

ssn

MEDICAL

MEDICAL

Health Care
Doctor
Hospital
Pharmacist
Nurse
Dentist
First Aid
Surgeon
Emergency

MEDICAL

Health Care
Doctor
Hospital
Pharmacist
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First Aid
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Emergency



DEPARTMENT OF BIOMEDICAL ENGINEERING



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ABOUT SSN

SSN Institutions, founded by Dr. Shiv Nadar, Chairman, HCL Technologies, stands out as a premier centre of higher learning with a mission of pursuing excellence in education and research. The institutions, with their diverse and dynamic community of students offer a distinctive combination of some of the finest graduate, undergraduate and research programs, accomplished faculty, world class facilities and a residential campus set on a sprawling 250 acres of sylvan surroundings.

SSN College of Engineering has been ranked 27th by the National Institutional Ranking Framework 2017 released by the Ministry of Human Resources and Development, among all engineering colleges in India. SSN is ranked number one private engineering institution in Teaching, Learning & Resources and 17th among all engineering institutions in the category. SSN is ranked number five among all private engineering institutions in India. SSN College of Engineering has also been accredited by the NAAC with an A+ grade and also by NBA for 5 consecutive years. SSN College had been designated as an Autonomous University in 2018 and later established itself as a state university.

ABOUT THE FOUNDER

SSN Institutions was found by Padma Bhushan Dr. Shiv Nadar, Chairman of HCL Technologies. In 1994, Nadar established what he believed was closest to his heart – the philanthropic Shiv Nadar Foundation and created its first initiative in Chennai, the SSN Institutions, that is a top ranked engineering college.

Today the Foundation is a significant driver of social change and transformational education through its landmark institutions spanning the entire education spectrum from schools to universities. A young and a unique research led interdisciplinary university, the Shiv Nadar University has been identified.





ABOUT THE DEPARTMENT

The Department of Biomedical engineering reflects the interdisciplinary ideas and offers world class education and research opportunities to students. It was started in the year 2005 offering B.E degree in Biomedical Engineering. The department has been recognised as a research centre in 2011 and offers Ph.D. degree in Biomedical Engineering. It also offers Master of Engineering degree in Medical Electronics, since 2014.

Highlights of the department include industry-institute interactions with eminent healthcare organisations like Philips India, Perfint Healthcare, Phoenix medical systems, HCL Healthcare, Medtronic India etc. Further, the ethical committee of the institution is managed by the department. Apart from these, our students undergo internships at various government organizations such as IITs, IISC, DRDO and in renowned hospitals like lifeline Hospitals, FORTIS Malar Hospitals, Apollo hospitals, PSG Hospitals, Global Hospitals, Deepam Hospitals to name a few.

MISSION

The Vision of Biomedical Department is to become a Centre of Excellence in biomedical engineering for the prosperity of the country, ensuring quality health service delivery, education and research

VISION

- To educate students to understand the human body as an integrated system through quantitative engineering analysis and to use that understanding to design better therapeutic strategies, devices, and diagnostics
- To serve society by conducting research that develops quantitative linkages across scales in the human body and uses that development to build new tools to improve human health
- To catalyze interactions between biologists, physical scientists, and engineers to benefit medicine and human health
- To create enabling technologies through innovative and evidence based interventions and practices for the improvement of human health and health care



HOD'S DESK

**Let us prosper with tranquility !!
Let Peace Prevail !!**

**Dr. A. Kavitha
Professor and Head,
Department of Biomedical Engineering**



On behalf of the Department of Biomedical Engineering, it is my pleasure to invite you to our beautiful academic campus for conducting campus selection programmes for our students. It is my privilege to mention that this department was established in the year 2005 and over the years it has earned great recognition not only in India but all over the globe.

The students of this department are occupying enviable positions in various institutions for higher studies and organizations at home and abroad. The department has earned fame not only for its excellent academic and extracurricular activities, but also for its research and development activities.

A rigorous academic regimen has equipped students with the professional and personal skills to excel in which-ever domain sector they choose to work.

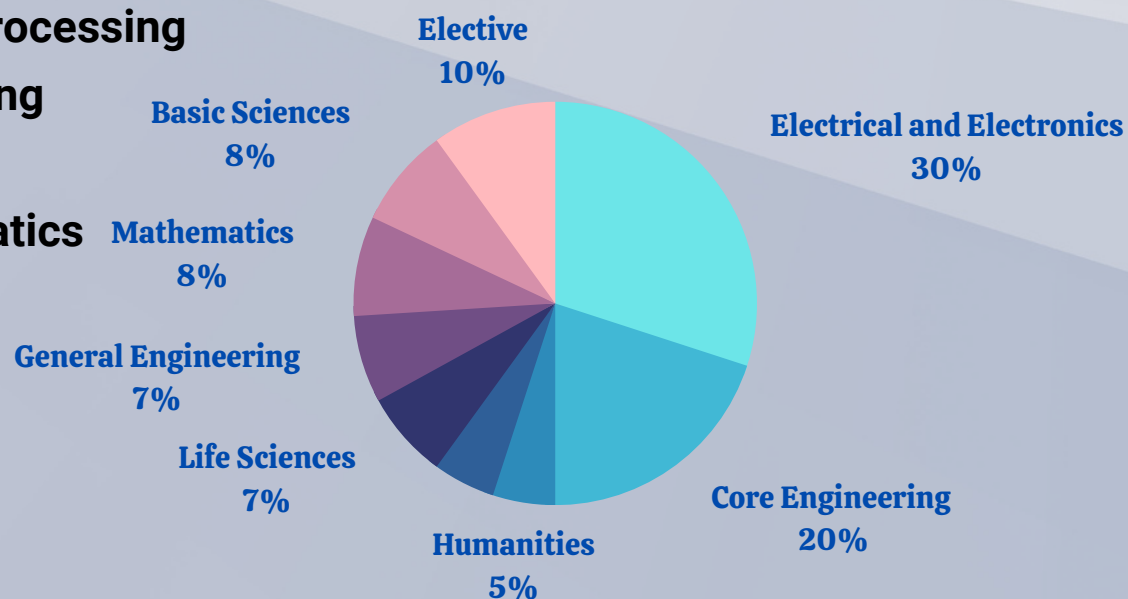
All the students recruited from Biomedical Department of SSNCE have proved to be great asset to all organizations they have joined. I am certain that the present graduates would maintain the same level of performance.

I wish the on-campus recruitment programme a great success and shall always look forward for mutually beneficial relationship with the recruit-ers of our graduates.



