



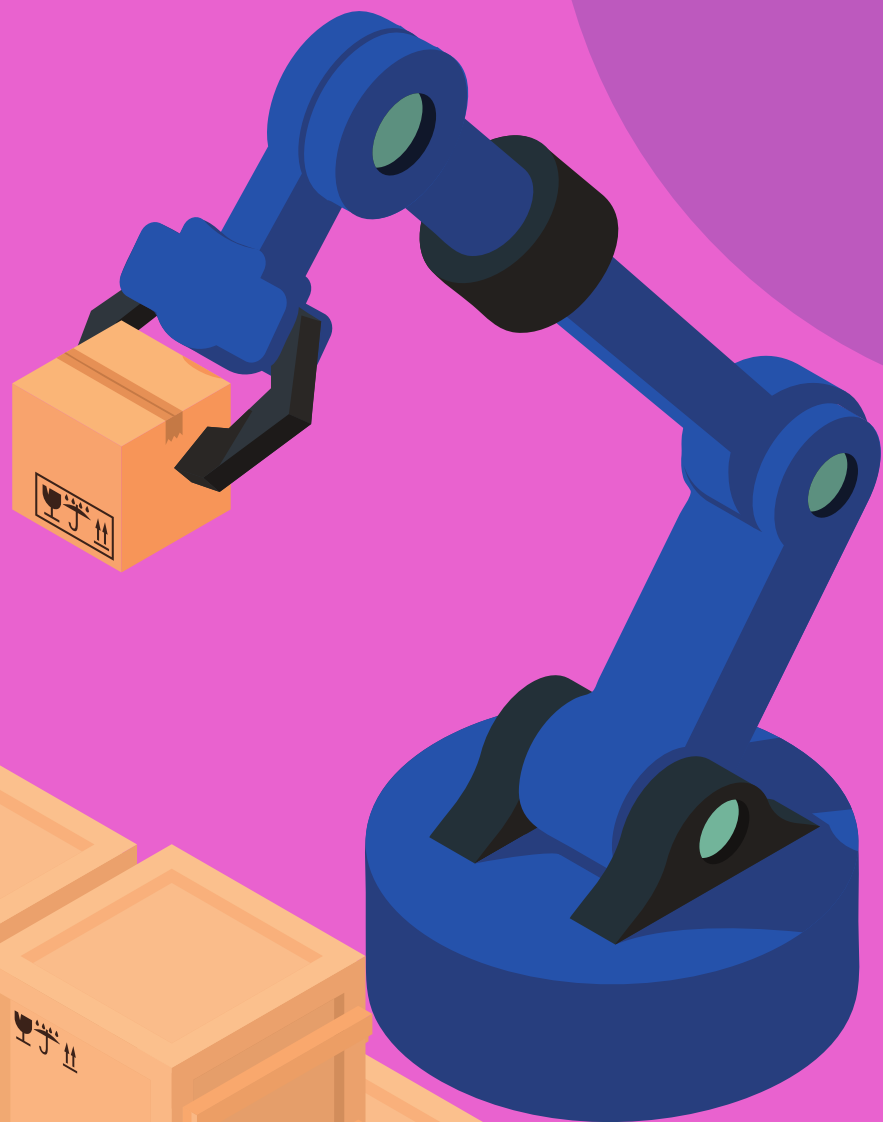
St. JOSEPH'S
INSTITUTE OF TECHNOLOGY
An Autonomous Institution, Affiliated to Anna University



DEPARTMENT OF MECHANICAL ENGINEERING

BEACON

July-25



Editorial Board
Dr.D.Elil Raja, Prof & Head-Mech
Dr.D.Arthur Jebastine Sunderraj, AP, Mech

MESSAGE

Dr. B. Babu Manoharan.,M.A., M.B.A., Ph.D., (Chairman)

"It gives me great pride to credit the staff and students of the Department of Mechanical Engineering, St. Joseph's Institute of Technology, for the excellent newsletter 'BEACON.' This publication highlights the active merits and milestones accomplished by the college. I sincerely hope these efforts help unleash their hidden potentials, paving the way for future success."

Mr. B. Shashi Sekar.,M.Sc., (Managing Director)

"I am very happy that our institution presents its activities marvelously through 'BEACON.' I am sure this newsletter will further enhance academic engagement. I congratulate the staff and students of the Department of Mechanical Engineering for their excellent effort. May 'BEACON' continue to be a great success."

