



BULLETIN



Prof.Dr.D.ELANGO,FIE
Chairman

Dr.J.BALAMURUGAN,FIE
Honorary Secretary

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From the Chairman's Desk.....



Dear Fellow Engineers,

My heartfelt greetings to all my esteemed members .

The Institution of Engineers (India), Tamil Nadu State Centre successfully organized an insightful guest lecture on "Beyond Capacity Addition: Grid-Forming Inverters, Energy Storage and the Next Phase of Renewable Energy Integration in India" on 19th June 2026 through the Zoom online platform. The lecture was delivered by Er. C. Nallasivan, M.E., M.I.E., (Ph.D.), Assistant Executive Engineer, TNPDC and Research Scholar, Anna University, who shared valuable insights into the evolving landscape of renewable energy integration and the critical role of grid-forming inverters and energy storage technologies in India's energy transition.

On 20th June 2026, the IE(I) TNSC organized the Eco Stalls & Innovations Exhibition as part of the World Environment Day Celebration at the IE(I) TNSC Auditorium, Chennai. Engineering institutions, startups, innovators, industries, NGOs, researchers, farmers, and sustainable product manufacturers participated in the exhibition by showcasing their

eco-friendly products, innovative technologies, and sustainable solutions. The inaugural function was graced by Dr. N. Parasuraman, Principal Scientist, M. S. Swaminathan Research Foundation, as the Chief Guest, and Dr. J. Daniel Chellappa, Eminent Nuclear Scientist, Chennai, as the Guest of Honour. The event provided an excellent platform for promoting environmental awareness, innovation, and sustainable engineering practices.

The Institution of Engineers (India), Tamil Nadu State Centre also organized an enlightening guest lecture on "Roles of Cement in Concrete" on 24th June 2026 at 6.00 p.m. through the Zoom online platform. The lecture was delivered by Er. M. Murugu Elan Thendral, Regional Technical Service Head – Tamil Nadu, Adani Cements, who shared his extensive industry experience and offered valuable insights into the vital role of cement in enhancing the performance, strength, durability, and service life of concrete structures.

I would also like to request all Corporate Members to complete the Know Your Membership (KYM) form to enable us to maintain an accurate and updated membership database. Your cooperation is essential for ensuring seamless communication and the effective delivery of member services and benefits. The completed form may be submitted in person at the IE(I) Tamil Nadu State Centre office or sent by email to ieitamilnadu@gmail.com or tnc@ieindia.org.

Let us continue to work together to strengthen our professional community, uphold the values of engineering excellence, and contribute meaningfully to the progress and development of our nation.

With warm regards,

Prof.Dr.D.ELANGO, FIE.,
Chairman

From the Hon. Secretary's Desk.....



Dear Esteemed Members,

Greetings from the Institution of Engineers (India), Tamil Nadu State Centre.

Engineering is evolving rapidly through Artificial Intelligence, Digital Transformation, Industry 5.0, Sustainability, Smart Infrastructure, and Emerging Technologies. As the premier professional body for engineers, it is our responsibility to ensure that every engineering discipline receives equal recognition while fostering interdisciplinary collaboration and lifelong learning.

With this vision, we are delighted to introduce the "Engineering Excellence Series"—a unique monthly engagement initiative that celebrates each of the 15 Engineering disciplines through innovative, technology-inspired weekly themes.

Each themed day will feature expert lectures, technical talks, panel discussions, industry interactions, innovation showcases, student engagement activities, and knowledge sharing sessions aligned with the latest technological trends.

Our proposed signature themes include:

- ElectrifyX 1st Monday – Smart Power & Electrical Engineering
- MechaNext 1st Tuesday – AI-Driven Mechanical Engineering
- BuildSmart 1st Wednesday – Intelligent Civil Engineering
- CodeFusion 1st Thursday – Computer Engineering & Digital Innovation
- ConnectX 2nd Monday – 5G, IoT & Electronics Engineering

- ChemNova 2nd Tuesday – Green Chemical Engineering
- MetalMorph 2nd Wednesday – Smart Materials & Metallurgy
- MobilityX 2nd Thursday – Electric & Autonomous Mobility
- AeroVision 3rd Monday – Aerospace & Advanced Aviation
- BlueTech 3rd Tuesday – Marine Engineering & Ocean Innovation
- MineSmart 3rd Wednesday – Sustainable Mining Technologies
- FactoryNext 3rd Thursday – Smart Manufacturing & Industry 5.0
- AgriTech 4th Monday – Precision Agricultural Engineering
- GeoFuture 4th Tuesday – Resilient Geotechnical Engineering
- DesignSphere 4th Wednesday – Architecture & Smart Built Environment
- InnovateX 4th Thursday – AI, Robotics, Renewable Energy, Start-ups & Multidisciplinary Engineering

This initiative is envisioned as a vibrant platform that brings together academia, industry, researchers, professionals, young engineers, and students to exchange ideas, inspire innovation, and strengthen the engineering ecosystem.

