



# KCG

COLLEGE OF TECHNOLOGY

Affiliated to Anna University

**AUTONOMOUS**

## Department of Electronics and Communication Engineering

### Impetus-For a change...

**2022-2023**

### *Technical Magazine*

*Editorial Members*

*Dr.Kavitha  
Balamurugan*

*Ms.B.Thyla*

*Ms .Johanna  
afreena(ECE 4 A)*

*Mr.Lokesh(ECE 4 A)*

## **Department of Electronics and Communication**

### **Vision of the Department**

To become a Centre of excellence of global significance in Electronics and Communication engineering and producing competent professionals committed to nation building.

### **Mission of the Department**

- Impart sound knowledge of Electronics and communication through innovative teaching learning process
- Establish laboratories equipped with modern state of art technology resources to facilitate research and consultancy
- Enhance the knowledge and skills of the faculty to incorporate the latest advancements
- Facilitate Industrial collaboration in socially responsive research activities

## **Program Educational Objectives**

The graduates will

**PEO 1** Have a successful career as technically competent, highly skilled professionals in

Electronics and communication engineering and its related fields

**PEO 2** Demonstrate technical competence to provide solutions for real time Electronics and

Communication engineering problems

**PEO3** Adopt technological challenges through skill upgradation in the relevant areas

**PEO 4** Exhibit professionalism and ethical attitude in their work

## **Program Outcomes:**

At the end of the program the student will be able to

**PO1** - Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2** - Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** - Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4** - Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5** - Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

**PO6** - Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO7** - Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** - Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** - Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** - Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11** - Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12** - Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### **Program Specific Outcomes**

The graduates after the completion of B.E Electronics and Communications will be able to

- **PSO1:** Apply the knowledge of Basic sciences, Electronics and Communication engineering fundamentals and specialization for solving complex problems in Electronics and Communication systems.
- **PSO2:** Design suitable electronic circuits and communication systems using modern tools such as PSPICE, MATLAB / Simulink, Assemblers, Cadence and NS2
- **PSO3:** Practice the ethics of their profession with a sense of social responsibility.

This academic year was very successful for the department of ECE. The various activities of the department are consolidated as follows:

### **About the Department**

The Department of Electronics and Communication Engineering was established in the year 1998. Electronics and Communication Engineering is both a core subject and a swiftly advancing field, with new ideas emerging every day. From mobile phones to remote sensing, there are exciting avenues to explore. With technology becoming all pervasive in everyday life, opportunities for electronic engineers are plenty.

The department of Electronics & Communication Engineering has faculty members with a blend of youth and experience. All the faculty members of the department are post graduates, some of them from eminent institutions like IIT. The department has qualified and accomplished doctorates in various domains of Electronics and Communication. Faculty members of this department have considerable academic, industrial and research experience.

### Academic performance of students

| Academic year              | Semester         | No. of students appeared | No. of students Passed in all subjects | Pass percentage |
|----------------------------|------------------|--------------------------|--|-----------------|
| 2021-2022<br>Even semester | Second Semester  | NA                       |  |                 |
|                            | Fourth Semester  | 59                       | 22                                     | 37.28           |
|                            | Sixth Semester   | 72                       | 37                                     | 51.38           |
|                            | Eighth Semester  | 68                       | 68                                     | 100             |
| 2022-2023<br>Odd semester  | First Semester   | NA                       |  |                 |
|                            | Third Semester   | 98+1WH                   | 48                                     | 48.97           |
|                            | Fifth Semester   | 58                       | 24                                     | 41.37           |
|                            | Seventh Semester | 72                       | 44                                     | 61.1            |

