

The eMITers gazette

Department of Electronics and Communication
Engineering

Maharaja Institute of Technology Mysore

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VISION

"To be recognized by the society at large as offering Value based Quality Education to groom the next generation entrepreneurs, leaders and researchers in the field of Electronics and Communication to meet the challenges at global level"

MISSION

1. To groom the students with strong foundations of Electronics and Communication Engineering and to facilitate them to pursue higher education and research.
2. To educate and prepare the students to be competent to face challenges of the industry/society and /or to become successful entrepreneurs.
3. Provide ethical and value-based education by promoting activities addressing the societal needs.
4. Enable students to develop skills to solve complex technological problems of current times and also provide a framework for promoting collaborative and multidisciplinary activities.

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HOD MESSAGE



Noble Laureate, Mr. Kofi Anann, Secretary General of United Nations said "**Education is an instrument with immense power to transform. On its foundation rest the cornerstones of freedom, democracy and sustainable human development**". We at MIT ECE department strive hard to bring that into the focus for our students.

It has been a very eventful year with lots of activity out of our ECE department and gives me solace that the events are recorded well by this third edition of the news letter of **EMITERS** is taking shape. Department of ECE, since its inception in 2007 has been constantly striving to better itself and has come a long way with various activities both curricular wise and co-curricular wise. Today department is vibrant with more than 34 staff (teaching and non teaching) and has 3 PhD holders along with more than 10 faculty pursuing PhDs, and two at the cusp of completing their PhDs. Each and every faculty has a minimum of M Tech and are encouraged to pursue their PhDs on their topics of interest. Lots of research papers have been published, encouraging final year students to publish their project work.

The department started the year with the Fresher's day, which has been now become a defacto standard across the college, and are planning an alumni meet. Our department Emitters Utsav was conducted with various activities such as Debates, Quiz, sports, etc and was well represented by the students of all the years. Newsletter committee is working to make this a great success, I wish them all the best. As always, the newsletter will be focused towards bettering the student experience at ECE of MIT.

Doctorate Awardee- Mr. Balakrishna K.



The University of Mysore (UoM), has awarded Ph.D in Electronics to **Balakrishna K** s/o Kempegowda (Retd, Superintend, RTO Office) and Pramila for his thesis "**A Novel WSN Application for Prescriptive Agriculture**" submitted under the guidance of **Dr. Mahesh Rao**. Balakrishna K received his BE and M.Tech Degree from the VTU University, Karnataka, India and currently working as Asst. Professor at Maharaja Institute of Technology Mysore.

Farmers invest thousands of rupees on their farm field every year, but there is no guarantee of getting the expected returns; they sometimes even lose their investment. Agriculture is also becoming more integrated with the agro-food chain in the nation, while increasing population, decreasing land size; environmental concerns, food safety and quality are impacting the productivity of this sector increasingly. Agriculture is facing new challenges to meet the food demand of high-quality produce for a growing population while minimizing the cost to the farmers. The technology adopted in farming has the potential to contribute to sustainable farming systems, while decreasing the input costs, reducing the wasteful use of natural resources such as water, soil conservation, balanced nutrients usage, etc.

Research work carried here is the utilization of Wireless Sensor Network (WSN), Artificial Intelligence Neural Network and Image Processing came up with a solution of Precision Agriculture. The enforcement of this Precision Agriculture leads to a new domain called Prescriptive Agriculture. This research work benefits the farmers in

- * Optimizing the precise time of irrigation required for the horticulture crops depending on its growth stages, environmental parameters collected from WSN devices, inter and intra field variability's of a farm field with the plant.

- * Applying precise ratios of nutrient based on the Back Propagation Neural network based on soil properties and plant growth stages. Also, estimating the nutrients saturation time and its release time based on the mathematical model. This helps the farmers to apply the proper ratio of nutrients and also control its nutrient release time.

- * Precautionary measures to cure leaf diseases by identification of the specific leaf diseases using Image processing technologies. This helps the farmers to grow a healthy plant to get better productivity.

