

ASPIRE

ACHIEVEMENTS OF SPORTS, PROJECTS, INDUSTRY, RESEARCH & EDUCATION



DEPARTMENT
MECHANICAL OF ENGINEERING

From the HoD's desk.....



Dr. K S Vijay Sekar

Professor and Head,
Department of Mechanical
Engineering

We are elated to bring you the April edition of Aspire!!

We profile Anne L'Huillier, Pierre Agostini and Ferenc Krausz who won the Nobel Prize in Physics “for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter” which have enormous potential in the field of medical diagnostics.

The annual cultural festival Instincts was conducted with much fanfare and joy with great participation by students from within and outside. It was a pleasure to have Mr. Shikhar Malhotra, Director and Board Member of HCL Corporation visit and inaugurate the ESAB – SSN Centre of excellence.

A workshop on training on oil and gas projects was conducted for the benefit of students. I was invited by Vels university to inaugurate their annual technical symposium. I published my first book of poems, “A Journey called Life”. We applied for a TN start up grant worth 2.5 crores to set up an Agri tech center of excellence at SSN.

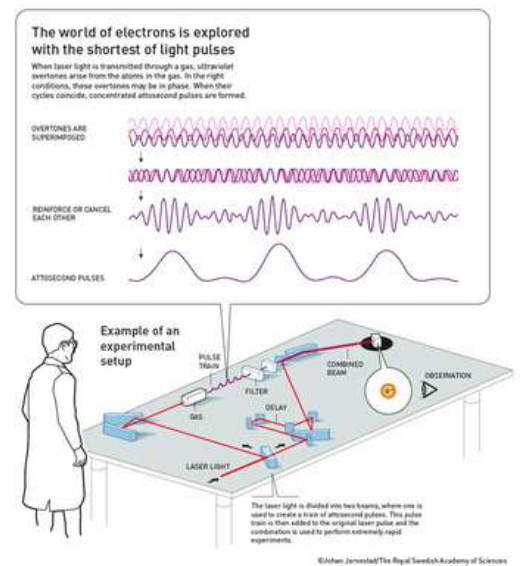
Faculty attend many conferences and also continue to publish in good journals while placement numbers go up with companies like Enmas, Securden and Trumpf metamation recruiting our students. A team of auto enthusiasts mentored by faculty conducted a bike dismantling workshop and have also shared their journey in a bike design competition, that acts as a motivation to others. Mech alumni share their success stories beyond SSN as an employee of Caterpillar as well as a Master's student at TU Delft, Netherlands.

Best wishes for a sunny April,

KSV
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“There is no road to happiness, happiness is the road itself “

NOBEL PRIZE UPDATE RACE AGAINST TIME!



Anne L'Huillier of Lund University, Pierre Agostini of The Ohio State University, and Ferenc Krausz of the Max Planck Institute of Quantum Optics won the Nobel Prize in Physics “for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter,” the Nobel Committee for Physics. Their discoveries, which capture electrons in flashes of light, have future applications in medical diagnostics, catalysis, and electronics.

Attosecond physics enables scientists to observe electron dynamics on ultrafast timescales. Anne L'Huillier pioneered attosecond pulse generation in the 1990s, allowing researchers like Krausz to measure electron escape times, disproving the assumption that photoionization is instantaneous.

Beyond fundamental research, Krausz's team is using attosecond pulses for molecular fingerprinting, detecting tiny spectral changes in blood samples. This could revolutionize early disease detection, including lung cancer, by enabling faster and more accurate diagnostics.

Attosecond-driven technology also promises breakthroughs in computing. By controlling electron spin with laser pulses, scientists aim to surpass current speed limits, potentially increasing processor speeds a thousandfold and revolutionizing ultrafast electronics.

