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 3
ISSUE 1

QUATERLY NEWSLETTER OF DEPT. ELECTRONICS AND BIOMEDICAL ENGINEERING
JUNE 2025 - AUG 2025

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

It gives me immense pride to address you through this edition of The Pulse, our quarterly newsletter. In alignment with our vision to evolve as a premier centre in Electronics and Biomedical Engineering and our mission of providing quality education, fostering innovation, and inspiring responsibility in healthcare technology, the past quarter has been both vibrant and impactful.

A significant highlight during this period of "The Pulse" was our academic partnership in HOSPEX 2025, where our students and faculty served as exhibitors, organizers, participants, and session hosts. This platform gave our students the unique opportunity to interact directly with industry leaders, policymakers, and experts, broadening their horizons beyond the classroom.

Our students and faculty have actively engaged in a wide spectrum of academic, research, and professional initiatives. Blueprints – the mini project exhibition showcased the creativity and technical acumen of our third-year students through innovative university projects. Through our professinal bodies,we hosted invited talks and career guidance sessions, enabling our students to connect with professionals and gain valuable insights into the healthcare technology ecosystem. Student led events were plenty under BMESI, TSI and IEEE EMBS.

Our department also takes pride in the remarkable achievements of our students—winning accolades in national-level competitions, excelling in university examinations, and securing promising placements. Alongside academic accomplishments, the vibrancy of extracurricular engagements has added depth to their overall growth.

The faculty of our department have been equally inspiring, earning recognitions through certifications, training programs, best paper awards, and engaging in industry visits such as the recent interaction at Ceumed Healthcare, Palakkad. Their efforts in keeping pace with the evolving trends of the healthcare sector continue to strengthen our academic ecosystem. As an evidence of our social commitment, the faculty of our department alongside the experts from ASIET proudly hosted a 1 month internship programme to Diploma Students, which was the first of its kind in Campus and probably in the state also. Through this initiative, we could upskill 25 Diploma students through ideation to prototyping of medical technology innovation.

As we move forward, we remain committed to our shared mission of cultivating innovative thinking, multidisciplinary collaboration, and a spirit of empathy and dedication in addressing healthcare challenges for the betterment of mankind.

With warm regards,

Dr.REMYA GEORGE
HOD ,ASSOCIATE PROFESSOR
DEPT OF EBE

MESSAGE FROM FACULTY COORDINATOR

"Biomedical engineering is not just about machines and medicine—it's about improving lives through innovation."
— Dr. Robert Langer

With immense pride and joy, I present to you the latest edition of our department newsletter. What began as a biannual publication has now evolved into a quarterly release—two newsletters per semester. This change is a reflection of the incredible momentum within the Department of Electronics and Biomedical Engineering.

The surge in student-led initiatives, faculty achievements, and department-level activities speaks volumes about the vibrant academic culture we are nurturing. From hands-on workshops and research advancements to national-level recognitions and outreach programs, each milestone represents the dedication, passion, and teamwork of our community.

This newsletter aims to capture and celebrate that spirit—serving not just as a record of events, but as a mirror of our collective enthusiasm, growth, and excellence. I extend my heartfelt appreciation to all contributors and look forward to continued collaboration and creativity in the issues ahead.

Warm regards,

Dr. TRESA JOSEPH
FACULTY COORDINATOR
DEPARTMENT OF EBE

MESSAGE FROM STUDENT COORDINATOR

It gives me great pleasure to present this edition of our department newsletter, which reflects the spirit, dedication, and achievements of our students and faculty. Over the past months, our department has witnessed remarkable progress, from academic milestones and innovative research initiatives to successful student-led projects and events. These accomplishments are a testament to the relentless pursuit of excellence by our students and the invaluable mentorship of our faculty, who have consistently guided and supported us in every endeavor. The collective effort of our department community continues to shape an environment of growth, collaboration, and innovation.

I would like to highlight the increasing recognition our department is receiving at both national and international platforms. This growing visibility is not only a proud moment for us but also an inspiration to strive harder and contribute meaningfully to the future of healthcare and biomedical technology.

As we move forward, let us celebrate these achievements with pride and remain motivated to reach new heights. Together, we can continue to make our department a true center of excellence in biomedical engineering.

Warms regards,

MISNA ABDUL MANAF
STUDENT COORDINATOR
S7 EBE

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 AND BMESI: SHAPING TOMMOROW

ASIET FACULTY LEAD KEY WORKSHOPS AT HOSPEX 2025 ON PATIENT SAFETY AND MEDICAL TECHNOLOGY PROCUREMENT

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The Department of Electronics and Biomedical Engineering (EBE) of Adi Shankara Institute of Engineering and Technology (ASIET) proudly partnered in the organization of **Hospex Healthcare Expo 2025, Kerala's largest medical equipment and healthcare technology exhibition.**

As part of this collaboration, the department conducted two workshops on the themes **"Biomedical Engineers for Patient Safety" and "Procurement of Medical Technologies – Due Diligence Practices."** The sessions, held from 2 p.m. to 6 p.m., were led by **Dr. Lakshmi M Hari, Associate Professor, and Dr. Remya George, Associate Professor and Head of the Department.** The workshops emphasized the vital role of biomedical engineers in safeguarding patients and the importance of systematic procurement practices in ensuring safety and cost-effectiveness within healthcare institutions.

In addition, Biomedical Engineering **S7 students of ASIET participated as exhibitors,** presenting innovative healthcare solutions and project demonstrations to industry delegates, while **S5 students supported the event as volunteers,** assisting faculty and participants to ensure seamless coordination.

The joint efforts of faculty, student exhibitors, and volunteers underscored ASIET's commitment to bridging academics with healthcare practice, further strengthening its role in shaping biomedical engineering education and industry engagement through Hospex 2025.


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Thank you
HOSPEX


HOSPEX

IEEE EMBS SBC ASIET | EXPERT TALK ON AI IN IVD & CLINICAL LABORATORIES

The session was graced by **Dr. Remya George, Associate Professor and Head of the Department of Electronics and Biomedical Engineering, ASIET**. Held on **June 13**, the event featured Dr. Remya sharing valuable insights into how **artificial intelligence has revolutionized diagnostic techniques and streamlined clinical workflows, particularly in in-vitro diagnostics (IVD) and laboratory practices.**

The event witnessed enthusiastic participation from students, faculty, and professionals from various disciplines. Attendees actively engaged with the resource person during the interactive session, making the event highly informative and impactful.

The program concluded with a vote of thanks to Dr. Remya George for her invaluable contribution and to all participants for making the session a grand success.

S6 EBE STUDENTS CLINCH FIRST PRIZE AT BLUEPRINTS 2025 MINI PROJECT EXHIBITION

The Blueprints 2025 Mini Project Exhibition was held on **17th July 2025 at T-06** CE Block , organized by the **Department of Electronics and Biomedical Engineering** in association with BMESI, at Adi Shankara Institute of Engineering and Technology.

The exhibition aimed to provide a platform for students to present their innovative mini projects, encouraging creativity, technical skills, and problem-solving abilities in the field of biomedical engineering. Conducted in offline mode, the event showcased a variety of student projects addressing real-world biomedical challenges.

A major highlight of the exhibition was the outstanding performance by the **S6 EBE team,** who secured the **First Prize for their project titled "Compact and Efficient Phototherapy Warmer for Newborns"**. Their project demonstrated a unique blend of innovation, practicality, and efficiency, offering potential improvements in neonatal care.

The event saw active participation from faculty and students, with coordinators ensuring smooth execution and meaningful interaction between participants and evaluators. The winning team's dedication and creative approach stood as an inspiration to their peers.

ONE-MONTH INTERNSHIP ON BIOMEDICAL INNOVATION AND PRODUCT DEVELOPMENT

The *Department of Electronics and Biomedical Engineering* at Adi Shankara Institute of Engineering and Technology (ASIET), Kalady, successfully organized a one-month internship program on "**Biomedical Innovation and Product Development**" from **May 12 to May 29, 2025.** Designed exclusively for final-year Diploma students in Biomedical Engineering across Kerala, the program aimed to bridge academic foundations with practical healthcare technology development.

Conducted entirely offline at the ASIET campus, this initiative focused on nurturing innovation, technical competence, and interdisciplinary collaboration. Students participated in a diverse range of hands-on workshops, expert-led sessions, and collaborative product development activities, exposing them to technologies such as signal processing, Arduino prototyping, PCB designing, 3D printing, and scientific documentation using LaTeX and AI tools.

The internship was meticulously coordinated by Dr. Remya George (HOD, Associate Professor, EBE Dept.), Dr. Lakshmi M Hari, and Mrs. Sheeba M, ensuring smooth and impactful execution throughout. The following expert sessions formed the core learning experience of the internship.

EFFECTIVE COMMUNICATION TECHNIQUES

On **May 12, 2025,** the students participated in an expert session titled ***"Effective Communication Techniques"***, led by **Mr. Sudesh Prabhakaran, Assistant Professor from the Department of Basic Sciences and Humanities.** The session focused on equipping students with core skills in professional communication—vital for pitching product ideas, engaging with stakeholders, and collaborating in multidisciplinary teams. Through interactive discussions, students explored key principles such as clarity, non-verbal communication, and audience engagement, all of which are critical in the biomedical field where communication must be both precise and empathetic.

COMPUTER-AIDED DESIGN AND PROTOTYPING

On **May 13 and 14, 2025,** this session was facilitated by Mr**. Jithesh S R from the Department of Mechanical Engineering**. The focus was on providing students with an introduction to **CAD-based designing and prototyping strategies**. Participants learned how to use design software for visualizing biomedical components and translating conceptual ideas into manufacturable models. By engaging in live demonstrations and basic prototyping exercises, students gained foundational exposure to iterative product development and model refinement—crucial skills in biomedical engineering.

MASTERING ARDUINO FOR ELECTRONIC PRODUCT DESIGN

On **May 19 and 20, 2025**, this intensive hands-on session led by **Mr. Shinu M M, Assistant Professor in the Department of Electronics and Biomedical Engineering,** introduced students to e**mbedded system development using Arduino.** Participants were guided through fundamental programming, sensor integration, and circuit prototyping. The session encouraged experimentation and creativity, enabling students to develop simple yet functional biomedical devices such as pulse sensors and temperature monitoring systems. Real-world applications and industry relevance were highlighted, preparing students to contribute to innovation in low-cost healthcare electronics.

HUMAN FACTORS FOR ENGINEERING PROJECTS

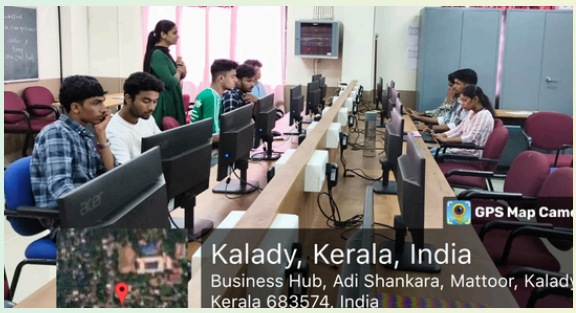
On May 21, 2025, Mr. Aswin Raj V, Assistant Professor in the Department of EBE, led a focused expert interaction on the **human-centered aspects of engineering design.** This session shed light on ergonomics, usability, and safety considerations in biomedical innovations. Students learned how incorporating user feedback and human limitations into design thinking can enhance device acceptance, functionality, and compliance in clinical environments. Case studies and relatable examples were discussed, reinforcing the necessity of empathetic engineering in healthcare.

EXPLORING 3D PRINTING IN INNOVATION

The session on **May 23, 2025, conducted by Mr. Sandeep O.S., Assistant Professor from the Department of Mechanical Engineering**, immersed students in the evolving field of 3D printing. With a focus on biomedical applications, the session included an overview of **additive manufacturing principles, materials used in bio-compatible printing, and the process of converting digital models to physical prototypes.** Live demonstrations helped students understand how to fabricate models for medical training, prosthetics, and device enclosures, giving them a new dimension of rapid prototyping and design validation

PREPARING DOCUMENTS USING LATEX

On **May 26, 2025, Dr. Tresa Joseph, Assistant Professor in the Department of EBE,** conducted a session that introduced **LaTeX as a powerful tool for scientific writing**. Students were guided through basic syntax, document structuring, table and figure insertion, and bibliography management. The workshop emphasized the importance of professional documentation in technical fields and helped participants prepare structured, reproducible reports suitable for academic and research submissions.