- * Finally, the communication model has been designed by integrating the WebHost Server with Way2SMS to decimate the information to farmers. This helps the farmers in taking measures at their farm field.

This research was supported by the Government of Karnataka, Department of Agriculture [Grant number 2401-00-001-1-01-103] and Maharaja Research Foundation. This work was supported in the installation of WSN devices and coordinating farmers by SKDRDP (Sri Kshethra Dharmasthala Rural Development Project), whose support was backbone in collecting data from farmers.

FACULTY DEVELOPMENT PROGRAM



The inaugural ceremony of the 5 days Faculty Development Program on “Evolution of research techniques, tools & commercialization aspects”, commenced with an invocation song followed with the lighting of the lamp by the group of dignitaries - Dr. K. Chidananda Gowda (Key-note speaker), Dr. D. S Guru (Chief guest), Dr.H. K Chethan (Joint secretary, MET), Dr. B. G. Naresh Kumar (Principal, MIT Mysore), Dr. Mahesh K Rao (Head, Department of ECE), Dr. Ravichandra (Convener of the FDP). Prof. Santhy Ajish formally welcomed all the dignitaries present on the dais and participants from various colleges & colleagues. Dr. Ravichandra , the convener of the FDP,gave a preface about the FDP and its aims.

Being a researcher requires inspiration and constant dedication & to inspire young researchers we had Dr K Chidananda Gowda who correlated multidisciplinary research, related fields and how they are interconnected and the skills and willingness required by a researcher. He motivated everyone to actively participate in the workshop to get benefited.

In his address, Dr. D. S. Guru briefed the importance of the topic and wished for the success of the workshop. In the end Prof. Manasa M G, offered the vote of thanks to all. She thanked all the invited guests and participants for gracing the occasion by their solemn presence. She also thanked MIT for all kind of facilities to conduct such workshop in the college.



Session 1: Research and Documentation - by Dr D S Guru

The core objective of the workshop was to equip the research scholars with set of skills and potentiality to undertake the research very effectively and to turn completed research into publishable material of high quality in the form of articles, journals, books and commercialization with industry collaboration.

Session 2: Problem Formulation and Mathematical Reasoning- by Dr. Sudarshan Patil K

The session was headed by Dr. Sudarshan Patil Kulkarni (Dr. SPK) from SJCE, Mysuru. Dr. SPK spoke about the epistemology of science, the need for SWOC analysis and extensive literature survey during problem formulation for engineering research indicating the researchers to identify the performance metrics, availability of the required analytical tools and concentrate on publications having very high impact factor along with more number of citations.

Session 3: Literature Review-by Dr Solomon Bobby

The session was delivered by Dr. Solomon Bobby Selvaraj from Vellore Institute of Technology, Tamil Nadu. Dr. Bobby commenced his interactive session by defining research as "Searching the known through unknown" followed by expanding Ph.D as "Patiently Heading for Degree". Dr. Bobby enlightened about the importance of reviewing the literature in a systematic way and categorizing the various literatures based on Methodology, Technology, Materials, Properties and Tools which will ease the referencing of an article. Later on Dr. Solomon channelized the session towards the basics and format of quoting the statement of the problem for the research being conducted and highlighted the key characteristics of the problem statement.

Session 4: Panel Discussion on 'Ethics in Research'

Panelists: Dr. M S Suresh, Former Principal and Dean BNMIT, BENGALURU Dr. Rajeshwar Mathe, Senior Principal Scientist, CFTRI, MYSORE Dr. K A Raveesha, HOD, Faculty of Life Sciences, JSS ACADEMY

Moderator: Dr. Mahesh K Rao, HOD, Dept of ECE, MIT MYSORE Human beings are social animals. We like to be bounded by certain rules and regulations to lead a productive and peaceful life and to be social. Technology isn't an industry, it's a method of transforming the culture and existing systems and institutions. Technology is advancing at a rapid pace and the associated parts of the society has not evolved to that level. Like law, medicine, etc, are practices, which involve requirements of ethical & gives those fields a fluency in ethical practices.