1 attosecond= 0.0000000000000001 seconds ()

MR SHIKHAR MALHOTRA INAUGURATES SSN ESAB SWIFT CENTRE OF EXCELLENCE

It was a privilege to receive Mr. Shikhar Malhotra, Director and Board member of HCL Corporation at the SSN ESAB SWIFT Centre of excellence at the SSN campus, for inaugurating the new facility. Mr. Sundar Mahalingam, President - Strategy at HCL Corporation, Dr Kala Vijayakumar, President SSN institutions and Principal Dr S Radha graced the occasion.



GARAGE REOPENING CEREMONY

The garage at SSN College of Engineering was officially reopened on March 20 by Dr. K.S. Vijay Sekar, HoD of Mechanical Engineering, after undergoing extensive renovation. The SAE-SSN team took charge of the project, ensuring the workspace was upgraded to meet the needs of aspiring engineers.

As part of the renovation, the garage was repainted, equipped with new tools, and stocked with advanced equipment to enhance practical learning and project development. This transformation provides students with an improved environment to work on innovative automotive and mechanical projects.

With these upgrades, the SSN garage is set to become a hub of creativity and engineering excellence, fostering hands-on experience for students in the field of automobile and mechanical design.



INSTINCTS 2025: A GRAND CELEBRATION OF CULTURE AND TALENT AT SSN/SNU

Instincts, the cultural extravaganza of SSN College of Engineering, was held on March 13, 14, and 15, creating an unforgettable experience filled with fun and excitement. The event witnessed students from various colleges showcasing their talents in numerous competitions.

One of the major highlights was the electrifying Choreo Night, where dance teams set the stage on fire. The crowd was mesmerized by Shakthisree Gopalan's Pro Show, followed by an energetic DJ Night that had everyone grooving. Spectacular performances such as the Bike Stunt, Fire Show, and Stand-up Comedy added to the thrill.

With a perfect blend of culture, creativity, and entertainment, Instincts 2025 was a grand success. The enthusiasm of participants and the vibrant atmosphere made it a truly unforgettable event, reinforcing SSN's reputation for hosting one of the best cultural fests in Chennai.



International Journal Publication - SCI /Clarivate Indexed



Vempany, D. T., Malla, L. K., Dileep, H., Mahapatra, P. S., Srivastava, P., & Pattamatta, A. (2024). "A novel antiparallel flat plate pulsating heat pipe for thermal management of electronics". *Experimental Heat Transfer*, Pages: 1-17, **Impact Factor: 2.5**.



Surya, A., Rohan Samuel David, P., Prakash, R. (2025). "Performance Analysis of the Photovoltaic Grid-Connected System Using PVsyst Software". *ICGEST 2023. Lecture Notes in Networks and Systems*, vol 1236. Springer, Singapore, Pages: 139-152, **Impact Factor: 0.57**.



Prakash R, "Experimental Thermo-hydraulic Investigation on Packed Bed Thermal Energy Storage System Using Phase Change Material", Volume: 4, ISSN Print: 2195-4356, Pages: 93-107, **Impact Factor: 0.47**.

International Journal Publication - SCI /Clarivate Indexed



R Anitha, M Jenita Flumel, K Jayakumar, B Gajalakshmi, 2024.” Exploring targeted apoptosis in huh-7 human liver cancer cell line through Mentha Officinalis-mediated gold nanoparticles: an in vitro study”. Journal of medical pharmaceutical and allied sciences, V 13 - I 6, Pages: 6817-6824, **Impact Factor:0.315.**



Khan, M.F.; Damodaram, R.; Altammar, H.; Karthik, G.M. “Metallurgical and Mechanical Properties of Stellite 6 Deposition Developed Through Friction Surfacing Technique”. Materials 2025, 18, 1003. ,Pages: 1-15, **Impact Factor: 3.4.**



Singh S.P, Ananthapadmanaban D, Venkateshwaran . “Effect of Ageing Temperature on the Hardness, Microstructural and Dry Sliding Wear Performance of the Functionally Graded A356 Alloy”. Inter Metalcast 19, Pages: 955-976, **Impact Factor: 0.53.**

