

The Institution of Engineers (India)

TAMILNADU STATE CENTRE



BULLETIN



Dr. V. KARTHIKEYAN, FIE.
Chairman

Er.D.GOKUL,MIE
Honorary Secretary

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February 2025

From the Chairman's Desk.....



Dear Fellow Engineers,

I am happy to reconnect with all of you through this latest news bulletin.

I am delighted to share that the Institution of Engineers (India) Tamilnadu State Centre organised One Day Seminar on "Harnessing Solar Energy for Sustainable Marine Development: Aligning with SDG 14" in association with AMET University College and Regional Language Promotion Day on the theme "Telecommunication – Its Origins and Evolution" in association with SRM Valliammai Engineering College on 21st February 2025.

The Institution of Engineers (India) Tamilnadu State Centre organized a guest Lecture on "Applications of Operations Research in Transportation and Logistics Engineering" on 25th February 2025 through online.

The Institution of Engineers (India) Tamilnadu State Centre celebrating the World Engineering Day for

Sustainable Development on the theme "Unleashing the Power of Engineers to Advance the Sustainable Development Goals" on 8th March 2025 at IE(I) TNSC Auditorium, Chennai. The Institution of Engineers (India) Tamilnadu State Centre celebrating the World Water Day on the theme "Glacier Preservation" jointly with IE(I) Hosur Local Centre on 15th March 2025 at Hosur. I invite all corporate members to participate in the above celebrations.

All India Seminar on the theme "Design and development of public fast charging infrastructure for electric and hybrid Electric vehicles" in association with Anna University is to be organized by IE(I) Tamilnadu State Centre on 28 & 29 March 2025 at IE(I) TNSC Auditorium, Chennai. I invite all corporate members to participate in the seminar and make the event a grand success.

I request all current corporate members to complete the "Know Your Membership (KYM)" form to assist us in updating and maintaining an accurate database. Your cooperation in this matter is vital for ensuring seamless communication and access to member benefits. Once completed, please submit the form to the IE(I) Tamil Nadu State Centre office in person, or email it to ieitamilnadu@gmail.com or tncs@ieindia.org.

Regards

Dr.V.Karthikeyan,FIE.,
Chairman, IE(I) TNSC
Chairman, ENDB IE(I)



Dear Corporate Members,

I extend my warmest greetings to all my esteemed members !

I am happy to inform you that with all your support , we have successfully conducted

All India Seminars	6
One Day Seminars	3
Online Lectures	7
Offline Meetings	6
Statutory Days	6
National Convention	2

In continuation with this, we need to conduct more technical events this year also.

I invite all our corporate members, institutional members, students chapters in various Engineering and Polytechnic Colleges to participate in all the IEI event and promote for membership growth.

All the meetings are available in our IEI TNSC You Tube Channel. I request all our corporate members to visit our IEI TNSC You Tube Channel and SUBSCRIBE for further notification of technical events and kindly visit our website (ieitnsc.org) for more information.

I appeal all corporate members to introduce IEI to all non members of IEI to avail the membership and get the benefits of our centenary year institution.

Thank you all for your continuous support and participation. I look forward to our continued journey of growth and success together.

Er. D. Gokul, MIE
Honorary Secretary
IE(I) TNSC



The Institution of Engineers (India)

IEI YOUNG ENGINEERS AWARD 2025

Notification

The Institution of Engineers (India) is a multi-disciplinary professional body of engineers with 15 engineering disciplines and over 9,00,000 members in India and abroad. The Institution was established in 1920 and was incorporated by Royal Charter in 1935. It has been in the forefront of engineering profession addressing the socio engineering problems for progress of the country. IEI functions among professional engineers, academicians, research workers to update their professional knowledge through continuous professional development. With its large international linkages and a network of 124 Centres in India and Six Overseas Chapters, the Institution has built up wide reach and large infrastructure to meet its objectives of promoting engineering in all aspects.