AI-INTEGRATED LATEX FOR SCIENTIFIC DOCUMENTATION

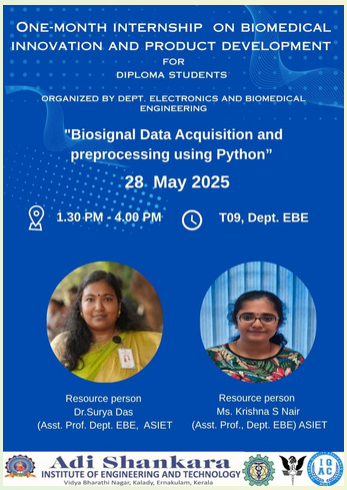
Held on **May 27, 2025**, this advanced session was led by Dr. **Sarika S, Associate Professor and Head of the Department of Artificial Intelligence and Data Science.** The session built upon prior L**aTeX knowledge and introduced how AI tools can streamline scientific writing.** Topics included automated content generation, grammar enhancement, and citation management using AI-powered platforms. Students explored AI-augmented workflows that reduce the time and cognitive load involved in preparing high-quality technical reports.

THE ANATOMY OF TECHNICAL DOCUMENTATION

On **May 28, 2025, Dr. Lakshmi M Hari, Assistant Professor from the Department of EBE,** delivered a comprehensive session on the **structure and logic behind impactful technical documentation**. Students examined components of well-written technical documents—ranging from abstracts and methodologies to results interpretation and conclusion framing. Through examples and writing exercises, the session helped participants refine their scientific writing style and understand the expectations of documentation in the engineering domain.

BIOSIGNAL DATA ACQUISITION AND PREPROCESSING USING PYTHON

Concluding the expert interactions on **May 28, 2025, Dr. Surya Das and Ms. Krishna S Nair, Assistant Professors from the EBE** Department, conducted a session on handling **biomedical signal data using Python.** Participants were introduced to the fundamentals of biosignal acquisition, noise reduction techniques, and preprocessing pipelines. The session featured live demonstrations on reading and filtering ECG signals, helping students build practical skills in biomedical data analysis—a cornerstone in modern diagnostic and monitoring systems.



EXPERT SESSION ON INTELLECTUAL PROPERTY RIGHT

An expert interaction on "Intellectual Property Rights" was conducted on **15th May 2025** at T09, Dept. EBE. The session, held from 1:30 pm to 4:00 pm, was led by **Dr. Silpa P A, Assistant Professor in EBE, India Patent Agent, and member of the IPR Cell at ASIET**. The interaction enriched the participants with valuable knowledge on patents and intellectual property, fostering innovation and awareness of legal aspects in product development.

EXPERT INTERACTION ON DESIGN THINKING FOR DIPLOMA STUDENTS

An expert interaction was conducted on **14th and 15th May 2025** at the CE Seminar Hall. The session on **"Design Thinking: Problem Identification and Conceptualization"** was handled by **Mr. Eldhose P Sim, Assistant Professor in CSE and Nodal Officer of IEDC ASIET.** The program, organized from **1:00 pm to 4:00 pm**, provided the participants with valuable insights into innovative approaches, creative problem-solving, and product conceptualization, making the internship more impactful and industry-relevant.

INNOVATION IN FOCUS: PITCHING AND PROPOSAL EVALUATION

Adi Shankara Institute of Engineering and Technology (ASIET) organized a session titled **"Innovation in Focus: Pitching and Proposal Evaluation"** as part of its One-Month Internship on Biomedical Innovation and Product Development for diploma students. Held on May 21, 2025, from 1:30 PM to 4:00 PM at T09, the program aimed to enhance students' skills in innovation, pitching, and proposal development. The resource persons were **Dr. Remya George, HOD, Associate Professor and Mr. Shinu M. M., Assistant Professor, who shared insights on proposal writing**, pitching techniques, and innovation strategies. The offline session included interactive discussions and student presentations, enabling participants to refine their project ideas while reflecting ASIET's commitment to fostering creativity and industry-oriented learning in biomedical engineering.

INDUSTRY EXPERT INSPIRES BIOMEDICAL ENGINEERING STUDENTS AT ONLINE INTERACTION

On **30th July 2025 at 8:00 PM,** the Department of Electronics and Biomedical Engineering, in association with **BMESI and EBSAA, organized** an insightful Industry Interaction Session via Zoom Meeting. The event, titled **"Dreams to Direction: Crafting Futures in Biomedical Engineering",** aimed to guide students in aligning their academic journey with real-world industry needs and career opportunities. The guest speaker, **Mr. Jaffar Maliyakkal, Business Development Manager at Aragon Calibrations LLC, Dubai,** shared his vast professional experience in biomedical engineering, emphasizing the importance of skill development, adaptability, and global exposure in building a successful career.He also highlighted the latest advancements in biomedical technology and discussed how innovation plays a key role in healthcare solutions.

FACULTY DEVELOPMENT PROGRAM EMPOWERS EDUCATORS WITH SIMULINK-BASED MODEL DESIGN SKILLS

On **27th June 2025,** the Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology (ASIET) organized a Faculty Development Program on **"Introduction to SIMULINK Based Model Design" at the BSP Lab.**

The session was led by **Mr. Dhanoop K Dhanpal, Application Engineer, MATLAB, CoreEL Technologies Ltd.**, Bangalore, and aimed to equip faculty members with practical knowledge and hands-on experience in SIMULINK for effective model-based design. The program covered fundamental concepts, simulation techniques, and real-world applications, enabling educators to integrate advanced computational tools into their teaching and research. Participants actively engaged in interactive demonstrations, gaining valuable skills to enhance academic delivery and foster innovation in engineering education

WORLD IPR DAY CELEBRATION AND KAPILA PATENT FUND DISTRIBUTION SUCCESSFULLY HELD

The Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology, Kalady, successfully organized the **World Intellectual Property Rights (IPR) Day Celebrations, which were uniquely combined with the official distribution of the AICTE Kapila Patent Fund**. The event aimed to promote awareness on intellectual property rights among students and faculty, while also encouraging innovation and patent filing culture within the institution. Conducted offline on campus, the program included insightful sessions, formal fund handovers, and acknowledgments of patent achievements. The celebration not only marked a tribute to IPR Day but also highlighted the institute's commitment to fostering a strong innovation ecosystem through AICTE's support.

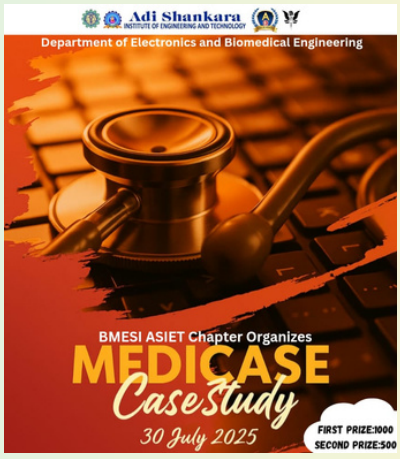
3-DAY ADVANCED HANDS-ON WORKSHOP ON BIO SIGNAL ACQUISITION AND PROCESSING

A 3-Day Advanced Hands-on Technical Training Programme on Bio Signal Acquisition and Processing took place from **May 26th to 29th, 2025.** The workshop aimed to provide participants with practical skills in biomedical signal acquisition and analysis, utilizing tools such as Scilab and Python. Sessions, led by Assistant Professors **Dr. Surya D and Ms. Krishna S. Nair**, covered crucial topics including ECG, EMG, and EEG signal processing, noise removal techniques, and digital filter design.

The programme was coordinated by **Ms. Nimmi Vijayan, Assistant Professor**
It saw enthusiastic participation from technical lab staff and final-year diploma students, providing them with valuable insights into biomedical applications, diagnostic tools, and healthcare innovation.

MEDICASE CASE STUDY COMPETITION AT ASIET

The **MediCase Case Study Competition** was held on **30th July 2025** at Adi Shankara Institute of Engineering and Technology in association with the **BMESI ASIET Chapter**. Conducted in offline mode, the event aimed to encourage students to apply their biomedical knowledge to real-world challenges through case study analyses. It witnessed active participation, with students showcasing their analytical and presentation skills. The dedicated efforts of faculty and student coordinators ensured the smooth and successful conduct of the event.



ALUMNI CONNECT: INSIGHTS FROM INDUSTRY WITH MS. ALEENA NELSON

An **Alumni Interaction for the first-year EBE students (2025 batch)** was successfully organized on 19th August. The session, held from 9:00 am, **featured Ms. Aleena Nelson from the 2021–25 batch,** who is currently serving as **Production Manager at LUKA Healthcare Pvt. Ltd**. The interaction provided students with valuable insights into career growth and industry exposure, while also strengthening the bond between alumni and the institution.

BIOALCHEMY WORKSHOP

The student chapter of the **IEEE Engineering in Medicine and Biology Society (EMBs),** in collaboration with the IEEE Kerala Chapter & Model Engineering College, successfully conducted a **Bio 3D printing specialized workshop, "BioAlchemy: Design Print Innovate**," on Monday, **August 11, 2025.** The session, which ran from 9:00 AM to 3:30 PM at the BSP Lab, , focused on practical applications and cutting-edge developments.

The workshop featured distinguished guest speakers, Dr. Muhammed Rabeeh, Senior Scientist, and Ms. Silby Markose, Junior Scientific Assistant, both from Dr. Moopen's INEST. The event provided participants with invaluable hands-on experience and expert insights into the rapidly evolving fields of biomaterials and related technologies.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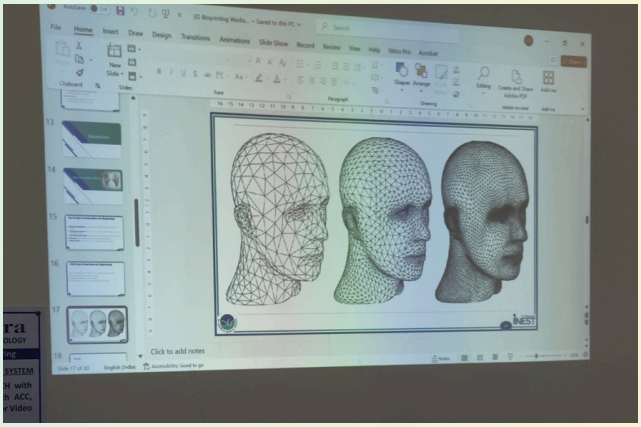


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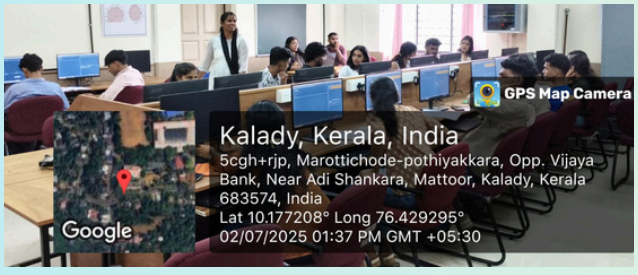
HANDS-ON TRAINING BOOSTS SKILLS OF S3 BIOMEDICAL ENGINEERS

The **Department of Electronics and Biomedical Engineering, ASIET, organized a 5-day hands-on certificate course exclusively for S3 Biomedical Engineering students**, focusing on strengthening their practical skills in electronics and digital logic. The program covered essential topics such as electronic testing instruments, diode and rectifier circuits, analog signal shaping techniques using filters, clippers, and clampers, and the implementation of basic digital logic circuits. Students also gained an introduction to Verilog HDL for simulating combinational logic designs. Combining theory with practical lab sessions, the course enhanced students' technical expertise, preparing them for advanced applications and diagnostic roles in the biomedical domain. Participants received certificates upon completion, with the added benefits of hands-on training and improved industry readiness.

ADVANCED MEDICAL ELECTRONICS: ADD-ON PROGRAM WITH PYTHON & QT-OCTAVE FOR S5 STUDENTS

The Department of Electronics and Biomedical Engineering of Adi Shankara Institute of Engineering and Technology, organized a **five-day Add-On Certificate Course titled "Advanced Medical Electronics with Practical Bio-Signal Processing using Python & Qt-Octave"** from **1st to 5th July 2025.** The program featured expert sessions conducted by esteemed resource persons **Ms. Winnie Ann Thomas, Ms. Krishna S Nair, Dr. Surya D, and Ms. Gopika Praveen from the EBE department, along with Ms. Sharika T R and Ms. Akshaya Jayaraj from the CSE department.**

The five-day course was designed for S5 EBE students to strengthen core competencies and industry readiness through a mix of theory and hands-on training. Sessions covered Python programming, real-time signal processing, and biomedical circuit design. Students practiced lab exercises using 741 and specialized ICs, simulated bio-signals, and applied Python-based analysis. The program aimed to introduce biomedical applications of Python, signal processing in healthcare, and practical circuit design while familiarizing students with key lab platforms. Coordinated by Dr. Tresa Joseph and Ms. Nimmi Vijayan (Dept. of EBE, ASIET) with student coordinators Mini S Nair and Jinusree, the course effectively bridged academics with real-world applications, preparing students for advanced learning and professional roles in Biomedical Engineering.



