



MECHATRONICS
ENGINEERING
ASSOCIATION



MECHATRONICS ENGINEERING

May 2023 - Oct 2024,
Newsletter

da.mce@kct.ac.in



Vision

To achieve excel in academic and industrial automation research and innovative product development driven by mechatronics systems.

Mission

- Impart the right blend of knowledge and skills to students and enable them to apply it in real life situations.
- Motivate the students towards interdisciplinary research to cater to the local and global needs.
- Achieve innovation in developing industrial products with social responsibility.

Department Activities

- Mr. T. Suresh participated in the AICTE approved 3-day Face-to-Face Introductory Faculty Development Program (FDP) on UHV, which took place on the 10th May. The FDP, held at AICTE Chennai at KCT, was designed to enhance the knowledge and teaching abilities of faculty members in the field of Ultra High Voltage (UHV) technology.
- Dr. M. Saravana Mohan HoD/ASP Industry-Academia interaction on Electric Vehicle with Mr. Sandeep Singh Vice President, Business development, Caresoft Global Pvt Ltd and Smart E-Mobility chapter initiative on 21st June 2022
- Mr. J. Sivaguru and Team took Mercy home children (HIV positive kids) to Blackthunder, Coimbatore on 13th June 2022 - 16 children
- Dr. M. Saravana Mohan HoD/ASP guided the students at an educational fair was conducted by Dina Thanthi at Trichy on 6th June and 7th June 2022 at Taj Marriage Hall, Chaitram Bustand. The education fair was inaugurated at 9:30 AM by Shri. Mookapillai, Managing Director, Mangal and Mangal, Trichy
- Dr. M. Saravana Mohan HoD/ASP meeting with KANNAN TOOLS AND DIES on 11.06.2022, Industry - Academia Interaction for R & D product development and student internships.

- Dr. M. Saravana Mohan HoD/ASP faculty as Resource person – Anna University Affiliated Institutions Second Syllabus Sub Committee members meeting of Faculty of Mechanical Engineering of Anna University, Chennai held on 28th June 2022.
- Mr. P. Magudapathi /AP-I, attended Faculty Development Program on “Defence Technology” organized Kumaraguru College of Technology , held on 20th to 22nd June 2022. •
- Mr. A. Ramkumar / AP-II attended “IEEE Seasonal School on "Image, Video and Audio Processing for pattern Recognition “organized Kumaraguru College of Technology, held on 23rd to 28th June 2022. •
- Dr. K. Akila / ASP attended “IEEE Seasonal School on "Image, Video and Audio Processing for pattern Recognition “organized Kumaraguru College of Technology, held on 23rd to 28th June 2022. •
- Dr. B. Sabitha / AP (SRG) attended “IEEE Seasonal School on "Image, Video and Audio Processing for pattern Recognition “organized Kumaraguru College of Technology, held on 23rd to 28th June 2022. •
- Mr. J. Sivaguru/ AP-I, attended “IEEE Seasonal School on "Image, Video and Audio Processing for pattern Recognition “organized Kumaraguru College of Technology, held on 23rd to 28th June 2022.

- Dr. M. Saravana Mohan , HoD/ASP participated Seminar on “ Indigenization requirements and roadmap” for Indigenization in Indian Air Force ” organized by Indian Air force , BRD5, Sulur Air Base held on 8th June 2022. . .
- Dr. M. Saravana Mohan , HoD/ASP participated Guest Lecture on” Benchmarking and its relevance for EV Adaptation “ organized by SSEM Institution Chapter – Kumaraguru College of Technology, held on 21st June 2022. .
- Mr. R. Raffik, AP-II, attended Faculty Development Program on “Robotic Process Automation Associate” organized by ICT Academy & PSNA College of Engineering and Technology, Coimbatore, held on 13th to 17th June 2022
- Mr. R. Saravanan, AP-II, and Mr. K. Murugesan/ AP-II attended Faculty Development Program on “Defence Technology” organized Mechanical Engineering, KCT, held on 27th 28th June 2022.
- Mr. J. Sivaguru /AP-II, participated Guest Lecture on “Benchmarking and its relevance for EV Adaptation” organized by SSEM Institution Chapter – Kumaraguru College of Technology, held on 21st June 2022