## Faculty Development Program

### Paper publications

| S.No. | Author  | Title  | Journal   | Date   |
|-------|---|--|---|--------|
| 1     | Dr.Thomas Leonid                              | Classification of Elephant Sounds Using Parallel Convolutional Neural Network.                             | Intelligent Automation & Soft Computing   | Jun-22 |
| 2     | Ms. B.Thyla                                   | Patient health monitoring system using smart IoT devices for medical emergency services                    | IEEE Explore - Innovative Computing, Intelligent Communication and Smart Electrical Systems | Jul-22 |
| 3     | Dr.Jose Anand                                 | An Effective and Secure Mechanism for Phishing Attacks Using a Machine Learning Approach                   | IEEE Explore - Innovative Computing, Intelligent Communication and Smart Electrical Systems | Jul-22 |
| 4     | Ms.Jaraline Kirubavathy and Dr.V. Thulasi Bai | Realtime Monitoring System for Surface Water Quantity and Analyzing of Water Quality Using Microcontroller | Journal of Pharmaceutical Negative Results  | Sep-22 |
| 5     | Dr.Jose Anand                                 | Programmable Stickers to Monitor Perishable Goods using Blockchain   | Proceedings of IEEE 2022 Computer Science, Engineering and Applications                     | Sep-22 |
| 6     | Dr.Deepa Jose                                 | Energy Efficiency in Charging Stations for Electric Vehicles with  | Lecture Notes in Electrical Engineering   | Oct-22 |
| 7     | Dr.Jose Anand                                 | Trident Fuzzy Aggregation Operators on Right and Left Apex-Base Angles in                                  | Advances in Parallel Computing Algorithms, Tools and Paradigms                              | Nov-22 |
| 8     | Dr.Jose Anand & Mr.Mohammed                   | Smart Stick using Ultrasonic Sensors for Vissually Impaired  | Advances in Parallel Computing Algorithms, Tools and Paradigms                              | Nov-22 |

|    |   |   |   |        |
|----|---|---|---|--------|
| 9  | Ms.Aida Jones,<br>Dr. Thulasi Bai,<br>Mr. Sadasivam S | A Systematic Review on Screening of Diabetic Retinopathy and Maculopathy Using Artificial Intelligence  | Lecture Notes in Electrical Engineering | Dec-22 |
| 10 | Dr.Jose Anand   | Fuzzy Based Route Optimization in Wearable Biomedical Wireless Sensor Network   | AIP Conference Proceedings              | Jan-23 |
| 11 | Dr.Clement Raj  | Enhanced electrochemical capacitance of a surfactant modified hierarchical Co(OH) <sub>2</sub> /TiO <sub>2</sub> nanotube array for supercapacitor applications | Inorganic Chemistry Communications      | Feb-23 |
| 12 | Dr.Deepa Jose   | Implementation of Indoor Navigation Control for Two-Wheeled Self-balancing Robot  | Lecture Notes in Electrical Engineering | Mar-23 |
| 13 | Ms. B.Thyla   | Design of UWB antenna for wireless capsule endoscopy  | Materials Today: Proceedings            | Mar-23 |
| 14 | Ms. K. Jaraline Kirubavathy<br>Dr.V.Thulasi Bai       | Pre and Post Flood Management using Mobile Application  | IEEE Explore                            | Mar-23 |

## Paper presentations

| S.No. | Presenter                        | Title   | Conference   | Date   |
|-------|----------------------------------|---|--|--------|
| 1     | Dr. Deepa Jose                   | Automated Covid 19 detection using X rays based on a customized neural network              | International Conference on Bio-Neuro Informatics and Algorithms   | Jun-22 |
| 2     | Ms. B.Thyla<br>Dr.Thulasi Bai    | Design of UWB Antenna for Wireless Capsule Endoscopy  | 2nd global conference on recent advances in sustainable materials  | Jul-22 |
| 3     | Ms. B.Thyla                      | Patient health monitoring system using smart IoT devices for medical emergency services     | International Conference on Innovative Computing, Intelligent Communication and Smart Electrical systems | Jul-22 |
| 4     | Dr. Deepa Jose                   | A methodology for increasing precision for the efficient implementation of Sigmoid function | Emergent converging technologies and Biomedical Systems  | Sep-22 |
| 5     | Ms.R.Maheswari and Dr.Jose Anand | Voice Control and Eyeball Movement Operated Wheelchair                                      | International Conference on Edge Computing and Applications  | Oct-22 |
| 6     | Dr. Kavitha Balamurugan          | Smart pill box  | National Conference on Innovation in Engineering & Technology  | Nov-22 |
| 7     | Dr.Uma Kumar C R                 | MRI Brain Tumor Detection using Fuzzy C-means Clustering Algorithm                          | International Conference on Computer Vision and Robotics   | Feb-23 |

