

Department of Biomedical Engineering  
KPR Institute of Engineering and Technology



# KPR Institute of Engineering and Technology

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## Highlights of this month

**16.02.2023 & 17.02.2023**  
**Fiesta' 23 Events**

**25.02.2023**  
**Synergy' 23 Events**

**Student Participation /  
Achievements**

**Faculty Contribution**

"We are Engineers for Doctors"

Biomedical Engineering is one of the premier Engineering disciplines among technocrats since it merges Healthcare Technology with Electronics and Software technologies including Artificial Intelligence, Machine Learning, Robotics in Medicine, Bioinformatics, Prosthetic Engineering etc. to serve better to the human community with advance and continuously upgrading technologies. In KPRIET, we nourish our students with advance laboratories like Bio-signal processing, Diagnostics and Therapeutic Equipment, Human Anatomy and Physiology, Biomedical Instrumentation to learn by practicing. Hospital training and internship are arranged with leading multispecialty hospitals and biomedical industries to facilitate the students for better career. Research activities are vibrant with publications and patents in the recent trends.

**Dr. D. Ganesh kumar HoD/BME**

**Monthly Newsletter: Department of Biomedical Engineering**

# EDITORIAL BOARD

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## About KPRIET

KPR Institute of Engineering and Technology (KPRIET), founded by Dr. K. P. Ramasamy, is one of the leading institutions of academic excellence by imparting technical, intellectual and professional skills to students. The Institution is ranked 200-250 band by NIRF. The institute, with its diverse and energetic community of students offers a distinguishing blend of some of the premium graduate, undergraduate and research programs, talented faculty, world class amenities and a residential campus set on a sprawling 150 acres of lush green campus.

While students at KPRIET immerse themselves in academics, the institute has a lot in store for them outside the classroom. Student life includes participation in sports, co-curricular activities and cultural. In short, at KPRIET, students will find an academic and social environment where everyone- from faculty members to peer's support shape their future.

KPRIET is a home to artistically designed buildings with state of the-art computer and internet facilities, modern workshops, seminar halls, auditoriums and well stocked libraries, sports and games fields in addition to an indoor badminton court and gymnasium.

KPRIET has a faculty strength of 264 with a faculty student ratio of 1:15. Out of the total, 139 faculty members Ph.Ds. and 95 are in the process of completing their Ph.Ds. As an exemplary institution of learning, KPRIET follows an admission policy that strongly favours merit, even as it enables access to education for students from all strata of society through appropriate scholarships. The Institution boasts of a strong alumni network with alumni events held every year serving as a platform for past students to give back to KPRIET and share their experiences with its present fellow students.

## About the Department

The Department of Biomedical Engineering of KPR Institute of Engineering and Technology, Coimbatore was established in the year 2017 with an annual intake of 60 students. The Department has highly qualified faculty members with Ph. D. and M.E. / M. Tech / M.S. under various specialize such as Biomedical Signal and Image Processing, Medical Electronics, Healthcare Data Analytics, Biomaterials, Regenerative medicine and Nanoscience. The total strength of the Faculties in the Department is Fifteen. Out of which, 60% of the faculty Members (9 Faculties) have completed their PhD and Five faculties are pursuing their PhD.

The faculty members contribute to academic development by publishing books / journals, products, patent filing and presenting papers in International and National Conferences. The Department of Biomedical Engineering signed MoUs with the reputed industries like Aravind Eye Care Hospital, Helix Private Ltd., GEM Hospitals, Ganga Medical Center and Hospital, Masonic Medical Centre for children, Waxwing Medical Technologies, Vital Bio-systems and ALERT (NGO) to bridge the gap between theory and field practices.

The Department also provides an opportunity for students in improving practical knowledge in the field of Biomedical Engineering and Software skills like MATLAB, LabVIEW, Proteus, Pspice simulation through KPI Centre of Excellence, in addition to Communication and Presentation skills. The students have to undergo Industrial Training and Industrial Visit to facilitate them to take up industrial live projects to understand the industry needs. The Students from Biomedical Engineering as well as faculty members has lifetime membership in various

Professional Societies like ISTE and BMESI to gain knowledge through various programs conducted by these bodies across the Nation.

