

## K S R INSTITUTE FOR ENGINEERING AND TECHNOLOGY

### DEPARTMENT OF BIOMEDICAL ENGINEERING

#### VISION

To impart quality education in the field of biomedical science by applying engineering principles.

#### MISSION

- DM1:** Impart quality education to enhance problem solving skills, leadership qualities and team spirit through teaching and learning process with ethical responsibilities.
- DM2:** Enrich interdisciplinary skills by providing state of the art laboratories and facilities.
- DM3:** Enhance research and entrepreneurship skills with social responsibilities to meet social needs.

#### PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- PEO 1: Core Competency:** To enable the graduates to demonstrate their skills in solving challenges in their chosen field through the core foundation and knowledge acquired in engineering and biology.
- PEO 2: Professionalism:** To enable the graduates to exhibit leadership, make decisions with societal and ethical responsibilities, function and communicate effectively in multidisciplinary settings.
- PEO 3: Higher studies and Entrepreneurship:** To ensure that graduates will recognize the need for sustaining and expanding their technical competence and engage in learning opportunities throughout their careers.

**PRANAA**  
**Association of Biomedical Engineering**

Department Association called “PRANAA” was formed in the year 2021 In order to provide a platform for the students and faculty to present and share their ideas, thoughts and findings and to conduct expert lectures, seminars, workshops, symposiums, conferences etc. This also aims in bringing pioneers in Biomedical Engineering minds to drive them towards the excellence in Biomedical Engineering.

- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized **“INAUGURAL FUNCTION”** on 30.08.23. The Resource person Mr.I.Ramarajan, Managing Director, Trans India Calibration Services Pvt Ltd, Tenkasi
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Seminar on **“IMPORTANCE OF MEDICAL DEVICE REGULATION”** on 30.08.2023. The Resource person Mr.I.Ramarajan, Managing Director, Trans India Calibration Services Pvt Ltd, Tenkasi.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Seminar on **“LEGAL STRUCTURES AND ETHICS STEPS IN ESTABLISHING STARTUPS”** on 30.08.2023 .The Resource person Mr.Somasekhar Murapala M.E., Scientist-C, Radiology, RSOQADXE, Andhra Pradesh MedTech Zone Limited, Visakhapatnam.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Workshop on **“ANALYSIS OF PSYCHOLOGICAL EFFECTS AT WORKSPOT – A PRACTICAL APPROACH”** on 11.09.2023 & 12.09.2023 .The Resource person Dr. Ashok Vajravelu B.E.,M.E., Ph.D., Senior Lecturer, Faculty of Electrical and Electronics Engineering, University Tun Hussein Onn Malaysia(UTHM), Malaysia.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Seminar on **“MEDICAL IMAGE PROCESSING”** on 23.09.2023 .The Resource person Mrs. P. Poovizhi, Assistant Professor, Dr.N.G.P Institute for Engineering and Technology, Coimbatore
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Technical Event on 26.09.2023 .The Resource person Mrs. V.D.Nandhini, Assistant Professor, Department of BME, KSR Institute for Engineering and Technology, Tiruchengode.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Seminar on **“IoT IN HEALTH CARE”** on 27.09.2023 .The Resource person Dr.N.Jeyakannan, Professor and Head, Department of Artificial Intelligence and Data Science, Rathinam Technical Campus, Coimbatore.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Non Technical Event on 29.09.2023 .The Resource person Mr. B B Sangameswaran, Assistant Professor, Department of BME, KSR Institute for Engineering and Technology, Tiruchengode.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Non Technical Event on 29.09.2023 .The Resource person Mrs. P.Arulmozhi, Assistant Professor, Department of BME, KSR Institute for Engineering and Technology, Tiruchengode.
- Department of Biomedical Engineering & "PRANAA" - Association of BME, organized Seminar on

**“NON INVASIVE OPTICAL BLOOD ’ GLUCOSE CONCENTRATION PREDICTION SYSTEM”** on 30.09.2023 .The Resource person Dr. Ashok Vajravelu B.E.,M.E., Ph.D., Senior Lecturer, Faculty of Electrical and Electronics Engineering, University Tun Hussein Onn Malaysia(UTHM), Malaysia.

- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Seminar on **“VALIDATION OF BUSINESS OPPORTUNITY”** on 13.10.2023 .The Resource person Ms.K.Soundrya, Asst. Manager HR & Payroll, DLUX TECH, Coimbatore.
- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Seminar on **“RECENT TRENDS IN IoT”** on 14.10.2023 .The Resource person Mr.S.Sudhakar, Embedded Software Engineering, Bosch Global Software Technology Pvt Ltd, Coimbatore.
- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Technical Event on 12.11.2023 .The Resource person Mr. P.J.Ragu, Assistant Professor, Department of BME, KSR Institute for Engineering and Technology, Tiruchengode.
- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Technical Event on 19.11.2023 .The Resource person Mrs. V.D.Nandhini, Assistant Professor, Department of BME, KSR Institute for Engineering and Technology, Tiruchengode.
- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Seminar on **“LATEST INNOVATIONS IN MEDICAL FIELD”** on 28.11.2023 .The Resource person Mr. Samba siva Rao, Project coordinator, VersityCrion Learning PVT. Ltd.
- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Seminar on **“INNOVATION PATHWAY FOR NAVIGATING ONFLICT RESOLUTION IN THE DIGITAL AGE”** on 29.11.2023 .The Resource person Ms. C. Aiswarya, Resolution Specialist International Process, Amazon.
- Department of Biomedical Engineering &"PRANAA" - Association of BME, organized Seminar on **“BIOMEDICAL SIGNAL AND DATA PROCESSING”** on 25.12.2023 .The Resource person Mr. V.Pragadheeswaran M.Tech., Founder & CEO, Aries Biomed Technology, Coimbatore.

## Activities Presented by the Faculty

S.No	Patent Details	Applicant Name	Patent Filed Date	Patent Status (Applied/Filed/Published)
1.	Solar Water Heating System	Mr.S.Parameswaran	Patent Filed Date 29/07/2023 Patent Number 396156-001	Published Date 15/11/2023
2.	Ai Based Walking Stick	Mrs.P.Arulmozhi	Patent Filed Date 18/10/23 Patent Number 397931-001	Published Date 14/12/2023
3.	Machine Learning Models And Artificial Intelligence Frameworks In Prediction And Resuscitation Of Cardiac Arrest	Mrs.T. Yamunarani	Patent Filed Date 29/07/2023 Patent Number 202341051189	Published Date 01/09/2023
4.	Artificial Intelligence And Machine Learning Based Brain Controlled Car For Disabled Person And Old Age Person	Ms.V.D.Nandhini	Patent Filed Date 04/09/2023 Patent Number 202341059400 A	Published Date 06/10/2023
5.	Neuro Fuzzy And MRI Imaging Based Detection And Optimization Of Bone Cancer Using Deep Neural Network	Mr.S.Arivoli	Patent Filed Date 28/08/2023 Patent Number 202321057525	Published Date 06/10/2023
6.	Data Centric Techniques To Enhance Machine Learning Performance In Quantum Information Science	Mrs.M.Brindha	Patent Filed Date 21/10/2023 Patent Number 202321057525	Published Date 24/11/23

S. No	Name of the Faculty	Title of the paper	Name of the conference	National / International	Year of publication
1.	Mrs.M.Brindha	An investigation of a novel TriangleshapedsierpinskiMicrostrip Patch antenna for implantable Biomedical Applications	7th International Conference on Electronics,Communication and Aerspase Technology	International	2023
2.	Mr.P.J.Ragu	Post-Traumatic Stress Disorder (PTSD) Analysis using Machine Learning Techniques	International conference in Electrical, Electronics and Computational intelligence(ICAEECI 2023)	International	2023
3.	Mr.S.Parameswaran	Gain Enhancement Of Novel Microstrip Patch Antenna Using Meandered Rectangular Shape For Biomedical Applications	International conference in Electrical, Electronics and Computational intelligence(ICAEECI 2023)	International	2023
4.	T.Yamunarani	EEG - Based Bipolar Disorder detection using Machine learning	International conference in Electrical,Electronics and Computational intelligence(ICAEECI 2023)	International	2023
5.	BB.Sangameswaran	Gain Improved Novel Coplanar Waveguide-Fed Sierpinski Carpet Fractal Microstrio Patch Antenna for the acquisition of Bio signals	International Conference on Automation, Computing and Renewable Systems(ICACRS 2023)	International	2023
6.	T.Yamunarani	Controller design for earthquake excitations using smart base – isolated structure	International Conference on sustainable communication networks and Applications (ICSCNA)	International	2023
7.	Mr.S.Parameswaran	Patient Health Monitoring using Fog and Edge Computing	International Conference on MultidisciplinaryResearch in Technology and Management 2023 (ICSCNA)	International	2023