DEPARTMENT OF MECHANICAL ENGINEERING CLASS OF 2026

Internship Update



AMEER BATCHA



MADHUMITHA G S

DEPARTMENT OF MECHANICAL ENGINEERING CLASS OF 2025

PLACEMENT UPDATE



TRUMPF METAMATION



ROHITH KUMAR

DEPARTMENT OF MECHANICAL ENGINEERING CLASS OF 2025

PLACEMENT UPDATE



ADITYA TSS



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RAJAT YADAV

WORKSHOP CONDUCTED ON TRAINING ON DETAILED ENGINEERING FOR O&G EPC PROJECTS

A workshop on "Training on Detailed Engineering for O&G EPC Projects" was successfully conducted on 19 March 2025. This workshop was delivered by Mr. Ganesh Kumar of A2i Training Services. The session discussed to provide a comprehensive understanding of the engineering, procurement, and construction (EPC) workflow in the oil and gas (O&G) sector, focusing on the key aspects of detailed engineering required for project execution.

The workshop covered essential topics such as:

- Overview of EPC Projects – Phases, scope, and role of detailed engineering.
- Process Engineering & Piping Design – Fundamentals, specifications, and key consideration.
- Mechanical, Electrical & Instrumentation Engineering – Design principles, equipment selection, and integration.
- Structural & Civil Engineering in O&G Projects – Load analysis, foundation design, and structural integrity.
- Project Management & Cost Control – Planning, scheduling, budgeting, and risk assessment.
- Case Studies & Best Practices – Real-world applications and industry challenges

The workshop included interactive discussions, practical demonstrations, and Q&A sessions to enhance the participants' understanding of the subject. The training was well- received, with active participation from II year and III year students of Mechanical, Civil and Chemical engineering students as attendees, including engineers, project managers, and industry professionals.

The session concluded with insights into current trends, technological advancements, and digital transformation in detailed engineering for EPC projects. Feedback from participants indicated that the workshop provided valuable technical knowledge and practical insights relevant to the O&G industry.



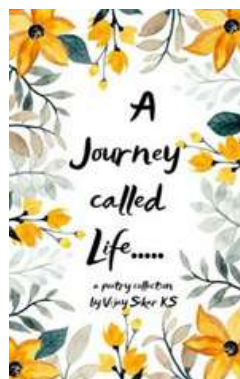
HOD INVITED AS CHIEF GUEST AT VELS UNIVERSITY.

It was a pleasure to be the chief guest at the technical symposium organised by the mechanical and automobile departments of VELS university, Chennai. The event was well organised and attended with much enthusiasm and zeal. My talk centred around the safe entry of Sunita Williams, Wilmore on the SpaceX Dragon and why withstanding speeds of 26k km/hr and a temperature difference of 1600 degree C needed a near perfect choice of materials across the capsule to withstand extreme weather conditions and at the heart of such a vehicle are a passionate team of Mech & Auto engineers. Thanks to VELS university for inviting me!!!



KSV PUBLISHES A BOOK OF POEMS

I am super excited to share that I have published my First Book, a poetry collection “A Journey Called Life...” which is a book of 21 poems inspired from daily life around me. I sincerely hope that it stirs up similar thoughts in you as you flip through the pages. I need your love and support in picking up a copy which is available on Amazon and also writing a review on what you felt flipping through it...that review would mean a lot to me. Thank you for being an indivisible part of my journey through your constant feedback and unflinching motivation...that spurred me to pen these musings.



FACULTY DEVELOPMENT PROGRAM ON "FOUNDATIONS OF ROS & IOT FOR INDUSTRIAL AUTOMATION, ROBOTICS, AND MECHATRONICS"

The Department of Mechanical Engineering at SSN College of Engineering successfully conducted a Faculty Development Program (FDP) on "Foundations of ROS & IoT for Industrial Automation, Robotics, and Mechatronics" from March 24 to 28, 2025. This five-day program aimed to provide faculty members and researchers with comprehensive knowledge and hands-on experience in robotics and automation.