Let us work together to make every week an opportunity to learn, innovate, collaborate, and lead.

Engineering the Future – One Discipline, One Day, Every Week.

Join our WhatsApp Channel for more information
<https://whatsapp.com/channel/0029VbC45KHJpe8iyqJ2Ap0C>

Visit our website : ieitnsc.org

Dr.J.Balamurugan,FIE.,
Honorary Secretary

Guest Lecture on Beyond Capacity Addition: Grid-Forming Inverters, Energy Storage and the Next Phase of Renewable Energy Integration in India

19th June 2026

The Institution of Engineers (India), Tamil Nadu State Centre organized an insightful guest lecture on **“Beyond Capacity Addition: Grid-Forming Inverters, Energy Storage and the Next Phase of Renewable Energy Integration in India”** on **19th June 2026 at 6.00 PM** through online Zoom platform.

The session commenced with a welcome address delivered by **Prof. Dr. D. Elango**, Chairman of IE(I) TNSC, who warmly welcomed the Guest Speakers and participants and he emphasized the importance of the session.

Dr.V.S.Sriraja Balaguru, Joint Secretary of IE(I) TNSC introduced the Guest Speaker **Er. C. Nallasivan**, M.E., M.I.E., (Ph.D.), Assistant Executive Engineer, TNPDC & Research Scholar, Anna University.

Er. C. Nallasivan shared that India's energy transition is entering a new phase. While the country has achieved remarkable success in renewable energy deployment, the next challenge is no longer adding solar and wind capacity alone, but maintaining grid stability and reliability in an increasingly inverter-dominated power system.



As of 31 May 2026, India's installed renewable energy capacity had reached approximately 286 GW, comprising about 157 GW of solar power, 56.8 GW of wind power, 15.3 GW of bioenergy and 5.2 GW of small hydro power, while total non-fossil fuel capacity approached 292 GW. During FY 2025-26, India added a record 50.9 GW of renewable energy capacity, reinforcing its position among the world's leading renewable energy markets and supporting its target of 500 GW non-fossil fuel capacity by 2030.

Tamil Nadu continues to be one of India's leading renewable energy states, with installed renewable energy capacity exceeding 28 GW, including nearly 12 GW of wind power and about 14 GW of solar power. The state has also recorded all-time-high electricity demand exceeding 21,300 MW and daily energy consumption above 471 MU, underscoring the growing need for grid flexibility and stability measures.

Traditionally, power systems relied on synchronous generators to provide inertia, voltage support and frequency stability. However, inverter-based renewable resources do not inherently provide these services. As renewable generation increases and conventional thermal plants back down, system inertia and fault levels reduce, creating new operational challenges for grid operators.

This has led to growing interest in Grid-Forming Inverters (GFMs), a new generation of power electronic converters capable of establishing and regulating grid voltage and frequency, similar to conventional synchronous machines. Unlike traditional Grid-Following Inverters, GFMs can provide synthetic inertia, fast frequency response, voltage regulation, black-start capability and improved performance under weak-grid conditions. As renewable penetration rises, GFMs are expected to become an important source of system strength and resilience.

Battery Energy Storage Systems (BESS) are emerging as the preferred platform for deploying GFM capability due to their rapid response, bidirectional power flow and ability to provide grid support independent of weather conditions. Beyond energy shifting, BESS can deliver ancillary services such as frequency regulation, reserve support and voltage control.

The future challenge for system operators is not merely understanding GFM technology, but determining where it is required, when it is needed and how much GFM capability is sufficient under varying operating conditions. Looking ahead, grid-forming capability may evolve into a dedicated ancillary service, supported by real-time monitoring, forecasting and adequacy assessment.

The transition to a renewable-powered grid will therefore require more than capacity addition. Grid-Forming Inverters, Energy Storage Systems and Firm and Dispatchable Renewable Energy (FDRE) solutions are emerging as key enablers of a secure, flexible and resilient power system. The success of India's clean energy future will depend not only on how much renewable capacity is installed, but also on how effectively system strength, stability and reliability are maintained in real time.

The event concluded with a vote of thanks proposed by **Dr. J. Balamurugan**, Honorary Secretary of IE(I) TNSC. He conveyed his heartfelt appreciation to the distinguished speakers for their insightful presentations and thanked the organizing team for their dedicated efforts in successfully conducting the program.

