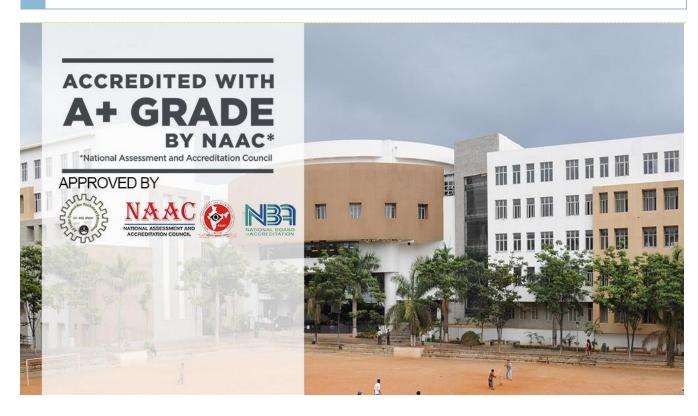# Department of Telecommunication Engineering Newsletter

July – December 2017

CMR Institute of Technology

What's in the Newsletter?

About CMRIT

Established in 2000, the CMR Institute of Technology imparts quality, pragmatic education in engineering and management to help students hone their analytical abilities and develop their creative thinking skills. CMRIT meets the rapidly growing need for technology professionals by nurturing young minds in an innovative and progressive learning environment. Situated in the very heart of South India's IT corridor, the CMRIT campus in Whitefield, Bangalore is centrally located, well connected and easily accessible.

At CMRIT, we are dedicated to holding aloft the flame of Sri Chikka Muniyappa Reddy's dreams. Towards this end, we are committed to promoting technical education as a catalyst to the growth and development of the country and society at large. With world-class infrastructure and experienced faculty, CMR Institute of Technology is the preferred destination for technocrats and managers who wish to shape the future.

Vision of CMRIT

To be a nationally acclaimed and globally recognized institute of engineering, technology and management, producing competent professionals with appropriate attributes to serve the cause of the nation and of society at large.

About TCE Department

With the convergence of electronics, communication and Information Technology, Telecommunications has become a lucrative industry for young hopefuls. The department of Telecommunication Engineering aims to meet the challenges and changing needs of a rapidly growing Telecommunication industry.

Telecommunication students are trained in all aspects of Electronic Engineering, and broad band communication. We have committed faculty specialized in Mobile Communication, Satellite Communication, VLSI and Programming Languages, Digital Signal Processing, Image Processing & Microwave Engineering.

Vision of TCE Department

To create an ethical human resource proficient in domains related to Telecommunication Engineering for a successful career in the service of society

Mission of TCE Department

The Mission of the Department of Telecommunication Engineering, CMRIT, is to:

M1. Create a staff team with a mixture of people with industrial and academic exposure capable of inspiring, moulding and training young minds into competent professionals and an ethical resource.

M2. Impart knowledge of domains by equipping laboratories and facilitate experiential learning, experimentation and research based on foundation of science and mathematics.

M3. Ideate and implement interdisciplinary projects and foster continuous learning in association with students and colleagues across disciplines of the institute.

M4. Collaborate with academia, industries, organizations and professional bodies for training, consultancy and research.

Faculty

Mr. Mahesh Kumar Jha

Dr. Sujatha S

Ms. Sharmila K P

Mr. Abhishek Javali

Ms. Sophiya Susan

Mr. Richa Tengshe

#	Name of The Faculty	Designation
1.	Mr. Mahesh Kumar Jha	Head of Department
2.	Dr. Sujatha S	Assoc. Professor
3.	Ms. Sharmila K P	Assoc. Professor
4.	Ms. Sophiya Susan	Asst. Professor
5.	Mr. Abhishek Javali	Asst. Professor
6.	Ms. Richa Tengshe	Asst. Professor
7.	Ms. Priya R	Asst. Professor
8.	Ms. Shruthi M L J	Asst. Professor
9.	Ms. Rashmi K V	Asst. Professor
10.	Ms. Bhumika Narang	Asst. Professor
11.	Mr. Raveesh Hegde	Asst. Professor
12.	Mr. Rahul Nyamangoudar	Asst. Professor
13.	Ms. Alka Raj	Asst. Professor
14.	Ms. Laxmi Sharma	Asst. Professor
15.	Ms. Anindita Sahoo	Asst. Professor
16.	Mr. Hemanth Kumar U M	Asst. Professor
17.	Ms. Deepa Pradeep	Asst. Professor