CURRICULUM

- Sensors and Measurements
- C,C++,java and python
- Statistics, Transforms, Random Processes
- Anatomy and Human Physiology
- Analog and Digital ICs
- Pathology and Microbiology
- Analog and Digital Communication
- Bio Control Systems
- Diagnostic and Therapeutic Equipment
- Bio Materials and Artificial Organs
- Biomedical Instrumentation
- Microprocessor and Microcontroller
- Pattern Recognition and Neural Networks
- Rehabilitation Engineering
- Physiological Modelling
- Medical Physics
- Radiological Equipment
- Biomechanics & Biofluids
- Digital Signal Processing
- Image Processing
- Deep learning
- Medical Informatics
- Assist Devices
- Biometrics
- Soft Computing





BOOTCAMP ON FUSION 360 DESIGN CHALLENGES

The department of Biomedical engineering, on behalf of SSN College of Engineering, conducted a Bootcamp on Fusion 360 in association with Autodesk Corporation on the 7th and 8th of October, 2022. The camp functioned as a precursor to the mega event to be organized at Anna University, in January, in association with the Government of Tamil Nādu and the Chief Minister's Naan Mudhalvan scheme. The principal, Dr .V.E. Annamalai, the head of the department of Biomedical engineering, Dr A Kavitha, and The Autodesk representatives, Dr. Prasath V, and Mr. Rohit Chandran, Education Engagement Specialists, Mr. Amey Jadhav and Mr. Abinesh, Fusion Catalysts presided over the inaugural ceremony. Mr. Thiruvengadam, the technical director of STAM digital tooling India was the chief guest for the inauguration ceremony. Dr Ramesh Pudale, Account Manager - MFG

We had 3 sessions on Day 1. Day 1 mainly focused on teaching and mentoring the participants, getting them familiar with the software and its interface. On Day 2, students were encouraged to brainstorm ideas and design their own models pertaining to the three themes provided on the naan mudhalvan website. The two days spent were surely memorable for both the student volunteers, and the participants as well.



Participants and Dignitaries of the Bootcamp



DEPARTMENT VENTURES

Dr J Vijay, Associate Professor, BME was the Co-ordinator, the overall organiser and the mentor. Dr. A Kavitha, HOD, BME, encouraged our department to take the design challenge under its wing and helped us conduct the event smoothly. 16 student mentors handled the event throughout, aided by other volunteers from the 3rd year students. All their combined efforts made the event a huge success. 4 Runner ups and 1 Overall winner was declared post evaluation, and the winners were given Autodesk T shirts and SSN trophy (Icon of SSN – clocktower Memento). The Runner ups were provided with Autodesk shirts.



Participants working for the Design Challenge Theme

MEETING REGARDING NBA ACCREDITATION

On November 18th, Dr. V.Mahesh, **Dr. Sachin**, and **Dr. Subashini** presented their respective course structure and curriculum to Prof. Samudra. Types of assessments with a sample, higher level of learning, and a sample of student's work were few points that were discussed in this meeting.



NBA Accreditation Meeting with Professor Samudra



DEPARTMENT VENTURES

IEEE EMBS STUDENT CHAPTER INAUGURATION

On 30th November, the Department of Biomedical Engineering **Inaugurated the Student Chapter of IEEE EMBS. The Vice Principal of SSNCE, HoD/BME, the Chief Guest, Dr. Nirav Patel and Dr. Pravin Kumar S. along with other faculty members of BME graced the event.** Following the inauguration and introduction of the Office Bearers for the academic year 2022-23, Dr. Nirav Patel gave an interactive talk on "Image Guided Surgery and Surgical Robots".

Dr. Nirav Patel explained his research and findings. He also went into the specifications of the challenges he faced through his research and also the future advancements and developments. The informative session with Dr. Nirav Patel piqued many questions among the students and the faculty members.



HOD/BME briefing about the department



Dr. Nirav Patel presenting a talk to the students of the BME Department



IEEE PHOTONICS SOCIETY INAUGURATION

On the 12th of September, the **Inaugural function of IEEE Photonics Society** was conducted by the Department of Biomedical Engineering. The chief guest was **Dr. N. Sujatha, Professor, Indian Institute of Technology, Madras**. She was accompanied by **Dr. A. Kavitha, Head of the Department, BME, Dr. M. Dhanalakshmi, Faculty Coordinator, BME, Dr. N. Venkateswaran, Student Branch Coordinator** and **Dr. Sree Sharmila, IEEE Student Branch Counsellor** on the dais.

The Chief Guest, Dr. N. Sujatha delivered an informative lecture on the topic, “Bringing light from bench to bedside: towards clinically viable photonic technologies”.

The official inauguration of the IEEE Photonics Society was also facilitated by the lamp lighting ceremony. **Dr. N. Venkateswaran, Student Branch Coordinator** gave us insights about the IEEE Photonics Society.



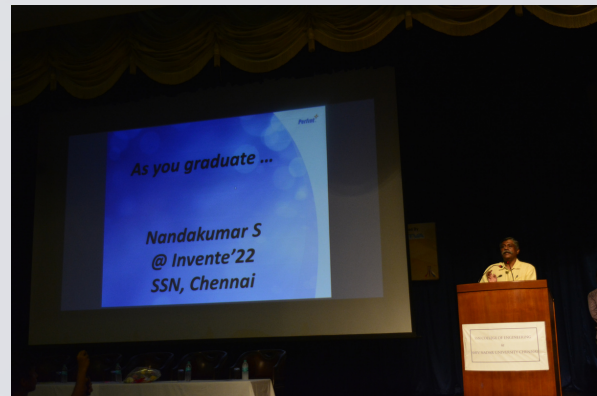
Chief guest Dr. N. Sujatha lighting the IEEE Photonics Society Lamp[



DEPARTMENT VENTURES

INVENTE 2022

The Department of Biomedical Engineering had the privilege to host Invente 2022 on the 1st and 2nd of December. This year marked a special year for Invente, as for the very first time, SSN Institutions and Shiv Nadar University Chennai jointly organized this student driven national technical fest. The inaugural ceremony was conducted in the presence of the honourable chief guest, Mr. Nandakumar Subburaman, **Dr. Kala Vijayakumar**, **Dr. V.E. Annamalai** and **Dr. A Kavitha**. Mr. Nandakumar Subburaman, the CEO and Co-founder of Perfint Healthcare gave an intriguing talk that students gained valuable knowledge from.



Invente 2022 Inauguration

The department of biomedical engineering had put together an exciting handful of technical and non-technical events, incorporating biomedical applications, designing, imaging and many more concepts for you to explore. One event that proved to be a grand success was The Project Expo event. Though it was the first time the department initiated this event, the expo lured a good number of participants. There was an overwhelming amount of registrations from various colleges like SRM Chennai, Veltech Multi-Tech, Bannari Amman Institute of Technology, Saranathan College of engineering etc.



DEPARTMENT VENTURES



Project Expo

A whole of two successful days were witnessed by many and appreciations for the events and organisation of events were commended. The nation wide symposium came to an end on 2nd December with the Valedictory ceremony.

