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SYNERGY

ACHIEVEMENTS IN PROJECTS, PLACEMENTS, RESEARCH AND EDUCATION

DEPARTMENT OF MECHANICAL ENGINEERING

SRI VENKATESWARA COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)

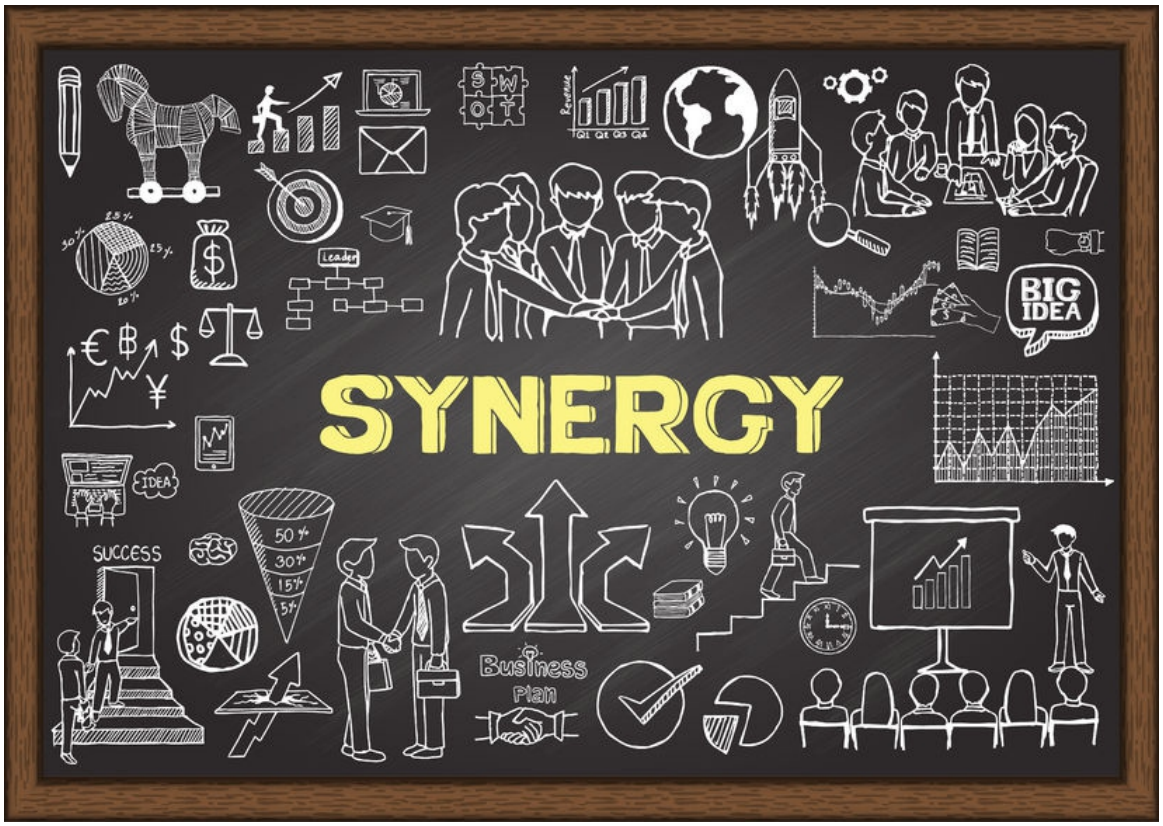
40 Years of Excellence

SYNERGY MAGAZINE

Synergy – The Essence of Collaboration and InnovationThe name Synergy embodies the spirit of teamwork and collective growth, where the combined efforts of individuals create results far greater than what can be achieved alone. In the realm of Mechanical Engineering, synergy represents the seamless integration of knowledge, innovation, and technical expertise to drive progress. This department magazine serves as a platform to unite students, faculty, and industry professionals, fostering a culture of learning, creativity, and collaboration.