- Mr. R. Raffik published a paper detailed, Gao, H., Kareem, A., Jawarneh, M., Ofori, I., Raffik, R., & Kishore, K. H. (2022). [Retracted] Metaheuristics Based Modeling and Simulation Analysis of New Integrated Mechanized Operation Solution and Position Servo System. *Mathematical Problems in Engineering*, 2022(1), 1466775.
- Mr. R. Raffik published a paper detailed, Yan, L., Ahmad, M. W., Jawarneh, M., Shabaz, M., Raffik, R., & Kishore, K. H. (2022). [Retracted] Single-Input Single-Output System with Multiple Time Delay PID Control Methods for UAV Cluster Multiagent Systems. *Security and Communication Networks*, 2022(1), 3935143.
- Sharma, S., Sabitha, B., Prabhakaran, A., Chavan, M., & Srivastava, R. (2022). A hybrid swarm intelligence approach for resolving reactive power dispatch issues in power system: Optimal placement and sizing of UPFC. *Advances in Engineering Software*, 170, 103149.
- Mohan, M. S., Anbumalar, V., & Kumar, P. S. S. R. (2022). Investigation on joint dynamic property of Nanoclay based redundant SCARA robot. *Period. di Minral*, 91, 117-135
- Mr. R. Raffik, AP/II (MCE) & Dr. M. Saravana Mohan, HOD/ASP (MCE) guided a team Mr. Surya Prakash V – 19BMC006, Mr. Sree Ezhil V R – 19BMC002, Mr. Paramasivam R -19BTT022, Mr. Jothikrishna K – 19BEC205, Mr. Nishaanth S – 20BEC090, of Mechatronics Engineering, Textile and ECE students which has been selected for the NIDHI PRAYAS Program at iTIC Incubator at IIT Hyderabad with the financial support of Rs. 10 Lakhs.

- R. A. Devi, R. Raffik, B. Sabitha and K. Akila, "IoT Device Security for Smart Card Fraud Detection for Credit Cards," 2023 2nd International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA), Coimbatore, India, 2023
- Dr. S. A. Pasupathy and the team of inventors were granted a patent for the "Function Control Device for Industrial Sewing Machines" on 4th October 2023. The patent, initially conceptualized on 6th July 2017, recognizes the innovative technology developed to improve the functionality and control of industrial sewing machines. This achievement reflects the team's contribution to advancing automation and precision in the textile industry.
- A team of experts, including Dr. B. Sabitha, Dr. K. Akila, Mr. K. Murugesan, and Mr. A. Ramkumar, represented the Mechatronics Engineering Department as resource persons at the National Conference on Advancements in Electrical, Electronics, Communication, Computing, and Automation. The event, held on July 16-17, 2023, at KCT, Chinnavedampatti, featured discussions on cutting-edge research and technological progress.

Introduction to 3D Printing Training

20th - 25th August 2023

The Mechatronics Engineering department at KCT organized a 5-day training on 3D Printing, providing hands-on experience in 3D modeling, printing technologies, and practical applications. Students learned key aspects of 3D printing, enhancing their skills in modern prototyping and design, under the guidance of Mr. R. Saravanan



- On 28th August 2023, KCT hosted a one-day outreach program titled "Fostering Innovation & Entrepreneurship: Empowering School Students." The event aimed to inspire young minds to explore innovation and entrepreneurship by providing them with exposure to creative thinking, problem-solving, and entrepreneurial skills. Under the coordination of Mr. J. Sivaguru, the program encouraged school students to engage with innovative concepts, promoting the development of future innovators and entrepreneurs.
- Both Sanjeev K B and KaviBala K participated in the Two Days Software on SolidWorks workshop held at KPR Institute of Engineering and Technology, Arasur, on 9th August 2023 and 10th August 2023. This workshop focused on enhancing skills in SolidWorks, a leading CAD software used for product design and engineering applications.
- Kumaraja G from the Mechatronics Engineering department participated in the NIT Festember competition held at NIT, Tiruchirappalli, on 10th August 2023. This national-level event featured various challenges, where participants showcased their skills. Kumaraja G won a cash prize for his exceptional performance.

