

Achievements 2019 – 2020

BEST DEPARTMENT AWARD

The Department of ECE bagged the “Best Department Award”, 2018-19. The Award was presented to Dr. Deepa Elizabeth George, Head of the Department by Dr. Alex Mathew, President ToCH Society, during the convocation ceremony of the first KTU batch, November 2019.



CERD Funded Projects

1. Auto Bee Pollinator

It provides an emerging solution to food supply reduction caused by the population shrinking of natural pollinators and results in precise farming giving high-yielding crops. Also, the time required for the pollination of a plant is considerably reduced when compared to pollination by natural factors. The project has received a fund of Rs.15000/- under CERD, Centre for Engineering Research & Development, Kerala Technological University.

- Project Investigators: Prof. Swathy Satheesh, Asst.Prof. Dhanya R
- Team Members: Nayana John, Malavika Balagopal, Nimmy Yohannan, Sreeparvathy Vinodkumar



Gyro Glove: The hand Tremor suppressor

The goal of this project is to create a device that reduces the magnitude of hand tremors in individuals with Parkinson's disease. The project has received a fund of Rs.17000/- under CERD, Centre for Engineering Research & Development, Kerala Technological University.

- Project Investigators: Prof. Deepthi Thomas, Asst. Prof. Annie Paul
- Team Members: Megha V Kumar, Pretty Varghese, Shilpa P S, Shelsha Sheji



KSCSTE Funded Projects

1. Hybrid Locomotion Robot for Mine Detection & Surveillance

The Hybrid Locomotion Robot consists of a Rover and a Quadcopter based on HC 12. It can be used for explosive detection and has night vision cameras for surveillance and a metal detector capable of detecting mines. The project has received a fund of Rs.10,000/- under the Kerala State Council for Science, Technology, and Environment.

- Project Investigators: Prof. Deepa Mary Varghese, Asst. Prof. Renjith PK.
- Team Members: Emmanuel Antony, Arya P Devaraj, Aparna K S, Hela Wilson



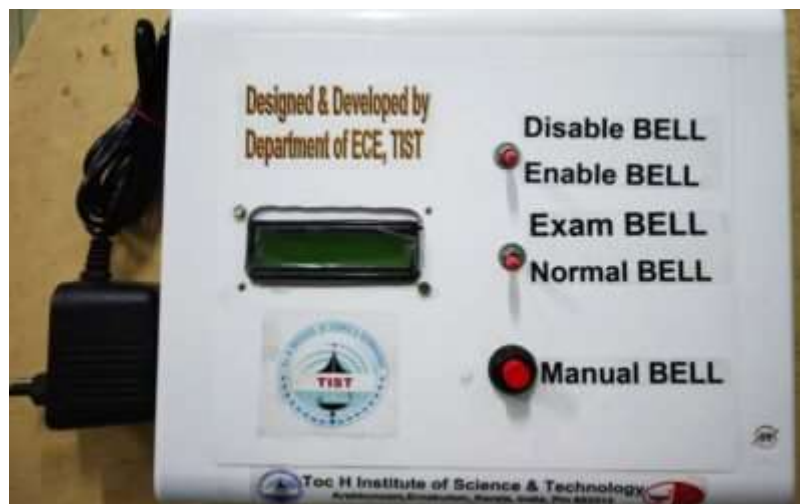
2. An autonomous cross-pollinator for future farming

The project has received a fund of Rs.10,000/- under the Kerala State Council for Science, Technology, and Environment.

- Project Investigators: Prof. Swathy Satheesh, Asst.Prof. Dhanya R
- Team Members: Nayana John, Malavika Balagopal, Nimmy Yohannan, Sreeparvathy Vinodkumar

PRODUCT DEVELOPMENT

The department of ECE has designed and developed an Automatic bell for colleges and schools. This product has been commissioned in the ECE department. The department has also delivered its product to the Mechanical Engineering Department of TIST on 12th July 2019.





Projects Selected under APJ Abdul Kalam Technological University-Centre for Engineering Research and Development(CERD) Research Seed Money Scheme 2019



Title: Design and Development of a Wearable Antenna for Non-Invasive Glucose Monitoring (NIGM Antenna)

Principal Investigator: Asst.Prof.Sreelekshmi S

Objective: Diabetes mellitus is a metabolic disease in which the body is unable to produce or properly use insulin, leading to variations of glucose levels in the blood. The proposed system provides a novel method of non invasive glucose monitoring using wearable antenna.



