Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY

PULSE

CAPTURING THE RHYTHM

DEPT. ELECTRONICS AND BIOMEDICAL ENGINEERING

Electronics and Biomedical Engineering
Students Association of Adi Shankara Institute of Engineering & Technology

VOLUME 2
ISSUE I

BIANNUAL NEWSLETTER OF DEPT. ELECTRONICS AND BIOMEDICAL ENGINEERING
JUNE 2024 - NOV 2024

ADI SHANKARA INSTITUTE OF ENGINEERING AND TECHNOLOGY

The Adi Shankara Institute of Engineering & Technology was founded in Kalady to offer value-added technical education that teaches students professional excellence and ethical values. The institution is managed by the Adi Sankara Trust, a registered organization that has made a name for itself in the field of education. The college, founded in 2001 and skilfully maintained by the Sringeri Mutt with the benign blessings of His Holiness Sri Sri Bharati Tirtha Mahaswamiji, is committed to a proactive approach to ensuring the student's holistic development.Adi Shankara Institute of Engineering & Technology (ASIET) is ideally situated in a picturesque environment that evokes vivid memories of Jagadguru Adi Shankara's calm presence. It is affiliated with the A P J Abdul Kalam Technological University, approved by the AICTE, and offers courses in UG, PG, and PhD levels. Four of their streams are NBA accredited (CSE, ECE, EEE & ME) which shows its commitment to quality systems. ASIET was the first self-financing technical education center in Kerala to be awarded the ISO 9001: 2008 certification. Nineteen batches of B.Tech students have passed out from this temple of education to date and they occupy responsible positions in prestigious organizations in India and abroad.

DEPT OF ELECTRONICS & BIOMEDICAL ENGINEERING

Electronics and Biomedical Engineering is an interdisciplinary branch of engineering, bridging the gap between life science and medicine with technology and engineering to create healthcare solutions, leading to the design and development of medical equipment. In collaboration with doctors and researchers, biomedical engineers develop methods and devices to tackle clinical problems using the developments in electronics and computers. Right from the development of sensors for diagnosis and analysis to the multi-dimensional aspects of diseases with the aid of high-tech equipment, biomedical engineers are indispensable. A biomedical engineer's job is not just limited to the development of some equipment and devices, but a much wider area of computer systems and software used in healthcare is also stretched out there to conquer. In short, whenever and wherever, a living being interacts with any health care equipment there is an invisible hand of a BIOMEDICAL ENGINEER, guarding and protecting lives. Biomedical engineers can find a huge volume of well-paid openings in fields like Prosthetics, Surgical devices, Imaging methods, Instrumentation, and much, much more. In the upcoming era of the Internet of Things (IoT), healthcare devices; both wearable and implanted inside the body, are being implemented to a large extent.

Opportunities for research and higher studies are available at various higher education institutions across the globe. Some of the common specializations include Bioinstrumentation, Biomaterials, Robotic Surgery, Clinical Engineering, Cellular, Tissue, and Genetic Engineering, Medical Imaging, Orthopedic Bioengineering, Rehabilitation Engineering etc.

OUR TECHNICAL ADVISORS

OUR PROFESSIONAL BODIES

MESSAGE FROM HOD

arm greetings to all our wellwishers and beloved stakeholders!

The pastfew months in this academic year have been an exciting period for our department, filled with events that showcased our innovations, participation, and industry engagements which are essential for the effective transformation of Biomedical engineering graduates into professionals

Our department made its mark second time at Kerala's largest medical device exhibition - HOSPEX 2024 held in last September, with pre - final year students volunteering the event management continuously for 3 days, and students displaying cutting-edge university projects and health tech products developed in our TBI. This platform allowed us to highlight the importance our department hold in promoting innovation, participation and project based learning in our academics. We could also participate in BioConnect 2.0 organized by Kerala State Industrial Developement Corporation st Trivandrum, an event fostering biotech and health tech advancements, where our department exhibited solutions aimed at addressing current healthcare challenges joining hands with IEDC and TBI Adi Shankara. Our students' participation not only showcased their technical acumen but also established stronger industry connections.

I am very happy to see that several of our final year students have been undertaking internships with leading health-tech industries. These internships have really offered them hands-on experience with cutting-edge technologies and essentially bridged the gap between academic learning and real-world application.

We hosted specialized training sessions at our Center of Excellence (CoE) with HORIBA, providing our students and Students from WedFort Academy of Allied Health Sciences, Thrissur with practical exposure to advanced In-Vitro diagnostic technologies, and reinforcing their theoretical knowledge.

Our students also shined in various competitions namely the Ideathon by HCI group, and Best Paper award in Longevity Asia's Symposium, and others including the logic reasoning and poster designing, organized under the Biomedical Engineering Society of India (BMESI). These events were instrumental in developing critical thinking, design skills, and interdisciplinary collaboration.

Achievements and awards received by our students and faculty are elaborated on the inside pages of "The Pulse". Kindly glance through it in detail.

I look forward to building on this momentum with the newly inaugurated IEEE - EMBS society and other professional bodies in the department. The department is all set to continuing to empower our students to lead the future of health technology through more and more experiential and participative learning avenues.

Warm regards,

Dr.REMYA GEORGE
HOD ,ASSOCIATE PROFESSOR
DEPT OF EBE

MESSAGE FROM FACULTY COORDINATOR

"Technology is best when it brings people together."
— Matt Mullenweg

Dear Colleagues and Friends,

It gives me immense pleasure to introduce the third edition of our department's newsletter, a celebration of the milestones and advancements we've achieved together. The intersection of electronics and biomedical engineering continues to be a vibrant space where innovative minds collaborate to solve complex problems, pushing the boundaries of what's possible in healthcare technology. This edition captures the essence of our department's unwavering commitment to innovation and learning. Over the past few months, our students and faculty have engaged in enriching activities, impactful seminars, and industry partnerships that bridge academic concepts with real-world applications. The energy and enthusiasm in our classrooms, labs, and project spaces have been truly inspiring. I extend my heartfelt thanks to each one of you—students, faculty, and collaborators—who have contributed to this ever-growing body of knowledge. Together, we are not only shaping the future of technology but also improving lives. I invite you to explore this edition, where every story, achievement, and project reflects our collective vision. Let us continue to innovate, collaborate, and create meaningful change. Thank you for being an integral part of this journey.
Warm regards,

Dr. TRESA JOSEPH
NEWSLETTER FACULTY COORDINATOR
DEPARTMENT OF EBE

MESSAGE FROM STUDENT COORDINATOR

As we continue to strive for excellence, I'd like to highlight some of the recent milestones and exciting updates within our department. Our team has been working diligently to ensure the smooth operation of all processes, and we've seen remarkable progress.

Our department has seen significant advancements in both academic and project work. From groundbreaking research initiatives to successful student-led projects, the progress made has been inspiring. These achievements reflect the dedication of our faculty and the relentless pursuit of excellence by our students. The continuous support and guidance provided by our professors have been instrumental in these successes, and we are grateful for their mentorship.

I would also like to highlight the increasing recognition of our department on national and international platforms. The work done here is shaping the future of healthcare technology

As we move forward, let's celebrate these achievements and remain motivated to strive for even greater heights. Let's continue to make our department a center of excellence in biomedical engineering.

Best regards

LUTHFIYA KAMAL
EBSAA REPRESENTATIVE
DEPARTMENT OF ELECTRONICS AND BIOMEDICAL ENGINEERING

VISION

Evolve as a premier center in Electronics and Biomedical Engineering to meet the ever-increasing needs for affordable and accessible healthcare technology focusing on innovative thinking and skill enhancement.

MISSION

• Provide quality professional education at par with global standards in the field of Biomedical Engineering with excellent faculty and infrastructure.
• Foster a culture of multidisciplinary research, comprehensive practical learning, and generate pioneering innovations by collaborating with academia, industry, and clinical experts.
•Inspire biomedical engineering graduates to be responsible for addressing critical healthcare challenges with empathy and dedication for the betterment of mankind.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PRACTICE OF PROFESSION: Function as creative professionals who excel in conducting research, designing, manufacturing, and testing biomedical devices with an unwavering focus on quality and patient safety.

CAREER GROWTH: Evolve as successful engineers, entrepreneurs, and healthcare technology leaders through professional development and collaborations.

LIFELONG LEARNING AND ADAPTABILITY: Engage in continuous learning to overcome the ever-evolving challenges of biomedical technology to support healthcare industries, allied healthcare sectors, and academia.

PROGRAM SPECIFIC OUTCOMES (PSOs)

• Apply the concepts of life sciences, engineering, and technology to the design and development of indigenous medical devices.
•Demonstrate contemporary healthcare technological knowledge and skills in a multidisciplinary environment with ethics and professionalism.

PULSE
CAPTURING THE RHYTHM

CONTENT

EBSAA & BMESI: SHAPING TOMORROW

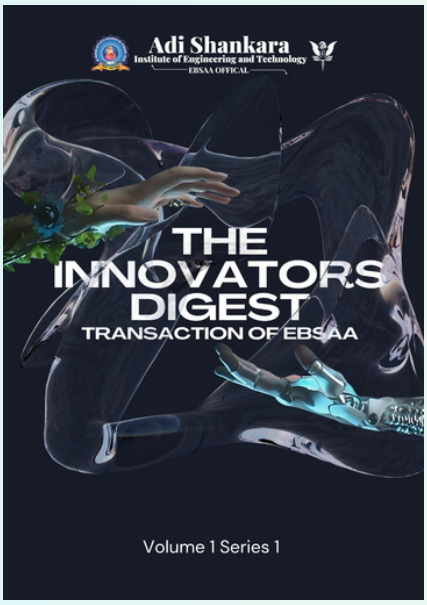
WORLD STANDARDS DAY CELEBRATIONS

On 24th October 2024, the Bureau of Indian Standards (BIS), in collaboration with the Standards Club of Adi Shankara Institute of Engineering and Technology (ASIET) and the Electronics and Biomedical Engineering Department, conducted a special program in honor of World Standards Day. The event was inaugurated by Shri Praveen Khanna, Deputy Director General, Southern Region, Bureau of Indian Standards. In his address, he emphasized the significance of standards in ensuring quality, safety, and sustainability across industries, particularly in the context of India's growth as a global leader. Following the inauguration, a technical talk on Medical Device Standards was delivered by Smt. Junitha T R, Deputy General Manager - Quality Assurance at HLL Lifecare Ltd, Kochi. She highlighted the critical role that standards play in the healthcare sector, particularly in the design, development, and regulation of medical devices, ensuring they meet international benchmarks for patient safety and efficacy. The event saw enthusiastic participation from both first-year (S1) and seventh-semester (S7) students, who were directed to the main seminar hall by 9:45 a.m. The interactive session provided valuable insights into the current standards landscape, with a focus on medical devices, inspiring students to consider the importance of standardization in their future careers. This World Standards Day celebration not only commemorated the role of standards in advancing technology and innovation but also encouraged young engineers to contribute to the evolving field of standardization in their respective domains. The program concluded successfully, with positive feedback from the attendees.

DESIGN A COVER PAGE COMPETITION

The Department of Electronics and Biomedical Engineering (EBE), in association with BMESI and EBSAA, successfully conducted a cover design competition for the department journal titled "The Innovators Digest: Transactions of EBSAA." on October 18th, 2024. This competition invited students to create unique and visually appealing cover designs under the theme, "A journal by students, for students, and with students. "The competition witnessed enthusiastic participation, with several creative submissions that demonstrated a high level of artistic talent and relevance to the journal's vision. Judging was based on three main criteria:

Creativity, relevance to the journal's theme, and visual appeal. The event fostered a spirit of creativity and student involvement, making it a memorable and engaging experience for everyone involved. This initiative highlighted the strong sense of community within the department and reinforced the importance of student-led activities in academic spaces.



NAKSHATRA ANIRUDHAN
S7, Dept of EBE
1st Prize

ANTONY DAVIS
S5 , Dept of EBE
2nd Prize

IELTS MASTERCLASS: COMMUNICATIVE SKILL ENHANCEMENT AND HIGHER EDUCATION AWARENESS

On Monday, October 9, 2023, the Department of Electronics and Biomedical Engineering at ASIET successfully organized an IELTS and Higher Education Awareness Session exclusively for Seventh Semester students. The session was conducted in collaboration with IDP Education, a renowned global leader in international student placement.

The event was held at T-07, S7 EBE classroom. It provided a comprehensive overview of the IELTS examination process, offering invaluable tips and strategies to enhance students' performance. Additionally, the session shed light on the myriad of higher education opportunities available abroad. Students were equipped with essential information about popular study programs, lucrative scholarships, and intricate visa procedures, empowering them to make informed decisions about their academic pursuits.

The session was met with enthusiastic participation from the students, fostering a dynamic and interactive learning environment. The event concluded on a positive note, leaving a lasting impact on the students' understanding of international education and career prospects.

IDEA PITCHING COMPETITION

The Department of Biomedical Engineering in association with EBSAA and BMESI successfully concluded MEDTRIX 2024's Biomedical Idea Pitching Competition, themed "Shaping the Future of Healthcare with Biomedical Innovations." This event brought together passionate students from S1, S3, and S5, who presented groundbreaking biomedical solutions addressing key healthcare challenges. Teams of 2 to 4 members showcased their creative ideas, evaluated on innovation, impact, and feasibility. After reviewing the proposals submitted by the 7th of October 2024, shortlisted participants advanced to the next phase. The competition, marked by inspiring presentations and innovative thinking, concluded with the announcement of exciting cash prizes for the winners.

INDUSTRY INTERACTION: BIOMEDICAL ENGINEERS AND REGULATORY COMPLIANCE

On September 6, 2024, at 3 pm , the Department of Electronics & Biomedical Engineering at ASIET hosted a virtual industry interaction featuring Ms. Shalom Fathema, a Senior Engineer in Regulatory Affairs at TATA Elxsi Ltd. The session focused on the essential role of biomedical engineers in ensuring medical device compliance with national and international regulations.

Ms. Fathema's presentation offered a comprehensive overview of the regulatory landscape, highlighting the critical stages of medical device development and commercialization. She emphasized the importance of biomedical engineers in staying abreast of evolving regulations and standards, conducting rigorous testing and analysis to ensure product safety and efficacy, preparing and submitting necessary regulatory submissions, and proactively mitigating risks and addressing compliance issues.

Ms. Fathema also discussed the challenges and opportunities faced by biomedical engineers in the regulatory field. She highlighted the increasing complexity of regulations, the need for specialized knowledge and skills, and the growing demand for regulatory professionals. However, she also emphasized the rewarding nature of the work, the potential for career advancement, and the opportunity to contribute to improving patient outcomes.

The interaction provided valuable insights for students and faculty, fostering a deeper understanding of the intersection between biomedical engineering and regulatory affairs. By demystifying the regulatory process, Ms. Fathema inspired participants to consider careers in this dynamic field. The event was coordinated by Dr Surya, Assistant professor, and Mr Melvin Mathew student in charge of BMESI.