With a view to promote the pursuit of excellence in the field of engineering, IEI has instituted 'IEI Young Engineers Award'. The Award consists of a Plaque and a Certificate. The purpose of the Award is to recognize outstanding achievements/contributions made by young engineers in engineering research, excellence in engineering technology development, technology transfer, etc. Any engineer citizen of India not older than **35 years** of age/ women engineer citizen not older than **37 years** of age as on **March 31, 2025** is eligible for the Award, provided that he/she is a Corporate Member of IEI or has applied for IEI Membership. The IEI Young Engineers Award is presented to awardees for all the 15 Engineering Divisions of the IEI during the respective National Conventions. The awardees attending the National Convention will be provided with free accommodation & their traveling expenses (AC-3 Tier train fare by shortest route) will be reimbursed on production of original documents.

The Application Proforma may be downloaded from IEI website <https://www.ieindia.org/webui/IEI-Activities.aspx#young-engineering-awards> or scan the QR code below. Soft copy of the filled-in application proforma should be forwarded to award@ieindia.org by **April 15, 2025**. Further, six copies of the duly filled application form, along with all supporting documents, endorsed by appropriate authority should be sent to the below mentioned address so as to reach us latest by **April 25, 2025**.

Deputy Director (Technical)
The Institution of Engineers (India)
8 Gokhale Road, Kolkata 700020

The envelope containing the application should be superscribed at the top as 'IEI Young Engineers Award 2025' and name of the engineering division under which the applicant desires to be considered for the Award.



REGIONAL LANGUAGES PROMOTION DAY 2025 (21-02-2025)

The Institution of Engineers (India) TamilNadu State Centre in collaboration with SRM Valliammai Engineering College and the Parivendhar Student Tamil Club organized the **Regional Languages Promotion Day 2025** on the title "**Telecommunication – Its Origins and Evolution**" on **21st February 2025 at 10.00 am at SRM Valliammai Engineering College, Chennai.**

The event commenced with Ms.Janani, a second-year student from the Electronics and Communication Engineering department, explaining the significance of Regional Languages Promotion Day and emphasizing the importance of one's mother tongue. Following this, students melodiously rendered the Tamil Thaaai Vaazhthu (Tamil Invocation Song), officially marking the beginning of the event.



*Honoring the Chief Guest by Dr.G.Madhusudhanan,
Committee Member, IE(I) TNSC*

Dr.M. Vijayalakshmi, Assistant Professor, Department of Tamil, SRM Valliammai Engineering College delivered the welcome address. The chief guest of the event, **Dr.Komala James**, Head of the Department, Electronics and Communication Engineering, was honoured with a shawl of appreciation by Dr.G.Madhusudhanan, Committee Member, IE(I) TNSC. Additionally, Dr.D. Elango, Committee Member, IE(I) TNSC and Head of the Department, Civil Engineering, SRM Valliammai Engineering College presented her with a bouquet as a token of respect.



*Honoring the Chief Guest by Dr.D. Elango, Committee Member,
IE(I) TNSC*

The highlight of the celebration was the special address delivered by the chief guest on the topic, "**Telecommunication – Its Origins and Evolution.**" She provided insightful details on the progress of the telecommunication sector, tracing its journey from the Sangam era to the modern age, and discussed future advancements in the field.



Special Address by the Chief Guest

The event concluded with a vote of thanks delivered by Mrs. S. Senbagavadivu, Assistant Professor, Information Technology Department, SRM Valliammai Engineering College. This celebration proved to be an enlightening experience for students and participants, reinforcing the significance of Tamil as a mother tongue and highlighting its cultural and linguistic evolution.

Mrs. S. Senbagavadivu extended heartfelt gratitude to the coordinators of the Parivendhar Student Tamil Club – Dr. M. Vijayalakshmi, Mrs. S. Senbagavadivu, Mrs. S. Shanthi, and the student coordinators, for their seamless organization of the event.

Webinar on APPLICATIONS OF OPERATIONS RESEARCH IN TRANSPORTATION AND LOGISTICS ENGINEERING (25-02-2025)

The Tamilnadu State Centre of the Institution of Engineers (India) organised the guest lecture on the topic **“Applications of Operations Research in Transportation and Logistics Engineering”** on **25th February 2025** at **6.00 pm** through online Zoom Meeting.