The primary aim of Synergy is to showcase the achievements, research contributions, and technical advancements of students and faculty. It provides insights into emerging trends, industry developments, and real-world engineering applications, bridging the gap between academia and industry. Through expert articles, project highlights, and alumni interactions, the magazine encourages knowledge sharing and intellectual growth.

The outcome of Synergy is a vibrant community of aspiring engineers who are well-informed, inspired, and equipped with the necessary skills to excel in the field. It not only enhances technical knowledge but also promotes innovation, effective communication, and professional networking. By recognizing talent and providing a platform for expression, Synergy strengthens the identity of the Mechanical Engineering department and serves as a beacon of excellence for future generations.



Message from the Chairman.....

Bharat Jyoti

Dr.Ravuri Venkata swamy Garu

Founder Chairman,
SV Group of Educational Institutions.

Education Is The Foundation Of Progress, And I Have Always Believed That Quality Education Can Transform Lives And Communities. With A Vision To Uplift The Backward Rayalaseema Region, I Established Srinivasa Educational Academy In 1998 With Like-minded Philanthropists And Educationists. Since Then, We Have Expanded Our Institutions To Provide Excellence In Nursing, Law, Engineering, And Medical Education.

Sri Venkateswara College of Engineering & Technology (Autonomous) stands as a testament to our commitment to technical education, consistently achieving outstanding results and national recognition. Our mission is not just to impart knowledge but to empower students with skills that lead to self-reliance and success

Beyond education, we have taken steps to serve society through RVS Hospitals and the proposed RVS Institute of Medical Sciences, ensuring accessible healthcare for the people of Chittoor and neighboring districts.

It is my firm belief that education, when combined with values and innovation, paves the way for a brighter future. I invite students to bepart of this journey and strive for excellence in their chosen fields.

Message from the Vice Chairman.....

Sri. Ravuri .V. Srinivas Garu

Vice Chairman,
SV Group of Educational Institutions.

At Sri Venkateswara College of Engineering & Technology (Autonomous), our mission is to provide world-class education while fostering innovation, leadership, and social responsibility. Under the banner of Srinivasa Educational Academy, we have been committed to excellence, ensuring that our students receive not just academic knowledge but also the skills and values necessary for success in a rapidly evolving world.

With a strong foundation in engineering and management education, we have created an ecosystem where students from across the globe, including countries like Malaysia, Sudan, UAE, and Bhutan, come to pursue their dreams. Our relentless pursuit of quality has earned our institutions national recognition, NBA and NAAC accreditations, and a reputation as a preferred destination for top recruiters.

Beyond academics, our commitment to social responsibility remains unwavering. Through initiatives like Smt. Haarika Memorial Literary and Cultural Association and Helping Hands, we continue to support education, healthcare, and community welfare programs. It is our belief that education should not only empower individuals but also contribute to the betterment of society.

I welcome students to join our journey of excellence, innovation, and service to society. Together, we can build a brighter future.

Message from the Principal.....

Dr. Matam Mohan Babu, Ph.D.,MISTE, MISH

Principal,
Sri Venkateswara College of Engineering & Technology
(Autonomous)

We are committed to transforming our campus into a center of engineering excellence, where research, innovative pedagogy, and strong values come together to meet the demands of today's world. Our goal is to ensure that our students emerge as technologically skilled and ethically responsible leaders who can contribute meaningfully to the global community

I encourage each of you to embrace this journey with passion and dedication. May you soar high, explore new horizons, and make a lasting impact—both through your profession and the power of education

Message from the Head of the Department
Mechanical Engineering

At The Department Of Mechanical Engineering, Sri Venkateswara College Of Engineering & Technology (autonomous), We Are Committed To Nurturing Innovative Thinkers, Problem Solvers, And Industry-ready Professionals. Mechanical Engineering Is The Foundation Of Technological Advancements, And Our Curriculum Is Designed To Blend Theoretical Knowledge With Practical Applications, Research, And Industry Exposure.