### **Vision of the Department**

To be a **center of excellence** for **dissemination of knowledge, research and development** in biomedical and allied engineering fields to serve the society.

### **Mission of the Department**

The Mission of the Department is to

- To impart value-based education in biomedical engineering with state-of-the-art facilities.
  - To build an integrated team of biomedical engineers to foster the technologies through research, development and innovation.
  - To be in pace with healthcare industries by practicing lifelong learning with ethical and moral values.

## LIST OF EVENTS / PROGRAMS CONDUCTED DURING FEBRAUARY 2022-23

S. No.	Date	Type of Event / Program	Title of the Event
1	16.02.2023 & 17.02.2023	Symposium	<p style="text-align: center;"><b>List of Biomedical Department Events on Fiesta' 23</b></p> <ol style="list-style-type: none"> <li>1. FIESTAA 2023 - PAPER PRESENTATION</li> <li>2. POSTER PRESENTATION</li> <li>3. PROJECT EXPO</li> <li>4. MR. &amp; MS. MEDICO SAPIENS</li> <li>5. PRO - THE MEDICO DATA</li> <li>6. CIRCUIFIX</li> <li>7. WORKSHOP ON ELECTRONIC SYSTEM DESIGN FOR BIOMEDICAL ENGINEERING</li> <li>8. WORKSHOP ON GRAPHICAL SYSTEM DESIGN USING LABVIEW</li> </ol>
2	25.02.2023	Synergy' 23	<p style="text-align: center;"><b>List of Department Events on Synergy' 23</b></p> <ol style="list-style-type: none"> <li>1. Recent Trends in Medical Instrumentation and its Application</li> <li>2. Corporate life in Biomedical Industry</li> </ol>

### Industry visits by the Department

S. No	Date of Visit	Name of the Industry visited by the faculty during February 2023
1.	07.02.2023	Silicon systems, Coimbatore
2.	08.02.2023	Kongunadu Hospital, Coimbatore
3.	10.02.2023	Harimith Medical Equipments, Coimbatore
4,	28.02.2023	Ortho-one Hospital, Coimbatore

## EVENT - 1 SYMPOSIUM – FIESTAA' 23

KPR Institute of Engineering and Technology had organized Fiesta' 23 on 16.02.2023 & 17.02.2023. To be a part of the Events, Department of Biomedical Engineering had conducted few offline Events with more than 120 External college students as Participants. Both Technical and Non-technical events were conducted and the Winners were awarded with Memento and Cash prize.

### 1. FIESTAA 2023 - PAPER PRESENTATION

Paper Presentation was conducted on 16.02.2023 at F104 hall, S&H block, KPRIET. The Event was organized by Mr. John Amose, AP(Sr.G)/BM. Thirteen teams have presented their works and Dr. N. Rajasingam, AP(SL.G)/BM and Mr. R. Krishna kumar, AP/BM evaluated the Marks based on the Content, Novelty, Presentation and Communication skills and the Post presentation answers to the Queries. Three teams were awarded Memento and Cash prizes.

**KPR INSTITUTE OF ENGINEERING AND TECHNOLOGY COIMBATORE**  
Learn Beyond

**DEPARTMENT OF BIOMEDICAL ENGINEERING**  
PRESENTS  
**FIESTAA '23**

**PAPER PRESENTATION**

THEME: CURRENT EMERGING TRENDS IN BIOMEDICAL APPLICATIONS

DATE : 16.02.2023  
MAXIMUM 2 MEMBERS PER TEAM  
(Individual participation allowed)  
VENUE : F104, First floor, S&H Block

SCAN HERE

<https://kpriet.ac.in/fiestaa>

STUDENT COORDINATOR  
SANGAMITHRA.S - 9789282278

1st PRIZE: RS.3000  
2nd PRIZE: RS.1500  
3rd PRIZE: RS.1000

FACULTY COORDINATOR  
MR.JOHN AMOSE AP(SR.G)  
johnamose@kpriet.ac.in  
904294206



### 2. POSTER PRESENTATION:

The Poster Presentation event on 16.02.2023 at F103 hall. Dr.S.Logesh kumar, AP(SL.G)/BM had organized the Event. Ten teams have participated and two teams were selected among them and awarded prizes.