ASIET'S ADD-ON CERTIFICATE PROGRAM: A HANDS-ON DIVE INTO ELECTRONIC PRODUCT BUILDING

The Department of Electronics & Biomedical Engineering at ASIET successfully concluded its Add-On Certificate Program on Electronic Product Building from August 29th to September 2nd, 2024. Held at the Electronics Devices and Circuits Lab, the 5-day intensive course provided participants with practical skills in electronic product development. Key areas covered included electronic circuit design, component selection, circuit simulation using Dip Trace software, optimization techniques, and hands-on PCB fabrication (soldering, component placement, testing, and troubleshooting).

The program was led by industry experts: Mr. Antu Dominic, Chief Technical Officer at Truetek World, Angamaly, and Ms. Tresa Joseph, Assistant Professor (Dept. of EBE). Mr. Dominic's expertise in product circuit design, PCB fabrication, and troubleshooting complemented Ms. Joseph's knowledge of digital design using Verilog HDL.

A culminating project session allowed participants to apply their newly acquired skills to create functional electronic products, solidifying their understanding of the subject matter. By the end of the course, participants were well-equipped to embark on their electronic product development endeavors.

HANDS-ON SKILL DEVELOPMENT WORKSHOP IN ASSOCIATION WITH HORIBA INDIA Pvt. Ltd.

The Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology (ASIET), Kalady, successfully conducted the second phase of training at the **Centre of Excellence for In-Vitro Diagnostic Instrumentation, sponsored by HORIBA India Pvt. Ltd., on August 22nd and 23rd, 2024**. The sessions were led by distinguished experts from HORIBA India, including **Dr. Pushkar Admane, Principal of the Horiba India Technical Institute** (the International Training Center of HORIBA Medical for in-house engineers), **Mr. Aniket Khandaitkar, Marketing Manager, HORIBA India Pvt. Ltd., Mr. Bahul Raj, Senior Business Unit Head for the South Region, HORIBA India Pvt. Ltd., and Mr. Athul K., Application Engineer, HORIBA India Pvt. Ltd.**

The training was attended by final-year B.Sc. Medical Laboratory Technology students from Westfort Institute of Allied Health Sciences, Thrissur, as external participants, along with 3rd-year B.Tech Electronics and Biomedical Engineering students from ASIET. The program provided valuable insights into advanced instrumentation and diagnostic techniques.

The event was coordinated by **Mr. Aswin Raj V. and Ms. Winnie Ann Thomas**, Assistant Professors from the Department of Electronics and Biomedical Engineering at ASIET.

In addition to this training, the department is organizing a Hands-On Skill Development Workshop in collaboration with the **Horiba India Technical Institute (HITI)**, a recognized **Centre of Excellence for IVD Instrumentation**. Scheduled for **August 22nd and 23rd, 2024**, at the **TBI Corporate Office**, ASIET, the workshop aims to bridge the gap between academia and industry by equipping participants with practical skills in specialized instrumentation. The event will be beneficial to undergraduate and postgraduate engineering students, polytechnic students, as well as professionals from fields such as Biochemistry, Microbiology, and Clinical/Medical Lab Technology.

This workshop, which offers certification from both HITI and ASIET, reflects the department's ongoing commitment to providing high-quality, industry-relevant education and training. By partnering with industry leaders like HORIBA India, ASIET continues to offer valuable opportunities for students and professionals to enhance their technical skills and advance their careers.

ADD-ON CERTIFICATE PROGRAMME: ELECTRONICS FUNDAMENTALS FOR CAREER SUCCESS

The Department of Electronics and Biomedical Engineering at ASIET successfully concluded its Add-On Certificate Programme titled "**Electronics Fundamentals for Career Success**" on **August 19 - October 7, 2024.** This 30-hour course, designed for final-year B.Tech students, aimed to bridge the gap between academic knowledge and industry-ready skills. Held in collaboration with the Training and Placement Cell, the program provided a comprehensive overview of essential electronic components, circuits, and systems.

The course focused on building a strong foundation in embedded systems programming using C, reinforcing concepts in Analog and Digital circuits, and preparing students for competitive exams like GATE. Divided into five modules, the program covered diodes, MOSFETs, operational amplifiers, combinational and sequential .

Logic circuits, and embedded C programming. Experienced faculty from the department led the sessions, providing hands-on training to enhance students' problem-solving abilities and real-world application skills.

Upon completion, participants received certificates, with prizes awarded to the best-performing students. The program, tailored for S7 EBE students, was conducted at the BSP Lab, EBE, and was coordinated by both faculty and students from the department. The sessions were conducted by experienced faculty members, including **Dr. Silpa P A, Ms. Nimmi Vijayan, Dr. Lakshmi M HARI, and Mr. Aswin Raj V**, all from the Department of Electronics and Biomedical Engineering at ASIET. This program, tailored for S7 EBE students, provided hands-on training to enhance problem-solving abilities and real-world application skills. Participants received certificates upon completion, with prizes awarded to the best-performing students.

The program was a resounding success, providing valuable training and skills to the participating students. It served as an excellent platform for them to gain practical knowledge and prepare for their future careers in the electronics industry.

LEVEL 5 LOGICAL REASONING COMPETITION: A TRIUMPH FOR CRITICAL THINKING

The BMESI chapter at ASIET successfully conducted a Level 5 Logical Reasoning Competition on August 22, 2024, from 11:45 AM to 12:30 PM in the S3 EBE classroom. The competition, designed to stimulate critical thinking and problem-solving skills, attracted a diverse range of participants. The event consisted of five progressively difficult levels, testing participants' ability to analyze complex scenarios and draw logical conclusions. It was open to all students, providing a platform for individuals to showcase their intellectual prowess. Attractive prizes were awarded to the top performers, recognizing their exceptional logical reasoning skills.

The competition was meticulously organized by students Jinusree M and Nagaraj C, under the guidance of Dr. Surya D. Melvin Mathew Jacob, the President of the EBSAA Club, who provided valuable support and oversight. The Level 5 Logical Reasoning Competition was a resounding success, fostering a competitive and intellectually stimulating environment. The event not only showcased the talents of ASIET students but also reinforced the EBSAA Club's commitment to nurturing creativity and leadership within the institute.

The BMESI chapter's Level 5 Logical Reasoning Competition was a valuable addition to the ASIET academic calendar. By challenging participants to think critically and solve complex problems, the event contributed to the overall intellectual growth and development of the student community. Nakshathra Anirudhan and Khadeeja M J of S7 EBE emerged victorious at the competition.

CAREER ORIENTATION PROGRAM: SHAPING THE FUTURE OF BIOMEDICAL ENGINEERING

On August 12, 2024, 3-4 Pm, the Department of Electronics & Biomedical Engineering at Adi Shankara Institute of Engineering & Technology (ASIET) hosted a career orientation program in collaboration with Adi Shankara Skill Kendra and the Biomedical Engineering Society of India (BMESI). The event, held at the Main Seminar Hall, focused on equipping students with the essential skills for a successful career in biomedical engineering. The program featured Dr. Jacob George C, Advisor for New Initiatives and Additional Skill Acquisition Programme, Government of Kerala, as the keynote speaker. Dr.Jacob George provided valuable insights into the evolving landscape of biomedical engineering and highlighted the emerging skills that are in high demand. He emphasized the importance of staying updated with technological advancements and developing a strong foundation in core engineering principles. The training aims to equip the students to understand the career paths,

enhancing soft skills such as effective communication, lifelong learning, and preparation for the professional world. Students were given awareness about opportunities in Germany for Biomedical graduates. Additionally, the Master class series courses and Mou s with Foreign Universities for certificate courses via the initiatives of ASIET Skill Kendra were dealt with in detail. The event was attended by students from EBE batches S3, S5, and S7. The program explored various career paths available in the field, including research, development, healthcare technology, medical device manufacturing, and entrepreneurship. Attendees gained a deeper understanding of the industry's requirements and the opportunities that await them upon graduation.

This career orientation program was an integral part of the Institution's Innovation Council and the Technology Innovation and Entrepreneurship Development Centre (TIEDC) at ASIET. The event aimed to inspire and motivate students to pursue their passions and contribute to the advancement of biomedical engineering.

POSTER DESIGNING COMPETITION: A SHOWCASE OF CREATIVITY

The BMESI-ASIET Chapter successfully hosted a poster designing competition on August 9, 2024, at the S5 EBE, 3rd Floor, Civil Block. The event, held from 1:00 PM to 1:30 PM, attracted a vibrant turnout of students eager to display their artistic talents.

Participants were required to submit their designs by the 8th of August, 2024, by noon. The submissions have to be based on either of the topics Health and Wellness or Global Humanitarian Issues. The competition provided a platform for students to showcase their creativity, innovation, and unique perspectives. The submissions were judged based on originality, design aesthetics, relevance to the theme, and overall impact. The event was a testament to the institution's commitment to fostering a culture of creativity and innovation. It encouraged students

to explore their artistic abilities and engage in healthy competition. The competition also served as an opportunity for students to connect with their peers and learn from each other's experiences. The S5 students Sreejith Ramachandran, Devanarayanan, and Alen S Veliyath bagged the first, second, and third prizes respectively.

SREEJITH
S5 EBE
1ST PRIZE

P DEVANARAYAN
S5 EBE
2ND PRIZE

ALEN S VELIYATH
S5 EBE
3RD PRIZE

SENIOR BIOMEDICAL ENGINEER VISITS ASIET TO ENHANCE MEDICAL SYSTEMS LAB CURRICULUM

Mr. Prasad, a senior biomedical engineer at Little Flower Hospital, visited the Electronics and Biomedical Engineering Department of ASIET on **July 26, 2024**. The focus of his visit was to discuss the content and structure of the medical systems lab. During the meeting, they likely explored various aspects such as lab equipment, curriculum development, and potential collaborations to enhance the educational experience for students in the biomedical engineering program.

A DEEP DIVE INTO BIO-SIGNAL PROCESSING: A 5-DAY INTENSIVE TRAINING AT ASIET

From July 22 to July 26, 2024, the Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology (ASIET), in partnership with the Electronics and Biomedical Students Association (EBSAA), successfully organized a 5-day Add-On Certificate Program on Bio-Signal Processing using Python and Octave.

The program was meticulously designed to equip S5 Biomedical Engineering students with the practical skills and theoretical knowledge necessary to navigate the intricate world of bio-signal processing. The intensive training commenced with a comprehensive introduction to Python programming, covering essential libraries and syntax. The initial two days were dedicated to solidifying the students' understanding of Python fundamentals, including operators, data types, data structures, selection, iteration, and modularization. On the third day, the focus shifted to the application of signal - processing techniques in the biomedical domain. Students delved into the bio-analysis of elementary signals and operations, culminating in practical sessions on ECG analysis and heart rate variability (HRV) estimation. The fourth day introduced participants to the Octave programming environment, where they honed their skills in matrix operations and signal processing applications using QT-Octave. The program concluded with a hands-on project on the fifth day, providing students with the opportunity to apply their newly acquired knowledge to real-world scenarios. A team of expert instructors, including Mr. Majo Davis from the Department of Mechanical Engineering, Dr. Surya D, and Dr. Lakshmi M HARI from the Department of Electronics and Biomedical Engineering, guided the participants throughout the training.

Upon completion of the program, participants were awarded a certificate, recognizing their enhanced skills in core biomedical engineering domains and their successful completion of the hands-on training that bridged theoretical knowledge with practical application.

SOCIAL OUTREACH PROGRAM FOR STUDENTS FROM BHAVANS VELLORE

The visit of 49 students (+1 student) and 4 staff from Bhavans Vellore to the ASIET campus on 7 September 2024, provided an immersive experience in hands-on training in the Biomedical and Robotics departments. The training, coordinated by Prof. Aswin Raj V and Prof. Arun, allowed the students to engage with cutting-edge technologies and practical applications in these fields. The session likely included demonstrations of medical devices, robotics engineering, and real-world problem-solving exercises.

The students gained exposure to the interdisciplinary nature of biomedical engineering and robotics, bridging the gap between theory and practice. The high level of engagement and the opportunity to work with advanced equipment contributed to the excellent feedback received from the participants. The positive response from the students reflects the effectiveness of the training and its alignment with their academic and career aspirations, highlighting the strength of the ASIET's programs in these innovative areas of engineering.

This successful event further strengthened ASIET's reputation as a hub for experiential learning and industry-relevant education, especially in emerging fields like biomedical technology and robotics.

BHAVAN'S ELOOR STUDENTS EXPLORE ECG PHYSIOLOGY THROUGH HANDS-ON SESSION

On July 18th, 30 students from the 8th and 9th grades at Bhavan's Eloor participated in an informative session on the physiology of ECG (electrocardiogram) generation. Led by Assistant Professor **Nimmy Vijayan** and faculty from the Robotics Department, the session combined theoretical knowledge with hands-on experience.

Students first learned about the electrical activity of the heart and the significance of ECG in monitoring heart health. This was followed by practical activities with a patient monitor, allowing them to observe how ECG readings are taken and interpreted.

The interactive format encouraged questions and discussions, enhancing their understanding of the relationship between biology and technology. Feedback was overwhelmingly positive, with many students expressing a newfound interest in careers in medical technology. This initiative underscored the value of early exposure to STEM fields, inspiring students to explore the intersections of biology and technology in their future studies.

3 DAY HANDS-ON TECHNICAL TRAINING IN MEDICAL ELECTRONICS

The Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology (ASIET), Kalady, successfully conducted a comprehensive three-day Advanced Hands-On Technical Training in Medical Electronics from July 1-3, 2024 at CE Seminar Hall. The program was meticulously designed to equip participants with the requisite practical skills and theoretical knowledge to excel in the field of biomedical engineering. Through a synergistic combination of theoretical instruction and hands-on experiments, participants gained proficiency in circuit design, troubleshooting, and equipment maintenance. The program featured a distinguished panel of expert faculty from ASIET and industry professionals from AD Instruments India Pvt. Ltd., ensuring that participants received a well-rounded and industry-relevant education. The Advanced Hands-On Technical Training in Medical Electronics encompassed a broad spectrum of topics essential for success in the field. Participants delved into circuit design and analysis, acquired practical expertise in equipment maintenance, developed effective troubleshooting strategies, and ensured adherence to industry standards and best practices.

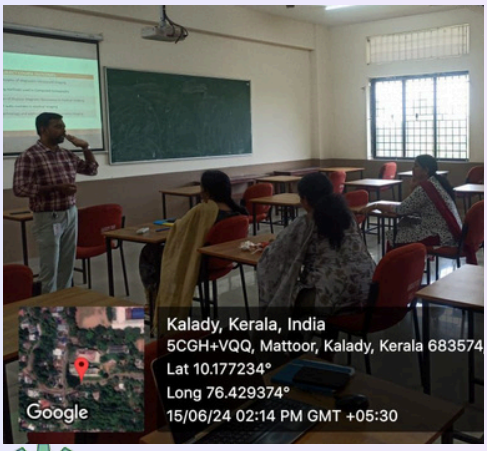
The training was led by a distinguished panel of experienced faculty members from ASIET and industry professionals from AD Instruments India Pvt. Ltd. Participants actively engaged in practical experiments, gaining invaluable hands-on experience that complemented theoretical knowledge. The program covered a comprehensive range of topics relevant to medical electronics, providing participants with a solid foundation. The training was meticulously designed to equip participants with skills that are directly applicable to their professional careers in the field of biomedical engineering. The event was coordinated by Assistant Professor Mr Aswin Raj V and Ms Nimmi Vijayan. The resource persons for the event ware K Kanagaraj, Business Development Manager, AD Instruments India Pvt. LTD, Ms Winnie Ann Thomas , Assistant Professor , Mr Shinu M M , Assistant Professor .