### Faculty as Resource persons

| S.No. | Resource person         | Role                | Conference / FDP/ Seminar  | Organized by   | Date                |
|-------|-------------------------|---------------------|--|--|---------------------|
| 1     | Dr.Deepa jose           | Resource Person     | FDP  | College of Engineering Guindy, Chennai /Anna University                | January 2023        |
| 2     |                         | Session Chair Guest | Springer International Conference on intelligent system and Machine Learning | Corteva Agriscience and EAI, Hyderabad                                 | 16-17 December 2022 |
| 3     |                         | Resource Person     | Workshop on Art of Research Paper Writing                                    | KCG College of Technology  | 22-09-2023          |
| 4     |                         | Session Chair       | IEEE International Conference  | IEEE International Conference on Service Operations and                | 02-09-2023          |
| 5     | Mr.Sadasivam.S          | Resource Person     | FDP on “Electronic Platform For Building Electronic Projects”                | Faculty Development Training Centre, Government College of Technology, | 25.8.2022           |
| 6     | Dr Kavitha Balamurugan  | Resource Person     | Seminar on Research Methodologies  | Vijaya Institute Of Technology For Women                               | 15-06-2022          |
| 7     | Dr Kavitha Balamurugan  | Resource Person     | FDP on 5G Wireless Communication and Beyond<br>Topic: FSO in 5G              | KCG College of Technology  | 24.2.2023           |
| 8     | K. Jaraline Kirubavathy | Resource Person     | Hands on Training  | IETE Chennai Centre  | 28 .02 2023         |

**Special Contributions by the faculty**  
**Research guidance**

| <b>S.NO</b> | <b>AU Recognized Supervisor</b> | <b>Reference No.</b> | <b>No. of Ph.D. scholars currently guiding</b> |
|-------------|---------------------------------|----------------------|--|
| 1           | Dr V Thulasi Bai                | 2440402              | 10   |
| 2           | Dr.Deepa Jose                   | 2840046              | 07   |
| 3           | Dr.Jose Anand                   | 3540013              | 06   |
| 4           | Dr.V. Balaji                    | 2740054              | 05   |
| 5           | Dr.Clement Raj                  | 3750006              | -  |
| 6           | Dr.Uma Kumari C R               | 3940024              | 01   |

## Books

| Sl.No | Name of the Author           | Title of the Book                       | Publisher                        |
|-------|------------------------------|---|----------------------------------|
| 1     | Dr.Kavitha<br>Balamurugan    | Communication Theory                    | Alpha International<br>Publisher |
| 2     | Dr Jose Anand                | Wireless Communication                  | R K Publications                 |
| 3     | Dr Jose Anand                | Web Technology                          | RK Publications                  |
| 4     | Dr Jose Anand                | Deep Learning with Python               | Haiyagrev<br>Publications        |
| 5     | Ms.B Thyla<br>Mr.S.Sadasivam | Antennas and Microwave<br>Engineering   | Alpha International<br>Publisher |
| 6     | Dr. Deepa Jose               | Big Data Mining and<br>Machine Learning | Jayalakshmi<br>Publications      |
| 7     | Dr. Deepa Jose               | Internet of Technology                  | Jayalakshmi                      |

