switching converter for switched Reluctance motor drive" has been sanctioned for K.A.Akash, T.Aravinthraj, S.R.Dharshini and B.V. Arjun (Third Year students) under the guidance of Dr. Mrunal Deshpande Asso.Prof/EEE on 27-10-2016.

Ms.S.Krishnaveni AP/EEE and Dr.V.Rajini Prof/EEE have received the sanction letter for the project titled " High voltage pulse generator based on DC-DC converter for PEF food processing" through Internally Funded Faculty Project by SSN trust on 01.10.2016.

Dr.R.Seyezhai Asso.Prof/EEE and Ms.D.Umarani AP/EEE received the Internal staff funding for the project titled, "Design and Control of Quasi Z-source Inverter for PV applications" from the President, SSN Institutions on 01.11.2016.

The project proposal titled "Modeling and implementation of impulse current measurement circuit" for Rs.20, 000/- submitted by D.Janani, B.Kaviya (Final year EEE A) and S.Aishwarya, S.Dharshini Bala (Third year EEE A) under the guidance of Dr.R.Deepalaxmi (Asso.Prof/EEE) has been selected under student research project proposal funding scheme in SSNCE on 27.11.2016.

V. Aishwarya (III Year), C. Kavitha (III Year)&R. Kaviya (III Year) received the sanction letter for the student project titled, " Design and implementation of on board battery charger for plug-in hybrid vehicles" under the guidance of Dr.R.Seyezhai, ASSP/EEE with financial support from SSN Institutions on 01.12.2016.

Anuj Kumar (IV-Year), R Aravinth (IV-Year), A Arun Kumar (IV-Year) &V. Kavicharkravarthy (IV-Year) received the sanction letter for the student project titled, "High performance interleaved boost converter for solar LED street lighting applications" under the guidance of Dr.R.Seyezhai, ASSP/EEE with financial support from SSN Institutions on 01.12.2016.

S. Harika (II-Year M.E., PED) received the sanction letter for the student project titled, " Investigation of Interleaved voltage source inverter for Photovoltaic Applications" under the guidance of Dr.R.Seyezhai, ASSP/EEE with financial support from SSN Institutions on 01.12.2016.

R. Mahalakshmi (II-Year M.E., PED) received the sanction letter for the student project titled, " Design and implementation of a fuel-cell based backup system using integrated boost converter for telecoms " under the guidance of Dr.R.Seyezhai, ASSP/EEE with financial support from SSN Institutions on 01.12.2016.

V.K. Vishwhak (II-Year M.E., PED) received the sanction letter for the student project titled, " Solar powered electric trolley using BLDC drive "under the guidance of Dr.R.Seyezhai, ASSP/EEE with financial support from SSN Institutions on 01.12.2016.

# IN-PLANT TRAINING

#### <u>EEE B:</u>

#### PRASHAATH

Interned at Lucas TVS Ltd, Padi and observed the main assembly and sub assembly of different kinds of motors (auto electrical components) manufactured in the company.

Interned at TNEB, Anna Nagar and visited substations and studied the various power system components used for high power transmission systems and visited two industries in the process and studied the calculation of harmonics generated and filter circuit used to remove the same.

#### VAGEESH

Interned at IIT-Bombay under the supervision of Prof.Vivek Agarwal on the project titled "Non Linear Control of Single Phase Grid Connected Inverters" and "Simulation and Hardware Implementation of DC-DC Converters and Maximum Power Point".

#### SHRUTI SRIRAM

Shruti did internship at the RnD side of a ministry level project on solar energy development and DC power. Work done there include 'uninterrupted DC power module', 'inverter less system', commercial Dc product development and research worked under Prof. Ashok Jhunjhunwala and his team.

#### **ROSELYN JOSE**

Did internship in a startup called Nappinnai, they make electric scooters. also did internship in Flextronics and an inplant training in Lucas TVS

#### SIVARAMAN

Interned at Sai Aero Tech, Chennai where he worked as an embedded system developer and developed several modules for a Quad copter.