- Students Roshan R P (21BMC036), Yogalakshmi, and Vasanth from the Mechatronics Engineering department participated in the Forge Innovation and Ventures competition held at CODISSIA, Coimbatore, on 20th August 2023. This internal event (within KCT) focused on promoting innovative ideas and ventures, providing students with an opportunity to showcase their skills. All three students received awards for their participation.
- Both Ms. A. Yogalakshmi Yazhini and Mr. S. Vasanth, students from the Mechatronics Engineering department, presented their work on a Machine Learning-based air pollution monitoring and forecasting system at the Techno Vista event, held on 9th August 2023 at Sri Eshwar College of Engineering. The presentation focused on leveraging machine learning algorithms to predict and monitor air quality, addressing environmental concerns. The presentation was supervised by Dr. M. Saravana Mohan.
- Students Roshan R P (21BMC036), Yogalakshmi, and Vasanth from the Mechatronics Engineering department participated in the Forge Innovation and Ventures competition held at CODISSIA, Coimbatore, on 20th August 2023. The event focused on promoting innovative ideas and ventures, providing students with an opportunity to showcase their skills. All three students received awards for their participation.

- A workshop on "Industrial Automation & Robotics" was conducted on 6th August 2023. This workshop provided students with an overview of industrial automation systems, including robotics, PLC, SCADA, and other related technologies.
- The Mechatronics Engineering department at KCT organized a one-day workshop on Technology Readiness Level (TRL) for teaching faculty on 30th August 2023. The workshop aimed to familiarize faculty members with the concept of TRL and its significance in evaluating technology development stages. On the same day, Dr. A. Geethakarathi, Associate Professor at KCT, delivered an insightful session on effectively incorporating TRL into academic and research projects. The event was coordinated by Dr. B. Sabitha.
- Our institution interacted with Robotoai Technologies on September 1, 2023, for a one-credit course on Operating Systems. Led by Mr. Rubesh Thirumani S, Director of Robotoai, the course covered key aspects like process management, memory, and security in operating systems. Mr. Rubesh shared valuable industry insights, connecting theoretical knowledge with real-world applications, particularly in robotics and AI. This collaboration enriched students' understanding and prepared them for future challenges in the tech industry.

INDUSTRY LINKAGE

August 10, 2023

Dr. M. Saravana Mohan, HoD/MCE, interacted with Ms. Padmaja, Senior Vice President, Bosch, Cross Computing Division & Mr. M. Sarkanandan, CEO, Vista Vista Bosch at Competency Partner Unit Inauguration as an Academic Member at Coimbatore.



On September 1, 2023, our department conducted an industry interaction event in collaboration with Vista @Vista-Bosch. The session, led by Mr. M. Saravanan, CEO of Vista, focused on the significance of connecting academic learning with industry practices. The event provided students with valuable insights into current industry trends and technologies, emphasizing the importance of industry exposure in their professional development.

- On 7th September 2023, Dr. M. Saravana Mohan attended a DAB Meeting at Er. Perumal Manimekalai College of Engineering, Hosur. The meeting focused on discussing strategic plans, curriculum enhancements, and industry collaborations to improve the academic and practical aspects of the Mechatronics Engineering program.
- Mr. A. Ramkumar served as a Panel Member for the Smart India Hackathon (SIH) 2023 held at KCT on 25th September 2023. The event provided a platform for students to showcase innovative solutions to real-world problems. As the Single Point of Contact (SPoC) for SIH 2023 at KCT, Mr. Ramkumar played a key role in guiding and evaluating participants' projects during the hackathon.
- Mr. K. Murugesan and Mr. P. Magudapathi visited Wheels India, Chennai, on 22nd - 23rd September 2023.
- Ajay Abishek B (20BMC002) participated in the Anna University Zonal Badminton Tournament held at SNS College of Technology, Kurumbapalayam, on 10th August 2023 and 26th September 2023. Competing in this national-level event, he demonstrated outstanding performance and received recognition for his achievements in the tournament.