<b>S.No</b>	<b>Name of the Author</b>	<b>Title of the Paper</b>	<b>Name of the Journal</b>	<b>Month &amp; Year</b>
1	Dr.RPrabu	DASUIP: Driver Alerting System for Smart Safety using Image Processing	IEEE	July & 2023
2	Ms.V D Nandhini, Mr.P J Ragu	Designing and validating an MD5 Hash Algorithm using the UVM Verification Framework and Checkers	IEEE	July & 2023
3	Ms.V D Nandhini	Energy Efficient Dynamic Routing Protocol for wireless sensor network	IEEE	September & 2023
4	Mrs.PArulmozhi	Advanced Power management for Electric Vehicle charging system	IEEE	December & 2023

**(Co-curricular Activities – Intra College level)****LIST OF STUDENTS PARTICIPATED IN PAPER PRESENTATION**

S.No	Name of the student	Year / Semester	Title of the paper presentation	Name of the Organization
1.	HARIKRISHNAN K	II/III	ARTIFICIAL INTELLIGENT FOR COUTING THE VEHICLE	SRI RAMAKRISHNA ENGINEERING COLLEGE
2.	RITHIKSHA S	II/III		
3.	KAVIN PRABU S	II/III		
4.	RAMYA S	II/III	HOSPITAL WORKERS MONITORING SYSTEM	
5.	SANJAY N	II/III		
6.	AYESHA NABILA S S	II/III		
7.	HARIKRISHNAN K	II/III	HUMAN SENSING ROBOT HAND	PAAVI ENGINEERING COLLEGE
8.	SANJAY N	II/III		
9.	SHARMILAN P	II/III		
10.	ARCHITH V	II/III	HEART LUNG MACHINE	MAHENDRA INSTITUTE OF TECHNOLOGY
11.	DHANASRI K	II/III		
12.	GOKULAVASAN A C	II/III	ABO BLOOD GROUP SYSTEM IN CONTACT OF HUMAN DISEASE	
13.	MAYILANANTHAN P	II/III		

**LIST OF STUDENTS PARTICIPATED IN WORKSHOP**

S.No	Name of the Student	Year/ Semester	Title of the workshop	Name of the Organisation
1	ABINAYA.M	II/III	AI-Driven Innovations in Biomedical Engineering	Mahendra College of Engineering
2	ABIRUBA.P	II/III		
3	ARCHITH.V	II/III		
4	DHANASRI.K	II/III		
5	KAVIYA SREE.B.K	II/III		
6	MITHRA.S	II/III		
7	SIRITHA.S	II/III		
8	YUVASRI.K	II/III		
9	GOKULA KRISHNAN V	II/III	Seminar on Design and Fabrication of Thin Film Biopatches for Detecting Bio Parameters in Human body under Noninvasive Methodology for Healthcare Applications 2023	Dr.NGP Institute of Technology
10	TEJA G	II/III		
11	HARI PRASANTH M	II/III		
12	NAVEEN P	II/III		
13	SUNIL KUMAR A	II/III		
14	PRABUDEVA P	II/III		
15	RAVI KUMAR M	II/III		
16	INDIRAN K	II/III		
17	PAVITHRAN G	III/V		
18	PRIYADHARSHINI N	III/V		
19	AGILAMBAL S	III/V		
20	SYED ALI FATHIMA M	III/V	IoT Based on Health Care	Sona College of Technology
21	SOUMYA S	III/V		
22	VAISHNAVI T K	IV/VII		
23	GOBINESWARI I	IV/VII		
24	VARSHINI R	IV/VII		
25	AGALYA R	IV/VII	National Institute of Technology, Tirchy	
26	SANJAY T	IV/VII		
27	MONISH C	IV/VII		
28	AJAY VENKATESH	II/III	MATLAB	K S R College of Engineering
29	HARISREE KARAN	II/III		
30	RANJITH	II/III		
31	RITHIKSHA	II/III		
32	NISHAL	II/III		
33	KEERTHANA	II/III		
34	SANJAY L	II/III	Block Chain Technology	VIT,Chennai
35	KEERTHANA	II/III		
36	RATHIMAN	II/III		