Interned at Omnipresent Robotics, Delhi where he worked as a computer vision developer and developed several modules for a video analysis software used to increase the work efficiency in shipping warehouses.

# PLACEMENT DETAILS

RAMKI.R	RENAULT NISSAN	
ROHIT RAO K P	ZOOMRX	
SHREERAMAN A K	GO FRUGAL	
SHREESHA R	MUSIGMA	
SHREYA S	EY GDS	
SHRILAKSHMI P	L&T INFOPATH	
VENKATESH P	MAVERICK	
RAMALINGAM S	JOHNSON CONTROLS INDIA PVT LTD	
S SHREENISHKALA	JOHNSON CONTROLS INDIA PVT LTD	
PAVITHRA B	NOKIA	
SANGEETHA T V	NOKIA	
SOWMYA J	BANK OF AMERICA	
VEENA S	DOW CHEMICALS	
ANAND T	MYTRAH ENERGY	

# BULK PLACEMENT

CONPANIES	EEEB	EEEA
CTS	28	18
ACCENTURE	23	19
INFOSYS	16	19
WIPRO	9	4

# REDEEMED GIZMOS

The folks of current era have outperformed all their progenitors in the sense that they have been able to devise the displacement for any route, blankly they just wobble around for shortcuts, hesitating to decipher the actual distance. If I needed to prepare an electronic project, giant *Google* would suggest me 69,60,000 results, what matters is how many I know among them, apart from the basic electromagnet.

Flash freeze photography is one such technique, which freezes those delicate moments that doesn't even last for more than a second, in your cameras. These devices can be built to get close to high-speed photography using a simple and inexpensive technique can be devised with the combination of DSLR camera, a slave flash, and an Arduino Uno. That breathtaking shot is now in a hard copy format!!

The key here is to control the firing of the flash. In this project, we use An Arduino Uno to fire an external flash when a specific external event is sensed. Almost any external sensor can be used as the trigger event for the flash. Here, we will use two sensors, a force-sensing resistor and a sound sensor, to detect the external event of interest.

A phototransistor stops conduction when a interrupting medium like black soot interfaces it, using this as the basic principle, an optical smoke alarm is built around opto-interrupter MOC7811 (IC1) and dual opamp LM358 (IC2). An optical smoke detector is no new but some additions to it with pre indicative alarm and informing on your phones rather than ringing an alarm would be the advancement. This could involve using a raspberry pi3 or Arduino Uno to enhance the interconnectivity of the device.



Serial data communication is by far the most discussed and constantly improvising topic. Manchester Encoding is a technique that has been in practice for all secured data transmissions. Why not adopt the basic methods like RF data link or other serial communication link for a digital data transfer? The mentioned methods have certain faults like synchronization- the receiver doesn't know when exactly to sample the signal and the demodulated audio signal can be delivered to the speaker without explicit interpretation of data on the receiver side.

Also Digital data can include long, uninterrupted sequences of ones or zeros, hence require an appropriate digital coupling

Manchester encoding offers a remedy to these two limitations. It is a simple digital modulation scheme that does two things: 1) ensures that the signal never remains at logic low or logic high for an extended period of time and 2) converts the data signal into a data-plus-synchronization signal.



Notice also that a logic-high bit always corresponds to a high-to-low transition, and a logic-low bit always corresponds to a low-to-high transition

By, Ramya Rathna Manjula (2<sup>nd</sup> Yr. B)

# DO IT YOURSELF!

# BLUETOOTH CONTROLLED ARDUINO CAR

By, Shabbeer Basha (3rd Year B)



#### REQUIREMENTS

- 1. Arduino Uno
- 2. Car chassis
- 3. Motor driver (L293D module)
- 4. Bluetooth module
- 5. Motors -2
- 6. Castor wheel
- 7. Jumper wires
- 8. Batteries

#### PROCEDURE

1. Connect the wires as in the circuit diagram.

2. The motor driver is used to drive the motor in clockwise and anticlockwise direction based on command given through processor.