ECHOES OF ASIET

ADI SHANKARA CUP 2025: A GRAND CELEBRATION OF SPORTSMANSHIP AND CAMARADERIE

Adi Shankara Institute of Engineering and Technology, Kalady, successfully hosted the Adi Shankara Cup 2025, an **All Kerala Staff Cricket Tournament,** on **April 26–28** at the Adi Shankara Cricket Ground. **Organized by the Department of Physical Education,** the event brought together staff teams from leading engineering colleges across Kerala, fostering sportsmanship and camaraderie. The tournament featured league and knockout matches and **was graced by Indian cricketer Basil Thampi,** who served as the brand ambassador for **Bee International** inspired participants with his words. **Decathlon Kalamassery supported the event as the official sponsor**, and teams from College of Engineering Trivandrum, Government Engineering College Thrissur, MA College of Engineering, and several others took part enthusiastically. The success of the three-day tournament was made possible through the dedicated efforts of faculty coordinators, volunteers, and student representatives.

ASPREN'25 PROJECT EXPO

ASPREN'25, the annual technical fest of Adi Shankara Institute of Engineering and Technology, featured its much-awaited Final Year Project Exhibition, conducted offline on campus. The event served as a platform for eighth-semester students to actively exhibit their projects, presenting creative and impactful engineering solutions that reflected innovation, problem-solving, and real-world application.

With enthusiastic student participation and strong faculty support, the exhibition underscored the importance of hands-on learning and technical excellence, while celebrating the innovative spirit nurtured at ASIET.

SAMAGRA'25 RECOGNITION

A team of 4 from EBE department -Ms Lakshmi A Menon, Ms Mary Ansteena Joseph, Ms Navya N A, and Ms Afsalu Rahman S, under the mentorship of Dr Surya D,Assistant professor from Adi Shankara Institute of Engineering and Technology reached a proud milestone with their project "Portable Phototherapy Blanket with Non-Invasive Bilirubin Detection." Designed to enhance neonatal care through portable and non-invasive bilirubin monitoring, the innovation received dual recognition by winning Outstanding Project at the ASPREN'25 Project Exhibition and securing the Third Prize at the SAMAGRA'25 Inter-College Competition organized by IEDC ASIET. Conducted offline on campus as a part of Brahma'25, both events celebrated impactful student innovations addressing real-world healthcare challenges.

GRAND ONAM CELEBRATION AT ASIET

The spirit of tradition and festivity came alive at our college on 27th August with the grand Onam celebration, which was conducted from 9:00 AM to 3:30 PM. The entire campus was filled with joy, colors, and cultural vibrance as students came together to celebrate Kerala's most cherished festival. The programs began with the beautiful Thiruvathira, followed by the Pookalamalasaram that added charm with creative floral designs. Energetic dance competitions and a lively flash mob brought cheer and excitement among the crowd. This year's Onam was even more special as it was celebrated in connection with the 25th anniversary of the college, adding greater significance to the event. As part of the festivities, a traditional Onam Sadya was arranged for all students, which was generously provided by the college itself, making the day a delightful experience for everyone.

From our department, students participated enthusiastically in every competition and showcased their talents with full spirit and energy. Whether it was the graceful steps in the dance events, the power-packed moves in the flash mob, or the creative involvement in cultural activities, our department's presence was strongly felt throughout the celebration. The event concluded on a grand note with the spectacular Melam, which created a powerful festive rhythm that echoed across the campus. The beats of the Melam energized the crowd, and students celebrated with immense joy, marking the day as one of the most memorable Onam festivities in the college.

CELEBRATING EXCELLENCE: STUDENT ACHIEVEMENTS & SUCCESS MILESTONES

HONOURING EXCELLENCE IN BIOMEDICAL ENGINEERING: CELEBRATING ACADEMIC & ALL-ROUND ACHIEVEMENTS

The **Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology (ASIET)** recently conducted a **felicitation ceremony** to recognize the outstanding accomplishments of its **2021–2025 graduating class. Ms. Nakshatra A was honored as the Academic Topper**, a testament to her consistent hard work and scholarly performance. Concurrently, **Ms. Aleena Nelson was named the Best Outgoing Student,** acknowledging her comprehensive achievements and contributions.

CELEBRATING VERSATILE TALENTS OF THE 2021–2025 BIOMEDICAL BATCH

The Department of Electronics and Biomedical Engineering (EBE), Adi Shankara Institute of Engineering and Technology (ASIET), organized a **felicitation ceremony** to honor two distinguished students from the **2021–2025** batch for their remarkable contributions and achievements. **Ms. Luthfiya Kamal was presented with the "Unsung Hero of EBSAA" award** in recognition of her consistent dedication and behind-the-scenes support for departmental and association initiatives. **Ms. Khadeeja M. J. was named the "All-Rounder of the Batch"** for her exceptional performance spanning academics, leadership, and active participation in both co-curricular and extracurricular spheres.

DEVIKA G A TAKES UP KTU CARE REGIONAL LEADERSHIP ROLE

Devika G A (S5 EBE) from NSS Unit 228 was selected as the **KTU Care Regional Coordinator (Ernakulam Region)** under the APJAKTU NSS Cell, marking a proud moment of leadership and recognition for the department.

EBE STUDENTS SELECTED TO IEEE EMBS KERALA CHAPTER ROLES

Two students from the Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology (ASIET) have earned distinguished positions within the **IEEE Engineering in Medicine and Biology Society (EMBS) Kerala Chapter**. **Ms Joeann Stephen, S7 EBE**, has been appointed as the Student Branch Chapter (SBC) Representative. In this role, Joeann will act as a vital link between the student chapter and the Kerala Chapter, coordinating activities and ensuring effective communication. **Ms Meenakshi M Menon, S5 EBE**, has been chosen to serve as a **Content Team Member**. She will be responsible for developing and curating content, supporting the chapter's outreach and knowledge-sharing initiatives.

AUTHENTIWRITE: ENHANCING ACADEMIC & PROFESSIONAL WRITING

A student-led workshop focused on enhancing academic and professional writing skills was successfully conducted at **ASIET** on **August 6, 2025**. Titled '**AuthentiWrite**,' the event was organized by **S5 Electronics and Biomedical Engineering students, Ms Meenakshi M Menon** and **Ms Devika G A**, with collaborative support from **µLearn ASI**. The workshop was designed to provide participants with practical techniques and insights crucial for effective communication in both academic and professional environments. This initiative underscores the students' proactive commitment to skill development and peer leadership.

INNOVATING FOR A GREENER TOMORROW!

Mr. Antony Davis, a student from **S7 EBE**, proudly secured **First Prize** in the **World Environment Day Idea Pitching Competition**. The event was organized by the **Department of Civil Engineering**. Antony's innovative proposal stood out among numerous entries, showcasing his deep understanding of environmental challenges and his creative approach to solving them.

EBE STUDENTS SHINE AT CASEQUEST

Mr Sreejith Ramachandran and **Ms Misna Abdul Manaf** of **S7 EBE** bagged the **first prize** in **CaseQuest** ,a case study competition conducted by **IEEE WiE AG ASIET**. The event was based on the Cybersecurity and was conducted as part of WiE Day. The achievement is surely a testament to their creativity, presentation skills and their sharp intellect.

S5 EBE STUDENTS SHINE IN MEDICASE CASE STUDY COMPETITION

Ms Mini S Nair and **Ms Mydhily Unnikrishnan** from **S5 EBE** secured the **First Prize** in **Medicase**, an event organized by the **BMESI,** showcasing their creativity, research excellence, and impressive presentation skills. Their success brought pride to the department and stood as an inspiration for their peers.

QUIZ COMPETITION AT SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY

Ms Meenakshi M Menon and **Ms Devika G A** of **S5 EBE** brought pride to EBE by winning **third prize** at quiz competition on **Ending Global Plastic Pollution** conducted on **June 25, 2025**, by the prestigious **Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram.**

LENS OF TALENT: DEVIKA G. A. WINS PHOTOGRAPHY CONTEST

Ms Devika G A emerged as the winner of the Photography Contest organized by the **National Service Scheme (NSS) Unit** of **Ahalia School of Engineering and Technology**. The event, conducted offline at Ahalia Heritage, Health & Knowledge Village, aimed at encouraging creativity and visual storytelling among students. With active student participation and faculty guidance, the contest turned into a vibrant showcase of talent, and Devika's achievement stood out as a proud moment for her institution.

EBE STUDENTS TAKE THE LEAD IN NSS EXCOM 2025

The Electronics and Biomedical Engineering (EBE) Department at ASIET is proud to announce that several of its students have been appointed to key positions in the newly formed **NSS EXCOM**, highlighting the department's commitment to fostering well-rounded students who excel not only academically but also in community service and leadership. **Ms Jinusree M** has been selected as **Activity Captain**, while **Akshaya A R** takes on the role of **Coordinator**. **Devika G A** and **Amalendu S** will serve on the **Media Team**, and **Subhana M**, **Shifa O S**, and **Nandana G** will handle Documentation responsibilities. Additionally, **Sanjay Sanil** has been named **Rudhirasena Coordinator**. This achievement is a testament to the dedication, leadership, and proactive involvement of these students in NSS activities.

Jinusree M-S5 EBE
Activity Captain

Akshaya A R- S5 EBE
Coordinator

Sanjay Sanil -S5 EBE
Rudhirasena

Amalendu S -S5 EBE
Media Team

Devika G A - S5 EBE
Media Team

Nandana G- S5 EBE
Documentation Team

Subhana M-S5 EBE
Documentation Team

Shifa O S -S5 EBE
Documentation Team

EBE STUDENTS SELECTED TO KEY ROLES IN IEDC

The Electronics and Biomedical Engineering (EBE) Department at ASIET proudly announces the selection of its students for key positions within the Institute's **Innovation and Entrepreneurship Development Centre (IEDC)**. These appointments highlight the students' commitment to leadership and innovation. **G S Adhi Narayanan**, **S3 EBE**, has been appointed as the **Junior Quality & Operations Lead. Nandana G** has been chosen to join the **Core Committee.**

Adhi Narayanan

Nandana G

EBE TALENT TAKES THE SPOTLIGHT IN ADI SHANKARA FASHION TEAM

The Department of Electronics and Biomedical Engineering (EBE) at ASIET proudly announces the selection of its students for key leadership positions within the newly formed **Adi Shankara Fashion Team (AFT)**, highlighting the diverse talents and creative passion within the department. Four students from the **S5 EBE** batch have been appointed to leadership roles. **Amanya H R** has been named **Makeup & Hair Lead**, **Aadhya Dinesh** will serve as **Artist/Stylist Lead**, **Affrin P Jiju** has taken on the role of **Outreach & Branding Lead**, and **Liba Abdul Rasheed** has been selected as **Costume Designer Lead**. These appointments are a source of great pride for the EBE Department, demonstrating the students' commitment to bringing innovation and excellence to creative and extracurricular pursuits.

AMANYA HR-S5-EBE
MAKEUP AND HAIR LEAD

AADHYA DINESH S5-EBE
ARTIST/STYLIST LEAD

AFRIN JIJU-S5-EBE
OUTREACH AND BRANDING LEAD

LIBA ADBUL RASHEEDS5-EBE
COUTUME DESIGNER LEADS

PROUD ACHIEVEMENTS OF EBE STUDENTS AT ANIMA INVICTA

Anima Invicta: Unbreakable Spirit, a short story writing competition organized by the **Women Empowerment Cell** of Adi Shankara Institute of Engineering and Technology on **July 11, 2025,** in connection with Malala Day, was conducted successfully. It was a moment of pride for EBE as two of the top three prizes were secured by our students, with **Ms Gayathri Jayan Krishna** of **S3 EBE** winning **First Prize** and **Ms Meenakshi M Menon** of **S5 EBE** claiming **Third Prize.**

PARTICIPATIVE LEARNING: BEYOND THE LECTURE

INNOVATIVE HEALTHCARE PROJECT BAGS DUAL RECOGNITION AT ASPREN'25 & SAMAGRA'25

The project, developed by **Ms Lakshmi A Menon**, **Ms Mary Ansteena Joseph**, **Ms Navya N A**, and **Ms Afsalu Rahman S** under the mentorship of **Dr. Surya D**, was appreciated for its creativity, clinical relevance, and technical excellence, marking a proud achievement for the team.