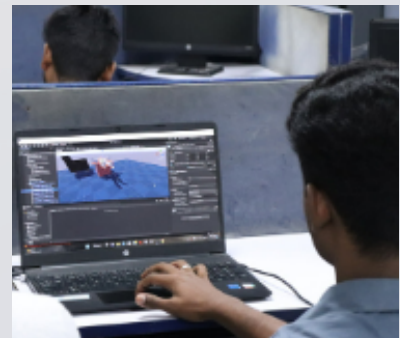




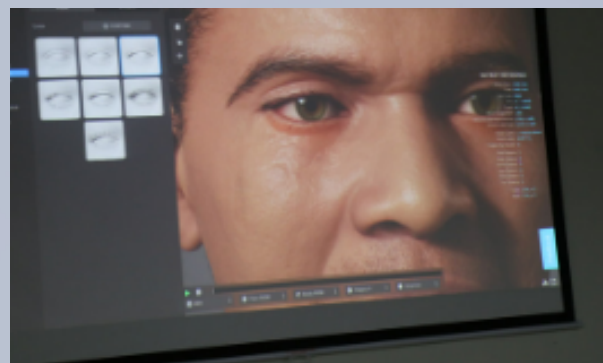
DEPARTMENT VENTURES

PRECONFERENCE WORKSHOP ON AR / VR

The Pre-Conference Workshop on AR & VR was conducted by The Department of Biomedical Engineering, co-ordinated by **Dr. A. Kavitha**, **Dr. S. Pravin Kumar** and **Ms. B. Divya** in association with the Centre for Healthcare Technologies, on March



14 and 15, 2023. Mr. Vishnu and Mr. Easwaran, industrial experts from Machenn Innovations, were present to guide the participants through the hands-on experience. They shared their insights on the potential of AR and VR technologies and helped us understand the basic user interface of the software that we intended to use and the enormous potential of the simplest of commands we were going to implement. Almost 70 people, including staff, from different departments and colleges, participated in the event. The goal of the workshop was to give a general overview of the most **recent advancements in AR and VR technology**, as well as their application in several fields. The workshop mainly focused on explaining the basics of AR and VR and assisting us, novices in comprehending the idea.





DEPARTMENT VENTURES

NINTH INTERNATIONAL CONFERENCE ON BIOSIGNALS, IMAGES, AND INSTRUMENTATION

The Department of Biomedical Engineering, SSNCE in association with the Centre for Healthcare Technologies had organized the Ninth International Conference on Biosignals, Images, and Instrumentation (ICBSII 2023) on March 16 - 17, 2023. It was a two day conference conducted in hybrid mode with offline and online participants. The Conference commenced with the Inaugural session on the 16th of March. The Chief guest Prof. Yuichi Kurita, Biological System Engineering Lab, Hiroshima University, Japan joined us virtually and was accompanied by Dr V. E. Annamalai, Principal, SSN College of Engineering, **Dr. S. Radha, Vice Principal, SSN College of Engineering** and **Dr. A. Kavitha, Conference Convenor, Head of the Department, BME** on the dais. The program began with the traditional lighting of the lamp by the dignitaries present on the dais. Following which, the Principal, Vice Principal and Head of the Department released the proceedings of the 9th ICBSII, 2023



Then, Professor Kurita began to deliver a lecture on the topic **“Human augmentation with a soft wearable exoskeleton”** as part of the session. He emphasized the aspects of developing wearable devices and their importance in rehabilitation through the visuals captured in his research laboratories. It was a very informative session indeed.



NINTH INTERNATIONAL CONFERENCE ON BIOSIGNALS, IMAGES, AND INSTRUMENTATION



The next keynote session as presided by **Dr. Rajeswari Aghoram, Associate Professor**, Department of Neurology, JIPMER, Pondicherry. She addressed the gathering about **“Pattern recognition from a clinician's perspective”**. Dr. Rajeswari made the session very interactive by engaging with the audience. She began the lecture by discussing about a common man’s visit to a clinic and his interactions with his physician.

On the same evening, Arthur McClelland, PhD, Principal Scientist, Centre for Nanoscale Systems, Harvard University, virtually delivered a keynote address on the **“Applications of Raman spectroscopy and Imaging for Biomedical Applications”**. The session started with the introduction to spectroscopy and moved on to their applications in biomedical domain. The speaker gave detailed insights on this topic and educated the audience with his speech.





NINTH INTERNATIONAL CONFERENCE ON BIOSIGNALS, IMAGES, AND INSTRUMENTATION

The events for day 1 concluded with a cultural show hosted by the students of the Department of BME. They had showcased their skills by singing, dancing, beat boxing and many such artistic talents. Their programs were thoroughly enjoyed by the audience seated for the event. It was a delight to watch them perform.



Day 2 events of the Conference started with the virtual session by Dr. Yuvaraj Rajamanickam, Education Research Scientist, NTU, Singapore who elaborated on the topic “**Artificial Intelligence in Neurology**”. He began his session by briefing upon AI and its development in today’s world. He had also elucidated on the advancement of AI in the field of diagnosis and treatment of neurological disorders. The audience found the session very interesting to attend.

The chief guest for the subsequent session was Dr. Sudhir Ganesan, Consultant Spine Surgeon, Sri Ramachandra Institute of Higher Education and Research. He had spoken about “Research in India from a Surgeon's Perspective”. The speaker shared his experiences he had undergone in his career as a researcher. He had also informed the audience about certain patients’ cases which have had a huge impact on him. It was very inspiring to know about the challenges he had faced in his journey in order to become a successful surgeon.





DEPARTMENT VENTURES

NINTH INTERNATIONAL CONFERENCE ON BIOSIGNALS, IMAGES, AND INSTRUMENTATION

Along with the keynote sessions, set of six paper presentation track sessions were held during the Conference, where participants were allowed to present their research articles. Each track was presided by an internal Session in charge and a Session chair who is an external expertise. A total of 82 papers across the globe were received under three categories: Biosignals, Medical Instrumentation, Medical Images and sensors. The submitted papers underwent a pre-evaluation assessment by conference editors and papers with a similarity index of less than 15% were selected. All the reviewers have an expertise in assessing the novelty, quality, impact, and importance of the research. Reviewers considered the following key points related to technical content, quality, and presentation of the papers. 37 papers were selected post scrutiny, which were presented across the 6 tracks.





DEPARTMENT VENTURES

NINTH INTERNATIONAL CONFERENCE ON BIOSIGNALS, IMAGES, AND INSTRUMENTATION

The Conference ended with the Valedictory Session on 17th March. The chief guest was Dr. David Belo, Senior Scientist- Machine Learning for Time Series Fraunhofer Portugal AICOS, Portugal. He was accompanied by Dr. A. Kavitha, Head of the Department, BME, Dr. M. Dhanalakshmi, Conference Coordinator, BME and Dr. R. Nithya, Conference Coordinator, ICBSII 23 on the dais. Dr. David Belo delivered a very informative lecture on the topic, **“Challenges and opportunities**



in handling healthcare data”. He began his presentation by introducing us to data handling in physiological domain. Following which, he briefed us about the hurdles in data acquisition. Dr. Belo then went on to give insights about the usage of data in various healthcare applications at the end of his speech.

The Conference was organized by **Dr. A. Kavitha, Convenor, HoD, BME, Dr. M. Dhanalakshmi, Conference Coordinator, ICBSII 23 and Dr. R. Nithya, Conference Coordinator, ICBSII 23 and Dr. L. Suganthi, Conference Coordinator, ICBSII 23**. The entire function went on very well and concluded with a formal vote of thanks. This conference was an excellent platform for researchers, academicians, and industry practitioners across the globe to showcase their novel ideas in the field of biomedical engineering.