Session 5: Latex Hands On- by Dr. Yathisha L

Latex is a high-quality typesetting system, it includes features designed for the production of technical and scientific documentation. This session favored the participants to understand how to use Latex and bunches of reasons why Latex is better than MS Word for research writing. Dr.Yathisha .L successfully explained the Creation of Document, Typesetting Text [Ex: Bold, Newline, Italics, Underline etc.], Fonts, Alignments, Equations, Tabular Columns, Attaching Images, generation of all kind of indices, bibliography and cross references etc., with Latex.

Session 6: Mathematics and Engineering research- by Dr.K.S.Mallesh

Dr.K.S.Mallesh addressed the participants regarding the concepts of Physics, Quantum Field Theory and mathematical physics. His talk efficiently presented the relationship between Physics and mathematics. This session also gave some ideas for converting the concepts of physics into mathematical representations.

Session 7: Commercialization Aspects of Research - Industry perspective by Mr Venkataramana Y

Mr. Venkataramana started his talk stating the history of L&T. The company was founded in 1938 by Danish engineers is now leading in Technology Services, Finance, Heavy engineering systems, machinery & industrial equipment, Building and factories Products, Infrastructure and power fields. The Commercialization strategy was explained considering a Model Based Design for Embedded Development, a Project in which Noise cancellation was a great challenge. The various phases of the product development cycle like- Concept Development, Scenario Creation, Product concept plan, Intellectual property were elaborated. The question on how does the product align with company's core business was explained.

Session 8: Commercialization Aspects of Research - by Dr. K. R. Prakash

The former special officer and In-charge of Robotics laboratory called Center for Automation Technology Center for Research in Robotics & Controls at National Institute of Engineering, Mysuru explained the strategies and approaches to Achieve a distinct position amongst the engineering colleges in the country by providing world-class advanced training and education in science, engineering and industry-relevant technology and enhance the research capability.

Session 9: Bridging the gap between Industrial and Academic Research - by Dr. Shyam Vasudeva Rao

A renowned academician and Entrepreneur has worked at Philips Innovation Center as Innovation Manager and Technical Director for CE and Healthcare 2004-2010 Stared Forus Health, MYMO wireless in 2010, Was Technical Director for Maastricht University Medical Center, the Founder RenalyX and EHE started in 2012, the Founder Rx DHP – a platform for Digital Health Care provisioning : 2017 and has Filed 24 patents, 4 US Patent Grants and 30+ publications. He presented a talk on Commercialising Academic research.



PLACEMENT TRAINING

On the urge of providing the students of Maharaja Institute of Technology Mysore a better valued placement, a five day training event was conducted for the students of 6th semester and 4th semester of ECE under the co-ordination of Mr. Guruprasad L., Assistant Professor, MIT Mysore headed by Dr. Mahesh Rao , prof and Head of department ECE, MIT Mysore by the expert trainers from RIIIT.

The event was organized from 28th January to 2nd February 2019. The students were addressed by the Dr. Venkatesh S.V., CEO and MD, RIIIT who really enthralled each and every student under the roof by his words and a story of his own in a passive voice as putting himself into the third person context. The training was based on the basics of C, C++ and Java Programming and students also enjoyed the hands on programming skills. .

The agenda for the 6th semester students was based on technical stealthiness for the technical round interview. The agenda for 4th semester students was based on the aptitude and soft skills. The topics covered in aptitude training were LCM, HCF, Dividibility rule, Remainder Theorem, NUmber Systems, Calendars, Clocks, Blood Relationship, Simple Intrest, Compound interest< Permutation and Combination. Syllogism, Time , Speed ,Distance and Work.

The training program was concluded with a quick mock test which helped the students rate themselves where they stand in an interview process.

EMITER'S UTSAV



EMITER'S UTSAV' is the department Fest of Electronics and Communication Engineering at Maharaja Institute of Technology Mysore. This was initiated in the year 2017-18 to promote and encourage the students in various extra-curricular activities.