ASIET STUDENTS WIN PROJECT AWARD FOR INNOVATION IN BIOMEDICAL REHABILITATION

The team of **Irine George**, **Megha Sivaramakrishnan** and **Muhammed Azam A** secured the **First Prize (Stream-wise)** for their project "**Interactive Game-Based System for Lower Limb Rehabilitation**," under the guidance of **Dr. Lakshmi M Hari**. Their innovative work successfully integrated interactive gaming with therapeutic rehabilitation, delivering an effective solution for lower limb recovery.

BEST PAPER AWARD AT ICIMRBE'25

Mr Nabeel Mohamed, **Ms Pooja V K**, and **Mr Celestian George** of the **2021–2025 EBE batch**, along with their mentor **Mr. Shinu M M**, Assistant Professor, Dept. of Electronics and Biomedical Engineering, received the **Best Paper Award in the Biomedical Engineering Track at ICIMRBE'25**. Their paper titled "**Comprehensive review of CNN-based image classification for egg fertility detection**" was recognized for its insightful analysis and contribution to the field of biomedical imaging. The Department of Electronics and Biomedical Engineering congratulates the team for their outstanding achievement and for bringing laurels to the institution.

EXHIBITION PARTICIPATION AND ANNUAL AWARD ACHIEVEMENTS BY S8 EBE STUDENTS

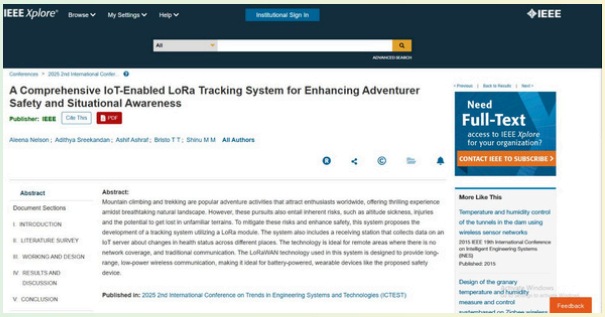
One of the notable project works from the **2021-2025 EBE batch**, guided by **Dr Lakshmi M Hari**, was exhibited at **"Ente Keralam 2025"**, in the exhibition stall representing APJAKTU and ASIET, held on 21st May 2025 at Marine Drive, Kochi. The project was presented by **Ms. Megha Sivaramakrishnan**, **Mr Mohammed Azam**, and **Ms Irene George**, with **Mr Dixon Davis** also attending the event. In addition, the recipients of two prominent annual awards instituted by the department were recognized for their hard work, dedication, and contributions to co-curricular and branding activities. The awards were sponsored by Mr. Bijoy V M (MD, Unarv Telemedicine, Kochi) and Mr. Ravi Balakrishnan (Faculty, Dept. RA).

POOJA V K'S SMART SYRINGE PUMP PROJECT GETS GLOBAL RECOGNITION

We proudly celebrate the remarkable achievement of our students **Pooja V. K., Irene Lee Joseph, and T. P. Nimmy,** whose mini project **"Revolutionizing Healthcare with Smart Syringe Pump – Design and Implementation"** has been **published as a book chapter in the prestigious CRC Press (Taylor & Francis) publication Security Issues in Communication Devices, Networks and Computing Models (2025 Edition)**.

Guided by **Ms. Winnie Ann Thomas (Project Guide),** the project explored the integration of AI, IoT, and Big Data to enhance medical syringe pumps, ensuring smarter and safer healthcare delivery.

PAPER PRESENTATION AT ICTEST 2023 ON IOT-BASED ADVENTURER SAFETY SYSTEM



At the **2nd International Conference on Trends in Engineering Systems and Technologies (ICTEST 2023)**, organized by **IEEE** and conducted online, a team of EBE students showcased their innovative research through the paper "**A Comprehensive IoT-Enabled LoRa Tracking System for Enhancing Adventurer Safety and Situational Awareness.**" Authored by **Ms Aleena Nelson**, **Ms Adithya Sreekandan**, **Mr Ashif Ashraf**, **Mr Bristo T T** and **Mr Shinu M M**, the work introduced a LoRa-based tracking solution aimed at improving the safety of adventurers such as trekkers and climbers in remote terrains. The contribution stood out for leveraging low-power wide-area network (LPWAN) technology to address critical safety challenges.

BIOMEDICAL INNOVATORS SECURE SECOND PRIZE AT MEDINOVA'25 FOR EEG-BASED MUSIC THERAPY SYSTEM

MEDINOVA'25, the annual project competition on medical technology and healthcare innovations, was successfully held at Adi Shankara Institute of Engineering and Technology. Among the standout participants, the team of **Mr Alen S Veliyath**, **Mr Alif Rasheed**, **Mr Antony Davis**, and **Mr Raimond George** secured the **Second Prize** for their project "**EEG Based Music Therapy System**," guided by **Mr Aswin Raj V**. Their work demonstrated how EEG signals could be harnessed to create personalized therapeutic music responses, offering a novel approach to mental health support. The team received a cash award of **₹10,000** for their innovation, which reflected both creativity and technical expertise.

EVOKE'25 WINNERS

Students of S7 EBE, **Mr Sreejith Ramachandran**, **Mr S Vinayak**, **Ms Misna Abdul Manaf**, and **Mr Shamnad M** won the **first prize** at **EVOKE'25** for their project "**FLEXCORE – Gamified Joint Rehabilitation**". The innovative project focused on human-centered health and assistive design, showcasing creativity and technical excellence. This remarkable achievement came under the guidance of **Dr. Remya George (HOD, Associate Professor, EBE)** and earned the team a prize worth ₹25000 and ₹20000 worth components, bringing pride to the department.

FACULTY SPOTLIGHT: A BEACON OF INSPIRATION

DR. SILPA P. A. AWARDED ₹5 LAKH MARKET ACCELERATION GRANT FROM KERALA STARTUP MISSION

Dr. Silpa P A, Associate Professor in the Department of Electronics and Biomedical Engineering and Founder of **Nanograf Private Limited**, received a prestigious **Market Acceleration Grant** of **₹5 Lakhs** from the **Kerala Startup Mission in 2025**. This grant aims to support innovative ventures with high potential for market growth. Dr. Silpa's recognition reflects her outstanding entrepreneurial vision and commitment to translating advanced research in nanotechnology into impactful commercial applications through Nanograf Private Limited.

DR. TRESA JOSEPH SHINES IN GLOBAL FDP ON BIBLIOMETRIC RESEARCH

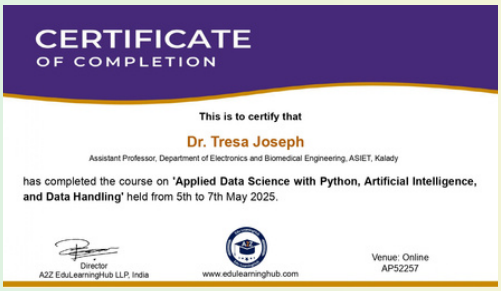
Dr. Tresa Joseph, Assistant Professor, Department of Electronics and Biomedical Engineering, ASIET Kalady, successfully participated in a **Three-Day International FDP** on "**Structured Literature Review and Bibliometric Analysis**" from **May 26 to May 28 2025.**

Organized by **A2Z EduLearningHub LLP**, the online FDP focused on enhancing research skills through systematic review methods and bibliometric tools. This participation highlights Dr. Tresa's dedication to academic and research excellence.

DR. TRESA JOSEPH PARTICIPATES IN AI & ML FDP

From **June 17 to June 21, 2025, Dr. Tresa Joseph** participated in the **Faculty Development Programme** on "**AI & ML Foundations: From Mathematics to Data Science,**" organized by the **Department of Computer Science and Engineering at IES College of Engineering, Chittilappilly**. The program offered in-depth exposure to the theoretical and practical aspects of Artificial Intelligence and Machine Learning, equipping participants with advanced analytical skills relevant to modern data-driven technologies.

DR. TRESA JOSEPH COMPLETES COURSE ON DATA SCIENCE & AI APPLICATIONS


CERTIFICATE
OF COMPLETION

This is to certify that

Dr. Tresa Joseph

Assistant Professor, Department of Electronics and Biomedical Engineering, ASIET, Kalady

has completed the course on **'Applied Data Science with Python, Artificial Intelligence, and Data Handling'** held from 5th to 7th May 2025.

Director
A2Z EduLearningHub LLP, India

www.edulearninghub.com

Venue: Online
AP52257

Dr. Tresa Joseph, Assistant Professor, Department of Electronics and Biomedical Engineering, ASIET Kalady, has successfully completed a certification course on **"Applied Data Science with Python, Artificial Intelligence, and Data Handling"** held from **5th to 7th May 2025**. The course was organized by **A2Z EduLearningHub LLP** in online mode and aimed at strengthening practical skills in Python programming, AI concepts, and effective data management. Dr. Tresa's participation demonstrates her commitment to integrating advanced data science tools in teaching and research.

DR. TRESA JOSEPH PARTICIPATES IN INTERNATIONAL WORKSHOP ON DATA VISUALIZATION WITH TABLEAU


CERTIFICATE OF PARTICIPATION

This is to certify that

Dr. Tresa Joseph

Assistant Professor, Department of Electronics and Biomedical Engineering, ASIET, Kalady

has participated in the International Workshop on " **Data Visualization & Dashboards with Tableau** " organized by the Department of Research & Publications, A2Z EduLearningHub on 13th & 14th May 2025.

Director
A2Z EduLearningHub LLP, India

Venue: Online
TB531341

www.edulearninghub.com

Dr. Tresa Joseph, Assistant Professor, Department of Electronics and Biomedical Engineering, ASIET Kalady, has successfully participated in an **International Workshop** on **"Data Visualization & Dashboards with Tableau"** held on **13th and 14th May 2025**.

The workshop was organized by the **Department of Research & Publications, A2Z EduLearningHub LLP, India**, and conducted in online mode. It focused on equipping participants with practical knowledge of data visualization tools and techniques for effective research and academic reporting. Dr. Tresa's participation reflects her continued commitment to adopting modern tools for academic and research excellence.

DR. TRESA JOSEPH CHAIRS SESSION AT ACCESS '25 INTERNATIONAL CONFERENCE


4th International Conference

IEEE Kerala Section

IEEE

CERTIFICATE
OF APPRECIATION

Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY

This certificate acknowledges that Dr. Tresa Joseph
Assistant Professor, Electronics & Biomedical Engineering Dept. ASIET
is gratefully recognized for the outstanding contribution as the "Session Chair" of the session Signal and Image Processing
at the **2025 4th International Conference on Advances in Computing, Communication, Embedded and Secure Systems (ACCESS '25)**, hosted by the **Department of ECE & EEE, Adi Shankara Institute of Engineering and Technology, Kalady, Ernakulam, India,** and technically sponsored by the **IEEE Kerala Section,** held from June 11th to June 13th, 2025.

ACCESS '25

Dr. Sreema M
IEEE SB Counselor ASIET

Dr. Bijna P R
Organizing Chair

Dr. M S Murali
Principal, ASIET

ASIET/ACCESS '25/SC/33

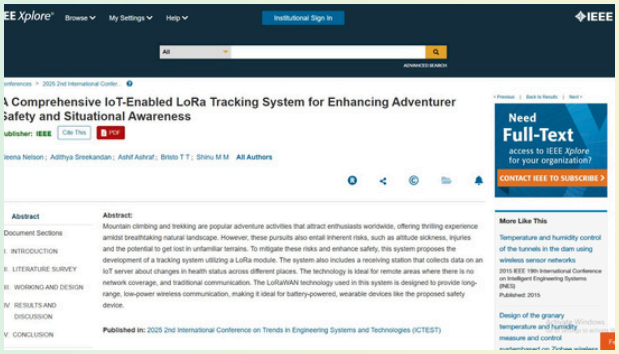
Vidya Bharathi Nagar, Mattoor road, Kalady, Ernakulam , Kerala 683574, India
www.adishankara.ac.in

Dr. Tresa Joseph, Assistant Professor at Adi Shankara Institute of Engineering and Technology, served as **Session Chair for Signal and Image Processing** at the **4th International Conference on Advances in Computing, Communication, Embedded and Secure Systems (ACCESS '25)** from **June 11 to 13, 2025**. The conference was organized by **Department of Electronics and Communication Engineering, ASIET and sponsored by IEEE Kerala Section**. Her role showcased her expertise and active engagement in the field.