The FDP was coordinated by Dr. Satheesh Kumar G, Dr. R. Vimal Samsingh, and Dr. S.S. Mani Prabu from the Department of Mechanical Engineering, SSNCE, and featured expert sessions from distinguished speakers in academia and industry.

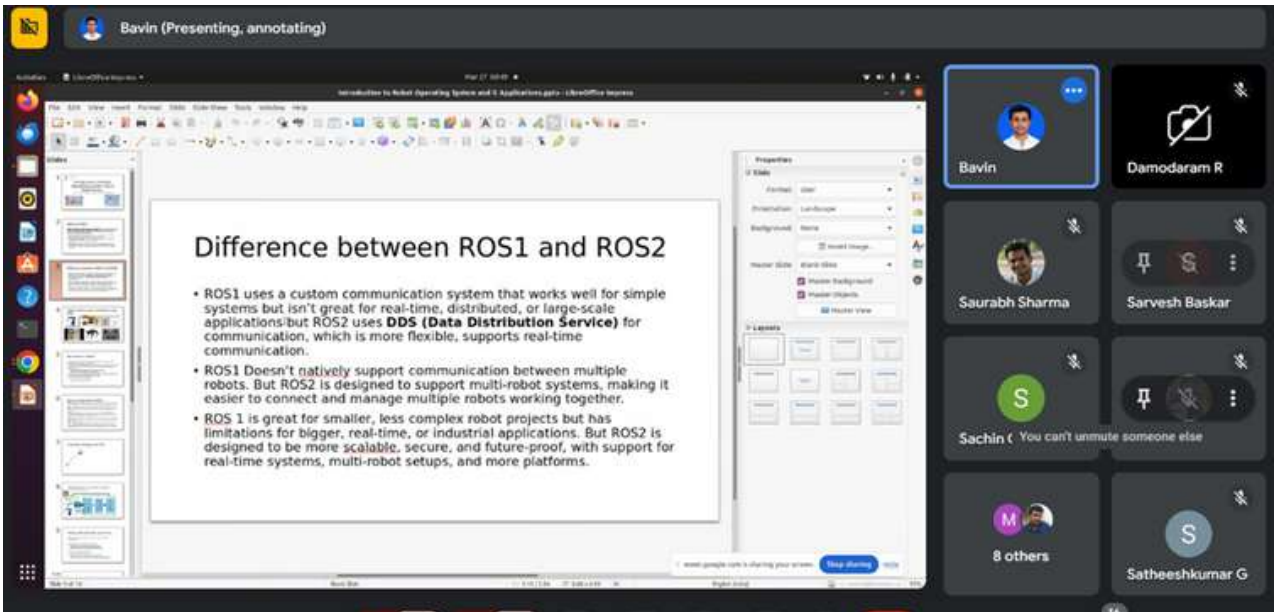
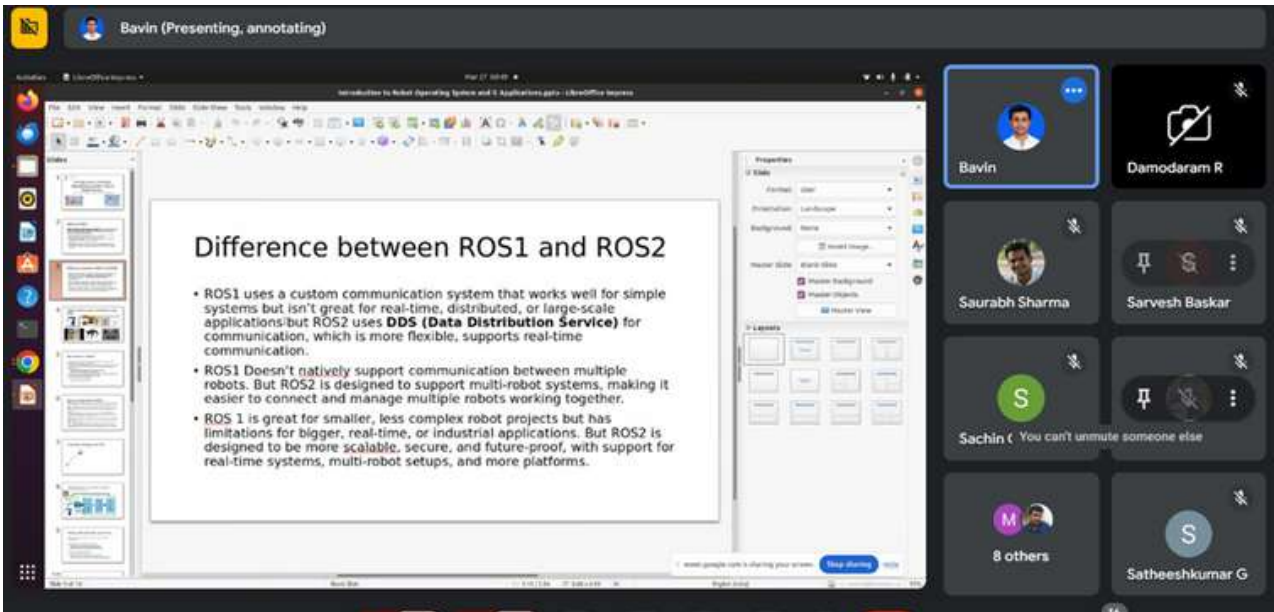
Expert Sessions:

- ◆ Dr. R. Ramakrishnan (VIT, Vellore) – Digital Technologies: The Driving Force Behind Robotics and Industry 4.0
- ◆ Dr. R. Vimal Samsingh (SSNCE) – Product Development for Commercialization
- ◆ Dr. C. Arun Prakash (MIT, Chennai) – Industrial PLC for Automation
- ◆ Dr. S.S. Mani Prabu (SSNCE) – 3D Prototyping for Robotics and Product Development
- ◆ Mr. Sriram (Founder & CEO, Roboram Pvt. Ltd.) – AI & ML for Mobile Robotics
- ◆ Dr. Satheesh Kumar Gopal (SSNCE) – Challenges in Robotics Research: The Indian Landscape
- ◆ Mr. Bavin S (AI Engineer, Skytex UAV, Bangalore) – ROS for Swarm Robots and Drones
- ◆ Dr. Lakshmi Narasimhan N (Vice President, Industry-Institute Partnership, GRT Group of Institutions) – Design Thinking as a Pragmatic Approach for Problem Solving

The program witnessed active participation, engaging discussions, and hands-on learning, offering valuable insights into the latest advancements in robotics and automation. The FDP successfully bridged the gap between academia and industry, fostering collaboration and innovation.

We extend our sincere gratitude to our HoD, staff and faculty members for their support in making this FDP a meaningful and impactful event.





MECH APPLIES FOR TN START UP GRANT

TA team comprising Dr. K.S. Vijay Sekar, Dr. G. Satheesh Kumar, Dr. Vimal Sam Singh, and Dr. S.A. Srinivasan has applied for TN Start-Up Grants to establish a Centre of Excellence in AgriTech. The proposal, seeking funding of ₹2.5 crores, has been submitted to the Tamil Nadu government with the objective of setting up a center at SSN that will offer technological and service solutions to the agricultural sector at an affordable cost and on a sustainable basis. The initiative aims to bridge the gap between technology and agriculture, fostering innovation and practical implementation to benefit the farming community. The proposal is currently under review, and further updates are awaited on its progress. The Mechanical Engineering Department extends its sincere gratitude to the President, Principal, and SSN Incubation (SSN iFound) for their invaluable encouragement and support.