A COMPREHENSIVE EXPLORATION OF MEDICAL DEVICE DESIGN AND REGULATORY PRACTICE

The Department of EBE at AISET, in collaboration with the Internal Quality Assurance Cell (IQAC), BMESI, and EBSAA, successfully conducted a three-day academic advancement program on Medical Device Design and Regulatory Practice from June 26th to 28th, 2024. The program featured Dr. P. Balaji, Technical Consultant, Toxicology and Microbiology DIQC, India, and Ms. Sajitha S, Assistant Professor at the Department of Electronics and Biomedical Engineering at Model Engineering College, Kochi, Mr. Raju B, retired DGM – SCM BPL Medical Technologies Pvt. Ltd, Dr. Remya George, Mr. Aswin Raj V, and Dr. Lakshmi M Hari, Associate Professor, and Assistant Professors respectively from the Department of Electronics and Biomedical Engineering, ASIET as the esteemed resource persons. Their expertise in the field of medical device design and regulatory compliance provided invaluable insights to the participants. The academic advancement program was a valuable opportunity for participants to enhance their understanding of medical device design and regulatory practices. The expertise of the resource persons coupled with the program's comprehensive curriculum, contributed to its success.

OUTCOME BASED EDUCATION (OBE) AWARENESS

The Faculty Development Programme (FDP) on Outcome-Based Education (OBE) Awareness, organized by the IQAC-Dept. of Electronics & Biomedical Engineering, wasl held on 15th June 2024 from 09:00 AM to 04:00 PM at S-09 Medical Systems Lab. The program, led by Mr.Shinu MM, Assistant Professor of Electronics & Biomedical Engineering, aims to educate faculty members on OBE principles and practices. The forenoon session will focus on the OBE philosophy, providing insights into its significance, objectives, and benefits, while the afternoon session will be a hands-on workshop on attainment calculation, demonstrating practical techniques for measuring and analyzing student outcomes. This FDP is designed to enhance faculty understanding and skills in creating an outcome-based curriculum, ultimately contributing to improved educational quality and student success.

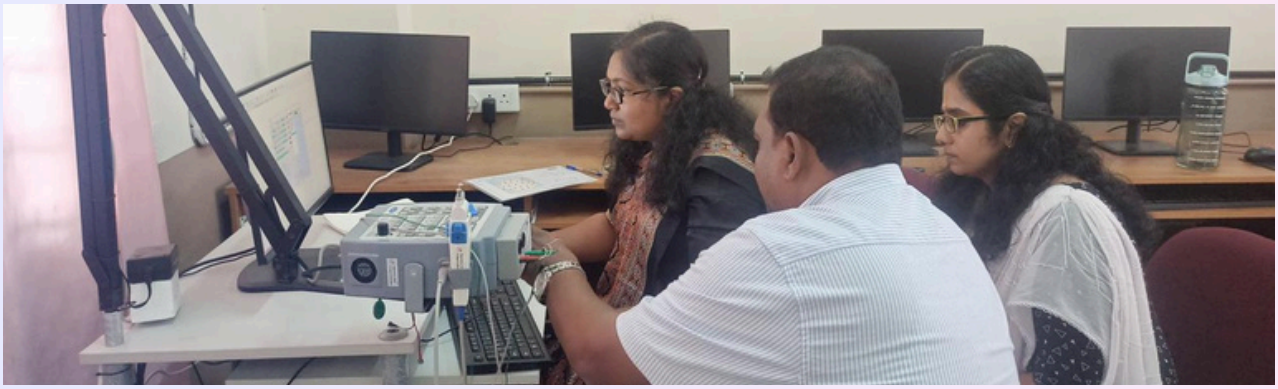


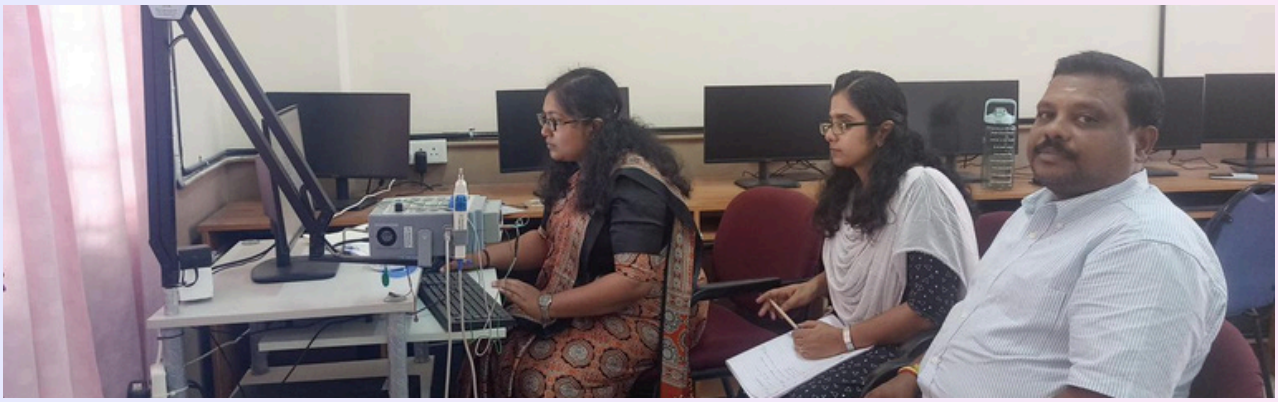
INSIGHTFUL DEMONSTRATION OF EEG AND ECG TECHNOLOGIES AT BSP LAB

On October 9, 2024, Mr. K.S. Muthukumar from Clarity conducted a specialized demonstration of EEG (electroencephalogram) and ECG (electrocardiogram) instruments at the Biomedical Signal Processing (BSP) Lab. This session focused on the functionality, applications, and technical handling of these crucial devices for monitoring neural and cardiac activities.

We had the opportunity to observe the setup, calibration, and real-time data interpretation of EEG and ECG instruments. Mr. Muthukumar engaged attendees in discussions about their practical applications in clinical settings, emphasizing their importance in neurology and cardiology.

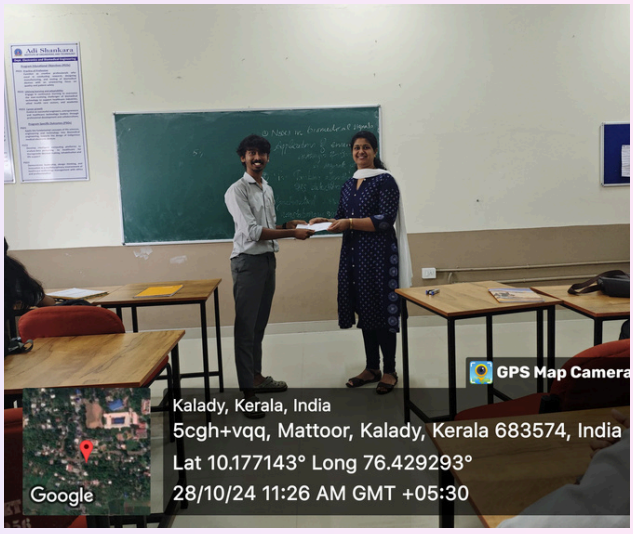
The demonstration provided valuable insights into how these technologies enhance patient care and diagnosis, fostering a collaborative learning environment and inspiring future innovations in biomedical engineering.





MERITORIOUS STUDENTS OF S5 EBE RECEIVE SCHOLARSHIPS FROM ASIET

The Student Welfare Cell of ASIET disturbed scholarship for students to support with expenses like books, fees, skill training, and more. Priority was given to meritorious student.On 28/10/24 some students of S5 EBE received the scholarship. The total amount of 12.5k was distributed to students



EMBS: ENABLE BREAKTHROUGHS

IEEE SUMMER CAMP

The IEEE Summer Camp on Generative AI in Healthcare Operations, held from September 23 to 28, 2024, was a remarkable success, with 789 participants from around the world. The camp featured 14 sessions exploring the transformative role of generative AI in biomedical engineering and healthcare operations.

This event was made possible by the strong support of the Adi Shankara Institute of Engineering and Technology, led by Principal Dr. M. S. Murali. Special contributions came from Dr. Remya George, Head of Electronics and Biomedical Engineering, who facilitated collaboration with the Telemedicine Society of India.

Together with the IEEE Student Branch, EMBS Society, and the Telemedicine Society of India-Kerala Chapter, the camp hosted impactful "Telemedicine" sessions.

Overall, the camp fostered meaningful discussions and showcased the potential of AI to revolutionize healthcare systems globally.

IEEE SB ASIET AND IEEE EMBS HOST SUCCESSFUL MEDICAL DEVICE DEVELOPMENT SYMPOSIUM

The **IEEE Student Branch ASIET**, in partnership with the IEEE Engineering in Medicine and Biology Society (EMBS), successfully organized a symposium titled **"Introduction to Medical Device Development"** on **August 23, 2024**. Held at noon in the Civil Seminar Hall, the event provided attendees with valuable insights into the complex world of medical device design and innovation.

Renowned experts in the field, including **Mr. Jithin Krishnan, Mr. Sarath S Nair, and Mr. Vinod Kumar V,** shared their extensive knowledge and experience with the audience. The symposium covered a wide range of topics, from the initial stages of concept development to the challenges and rewards of bringing medical devices to market.

To encourage broad participation, registration was offered free of charge to IEEE members and at a nominal fee for non-members. This inclusive approach attracted a diverse group of attendees, including students, professionals, and researchers with a keen interest in medical technology.

The symposium was a resounding success, providing attendees with a deeper understanding of the medical device development process and inspiring them to explore potential career paths in this dynamic field.

IEEE EMBS SB INAUGURATION

The IEEE EMBS Inauguration was held on 23rd August in the Auditorium. The Inauguration had the presence of Mr. Vinod Kumar V Chair of IEEE EMBS Kerala chapter, Mr Jithin Krishnan Vice Chair of IEEE EMBS Kerala Chapter and Dr M J Jayasree Secretary of EMBS Kerala Chapter, Dr Remya George, HOD of Electronics and Biomedical Engineering ASIET and many representees from ASIET and the core team members of IEEE SB ASIET.

The IEEE EMBS Student Branch Chapter at ASIET will serve as a platform for students to explore cutting-edge developments at the intersection of engineering, medicine, and biology, enhancing their academic and professional growth. The formation of this chapter aligns with IEEE EMBS's mission of advancing research and education in biomedical engineering, providing students with unparalleled opportunities to engage in meaningful projects, events, and networking activities. The Executive Committee (EXCOM) for the IEEE EMBS Student Branch Chapter has been appointed for the year 2024. The leadership includes Luthfiya Kamal as Chairperson, Joeann Stephen as Vice Chairperson, and Able Gerard Saji as Secretary. Dr. Silpa P.A. has been appointed as the Chapter Advisor, ensuring the alignment of the chapter's activities with the broader vision of IEEE EMBS. Additionally, Abhirami P.D. will oversee initiatives focused on promoting diversity and empowering women in the field of Medical Technology. This newly formed team is poised to lead the IEEE EMBS Student Branch Chapter at ASIET in organizing workshops, conferences, and various knowledge-sharing sessions, aiming to bridge the gap between engineering and healthcare while contributing to the academic and professional development of its members.

NEXUS CASE STUDY COMPETITION FOR WORLD ANAESTHESIA DAY AT ASIET

The IEEE EMBS Student Branch Chapter at ASIET organized the Nexus: Case Study Competition for World Anaesthesia Day to challenge students' clinical skills and encourage innovation in anesthesia under the guidance of Luthfiya and Joeann.

The competition consisted of two phases. In Phase 1, participants submitted written solutions for complex clinical cases by October 16, 2024, showcasing their medical knowledge and problem-solving skills. Phase 2, held on October 19, involved virtual PowerPoint presentations by shortlisted teams, allowing them to present their ideas to a judging panel.

The top 3 teams advanced to the final round, gaining recognition for their exceptional performance. The event successfully fostered clinical expertise and innovation, preparing students for careers in healthcare.

IEEE YESS '24

On August 24, 2024, the S3 Electronics and Biomedical Engineering (EBE) students from Adi Shankara Institute of Engineering and Technology participated in the IEEE "YESS" event held at Muthoot Institute of Technology. The event featured a comprehensive medical expo showcasing a variety of cutting-edge medical technologies and innovations. The students actively engaged with the exhibits, gaining valuable insights into the latest advancements in medical engineering. Their participation reflected both enthusiasm and a commitment to expanding their knowledge in the biomedical field, further enhancing their academic and professional development.

PARTICIPATIVE LEARNING

ASIET IEDC MEMBERS AT NIT CALICUT SUMMIT ON INNOVATION

The IEDC Members of ASIET attended the IEDC SUMMIT on 19th October at NIT Calicut .Melvin Mathew Jacob and Aleena Nelson from S7 EBE was also part of the team . The event focused on innovation and entrepreneurship, featuring workshops, panel discussions, and networking with industry experts. They gained insights into startup strategies and challenges, enhancing their understanding of applying engineering skills in business. Overall, the summit offered a valuable platform for aspiring entrepreneurs to connect and share ideas.

SHOWCASING INNOVATION AT HOSPEX HEALTHCARE EXPO

The student's **Melvin Mathew Jacob, Rita Canice Rodrigues, Lakshmi Anoop, and Megha Sivaramakrishnan of S7 EBE and Sreejith Ramachandran, and Raymond George of S5 EBE**, successfully showcased innovative devices, Smarthub, Oxygen concentrator, Bluetooth enabled stethoscope, and PlayRehab, at the Hospex Healthcare Expo at Kinfra, Kakkanad, Kochi, from **September 27th to 29th, 2024**. They had the opportunity to network with industry professionals, potential investors, and other stakeholders in the healthcare sector. The students' devices received positive feedback from visitors and potential investors, demonstrating their potential for commercialization. The department's participation in the expo increased its visibility and reputation within the healthcare industry.

Their participation in the expo was a testament to their dedication, technical prowess, and ability to apply theoretical knowledge to real-world healthcare applications. The students' devices, designed to address pressing healthcare challenges, garnered significant attention and positive feedback from industry professionals and potential investors.

By showcasing their innovative solutions at this prestigious platform, the students not only represented their department but also contributed to the advancement of healthcare technology. Their achievement is a reflection of the department's commitment to fostering a culture of innovation and providing students with opportunities to translate their ideas into tangible products.