Mrs. S. Jessie Priya.,M.Com., (Executive Director)

"BEACON,' true to its name, is bold in its content. It gives me immense delight to see the exceptional talent of the Mechanical Engineering students at St. Joseph's Institute of Technology. I congratulate the team for creating this newsletter—a true road to success."

Dr. S. Arivazhagan.,M.E., Ph.D., (Principal)

"I applaud everyone involved in creating 'BEACON' from the Department of Mechanical Engineering. The team's tenacity in crafting innovative and informative ideas into this newsletter is commendable. I believe this effort will bring them even greater achievements."

Dr. G. Sreekumar.,M.Sc., M.Tech., Ph.D (Dean & Academic Coordinator)

"The 'BEACON' newsletter stands as a shining example of excellence from the Department of Mechanical Engineering. It reflects the unwavering commitment and creativity of its team. I commend each contributor for making this publication informative and engaging—it is sure to earn widespread acclaim."

Dr. D. Elil Raja, M.E.,Ph.D., Head of the Department, Mechanical Engineering

"It is with immense pride that I commend the tireless efforts of our students and faculty in bringing 'BEACON' to life. This newsletter not only reflects the technical brilliance of our department but also the creativity and dedication of our team. May 'BEACON' continue to illuminate the achievements of our institution and inspire future generations of engineers. Together, we are shaping a legacy of excellence."

VISION OF THE INSTITUTION

- To be a centre of excellence for Education, Innovation and Research in Engineering, Technology and Management and to encourage Entrepreneurship with ethical and professional standards to benefit the society at large.

MISSION OF THE INSTITUTION

- To create a better learning environment to produce competent and innovative professionals with sound technical knowledge and management skills.
- To instill ethical and social values among the students to contribute to the global technological and socio-economic development.
- To inculcate qualities of leadership and entrepreneurship in students to improve their employability and achieve sustained placement through campus interviews.
- To provide opportunities and resources through consistent Industry-Institute Interaction for Research and Development in the emerging fields.

VISION OF THE DEPARTMENT

- To provide knowledge centered education and prepare students for meeting global mechanical engineering challenges thereby enabling them to contribute for the prosperity of the society.

MISSION OF THE DEPARTMENT

- To impart strong technical skills and fundamentals in Mechanical Engineering, through effective teaching and learning methodologies.
- To create an environment conducive for research and development by developing partnerships between academia and industry.
- To cultivate leadership qualities, ethical values, creativity and lifelong learning culture in order to prepare our graduates into a successful professionals.
- To foster knowledge on emerging technologies in interdisciplinary domains inorder to pursue a sustained professional career.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

- To provide a strong foundation in science, engineering and computational fundamentals for designing, formulating, solving, and analyzing real-time mechanical engineering problems.
- To inculcate the skills to develop core competency through research and development in order to compete the ever-changing endeavors in their professional career.
- To nurture leadership abilities, teamwork, and ethical values to fulfill the needs of the society and environment while demonstrating their professional abilities.
- To encourage multidisciplinary learning approach to foster advanced technologies for their successful professional career.

PROGRAM OUTCOMES (PO)

Engineering graduates will be able to:

- 1.Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3.Design/development of solutions: Design solution for complex engineering problems and design systems components or process that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4.Conduct investigations of complex problems: Use research- based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5.Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6.The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7.Environmental and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of, and need for sustainable development.
- 8.Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10.Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11.Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12.Life-Long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO 1: Ability to apply industrial standards to design, model and analyze machine elements and systems using modelling and analysis tools

PSO 2: Ability to apply knowledge in various process of manufacturing, thermal and industrial engineering to fabricate diverse engineering components in order to solve engineering problems.

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Industrial Visit: Bridging Theory and Practice

IV-year Mechanical Engineering students visited Neyveli Lignite Corporation on 17th July 2025, gaining hands-on exposure to sustainable mining practices, renewable energy innovations, and corporate governance. Highlights included demonstrations of water recycling, fly-ash reuse, and community engagement initiatives, aligning with the department's focus on environmental stewardship.



Industrial Visit to Adroit Automation

The department arranged an industrial visit to Adroit Automation India Pvt. Ltd, Hosur, on 25th July 2025. Students observed real-world operations, including machining of automobile components, HMC machines, CMM demonstrations, and production planning, bridging the gap between theory and practical industry practices.

These events collectively enriched students' technical knowledge, industry exposure, and humanitarian values, reflecting the department's commitment to holistic development.



