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St. JOSEPH'S COLLEGE OF ENGINEERING
(An Autonomous Institution)
St. JOSEPH'S GROUP OF INSTITUTIONS
OMR, CHENNAI - 119



Department of Mechanical Engineering

A Report on



Student Chapter

Institution of Engineers (India)
Kancheepuram Local Centre

Organizes

TECHNICAL TALK ON
HYDRAULIC AND PNEUMATIC SYSTEM APPLICATIONS

08/02/2025

Academic year 2024-2025

Organized by

Department of Mechanical Engineering

St. Joseph's College of Engineering. OMR, Chennai- 600119

EVENT POSTER



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DEPARTMENT OF MECHANICAL ENGINEERING



The Institution of Engineers (India)
Kancheepuram local centre



HYDRAULIC AND PNEUMATIC SYSTEM APPLICATIONS

Mr. T. Thyagarajan
Engineering Manager
Flowserve India Controls
Private Limited

08/02/2025

10:00 AM

FLOWSERVE



STUDENT CHAPTER ADVISOR
Dr. VADDI SESHAGIRI RAO, M.E., M.B.A., Ph.D., FIE
Principal, St. Joseph's College of Engineering

Head Of The Department
Dr. L. BALAMURUGAN, M.E., Ph.D.

📍 BASIL HALL, PLACEMENT BLOCK



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The Choice of
Disciplined Toppers

OBJECTIVE OF THE EVENT:

Enhance Technical Knowledge – Provide students with in-depth insights into industrial engineering and fluid motion control systems.

Expose Students to Industry Trends – Familiarize students with advancements in pressure vessel and valve design, computational fluid dynamics (CFD), and global industry standards.

Emphasize Safety and Compliance – Highlight the importance of safety measures in pressure testing and adherence to API standards for industrial applications.

Bridge Academia and Industry – Strengthen students' understanding of real-world applications through case studies and expert insights.

Encourage Career Development – Guide students on career opportunities, interdisciplinary learning, and professional growth in the mechanical and fluid power industries.

Promote Research and Innovation – Inspire students to engage in research, continuous learning, and participation in industry forums for technical and managerial excellence.



EVENT REPORT:

The Department of Mechanical Engineering, St. Joseph's College of Engineering, OMR, Chennai, IE(I) student chapter in association with The Institution of Engineers India, under the Kancheepuram Local Centre (**Chapter Code: 60119/SJCE/MC**), Organizes, a technical talk on "Hydraulic and Pneumatic System Applications" at our campus on **08/02/2025**.

A guest lecture delivered by Mr. Thyagarajan T, an accomplished Engineering Manager at Flowserve India Controls Private Limited, Maraimalai Nagar, Chengalpattu District. The session provided invaluable insights into the fluid motion control industry, with a focus on industrial valves, pumps, and sealing systems. Mr. Thyagarajan shared his extensive professional journey, technical expertise, and his vision for the future of industrial engineering.

A total of 54 students from the second and third year Mechanical Engineering program participated in the event to enhance their understanding of key concepts, technologies, and trends in the industry. The event was led by **Dr. L. Balamurugan M.E., Ph.D.**, (Head of Department, Mechanical Engineering). The event was meticulously coordinated by **Dr. Vaddi Seshagiri Rao, M.E., M.B.A., Ph.D., FIE**, and the organized by **Dr. Sathish Rengarajan, M.E., Ph.D.**, and **Mr. Pravinkumar Kamatchi, M.E., (Ph.D.)**.



Key Highlights of the Guest Lecture: During the session, Mr. Thyagarajan delved into various facets of industrial engineering and the fluid motion control sector. Key areas covered in his lecture included:

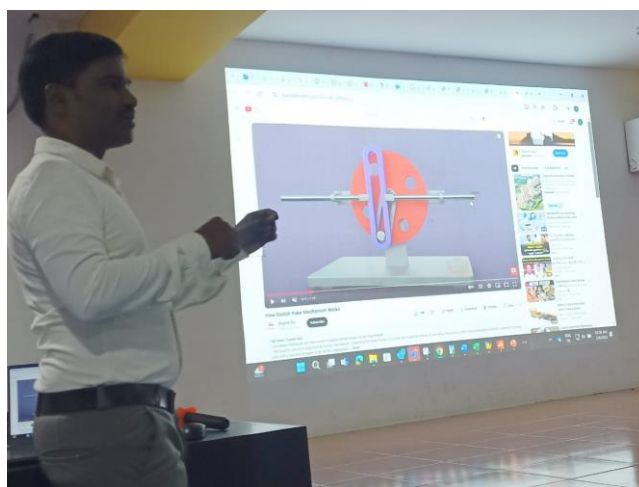
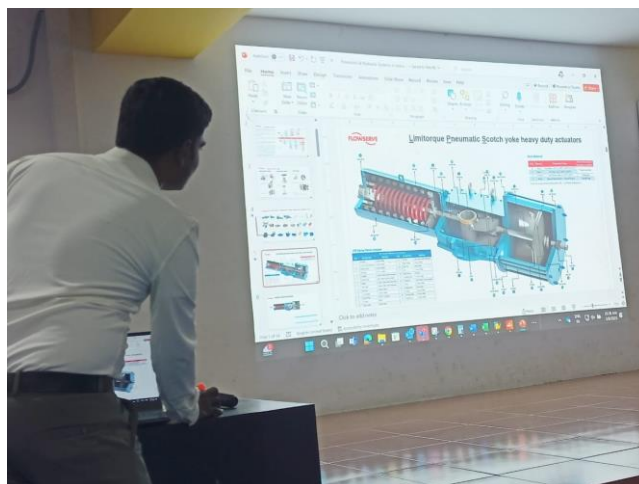
Overview of Flowserve:

- Global presence and the company's commitment to manufacturing top-tier pumps, valves, and sealing systems.
- Significance of Flowserve's three Indian facilities in contributing to the global supply chain.