### LIST OF STUDENTS PARTICIPATED IN CONFERENCE



S.No	Name of the Student	Year/ Semester	Title of the Conference	Name of the Organisation
1	PRIYADHARSHINI N	III/V	EFFECTS OF SILVER NANOPARTICLES INDUCED ON MULTIDRUG RESISTANCE BACTERIA	NEHRU INSTITUTE OF TECHNOLOGY
2	PRASANNA S	III/V	RADIATION PROTECTION : SAFEGUARDING HEALTH SAFETY IN HOSPITAL AND INDUSTRIES	KARPAGA VINAYAGA COLLEGE OF ENGINEERING AND TECHNOLOGY
3	RANJINI M	III/V	MODERN TENDENCIES IN VEHICLES BASED CONDITION MONITORING OF RAILWAY TRACK	KARPAGA VINAYAGA COLLEGE OF ENGINEERING AND TECHNOLOGY
4	RANJINI M	III/V	OBSTRUCTION DETECTION SYSTEM FOR ELEVATOR USING AI	HINDUSTAN COLLEGE OF ENGINEERING AND TECHNOLOGY
5	DHIVYA S	III/V		
6	JEEVITHA V	III/V	SMART HEAT STROKE ALARM SYSTEM CONTROLLED USING AI	HINDUSTAN COLLEGE OF ENGINEERING
7	BHARATHKUMAR R	III/V		
8	POORANI S	III/V		
9	GOKUL G	III/V	INSTRUMENTATION AND MONITORING MODERN TENDENCIES IN VEHICLES BASED CONDITION MONITORING OF RAILWAY TRACK/ RADIATION PROTECTION : SAFEGUARDING HEALTH SAFETY IN HOSPITAL AND INDUSTRIES	KARPAGA VINAYAGA COLLEGE OF ENGINEERING AND TECHNOLOGY

**LIST OF STUDENTS ATTENDED INDUSTRIAL TRAINING**

S. No	Student Name	Company Name	Year/ Sem	From Date	To Date	Area
1	Darvin v	AMTZ, Visakhapatnam Andra Pradesh.	IV/VII	07/08/2023	27/08/2023	Critical Care Equipment, Operation Teartre Equipment, Radiology Equipment
2	Kavin Kumar S					
3	Kannan					
4	Raghuraman M					
5	Vishnuram S R					
6	Bharathkumar R					
7	Sivabalamurugan J					
8	Venugopal S					
9	Jagadeesh S					
10	Rajesh Kumar K					
11	Gokul G		III/V			
12	Premkumar R G					
13	Dhayanithi P					
14	Deepak S					
15	Nitheeshkumar S					
16	Dhanapal K					
17	Senthamilmaran M					
18	Soumya S					
19	Ranjini M					
20	Dhivya S					
21	Yasmin S					
22	Poorani S					
23	Syed Ali Fathima					
24	Thuspika N					
25	Kokila P					
26	FeminaBanu P					
27	Rithika R					
28	Heera R					
29	Jeevitha V					
30	Kiruthika E					

**EDITORIAL BOARD**

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<b>Editor</b>	Mrs.V.D.NANDHINI.,AP/BME	
<b>STUDENT EDITORS</b>	<b>Final Year</b>	SANJAY T
	<b>Third Year</b>	KOKILA P
	<b>Second Year</b>	GOKULA KRISHNAN

### **Program Outcome for Biomedical Engineering**

**PO 1: Engineering Knowledge:** Apply knowledge of mathematics, science and engineering principles to solve problems in the domain of Electronics and Communication Engineering.

**PO 2: Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO 3: Design/Development of solutions:** 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.

**PO 4: Conduct investigations of complex problems:** 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.

**PO 5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**PO 6: The engineer and society:** 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.

**PO 7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.

**PO 8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO 9: Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO 10: Communication:** 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.

**PO 11: Project management and finance:** 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.

**PO 12: Life-long learning:** 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 (PSO)**

**PSO1: Embedded system design:** Graduates will be able to analyze, design, construct and test electronic and embedded systems for desired specification.

**PSO2 : Simulation Tools:** Graduates will be able to solve emerging real world problems using suitable hardware and software tools.