MR ASWIN RAJ V WINS “CAPTURED & CHERISHED” COMPETITION

Mr Aswin Raj V from the Department of Electronics and Biomedical Engineering has been named the **winner of the "Captured & Cherished” competition**. The event, organized by the **Women’s Empowerment Cell,** celebrated creativity and talent among the participants. This achievement showcases the diverse skills and passions of our faculty beyond their academic roles, contributing to a vibrant and multifaceted campus community.

MR SHINU M M PUBLISHES RESEARCH ON IOT-ENABLED TRACKING SYSTEMS



Mr Shinu M M, Assistant Professor in the Department of Electronics and Biomedical Engineering at Adi Shankara Institute of Engineering and Technology, has co-authored a research paper titled “**A Comprehensive IoT-Enabled LoRa Tracking System for Enhancing Adventurer Safety and Situational Awareness.” The paper, co-authored with Aleena Nelson, Adithya Sreekandan, Ashif Ashraf, and Bristo T. T., was published in the proceedings of the 2025** 2nd International Conference on Trends in Engineering Systems and Technologies **(ICTEST).**

The research focuses on developing an IoT-enabled LoRa tracking system to improve safety for mountain climbers and trekkers. The system aims to mitigate inherent risks by providing low-power, long-range communication and situational awareness, making it ideal for battery-powered, wearable devices. The publication highlights the department’s ongoing commitment to impactful research and innovation.

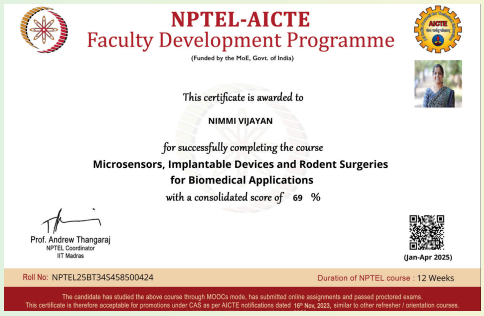
FACULTY ON THE FIELD: ADI SHANKARA CUP 2025

Adi Shankara Institute of Engineering and Technology, Kalady, proudly hosted the **Adi Shankara Cup 2025**, an All Kerala Staff Cricket Tournament, from **April 26 to April 28, 2025**. Representing the institute, **Mr. Aswin Raj V and Mr. Shinu M M** from the **Department of Electronics and Biomedical Engineering** actively participated, showcasing their sportsmanship and teamwork. The event, organized on campus and supported by Decathlon Kalamassery, brought together staff from top engineering colleges across Kerala. Their participation highlights the department’s commitment to fostering inter-collegiate camaraderie and promoting faculty engagement in extracurricular activities.

DR. LAKSHMI M. HARI LEADS FDP ON AI AT IIT PATNA

Dr. Lakshmi M. Hari, Assistant Professor in the Department of Electronics and Biomedical Engineering, has successfully completed the "**AI Mastery for Educators" Faculty Development Program (FDP)**. The intensive program, organized by **Vishlesan i-HUB IIT Patna**, was held from **May 15th to June 7th, 2025**. Her participation in this advanced training on Artificial Intelligence highlights the department's commitment to equipping educators with cutting-edge knowledge. Insights from this FDP will strengthen the curriculum and ready students for future careers in AI.

MS. NIMMI VIJAYAN COMPLETES NPTEL-AICTE FDP ON BIOMEDICAL APPLICATIONS



We are proud to share that **Ms. Nimmi Vijayan**, faculty of the **Electronics and Biomedical Engineering department**, has successfully completed the **12-week NPTEL-AICTE FDP on "Microsensors, Implantable Devices and Rodent Surgeries for Biomedical Applications"** (Jan–Apr 2025), coordinated by **IIT Madras** under Prof. Andrew Thangaraj, with a consolidated score of 69%. This achievement reflects her dedication to continuous learning and academic excellence

DR. REMYA GEORGE COMPLETES WORKSHOP ON MEDICAL DEVICE REGULATIONS

Dr. Remya George, HOD, Associate Professor Department of Electronics and Biomedical Engineering, successfully completed a **two-day online workshop** on "**Indian Medical Device Rules 2017.**" Organized by the **Indian Biomedical Skill Consortium (IBSC)** and held from **June 14th to 15th, 2025**, the workshop provided comprehensive insights into the regulatory framework for medical devices in India. This specialized knowledge is crucial for ensuring the safety, quality, and efficacy of medical technologies.

Her participation reinforces the department's commitment to continuous professional development and ensures that our curriculum and research remain current with critical industry standards.

DR. SURYA S : FACULTY RESEARCH PUBLICATION IN INTERNATIONAL JOURNAL


Brain Organoid and Systems Neuroscience Journal

Inter subject variability analysis in normal ageing and prodromal AD

Dr. Surya D, Assistant Professor, Department of Electronics and Biomedical Engineering (EBE), has published a research article titled **"Inter Subject Variability Analysis in Normal Ageing and Prodromal AD"** in the prestigious **Brain Organoid and Systems Neuroscience Journal (Elsevier, Vol. 3, 2025)**.

The study, co-authored with **Dr. Subha D. Puthankattil**, investigates neural dynamics through EEG-based analysis, comparing brain activity in healthy ageing individuals and patients with prodromal Alzheimer's Disease (AD).

The paper explores metrics such as inter-subject correlation and coherence, contributing valuable insights toward early detection biomarkers for neurodegenerative conditions. This publication highlights Dr. Surya's continued contribution to cutting-edge neuroscience research and interdisciplinary innovation in biomedical engineering.

WORLD IPR DAY CELEBRATION AND KAPILA PATENT FUND DISTRIBUTION SUCCESSFULLY HELD

The Intellectual Property Rights (IPR) Cell of Adi Shankara Institute of Engineering and Technology, Kalady, successfully **organized the World Intellectual Property Rights (IPR) Day Celebrations,** uniquely combined with the **official distribution of the AICTE Kapila Patent Fund.** The event aimed to promote awareness on intellectual property rights among students and faculty, while also encouraging innovation and a patent-filing culture within the institution.

Conducted offline on campus, the program featured insightful sessions with the participation of **Dr. Shilpa,** formal handovers of the fund, and acknowledgments of patent achievements. As part of the initiative, reimbursements were provided for patents already filed under this scheme. The celebration not only marked a tribute to IPR Day but also highlighted the institute's commitment to fostering a strong innovation ecosystem through AICTE's support.

INDUSTRIAL VISIT INVITATION FROM BRIDGEWAY HEALTHCARE

Bridgeway Healthcare, under the leadership of **CEO Ashraf Thayyil**, extended a warm invitation to the **faculty members** of the **Department of Electronics and Biomedical Engineering, ASIET** to visit their facility in **Palakkad**. **The initiative was organized by Bridgeway Healthcare's** leadership team with the objective of fostering industry-academia collaboration. The visit is scheduled to take place at their **Palakkad facility**, with further details to be coordinated mutually.

The purpose of this visit is to provide a deeper understanding of Bridgeway's healthcare products, operational workflows, and real-world applications, thereby enabling academic institutions to align better with industry practices and explore potential collaborative opportunities.

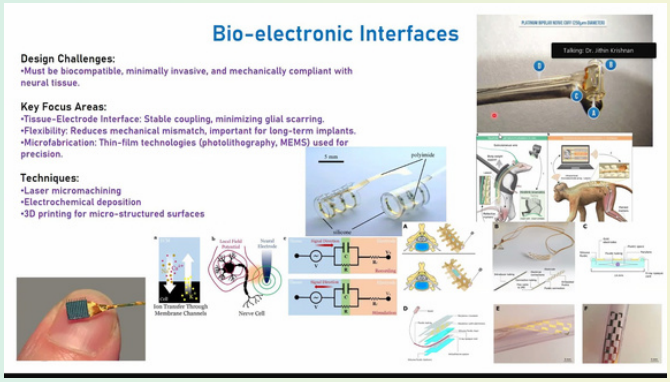
This offline, interactive visit is expected to include facility tours, product demonstrations, and discussions on practical applications in the biomedical field. It is part of Bridgeway's effort to build strong, mutually beneficial partnerships with educational institutions.

The invitation was formally addressed by Mr. Ashraf Thayyil, CEO of Bridgeway Healthcare, who emphasized the importance of such visits in strengthening academic-industry relationships. His message focused on aligning educational goals with healthcare innovations and real-world practices.

The visit encourages active faculty involvement and paves the way for possible student engagement, internships, and research collaborations in the near future.

FACULTY PARTICIPATION IN FDP ON NEXT-GENERATION HEALTH TECHNOLOGIES

The **Department of Electronics and Biomedical Engineering**, Adi Shankara Institute of Engineering and Technology, Kalady, in association with the **Telemedicine Society of India – Kerala Chapter**, organized a **Five-Day Faculty Development Programme** on "**Next-Generation Health Technologies: Integrating Signal Processing, Teleneurology & AI**" from **June 3 to June 7, 2025** at ASIET, Kalady. Conducted offline, the programme featured expert sessions, technical presentations, and interactive discussions. Resource persons from academia and research delivered insightful sessions on cutting-edge topics such as biomedical signal processing, brain-computer interfaces, and AI applications in healthcare, greatly enriching the knowledge of all participants.



MEDTECH ENTREPRENEUR VISITS EBE DEPARTMENT AT ASIET

the **Department of Electronics and Biomedical Engineering (EBE), ASIET,** had the privilege of hosting **Mr. Ashraf Thayyil, CEO & Founder of Bridgeway Medical Systems and a renowned MedTech entrepreneur.**

During his visit, Mr. Thayyil interacted with faculty members and students, sharing valuable insights on the future of MedTech innovation. He expressed admiration for the department's vibrant ecosystem of learning, where theoretical

knowledge is seamlessly integrated with practical applications.
Highlighting projects ranging from brain-computer interfaces to tele-rehabilitation systems and neuromodulation techniques, he praised the hands-on approach of ASIET's Biomedical Engineering students. Mr. Thayyil noted that the passion, curiosity, and innovative drive of the students truly set the department apart.
His visit served as a strong reaffirmation of the department's vision to blend academics with innovation, inspiring students and faculty alike to pursue impactful solutions for the healthcare industry.

CAMPUS BIDS FAREWELL: SENT OFF FOR MR. ASWIN RAJ V

The Department of Electronics and Biomedical Engineering (EBE), ASIET, bid a warm farewell to **Mr. Ashwin, Assistant Professor.** The occasion was marked with a heartfelt lunch gathering, where faculty members came together to celebrate his contributions to the department.
As a gesture of appreciation, **Dr. Remya George, Head of the Department,Associate Professor, presented him with a token of honor, acknowledging his dedication and service**. The event reflected the deep respect and gratitude of the department towards Mr. Ashwin, wishing him success in all his future endeavors.