Industrial Visit to Polyhose India Pvt. Ltd

The Department of Mechanical Engineering organized an industrial visit for second-year students on 30th July 2025 to Polyhose India Pvt. Ltd., Kelambakkam. The visit provided insights into advanced manufacturing processes, automation, and quality control in hose production, enhancing students' understanding of industrial practices and safety standards.



Guest Lecture on Additive Manufacturing

The department organized an enlightening guest lecture on "Exploring the Capabilities of Additive Manufacturing" on 22nd July 2025, featuring Mr. Arul Regan, Senior Manager at 3D Monotech Systems Ltd. Students gained valuable insights into the latest advancements in 3D printing and its industrial applications, enhancing their understanding of this transformative technology.



Guest Lecture on CFD & AI/ML Applications

On 23rd July 2025, Dr. S. Jayakumar, CFD Expert from Valeo India, delivered an insightful session on "CFD Process and Application in AI/ML." The lecture highlighted the integration of Computational Fluid Dynamics with artificial intelligence, showcasing its growing significance in modern engineering solutions.



NGO Visit – Serving the Community

Aligned with the motto "Give your hands to serve and your hearts to love," students visited Marias Home for the Aged on 24th July 2025. This heartwarming initiative allowed them to interact with and support the elderly, reinforcing the importance of empathy and social responsibility.



NGO Visit – (Community Service Initiative)

The Department of Mechanical Engineering facilitated an NGO visit for third-year students to Rehoboth Educational Trust and Annai Theresa Social Welfare Trust in Winco Nagar, Chennai on 31st July 2025. The event, themed “Give your hands to serve and your hearts to love,” emphasized the importance of social responsibility and community engagement.



Academic Toppers

Celebrating Academic Excellence

The department proudly recognized its top performers:

- 2023–2027 Batch (IV Sem): Vishal K, Mukesh V, Srinivasan M, and Logeshwaran R secured 8.3+ CGPA.
- 2022–2026 Batch (VI Sem): Arunkumar S (8.81 CGPA), Shrivatsav T (8.80 CGPA), Jawahar Raj B (8.71 CGPA), and Adithya V (8.63 CGPA) showcased consistent brilliance.

Students Topper Secured 8.3 CGPA and above (upto IV sem)

BATCH 2023-2027



8.47

VISHAL K
312423114044



8.37

SRINIVASAN M
312423114035



8.35

MUKESH V
312423114024



8.31

LOGESHWARAN R
312423114022

Students Secured 8.5 CGPA and Above(upto VI Sem)
Batch: 2022 -2026



Mr. S. ARUNKUMAR
312422114008
CGPA: 8.81



Mr. T. SHRIVATSAV
312422114024
CGPA: 8.80



Mr. B. JAWAHAR RAJ
312422114011
CGPA: 8.71



Mr. V. ADITHYA
312422114001
CGPA: 8.63

Alumni Talk on Inspiring Future Leaders

The Department of Mechanical Engineering, in association with The Institution of Engineers (Kanchi), hosted an enlightening seminar on "Conquering Competitive Exams" on 14th July 2025. The event featured Mr. S. Sandeep Kumar, Assistant Manager at Canara Bank and alumnus (2017–2021 batch), who shared invaluable insights on exam strategies and career growth. The session, held at the Library Conference Hall, was coordinated by Dr. D. Elil Raja (HoD) and Dr. D. Arthur Jebastine Sunderraj.



Skill Development Seminar for Tomorrow's Engineers

A seminar on "The Skills You Need for Tomorrow's Industry" was organized on 17th July 2025 at the CAD Lab. Mr. P. Pavithran, Managing Director of Petricore Technologies Pvt Ltd., addressed II and III-year students on emerging industry trends. The event, coordinated by Dr. Elil Raja and Dr. Arthur Jebastine, emphasized practical skill-building for future-ready engineers.