Evolution of Pressure Vessels and Valves:

- Design advancements over the years.
- The role of R&D in enhancing product durability, performance, and safety.

1.



Computational Fluid Dynamics (CFD) Applications:

- Utilization of CFD simulations in valve design to predict fluid behavior and optimize performance.
- Real-life examples showcasing improved efficiency through CFD analysis.

Safety in Pressure Testing:

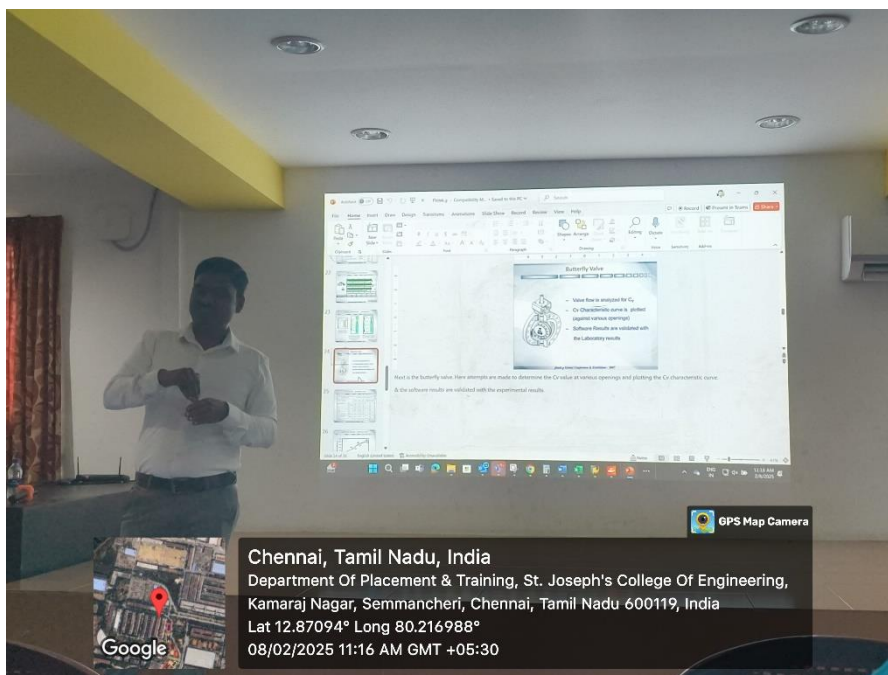
- Case studies illustrating potential hazards during pressure testing.
- Implementation of safety enclosures and risk mitigation techniques.

API Standards and Global Compliance:

- The importance of adhering to API standards to ensure the quality and reliability of industrial valves.
- Insights into the collaborative process of developing and updating API standards.

Career Guidance and Professional Growth:

- Encouragement for students to pursue interdisciplinary education, combining technical and managerial skills.
- Importance of research, continuous learning, and active participation in industry forums.



Interactive Session: The lecture concluded with an engaging interactive session, where students had the opportunity to seek advice and clarify doubts. Mr. Thyagarajan emphasized the need for young engineers to stay abreast of emerging technologies, such as computational simulations and automation, which are shaping the future of industrial engineering.

Visual Documentation: The guest lecture was well-documented through photographs capturing Mr. Thyagarajan's presentation, his interaction with students, and the overall ambiance of the event. These images serve as a valuable record of the knowledge-sharing experience and the enthusiasm displayed by attendees.

Conclusion: Mr. Thyagarajan T's guest lecture was an enriching experience for all participants. His extensive industry knowledge, coupled with his passion for engineering excellence, provided students with a comprehensive understanding of the fluid motion control industry and the critical role of R&D in shaping industrial standards.

The session underscored the importance of integrating technical proficiency with managerial capabilities, encouraging aspiring engineers to strive for innovation and global excellence. We extend our sincere gratitude to Mr. Thyagarajan T for his invaluable time and insights, and we look forward to future collaborations with industry leaders to further bridge the gap between academia and industry.



Acknowledgment: We extend our heartfelt appreciation to Flowserve India Controls Private Limited for supporting this initiative and to Mr. Thyagarajan T for sharing his expertise and inspiring the next generation of engineers.

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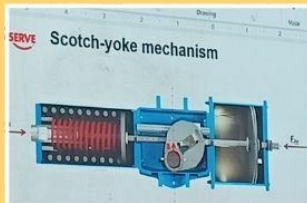
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HYDRAULIC AND PNEUMATIC SYSTEM APPLICATIONS



FLOWERVE

GUEST LECTURE

Mr. T. Thyagarajan
Engineering Manager
Flowserve India Controls
Private Limited

OUTCOME OF THE EVENT :

- Understanding Core Principles of Hydraulics and Pneumatics
- Real-World Industrial Applications
- Latest Industry Trends and Innovations
- Career and Internship Opportunities in Fluid Power Industries
- Safety Standards and Best Practices in System Design

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HEAD OF THE DEPARTMENT

Dr. L. BALAMURUGAN, M.E., Ph.D.

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