The recorded session is available on the IE(I) TNSC YouTube Channel:
<https://www.youtube.com/live/UkD7MgoxhFg?si=aKLn3sGwP1frPfy0>

World Environment Day Eco Stall & Innovations Exhibition 20th June 2026

The Institution of Engineers (India), Tamil Nadu State Centre, organized **Eco Stall & Innovations Exhibition** on the occasion of **World Environment Day Celebration** on **20th June 2026** at the IE(I) Tamil Nadu State Centre Auditorium, Chepauk, Chennai.

As part of the celebration, IE(I) Tamil Nadu State Centre invited engineering institutions, startups, innovators, industries, NGOs, researchers, farmers, and sustainable product manufacturers to showcase their eco-friendly products, technologies, and innovative solutions through an Eco Stalls & Innovations Exhibition.



The programme commenced with Tamil Thai Vazhthu, followed by the lighting of the lamp. **Prof. Dr. D. Elango**, Chairman, IE(I) Tamil Nadu State Centre, delivered the welcome address and warmly

welcomed the distinguished guests, speakers, exhibitors, and participants. **Mrs. Mallika Karthick**, Engineers & Consultants and Eco-Conscious Researcher, introduced the theme and objectives of the programme, emphasizing the importance of integrating environmental sustainability into engineering practices. A video presentation on environmental initiatives was screened, followed by the felicitation of the dignitaries.



The inaugural function was graced by **Dr. N. Parasuraman**, Principal Scientist, M.S. Swaminathan Research Foundation, as the Chief Guest, and **Dr. J. Daniel Chellappa**, Eminent Nuclear Scientist, Chennai, as the Guest of Honour.

Er. P. G. Kamalakannan, CEO, Konstrakt Infratech, introduced the Guest of Honour, Dr. J. Daniel

Chellappa. He highlighted the importance of responsible engineering solutions and sustainable infrastructure.

Mrs. Mallika Karthick introduced the Chief Guest, Dr. N. Parasuraman . He delivered an insightful address on biodiversity conservation, climate-resilient agriculture, food and nutritional security, sustainable farming practices, youth participation, water management, biofortification, and community-driven initiatives aligned with the UN Sustainable Development Goals.

Following the inaugural session, a technical sessions were conducted by eminent experts.

Mr. Gowrishankar C., Founder & Chief Worker, SESBL Foundation, presented an overview of NITI AAYOG and its role in sustainable national development.

Dr. Kurian Joseph, Adviser, AquaMAP Centre for Water Management and Policy, IIT Madras, delivered a lecture on "Learning Sustainability from Nature," highlighting nature-based solutions for environmental challenges. **Er. N. S. Anuradha**, Superintending Engineer, TNEB (Retd.), delivered a motivational talk encouraging participants to adopt positive attitudes, lifelong learning, and ethical leadership. **Mr. Palaneeswar Rajarathinam**, Agricultural Systems Strategist and Agroecologist, presented a session on "Soil to Plate Engineering Arogyam," focusing on sustainable agriculture and food systems.

The afternoon sessions featured **Mr. Divakaran K.**, Distinguished Professional in Marketing, Education and Public Relations, who delivered a session on Energy Security and Compressed Bio Gas (CBG), highlighting renewable energy opportunities. **Dr. K. S. Kamaludeen**, Managing Director, Blue Bharath Exim Pvt. Ltd., addressed the participants on "How to Become an International Entrepreneur," inspiring them to explore global entrepreneurial opportunities through innovation.

Mr. Mark, Tarini Insurance Brokers Pvt. Ltd., conducted an interactive session with the participants.



The speakers were honoured with mementos in recognition of their valuable contributions, and certificates were presented to all the stall entrepreneurs for their enthusiastic participation and support.

During the programme the "**One Rupee towards One Earth**" initiative was launched, encouraging participants to contribute towards environmental conservation.

The programme concluded with the Vote of Thanks delivered by **Dr. J. Balamurugan**, Honorary Secretary, IE(I) Tamil Nadu State Centre, who expressed gratitude to the Chief Guest, Guest of Honour, speakers, exhibitors, sponsors, volunteers, and participants for their contributions to the successful conduct of the event. The celebration concluded with the National Anthem.



The World Environment Day Celebration successfully promoted awareness on sustainable engineering, biodiversity conservation, renewable energy, climate action, environmental stewardship, entrepreneurship, and responsible resource

management. The programme inspired participants to adopt sustainable practices and contribute

towards building a greener and more sustainable future through engineering excellence.