OUR FINESSE

S8 RESULTS 2021-25

S6 RESULT 2022-2026 BATCH

MISNA ABDUL MANAF
8.85

SALMA SAKKARIYA
8.59

RAIMOND GEORGE
8.50

SREELAKSHMI K J
8.09

SHAMNAD M
8.07

JANE ROSE JIJO
8.00

ANTONY DAVIS
8.00

S4 RESULT BATCH 2023-2027

MYDHILY UNNIKRISHNAN
9.27

SREELAKSHMI SUNIL
8.73

UMA JAYAKUMAR
8.64

NANDANA G
8.18

SUBHANA
8..09

EXPERIENTIAL LEARNING: EXPLORE, ENGAGE, EVOLVE

S7 INTERNSHIP JOURNEY – STEPPING INTO PROFESSIONAL READINESS

ALEN S VELIYATH
Centre for AI and IoT Innovation

ALIF RASHEED
Al-Azhar Medical College and Super Speciality hospital

ALMINAZ HASHIK
VPS Lakeshore Hospital

ANTONY DAVIS
Centre for AI and IoT Innovation

ANURAG C NAIR
Al-Azhar Medical College and Super Speciality hospital

AUFFIN RASHEED
Al-Azhar Medical College and Super Speciality hospital

EBY MATHEW
St gregorios medical mission multi speciality hospital

FATHIMA NASRIN KM
VPS Lakeshore Hospital, Kochi

FIDHA SUHARA T A
Elite Mission Hospital, Koorkenchery, Thrissur

JANE ROSE JIJO
Elite Mission Hospital, Koorkenchery, Thrissur

JOEANN STEPHEN
Little flower hospital, Angamaly

P DEVANARAYANAN
Centre for AI and IoT Innovation

RAIMOND GEORGE
Centre for AI and IoT Innovation

SAJNA SAJEEV
Elite Mission Hospital, Koorkenchery, Thrissur

SALMA SAKKARIYA
SP Medifort Hospital Eanchakkal, Thiruvananthapuram

SARANG SATHIAN
Parco Institute of Medical Sciences

SAYYINA SUBAIR
Elite Mission Hospital, Koorkenchery, Thrissur

SHAMEEL SHAJ MOOTHEDATH CHEMMET
IQRAA International Hospital & Research Centre, Kozhikode

SREEJITH RAMACHANDRAN
Little flower hospital, Angamaly

SREELAKSHMI K J
Welcare Hospital Sahodaran Ayyappan Road, Vytilla, Ernakulam

SRUTHY KRISHNA S
Welcare Hospital
Sahodaran Ayyappan Road, Vytilla, Ernakulam

S VINAYAK
Centre for AI and IoT Innovation

AISWARYA C R
Elite Mission Hospital, Koorkenchery, Thrissur

ATHUL P
Baby Memorial Hospital, Kannur

GOUTHAMDAS K
Baby Memorial Hospital, Kannur

MUHAMMED RABEEH K
IQRAA International Hospital & Research Centre, Kozhikode

SHAMNAD M
Ibis Medicals Pvt.Ltd Thammanam, Ernakulam

ZIYAD ABDUL MAJEED
Ibis Medicals Pvt.Ltd Thammanam, Ernakulam

S5 INTERNSHIP JOURNEY – EXPLORING INDUSTRY & HEALTHCARE

AADHYA DINESH
Daya General Hospital

AFFRIN P JIJU
Daya General Hospital

AISWARYA RENJITH
St Mary's Hospital Thodupuzha

AKSHARA SURENDRAN
M.O.S.C Medical College

ALAP K DILEEP
M.O.S.C Medical College

AMITHA V S
SH Medical Centre Hospital

ARJUN M NAIR
SH Medical Centre Hospital

AVANI A S
Daya General Hospital

DEVIKA G A
Sree Chitra Tirunal Institute for Medical Sciences and Technology

HARISREE .S
QuadLync AIBC Pvt.Ltd, Kadavanthra, Ernakulam

HEERA PS
Daya General Hospital

IMMANUEL JOSE
SH Medical Centre Hospital

JILITTAMOL SAJI
Smita Memorial Hospital and Research Centre

MEENAKSHI M MENON
Sree Chitra Tirunal Institute for Medical Sciences and Technology

MINI S NAIR
QuadLync AIBC Pvt.Ltd, Kadavanthra, Ernakulam

MUHAMMED YASEEN.A
IMCH Co operative hospital and research centre

MYDHILY UNNIKRISHNAN
QuadLync AIBC Pvt.Ltd, Kadavanthra, Ernakulam

NAGARAJ. C
Ibis Medical Equipment & Systems Pvt Ltd

NIRANJANA N B
Daya General Hospital

REANNA MARIAM SHAJI
St.Gregorios medical mission hospital

SHIFA O S
Maulana hospital, Perinthalmanna

SNIYA DAVIS
Sree Narayana Institute of Medical science, Chalakka

SREDHA PRADEESH
Sree Narayana Institute of Medical science, Chalakka

SREELAKSHMI SUNIL
QuadLync AIBC Pvt.Ltd, Kadavanthra, Ernakulam

UMA JAYAKUMAR
M.O.S.C Medical College

ARAVIND BABU P
Elite Mission Hospital

S3 INTERNSHIP JOURNEY – GAINING REAL-WORLD EXPERIENCE

ABHINAV RAJ
Sree Chitra Tirunal Institute of Medical Science and Technology

G S ADHI NARAYANAN
Sree Chitra Tirunal Institute of Medical Science and Technology

G S GAUTHAM SIVA
Sree Chitra Tirunal Institute of Medical Science and Technology

DEVANANDA P
Indira Gandhi Co-Operative Hospital, Thalassery Kannur

HEAVEN ANTO
Cyrix healthcare pvt Ltd, Petta, Ernakulam

AMINA FASNA K P

Sevana Hospital & Research Centre pvt.ltd Pattambi

MIDHUN RAJ R

Biomedical techniques (BMT).
Calibration and validation Thrissur

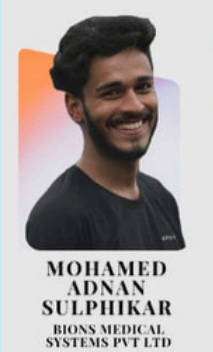
PARVATHI K S

St Mary's Hospital, Thodupuzha

SHREYA A S

Ananthapuri Hospitals and Research Institute

PLACEMENT MILESTONES OF THE 2021–2025 BATCH

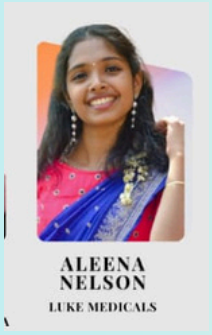


MOHAMED ADNAN SULPHIKAR
BIONS MEDICAL SYSTEMS PVT LTD

LUTHIFIYA KAMAL
GLAD HYDROGEN

NAKSHATHRA ANIRUDHAN
PENTAGON SPACE PVT LTD(INTERNSHIP CUM PLACEMENT)

MELVIN MATHEW JACOB
HEKA MEDICALS INDIA PVT. LTD.



ALEENA NELSON
LUKE MEDICALS

MEGHA S
AGAPPE DIAGANOSTICS LTD(INTERNSHIP CUM PLACEMENT)

CELESTIAN GEORGE
AGAPPE DIAGANOSTICS LTD(INTERNSHIP CUM PLACEMENT)

MADHAV M NAIR
AGAPPE DIAGANOSTICS LTD(INTERNSHIP CUM PLACEMENT)

SREEJITH K.S
KALA ASSOCIATES HYD

ASHIF ASHRAF
CYRIX HEALTH CARE PRIVATE LIMITED

LAKSHMI A MENON
GLOBAL QUEST TECHNOLOGIES PVT LTD(INTERNSHIP CUM PLACEMENT)

MARY ANSTEENA JOSEPH
TECHNOLOGICS GLOBAL PVT ITD

IRINE GEORGE
HORIBA INDIA PVT LTD

ADHITYA SREEKANDAN
NILA TECH PVT LTD

IRENE LEE JOSEPH
BIONS MEDICAL SYSTEMS PVT LTD

NABEEL MOHAMAD
WEISS HEALTHCARE

EBE @ NEWSPAPER BITES

ദീർഘകാല കിടപ്പുരോഗികൾക്ക് പ്രതീക്ഷ നൽകി ആദിശങ്കര

കാലടി: ദീർഘകാല കിടപ്പു രോഗികളിൽ കാണപ്പെടുന്ന വ്രണവും അണുബാധകളും തടയുന്നതിനുള്ള അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡുമായി ആദിശങ്കര എൻജിനീയറിങ് കോളേജിലെ വിദ്യാർത്ഥികൾ.

അവസാന വർഷ വിദ്യാർത്ഥികളായ മെൽവിൻ മാത്യു ജേക്കബ്, ആഷിഫ് അഷ്റഫ്, റിറ്റു കാനീസ് റോഡ്രിഗസ്, എസ്. അഭികൃഷ്ണ, എറിക് കെ. വിൽസൺ, വി. മഹാദേവ മാരാർ എന്നിവർ ബയോ മെഡിക്കൽ വകുപ്പ് മേധാവി ഡോ. രമ്യ ജോർജിന്റെയും മെക്കാനിക്കൽ വിഭാഗം അസിസ്റ്റന്റ് പ്രഫസർ ഒ.എസ്. സന്ദീപിന്റെയും മേൽനോട്ടത്തിൽ ഈ നൂതന സംവിധാനം രൂപകൽപന ചെയ്തത്.

കിടപ്പുരോഗികളിൽ ശരീരഭാരം വഴിക്കുന്ന അസ്ഥികൾ ചർമത്തിൽ ഏൽപിക്കുന്ന സമ്മർദം മൂലം ശരീരത്തിൽ വ്രണങ്ങൾ ഉണ്ടാകാറുണ്ട്. രക്തചക്രമണത്തിലെ അപര്യാപ്തതയും അണുബാധയും രോഗികളെ ഗുരുതരാവസ്ഥയിലേക്ക് നയിക്കാറുണ്ട്.

ഈ സാഹചര്യമാണ് അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് രോഗികൾക്ക് കിടപ്പു സുഖവും പരിചരണവും വർധിപ്പിക്കുന്നതിന് സ്മാർട്ട് സെൻസറിങ്ങും ന്യൂമാറ്റിക് നിയന്ത്രണവും സമന്വയിപ്പിച്ച് പരിഹരിക്കാൻ ശ്രമിക്കുന്നത്. അറുപതോളം എയർബാഗുകളും, സെൻസറുകളും, വാൽവുകളും അവയെ പ്രത്യേകം നിയന്ത്രിക്കാനുള്ള സംവിധാനവും ആണ് ബെഡിൽ ഒരുക്കിയിരിക്കുന്നത്. ദീർഘനേരം അമിത മർദ്ദം അനുഭവപ്പെടുന്ന ശരീരഭാഗങ്ങളിലെ എയർ ബാഗുകളുടെ സങ്കോചവികാസങ്ങളെ നിയന്ത്രിച്ചാണ് വ്രണങ്ങൾ രൂപപ്പെടാനുള്ള സാധ്യത ഇല്ലാതാക്കുന്നത്.

അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡുമായി ആദിശങ്കര എൻജിനീയറിങ് കോളേജിലെ ഒരു സംഘം വിദ്യാർത്ഥികൾ

KERALA KAUMUDI EPAPER
Online Kerala Kaumudi - Ernakulam

2025 മേയ് 23 വെള്ളി | www.manoramaonline.com/news | CHN മലയാള

കിടപ്പു രോഗികൾക്ക് ആശ്വാസം പകരാൻ കട്ടിലുമായി കുട്ടികൾ

വ്രണവും അണുബാധയും തടയുന്ന അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് സജ്ജമാക്കി കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജ് വിദ്യാർഥികൾ

കാലടി∙ ദീർഘകാല കിടപ്പു രോഗികളിൽ സാധാരണ കാണപ്പെടുന്ന വ്രണവും അണുബാധയും തടയുന്നതിനുള്ള അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡുമായി കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജിലെ ഒരു സംഘം വിദ്യാർഥികൾ.

അവസാന വർഷ ബയോ മെഡിക്കൽ വിദ്യാർഥികളായ മെൽവിൻ മാത്യു ജേക്കബ്, ആഷിഫ് അഷ്റഫ്, റിറ്റു കാനീസ് റോഡ്രിഗ്സ് , എസ്.അഭികൃഷ്ണ, എറിക് കെ. വിൽസൺ, വി. മഹാദേവ മാരാർ എന്നിവർ ബയോ മെഡിക്കൽ വകുപ്പു മേധാവി ഡോ.രമ്യ ജോർജിന്റെയും മെക്കാനിക്കൽ വിഭാഗം അസിസ്റ്റന്റ് പ്രഫസർ ഒ.എസ്. സന്ദീപിന്റെയും മേൽനോട്ടത്തിൽ ഈ നൂതന സംവിധാനം രൂപകൽപന ചെയ്തത്.

കിടപ്പുരോഗികളിൽ ശരീരഭാരം വഴിക്കുന്ന അസ്ഥികൾ ചർമത്തിൽ ഏൽപിക്കുന്ന സമ്മർദം മൂലം ശരീരത്തിൽ വ്രണങ്ങൾ ഉണ്ടാകാറുണ്ട്. രക്തചക്രമണത്തിലെ അപര്യാപ്തതയും അണുബാധയും രോഗികളെ ഗുരുതരപ്രശ്നങ്ങളിലേക്ക് നയിക്കുന്നു.

അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് രോഗികൾക്ക് കിടപ്പുസുഖവും പരിചരണവും വർധിപ്പിക്കുന്നതായി ബയോ മെഡിക്കൽ വിദ്യാർഥികൾ പറയുന്നു.

അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് വികസിപ്പിച്ചെടുത്ത കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജിലെ അവസാന വർഷ ബയോ മെഡിക്കൽ വിദ്യാർഥികളായ മെൽവിൻ മാത്യു ജേക്കബ്, ആഷിഫ് അഷ്റഫ്, റിറ്റു കാനീസ് റോഡ്രിഗ്സ്, എസ്.അഭികൃഷ്ണ, എറിക് കെ.വിൽസൺ, വി. മഹാദേവ മാരാർ എന്നിവർ വകുപ്പു മേധാവി ഡോ. രമ്യ ജോർജ്, മെക്കാനിക്കൽ എൻജിനീയറിങ് വിഭാഗം അസി. പ്രഫസർ ഒ.എസ്.സന്ദീപ് എന്നിവർക്കൊപ്പം.

അഡാപ്ടിവ് ന്യൂമാറ്റിക് ബെഡുമായി കോളജ് വിദ്യാർഥികൾ

കാലടി: ആദിശങ്കര എൻജിനീയറിങ് കോളജ് വിദ്യാർഥികൾ ദീർഘകാല കിടപ്പുരോഗികളിൽ സാധാരണ കാണപ്പെടുന്ന വ്രണവും അണുബാധകളും തടയുന്നതിനുള്ള അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് രൂപകല്പന ചെയ്തു. അവസാന വർഷ വിദ്യാർത്ഥികളായ മെൽവിൻ മാത്യു ജേക്കബ്, ആഷിഫ് അഷ്റഫ്, റിറ്റു കാനീസ് റോഡ്രിഗസ്, എസ്. അഭികൃഷ്ണ, എറിക് കെ. വിൽസൺ, വി. മഹാദേവ മാരാർ, ബയോമെഡിക്കൽ വകുപ്പ് മേധാവി ഡോ. രമ്യ ജോർജ്, പ്രഫ. ഒ.എസ്. സന്ദീപ് എന്നിവരുടെ നേതൃത്വത്തിലാണ് ഈ നൂതന സംവിധാനം രൂപകൽപ്പന ചെയ്തത്.

കിടപ്പ് രോഗികളിൽ ശരീരഭാരം വഹിക്കുന്ന അസ്ഥികൾ ചർമത്തിൽ ഏൽപ്പിക്കുന്ന സമ്മർദം മൂലം ബെഡ് സോറുകൾ എന്നറിയപ്പെടുന്ന വ്രണങ്ങൾ രൂപപ്പെടാറുണ്ട്. കൂടെ രക്തചക്രമണത്തിലെ അപര്യാപ്തതയും അണുബാധയും രോഗികളെ ഗുരുതരാവസ്ഥയിലേക്ക് നയിക്കുന്നു.

ഈ സാഹചര്യമാണ് അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് രോഗികൾക്ക് കിടപ്പ് സുഖവും പരിചരണവും വർധിപ്പിക്കുന്നതിന് സ്മാർട്ട് സെൻസറിങ്ങും ന്യൂമാറ്റിക് നിയന്ത്രണവും സമന്വയിപ്പിച്ച് പരിഹരിക്കാൻ ശ്രമിക്കുന്നത്. അറുപതോളം എയർബാഗുകളും, സെൻസറുകളും, വാൽവുകളും അവയെ പ്രത്യേകം നിയന്ത്രിക്കാനുള്ള സംവിധാനവും ആണ് ബെഡിൽ ഒരുക്കിയിരിക്കുന്നത്. ദീർഘനേരം അമിത മർദ്ദം അനുഭവപ്പെടുന്ന ശരീരഭാഗങ്ങളിലെ എയർ ബാഗുകളുടെ സങ്കോചവികാസങ്ങളെ നിയന്ത്രിച്ചാണ് വ്രണങ്ങൾ രൂപപ്പെടാനുള്ള സാധ്യത ഇല്ലാതാക്കുന്നത്.

അഡാപ്ടിവ് ന്യൂമാറ്റിക് ബെഡുമായി ആദിശങ്കര എൻജിനീയറിങ് വിദ്യാർഥികൾ

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കിടപ്പു രോഗികൾക്ക് ആശ്വാസം പകരാൻ കട്ടിലുമായി കുട്ടികൾ

വ്രണവും അണുബാധയും തടയുന്ന അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് സജ്ജമാക്കി കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജ് വിദ്യാർഥികൾ

കാലടി∙ ദീർഘകാല കിടപ്പു രോഗികളിൽ സാധാരണ കാണപ്പെടുന്ന വ്രണവും അണുബാധയും തടയുന്നതിനുള്ള അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡുമായി കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജിലെ ഒരു സംഘം വിദ്യാർഥികൾ.

അവസാന വർഷ ബയോ മെഡിക്കൽ വിദ്യാർഥികളായ മെൽവിൻ മാത്യു ജേക്കബ്, ആഷിഫ് അഷ്റഫ്, റിറ്റു കാനീസ് റോഡ്രിഗ്സ് , എസ്.അഭികൃഷ്ണ, എറിക് കെ. വിൽസൺ, വി. മഹാദേവ മാരാർ എന്നിവർ ബയോ മെഡിക്കൽ വകുപ്പു മേധാവി ഡോ.രമ്യ ജോർജിന്റെയും മെക്കാനിക്കൽ വിഭാഗം അസിസ്റ്റന്റ് പ്രഫസർ ഒ.എസ്. സന്ദീപിന്റെയും മേൽനോട്ടത്തിൽ ഈ നൂതന സംവിധാനം രൂപകൽപന ചെയ്തത്.

കിടപ്പുരോഗികളിൽ ശരീരഭാരം വഴിക്കുന്ന അസ്ഥികൾ ചർമത്തിൽ ഏൽപിക്കുന്ന സമ്മർദം മൂലം ശരീരത്തിൽ വ്രണങ്ങൾ ഉണ്ടാകാറുണ്ട്. രക്തചക്രമണത്തിലെ അപര്യാപ്തതയും അണുബാധയും രോഗികളെ ഗുരുതരപ്രശ്നങ്ങളിലേക്ക് നയിക്കുന്നു.

അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് രോഗികൾക്ക് കിടപ്പുസുഖവും പരിചരണവും വർധിപ്പിക്കുന്നതായി ബയോ മെഡിക്കൽ വിദ്യാർഥികൾ പറയുന്നു.

അഡാപ്റ്റിവ് ന്യൂമാറ്റിക് ബെഡ് വികസിപ്പിച്ചെടുത്ത കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജിലെ അവസാന വർഷ ബയോ മെഡിക്കൽ വിദ്യാർഥികളായ മെൽവിൻ മാത്യു ജേക്കബ്, ആഷിഫ് അഷ്റഫ്, റിറ്റു കാനീസ് റോഡ്രിഗ്സ്, എസ്.അഭികൃഷ്ണ, എറിക് കെ.വിൽസൺ, വി. മഹാദേവ മാരാർ എന്നിവർ വകുപ്പു മേധാവി ഡോ. രമ്യ ജോർജ്, മെക്കാനിക്കൽ എൻജിനീയറിങ് വിഭാഗം അസി. പ്രഫസർ ഒ.എസ്.സന്ദീപ് എന്നിവർക്കൊപ്പം.

Highlights From HOSPEX 2025: Expert Talks & Key Insights

"Supply Chain Complexities and Disruption in Healthcare – Hospex 2025"

Ashraf Thayyil CEO, Bridgeway Healthcare

The presentation opens by acknowledging the profound disruptions that have shaken global healthcare supply chains in recent years. From the COVID-19 pandemic to geopolitical tensions and climate-related disasters, these events have exposed systemic vulnerabilities in how medical products are sourced, transported, and delivered. The healthcare sector, which relies heavily on timely access to critical supplies, has faced unprecedented challenges that have forced stakeholders to rethink traditional supply chain models.

Healthcare supply chains are inherently complex due to their multi-tiered nature. They involve a wide array of actors including manufacturers, distributors, hospitals, pharmacies, and regulatory bodies. Unlike other industries, healthcare logistics must contend with strict compliance standards, temperature-sensitive products, and the life-or-death urgency of delivery timelines. The presentation emphasizes that this complexity is compounded by fragmented procurement systems and inconsistent global regulations, which often lead to inefficiencies and increased costs.

To address these challenges, the presentation highlights the growing role of digital transformation. Technologies such as artificial intelligence, predictive analytics, blockchain, and the Internet of Things (IoT) are being integrated into supply chain operations to improve visibility, traceability, and responsiveness. AI-driven forecasting tools help anticipate demand surges, while blockchain ensures secure and transparent tracking of medical goods. IoT-enabled devices allow real-time monitoring of shipment conditions, which is especially critical for vaccines and biologics.

Building resilience is another central theme. The presentation advocates for diversification of suppliers to reduce dependency on single sources, especially those located in politically unstable regions. It also encourages local manufacturing initiatives to shorten supply chains and improve responsiveness. Strategic inventory buffering—stockpiling essential items—is presented as a pragmatic approach to mitigate future disruptions. These strategies, while potentially costly, are positioned as necessary investments in long-term stability.

Highlights From HOSPEX 2025: Expert Talks & Key Insights

"Supply Chain Complexities and Disruption in Healthcare – Hospex 2025"

Ashraf Thayyil CEO, Bridgeway Healthcare

Sustainability and ethical sourcing are increasingly important considerations in healthcare logistics. The presentation discusses the shift toward green logistics, including optimized transportation routes and eco-friendly packaging. Ethical procurement practices are also emphasized, with a focus on labor standards, fair pricing, and responsible sourcing of raw materials. These efforts not only align with corporate social responsibility goals but also enhance brand reputation and stakeholder trust.

Several case studies are presented to illustrate successful adaptations. India's vaccine distribution model, which leveraged digital platforms and robust cold chain logistics, is highlighted as a scalable solution for other developing nations. European hospital networks that adopted centralized procurement systems saw significant cost savings and improved delivery efficiency. In the United States, the expansion of telehealth services created new logistical demands for home-delivered medical kits and remote diagnostics, prompting innovation in last-mile delivery.

The presentation also shares compelling data points to underscore the urgency of reform. Large hospitals face average disruption costs of $3.8 million per incident, and up to 25% of healthcare inventory is wasted due to expiry or mismanagement. Meanwhile, 42% of healthcare providers globally have adopted AI tools to streamline operations, signaling a strong trend toward digitization.

In its concluding remarks, the presentation offers a roadmap for future preparedness. It urges healthcare organizations to invest in digital infrastructure, build strategic partnerships across sectors, and upskill their workforce in data literacy and crisis management. It also recommends establishing early warning systems to monitor emerging risks such as geopolitical shifts, environmental threats, and new disease outbreaks. The overarching message is clear: agility, innovation, and collaboration are essential to building a resilient and future-ready healthcare supply chain.

Highlights From HOSPEX 2025: Expert Talks & Key Insights

"Digital Health: Cybersecurity and Data Privacy Threats to Medical Devices

Dr Manesh Thankappan PhD (Cyber Security) | M.Tech (Information Security) | B.Tech| SMIEEE| MACM| Certified Ethical Hacker(CEH)-EC Council Senior Lecturer in Cyber Security | Program Leader for BEng(Hons) Cyber Security School of Computing, Engineering and Physical Sciences

The rapid integration of the Internet of Things (IoT) into healthcare has transformed the way medical devices operate, communicate, and support patient care. Known as Medical IoT, this network of connected devices includes wearables, implantables, hospital monitoring systems, and remote healthcare tools that significantly improve treatment outcomes, enable real-time monitoring, and reduce the need for hospital visits. However, this connectivity comes with inherent cybersecurity risks that pose a direct threat to patient safety and the integrity of healthcare systems. With medical data being up to ten times more valuable than financial information, the healthcare sector has become a primary target for cybercriminals.

Cybersecurity threats in medical IoT range from unauthorized access, data leakage, and malware injection to sophisticated ransomware and man-in-the-middle attacks. Real-world incidents, such as the recall of pacemakers in 2017 due to hackable flaws, the 2019 Medtronic insulin pump vulnerabilities, and high-profile ransomware attacks on hospitals in Germany (2020) and Ireland (2021), highlight the devastating impact of cyberattacks. Such events have resulted in disrupted healthcare services, exposure of sensitive patient data, financial strain on institutions, and even patient deaths. In 2024, a ransomware attack on Synnovis NHS pathology systems in London disrupted hospital operations and tragically led to fatalities, proving that cybersecurity lapses in medical devices extend beyond IT concerns to matters of life and death.