Title: *Artificial Intelligence (AI) based Smart Irrigation System.*

Principal Investigator: Asst. Prof. Neethu George

Objective: *The proposed system makes use of weather forecast information and various sensor outputs to predict the water requirement on each day. The system is a perfect combination of artificial intelligence and IOT (Internet of Things) to automate the traditional practices in agriculture.*

Socially Relevant Funded Projects at Toc H

Solutions for problems affecting society whether big or small should be the focus of all engineering activities. Keeping this in mind the students of Electronics & Communication Engineering, Toc H Institute of Science and Technology have developed several innovative and useful products.

A low-cost portable device for accurate detection of malaria parasites in blood smears has been developed. This innovative product does not need lab facilities and can be used easily by primary health workers in remote areas with minimum training. As malaria poses a serious global health problem affecting millions of people, students of final year ECE – Naveen M, Sachithananda Pai, and Saurav B, hope to reduce the death rate due to malaria through their device. This project under the guidance of Dr. Georgina Binoy Joseph and Dr. Deepa Elizabeth George is funded by CERD, APJ Abdul Kalam Technological University under the Student Project Scheme.



Portable Malaria Rapid Diagnostic Device (PMRDD)



LPG Mithram

Domestic LPG is becoming costlier day by day. Ashmin Antony, Allen Carvalho and Anoop Antony of third year ECE, under the guidance of Dr Georgina Binoy Joseph, have developed a low cost device – **LPG Mithram**, for domestic LPG Management. The system will be beneficial to the millions of domestic gas consumers to monitor the balance LPG level in their cylinders and gas consumption over a period time aiding in energy conservation. This system comes with inbuilt safety monitoring features and can also be integrated to existing home automation systems to free the consumer from the hassles of remembering to book refills. This Project has reached the semifinal stage of the **DST and TI India Innovation Challenge Design Contest IICDC 2018**. It is also funded by IEDC.

Student Achievements

PIPE-BOT: UBA funded Socially relevant project

The project an effective and efficient alternative for pipe and sewer cleaning systems incorporating Robotic technology. The project has received a fund of Rs **1 lakh** under the '**Unnat Bharat Abhiyan**' scheme, Centre for Rural Development launched by the Ministry of Human Resource Development (MHRD), New Delhi with an aim to connect institutions of higher education with local communities to address the development challenges through appropriate technologies.

Project Guide: Asst.Prof.Dhanya.R



Research & Development Activities Summary

Name of the faculty	Project/ FDP/STTP	Project Type Research/Consultancy	Funding Agency
Asst. Prof. Dhanya.R	PIPE-BOT	Funded student project	Unnat Bharat Abhiyan (UBA),Centre for Rural Development & Technology, New Delhi
Asst Prof. Sreelekshmi.S	Design & development of a Wearable Antenna for Non-invasive Glucose monitoring	Research Seed Money Scheme	APJ KTU – Centre for Engineering Research and Development (CERD)
Asst Prof. Neethu George	AI based Smart Irrigation System	Research Seed Money Scheme	APJ KTU – Centre for Engineering Research and Development (CERD)
Asst. Prof. Dhanya.R & Asst.Prof. Swathy Satheesh	Auto-Bee Pollinator	Funded Student project	APJ KTU – Centre for Engineering Research and Development (CERD)
Asst.Prof. Deepthi Thomas & Asst.Prof.Annie Paul	Gyro Glove: The Hand Tremor Suppressor	Funded Student project	APJ KTU – Centre for Engineering Research and Development (CERD)
Asst. Prof Swathy Satheesh	Auto Bee Pollinator	Funded Student project	Kerala State Council for Science, Technology and Environment (KSCSTE)
Asst. Prof Deepa Mary Varghese & Asst.Prof. Renjith P.K	Hybrid Locomotion Robot for Mine Detection & Surveillance	Funded Student project	Kerala State Council for Science, Technology and Environment (KSCSTE)

Dr. PerumalSankar	Trends and Technologies in Antenna design	STTP(Short Term Training Program)	AQIS AICTE
Dr. Georgina Binoy Joseph	Modernization of Microprocessor and Embedded systems lab	MODROBS (Modernisation And Removal Of Obsolenscence	AQIS AICTE