Ms. Sophiya Susan

Ms. Priya R

Ms. Shruthi M L J

Ms. Rashmi K V

Ms. Alka Raj

Ms. Laxmi Sharma

Ms. Anindita Sahoo

Ms. Bhumika Narang

Mr. Raveesh Hegde

Mr. Hemanth Kumar U M

Ms. Deepa Pradeep

Mr. Rahul Nyamangoudar

Faculty Publications

#	Title of the Paper	Conference / Journal	Date	Author(s)
1	Energy Efficient Lightening System for Indoor Parking with Ubiquitous Communication	Springer International Journal of Wireless Personal Communications	Nov 24, 2017	Mr. Mahesh Kumar Jha
2	Emergence of Small World Behaviours in Optical Transport Networks	IEEE ICICI - 2017	Nov 23-24, 2017	Mr. Rahul Nyamangoudar
3	Deadline Alert to Adaptable Packet Organizing in Multimedia Transmission	IEEE ICIECE - 2017	July 21-22, 2017	Ms. Sharmila K P
4	Optimization AP location and channel assignment in WLAN based on SIR	IEEE ICIECE - 2017	July 21-22, 2017	Ms. Sharmila K P
5	An Update on Location Based Services: Current State and Future Prospects	IEEE ICCMC-2017	July 18-19, 2017	Ms. Laxmi Sharma Mr. Abhishek Javali Mr. Rahul Nyamangoudar Ms. Priya R
6	Motion Tracking using pixel subtraction method	IEEE ICCMC-2017	July 18-19, 2017	Ms. Shruthi M L J
7	Software Defined IoT: Issues and Challenges	IEEE ICCMC-2017	July 18-19, 2017	Mr. Mahesh Kumar Jha Ms. Richa Tengshe Ms. Laxmi Sharma

Faculty Interaction with outside world

✤ Ms. Rashmi K V attended one-day workshop on 3P of DSP: Pedagogy, Principle and Practice at MSRIT, Bangalore on October 8, 2017.

✤ Ms. Anindita Sahoo attended one-day National workshop on popularization of remote sensing based Maps & Geospatial Information organized by ISRO & ISRS on August 11, 2017.

✤ Ms. Shruthi M L J attended one-day FDP on Latest Trends in Wireless Communication at Atria Institute of Technology on July 24, 2017.

✤ Ms. Shruthi M L J attended one-day VTU syllabus blowup workshop in Visvesvaraya Technological University, Regional Office, Nagarbhavi on July 7, 2017.

Faculty Awards

✤ Dr. Sujatha S received 10 Years CMR service award on November 26, 2017.

✤ Mr. Abhishek Javali, Ms. Richa Tengshe, Mahesh Kumar Jha and Mr. Hrasha Shree received 5 Years CMR service award on November 26, 2017.

Student Achievements

❀ Amogh M P and Chandana P of 2nd year, Deepak P and Neha B Shetty of 4th year received CMR Jnanadhara Trust Merit Scholarship on November 18, 2017.

❀ Ayesha Banu 3rd year received Huawei scholarship on November 2, 2017 at CMR Institute of Technology.

❀ Gowthami B of 3rd year secured first runner-up in Katalyst Tech fest 2017 organized by Katalyst at 'Siemens Corporate Technology' on September 18, 2017.

❀ Abhay Rangan of 2nd year participated in Harvard Project for Asian and International Relations, held at Sydney in August 17-21, 2017.