At the outset., **Dr V Karthikeyan**, Chairman, IE(I) Tamilnadu State Centre welcomed the gathering. Er **Vijoe Maria Michael Raj**, **Manager**, Operations Research – FedEx Freight, Memphis was the guest speaker.

He presented his lecture with the Powerpoint presentation. He explained that operations research is a sub-discipline of industrial engineering, focusing on network optimization, container loading, asset scheduling, and vehicle routing optimization. He also highlighted the applications of operations research in logistics, transportation, healthcare, finance, and manufacturing, emphasizing its ability to automate decision-making and optimize processes. He underscored the importance of operations research in various sectors, including FedEx and commercial airlines, and noted its potential to save time, money, and power when applied to complex problem-solving.

Vijoe discussed the applications of Optimization in the transportation and logistics industry, using the trucking industry as a primary example due to his work in the freight division of FedEx. He explained how Operations Research can help efficiently move shipments from origin to destination, utilizing the least costly mode of transportation (road, rail, or air) to meet customer expectations and save money. He also highlighted the importance of optimizing vehicle routes to minimize mileage and reduce carbon emissions. Furthermore, he touched upon applications common across industries such as cargo optimization and fleet routing, emphasizing the need for efficient loading of containers and routing ships to impact the bottom line.

flight scheduling is a complex problem that requires optimization due to potential delays and their cascading impact across the entire airline network. Operations research is used to generate the best schedule to return the airline network to its baseline state. He also highlighted the use of operations research in revenue management to maximize ticket prices while considering customer willingness to pay and the risk of losing customers. Lastly, he mentioned the application of operations research principles in assigning aircraft to gates to minimize overall distance covered by aircraft on the ground.

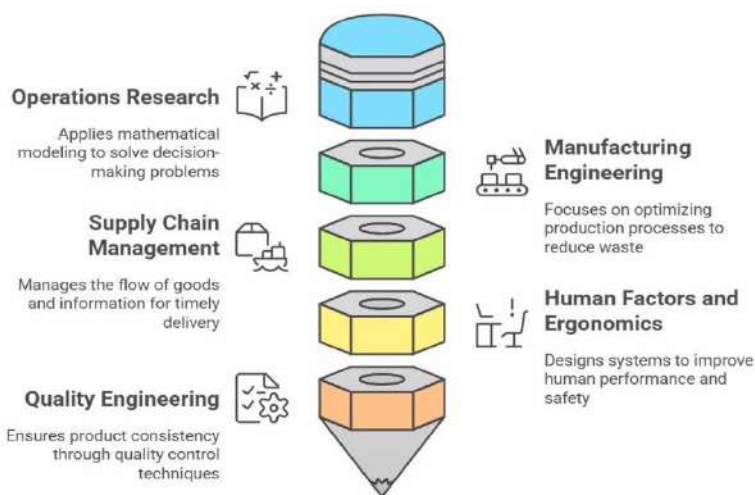
Vijoe discussed the use of the ORB application in various industries, focusing on logistics and transportation. He highlighted the importance of network optimization in moving shipments efficiently, balancing cost savings with time considerations. He explained that decisions are made to minimize costs, including truck assignment and driver pay, while also considering factors like carbon emissions and petroleum gas prices. He also emphasized the importance of hub location in optimizing consolidation points. The discussion concluded with mentioning the mathematical formulation used to solve these problems.

Vijoe discussed the challenges faced by various industries, including trucking, airlines, and shipping, in optimizing space utilization and scheduling. He highlighted the complexity of the container loading problem, which involves arranging items in a container to maximize space and minimize wasted space. He explained that this problem is a factorial problem, requiring the examination of millions of combinations to find an optimal solution. He also mentioned the importance of evenly distributing the volume in a container to prevent the trailer from becoming too heavily weighted. Lastly, he touched on the worker crew scheduling problem, which involves assigning workers or equipment to tasks in various settings, such as a shop floor, airport, warehouse, or port.