Dr.S. Arunsaco
Associate Professor
Head of the Department – Mechanical Engineering
Sri Venkateswara College of Engineering & Technology
(Autonomous)

Vision

To be recognized as a center for quality education in Mechanical Engineering and allied areas and to train young students to solve the problems of tomorrow.

Mission

M1 : Provide excellent foundation through Teaching-Learning and train the students based on research to help them progress for Higher education.

M2 : Fostering student development with special focus on domain and soft skills for a prospective career placement.

M3 : Developing students with skills in entrepreneurship contributing to job creation and societal development.

M4 : Creating an ecosystem for continuous development of faculty and students by providing relevant infrastructure and resources.

We emphasize hands-on learning, interdisciplinary research, and skill development to equip our students with the ability to tackle real-world engineering challenges. Our well-equipped laboratories, dedicated faculty, and strong industry collaborations ensure that students gain a competitive edge in the ever-evolving engineering landscape.

I encourage our students to think critically, innovate fearlessly, and uphold ethical values in their professional journey. With determination and dedication, I am confident that each of you will contribute significantly to the field of mechanical engineering and make a meaningful impact on society.

Wishing you all a rewarding and successful journey ahead!

Hydrogen-Powered Engines: India's Emerging Clean Mobility Revolution

Introduction

As India accelerates toward sustainable transportation, hydrogen-powered internal combustion engines (H_2-ICE) are gaining significant attention. These engines, which use hydrogen as fuel instead of conventional petrol or diesel, offer a zero-carbon alternative while utilizing existing engine technology. The Government of India and leading automobile manufacturers are actively exploring hydrogen-based mobility solutions to reduce emissions and strengthen energy security.

Technology Overview

Hydrogen internal combustion engines operate similarly to petrol engines but burn hydrogen gas, producing water vapor as the primary by-product. Since hydrogen has a higher flame speed and wider flammability range, H_2-ICEs provide improved thermal efficiency and quicker response characteristics. Indian manufacturers like Tata Motors and Ashok Leyland are currently developing prototype vehicles equipped with hydrogen engines for commercial use (NITI Aayog, 2023).

Applications in India

- Public Transport: Hydrogen buses are being tested under pilot projects in Delhi and Pune to reduce urban pollution.
- Heavy Commercial Vehicles: Due to high torque demand, hydrogen engines suit long-haul trucks, minimizing dependence on diesel.
- Industrial Mobility: Ports, mining vehicles, and warehouse equipment can transition to hydrogen-based power with minimal redesign of existing systems.

Advantages

- Zero Carbon Emission: Only water vapor is emitted during combustion, making it an eco-friendly option.
- Energy Security: Hydrogen can be produced domestically through electrolysis using renewable energy.
- Cost-Effective Transition: Existing engine manufacturing and service infrastructure can be adapted for hydrogen engines with limited changes.

Conclusion

Hydrogen-powered engines represent a promising pathway to India's clean mobility future. Their ability to combine environmental sustainability with the strength of existing engine technology makes them an attractive solution for a rapid and cost-effective green transition. With strong government support and industrial innovation, India is poised to become a global leader in hydrogen mobility technologies.

Reference

NITI Aayog. (2023). Harnessing Green Hydrogen: Opportunities for India in Clean Mobility. Government of India.

Faculty Achievements

Dr. P. Venkataramana

J. Inst. Eng. India Ser. D
https://doi.org/10.1007/s40033-025-00956-0

ORIGINAL CONTRIBUTION

Variation of Heat Input and Orientation in a CLPHP with Al_2O_3/ Copper Nanofluids: Application of Enhanced Heat Transfer

P. Venkataramana[1] · P. Vijaya Kumar[2] · B. Balakrishna[3]

We are proud to announce that Dr. P. Venkataramana, Faculty Member, Department of Mechanical Engineering, has successfully published a research paper titled "Variation of Heat Input and Orientation in a CLPHP with Al_2O_3/Copper Nanofluids: Application of Enhanced Heat Transfer" in the Journal of The Institution of Engineers (India), Series D.