DEPARTMENT VENTURES

DEPARTMENT LAB FACILITIES

- Biomedical instrumentation lab
- Bioscience lab
- Tissue engineering lab
- Medical software lab
- Bioelectronics lab
- Diagnostic and therapeutic lab



- Voice lab setup
- Feynman nano laboratory
- Human factors engineering lab
- Augmented Reality/Virtual Reality LAB
- Centre for Healthcare Technologies



VOICE LAB SETUP



STUDENT ACTIVITIES

The following PG students have attended a virtual workshop "UpSkill Enmed" conducted by IIT Kharagpur on the 22nd and 23rd July 2022.

- **Abiya MJ**
- **Arulselvi**
- **Chandana H**
- **Dharshini Venkatesan**
- **Jeevitha R**
- **Jefri jacob**

Chandramouli K, IV th Year BME, completed a course on "Capstone: Applying Project Management in the Real World" in Coursera (Course Completion) on 16/08/2022.

Chandramouli K, IV th Year BME, completed a course on "Agile Project Management" in Coursera on 02/07/22.

Chandramouli K, IV th Year BME, completed a course on "Google Project Management" in Coursera (Course completion) on 16/08/22.

The following PG first year students attended a five-days faculty development program on "Medical System Design, Modeling, and Simulation using Fusion 360" held at SSNCE by the Department of Biomedical Engineering from 01/08/2022 to 05/08/2022.

- **Abiya M J**
- **Arulselvi**
- **Chandana H**
- **Dharshini Venkatesan**
- **Jefri Jacob**



STUDENT ACTIVITIES

Giridharani R and **Supriya R S** of 3rd year BME successfully completed a one week internship program in Big data for data engineering from Marcello tech on 19 December 2022

Srivibha Parthasarathy of 3rd year BME successfully completed Supervised Machine Learning: Regression and Classification an online non-credit course authorized by DeepLearning AI and Stanford University and offered through Coursera on 19 January 2023.

Chandramouli K, IV th Year BME, won in Smart India Hackathon conducted by Ministry of Education, AICTE - winning inspirational award (cash prize of ₹ 25000) on 15/08/22 and 26/08/22 - in Welingkar Institute of Management, Mumbai.

Rakshitha S, IV th Year BME, won in Smart India Hackathon conducted by Ministry of Education, AICTE - winning inspirational award (cash prize of ₹ 25000) on 15/08/22 and 26/08/22 - in WelingkarInstitute of Management, Mumbai.

Nisha S, IV th Year BME, won in Smart India Hackathon conducted by Ministry of Education, AICTE - winning inspirational award (cash prize of ₹ 25000) on 15/08/22and 26/08/22 - in WelingkarInstitute of Management, Mumbai.

R Dhanush Babu, IV th Year BME, published an abstract in proceedings of International Conference on Advanced Research Trends in Material Science and Nanomaterials.

Nityashree B, IV th Year BME, won in Smart India Hackathonconducted by Ministry of Education, AICTE - winning inspirational award (cash prize of ₹ 25000) on 15/08/22 and 26/08/22 - in WelingkarInstitute of Management, Mumbai..

Dharshan A H, IV th Year BME, won in Smart India Hackathon conducted by Ministry of Education, AICTE - winning inspirational award (cash prize of ₹ 25000) on 25/08/22 and 26/08/22 - in WelingkarInstitute of Management, Mumbai.



STUDENT ACTIVITIES

Harshini Ramachandran, S.Harihara Sudhan and S.Aravinthan of II year BME was sanctioned an Internal funded student project titled "Assistive walker with guidance for posture correction" guided by Dr. S. Saranya, Assistant Professor, BME. Budget: 28000

Pradiep Kumar G.D and Praveen Kumar K.R of III year BME was sanctioned an Internal funded student project titled "Drowsiness detection an prevention using EOG and Binaural rhythms' ' guided by Dr. S. Saranya, Assistant Professor, BME. Budget: 30000

Internal funded student project by **Aarya Raghavan and Dhanya R** titled "Assistive training device with biofeedback for amputees" guided by Ms.B.Divya and Dr.S.Saranya was selected to be pursued under build club initiative by SSN ifound and IITM Incubation cell.

Anusha A,Giridharani R,Shivapriya S and Supriya R S of III year BME was sanctioned an Internal funded student project titled "Development of Game based Virtual Environment for Post Stroke Treatment" guided by Dr. J. Vijay, Associate Professor, BME. Budget: 26000

R Srilalitha and A Swetha of III year BME , S A Lingeswar and R Buvan Sankar from III Year CSE was sanctioned an Internal funded student project titled "Brain computer interface using P300 audiovisual spellers - Tamil language" guided by Ms.B.Divya , Assistant Professor ,BME and Dr.S.Kavitha , Associate Professor ,CSE Budget: 17000



STUDENT ACTIVITIES

T.V. Santhoshiya IV Year,BME , **T. R. Mahitha** ,**A.L. Raajameenakshi** of III year BME was sanctioned an Internal funded student project titled " Fabrication of flexible werable sensor using Au nanomesh/PVA nanofibers" guided by Dr.S.Arun Karthick ,Associate Professor , BME and Dr.L.Suganthi , Associate Professor , BME . Budget : 24000

J.Jeevan, R. Loshigha , C Manimaran , S Shreenidhi of II year BME was sanctioned an Internal funded student project titled " Miniaturized sensor for continuous physiological Monitoring in the neonatal intensive care unit(NICU)" guided by Dr.S.Arun Karthick ,Associate Professor , BME and Dr.L.Suganthi , Associate Professor , BME . Budget : 24000

K. B. Krithiukha, R. Karthick Siva , M. Renukka Shanmuga Sundari ,II Year BME ,**B. Rajalakshmi** ,II Year Civil was sanctioned an Internal funded student project titled " Wearable bowling action analyser" guided by Dr. Sachin Gaurishankar Sarate ,Assistant Professor , BME . Budget : 23000

G.Jeni Christina , K.Santhoshi , G.Sharmila , III Year BME was sanctioned an Internal funded student project titled "Albumin as a carrier to deliver Ruthenium based anticancer drug " guided by Dr. R. Subashini ,Assistant Professor , BME . Budget : 24000

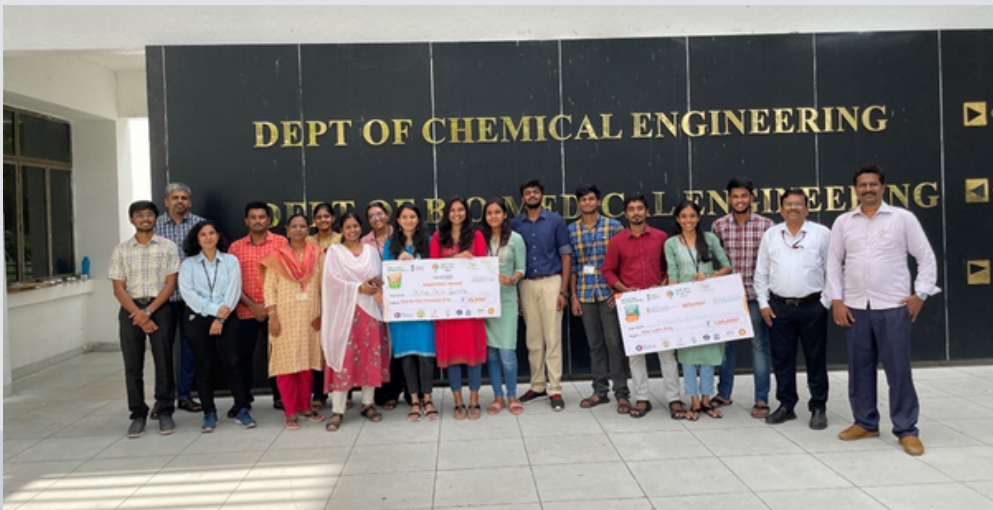
Meera Kumar, Devadharshini and Poorvica of 3rd year BME and **Kritik Varshi** of 4th year BME successfully completed the 10-day Unleash program (2-11 Dec, 2022) conducted by UNLEASH Global Innovation Lab 2022 at Mysore.