Vijoe discussed the importance of worker scheduling in manufacturing industries, particularly in the United States where labor costs are high. He explained that operations research professionals use mathematical models to optimize worker assignments, considering factors such as skillsets, shift durations, and full-time vs part-time workers. He also highlighted the need for a strong background in operations research, often

suggested that companies could outsource their operations research needs to consultants if they couldn't afford to have their own team. He discussed the use of AI and machine learning in various fields, including healthcare and operations research. He emphasized that AI is not always the answer to every problem and highlighted the importance of understanding the basic principles in solving

Industrial Engineering Sub-Disciplines



requiring a Master's or Ph.D. degree, and the use of programming languages like Java or Python to solve these equations. He emphasized the high return on investment and short time to value for companies that adopt operations research techniques. He also

problems. He also mentioned that operations research would be a better solution than AI for some optimization problems.

Er D Gokul , MIE, Honorary Secretary of IE(I) Tamilnadu State Centre proposed the vote of thanks.



World Water Day 2025

Theme: Glacier Preservation

March 22, 2025

World Water Day is observed on 22nd March every year by The United Nations. The theme for the year 2025 is "**Glacier Preservation**", emphasizing the critical role glaciers play in sustaining the global water supply. Glaciers are melting rapidly, disrupting water flows and affecting millions through floods, droughts, and rising sea levels. Mitigating climate change and adapting to the loss of glaciers is essential to protect communities and ecosystems.

The theme emphasizes the need for global action to manage melt-water sustainably and reduce emissions, securing vital water resources for the future.

The theme highlights the essential role glaciers play in providing freshwater to millions of people. Glaciers store roughly 70% of the world's fresh water, serving as critical sources for drinking water, agriculture, and hydropower. However, the rapid retreat of glaciers, driven by climate change, threatens these vital resources. The theme urges global action to protect glaciers, which are not only crucial for water supply but also for sustaining the ecosystems dependent on glacial melt-water.

Efforts to preserve glaciers require a multifaceted approach, including reducing greenhouse gas emissions, promoting sustainable energy, and implementing policies aimed at conserving these natural resources. Technological advancements, such as satellite monitoring and climate models, are essential in assessing glacier health and predicting future changes. Conservation initiatives in glacier-rich regions are also vital in mitigating human impact and ensuring the continued flow of glacial water. By prioritizing glacier preservation, we secure vital freshwater, protect biodiversity, and enhance the resilience of vulnerable communities against climate change.

The Institution of Engineers (India) earnestly urges all the IEI State & Local Centres, as well as its affiliated entities, to observe the World Water Day-2025, actively participating in the associated activities.

All India Seminar on **“THE SMART MATERIALS AND AI: THE WINNING COMBINATION OF THE FUTURE”** (30,31-01-2025) by Hosur Local Centre

The All India seminar was conducted on **“The Smart Materials and AI: The winning combination of the future”**. under IEI Hosur Local Center on 30-01-2025. The seminar started at 10.00 at West Block Auditorium, PMC Tech. Smt .P.Mallar, Secretary , PMC TECH Institutions inaugurated the seminar by lightening the lamp. Dr.K.Ramlingam , Chairman ,IEI HLC, welcomed the gathering.



Releasing of Souvenir

Shri P.Kumar, Chairman, PMC TECH Institutions presented the keynote address in the seminar. Professor N.Sudhakaran, Director, PMC TECH Institutions felicitated the seminar. Following him, Dr.A.Senthil Kumar, Principal, PMC TECH Engineering college, spoke about AI tools in his Keynote address.

Er.KN.Sivaraju presented the thematic address to the seminar. The seminar was conducted for 2 days .Dr. V Karthikeyan, IEI Chairman, Tamilnadu State Centre, was invited as a Guest of Honor. He addressed on the topic " The essential role of AI in education.