This paper, co-authored with P. Vijaya Kumar and B. Balakrishna, explores the impact of heat input and orientation on closed-loop pulsating heat pipes (CLPHP) using Al_2O_3 and copper nanofluids, highlighting advancements in heat transfer performance.

The management, principal, and faculty members of Sri Venkateswara College of Engineering and Technology (SVCET) congratulate Mr. P. Venkataramana on this remarkable academic achievement.

Faculty Achievement – Certificate of Appreciation

Dr. C. Ahilan, Professor, Department of Mechanical Engineering, served as a Judge for the "Community Service Project Expo" organized as part of the EPICS & Students Innovation Council (SIC – SVCET) activity.

The event was jointly organized by the Departments of Computer Science and Engineering and Mechanical Engineering on 30th October 2025 at the Mechanical E-Classroom and IDEA Lab, SVCET.

Dr.C. Ahilan was appreciated for his valuable time, insightful evaluation, and contribution toward encouraging students to develop innovative, community-oriented engineering solutions. The management and faculty members of SVCET extend hearty congratulations on this recognition.

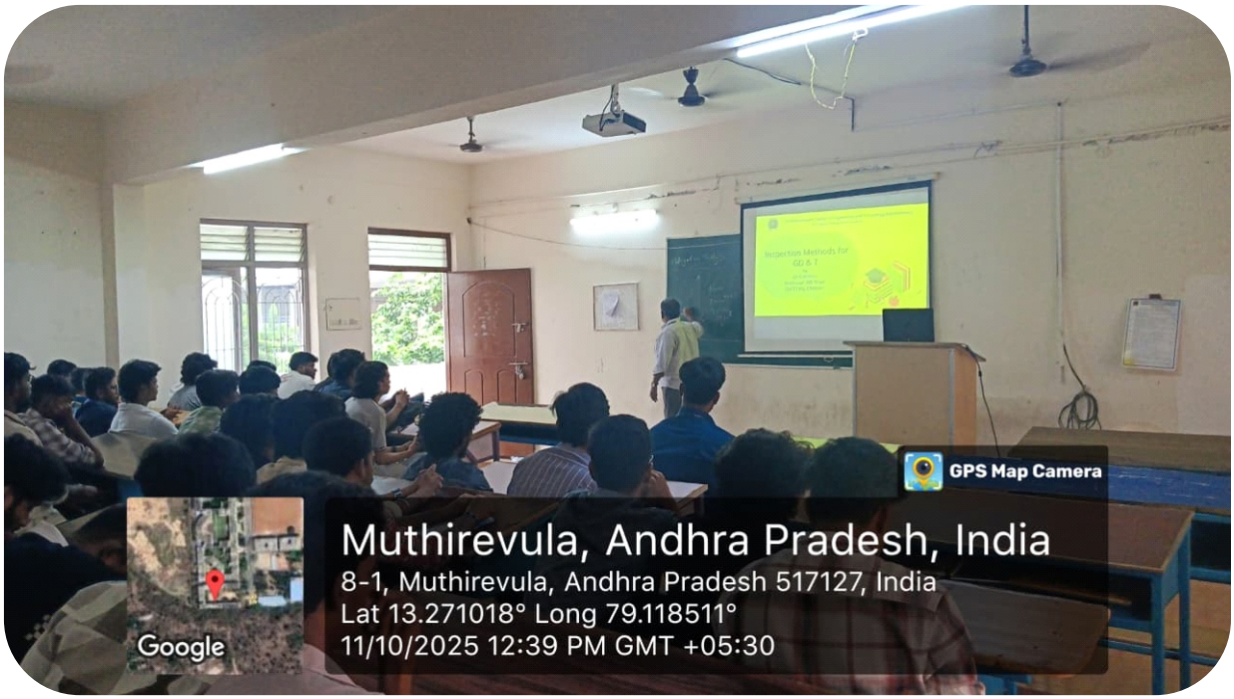
Students Achievements

Guest Lecture on "Inspection Methods for GD&T"

The MEDHA Association conducted a Guest Lecture on "Inspection Methods for GD&T" on 11th October 2025, from 12:10 PM to 1:00 PM.