STUDENT ACTIVITIES

SMART INDIA HACKATHON (SENIOR) 2022

The National Level Smart India Hackathon (SIH) was held during the month of August, 2022. There were a total of three teams (One for Software edition and Two for Hardware edition) from the Department of Biomedical Engineering who were shortlisted for the SIH grand finale 2022. Out of the three, two teams won prizes at the grand finale.



Grand finale Teams

Team ZEOLITE:

Problem Statement: IoT based solution for recording and storing metrics of normal and orthotic leg for analysis by Orthotist

Team Name: Zeolite

Team Members: Krishi Divya Dharshini.V, Vahini. M, A.V. Trisha, Dhanush Babu. R, Manjunathan. R

Team Mentor: **Dr. N. Venkateshwaran, Professor** and **Dr. V. Mahesh,** Associate Professor, Department of Biomedical Engineering

Won: Grand finale Winner with cash prize Rs. 100000/-



STUDENT ACTIVITIES



TEAM ZEOLITE AND THEIR WORK

Team ALPHA BETA GAMMA:

Problem Statement: Vital parameter measurement using smartphone

Team Name: Alpha Beta Gamma

Team Members: Nisha, Dharshan, Nithyashree, Rakshitha, Chandramouli, Jaikishore (IT)

Team Mentor: **Dr. Vijay J**, Associate Professor, Department of Biomedical Engineering

Won: Inspiration Award and Cash Prize Rs.25000/-



Team ALPHA BETA GAMMA



STUDENT ACTIVITIES

Team ENDROMIS:

Problem Statement: To design a knee brace for the elderly to transfer body weight to shoe

Team Name: Endromis

Team Members: Supraja Vaidhyanathan, Srivibha Parthasarathy, Shri Thrisha Arunkumar, Devadharshini Sivadevan, Abhijeet Gopalakrishnan(Mechanical), Pranav Asuri(EEE)

Team Mentor: **Dr. M. Dhanalakshmi**, Associate Professor, Department of Biomedical Engineering

Won: out of the box approach Rs.25000 /-



Team ENDROMIS



STUDENT ACTIVITIES

The following students from the II Year BME participated in Word Audiologist DAY celebration on 12/10/2022.

- **Aishwarya**
- **Geetika H P**
- **Hari Harasudhan M**
- **Ilakiya Bharathi**
- **Kapana Devi**
- **Karishma Sathish Kumar**
- **Karthick Siva**
- **Krithuika B**
- **KrupaSagar M**
- **Renukka Shanmugam**
- **Sarvajith**
- **Shivani K**
- **Sibi Chakkaravarthy**
- **Vayishnavee**

Sharmila G from **III Year BME** had participated in the Tesla Events conducted by the IEEE SB on 29.09.2022.

Deepika K and **Varsha V** **II year BME** were selected to participate in Zonal Competition taking place at Sairam College of Engineering ON 6th December 2022.

Pramod Rajan S from **III Year BME** had participated in Tesla Events conducted by IEEE SB of SSN on 29.09.2022.



STUDENT ACTIVITIES

Supraja Vaidhyanathan of 3rd year BME has completed her Internship as an Analog Engineering Intern at **Neurostellar**, a startup at IIT Madras Research Park.



She started working as an intern on the 10 th of January, 2023. She was mainly responsible for analog engineering and biomedical signal processing. During her internship, she conducted literature surveys on EEG signal processing, how to extract heart rate, Heart rate Variability and Respiratory signal, all by processing PPG waves.

The following students have completed an internship at **Cardiac Design Labs** from 6.2.23 - 17.2.23 in offline mode in the Cardiac Design Labs office in Bangalore

Abishek P S
Harish Narayanan
Jeni Christina
Praveenkumar K R
Sharmila G





STUDENT ACTIVITIES

Aarya Raghavan, Aishwarya V and Dhanya R of IV year BME was sanctioned an Internally funded student project titled "Assistive training device with biofeedback for amputees" guided by Dr. S. Saranya, Associate Professor, BME and Ms. B. Divya, Assistant Professor, BME. Budget: 24000

Abirami Natrajan, Devadarshini S, Shri Thrisha Arunkumar of III year BME was sanctioned an Internally funded student project titled "Fabrication of photo diode based TL glow reader" guided by Dr. S. Masila Moses Kennedy, Professor and Head in the Department of Physics. Budget: 33000

Shreya Muthukumaran, Srivibha Parthasarathy and Supraja Vaidhyathan of III year BME was sanctioned an Internally funded student project titled "Effect of motion sickness drugs on gut bacteria during rapid motion" guided by Dr. R. Subashini, Assistant Professor, BME. Budget: 20000

Siva Adithya S, Naveen P, Kiran Raj and Dhanush Babu R of IV year BME was sanctioned an Internally funded student project titled "EMG controlled trans-femoral prosthetics" guided by Dr. M. Dhanalakshmi, Assistant Professor, BME and Dr. G. Satheesh Kumar, Associate Professor, Department of Mechanical Engineering. Budget: 26000

Ashwini S, Indhumathi R, Janani T, Sowmya R and Thejaswini H of IV year BME was sanctioned an Internally funded student project titled "Digital Wireless Stethoscope" guided by Dr. Sachin Gaurishankar Sarate, Assistant Professor, BME. Budget: 20000



STUDENT ACTIVITIES

Arushi Sahu , Pravalika P and Tharunika T M of IV year BME was sanctioned an Internally funded student project titled " " guided by Dr.S.Arun Karthick ,Associate Professor , BME and Dr.L.Suganthi , Associate Professor , BME .Budget :23000

Hevanthika M , Monica Venkataramana and Shivangi Pandey of IV year BME was sanctioned an Internally funded student project titled " Fabrication of sponge-forming micro needle patch for rapidly sampling interstitial fluid" guided by Dr.S.Arun Karthick ,Associate Professor , BME and Dr.M.Srinivasan , SSN RC.Budget :32000

Raghupathy J and Saravanan N V of IV year BME was sanctioned an Internally funded student project titled "Silent speech recognition using facial electromyography " guided by Dr.M.Dhanalakshmi, Assistant Professor , BME. Budget : 24000

Dharshan A H and Shakti Varsha of IV year BME was sanctioned an Internally funded student project titled " Preparation and evaluation of collagen based hydrogel with allicin derived from natural garlic and silver nanoparticles" guided by Dr.R.Subashini,Assistant Professor , BME . Budget : 24000