### Achievements by students

| S.No. | Achiever   | Department / Year | Event   | Date                           |
|-------|--|-------------------|---|--------------------------------|
| 1     | Jaya Soumeya,<br>Dhandapani  | ECE/IV            | Honeywell -Microsoft AI Azure - Global Exam   | 24.05.2022                     |
| 2     | Ananthesh,<br>Hariharan.A  | ECE/II            | Technical Quiz - SLICE V22, National Level Technical Symposium<br>Loyola ICAM college of Engineering and Technology | 8.10.2022                      |
| 3     | G.V. Meenakshi<br>B.Britina Pearlsida                                    | ECE/II            | Dragons & Dungeons, Symposium<br>"Mathista 2k22" , St.Josephs' Institute of Technology                              | 8.10.2023                      |
| 4     | Johanna Afreena,<br>Kanaga Durga,<br>Fahima Niaz                         | ECE/III           | Haskell Training Programme  | 21.01.2023                     |
| 5     | Doreen Belinta,<br>Kavya T, Kavi Priya<br>M                              | ECE / IV          | IET Pentathlon Makeathon /<br>Winners - First Prize   | 18.1.2023                      |
| 7     | Thomas Regan   | ECE/II            | Rev. Fr. Guezou MemorialFootball<br>Tournament - Runner up  | 8.10.2022                      |
| 8     | JeyaPrakash,<br>Ananthesh, Magesh,<br>Jeeva pandi,<br>Jaisuriya, Karthik | ECE/II & III      | Handball Tournament<br>3rd Place  | 04.01.2023                     |
| 9     | Radha Prabakaran<br>Jennifer.V   | ECE/IV,<br>ECE/II | Smart India Hackathon 2022 - Software<br>Edition  | 22.08.2022<br>to<br>27.08.2022 |
| 10    | Harish Chensudar<br>Allwin Lawrence                                      | ECE/IV            | Smart India Hackathon 2022 - Hardware<br>Edition<br>Winners - First Prize   | 29.08.2022<br>to<br>03.09.2022 |

## Industrial Visit:

**Coordinator : Ms. Jaraline**

| S.No | Year      | Date of Visit | Place of Visit  | No. of Students |
|------|-----------|---------------|---|-----------------|
| 1    | III Year  | 05.08.22      | National Atmospheric Research Laboratory (NARL), Andhra Pradesh | 59              |
| 2    | IV Year   | 30.08.22      | ISRO, Bangalore   | 72              |
| 3    | II Year B | 29.10.22      | Sanmina SCI India Pvt. Ltd., Chennai                            | 50              |

- **TNSDC** 4 courses sanctioned . Total Sanctioned Amount from TNSCDC: Rs. 3.66 lacs ; Coordinator : **Ms. R Maheswari**
- Under Board of Apprenticeship Training (BOAT) 3 instructors recruited; Amount Sanctioned – Rs.1,44,000/- (Received : Rs. 24000/-) Coordinator : **Ms. R Maheswari**
- 4 Patents & 1 Copyright granted ; 4- FER
- **Dr Deepa Jose** received IET Women Academic Practitioner Award
- **Dr Kavitha Balamurugan** received Best Faculty Award from Knowledge Research Academy
- **Dr Kavitha Balamurugan** AU Board of Studies Member
- **Dr Thulasi Bai and Dr Kavitha Balamurugan** are AU Syllabus Sub Committee Members UG & PG resp.
- 2nd Instalment from Modrob Received 1,11,651/- for 2022-23 on Dec 20,2022
- Virtual lab experiment titled “**Frequency Modulation & ASK – Modulation & Demodulation**” completed and deployed in NITS. Coordinator : **Ms. B. Thyla**

## CONSULTANCY

**1.Consultancy worth Rs.2,35,000/- ; Mentors: Dr. Uma Kumari C.R.,**

**Title:** Development of a Composite Pusher type Fixed wing VTOL Remotely piloted Aircraft System

**2. Appa samy Medicals for Rs. 75,000/- ; Mentor: Dr. Deepa Jose**

**Title:** Evaluation of Glaucoma using OCT Analysis (Phase 1 work completed and amount received)



# KCG

COLLEGE OF TECHNOLOGY

A unit of Hindustan Group of Institutions



## HITS finds its new chancellor in this educationist-cum-

**A**nand Jacob Verghese has been elevated as the Chancellor of Hindustan Institute of Technology and Science - HITS (Deemed to be University).