Common weaknesses in medical devices include the use of weak or default passwords, outdated firmware, unencrypted communication channels, and poor authentication measures. Hackers exploit these vulnerabilities across various devices: implantable pacemakers and defibrillators can be hijacked to alter pacing, insulin pumps can be remotely manipulated to deliver incorrect dosages, and hospital devices like infusion pumps and ventilators are particularly at risk due to outdated operating systems and weak network segmentation. Even wearable fitness trackers and glucose monitors are prone to data leaks, allowing attackers to profile patients' habits and manipulate health readings.

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"Digital Health: Cybersecurity and Data Privacy Threats to Medical Devices

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Mitigating these risks requires a multi-pronged defense strategy. Key measures include strong encryption and authentication mechanisms, timely software updates, secure storage with anonymization, and isolating IoT devices from open networks. Advanced approaches such as artificial intelligence-driven security monitoring, blockchain for ensuring data integrity, and cyber insurance for healthcare institutions are also emerging trends. Importantly, confidentiality, integrity, and availability—the pillars of cybersecurity—must be maintained at all levels. Moreover, regulatory authorities such as the U.S. FDA, European ENISA, and India's CDSCO, CERT-In, and MeitY have issued standards and guidelines to enforce compliance, including the 2023 Digital Personal Data Protection Act in India.

Biomedical engineers play a crucial role as frontline defenders in this ecosystem. They must integrate cybersecurity into the design phase of devices, collaborate with IT and security experts, advocate for privacy-by-design principles, and ensure compliance with standards such as ISO/IEC 80001, HIPAA, GDPR, and FDA regulations. Equally important is training hospital staff to recognize and mitigate cyber risks, as insider threats and phishing remain leading causes of breaches. Ultimately, cybersecurity in healthcare is not just about protecting systems; it is about safeguarding patients' lives and trust. The conclusion is clear: patient safety today depends as much on effective cybersecurity as on medical expertise.

Highlights From HOSPEX 2025: Expert Talks & Key Insights

Medical Device Adverse Event Committees (MDAECs) and Materiovigilance in India

Amrutha C
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The regulation and monitoring of medical devices have become critical in ensuring patient safety and public health, particularly with the increasing reports of device-related harm across healthcare settings. The Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), an institution of national importance, has been at the forefront of medical device development, testing, and regulation in India.

With its Biomedical Technology Wing specializing in the design and testing of artificial organs, extracorporeal devices, bioceramics, and medical instrumentation, SCTIMST has played a major role in introducing indigenous innovations such as the TTK Chitra Heart Valve, intrauterine devices, and disposable blood bags in collaboration with industrial partners. The institute also provides globally recognized testing and calibration services accredited by CDSCO, NABL, and COFRAC, making it the first accredited medical device testing laboratory in India since 2003.

Against this backdrop, the increasing adverse events associated with medical devices have highlighted the urgent need for systematic monitoring through post-market vigilance. This gave rise to the Materiovigilance Programme of India (MvPI), which aims to strengthen patient safety by assessing the risk–benefit profile of devices, promoting evidence-based information, and supporting healthcare professionals in ensuring safe usage.

Materiovigilance not only aids the Central Drugs Standard Control Organization (CDSCO) in regulatory decision-making but also restores public confidence in the safety of medical technologies. Under this initiative, more than 590 Medical Device Adverse Event Monitoring Centres (MDMCs) have been established across the country, focusing on structured reporting and evaluation of device-related issues.

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Medical Device Adverse Event Committees (MDAECs) and Materiovigilance in India

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The National Medical Commission (NMC) has further emphasized the formation of Medical Device Adverse Event Committees (MDAECs) in every medical college. These committees are tasked with identifying, reporting, and analyzing adverse device events ranging from performance issues, labeling and packaging defects, and device malfunctions to poor quality concerns, user errors, false positive/negative results, and even near-miss incidents that pose a potential threat to patient safety. By establishing a structured reporting mechanism, these committees ensure that both major and minor device-related risks are systematically addressed, contributing to a safer healthcare ecosystem.

Becoming a Medical Device Adverse Event Monitoring Centre also offers significant advantages for academic institutions. It provides academic recognition by allowing contributions to national public health and regulatory science while offering professional development opportunities for faculty and students through hands-on exposure to risk assessment and post-market surveillance. Moreover, institutions benefit from access to training resources, infrastructural support, and national-level collaboration under MvPI. Importantly, involvement in such initiatives gives medical colleges an active role in influencing policy decisions and shaping evidence-based medical device regulations.

In conclusion, the establishment of MDAECs under the Materiovigilance framework represents a crucial step toward integrating patient safety into medical education and healthcare delivery. With device-related adverse events being an inevitable reality in modern medicine, continuous vigilance, transparent reporting, and regulatory oversight are indispensable. As the programme evolves, it is expected to enhance the culture of safety in Indian healthcare by fostering collaboration between regulatory bodies, healthcare institutions, and biomedical researchers. Indeed, as highlighted in the presentation, “Patient safety is not just a standard; it is the soul of quality healthcare.”

Highlights From HOSPEX 2025: Expert Talks & Key Insights

Decoding India's Medical Device Regulations – A Mandate for Patient Safety

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The regulation of medical devices in India has become a matter of paramount importance as the healthcare sector increasingly relies on sophisticated technologies to support diagnosis, treatment, and patient management. Historically, medical devices were regulated under the Drugs and Cosmetics Act of 1940, which covered their import, manufacture, sale, and distribution under the broader category of "drugs." However, recognizing the need for specific and stringent regulatory requirements for medical devices, the Medical Devices Rules (MDR), 2017 were introduced and have been in effect since January 1, 2018. These rules provide a comprehensive framework that defines medical devices and prescribes clear standards for their safety, performance, and quality assurance. The definition issued under S.O. 648(E) dated 11 February 2020 encompasses all instruments, apparatus, implants, software, and accessories intended for medical purposes, whether used alone or in combination, provided they achieve their function not through pharmacological or immunological action, but through mechanical or other means.

The MDR 2017 adopts a risk-based classification system for medical devices, categorizing them into Class A (low risk), Class B (low-moderate risk), Class C (moderate-high risk), and Class D (high risk). This classification ensures that regulatory scrutiny and compliance requirements increase proportionally with the risk posed to patients. Manufacturers and importers are required to submit detailed documentation including a Device Master File (DMF), which outlines device description, intended use, specifications, safety and performance principles, and verification/validation data, along with a Plant Master File (PMF) detailing the quality management system, infrastructure, production operations, and compliance with ISO 13485 and other global standards. The framework mandates conformity to BIS standards or, in their absence, to ISO/IEC standards or validated manufacturer specifications. Importantly, provisions such as Rule 89 on product recall ensure that unsafe medical devices can be swiftly withdrawn from the market, supported by mandatory risk analysis and benefit–risk assessments.

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Decoding India's Medical Device Regulations – A Mandate for Patient Safety

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To ensure compliance and oversight, India has established a network of regulatory and quality assurance bodies. Notified Bodies accredited by NABCB are authorized to audit Class A and B devices, while Central Medical Device Testing Laboratories and over 39 registered testing labs conduct statutory evaluations of devices. The regulatory system is further supported by the Materiovigilance Programme of India (MvPI), which systematically collects and analyzes adverse event data related to medical devices, enabling evidence-based regulatory decisions and enhancing patient safety. Additionally, CDSCO has facilitated transparency and stakeholder engagement through an online medical devices portal, where guidance documents, FAQs, classification details, and regulatory updates are published for easy industry access. Draft guidance documents on post-market surveillance, stability studies, and performance evaluations of in-vitro diagnostic devices (IVDs) have also been made available to strengthen regulatory clarity.

The MDR 2017 emphasizes essential principles of safety and performance, requiring manufacturers to provide proof that their devices meet stringent quality and safety benchmarks before being marketed. The regulations underscore the importance of risk management, highlighting that all identified risks must be controlled to acceptable levels and weighed against the benefits offered by the device. With international recognition, the Indian framework also requires foreign manufacturers to submit certifications such as Free Sale Certificates (FSC) from trusted jurisdictions (USA, EU, Canada, Australia, Japan, and UK) and ISO/CE conformity reports for import approval.

In conclusion, India's medical device regulatory framework represents a robust, risk-based, and patient-centric system aimed at ensuring that medical devices available in the country are safe, effective, and of high quality. The integration of pre-market approval processes, post-market surveillance, quality management requirements, and adverse event monitoring underscores a holistic approach toward patient safety. By strengthening compliance, aligning with global standards, and fostering transparency, the MDR 2017 framework ensures that patient well-being remains at the heart of healthcare innovation and medical technology use in India. It stands as a clear mandate that patient safety is non-negotiable in the era of advanced medical devices.

Highlights From HOSPEX 2025: Expert Talks & Key Insights

Cost Control vs. Quality & Innovation in Medical Technology Procurement

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The procurement of medical devices and in-vitro diagnostic (IVD) technologies plays a crucial role in shaping diagnosis and treatment decisions in healthcare. The choices made at this stage have a direct impact on patient outcomes, safety, operational efficiency, and even hospital reputation. Therefore, procurement is not just a financial decision but a strategic one, requiring a balance between cost control, quality assurance, and innovation adoption.
One of the key challenges faced by healthcare organizations is the dilemma between adhering to budget constraints and meeting the growing demands for advanced technology and high-quality care. The central balancing act involves achieving cost efficiency without compromising diagnostic accuracy. The rapid evolution of medical technology, coupled with the need for compatibility and interoperability, calls for a sustainable investment strategy. The art lies in knowing when to invest in innovation and when to rely on proven, cost-efficient solutions.

Hidden costs in IVD procurement often exceed the purchase price of equipment. Life-cycle costs include daily maintenance, calibration, consumables, and reagents, while operational expenses cover energy consumption and recurring supplies. Post-purchase support, warranty coverage, and downtime-related productivity losses add further costs. Additionally, quality costs must be considered, including preventive maintenance, rework, and replacement expenses, as well as staff training. A seemingly cheaper analyzer can end up costing more in the long run due to high reagent expenses. Thus, procurement decisions should be based on a thorough Total Cost of Ownership (TCO) analysis rather than upfront purchase price alone.

Quality considerations are paramount in procurement. Compliance with regulatory standards, effective risk management, and robust Quality Management Systems (QMS) ensure reliability and safety. Good product and process design minimize variability, while strong collaboration and communication among departments, stakeholders, and suppliers improve implementation efficiency. Beyond cost and compliance, innovation and patient-centricity play an essential role, offering more accurate diagnostics, personalized treatment plans, and enhanced recovery times. However, responsible implementation of technology is vital to address ethical concerns such as data privacy and potential algorithmic bias in AI systems.

Highlights From HOSPEX 2025: Expert Talks & Key Insights

Cost Control vs. Quality & Innovation in Medical Technology Procurement

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Long-term efficiency and innovation go hand-in-hand when procurement is approached strategically. Technology evaluation should be performed critically to avoid vendor lock-in and ensure real value. Standardization and interoperability must be prioritized to improve system integration and operational consistency. Healthy competition among suppliers, along with strong partnerships, helps maintain quality while ensuring cost-effectiveness.

A shift towards value-based procurement is crucial for the future. This approach emphasizes total value delivered, focusing on diagnostic accuracy, uptime, patient outcomes, and long-term cost efficiency over 5–10 years. Performance-linked service agreements and price stability contracts for consumables and reagents should be included in procurement planning. Regular utilization reviews are also essential to track return on investment (ROI).

A notable case study demonstrates the benefits of strategic procurement. A large private hospital replaced three semi-automated analyzers with a single, fully automated platform. Though the upfront cost was 25% higher, reagent standardization and reduced manpower requirements led to a 15% reduction in annual running costs. The result was improved accuracy, reduced misdiagnosis, shorter turnaround times, and better patient flow, ultimately achieving ROI despite higher initial investment.

In conclusion, the key takeaway is to balance cost control without compromising quality. The cheapest solution is not always cost-effective, and innovation should address real clinical challenges rather than being pursued for its own sake. Value-based procurement benefits both patients and budgets. Procurement in healthcare must be viewed as a strategic decision rather than a mere transaction, ensuring that the right technology is chosen at the right time.

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