ADI SHANKARA TBI SHINES AT BIOCONNECT 2.0

Adi Shankara Technology Business Incubator (TBI) made a strong impression at BioConnect 2.0, a prominent biotechnology event held on the 27th and 28th of September at Hyatt Regency, Thiruvananthapuram. The TBI's booth showcased innovative solutions developed by its incubated startups and researchers.

Attendees expressed particular interest in healthcare innovations and sustainable biotech initiatives. The event provided a valuable platform for networking and collaboration. The success of Adi Shankara TBI's participation has opened doors for future collaborations. Several startups have initiated discussions for research partnerships, mentorship programs, and funding opportunities. In conclusion, Bio Connect 2.0 proved to be an invaluable platform for Adi Shankara TBI. The event showcased the TBI's pioneering efforts in biotech innovation and established new connections within the industry.

Students of S7 EBE Kavya CV, Ranjusha K R, Irene Lee Joseph, and Luthfiya Kamal, along with faculty members Dr. Silpa P A and Mr. Eldhose P Sim, represented the institution at Bioconnect 2.0. The participation of these students and faculty members further enhanced Adi Shankara TBI's presence at the event, demonstrating the institution's commitment to fostering the development of young talent in the field of biotechnology. Their engagement with industry professionals and potential collaborators would have been instrumental in exploring potential opportunities for research, mentorship, and funding.


BIOCONNECT 2.0
KERALA 2024
I2I- INNOVATION TO INDUSTRY
Date: 27-28 September
Venue: Hyatt Regency,
Thiruvananthapuram, Kerala.


Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY


Adi Shankara


ADISHANKARA INSTITUTE OF ENGINEERING AND TECHNOLOGY
Adi Shankara


SWC
Integrating Generative AI in Healthcare Innovations
WORKSHOP
AI-DRIVEN DIAGNOSIS AND TREATMENT IN TELEMEDICINE
Friday, Sept 27
05:00 - 06:00 PM (GMT+5:30)
Speaker:
Dr. Vivek Nambiar
IEEE EMBS SAC
Program available at
bit.ly/swcprogram
/embs.sac


VISIT US AT
BIOCONNECT 2.0
KERALA 2024
Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY
TBI TECHNOLOGY BUSINESS INCUBATOR
BOOTH NO.
S9
GREAT HALL, HYATT REGENCY
27th & 28th Sep 2024 | Hyatt Regency, Thiruvananthapuram

THE GLOBAL AYURVEDA SUMMIT

The Global Ayurveda Summit & Expo 2024, held on August 29th and 30th at the Adlux International Convention Centre in Kochi, Kerala, was a significant event aimed at promoting Ayurveda, healthcare, and wellness. Organized by the Confederation of Indian Industry (CII), sponsored by Meitra Hospital and the Koattakal Arya Vaidya Sala, the summit gathered healthcare professionals, policymakers, and business leaders from around the world to explore new opportunities in health tourism. Inaugurated by Shri Pinarayi Vijayan, Kerala's Chief Minister, the event featured over 80 exhibitors and facilitated numerous B2B and B2G meetings. Representatives from various countries, including France, Kenya, Maldives, Russia, UAE, and others, highlighted the global interest in Ayurveda and health tourism, enhancing Kerala's standing as a wellness destination. Supported by key organizations such as Invest Kerala, KSIDC, and the National AYUSH Mission, the summit underscored the integration of traditional Ayurveda with modern healthcare innovations. The diverse participation helped foster partnerships and showcased Kerala's commitment to global health and wellness. The Global Ayurveda Summit reaffirmed Kerala's leadership in Ayurveda and health tourism, offering attendees valuable insights and collaboration opportunities, and positioning the state as a global hub for wellness.

EXPLORE & EXPERIENCE: LEARNING PROGRAMS

INTERNSHIP AT AGAPPE

We are pleased to recognize Megha Sivaramakrishnan's successful completion of a two-week internship at Agappe Diagnostics Ltd. starting from July 15th onwards. During this time, Megha demonstrated a strong work ethic, a keen interest in the field of diagnostics, and a willingness to learn. Megha's internship provided her with a valuable opportunity to gain firsthand experience in a dynamic and innovative healthcare setting. Her inquisitive nature and attentiveness during training sessions allowed her to gain a comprehensive understanding of the company's operations. We are confident that this experience has further solidified her interest in the field and equipped her with valuable knowledge and skills for her future endeavors. Megha seamlessly integrated into the team at Agape Diagnostics. Her positive attitude and collaborative spirit fostered a supportive and productive work environment. Megha readily embraced assigned tasks and applied her knowledge effectively. Her contributions were valuable and demonstrated a clear understanding of the internship's objectives.

"During my two-week internship at Agappe Diagnostics Ltd in the Technical Service Department, I gained valuable hands-on experience in medical equipment maintenance and troubleshooting. I had the opportunity to work alongside skilled professionals, learning about the functionality and repair of diagnostic devices, as well as the importance of ensuring their optimal performance for accurate results. This experience enhanced my technical skills, deepened my understanding of medical technology, and gave me insights into the critical role technical service plays in supporting healthcare systems."

Megha Sivaramakrishnan
S7 EBE

INTERNSHIP AT CYRIX HEALTHCARE PVT LTD

A group of talented students from S7 EBE recently concluded a successful week-long internship at Cyrix Healthcare Pvt Ltd in Cochin. Sneha K S, Sreejith K S, Rita Canice Rodrigues, Muhammed Azam A, Irine George, and Ashif Ashraf gained valuable hands-on experience and knowledge during their internship.

The students were immersed in the dynamic environment of Cyrix Healthcare, where they had the opportunity to work alongside experienced professionals. They actively participated in various projects, contributing their skills and ideas to real-world healthcare initiatives. The internship provided a platform for them to apply their academic knowledge to practical situations and develop their problem-solving abilities.

Through their internship, the students gained a deeper understanding of the healthcare industry and the specific operations of Cyrix Healthcare Pvt Ltd. They learned about the latest advancements in healthcare technology, patient care practices, and regulatory compliance. The experience also helped them build valuable professional networks and enhance their employability.

The successful completion of the internship is a testament to the dedication and hard work of the students. Their participation in this program has undoubtedly equipped them with the skills and knowledge necessary to excel in their future careers.

"During my internship at Cyrix Healthcare Private Limited, I gained hands-on experience with various biomedical devices, enhancing my understanding of their functionality and maintenance. I had the opportunity to dismantle some devices, which provided valuable insights into their internal mechanisms. This practical exposure also helped me learn about the processes involved in cleaning and repairing the equipment. Additionally, I became familiar with the significance of specific markings on the devices, such as regulatory labels , which play a crucial role in ensuring proper use and compliance."

Irene George
S7 EBE

INTERNSHIP AT IBIS MEDICAL Pvt. Ltd. COCHIN

The **five students, Khadeeja M J, Luthfiya Kamal, Pooja V K, Sandra Jacob, and Muhammed Adnan Sulphikar,** from the **S7 EBE** class at ASIET, completed a **2-week internship at Ibis Medical Pvt. Ltd., Cochin.** This valuable experience provided them with practical exposure to the healthcare industry, allowing them to apply their academic knowledge in a real-world setting. During their internship, the students gained hands-on experience in various aspects of healthcare operations, including patient care, medical administration, and clinical research. They had the opportunity to work alongside experienced professionals, learn new skills, and develop valuable industry connections. This internship has undoubtedly enhanced the students' career prospects and prepared them for future endeavors in the healthcare field. The skills and knowledge acquired during this experience will serve as a solid foundation for their professional development.

"My internship at IBIS Medical was a milestone of my Academics During my internship at IBIS Medical, I had the opportunity to work on the production side of medical equipment, particularly in assembling, Quality Control (QC), and Quality Assurance (QA) for devices like phototherapy units and infant warmers. I was involved in hands-on tasks like assembling equipment from pre-soldered components, and I participated in the thorough QC process where we checked technical parameters like current and voltage to ensure that the devices met the necessary standards. It was a great experience to see how biomedical equipment is built and validated, and it gave me a deeper appreciation for the precision required in this industry."

Muhammad Adnan Sulphikar
S7 EBE

INTERNSHIP AT SIEMENS

Aleena Nelson, Celestian George, and Nakshathra Anirudhan, students from the seventh semester of the Electrical and Electronics Engineering (EBE) program at ASIET, have successfully completed a 21-day internship at Siemens Healthcare Pvt Ltd. in Bangalore from 10th July 2024 to 31st July 2024. This valuable experience provided them with a unique opportunity to apply their theoretical knowledge to real-world engineering challenges. During their internship, the students were actively involved in various projects and initiatives within the healthcare technology domain. They had the chance to work alongside experienced professionals, gaining valuable insights into the latest advancements in medical equipment and systems. They received hands-on training on Siemens Healthcare's cutting-edge technologies and equipment, enhancing their technical skills. They developed essential soft skills, including teamwork, communication, and problem-solving, which will be invaluable in their future careers. The internship at Siemens Healthcare Pvt Ltd. has significantly impacted the student's academic and professional growth. The practical experience they gained has reinforced their theoretical knowledge and inspired them to pursue careers in the healthcare technology sector. The students are eager to apply the skills and insights acquired during their internship to their future endeavors, contributing to the development of innovative healthcare solutions.

"I recently had the privilege of interning at Siemens Healthineers, a global pioneer in medical technology dedicated to shaping the future of healthcare. Over three weeks, I gained hands-on experience working with cutting-edge imaging systems across multiple departments, including MRI, Advanced Therapeutics, Power & Vacuum, and CT. This internship provided me with invaluable insights into how advanced technologies are developed and applied to improve patient care, while also sharpening my technical skills and fueling my passion for biomedical engineering. This opportunity allowed me to immerse myself in the development and testing of advanced medical imaging technologies, contributing to systems like the Magnetom FreeStar MRI, Cios Fit C-arm, and the Somatom Go Now CT scanner. I played a pivotal role in assembling and testing the Magnetom FreeStar system in the MRI department, deepening my understanding of the intricate components and cooling mechanisms vital for high-quality imaging. In Advanced Therapeutics, I contributed to the Cios Fit, mastering the assembly of complex parts and high-voltage testing procedures."

Nakshathra Anirudhan
S7 EBE

INTERNSHIP AT HORIBA Ltd.

The students of **S7 EBE, Nabeel Mohamed, Madhav M Nair, Nithin P, Afsalu Rahman, Sreyas A Nair, K J Jayakrishnan, John Aldrin Soza, and Deepesh T B,** have successfully completed their **1 - month internship at HORIBA Ltd.** Demonstrating their dedication, technical prowess, and ability to apply theoretical knowledge to practical industrial applications, the students actively participated in diverse projects and gained invaluable hands-on experience with cutting-edge technologies. The successful completion of this internship is a testament to the department's commitment to providing students with opportunities for practical learning and professional growth, as well as its strong partnerships with industry leaders. The students' achievements are a source of pride for the department and the institution, and they are well-prepared to embark on their future careers in the field of engineering.

"I was fortunate to be part of the Comprehensive Internship Program for Biomedical Engineers at the Horiba India Training Institute, Nagpur, and I owe a special thanks to Dr. Remya George, HOD of EBE at ASIET, and Dr. Lakshmi M. Hari for helping me secure this opportunity. I am also deeply grateful to Aniket Sir and Dr. Pushkar Admane for their guidance throughout the internship.

The institute's cutting-edge facilities provided hands-on experience with advanced diagnostic instruments like the Yumizen H500 and CA40 coagulation analyzer. My training in the QA and QC departments on the CA40 was a highlight, where I learned essential skills in calibration and troubleshooting.

With expert mentorship and exposure to the latest innovations in diagnostics, this internship helped me bridge the gap between theory and practice. Workshops on soft skills further enhanced my professional growth. Overall, it was an invaluable experience that prepared me well for a career in biomedical engineering."

Madhav M Nair
S7 EBE

INTERNSHIP AT BIOSPACE HEALTH CARE

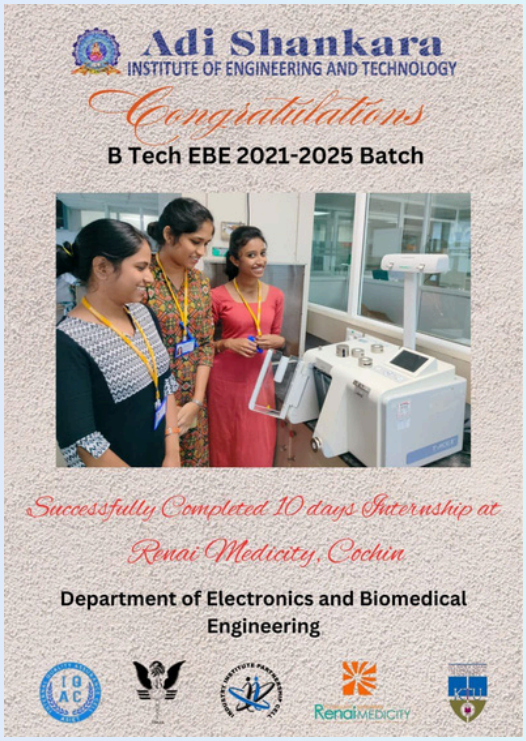
Sreya S, a dedicated student from the B Tech Electronics and Biomedical Engineering (EBE) program (2021–2025 batch) at Adi Shankara Institute of Engineering and Technology, has completed a two-week internship at Biospace Health Care, Kannur. This internship provided her with valuable hands-on experience in the healthcare industry, further enriching her academic knowledge and practical skills in biomedical engineering. Sreya's achievement reflects her commitment to professional development and the application of cutting-edge technology in healthcare, setting a strong foundation for her future career in this evolving field.

"I had the privilege of completing my internship at Biospace Healthcare, an In-Vitro Diagnostic (IVD) equipment company based in kannur.The internship offered me significant exposure to a professional environment where I could observe and develop key skills such as time management, communication, and problem-solving. I gained insights into how in-vitro diagnostic equipment functions and its importance in the medical field. This included learning the operation and maintenance protocols for devices provided by Biospace Healthcare.The internship at Biospace Healthcare was a valuable experience that allowed me to apply my academic knowledge in a real-world setting. It enhanced my technical expertise, communication skills, and understanding of the healthcare equipment industry. I am confident that the skills and knowledge I have gained will significantly contribute to my future career in the healthcare field."

Sreya Valsan
S7 EBE

INTERNSHIP AT RENAI MEDICITY, COCHIN

The students of **S7 EBE, Lakshmi Anoop, Mary Ansteena Joseph, and Navya N A,** have completed their **ten-day internship at Renai Medicity, Cochin.** This significant accomplishment demonstrates their dedication, technical proficiency, and ability to apply theoretical knowledge to real-world healthcare settings. During their internship, the students actively participated in various medical projects, gaining invaluable hands-on experience with advanced medical equipment and developing essential professional skills. Through this internship, the students have gained a deeper understanding of the healthcare industry, strengthened their problem-solving abilities, and enhanced their teamwork and communication skills.