In his new role, Verghese, a renowned educationist, aviator and thought leader, will be at the helm of leadership and management of the Institution and promote continued development of its academic programmes and research excellence with the vision of being a leading international institute of excellence providing a conducive envi-

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ronment for education with a strong emphasis on innovation, internationalisation, leading edge research and strategic partnership blended with values and commitment to society.

He comes ably backed with a vast managerial experience and administration skill spanning 27 years in education and aviation sectors.

### 27

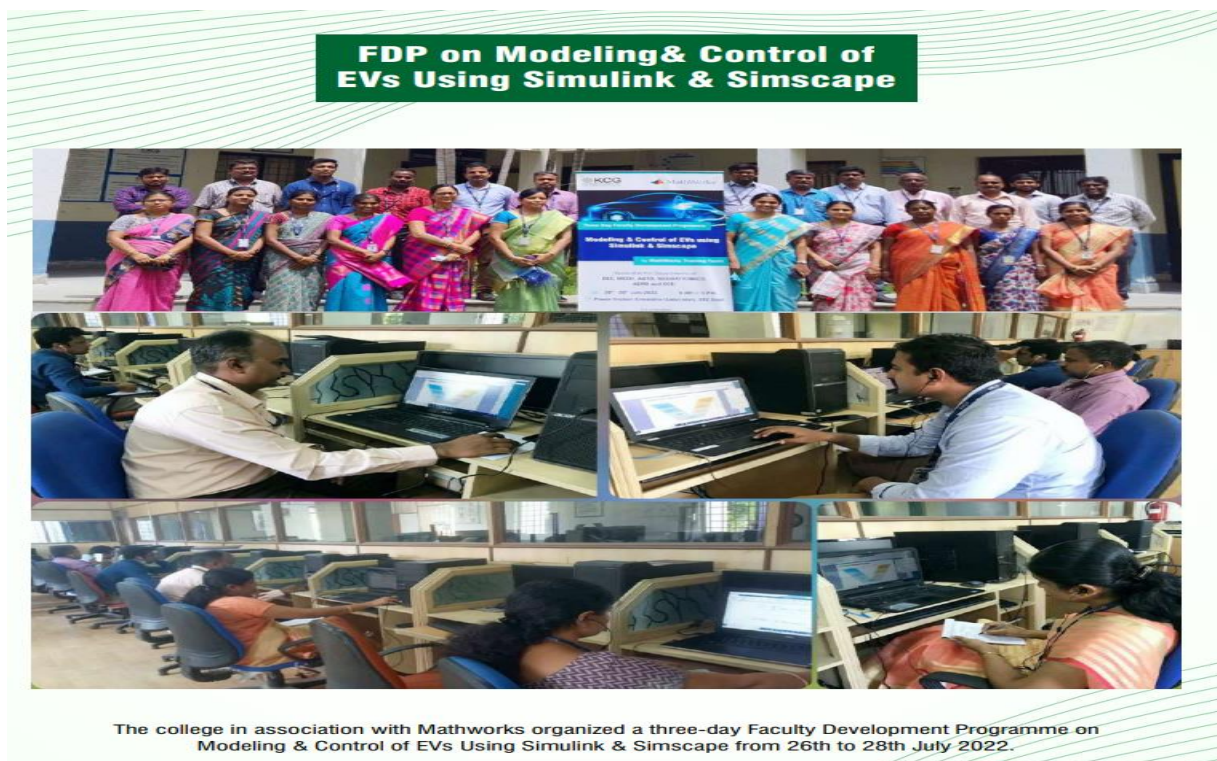
years in  
education  
and aviation  
sectors.



## Campus Buzz

July to December 2022

## FDP on Modeling and Control of EV using Simulink and Simscape



## Awards and Accolades



## KCG Skill Development Centre

### New Initiatives

#### Inauguration – IEEE Madras KCG Student Branch Chapter

Inauguration of the IEEE Madras KCG Student Branch Chapter was held on 5th August 2022. **Dr M Kumarappan**, Chairman, IEEE Madras Section and Professor, Faculty of Engineering and Technology, Annamalai University was the chief guest.