3. The Bluetooth module is connected to the Serial receiving terminal (RX).

4. An android app needs to be downloaded in order to send the data through Bluetooth.

5. The Arduino code is for moving the car forward and to stop it.

#### CODE

```
char data = 0; //Variable for storing received data
```

void setup()

{

}

```
Serial.begin(9600); //Sets the baud for serial data transmission
```

```
pinMode(7,OUTPUT);
```

```
pinMode(8,OUTPUT);
```

```
pinMode(9,OUTPUT);
```

pinMode(10,OUTPUT);

pinMode(11,OUTPUT);

pinMode(12,OUTPUT);

pinMode(13,OUTPUT);

#### void loop()

```
{
```

```
if(Serial.available() > 0) // Send data only when you receive data:
```

#### {

```
data = Serial.read(); //Read the incoming data & store into data
Serial.print(data); //Print Value inside data in Serial monitor
Serial.print("\n");
if(data == '1') // Forward
{
digitalWrite(7,HIGH);
digitalWrite(8,HIGH);
digitalWrite(9,HIGH);
```

digitalWrite(10,LOW);

digitalWrite(11,HIGH);

```
digitalWrite(12,HIGH);
```

digitalWrite(13,LOW);

```
}
```

```
else (data == '0') // Stop
```

digitalWrite(7,LOW); digitalWrite(8,HIGH); digitalWrite(9,HIGH); digitalWrite(10,LOW); digitalWrite(11,HIGH); digitalWrite(12,HIGH); digitalWrite(13,LOW);



}}



# ALUMNI TALK

**Disclaimer**: This article isn't meant for the faint of heart, pregnant women or children below 16 years. If you are any of the above, don't read further. If not, you're good to go.

When I was first asked to write an article, I wasn't sure what this article would cover. It's probably what they call as a writer's block. So here I am, staring at the screen thinking what I could possibly write that might make your read enjoyable while you're having your morning cup of coffee wrapped in a blanket while the cold air hits you.

So here, it goes

You, yes you, if you're reading this, you have come a long way: faced many challenges, crossed many obstacles, made friends along the way, lost some in the process and here you are now. This isn't the end though, my friend, this is just the beginning. A long road awaits you. A road that remains untraveled. It's alright to be scared. It's okay to fail. However, you need to make peace with it and move on, for denial is always the first step to failure and once you cross that phase and make peace with it, you're closer to success.

The world is scary. Yes, it is. When you're in college, you remain in a much protected environment and everything goes smooth for its planned and there exist no uncertainties. Everything is expected, like the planned trips that never happen, the unplanned ones that become a success. Once you're past that phase and enter the corporate world, things go haywire.. Things get overwhelming. It feels that the whole world has crumbled and you have to carry the weight on your shoulders. There may be days when things aren't what they were meant to be. There may be times when people will let you down, make you doubt yourself. It's those days and times when you must remind yourself that you're better that them and move on.

Sometimes I wish someone had given me a guide book to the real world. Sadly, no such thing exists. It's like when you buy a new appliance with no user manual and you have no idea how to operate it. That's how it's going to be out there. Be prepared.

How to prepare, you ask? Never lose hope come what may. It's alright if you fall for you'll learn to pick yourself up (I'm sure most of you know the reference). That said, there are a few things that you can do before you leave your protected sphere of life and enter the world of uncertainties. If you already know where you are going to be in the coming months, prepare for it. Learn new things that can be useful in future. Talk to people; build contacts and connections for who knows, they might come in handy when you need the most. Get more insight about the path you plan to take for you wouldn't be getting there without a manual as you would be one. Always believe in yourself in any and all circumstances for you're the one going to being in the change. Never lose hope for the light at the end of the tunnel is bright.

Siddharth Mohan. (2016 passed out)

# EDITORIAL TEAM

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