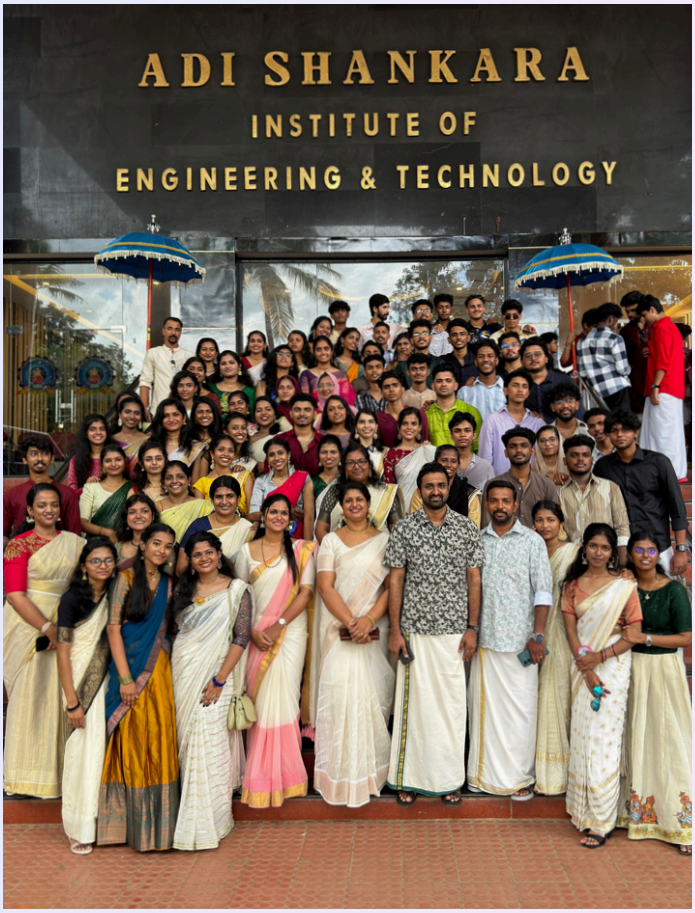
"During our 10-day internship at Renai Hospital, we gained hands-on experience and deep insights into hospital operations and biomedical equipment. We rotated through various departments, including Cardiology, Physiotherapy, and the Central Laboratory, where we explored cutting-edge diagnostic and therapeutic technologies. In the cardiology department, we learned about ECG machines and echocardiography. A highlight was observing surgeries in the OT, such as knee replacements and kidney stone removal, and witnessing the use of critical biomedical equipment. We also learned about device maintenance and the role of the hospital's biomedical engineering team, enhancing our understanding of healthcare technology."

Lakshmi A Menon
S7 EBE

COLLEGE EVENTS

ONAM - ARMADAM '24

The Onam celebration at Adi Shankara Institute of Engineering and Technology on 13th September 2024 was a highly successful and festive event. The program featured an impressive "melam," creating an authentic cultural atmosphere. The staff from the Electronics and Biomedical Engineering (EBE) department secured second place in the Malayalee Manga competition, contributing to the day's competitive spirit. Additionally, various other competitions were organized, along with dance performances from all departments, which were enthusiastically received by attendees. Overall, the event was a resounding success, with widespread participation and enjoyment from both students and faculty.



NSS 7- DAY SERVICE CAMP

The National Service Scheme (NSS) units of Adi Shankara Engineering College recently initiated a seven-day service camp at Kalady Government Upper Primary School. The camp, inaugurated by Kalady Panchayat President Shaji Thottapally, was presided over by Ward Member Sheeja Sebastian.

A gathering of esteemed dignitaries marked the inaugural ceremony, including Dr. Shripriya S, Research Dean of Adi Shankara Engineering College, School Principal Safiyamool M K, PTA President Davis P A, Alumni Association President Varghese K P, and Adi Shankara Business School Head Shaji Mohan. NSS Program Officers Sijo George, Ashwin Raj V, and Volunteer Secretary Bharat S also addressed the gathering.

The camp has an ambitious agenda, encompassing a wide range of activities. These include digital literacy initiatives, the refurbishment of hospital equipment, digitization of the school library, school renovation, awareness programs, personality development workshops, and practical training sessions.

This week-long endeavor is a testament to the commitment of the NSS units and the participating students to serve the community. By undertaking these projects, the students aim to make a tangible difference in the lives of the local people and contribute to the overall development of the community.


RATHEM

A MASTERCLASS IN INNOVATION: S7 EBE STUDENTS EXCEL

On September 4, 2024, the enlightened minds of S7 EBE at Adi Shankara Engineering College participated in the Masterclass Series Season 2, focusing on Business Innovation. This esteemed group, comprising Aleena Nelson, Luthfiya Kamal, Rita Canice Rodriguez, Ashif Ashraf, Irene Lee Joseph, Thejna T, Kavya C V, Sreyas A Nair, John Aldrin Soza, Deepesh T B, and Melvin Mathew Jacob, embarked on a journey of discovery into the realms of technology, innovation, and commercialization. This masterclass provided invaluable insights, fostering a deeper understanding of how technological advancements and innovative thinking can be effectively transformed into commercial success , preparing students for impactful careers in the evolving landscape of business and technology. Certified by Robert Gordon University, Scotland, UK, the program offered invaluable insights into the dynamic world of business innovation. Dr. Simon Fraser, a seasoned principal lecturer in entrepreneurship and international engagement lead, served as the guiding light, sharing his wealth of knowledge and experience.

The masterclass delved into the intricate interplay between technology, innovation, and commercialization. Students explored the transformative power of technology in driving innovation and learned the art of translating innovative ideas into tangible business ventures. The program also emphasized the significance of creativity and innovation, inspiring students to think outside the box and develop groundbreaking solutions.

The participation of S7 EBE students in this prestigious masterclass is a testament to their dedication to academic excellence and their pursuit of knowledge beyond the classroom. The experience gained from this program will undoubtedly equip them with the skills and mindset necessary to thrive in the competitive world of business and innovation. As they step into the future, these students are poised to make a significant impact on the global landscape.

FUSELAGE INNOVATION

On August 21, 2024, the Fuselage Innovation Internship Programme took place, offering students practical experience in aerospace engineering with a focus on fuselage design and testing. The program aimed to develop essential skills in innovation, material science, and sustainability while providing hands-on exposure to real-world challenges in the aerospace industry. This unique opportunity allowed participants to gain valuable insights into the complexities of aerospace design, preparing them for future careers in a rapidly evolving field.

ENHANCING QUALITY IN HIGHER EDUCATION: NAAC'S ROLE

The session conducted by Lakshmi M. Hari highlighted NAAC's essential role in elevating the quality of higher education in India. Through rigorous assessment and accreditation, NAAC encourages institutions to achieve academic excellence, foster innovation, and contribute to national development. By adopting NAAC's recommendations and maintaining a commitment to quality, higher education institutions can better prepare students to excel in a dynamic, globalized world.

A VISIT FROM THE PIONEERS OF ROBOTICS: GENROBOTICS AT ASIET

The Department of Electronics and Biomedical Engineering at Adi Shankara Engineering College had the distinct honor of hosting a visit from the esteemed team at Genrobotics, a renowned robotics company known for its innovative and groundbreaking creations. The visit provided a unique opportunity for students and faculty to engage with industry leaders and gain valuable insights into the world of robotics.

The Genrobotics team, interacted with students and faculty members, sharing their experiences and expertise in the field of robotics. They showcased their latest innovations and discussed the challenges and opportunities in the industry. The visit also included a demonstration of Genrobotics' advanced robotic technologies, captivating the audience with their capabilities and potential applications.

The interaction with Genrobotics was a source of inspiration for students, who were exposed to the cutting-edge advancements in robotics and their real-world applications. The visit also fostered valuable connections between the college and the industry, paving the way for potential collaborations and research opportunities.

This visit from Genrobotics was a significant milestone for Adi Shankara Engineering College, highlighting the institution's commitment to nurturing innovation and providing students with exposure to industry leaders. The experience will undoubtedly inspire students to pursue careers in robotics and contribute to the advancement of this rapidly evolving field.

STUDENT ACHEIVEMENT

GLOBAL INNOVATION IDEATHON

The team memebers Ms. Megha S, Ms. Lakshmi Menon, and Ms. Rita Canice of S7 EBE , under the guideship of Dr. Lakshmi M. Hari reprssented their S6 Mini project for the Global Innovation Ideathon 2024 organized by Health Careers International Pvt. Ltd, Australia at Hotel Le Meridien, Kochi on 23rd Sep 2024 and won the First Runners up position and a cash prize of INR 20K.

LIVING LONGER, LIVING BETTER: A SYMPOSIUM ON LONGEVITY AND HEALTH

M.s Kadeeja, S7 Electronics and Biomedical Engg has presented "Smart Fall Detection Jacket for Elderly" in the Virtual symposium - "Living Longer, Living Better: A Symposium on Longevity and Health" symposium organized by Rhenix Lifesciences International Institute for Population Sciences on September 21, 2024. The presentation was also awarded "Best Student Paper" and received a cash prize of Rs. 5K.

2-WEEK INTERNSHIP AT IBIS MEDICAL PVT. LTD., COCHIN.

KADEEJA MJ
S7 EBE

LUTHIFIYA
S7 EBE

POOJA VK
S7 EBE

SANDRA JACOB
S7 EBE

MUHAMMED ADNAN
S7 EBE

1 MONTH INTERNSHIP AT HORIBA LTD.

NABEEL
S7 EBE

MADHAV M
S7 EBE

NITHIN P
S7 EBE

AFSALU RAHMAN
S7 EBE

SREYAS A NAIR
S7 EBE

K J JAYAKRISHNAN
S7 EBE

JOHN ALDRIN SOZA
S7 EBE

DEEPESH T B
S7 EBE

10-DAY INTERNSHIP AT RENAI MEDICITY, COCHIN.

LAKSHMI ANOOP
S7 EBE

MARY ANSTEENA JOSEPH
S7 EBE

NAVYA N A
S7 EBE

TWO-WEEK INTERNSHIP AT AGAPPE DIAGNOSTICS LTD.

MEGHA SIVARAMAKRISHNAN
S7 EBE

21-DAY INTERNSHIP AT SIEMENS HEALTHCARE PVT LTD.

ALEENA NELSON
S7 EBE

CELESTIAN GEORGE
S7 EBE

NAKSHATHRA
S7 EBE

21-DAY INTERNSHIP AT BIOSPACE HEALTHCARE PVT LTD.

SREYA S
S7 EBE

1-WEEK INTERNSHIP AT CYRIX HEALTHCARE PVT LTD.COCHIN

SREEJITH
S7 EBE

IRENE GEORGE
S7 EBE

RITA CANCIE RODRIGUEZ
S7 EBE

ASHIF AHSRAF
S7 EBE

SNEHA K S
S7 EBE

OUR FINESSE

S6 RESULT 2021-2025 BATCH

NAKSHATHRA ANIRUDHAN
8.83

LUTHFIYA KAMAL
8.79

KADEEJA MJ
8.78

POOJA VK
8.6

LAKSHMI A MENON
8.57

ALEENA NELSON
8.24

S4 RESULT 2022-2026 BATCH

MISNA MANAF ABDUL
8.64

ANTONY DAVIS
8.59

SARANG SATHIAN
8.45

RAIMOND GEOREGE
8.32

JANE ROSE JIJO
8.18

S2 RESULT 2023-2027 BATCH

MYDHILY UNNIKRISHNAN
9.29

NANDANA G
8.71

MUHAMMED JASIL SHAFI UP
8.05

SREELAKSHMI SUNIL
8.05

UMA JAYAKUMAR
7.88

MINI S NAIR
7.86

ACCOLADES & WINS

- Secured First Prize in **Quiz Competition held during the Nanotechnology Workshop at NIT Calicut.**

IMMANUEL JOSE
S3 EBE

- Secured the top prize in the **"Designexus Logo Design Competition" conducted by the Women Empowerment Cell.**

JOEANN STEPHEN
S5 EBE

- Securied the **first prize** in the **"Swaraj Sirens**: **The Heroines of Indian Freedom Struggle**" quiz competition conducted by the **Women Empowerment Cell at ASIET** on **August 16th, 2024.**

NAGARAJ C
S3 EBE

MEENAKSHI
S3 EBE

- Secured 1st prize for his innovative **The poster designing competition** at Adi Shankara Institute of Engineering and Technology.

SREEJITH RAMACHANDRAN
S5 EBE

- Secured 1st prize for **Level 5 Logical Reasoning Competition** on August 22, 2024, at Adi Shankara Institute of Engineering and Technology.

KHADEEJA MJ
S7 EBE

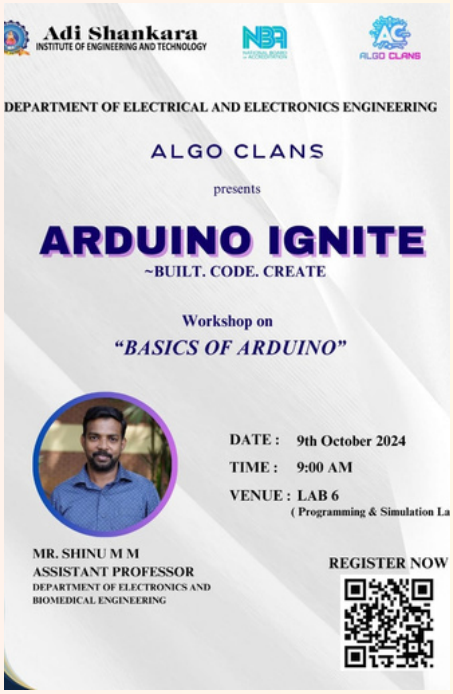
NAKSHATRA ANIRUDHAN
S7 EBE

- Angel Maria and team ASIET secured first position for the KTU D zone Volleyball Tournament.

ANGEL MARIA
S3 EBE

FACULTY SPOTLIGHT: ACHIEVEMENTS & ENGAGEMENTS

ARDUINO IGNITE : WORKSHOP ON BASICS OF ARDUINO



The **Arduino Ignite workshop**, organized by **ALGO CLANS** from the Department of Electrical and Electronics Engineering, successfully concluded on **9th October 2024.** Led by **Mr. Shinu M M**, Assistant Professor from the Department of Electronics and Biomedical Engineering, the event provided an engaging platform for students to dive into the basics of Arduino.

Throughout the workshop, participants learned to build circuits, write code, and bring their ideas to life using the Arduino platform. Mr. Shinum's clear and insightful guidance helped students understand the core principles of microcontroller programming and hardware interfacing. The hands-on experience in Lab 6 (Programming & Simulation Lab) not only equipped students with practical skills but also sparked an interest in electronics and embedded systems.

The event received great feedback, leaving participants eager to further explore and apply what they learned.