Dr V.Balasubramanian, Director, Centre for materials, Annamalai University, Chithambaram, was invited as Chief Guest of the seminar, and he delivered his address on the future impact of AI and smart materials for societal development. During the technical sessions, Dr.P.Uthyakumar ,KLN College of

Technology, Madurai , spoke about in-depth analysis of smart materials, key applications, and atomic structures . Following him, P.Sivasubramaniyan,Former GM,ISRO, delivered his speech on the role of smart materials in the space industry, ISROs milestones, and future projects .While speaking Dr.R.Sridhar,RVCE,Bangalore, he emphasized the importance of smart materials in automotive mechatronics and AI's role in Mercedes Benz control systems .



Dignitaries on the Dias

Dr.R.Karthikayan ,PMC TECH, Organising Secretary, IEI,HLC, proposed a vote of thanks in the seminar . Professor R.Ramachandran, PMC TECH Polytechnic College made the arrangements for valedictory function.

Dr.R.Saravanan , Director, Academics, Dr. P. Rajaaakaran Hod , Mechanical Engineering, participated in the program. Moreover Professors and students of Engineering Colleges from Tamilnadu ,Karnataka Andhra Pradesh , Telungana and faculty members and students from various departments of PMC TECH polytechnic and Engineering college participated in the seminar and learned the importance of Smart Materials & AI Technology and its combination benefits.



The Institution of Engineers (India)
A Century of Service to the Nation
Celebrates

World Engineering Day for Sustainable Development



March 4, 2025
Theme:

Unleashing the Power of Engineers to Advance the Sustainable Development Goals

World Engineering Day for Sustainable Development is celebrated on 4th March every year. It highlights the pivotal role of engineering in driving sustainable progress worldwide. The theme for 2025, "Unleashing the Power of Engineers to Advance the Sustainable development Goals," emphasizes the crucial contributions engineers make in addressing global challenges such as climate change, poverty, and inequality. Engineers are at the forefront of developing innovative solutions that create positive environmental, economic, and social impacts. By fostering interdisciplinary collaboration, the engineering community plays an essential role in accelerating the achievement of the United Nations' Sustainable Development Goals (SDGs).

The application of engineering solutions is instrumental in tackling majority of the world's pressing problems. From renewable energy technologies to water purification systems and smart infrastructure, engineers design and implement technologies that make our world more sustainable. By creating systems that minimize resource consumption, enhance efficiency, and reduce environmental harm, engineering directly supports sustainable development. Engineers contribute in advancing green technologies, which help reduce carbon emissions and mitigate the effects of global warming to address the SDGs, ensuring a more equitable and sustainable future for all.

In addition to technological advancements, engineers also influence the socio-economic dimension of sustainability. On World Engineering Day 2025, it is essential to recognize the immense value engineers bring in advancing the SDGs and fostering a sustainable world. Their collective efforts can unlock a future where both people and the planet thrive in harmony.

The Institution of Engineers (India) earnestly urges all IEI State & Local Centres, as well as its affiliated entities, to celebrate the World Engineering Day for Sustainable Development-2025, actively participating in the associated activities to foster a collective commitment towards a sustainable future.



The Institution of Engineers (India)
Tamilnadu State Centre



Cordially invites you to attend the



WORLD ENGINEERING DAY
FOR SUSTAINABLE DEVELOPMENT

Theme:

"Unleashing the power of engineers to advance the Sustainable Development Goals"

On Saturday, March 8, 2025 from 3.15 pm

Venue : **THE INSTITUTION OF ENGINEERS (INDIA)**
Tamilnadu State Centre
No. 19, Swami Sivananda Salai, Chepauk, Chennai - 600005

Chief Guest



Dr. PALANIVEL THIAGARAJAN
Hon'ble Minister for Information Technology and Digital Services,
Government of Tamil Nadu.

Dr V KARTHIKEYAN, FIE
Chairman, IE(I) TNSC
Chairman, IE(I) ENDB

Er D GOKUL, MIE
Honorary Secretary
IE(I) TNSC

Forthcoming Technical Activities

Date	Title	Venue
15-03-2025	Celebration of World Water Day	IEI Building, Hosur
28,29-03-2025	All India Seminar on " "Design and development of public fast charging infrastructure for electric and hybrid Electric vehicles"	IEI, TNSC Auditorium

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Bulletin

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