NON-TEACHING STAFF ACTIVITIES

24/03/2025	Mr. P. Bala sundaram/ Assistant. Lab Instructor / Mechatronics and Automation Laboratory / Alison course completed : Advanced Diploma in Mechanical Measurements. completed on 24.03.2025 Monday 11.30 am
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FDP ATTENDED

03/02/2025	Dr. L. Poovazhagan, Associate Professor/Mech., attended Five Days ASM Sponsored FDP on "Advanced Materials and Manufacturing" Conducted by Department of Mechanical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam, Chennai,Tamil Nadu from 17.02.2025 to 21.02.2025.
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INTERNATIONAL JOURNAL PUBLICATION

03/02/2025	Dinesh A (II Year M.E Manufacturing Student) and Dr. L. Poovazhagan, ASP/Mech., presented a paper entitled "Examining the Corrosion Resistance Properties of MgO and ZnO Coated Magnesium Nanocomposites" in the Two-days INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY RESOURCES, MATERIALS AND TECHNOLOGIES (ISERMAT 2025) organized by Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam, Thiruporur, Chennai, during February 13-14, 2025.
03/02/2025	Prasanna B, Rajarajan DE (IV Year Mechanical Engineering Students) and Dr. L. Poovazhagan, ASP/Mech., presented a paper entitled "Design and fabrication of self-contained electrocoagulation reactor for a small-scale water treatment system" in the Two-days INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY RESOURCES, MATERIALS AND TECHNOLOGIES (ISERMAT 2025) organized by Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam, Thiruporur, Chennai, during February 13-14, 2025.
03/02/2025	Rajarajan DE, Prasanna B (IV Year Mechanical Engineering Students) and Dr. L. Poovazhagan, ASP/Mech., presented a paper entitled "Development of sustainable electrocoagulation system for industrial water purification" in the Two-days INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY RESOURCES, MATERIALS AND TECHNOLOGIES (ISERMAT 2025) organized by Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam, Thiruporur, Chennai, during February 13-14, 2025.

03/03/2025	Dr. K. Jayakumar, Automated Sensor based Impediment and Pothole Detection System, THIRD INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY RESOURCES, MATERIALS AND TECHNOLOGIES, SSNCE, 13-14 February, 2025.
07/02/2025	Dr KS Vijay Sekar/Prof/mech attended the DC meeting of a scholar from St. Joseph's college of Engineering, registered under Anna University, on 07.02.2025
25/03/2025	Dr. M. Dhananchezian, ASP/Mechanical Engineering conducted the 4th DC meeting (Review of Examiners' Comments) for his part-time research scholar, Mr. P. Kaliyappan (1617299251) on 21.02.2025.
25/03/2025	Dr. K. Jayakumar, Prasanna Perumaal S, Suganthan S, Sudarson S, 'Manufacturing and assembly of a Stewart Platform for the application of Machine Tools'; Third International Conference on Sustainable Energy Resources, Materials and Technologies (ISERMAT-2025), SSNCE, 13-14 February 2025.

NATIONAL CONFERENCE ATTENDED

03/12/2025	R.Keethivasan ,UG Student ,SSNCEand Dr .D.Ananthapadmanaban,Associate Professor ,SSNCE presented a paper entitled Hot Deformation studies using gleeble simulator at the National Conference PRIME 25 conducted by Sri Sivasubramaniya Nadar College of Engineering on 7th March,2025.
03/12/2025	Sarbesh Natarajan,UG Student and Dr .D.Ananthapadmanaban ,Associate Professor presented a paper entitled Impact analysis of Al 7075 and Al-Fe using Numerical Analysis at the National Conference PRIME 25 conducted by Sri Sivasubramaniya Nadar College of Engineering on 7th March,2025

03/12/2025	V.J.Sathianand, UG Student and Dr .D.Ananthapadmanaban ,Associate Professor presented a paper entitled Machining studies on Aluminium FGMMC fabricated through centrifugal casting at the National Conference PRIME 25 conducted by Sri Sivasubramaniya Nadar College of Engineering on 7th March,2025
03/12/2025	V.J.Sathianand, UG Student and Dr .D.Ananthapadmanaban ,Associate Professor presented a paper entitled Machining studies on Aluminium FGMMC fabricated through centrifugal casting at the National Conference PRIME 25 conducted by Sri Sivasubramaniya Nadar College of Engineering on 7th March,2025