STUDENT ACTIVITIES

Ishwarya Ramachandran , Sarvajith P and Karishmaa Sathish Kumar of I year BME was sanctioned an Internally funded student project titled "Smart TV add-on system for child eye safety " guided by Ms.S.Lakshmi priya ,Assistant Professor , CSE , Dr.K.R.Sarath Chandran ,Assistant Professor , CSE and Dr.N.Sujaudeen , Assistant Professor , CSE . Budget : 20000

Harshini Ramachandran, S.Harihara Sudhan and S.Aravinthan of II year BME was sanctioned an Internal funded student project titled "Assistive walker with guidance for posture correction" guided by Dr. S. Saranya, Assistant Professor, BME. Budget: 28000

Pradiep Kumar G.D and Praveen Kumar K.R of III year BME was sanctioned an Internal funded student project titled "Drowsiness detection and prevention using EOG and Binaural rhythms' ' guided by Dr. S. Saranya, Assistant Professor, BME. Budget: 30000

Internal funded student project by **Aarya Raghavan and Dhanya R** titled "Assistive training device with biofeedback for amputees" guided by Ms.B.Divya and **Dr.S.Saranya** was selected to be pursued under build club initiative by SSN ifound and IITM Incubation cell.

Anusha A,Giridharani R,Shivapriya S and Supriya R S of III year BME was sanctioned an Internal funded student project titled "Development of Game based Virtual Environment for Post Stroke Treatment" guided by Dr. J. Vijay, Associate Professor, BME. Budget: 26000



STUDENT ACTIVITIES

R Srilalitha and A Swetha of III year BME , S A Lingeswar and R Buvan Sankar from III Year CSE was sanctioned an Internal funded student project titled "Brain computer interface using P300 audiovisual spellers - Tamil language" guided by Ms.B.Divya , Assistant Professor ,BME and Dr.S.Kavitha , Associate Professor ,CSE Budget: 17000

T.V. Santhoshiya, IV Year BME , T. R. Mahitha ,A.L. Raajameenakshi of III year BME was sanctioned an Internal funded student project titled " Fabrication of flexible wearable sensor using Au nanomesh/PVA nanofibers" guided by Dr.S.Arun Karthick ,Associate Professor , BME and Dr.L.Suganthi , Associate Professor , BME . Budget : 24000

J. Jeevan, R. Loshigha , C Manimaran , S Shreenidhi of II year BME was sanctioned an Internal funded student project titled " Miniaturized sensor for continuous physiological Monitoring in the neonatal intensive care unit(NICU)" guided by Dr.S.Arun Karthick ,Associate Professor , BME and Dr.L.Suganthi , Associate Professor , BME . Budget : 24000

K. B. Krithiukha, R. Karthick Siva , M. Renukka Shanmuga Sundari ,II Year BME B. Rajalakshmi ,II Year Civil was sanctioned an Internal funded student project titled " Wearable bowling action analyser" guided by Dr. Sachin Gaurishankar Sarate ,Assistant Professor , BME . Budget : 23000

G.Jeni Christina , K.Santhoshi , G.Sharmila , III Year BME was sanctioned an Internal funded student project titled "Albumin as a carrier to deliver Ruthenium based anticancer drug " guided by Dr. R. Subashini ,Assistant Professor , BME . Budget : 24000



STUDENT ACTIVITIES

N.Srinidhi from Final Year BME, won first place in the State Level Inter Engineering Table Tennis Tournament- Seetharaman & Lakshmi Ammal Memorial Trophy conducted on 29.09.2022 & 30.09.2022 at Sri Sairam Engineering College.

The following students have volunteered for the IEEE Day celebrations conducted by SSNCE IEEE Student Branch from 20.10.2022 to 28.10.2022.

- **Shri Thrisha Arunkumar, III Year BME**
- **Abirami Natarajan , III Year BME**
- **Abishek P.S. , III Year BME**

Illakiyabharathi, Kalpanadevi from II year BME have volunteered for the NSS Orientation Event on 27/10/2022.

Induja MC from II year BME participated in the FUSION 360 DESIGN CHALLENGE under NAAN MUDHALVAN Programme on October 7-8, 2022.

The following students from the II Year BME participated in ROLE OF YOUTH IN NATION BUILDING-DEBATE SESSION on 27/10/2022 .

- **Karishma Sathish Kumar**
- **Sarvajith P**
- **Renukka M**
- **Shivani K**

Jeni Christina.G from III Year BME participated in Tesla events conducted by the IEEE SB of SSN on 29.09.2022.



MOU'S



MoU with Perfint Healthcare

A Memorandum of Understanding (MoU) was signed between Perfint Healthcare and Sri Sivasubramaniya Nadar College of Engineering on December 1, 2022 (Thursday). This MoU envisages student internship, placements, guest faculty, clinical research trials, and data sharing. Dr. A. Kavitha, HOD, BME, and Dr. J. Vijay, ASP, BME, coordinated the MoU



MoU signed between Perfint Healthcare and SSN College of Engineering



MOU'S

Dr. M. Dhanalakshmi and **Dr. S. Saranya** visited Steradian Technologies Pvt.Ltd on 20.7.2022 for possible collaborations and consultancy research.

A Memorandum of Understanding (MoU) was signed between Deepam Hospitals and Sri Sivasubramaniya Nadar College of Engineering on July 14, 2022 (Thursday). This MoU envisages student internship, placements, guest faculty, clinical research trials, and data sharing. **Dr. A. Kavitha, HOD, BME,** and **Dr. J. Vijay, ASP, BME,** coordinated the MoU process.



Meeting with the experts from Deepam Hospitals

Prof. Manivannan, Principal Investigator, Touch Lab at IIT Madras, visited SSN to discuss the objectives of IITM's new initiative on **Virtual Reality and Haptics, also known as Experiential Technology Innovation Center (XTIC), IIT Madras.**

Dr. Kala Vijayakumar, President of SSN Institutions, Prof. V. E. Annamalai, Principal SSNCE, Mr. Chandran, CEO – SSN Incubation Center met **Prof. Manivannan, IIT Madras** on 29th September, 2022 along with **Prof. A. Kavitha, HOD, BME, Dr. Pravin Kumar, ASP, BME** and **Ms. Divya, AP, BME,** of Department of Biomedical Engineering at SSN.

The possibilities of the involvement of SSNCE in the functioning of XTIC was discussed and **Prof. Kavitha** was asked to take it forward after further discussions.



Meeting with Prof.Manivannan at SSN for XTIC discussion

The MoU between SSN and Sri Ramachandra Institute for Higher Education and Research, Porur has been renewed for the next five years, on August 04, 2022. The scope of this MoU is to include joint product development, sharing of clinical data, students and faculty exchange, joint publications and submission of project proposals. **Dr. V. E. Annamalai, Principal, Dr. A. Kavitha, HoD, BME, Dr. S. Pravinkumar, ASP and Dr. Vijay J, ASP, BME,** were present during the MoU signing ceremony at SRIHER, Porur. This event was coordinated by **Dr. A. Kavitha and Dr. Vijay J.**



MoU signed by the SRMC Vice Chancellor



MOU'S

The **MoU for the next five years was signed by the SRMC Vice Chancellor**, who expressed his great appreciation for the department's collaborative research efforts. Furthermore, he has extended an invitation to the department to assist their engineering division.