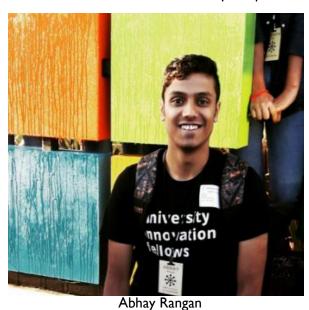❀ Deepak P of 4th year is L&T InfoTech campus Ambassador.

Ayesha Banu (second from left) with Principal, CMRIT and other Huawei scholarship recipients

Abhay Rangan

Gowthami B and first runner-up certificate and shield memento

Technolix Club

❀ **Started in the year 2011.**

❀ **Faculty Council**
  o Prof. Sujatha S – General Secretary
  o Prof. Raveesh Hegde – Faculty Coordinator

❀ **Student Council**
  o Mr. Sampras Xavio – General Secretary
  o Mr. Vishwas R – Technical Head
  o Ms. Priya P – Event Coordinator

Under Technolix Club various events and programme's are conducted for students and faculty to enrich technical skills.

Industrial Visit

Industrial Visit to Indian Space Research Organization, Bangalore
August 11, 2017

Industrial visits sensitize the students to the practical challenges that organizations face in the real world. Industrial visits also give greater clarity about various concepts the students study in classrooms as they can practically see how these concepts are put into action.

Department of Telecommunication Engineering and Electronics & Communication Engineering, CMR Institute of Technology organized a one day industrial visit to Indian Space Research Organization, Bangalore for the 5th semester students on 11.08.2017. The workshop was on "Popularisation of RS based Maps & Geospatial Information".

The Remote Sensing Day was celebrated by Indian Society of Remote Sensing (ISRS) on the eve of birthday of Indian Scientist Dr. Vikram A Sarabhai. Dr. B Pateriya, Director, PRSC, discussed about the evolution of Indian Space Programme with special emphasis on application of Remote Sensing in Natural Resource Management and Climate Change. Prof. S S Kukal, President, ISRS, elaborated various activities of the Society and also explained the utility of remote sensing techniques in various fields. Dr. R K Setia, Secretary, ISRS, gave a brief insight into the life and works of Dr. Vikram Sarabhai. Dr. P K Kingra, executive member of ISRS, thanked the speakers and students for participating in the event and impressed

upon the young students to get maximum benefit out of remote sensing technology. Few videos of satellite images and maps were also shown for the benefits of the students.

Workshops/FDP's

Faculty Development Program on Computer Communication Networks
August 3, 2017

The Internet has become one of the most important components of our life. We browse the Web, check e-mails, make VoIP phone calls, and have video conferences via computers. All of these applications are made possible by networking computers together.

Department of Telecommunication Engineering, CMR Institute of Technology organized a one day Faculty-Development-Program on Computer Communication Networks in association with Jetking, Sadashivnagar. Ms. Sunita Amingad who is a technical manager in Jetking, Sadashivnagar provided a hands on training session on computer networking. The FDP involved an introduction to fundamentals of computer networks, concept of layers and concept of protocols which are fundamental to computer networks.

The participants learnt how to establish a connection among multiple computers, what are the protocols used in the industry and how to simulate computer network using Cisco network simulator software.

Career Guidance Program

Career Guidance Program by BYJU's
September 25, 2017

The program organized by Dept. of TCE, CMRIT in association with Byju's classes for V-sem students addressed the topics such as - Technical Internships, Technical Certificate and Technical Exchange programs, Importance of higher education and career planning, Profile building & CV analysis, Profile Gap analysis & SOP (Statement of purpose), Filing of a patent for an innovative idea or project, Importance of Research, Journal publications and conference, A reality check on Test prep.

Other Activities

Aptitude Test
October 25, 2017

Aptitude tests help the students in assessing and improving their reasoning and analytical skills. These are the qualities required in both professional and personal life of human beings. So, it is important to provide the students with opportunities to improve these skills.