- Dr. M. Saravana Mohan participated in the SMART ECOBIN - Hackathon 2023, held on 15th September 2023 at SRM Institute of Science and Technology, Kattakulathur, Chengalpattu. This national-level hackathon focused on developing innovative solutions for smart waste management systems, with participants presenting ideas related to sustainability and technology. Dr. Saravana Mohan contributed actively in a face-to-face format, collaborating with other participants to address the challenges posed by the event.
- On October 3, 2023, our department collaborated with Kanrad Houseware Pvt. Ltd., Bangalore, on an industrial automation project. The interaction, led by our HoD, Dr. Saravana Mohan, focused on exploring the latest advancements in automation technology and its applications in the industry. This collaboration helped strengthen the connection between academia and industry, providing valuable insights for both students and faculty.
- A two-day Drone Genesis workshop was organized on October 6-7, 2023. This workshop covered the fundamentals of drone assembly and operation, providing students with an introduction to this exciting field
- Dr. M. Saravana Mohan, Head of Mechatronics Engineering, and Mr. K. Murugesan, Assistant Professor of Mechatronics Engineering, organized an industrial visit to M/s. Sri Sairam Auto Components, Coimbatore, for the students of Mechatronics Engineering on 27th October 2023.

AICTE-Approved 3-Day Face-to-Face Introductory FDP on Universal Human Values (UHV)

5th - 7th October 2023

The Mechatronics Engineering department conducted a 3-day AICTE-approved Faculty Development Program (FDP) on Universal Human Values (UHV) from 5th to 7th October 2023. The program aimed to introduce faculty members to the foundational principles of UHV, fostering ethical, humanistic, and value-based education. The FDP provided participants with practical insights into integrating UHV into teaching and learning processes, promoting a holistic educational environment.



Industrial Interaction with Kanrad Houseware Pvt Ltd.

October 26, 2023

- Dr. M. Saravana Mohan, Head/Mechatronics Engineering and team from Kumaraguru Institutions visited Kanrad Houseware Pvt Ltd., Bangalore for Industrial automation project collaboration.



- Mr. R. Raffik from the Mechatronics Engineering department has filed a patent for a "Robotics System for the Detection of Lead Element Absorption in Agricultural Soil through Internet of Things (IoT)." The system aims to revolutionize agricultural practices by detecting the presence of lead contamination in soil using robotic technology and IoT, contributing to better soil management and environmental protection. The patent was officially registered on 27th October 2023.

- Dr. M. Saravana Mohan, Head of Mechatronics Engineering, and Mr. K. Murugesan, Assistant Professor of Mechatronics Engineering, along with 61 students from the Mechatronics Engineering department, visited M/s. SP Balaji, Tirupur, on October 22, 2023. The industrial visit aimed to provide students with practical insights into the casting process, enhancing their understanding of real-world manufacturing techniques.
- Students of the Mechatronics Engineering department visited M/s. Sri Sairam Auto Components, Coimbatore, on October 27, 2023, to gain practical knowledge about the manufacturing process of automotive components. The visit provided valuable insights into industry practices, production techniques, and quality control measures in the automotive sector.
- The Mechatronics Engineering department at Kumaraguru College of Technology (KCT) organized a National-level Faculty Development Program (FDP) on 3D Printing Technology on 8th October 2023. The program aimed to provide faculty members with advanced knowledge in 3D printing, covering the latest innovations, applications, and techniques in the field. Dr. K. Akila served as the program coordinator, ensuring insightful discussions and a productive learning experience for the participants.