'EMITER'S UTSAV[2018-19]' began with a cheerful Flash-Mob following the inauguration function held on 08/10/2018 with the gracious presence of honorable chief guests Dr. Murali S. President, MIT Mysore Dr. B.G. Naresh Kumar, Principal, MIT Mysore and Dr. Mahesh Rao, Professor and HOD of ECE, MIT Mysore.

'EMITER'S UTSAV[2018-19]' included various indoor and outdoor activities for the students of ECE. The program was planned for the odd semester, providing various indoor and outdoor events for the students, fortunately prolonged to even semester because of placement activities. Students participated in more numbers with enthusiasm and encouraged the whole program.



The program ended with a final valedictory function where the prizes were distributed to the winners of the respective events by Dr. Mahesh Rao, which was held on 20/02/2019. Thus brought the program to grand success.

IETE STUDENT FORUM INAUGURATION



On 23rd March 2019, Department of Electronics and communication Engineering inaugurated the IETE students' forum. On this occasion, prof.sandesh NG and prof .sushanth KJ the coordinators for the IETE students forum, took the responsibility of the event.

The formal inauguration was done at 11:00 am in the presence of Dr. Mahesh Rao, professor and Head of ECE, Dr. Deepu .R Professor and Head of CSE, Dr. Raju.H.K. Professor and Head of MBA, Dr.CRN, retired professor ,SJCE Mysore and Dr. Bhagyashree S.R., Professor ,ATME Mysore.

After the formal inaugural, special invitee from ISRO T. Subramanyaganesh delivered a talk on navigation with Indian constellation highlighting how the GPS system works. The Program ended with a concluding talk by Dr.Mahesh Rao who highlighted the objectives of IETE student forum and need for the GPS systems.



PROJECT EXPO 2019

The Project Expo was organized by the department of ECE, MIT Mysore on 11th May 2019 for 8th semester students. This project expo provided a common platform for students to exhibit their innovations and work to excel in latest technology. A committee consisting of an industrial expert and academic from diverse backgrounds were invited to select the best project. The top three projects were awarded with cash prizes. The information regarding the best three projects are listed in the table.



S/I	Project title	Guide	USN	Student name
Academic Year 2018-2019				
1	"Leaf recognition of vegetables using MATLAB"	Prof. Guruprasad L.	4MH15EC001	Ahalya Arun
			4MH15EC023	Bhumika U
			4MH15EC031	Divyashree K
			4MH15EC419	Rashmi H S
2	"Smart Autonomous Ration Dispenser"	Prof. Mahadesh K.M.	4MH15EC081	Rohith Naik B
			4MH16EC423	Shivakumar N
			4MH15EC033	Guruprasad B S
			4MH15EC075	R P Rahul
3	"Smart Oxygen Monitoring System"	Dr. Ravichandra	4MH15EC004	Aishwarya M N
			4MH15EC045	Kruthi Nayak K
			4MH15EC054	Meghana G
			4MH16EC406	Hamsaveni HR



MINI PROJECT EXHIBITION 2019



Department of Electronics and Communication Engineering initiated the mini project competition for 2nd year students. The interested students were informed to make their own group and select guide , then they were asked to give project title, group and guide details. Wherein 10 groups volunteered. After that, 50 days time was given to execute the project with guidance of the faculty. Then **Project Expo 2019** was conducted on **17/05/2019** at 10.30 to 1pm at analog electronic laboratory.

Our beloved principal, president, secretary and HOD's of various other departments were invited to visit **Project Expo 2019** and evaluation committee was framed comprising of following members- Dr. Sharath kumar Y H, Professor and Head of ISE, Mr.Yogesh Kumar K J, Assistant Professor, Dept. of ME, MIT Mysore, Mrs. Maria Pavithra, Assistant Professor, Dept. of ECE, MIT Mysore and Mr. Sheshagiri jois , Assistant Professor, Dept. of ECE, MIT Mysore.

Out of 10 groups, 6 groups participated and all the trustees, students of department of Electronics and Communication Engineering visited. Two winning teams were awarded with a cash prize and participation certificates were distributed.



DEPARTMENT TOPPERS



3rd Sem- Zoya Mohammadi



5th Sem- Aisiri J



7th Sem- Pallavi C R