**KPR INSTITUTE OF ENGINEERING AND TECHNOLOGY Coimbatore**  
Learn Beyond

**DEPARTMENT OF BIOMEDICAL ENGINEERING**  
PRESENTS  
**FIESTAA '23**

**POSTER PRESENTATION**

THEME : CURRENT EMERGING TRENDS IN BIOMEDICAL APPLICATIONS

DATE : 16.02.2023  
MAXIMUM 2 MEMBERS PER TEAM  
VENUE : S&H BLOCK, FIRST FLOOR, 103

SCAN HERE

<https://kpriet.ac.in/fiestaa>

STUDENT COORDINATOR  
VYTHEESWAR P - 9489187738

FACULTY COORDINATOR  
Dr.LOGESH KUMAR.S - 9994463277  
logeshkumar.s@kpriet.ac.in



### 3. PROJECT EXPO

Project Expo was conducted on the theme "Current emerging trends in Biomedical Applications" on 16.02.2023 at F102 hall. Dr.P.Arunkumar, AP(Sr,G)/BM has organized the Event. Twelve student participants from various colleges has participated in the event and presented their projects related to current emerging trends in Biomedical Applications. The best project was awarded a cash prize of Rs.2000. Two projects were awarded.



### 4. MR. & MRS. MEDO SAPIENES

This Event was conducted on 17th February, 2023 from 9 am to 11 am at the S & H Block, First floor, F 104. The Event was organized by Dr.T.Gayathri, AP(SI/G)/BM. Around 11 teams participated in this event from the colleges across Tamil Nadu. Maximum of two members per team were allowed. Three rounds were conducted for this event. Round 1 had 25 MCQ type questions. The theme was related to basic science. One mark was given for the correct answer. No negative marks were awarded. Round 2 was a picture-based quiz and the theme was current trends in biomedical engineering. Seven questions were with pictures and questions and eight questions were without any questions. Two marks were awarded for each question. Top 5 teams were selected at the end of this round. Round 3 was disease prediction based on pictures. Marks were allotted based on how fast they were able to answer from the given images. If they answer at the first attempt, 10 marks were awarded. If not, the marks were deducted according to the time taken to find the correct answer. In the final round, two teams were selected as the winners.



## 5. PRO – THE MEDICO DATA

The Students from External colleges have attended the Competition. The Competition comprises of three rounds with the difficulty of consecutive round daunting than the previous one. The first round starts with 11 participants. the Round 1 quiz consists of 25 Multiple Choice Questions. The duration of the round is 25 minutes. Second round consists of 10 questions and the duration was 15 minutes. Five students were shortlisted for the final round based on the scores obtained from first and second round. Final round comprises of two analytical questions and two students were chosen as a winner and a runner and awarded cash prizes.

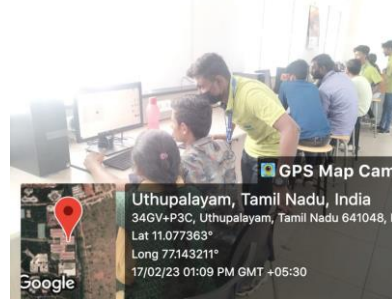


## 6. CIRCUIFIX

Department of Biomedical Engineering organized the competition of fixing a circuit depends on the specific issue or problem named as "Circufix " that needs to be addressed and identifying errors or faults in an electronic circuit on 17th February 2023 ( 11 : 00 am to 01 : 30 pm ) at Medical Data Analytics Laboratory.