- Dr. M. Saravana Mohan, Head of Mechatronics Engineering, along with Masters of Kumaraguru Institutions, visited Middlesex University and De Montfort University from October 16 to 26, 2023. The visit aimed to study the academic system and industrial interaction at these universities, fostering potential collaborations and enhancing educational methodologies.



- Dr. M. Saravana Mohan, Head of Mechatronics Engineering, along with Masters of Kumaraguru Institutions, visited Middlesex University and De Montfort University from October 2 to 7, 2023. The visit aimed to study the academic system and industrial interaction at these universities, fostering potential collaborations and enhancing educational methodologies.



- Dr. S. A. Pasupathy was granted a patent for the "Mineral Board Composition and Preparation Method Thereof." The patent was officially issued on 15th November 2023, recognizing the innovative method for preparing a mineral-based board composition. This technology offers enhanced materials for construction and other industrial applications, demonstrating Dr. Pasupathy's contributions to advancing material sciences.
- Mohamed Sahan A. S, a student from the Mechatronics Engineering department, published a research paper titled "Role of Cobots over Industrial Robots in Industry 5.0" in an international journal indexed by Scopus on 29th November 2023. The paper explores the emerging role of collaborative robots (cobots) in the context of Industry 5.0, highlighting their contribution to enhancing human-robot collaboration in industrial settings. This publication showcases his research and insights into modern advancements in automation and robotics.

- Mr. A. Ramkumar was granted a patent for the "Apparatus and Method of Fluid Absorption and Wet Back Tester for Absorbent Pads." The patent was officially issued on 3rd December 2023. This invention is designed to test the fluid absorption and wet-back characteristics of absorbent pads, a key component in products like diapers, sanitary pads, and medical absorbents, contributing to improvements in product testing and quality control in the hygiene industry.
- Mr. T. Suresh and Mr. R. Raffik, faculty members from the Mechatronics Engineering department, attended a five-day National Faculty Development Program on "Automation and Smart Manufacturing" from December 9, 2023. The program was organized by IIT Delhi, Automation Industry Association, Anna University Chennai, and Janatics India Pvt. Ltd. It provided an in-depth understanding of the latest advancements in industrial automation and smart manufacturing systems, focusing on their practical applications in modern industries.
- Dr. K. Akila contributed her expertise as a member of the Technical Review Committee for the National Conference held at KCT, Chinnavedampatti, on December 28-29, 2023. Her insights were pivotal in evaluating research papers and ensuring the quality of presentations, playing a crucial role in the conference's success.
- Both Dr. B. Sabitha and Dr. K. Akila played significant roles in the ISSS National Conference at KCT, Chinnavedampatti, held from December 14 to 16, 2023. They led discussions that highlighted advancements in engineering and technology.

- Dr. B. Sabitha was invited to serve as a judge for the Project Expo held on February 17, 2024, at KCT, Chinnavedampatti. The event showcased innovative projects by students, encouraging creativity and hands-on learning in engineering disciplines.
- On March 6, 2024, Dr. B. Sabitha from the Mechatronics Engineering Department participated as a conference chair at the National Conference held at SNS College of Technology, Saravanampatti. This event served as a platform for academic discussions and innovative ideas, fostering collaboration among researchers and practitioners.
- On March 16, 2024, Dr. B. Sabitha chaired a session at the Yugam Conference organized by KCT, Chinnavedampatti. The session emphasized emerging trends and advancements in engineering, inspiring students and faculty alike.
- Dr. K. Akila also served as a conference chair for the Yugam event on March 16, 2024, at KCT, Chinnavedampatti. The discussions focused on bridging gaps between theoretical knowledge and industry applications.