TEACHER'S DAY CELEBRATION

The Department of Electronics and Biomedical Engineering celebrated Teachers' Day on September 5th, 2024, honoring the tireless efforts and dedication of its esteemed faculty members who empower and enrich the minds of future generations. The celebration featured felicitations, student performances, speeches, and a cake-cutting ceremony. Students, alumni, and staff gathered to express gratitude to their teachers, whose guidance and mentorship have made a profound impact on their lives. The event was a heartfelt tribute to the department's beloved educators, making it an unforgettable day.

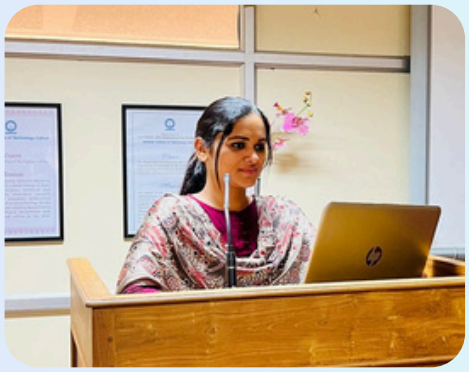
DESIGNED BY CELESTIAN GEORGE S7 EBE

INNOVATE AND PROTECT :ASIET COLLABORATES WITH NIPAM FOR IPR WORKSHOP

A two-day hands-on training in PCB fabrication was conducted on the 24th and 25th of September at the Centre for AI-IoT Innovation, organized by the Department of Electronics and Communication Engineering (ECE). The training was aimed at providing participants with practical experience in the complete process of designing, fabricating, and testing printed circuit boards (PCBs), which are crucial in the field of electronics and IoT. Dixon and Sumayya attended the workshop, which featured comprehensive sessions on PCB design software, fabrication techniques such as etching and drilling, as well as testing and troubleshooting methodologies.

REAL-TIME BLOOD PRESSURE PREDICTION ON WEARABLE DEVICES USING EDGE BASED DEEP NEURAL NETWORKS: A HARDWARE-SOFTWARE CO-DESIGN APPROACH

The manuscript, "Real-time Blood Pressure Prediction on Wearable Devices using Edge Based Deep Neural Networks: A Hardware-software Co-design Approach," Authored by Dr. Tresa Joseph, Asst. Professor, Dept. EBE has been accepted by ACM Transactions on Design Automation and will be published by Advanced Computing Machines.



INSPIRING FUTURES: DR REMYA GEORGE ENGAGES WITH CSE STUDENTS AT CHELAD POLYTECHNIC

The students of the final year Computer Science and Engineering (CSE) program at Chelad Polytechnic were privileged to host a visit from Dr. Remya George, the esteemed Head of the Department of Electronics and Biomedical Engineering at Adi Shankara Engineering College. Dr. Remya George's visit provided a valuable opportunity for the students to interact with a distinguished academic and gain insights into the field of engineering.

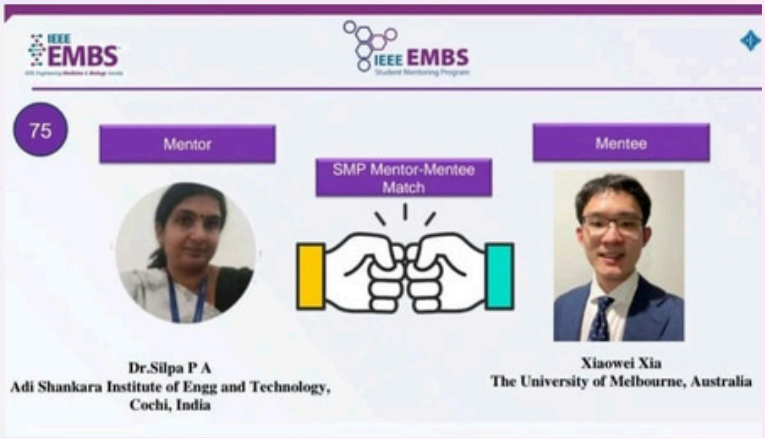
During her visit, she engaged in a series of interactive sessions with the students, sharing her expertise and experiences in the field of engineering. She discussed the latest advancements in technology, the challenges and opportunities facing engineers today, and the importance of continuous learning and professional development. Her insights were invaluable in inspiring the students to pursue their engineering aspirations with passion and determination.

Dr. Remya George's visit also served as a valuable networking opportunity for the students. By interacting with a senior academic from a renowned engineering college, the students were able to expand their professional network and gain valuable advice for their future careers.

The visit of Dr. Remya George to Chelad Polytechnic was a memorable event that left a lasting impression on the students. Her guidance and encouragement will undoubtedly motivate the students to strive for excellence in their academic pursuits and contribute meaningfully to the field of engineering.

ELEVATING BIOMEDICAL ENGINEERING : DR SHILPA PA SHINES IN IEEE EMBS MENTORNSHIP ROLES

Dr. Shilpa P.A., a distinguished faculty member at Adi Shankara Institute of Engineering and Technology, has successfully completed her membership in the prestigious IEEE Engineering in Medicine and Biology Society (EMBS) Student Mentoring Programme.



As part of this global initiative, she **provided expert mentorship to Xiaowei Xia,** a student from the **University of Melbourne, Australia**. Dr. Shilpa's involvement in this program highlights her commitment to advancing knowledge and fostering international collaboration within the biomedical engineering community. Ed to shaping the next generation of professionals in the field, further enhancing the reputation of Adi Shankara Institute of Engineering and Technology on the global stage.

ELEVATING EDGE AI: DR TRESA JOSEPH'S PHD BREAKTHROUGH IN HARDWARE ACCELERATION

Dr. Tresa Joseph successfully **defended her Ph.D**. thesis titled "**Design of Hardware Accelerators for Efficient LSTM Networks in Edge-based AI**" from NIT Calicut, Kerala on **12.08.24** . Her research has made significant contributions to the field. We extend our gratitude to her supervisor and committee members. This achievement is a testament to ASIET's quality of education and research.

COMMUNICATE TO INNOVATE

On July 31, 2024, IEEE SB ASIET hosted "Communicate to Innovate: Patent Strategies for Tech Success." Dr. Silpa P.A., Assistant Professor, led the session, emphasizing the importance of patent strategies and effective communication in driving innovation.
The event attracted a diverse audience and featured an engaging Q&A session. Participants gained valuable insights into protecting intellectual property and enhancing tech success.

5 DAYS ACADEMIC ENRICHMENT PROGRAMME

Ms. Lakshmi M Hari, Faculty of the Department of Electronics and Biomedical , has been acknowledged for her contributions as a **resource person** during the **Five Days Academic Enrichment Programme organized by the Department of Robotics and Automation Engineering at ASIET**. Her expertise and insights enriched the learning experience of the participants. We are grateful for her commitment to fostering academic excellence.12

INNOVATING IN MEDICINE : SUMAYYA P.I AND DIXON MA ENHANCE SKILLS IN ADVANCE MEDICAL ELECTRONICS

Sumayya P. I and Dixon MA from Adi Shankara Institute of Engineering & Technology (ASIET), successfully completed an esteemed 3-day **"Advanced Hands-On Technical Training in Medical Electronics"** held from **July 1st to July 3rd, 2024.** The training was meticulously organized by the Department of Electronics & Biomedical Engineering in collaboration with the Internal Quality Assurance Cell (IQAC) at ASIET, Kalady, Ernakulam.

DIXON M A

The program was conducted in association with the Biomedical Engineering Society of India (BMESI) and the Engineering and Biomedical Science Alumni Association (EBSAA). It was designed to provide participants with cutting-edge practical skills and in-depth knowledge in the field of medical electronics. Through hands-on sessions and expert-led instruction, they gained valuable experience in this rapidly advancing discipline, demonstrating their commitment to professional development and excellence in biomedical engineering.

SUMAYYA P I

DR. SILPA P.A. EMPOWERS BSH FACULTY WITH LATEX EXPERTISE

Dr. Silpa P.A., Assistant Professor in the Department of Electronics and Biomedical Engineering, shared her knowledge at a Faculty Professional Enrichment Programme organized by the Department of Basic Science and Humanities (BSH) at AISET from **June 27th to 29th**. Her session focused on "LaTeX: An Overview," equipping BSH faculty members with a powerful tool to enhance their academic writing and presentations.

LaTeX, a sophisticated typesetting system, is widely used in academic circles for its ability to produce high-quality documents with intricate mathematical expressions and consistent formatting. Dr. Silpa P.A.'s expertise in this area proved invaluable to the BSH faculty, providing them with a solid foundation in LaTeX's capabilities and functionalities.

Through interactive sessions and practical exercises, Dr. Silpa P.A. guided the participants through the process of creating professional documents using LaTeX. Faculty members gained an understanding of the software's basic commands, structure, and features, enabling them to craft well-structured and visually appealing documents for research papers, reports, and presentations.

This enriching program fostered a collaborative learning environment where BSH faculty members could delve into the world of LaTeX and explore its potential to elevate the quality of their academic endeavors. Dr. Silpa P.A.'s insightful presentation and interactive approach contributed significantly to the program's success.

A COLLABORATIVE EXPLORATION OF WEARABLE AI FOR PERSONALISED HEALTH CARE

The Department of Biomedical Engineering at Rajalakshmi Engineering College, Chennai, successfully hosted a five-day virtual faculty development program from June 3rd to 7th, 2024. Mr. Shinu M M and Dr. Remya George, Assistant Professor and Associate Professor respectively from the Department of EBE were distinguished participants in the program, contributing their expertise to the discussions and learning experiences.

The virtual format of the program allowed for a wider reach and participation from faculty members across various institutions. The program covered a wide range of topics, including wearable device design, data collection and analysis, AI algorithms for health monitoring, and personalized treatment plans.

Mr. Shinu M M and Dr. Remya George's active participation enriched the program, offering valuable insights and perspectives. Their contributions to the discussions and group activities enhanced the overall learning experience for all participants. The program's outcomes will undoubtedly contribute to the advancement of personalized healthcare practices and research in the field of biomedical engineering.


CERTIFICATE

OF PARTICIPATION

presented to :

Dr. Remya George

Faculty of **Adi Shankara Institute of engineering and Technology** has successfully completed the five-day virtual Faculty Development Program on "**Exploring Wearable Tech and AI Innovations for personalized Healthcare**" held from 3rd June to 7th June 2024, organized by the Department of BME, Rajalakshmi Engineering College, Chennai.

DR. R. KALPANA
Professor and Dean

DR. S. RAJKUMAR
Professor and Head


CERTIFICATE

OF PARTICIPATION

presented to :

Shinu MM

ulty of **Adishankara institute of engineering and technology** has successfully completed the five-day ual Faculty Development Program on "**Exploring Wearable Tech and AI Innovations for personalized Healthcare**" held from 3rd June to 7th June 2024, organized by the Department of BME, Rajalakshmi Engineering College, Chennai.

DR. R. KALPANA
Professor and Dean

DR. S. RAJKUMAR
Professor and Head

CELEBRATING INNOVATION DR LAKSHMI M HARI'S IMPACT AT MSIGMA-IEEE TECHBURST 2K24

Dr. Lakshmi M Hari, Faculty of Electronics and Biomedical depatment , was honored for her exceptional contributions as a **judge during the MSIGMA-IEEE TechBurst 2K24** Project Presentation held on **9th June 2024** at Gokulam Park, Kochi. Her insightful evaluations and invaluable feedback played a crucial role in the success of the event. This recognition highlights Dr. Hari's expertise and dedication to fostering innovation in the field of engineering

DR. ASWIN'S SPECIAL APPRECIATION AWARD

We are proud to say that Dr. Aswin Raj V of the Electronics and Biomedical Department has been honored with the University NSS Special Appreciation Award 2022-23. This prestigious award was presented by the National Service Scheme Cell, APJ Abdul Kalam Technological University, in recognition of his outstanding contributions to the National Service Scheme (NSS).

Dr. Aswin Raj V has demonstrated exemplary dedication to the NSS by effectively implementing its programs within the community. His efforts have significantly promoted the spirit of volunteerism and selflessness, inspiring students and community members alike to engage in meaningful social service. This recognition highlights his unwavering commitment to fostering a sense of responsibility among volunteers, thereby contributing positively to society.

CHAMPIONING LIFE SAVING : RUDHRASEENA

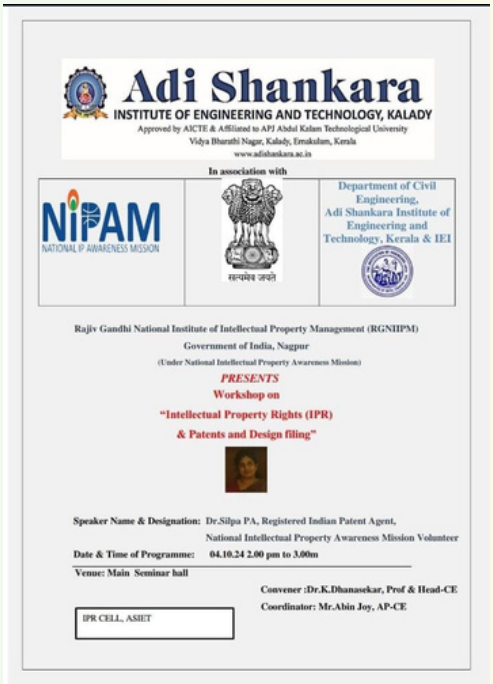
Adi Shankara Institute received state and district awards for **blood donations**. Dr. **Aswin Raj** represented the institute at the ceremony. The institute's commitment to social responsibility and blood donation was highlighted by his presence. The awards recognize the institute's exceptional efforts in promoting blood donation among its members.

NIPAM Hosts Workshop on Intellectual Property Rights

On October 4, 2024 – The National Intellectual Property Awareness Mission (NIPAM), in collaboration with the Department of Civil Engineering at Adi Shankara Institute of Engineering and Technology and the Institution of Engineers (IEI), held a workshop on "Intellectual Property Rights (IPR) & Patents and Design Filing."

Dr. Silpa PA, a Registered Indian Patent Agent, and NIPAM Volunteer, served as the keynote speaker, sharing insights on the importance of protecting innovations through patents and design filings. The event, held from 2:00 PM to 3:00 PM, attracted students and faculty eager to learn about IPR's vital role in fostering innovation.

This initiative reinforces NIPAM's commitment to enhancing understanding of intellectual property in the engineering community.


Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY, KALADY
Approved by AICTE & Affiliated to APJ Abdul Kalam Technological University
Vidya Bharathi Nagar, Kalady, Ernakulam, Kerala
www.adishankara.ac.in
In association with
NIPAM
NATIONAL IP AWARENESS MISSION
सत्यमेव जयते
Department of Civil Engineering, Adi Shankara Institute of Engineering and Technology, Kerala & IEI
Rajiv Gandhi National Institute of Intellectual Property Management (RGNIIPM)
Government of India, Nagpur
(Under National Intellectual Property Awareness Mission)
PRESENTS
Workshop on
"Intellectual Property Rights (IPR)
& Patents and Design filing"
Speaker Name & Designation: Dr.Silpa PA, Registered Indian Patent Agent, National Intellectual Property Awareness Mission Volunteer
Date & Time of Programme: 04.10.24 2.00 pm to 3.00m
Venue: Main Seminar hall
Convener :Dr.K.Dhanasekar, Prof & Head-CE
Coordinator: Mr.Abin Joy, AP-CE
IPR CELL, ASIET

TELEMEDICINE AND ITS ADVANCEMENTS: TRANSFORMING HEALTHCARE DELIVERY

MS. KRISHNA S NAIR
ASST PROFESSOR
DEPT EBE

The rise of telemedicine has revolutionized healthcare delivery, offering solutions that transcend geographical barriers and enhance access to medical services. From its early days of basic video consultations to today's sophisticated telehealth systems, telemedicine continues to evolve, promising improved patient outcomes and operational efficiency in healthcare.