The competition focused on the following points

1. Basics of electronic circuit configurations
2. Online simulation tools to design circuits virtually
3. Circuit debugging to identifying and correcting errors in an electronic circuit to ensure that it functions properly





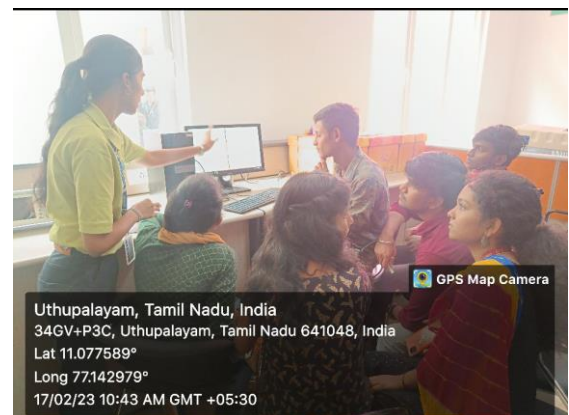
## 7. WORKSHOP ON ELECTRONIC SYSTEM DESIGN FOR BIOMEDICAL ENGINEERS

A workshop was organized and conducted on "Electronic system design for Biomedical Engineers". The event began at 9.00 AM in the morning in the Medical Data Analytics laboratory. The participants were restricted to 20. The event started with an introduction to microcontrollers and microprocessors Ms Joselyne Sneka I T III BME explained the concepts. Then Ms Kowshika R III BME demonstrated an experiment using Arduino, Servo motor and PIR sensor. Mr Saalih Sulthan S II BME and Ms Varnika M II BME simulated the same experiment using TinkerCAD. Then Mr Vishnu K III BME and Ms Joselyne Sneka III BME demonstrated another experiment using ESP32 on board and on the simulator Wokwi as well. After the demonstrations, the participants were given space to simulate their own models. The participants were given small tasks and the student coordinators guided them through the practice session in completing their tasks. The doubts were cleared then and there. Later the faculty Coordinator Dr A Allwyn Gnanadas addressed the participants sharing the importance of electronic system design. He showed them various microcontroller boards starting from 16MHz fast controllers to 1.4GHz fast controllers. All the possible single core, dual-core processing capabilities and their need were discussed. The professor also shared the options and various protocols that are available with the respective boards and shared how these features enable IoT in medical field. finally, the session ended with a Question answer session followed by a feedback session.



## 8. WORKSHOP ON GRAPHICAL SYSTEM DESIGN USING LABVIEW

Hands-on training was conducted for the participants from various institutions to gain fundamental knowledge in LabVIEW programming, data acquisition and analysis. Mr.B.PriyaDarshini has coordinated the workshop. Basic concepts of virtual instrumentation was explained. Real time applications of LabVIEW were stated. The industries using LabVIEW and the tools they majorly work upon projects were stated. Few real time projects were explained. Received good feedback from the participants.



## EVENT – 2 - SYNERGY' 23

### 1. Guest Lecture on Recent advancements in Medical Instrumentation and its Applications

The Department of Biomedical Engineering in association with IIPC have conducted Guest lecture on Recent advancements in Medical Instrumentation and its Applications on 25rd February 2023 on the occasion of Synergy' 23. The Resource Person is Dr.N.Nandakumar, Founder & CEO, Prime Biomed Technologies, Tiruppur. The Chief Guest introduction was given by Ms. B. Neha Nesvas, III BME student. Followed by the Expert session. The Guest has given a brief note on the evolution of Hospital and Medical Instrumentation. Dr. N. Nandakumar categorized various Biomedical equipment's into three types, Diagnostic, Therapeutic and Monitoring devices. He started with Stethoscope; a diagnostic medical device used to hear heartbeat of the Patient. He then explained most of the Biomedical Equipment's function, working, advantages, limitations and future scope. The Guest then explains the Ultrasound and its application types such as Doppler Ultrasound, Fetal Ultrasound, 3D ultrasound and 4D ultrasound and its advantages and applications. The Guest had explained about the ECG and EEG devices and their recent advancements. He then explained about ICU equipment's and its importance. He explained the operation theatre procedures and the role of Biomedical Engineers in Operation theatre preparations. The Speaker then demonstrated a video on how twin babies are made delivered through surgery, with the mother being awake and conscious. He then presented the students the list of achievements made possible, with the aid of recent advancements in Biomedical devices and educated the students with various opportunities and scope in Biomedical engineering and motivated the students to succeed in their Career. The Guest had encouraged the students to develop their entrepreneur skills and explained the procedure to enhance their Biomedical engineering career as entrepreneur. At the end of the Session, Mr. S. Vignesh, III BME had delivered Vote of Thanks to the Chief Guest, Head of the Department, Faculty members and BME students