- Subramani, S. C., Manohar, P., Balasubramani, S., & Raffik, R. (2024, March). Latest technologies in stock checking robot. In AIP Conference Proceedings (Vol. 3035, No. 1). AIP Publishing.
- Kumarasamy, G., Periyasamy, M., & Balasubramanian, S. (2024, March). A review on medical drone for tribal locations. In AIP Conference Proceedings (Vol. 3035, No. 1). AIP Publishing.
- Jegal, N. J., Periyasamy, M., & Balasubramanian, S. (2024, March). Technical review on sustainable low cost laser based weeder for autonomous and non-autonomous agriculture offroad vehicles. In AIP Conference Proceedings (Vol. 3035, No. 1). AIP Publishing.
- Inventors Pon Bharathi A, Dr. S. Veluchamy, Dr. N. A. Natraj, T. Vignesh, Dr. Pankaj Pathak, Dr. K. Akila, Dr. K. M. Senthilkumar, and Ms. N. Pooranam have successfully filed a patent titled "Personal AI-Based Assistant Robot" on March 14, 2024. This invention focuses on the design and development of an AI-powered assistant robot tailored for personal applications. By integrating advanced AI functionalities, the assistant robot aims to enhance daily convenience and efficiency, providing intelligent support for various tasks and improving overall user experience.

- On March 16, 2024, Subash C represented our department at the Fourth International Conference on Innovation in IoT, Robotics, and Automation. This international event brought together experts from around the globe to discuss the latest innovations and breakthroughs in IoT and robotics. Subash participated in discussions that focused on the future of automation technologies and their application across various industries.
- From March 14 to 16, 2024, Pragadeeswaran T and Sriram B attended the TN Skills event on Robot Integration held at PSG College of Technology. This state-level competition offered hands-on experience in integrating robots into real-world applications, helping participants improve their problem-solving and engineering skills. It was a great opportunity for the attendees to network with professionals and learn the latest trends in robotics and automation.
- On March 4, 2024, a group of students from our department participated in the SAE - eBaja competition at BV Raju University in Secunderabad. The event provided a platform for students to showcase their skills in automotive engineering, with a focus on designing and building off-road vehicles. This national-level competition allowed participants to engage with industry experts and enhance their practical knowledge.

One-Day Skill Enhancement Program on Embedded Systems

March 25, 2024

On March 25, 2024, the Mechatronics Engineering department hosted a one-day skill enhancement program on embedded systems using Arm Cortex M4. This workshop was designed to provide students with hands-on experience and practical knowledge in embedded systems design and development



- We are pleased to announce that Mohmad Sahan A S, a student from our department (Roll No. 20BMC026), has secured an internship at Cameron Manufacturing India Pvt. Ltd. from November 7, 2023, to January 9, 2024. During this internship, Sahan will gain valuable hands-on experience in manufacturing processes. We congratulate him on this achievement and wish him continued success during this internship.
- We are pleased to announce that Nitish R S, a student from our department (Roll No. 20BMC031), has completed an internship at Craftsman Automation Limited from September 28, 2023, to October 16, 2023. During this internship, Nitish gained valuable industry experience in automation and manufacturing processes. We congratulate him on this achievement and look forward to his continued growth in the field.
- We are happy to announce that Kavyashree T, a student from our department (Roll No. 20BMC019), completed an internship at Bommasanda Industrial Area from July 8, 2023, to July 31, 2023. During her internship, Kavyashree gained practical experience in industrial processes and was awarded a stipend of ₹10,000. We congratulate her on this achievement and wish her continued success in her career.
- We are pleased to announce that Rohith Bala S, a student from our department (Roll No. 21BMC035), completed an internship at Alstom Transport India Limited from October 7, 2023, to October 8, 2023. During this short-term internship, Rohith gained valuable insights into the transportation and engineering sectors. We congratulate him on this accomplishment and look forward to his continued success in the field.

- We are pleased to announce that Pragadeeswaran T, a student from our department (Roll No. 21BMC031), completed an internship at Titan Engineering & Automation Ltd. from September 18, 2023, to September 23, 2023. During this short-term internship, Pragadeeswaran gained hands-on experience in engineering and automation, contributing to his academic and professional growth. We congratulate him on this achievement and wish him continued success in his career.