Department of Telecommunication, CMRIT arranged an Aptitude Test for Telecommunication Engineering students. Test was conducted in 3 batches of 15 students per batch in Microprocessor lab from 1:00 PM to 3:00 PM. About 40 students participated in the aptitude exam.

Mr. Veeresh from 5th Semester, B Section, TCE won the first prize.

Salient Features of TCE Departments

6 – Laboratories	24 – Individual Cubicles / Cabins for Staff
Class Rooms with Projectors	104 – Desktops
10 – User Licences	1 – User License

Placements

No. of Students Placed: **25**

Companies Visited:

News featured in TV 9 (Kannada News Channel) on November 14, 2017.

Media Coverage

Students offer IoT-based solution for unmanned railway crossings

AditU.Gyanesh@timesgroup.com

Bengaluru: At a time when train accidents are becoming frequent, six students from CMR Institute of Technology, Bengaluru, have suggested a cost-effective way to the Indian Railways to eliminate accidents at unmanned level crossings.

The project — an Internet of Things-based (IoT) multi-tier system — is currently under the railway ministry's consideration. The system is based on three types of sensors and was presented at the Smart India Hackathon 2017, organized by the central government in April.

"We have given an alternative idea of eliminating unmanned railway crossings across India. It's an automated IoT-based multi-tier system based on sensors. This will buttress the security system of the

TO PREVENT ACCIDENTS

railways and remove human errors," explained Ishaan Abhinav, a third-year student and member of team Gamma, which came up with the model.

The model operates on three sensors — radio-frequency identification (RFID) sensor, pressure sensor and optical sensor — to be placed at different points from the crossing. The pressure and optical sensors are triggered by the weight and appearance of trains, respectively.

As soon as the train passes through the RFID sensor located 2.7km from the crossing, an alarm and light system will be activated to signal road users to stop. As the train approaches the pressure sensor — to be placed at 1.75km from the crossing — it's time for the gates to close. By the time the train reaches the optical sensor, placed 1.5km from the crossing, the gates will shut automatically.

"The project doesn't end here. It is often seen that when barricades come down, many walker try to

MOOTING SOLUTIONS: The team from CMR Institute of Technology, Bengaluru, aims to reduce railway accidents through their innovative approach

CHANGES SOUGHT

The railways has asked the students to further work on the system. The ministry has sought changes in the RFID system to be able to detect the train name and number. A four-barricade system has been suggested to help road users, who get stuck between two closed barricades. It has also been suggested to use lithium ion battery for the sensors.

The students have been asked to look into issues of power supply and vandalism at unmanned railway crossings.

GOING BY STATS

At the hackathon, the students had various options to work on, but they chose unmanned railway crossings.

Their analysis of Indian Railways' statistical reports between 2009 and 2015 showed that 40.7% of train accidents occurred due to failure of railway staff and 45.7% due to others' faults. Most accidents due to failure of people other than railway employees have occurred at unmanned crossings, where the liability is primarily on road users, the reports revealed.

cross the track by slipping underneath. To prevent this, we have added barbed wires to the barricades," said Malvika Vinay, another team member and a third-year engineering student.

The project was readied in two-and-a-half weeks by the team whose members include Madhusoodhanan K M, Adhitya Niranjan, Misha P and Rainy Jain. The students from computer science and mechanical engineering streams were mentored by Sudhir Routray, Sharmila KP and Ra-

hul Nyamangoudar.

"We went till the final round of the hackathon. The PM addressed us and spoke about the problems faced by the Railways," said Madhusoodanan.

Said professor Sharmila, head of the department for telecommunication: "It's a low-budget solution for railways as these sensors don't require much power or battery to run till about four to five years. We are now making changes in the project as suggested by the ministry of railways."

News featured in The Times of India - Page 5.on September 25, 2017.

News featured in NEWS 9 (English News Channel) on November 14, 2017.