Kauvery Hospital team visited the Department of Biomedical Engineering on 8th Feb 2023 for exploring collaboration with them. Faculties from BME Dr. A. Kavitha HoD, **Dr. S. Pravinkumar, Dr. J.Vijay, Dr. M. Dhanalakshmi, Dr. R. Nithya & Ms. B. Divya** gave presentations on their project works.

Cognizant Technology solutions (Healthcare unit) visited the department of Biomedical Engineering on 10th Feb 2023. **Mr. Raghuraman, Ms. Rophia and Ms. Sujithra** visited **CHT, AR/VR lab and other laboratories in the department**. PG Scholar **Ms. Abiya MJ** demonstrated the use of HTC Vive (VR device) to them during the visit where a game called Inmind VR was played on the Alienware system interfaced with the VR device using Steam AR application. This kindled their interests posing many questions and more on the applications of VR in the healthcare, thus making it even more interactive.



Mr. Vishnu T.U., CEO, Machenn Healthcare, had discussions with **Dr. A. Kavitha HoD/BME** and **Dr. S. Pravin Kumar, AsP/BME** for potential student internships and collaborative research works on 14.3.23. He also met **Mr. Chandran, SSN IFound** to discuss the startup formation.



INDUSTRIAL COLLABORATIONS

Dr. A. Kavitha HoD/BME and **Dr. S. Pravin Kumar AP/BME** arranged a meeting between Mr. Magendran from Study International Academy and Mr. Chandran and SSN IFound Team on 28.03.23 to discuss the EduTech Startup.

Dr. Denzil Fernandes, Physiotherapist and co-founder of Sonic Rehab Health Care Physiotherapy Services Bangalore visited the department on 9 March, 2023 and interacted with a team of faculty members including **Dr.Kavitha HOD, Dr.Nithya, AP/BME, Dr.Dhanalakshmi AP/BME** and **Dr.Saranya AP/BME** on possible collaborative research and product outcomes.



HIGHER STUDIES





PLACEMENT ACTIVITIES

UG PLACEMENT ACTIVITIES

The students and the placement cell were very enthusiastic as the recruitment season for the academic year 2022-2023 got underway. The core and regular categories had the most firms at the start of the placement season, followed by Super dream companies.

The first company where our department students got placed was **ZIFO RnD**, a **pharmaceutical research-oriented company** that took students for the role of Associate Analyst. A total of 10 students – **Arushi Sahu, Janani T, Dhanya Ravi, Archana S, Harish M, Raghupathy J, Nisha S, Shakti Varsha, Rakshitha S, Thejaswini H** got selected for an **annual pay of 4.75 lakhs**.



Following this, **HCL Technologies** recruited students for core roles as a part of their intern cum placement program initiated by the Head of Department. A total of 10 students got placed with a **salary package of 4.25 LPA**. The selected students are – **Indhumathi R, Rithika K, Rithick Kumar G, Roshan M, Shivangi Pandey, Sona Mariya, Sowmick Rakesh S, Tharunika TM, V Aishwarya, Vahini M**.



PLACEMENT ACTIVITIES



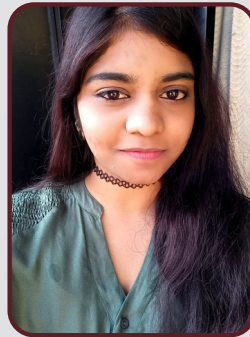
Amazon, which is an American Multinational technology company which focuses on E-Commerce for 3 different positions, Program manager, Accounts Manager and Operations Manager. A total of 4 students – **Hevanthika M, Aishwarya V, Tharunika TM, Rakshitha S** from our department got placed in Amazon. The students were offered a 6-month internship program and on successful conversion will be offered a FTE of **14 LPA**. Some of the regular offers included recruitment of 6 students for **Cognizant** and 2 for **Tata Consultancy Services**.





PLACEMENT ACTIVITIES

Comcast is the largest American multinational telecommunications conglomerate. A total of 4 students – **Nithyasree, Bhavithra and Shruthi** have successfully been placed in this Dream company as a **Development Engineer**.

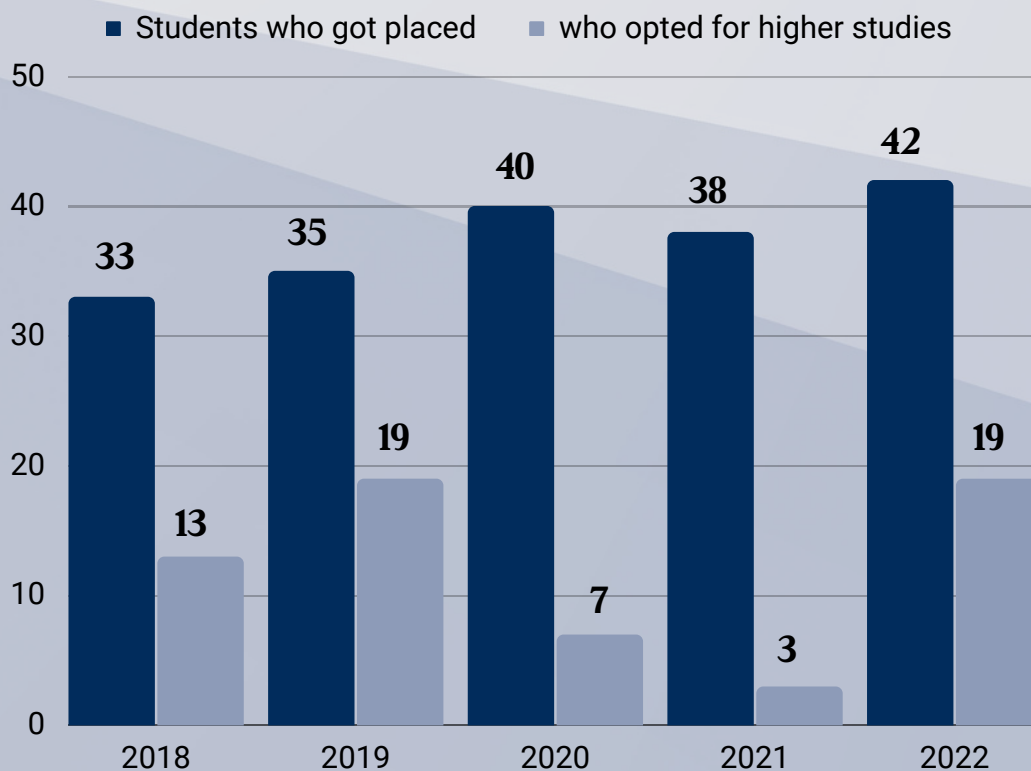
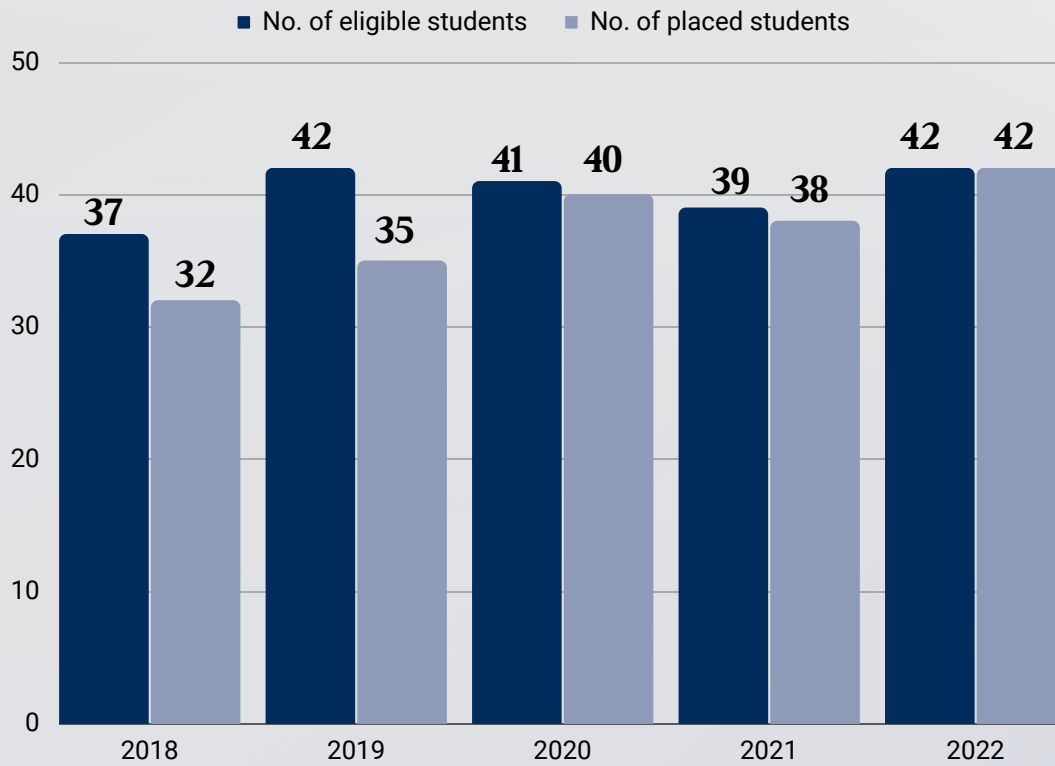