#### Introduction of Two New Courses by KCGSDC

KCG Skill Development Centre (KCGSDC), in association with Tamilnadu Skill Development Centre (TNSDC) and Hindustan Institute of Technology and Science (HITS), has introduced two courses "Embedded Full stack IoT Analyst" and "Embedded Software Engineering".



## IEEE Student Project Fund Scheme

### IEEE Students Project Fund Scheme

**Harish Chensudar, Abhishek & Lokesh** of Final year **ECE** have won First Runner – Up with a cash prize of Rs.7500 in the IEEE Students Project Fund Scheme conducted by IEEE.



## IEEE YESIST12 2022







**KCG25**  
COLLEGE OF  
TECHNOLOGY  
AUTONOMOUS

**Campus  
Buzz**  
Jan to Jun 2023

## **Conferment of Autonomous Status**

KCG College of Technology, Chennai, was conferred Fresh Autonomous Status by University Grants Commission (UGC) for a period of 10 years as per provisions of Clause 3. 13 and Clause 6.4 (i) of UGC Regulations 2018. The autonomy is conferred recognizing the institution's state-of-the-art infrastructure, expert faculty, partnership with industries, consistent excellence in curricular, co-curricular and extra-curricular activities and impressive placement records.

### **Doctorate Completed Details**

## 10 papers got published and indexed in Scopus during August 2023

### KCG Faculty - Doctorate Completed Details

| Ph.D. Scholar & Supervisor                                  | Thesis Title  | Date of Viva- Voce                               | University      |
|---|---|--|-----------------|
| <b>Ms Meena R &amp; Dr.V.Thulasi Bai,</b><br>Professor, ECE | Experimental Studies on Performance Improvement by Mechanical Textured Cutting Tool Under Dry Truning | 11 <sup>th</sup> August 2023 at 12.10 PM,offline | Anna University |

### VISAI 2023 International Project Competition and Exhibition

#### VISAI 2023



At **VISAI 2023**, 13<sup>th</sup> International Project Competition and Exhibition, 193 teams participated from all over India and the top 52 teams entered into the last round. **Doreen Belinta A, Kavipriya M and Kavya T** - final year - **ECE** represented the team Mystic Technocrats and won the second prize with a cash award of 6000 INR. The team won under the theme Sustainable Cities and Communities for their project title **AEGISTEC - MCS** mentored by **Dr. Deepa Jose**, Professor - **ECE**.

### La Trobe University Peoples Choice Award

#### La Trobe University People's Choice Award

**Doreen Belinta A, Kavya T and Kavipriya M**, 4<sup>th</sup> Year, ECE who represented the Team Mystic Technocrats won the prestigious The People's Choice Award by La Trobe University, Melbourne, Australia at the International Competition Technology Infusion Grand Asia Challenge 2022-23 with a cash prize of 2000 AUD (1,09,000 INR).

## Educational sessions

### Educational Sessions

#### Training Cell

### Alumni Expert Talk for KAAR Drive

**Mr Abdullah**, ECE Alumna (2013-2017 Batch) & Senior Consultant, Abeam Consulting, Singapore addressed the students who had registered for KAAR Drive on 9<sup>th</sup> August 2023.

**Mr Abdullah** enlightened the students about the test pattern, company project details & advantages of working in KAAR.



## Decoding the Tech Terrain

### Department of Electronics and Communication Engineering

### Decoding the Tech Terrain



A Seminar on Decoding the Tech Terrain was organized on 12<sup>th</sup> August 2023. **Ms Ramya D S**, Member Technical Staff, Zoho Corporation Pvt. Ltd & **ECE** Alumna was the resource person. She enlightened the audience about the process of getting into Product & Service companies, the expectations & skills required.

## **Industrial Visit to NIOT**

We had good exposure towards the current research efforts taken by our government. We had a knowledge transfer session with one of the scientists and we visited various lab also learnt various technologies. Some of the labs and technologies which we learnt are deep sea technology, ocean electronics, environmental climate change, various sensors used in marine. It is accompanied by Dr.Clement and Dr.Uma kumari.