INTERNATIONAL JOURNAL PUBLICATION

03/12/2025	S,Prathap Singh,D.Ananthapadmanaban,N.Venkateshwaran, M.A.Sai Balaji, Effect of Ageing temperature on the hardness,microstructural and dry sliding wear performance of the functionally graded A356 Alloy International Journal of Metal Casting,American Fondrymen's Society
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EXTERNAL RECOGNITIONS

3/2/2025	Dr. L. Poovazhagan, ASP/Mech. attended the comprehensive DC meeting @ the department of mechanical engineering, Sathaybama University, Chennai on 28.02.225. Name of the Candidate: Mr. S. RASAIYA Topic: DC Meeting (Comprehensive meeting)
3/25/2025	Dr. K. Jayakumar, Associate Professor, has been invited to the Board of Studies (BOS) meeting to contribute to the formulation of the Mechanical Engineering syllabus for Jawaharlal College of Engineering and Technology, an autonomous institution in Kerala accredited with NAAC A+ and affiliated with KTU. The meeting was conducted on February 6, 2025.

Bike dismantling workshop: Devason Periyar from 1st year

The Bike Dismantling Workshop at SSN College of Engineering provided an excellent hands-on learning experience for over 30 students from the Mechanical and EEE departments. This interactive session allowed participants to dismantle all parts of a bike, gaining a deep understanding of its mechanical and electrical components.

Students explored the engine, transmission, braking system, and electrical wiring, while instructors explained their functionality and integration. This practical approach helped bridge the gap between theory and real-world applications, enhancing students' knowledge of automotive engineering.

The workshop was a great success, sparking curiosity and technical enthusiasm among future engineers, making it a valuable step toward mastering automobile mechanics and system design.



AKASPATHAN FROM SECOND YEAR WRITES...

A team of 10 students from SSN College of Engineering participated in RIVALS'25: 100cc Bike Competition at Karpagam Institute of Technology, Coimbatore. The team, consisting of Kishore Varshan, Harrish AC, Akaspathan R, Mithun Kishore, Jithesh, Lokesh Vishnu, Tarun Thayappan, Vishnu Dev, and Vishnu Raghav, competed in three rigorous tests: Skid Pad Test (Figure of 8), Brake and Acceleration Test, and the Endurance Test, which featured a 1.2 km-long obstacle course. Despite not securing a podium finish, the competition provided an invaluable hands-on experience, testing their technical skills, teamwork, and problem-solving abilities. It was an opportunity to push the limits, understand the dynamics of bike performance, and compete with some of the best teams. The event served as a great learning experience, boosting confidence and motivation for future automotive challenges and competitions.



SRIVATSAN S (MECH 2024) SHARES...



This write-up is kind of special as it's one written after a long time, the last being during my 4th year of college life. Why is it so special? There are particularly two reasons: Firstly, it's about graduation day, and secondly, it's about my 1-year work anniversary at Caterpillar.

Let's start with grad-day. I received "First-Class with Distinction" with a CGPA of 9.51. People often say that scores don't matter, but I believe that CGPA provides the key to opportunity gates, which can only be obtained through effort and a strong foundation.

Once you have that key, it's your knowledge, attitude, and ability to present yourself that shape your success. As an engineer stepping into society, I realized that a strong core foundation is essential, and my faculties at SSN played a crucial role in building it. I truly thank Dr. Santosh Sampath for teaching me not just theories but their practical applications through discussions and research papers. I also thank Dr. Suresh Kumar for sparking my interest in the work I now do at Caterpillar.