The session was handled by Dr. C. Ahilan, Professor, Department of Mechanical Engineering.

Held at Room No. R-208, the lecture offered valuable insights into various inspection techniques associated with Geometric Dimensioning and Tolerancing (GD&T), enriching students' understanding of modern quality inspection practices.



Guest Lecture on
"Career Opportunities for Mechanical Engineering"

The MEDHA Association organized a Guest Lecture on "Career Opportunities for Mechanical Engineering" on 16th October 2025, from 2:10 PM to 3:00 PM.

The session was delivered by Dr. S. Johny James, Professor, Department of Mechanical Engineering.

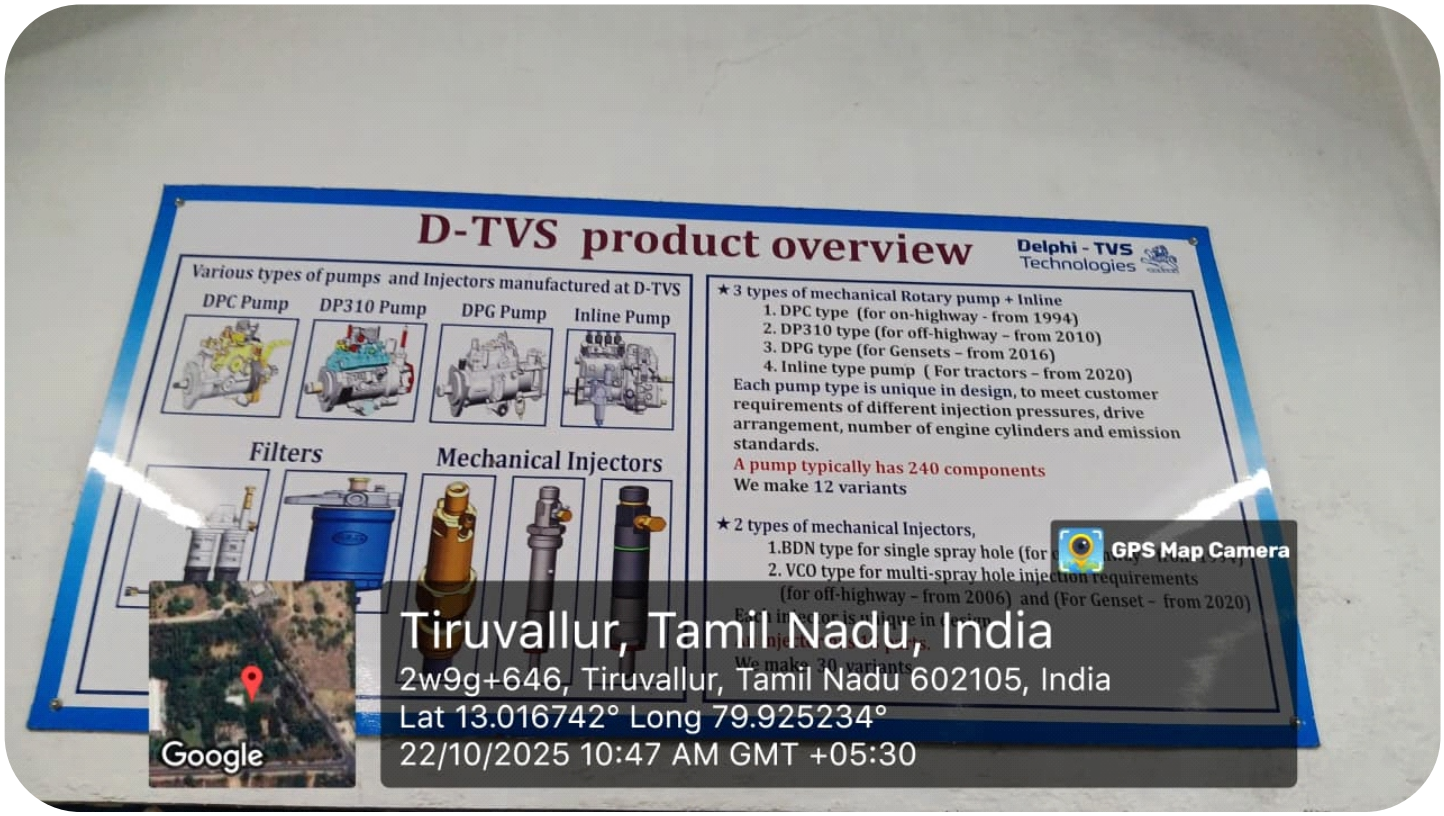
The event was held at Room No. R-208 and provided students with valuable guidance on various career paths and professional opportunities available in the field of Mechanical Engineering.