A Brief History of Telemedicine

Telemedicine, in its most primitive form, dates back to the late 20th century, when physicians began experimenting with telephone lines to provide remote care. Since then, it has grown exponentially with the advent of the Internet, faster communication networks, and the proliferation of mobile devices. Telemedicine is now defined as the delivery of healthcare services using telecommunications technology, encompassing a wide range of applications from teleconsultations to remote patient monitoring and beyond

Recent Advancements in Telemedicine

1. **Artificial Intelligence (AI) Integration**: AI is increasingly being integrated into telemedicine platforms, enabling personalized treatment plans, and real-time analytics. From AI-driven chatbots assisting patients in triage to AI-powered diagnostic tools in radiology, the technology is streamlining the decision-making process and augmenting the capabilities of healthcare professionals.

2. **Wearable Technology and Remote Monitoring:** The incorporation of wearable devices into telemedicine has allowed for continuous monitoring of patients with chronic conditions, such as diabetes and cardiovascular diseases. These devices collect vital data and transmit it to healthcare providers in real time, facilitating early detection of health issues and timely interventions.

3.**mHealth and Mobile Applications:** Mobile health (mHealth) applications have enabled patients to manage their health more effectively. With the increasing use of smartphones, patients can now access personalized health interventions, engage in teleconsultations, and receive medication reminders, making healthcare more accessible and efficient.

4. **Virtual Reality (VR) and Augmented Reality (AR)**: Emerging technologies such as VR and AR are reshaping telemedicine by enhancing patient-physician interactions. These technologies are particularly useful in medical education, surgical simulations, and providing remote assistance in complex medical procedures, where specialists can guide surgeries remotely using AR.

5.5G Technology: The rollout of 5G networks is expected to be a game-changer for telemedicine. With high-speed, low-latency communication, 5G will enable seamless real-time video consultations, remote robotic surgeries, and more reliable data transfer between healthcare devices.

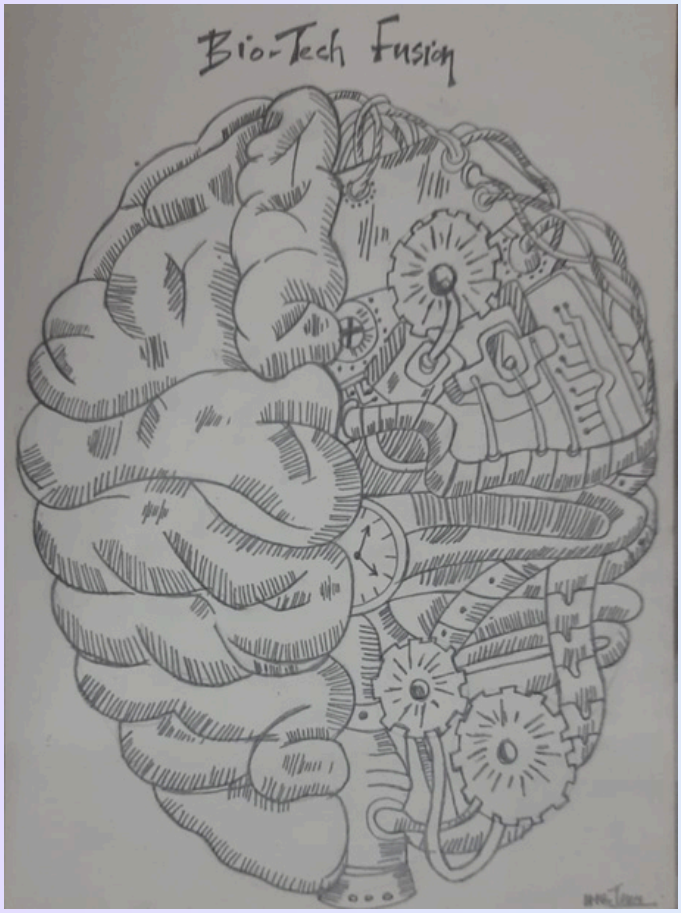
Telemedicine in India

In India, telemedicine has witnessed significant growth, especially during the COVID-19 pandemic. The government's push towards digital health and the establishment of the National Telemedicine Service have contributed to a robust telehealth infrastructure. Today, initiatives like eSanjeevani are helping bridge the gap between rural populations and healthcare specialists, providing millions access to essential healthcare services.

The Road Ahead

As telemedicine continues to advance, it holds the potential to not only improve patient outcomes but also address critical healthcare challenges, such as the shortage of healthcare professionals and inequitable access to healthcare facilities. With ongoing advancements in AI, IoT, and communication networks, the future of telemedicine looks promising, making healthcare more patient-centered, efficient, and accessible to all.

BIOTECH- FUSION



DR.TRESA JOSEPH
ASST PROFESSOR
DEPT EBE

TECHNICAL NEWS

THE INTERSECTION OF TECHNOLOGY AND MEDICINE

In recent times, the growth of the Internet of Things (IoT), artificial intelligence (AI), and Blockchain technologies have quickly gained pace as a new study niche in numerous collegiate and industrial sectors, notably in the healthcare sector. Recent advancements in healthcare delivery have given many patients access to advanced personalized healthcare, which has improved their well-being. The subsequent phase in healthcare is to seamlessly consolidate these emerging technologies such as IoT-assisted wearable sensor devices, AI, and Blockchain collectively.

Surprisingly, owing to the rapid use of smart wearable sensors, IoT and AI-enabled technology are shifting healthcare from a conventional hub-based system to a more personalized healthcare management system (HMS). However, implementing smart sensors, advanced IoT, AI, and Blockchain technologies synchronously in HMS remains a significant challenge . Prominent and reoccurring issues such as scarcity of cost-effective and accurate smart medical sensors, unstandardized IoT system architectures , heterogeneity of connected wearable devices, the multidimensionality of data generated, and high demand for interoperability are vivid problems affecting the advancement of HMS. Hence, this survey paper presents a detailed evaluation of the application of these emerging technologies (Smart Sensor, IoT, AI, Blockchain) in HMS to better understand the progress thus far. Specifically, current studies and findings on the deployment of these emerging technologies in healthcare are investigated, as well as key enabling factors, noteworthy use cases, and successful deployments. This survey also examined essential issues that are frequently encountered by IoT-assisted wearable sensor systems, AI, and Blockchain, as well as the critical concerns that must be addressed to enhance the application of these emerging technologies in the HMS.

AI and machine learning are enhancing diagnostics and predictive analytics, while telemedicine and wearable devices enable remote monitoring and personalized care. 3D printing is transforming prosthetics and implants, with bioprinting showing promise for organ creation. CRISPR gene editing offers potential cures for genetic disorders, and robotic-assisted surgery provides greater precision. Nanotechnology enables targeted drug delivery, and stem cell therapy is advancing regenerative medicine. Immunotherapies like CAR-T are breakthroughs in cancer treatment, while biosensors and precision medicine allow for real-time monitoring and tailored treatments based on genetic profiles. These innovations are improving outcomes and transforming patient care.

STUDENTS CREATIVE CORNER

ARTIFICAL LIFEBLOOD THE BREAKTHROUGH THAT WILL CHANGE EVERYTHING

The Future of Medicine: Biomechanical Blood Substitute Revolutionizes Transfusions
Blood transfusions are a vital aspect of medical care, saving countless lives daily. However, traditional blood transfusions come with limitations and risks, such as short shelf life, potential contamination, and compatibility issues. To address these challenges, biomedical engineers have made a groundbreaking discovery – Hemorrob, a biomechanical fluid designed to replace human blood.

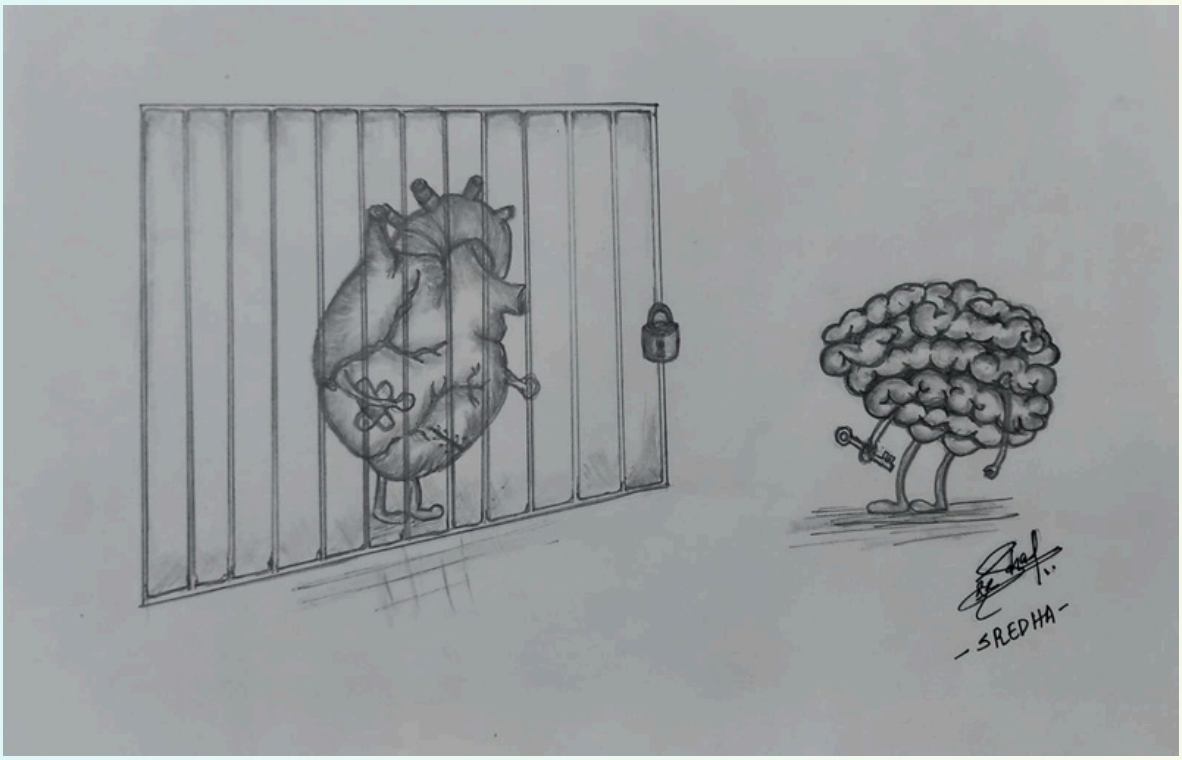
The need for a reliable blood substitute has long been pressing. Human blood is a complex and dynamic fluid, comprising various cells, proteins, and nutrients. Replicating its functions artificially has proven daunting. Hemorrob, a proprietary formula combining synthetic polymers, nanomaterials, and bioactive compounds, mimics blood's essential properties, including oxygen transport, viscosity, and biocompatibility.

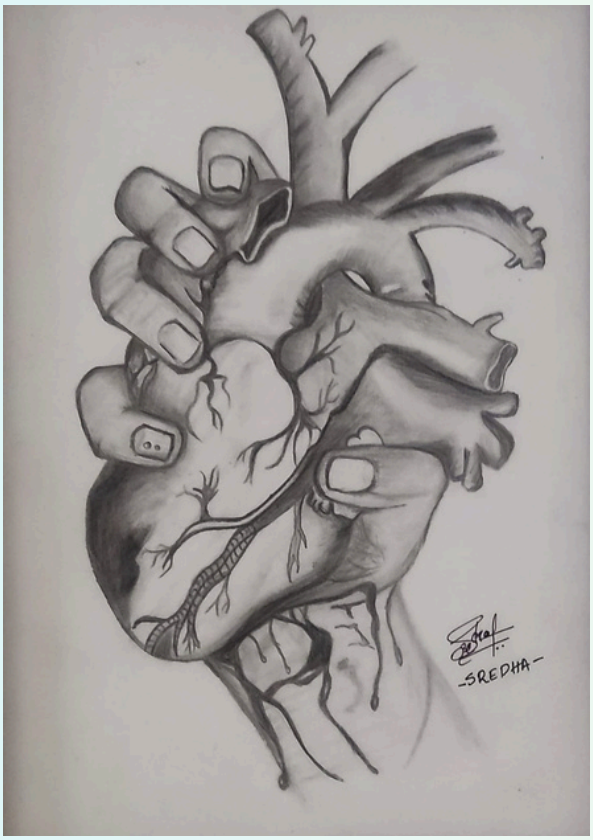
Hemorrob offers several advantages over traditional blood transfusions. Its increased shelf life eliminates the need for refrigeration, reducing the risk of infection and contamination. Universal compatibility eliminates the need for blood typing or cross-matching. Enhanced oxygen delivery potentially improves tissue oxygenation.

Potential applications include emergency transfusions, surgical procedures, organ transplantation, cancer treatment, wound healing, and tissue engineering. Hemorrob's development marks a significant milestone in biomedical engineering, holding the potential to transform medical care.

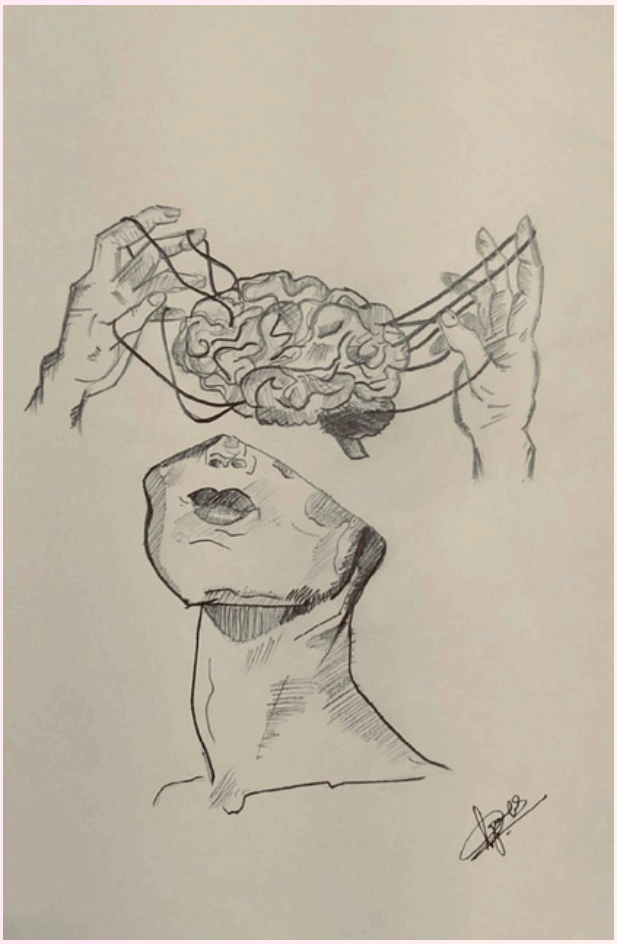
Expert insights highlight the collaborative effort and game-changing solution. Real-world implications extend beyond medical settings, including disaster relief, military medicine, and global health. Hemorrob addresses blood shortages in resource-constrained areas.