Alumni Talk on Career Strategies

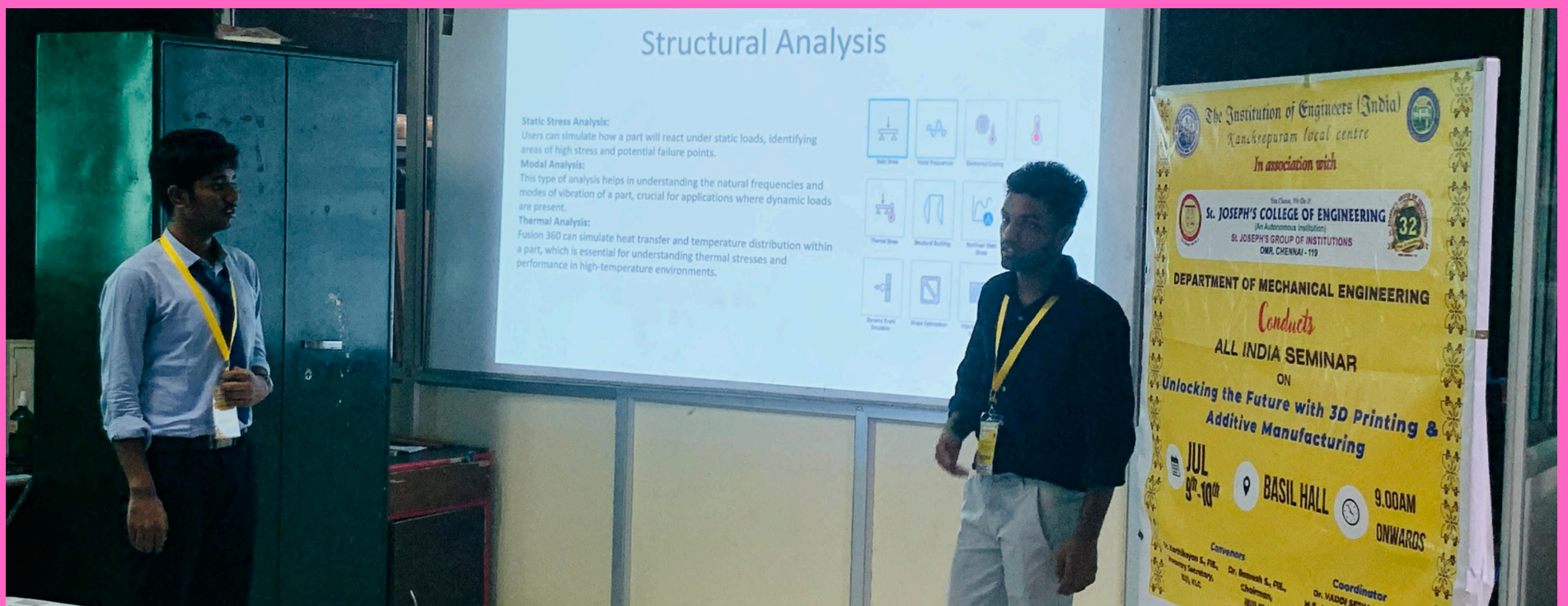
The Department of Mechanical Engineering hosted an enlightening session titled “Strategic Roadmap to Get Placed in Core Companies” on July 11, 2025. The talk featured Mr. D. Tharun Vaithya (Batch 2019–2023), a former Graduate Engineer Trainee at Vestas and current scholar at Jose State University, USA. His insights provided students with actionable guidance for securing roles in core industries.



Students Achievements

Seminar Presentation

Mr. P. Pragadeep IV year & Mr. Vigneshwaran II Year Mechanical students secured a third position in the All India Seminar on “Unlocking the Future with 3D Printing and Additive Manufacturing” (July 9–10, 2025), organized in collaboration with The Institution of Engineers (India). His performance was lauded for technical brilliance and contributions to the event.



Faculty Participation in AICTE QIP, CEEE Program & Industry Internships

The Department of Mechanical Engineering has actively promoted continuous professional development by encouraging faculty to participate in prestigious training programs and industry internships.

Here's a detailed account of recent accomplishments:

AICTE QIP Program:

- - Dr. D. Elil Raja (HOD & Prof) and Dr. S. Prathap Singh (Asst. Prof) successfully attended at IIT Palakkad.

CEEE Program Participation:

- - Dr. M. Chrispin Das (Assoc. Prof) at IIT Madras
- - Mr. A. Sathish Kumar (Asst. Prof) at IIT Bombay

Industry Internships Completed:

- - Dr. N. Thangapandian (Assoc. Prof) — Velan Valves, Coimbatore
- - Dr. J. Immanuel Durairaj (Asst. Prof) and Mr. K. Ramesh (Asst. Prof) — JK Fenner India Pvt. Ltd, Sriperumbudur
- - Dr. D. Arthur Jebastine Sundarraaj (Asst. Prof) and Mr. S. A. Muhammed Abraar (Asst. Prof) — Rambal Pvt. Ltd, Thirupur
- - Mr. R. Ranjith Kumar (Asst. Prof) — Harting MGF India Pvt. Ltd, Thirumazhisai
- - Mr. S. Jagadeesh (Asst. Prof) — JK Fenner India Pvt. Ltd, Sriperumbudur
- Dr. D. Murali (Asst. Prof) — Phanele Engineering, Ambattur



Engineering Excellence Program for School Students

On Monday, 30th June 2025, the Department of Mechanical Engineering organized an “Engineering Excellence” program for the enthusiastic students of Sreevatsa Viswanathan Vivekananda Vidyalaya Senior Secondary School.