It's been a pleasure to be selected for my dream job at Caterpillar, where I currently work as a Light Fabrications Design Engineer for the Medium Tractor Products team. My responsibilities range from component design, structural integrity analysis, and cost reduction programs to handling field failures. Working at CAT has not only given me technical exposure but also helped me overcome my fear of the stage and develop a deeper understanding of the mechanical field. Engaging with multiple leaders and collaborating with professionals across the globe has boosted my confidence and broadened my perspective on engineering.

I conclude by thanking my parents and brother for their unwavering support, and my friends and teachers, without whom I wouldn't be who I am today. A special thanks to Dr. Vijay Sekar, HOD, for giving me this opportunity to contribute to Aspire's write-up.

ACHINTA (MECH 2024) SHARES



As I am one quarter away from completing my first year of my master's studies at TU Delft, I feel the importance of addressing the journey and experience so far. Shifting base completely after spending 22 years in Chennai, I was expecting nothing less than excitement and challenges. The change in dynamics was challenging in every aspect. Whether it was the academic workload, personal goals, or shift in culture, every aspect of this experience made me give my all.

I am sincerely thankful to everyone who supported me through this journey – family, friends, and professors who believed in me and gave me guidance to move ahead with my head held high. The journey so far has been nothing less than amazing.

I am currently pursuing my master's in aerospace engineering, specializing in Aerospace Structures and Materials (ASM). Shifting to a new field was daunting, but my mechanical engineering foundation helped me navigate courses like Fatigue of Aerospace Structures, Finite Element Modelling, and Materials for Space. The "Trinity Exercise" lab course, where we manufacture laminates and conduct mechanical tests, has been a highly experiential learning curve.

As Secretary of the Enlightness Board – ASM student society, I help organize career events, industry lectures, and feedback sessions, strengthening my leadership and communication skills.

I sincerely thank Dr. Vijay Sekar K. S., Dr. M. Suresh, Dr. Suresh Kumar Sundaram, and Dr. Santosh Sampath for their support during my bachelor's, and Dr. S. Rajkumar for guiding my design and final year projects. A special thanks to Dr. Santosh Sampath, whose lectures on mechanical behavior of materials sparked my interest in fracture mechanics and material behavior, shaping my current studies and future thesis.

I firmly believe learning never stops—a strong foundation is vital, but continuous growth in technical and soft skills is just as important. With this mindset, I look forward to embracing new challenges and opportunities ahead!

No Competition, No Progress

SISRO Robotics Challenge 2025



Automate the Future: DTCC's Developer Code-A-Thon



University Rover Challenge 2026



From the desk of Ramki – Aspire to Inspire

From Ramki

Happy Morning – Aspire to Inspire

Push the lower

The law of life states, "When the lower is pushed, the higher delights." When the body is pushed beyond its perceived limits, the mind rejoices. Think about those moments when your body insists, "I can't walk another step, run another lap, or climb any further," yet when you push past those limits—walking that extra block, running another lap, or trekking further—the mind delights. Every extra push-up, every added rep, every additional squat defies the body's resistance, bringing joy to the mind.



This principle extends beyond the physical. There is a constant inner conflict between instincts and conscience—instincts urge us toward pleasure and pain, while conscience guides us toward right and wrong. Guilt arises when our "Knower" (conscience) disapproves of the "Doer" (instincts). Resolving this conflict and living as an integrated person is the struggle of intelligence, but ultimately, it is the delight of the higher emotional self.

#WishingMostAndMore

Have a great day & a wonderful weekend!



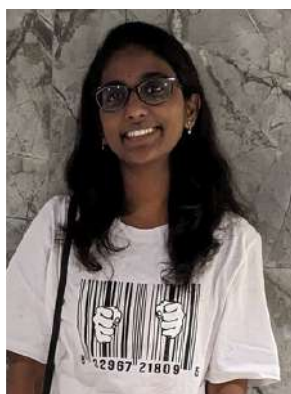
Dr. M S Alphin



Dr. Satheesh Kumar G



Magari Ramasamy



Abirami Subbaih



Aravindhan R



Nithish Kumar S



Dhivya Dharshini R



Mithun Kumar



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