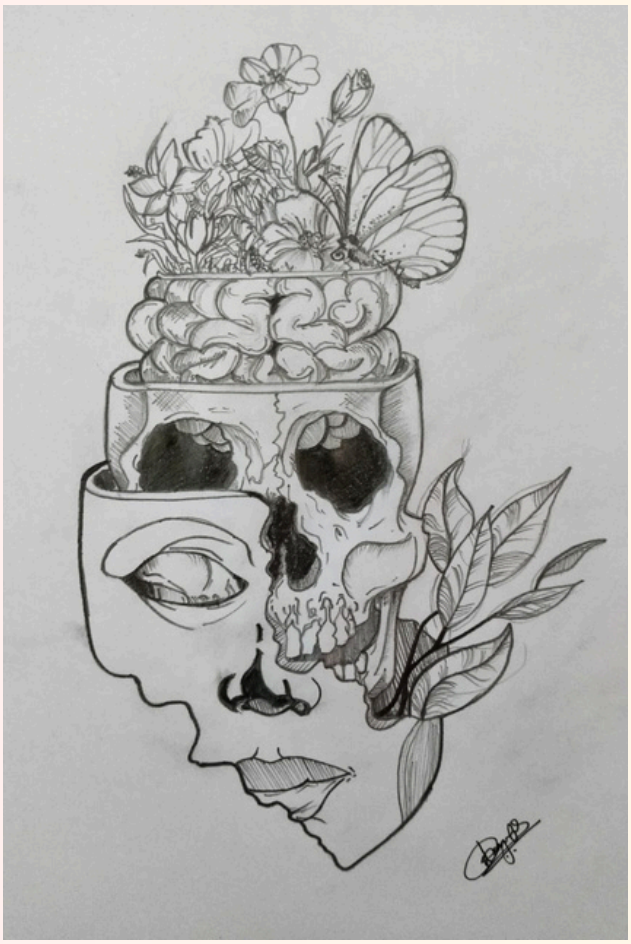
In conclusion, Hemorrob's possibilities are endless. As biomedical engineers continue to refine this technology, we may witness a seismic shift in medical care.





SREDHA PRADHEESH
S3 EBE





G S ADHI NARAYANAN
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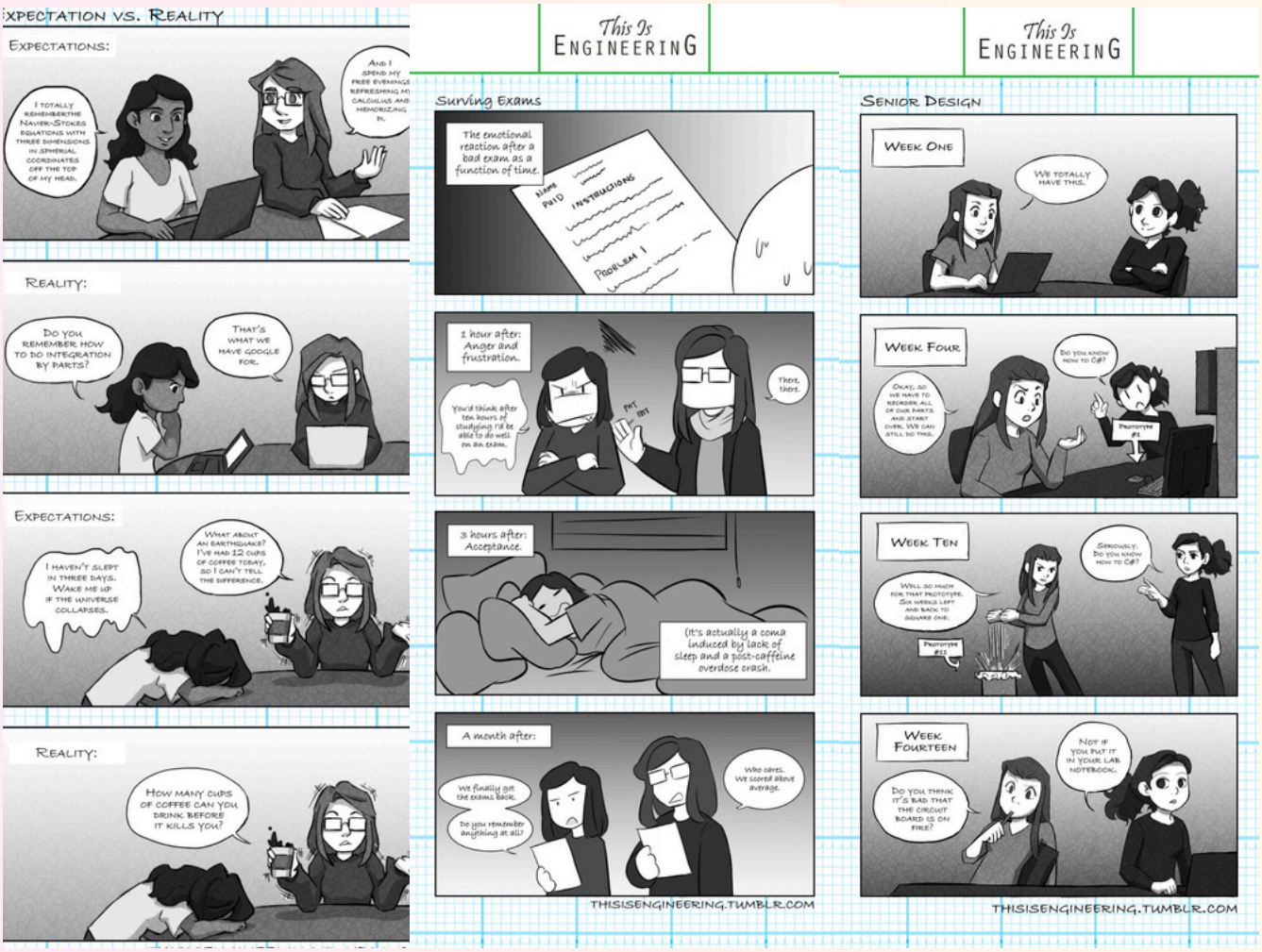
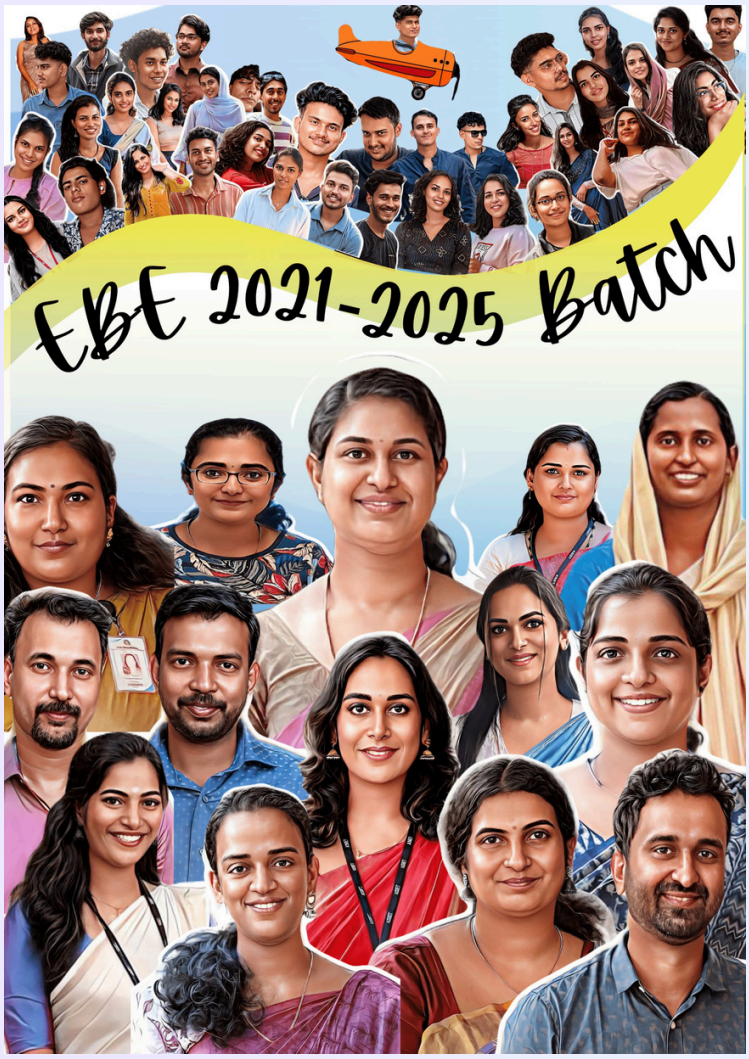


SAJNA SAJEEV
S5 EBE

The Heart

It commenced with a beat,
Rhythms arising from the core.
Through the day I felt heat,
The most precious thing I bore.
A line without a limit and chambers it possess,
Known for emotions the chamber hub.
Agonizing it can be when in distress,
But embellishes to become the true one,
And every ache it doesn't snub.
The fastest it pumps to support human essence,
They smolder without your presence.
Just as an old legend says,
May become too late before it dies
And ends with a beat.

PRINITHA P S3
S3EBE



CELESTIAN GEORGEE
S7 EBE

TECH TIDBITS: EBE HIGHLIGHTS

മെഡിക്കൽ ഡിവൈസസ് പാർക്കുകൾ വേണം

മെഡിക്കൽ ഉപകരണ രംഗത്ത് വലിയ സാധ്യത

എ.ടി.എം. പറയും ആരോഗ്യം

മഹാരാഷ്ട്രയിലെ എട്ട് സർക്കാർ ആശുപത്രികളിൽ വരുന്നു ഹെൽത്ത് എ.ടി.എമ്മുകൾ

രക്തദാനത്തിനുള്ള അവാർഡ് നേടി ആദി ശങ്കര എൻഎസ്എസ് യൂണിറ്റ്

കാലടി: സംസ്ഥാനത്തെ മികച്ച രക്തദാന പ്രവർത്തനം നടത്തിയതിനുള്ള സ്ഥാപനത്തിന് നൽകുന്ന പുരസ്കാരം ആരോഗ്യ വകുപ്പ് മന്ത്രി വീണ ജോർജ്ജ് ഉത്ഘാടനം ചെയ്ത ചടങ്ങിൽ കേരള സ്റ്റേറ്റ് ബ്ലഡ് ട്രാൻസ്ഫ്യൂഷൻ കൗൺസിൽ വൈസ് ചെയർമാൻ ഡോ. ശ്രീലത ആറിൽ നിന്നും പ്രിൻസിപ്പാൾ ഡോ. എം എസ് മുരളി ഏറ്റുവാങ്ങി. ആദി ശങ്കര എൻജിനീയറിങ് കോളജിലെ എൻ എസ് എസ് യൂണിറ്റിന്റെ പ്രവർത്തനമാണ് അവാർഡിന് അർഹമാക്കിയത്. ജില്ലയിൽ കൂടുതൽ രക്തദാനം നടത്തിയതിനുള്ള പുരസ്കാരവും കോളജിന് ലഭിച്ചു. മലപ്പുറം ജില്ലാ കളക്ടർ വി ആർ വിനോദ്, നിലമ്പൂർ നോർത്ത് ഡി എഫ് ഓ കാർത്തിക്, നിലമ്പൂർ നഗരസഭ ചെയർമാൻ മാട്ടുമ്മൽ സലീം, നിലമ്പൂർ ബ്ലോക്ക് പഞ്ചായത്ത് പ്രസിഡൻറ് പുഷ്പവല്ലി, ജില്ല മെഡിക്കൽ ഓഫീസർ ഡോ. രേണുക ആർ എന്നിവർ സംസാരിച്ചു.

● രക്തദാന പ്രവർത്തനത്തിന് ഡോ. ശ്രീലത ആറിൽ നിന്നും പ്രിൻസിപ്പാൾ ഡോ. എം എസ് മുരളി അവാർഡ് ഏറ്റുവാങ്ങുന്നു.

സംസ്ഥാനത്തെ മികച്ച രക്തദാന പ്രവർത്തനത്തിനുള്ള പുരസ്കാരം ആദിശ
എൻഎസ്എസ് യൂണിറ്റ് കേരള സ്റ്റേറ്റ് ബ്ലഡ് ട്രാൻസ്ഫ്യൂഷൻ കൗൺസിൽ വൈ
ചെയർമാൻ ഡോ. ആർ ശ്രീലതയിൽനിന്ന് പ്രിൻസിപ്പൽ ഡോ. എം എസ് മുരളി
ഏറ്റുവാങ്ങുന്നു

ആദിശങ്കര എൻഎസ്എസ് യൂണിറ്റിന് പുരസ്കാരം

കാലടി

രക്തദാനത്തിനുള്ള സംസ്ഥാന പുരസ്കാരം ആദിശങ്കര എൻഎസ്എസ് യൂണിറ്റിന്. കേരള സ്റ്റേറ്റ് ബ്ലഡ് ട്രാൻസ്ഫ്യൂഷൻ കൗൺസിൽ വൈസ് ചെയർമാൻ ഡോ. ശ്രീലതയിൽനിന്ന് പ്രിൻസിപ്പൽ ഡോ. എം എസ് മുരളി ഏറ്റുവാ

രക്തദാന പ്രവർത്തനത്തിന് പുരസ്കാരം നേടി

കാലടി: സംസ്ഥാനത്തെ മികച്ച രക്തദാന പ്രവർത്തനം നടത്തിയതിനുള്ള സ്ഥാപനത്തിന് നൽകുന്ന പുരസ്കാരം നിലമ്പൂരിൽ നടന്ന ചടങ്ങിൽ കേരള സ്റ്റേറ്റ് ബ്ലഡ് ട്രാൻസ്ഫ്യൂഷൻ കൗൺസിൽ വൈസ് ചെയർമാൻ ഡോ. ആർ .ശ്രീലതയൽ നിന്നും ആദിശങ്കർ എൻജിനീയറിങ് കോളജ് പ്രിൻസിപ്പൽ ഡോ. എം.എസ്. മുരളി ഏറ്റുവാങ്ങി. കോളജിലെ എൻ.എസ്.എസ് യൂണിറ്റിന്റെ പ്രവർത്തനമാണ് അവാർഡിന് അർഹമാക്കിയത്. ജില്ലയിൽ കൂടുതൽ രക്തദാനം നടത്തിയതിനുള്ള പുരസ്കാരവും കോളജിന് ലഭിച്ചിരുന്നു.

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