The event saw an overwhelming participation of 118 students, reflecting a successful outreach initiative aimed at inspiring young minds towards the world of engineering.



**Sreevatsa Viswanathan Vivekananda Vidyalaya Senior
Secondary School**

The program included:

- Interactive sessions with faculty
- Hands-on demonstrations and technical displays
- Motivational talks by the department heads and faculty members

The visit helped the school students experience a vibrant academic atmosphere and gather insights into future opportunities in engineering education and careers.

Engineering Excellence Program for School Students

Department of Mechanical Engineering, recently welcomed students from Bharatha Vidyalaya Matriculation HR Sec School, Tiruporur, for an "Engineering Excellence" program. The event, organized by the Department of Mechanical Engineering, aimed to provide insights into the world of engineering. Held on Wednesday, July 9th, 2025, the program saw an enthusiastic participation of 35 students.



Industry-Institute Interaction with Nidec Industrial Automation

The Department of Mechanical Engineering conducted an Industry-Institute Interaction session featuring Mr. Prabhu Ganesan, Senior HR Manager at Nidec Industrial Automation. The discussion covered internships, placements, and innovation in motor technology, aligning with Nidec's vision of "Everything that spins and moves."



Staff Achievements



G. Velmurugan, J.S. Chohan, D. Elil Raja et al., Thermo-Mechanical and Flame-Retardant Performance of Epoxy/Hemp Composites Reinforced with Nano-SiO₂ and Al(OH)₃, Fibers and Polymers, 2025.



M. Chrispin Das, S. Prathap Singh, R. Malkiya Rasalin Prince, K. Gnanasekaran, S. Manikandan, A. Dhanush, D.S. Sujith Kumar, S. Yuva Praveen, Influence of Alkali Treatment on the Tensile Properties of the Hybrid Fiber Reinforced Polymer Matrix Composite, Journal of Polymer and Composites, Vol. 13, No. 4, pp. 28-34, 2025.



T. Kumaresan, S. Subhashini, M. Chrispin Das, P. Senthilkumar, K. Chandra Sekhar, P. Janagarathinam, S. Sumanth, R. Denis, Electrospun Antibacterial Polymer Composite Scaffolds Incorporating Silver Nanoparticles for Enhanced Wound Healing, Journal of Polymer and Composites, Vol. 13, No. 5, 2025.



M. Gerald Arul Selvan, A. Ananth Rajkumar, S. Prathap Singh, D. Elil Raja, T. Sonar, Mechanical Characterization of Novel Fragrant Screwpine Fiber-Reinforced Polyester Composite and Development of a Mathematical Model with the Aid of Machine Learning, July 2025, Article ID 7847118, 11 pages, 2025.

Staff Achievements

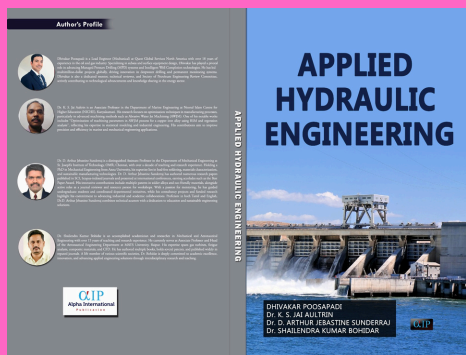


Dr. N. Thangapandian, Associate Professor, for his prestigious election as a Senior Member of the Indian National Academy of Engineering (INAE).



Dr. D. Arthur Jebastine Sundarraaj, Assistant Professor, has recently published book titled “Applied Hydraulic Engineering”.

Published by Alpha International Publications, this book is a comprehensive academic resource, addressing key principles, applications, and innovations in the field of hydraulic engineering. It covers essential topics relevant to both students and professionals working in fluid mechanics, water resource management, and sustainable hydraulic solutions.



Dr. Arthur Jebastine Sunderraj, Assistant Professor, Department of Mechanical Engineering student represented the institute at Sree Sakthi Engineering College’s virtual Faculty Development Program on “Shaping the Future of Materials: Innovations & Insights” (June 23–28, 2025).