Industrial Visit to Delphi-TVS

An Industrial Visit was organized on 22nd October 2025 to Delphi-TVS, located at Mannur, Sriperumbudur, Kanchipuram District, Tamil Nadu. A total of 57 students from the Department of Mechanical Engineering participated in the visit.

The visit was coordinated by Mr. C. Sivalingam and Mr. S. Jawahar, Faculty Members of the Department of Mechanical Engineering. It was organized under the guidance of Dr. Arunsaco, Head of the Department (Mechanical Engineering), and approved by Dr. M. Mohanbabu, Principal, SVCET.

The visit provided students with valuable industrial exposure and practical insights into advanced manufacturing and automotive component systems.


D-TVS product overview
Delphi - TVS Technologies
Various types of pumps and Injectors manufactured at D-TVS
DPC Pump
DP310 Pump
DPG Pump
Inline Pump
Filters
Mechanical Injectors
★3 types of mechanical Rotary pump + Inline
1. DPC type (for on-highway - from 1994)
2. DP310 type (for off-highway – from 2010)
3. DPG type (for Gensets – from 2016)
4. Inline type pump (For tractors – from 2020)
Each pump type is unique in design, to meet customer requirements of different injection pressures, drive arrangement, number of engine cylinders and emission standards.
A pump typically has 240 components
We make 12 variants
★2 types of mechanical Injectors,
1.BDN type for single spray hole (for
2. VCO type for multi-spray hole injection requirements
(for off-highway – from 2006) and (For Genset – from 2020)
We make 30 variants
GPS Map Camera
Tiruvallur, Tamil Nadu, India
2w9g+646, Tiruvallur, Tamil Nadu 602105, India
Lat 13.016742° Long 79.925234°
22/10/2025 10:47 AM GMT +05:30
Google


Our customers
Delphi - TVS Technologies
JCB
Perkins
CATERPILLAR
ESCORTS
TATA
SONALIKA
JOHN DEERE
GPS Map Camera
Tiruvallur, Tamil Nadu, India
2w9g+646, Tiruvallur, Tamil Nadu 602105, India
Lat 13.016676° Long 79.92517°
22/10/2025 10:47 AM GMT +05:30
Google

Guest Lecture on
"Be the Brand: Building Your Personal Identity Before Graduation"

The MEDHA Association organized a Guest Lecture on "Be the Brand: Building Your Personal Identity Before Graduation" on 31st October 2025, from 11:20 AM to 12:10 PM.

The inspiring session was delivered by Dr. V. Sujatha, Professor, Department of Mechanical Engineering.

Held at Room No. R-208, the lecture focused on the importance of developing a strong personal identity and professional brand before graduation, motivating students to enhance their skills and self-presentation for future career success.

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