**EVENT – 2 - SYNERGY' 23****2. Interactive Session on Corporate life in Biomedical Industry**

The Department of Biomedical Engineering organized an interactive session in SYNERGY '23. This session focused on Corporate life in Biomedical Engineering. During the session, the moderator Ms. Joselyne Sneha asked various questions to Mr. Rajesh Dhamodharasamy which were thought provoking. He shared about the business culture in the US as well as in India. His answers enlightened our mind to be focused on what we study and do in our future. He gave an idea about Startups which are necessary in the field of Biomedical Engineering to bring in fresh ideas. His answers to all the questions were really inspiring. Most importantly, he was very concerned about taking care of the mental and physical health of every person since it helps us to develop our skills after joining the industry. He shared about the products in which Philips was working like X-ray machines, Ultrasound devices, etc. His field of work is Defibrillator. He discussed about the recessions happening everywhere and he gave a solution to overcome it. His ideas for recession are to explore ourselves with new technologies every day which will help us to sustain in professional life and it will help us to be more creative. Overall, the session cleared the doubts in each and every person who is on their journey to get a good job and also in entrepreneurship.



### Student Achievements – Technical / Non-Technical

S. No	Name of the Students	Year	Name of the Event / Program	Achievements
1.	Ms. K. Priyadharshini	II BME	Sports	Second place in Throwball
2.	Ms. K.C. Arthi			Third position in Throwball
3.	Mr.K.Gowtham			Sixth place in Open State competition
4.	Ms. V. Lithyashree and Team			Winners in Volleyball, Covai Ties Tournament
5.	Students of II BME		Online Certification	290 Coursera certifications
5.	Ms.K.S.Gayathri	III BME	Technical Event @ Karpagam Institution	Third place and Won Cash award Rs.1000/-
6.	Ms.Ridhana Sri			
7.	Ms.Bharathi Prabha			
8.	Ms. Priyadharshini		NCC	B Certificate

## Faculty Contribution

### Patents / Achievements / FDP/ Conference and Workshops Attended

S. No	Name	Name of the Webinar/ Workshop/ FDP/ Internship/ Achievement	Organized by
1.	Dr. P. Sreelatha	Design patent Granted	-
2.	Mr. R. Krishna Kumar	Patent Publication	-
3.	Dr. A. Allwyn Gnanadas	Best Faculty of the Department Award	KPRIET
4.	Dr. T. Gayathri	Best Mentor of the Department Award	KPRIET
5.	Mr. D. Saravanaraj, Technical Officer Grade 2	Best Nonteaching staff of the Department	KPRIET
6.	Mr. R. Krishna Kumar	Completed Online certification course with 90% marks	Coursera

## Glimpses

### III BME Students received Award @ Karpagam Institution



### II BME Students, Ms. K. C. Arthi & Ms. K. Priyadharshini secured Second place in Covai Ties Throwball Tournament



### II BME Student Mr. K. Gowtham secured Sixth place in the Open State competition in Dead Lifting



### II BME Student, Ms. V. Lithyashree and Team won Covai Ties Tournament



### III BME Students, Ms. K. C. Arthi & Ms. K. Priyadharshini secured Third place at SNS Institution



## Faculty members of BME receiving awards from Madam Principal @ Kalaiarangam, KPRIET