As a result, our students and teachers began to approach placements with increased vigor and passion. We anticipate a lot more exciting placement chances as long as the placement season lasts. Additionally, many students are seeking higher education and many have their own pathways to success in a wide range of industries.

Our students get placed in core companies like **Philips, HCL Healthcare, iGATE** etc along with multiple placement offers in the software industry. Higher Studies is also the most sought after career advancement opted by the students of Biomedical Engineering. Our students pursue their Masters and Doctoral studies at prestigious Universities like RWTH-Aachen, Georgia Institute of Technology, Carnegie Mellon University, University of Florida, IIT Madras, Cornell University, The University of Melbourne, Australia, Duke's University, North Carolina, Nanyang Technological University, Singapore, Arizona State University, University of California, San Diego, Texas University, Arlington, Ghent University, Belgium, Lamar University, Texas etc.



PLACEMENT STATISTICS





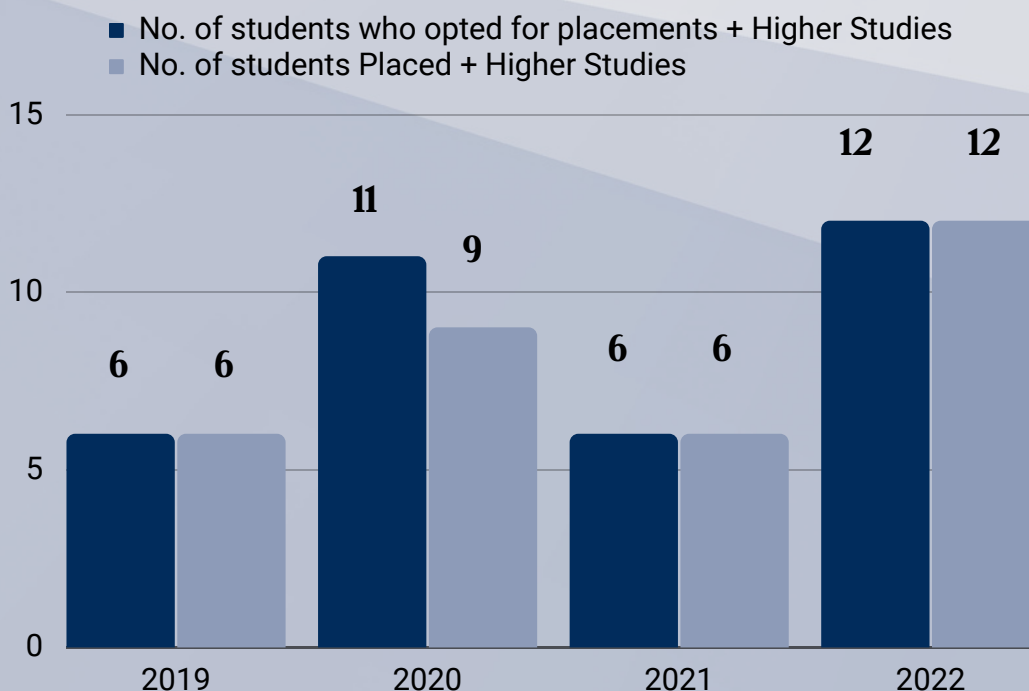
PLACEMENT STATISTICS

PG PLACEMENT ACTIVITIES

The students of PG medical electronics get placement in core biomedical companies by demonstrating their project work. . Our students received opportunities to work in various project domains and gained substantial knowledge in their domain of interest to extend their work further towards research. Consequently, they were offered Junior research fellowship in externally funded projects and higher studies opportunities as full-time Ph.D. scholars in India as well as abroad .

The students of M.E Medical Electronics get placements every year from core companies relevant to the biomedical field and regular companies as well. An increase in the number of students placed during every consecutive academic year can be seen in the following statistics .

The focus of our students are either core company placement or options for higher studies in the biomedical field abroad. Our students get placement in core companies such as HCL Healthcare, Allyshealth, Keyence, Phoenix Medical Systems, etc., as well as in regular companies and academic institutions.





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Professor and HOD of BME

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Assistant Professor of BME

STUDENT EDITORS



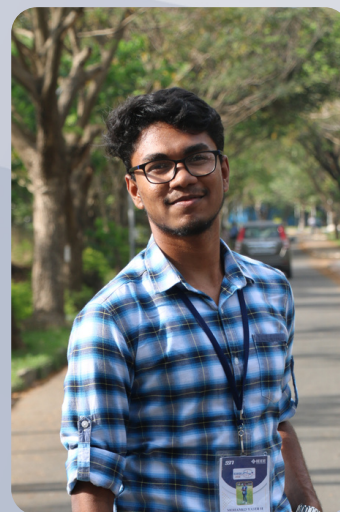
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