**Guest Lecture on
"Roles of Cement in Concrete"
24th June 2026**

The Institution of Engineers (India) Tamil Nadu State Centre successfully organized an enlightening guest lecture on **"Roles of Cement in Concrete"** on **24th June 2026 at 6.00 PM** through online zoom platform. The programme witnessed active participation from practicing engineers, academicians, researchers, and students from various institutions and industries.

The session commenced with a welcome address by **Prof. Dr. D. Elango**, Chairman, IE(I) TNSC, who extended a warm welcome to the Guest Speaker and all the participants.

The Guest Speaker, **Er. M. Murugu Elan Thendral**, Regional Technical Service Head – Tamil Nadu, Adani Cements, was introduced by **Dr. M. Kaarthik**, Committee Member, Civil Engineering Division, IE(I) TNSC, who highlighted his professional expertise and experience in the field.

Er. M. Murugu Elan Thendral shared his extensive industrial experience and provided valuable insights into the significance of cement in determining the performance, strength, durability, and service life of concrete structures.



During the session, the speaker explained the fundamental roles of cement in concrete, including its contribution to workability, setting characteristics,

strength development, bonding properties, and durability. The influence of cement properties such as fineness, chemical composition, grade, and hydration characteristics on fresh and hardened concrete was discussed in detail. The participants gained a clear understanding of the importance of selecting suitable cement types for different construction applications.

The lecture also covered the various types of cement available in the market and their applications in residential, commercial, industrial, and infrastructure projects. Particular emphasis was given to the importance of proper cement selection in achieving durable, sustainable, and cost-effective concrete structures.

A noteworthy aspect of the lecture was the discussion on the introduction of specialized cement products designed to address practical construction challenges such as water seepage and permeability in concrete structures. The speaker highlighted that these advanced cement formulations are developed to reduce water penetration, improve waterproofing performance, and enhance the durability of structures exposed to moisture and aggressive environmental conditions. Such cements are highly beneficial for applications including basements, terraces, water-retaining structures, underground constructions, bathrooms, and marine environments where resistance to water ingress is essential.

The speaker further emphasized the importance of good construction practices, proper curing methods, and quality control measures to achieve the desired performance of concrete. Several practical examples and field experiences were shared, enabling participants to relate theoretical concepts to real-world construction scenarios.

An interactive question-and-answer session followed the lecture, during which participants actively engaged with the speaker and clarified various technical aspects related to cement technology and concrete performance.

The event concluded with a vote of thanks proposed by **Dr. J. Balamurugan**, Honorary Secretary of IE(I) TNSC. The guest lecture proved to be highly informative and beneficial, enriching the knowledge

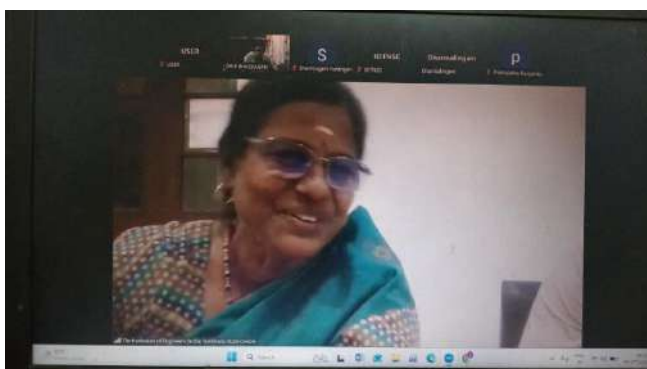
of participants on modern developments in cement technology and reinforcing the importance of selecting appropriate cement for achieving durable and sustainable concrete structures.

The recorded session is available on the IE(I) TNSC YouTube Channel:
https://www.youtube.com/live/s5WfL4CkuX8?si=fayzUrF_YzRkN52q

Guest Lecture on
“Engineering the Mind: Rewiring Thoughts, Empowering Lives”
4th July 2026

The Institution of Engineers (India), Tamil Nadu State Centre organized an enlightening guest lecture on **“Engineering the Mind: Rewiring Thoughts, Empowering Lives”** on **04th July 2026** at **6.00 p.m.** through the Zoom online platform. The programme commenced with a warm welcome address by **Er. S. Natarajan**, Committee Member, IE(I) Tamil Nadu State Centre, who welcomed the Guest Speaker and all the participants.

Dr. V. S. Sriraja Balaguru, Joint Secretary, IE(I) Tamil Nadu State Centre, introduced the Guest Speaker, **Er. N. S. Anuradha**, Superintending Engineer, TNEB (Retd.), highlighting her vast professional experience and expertise.



In her thought-provoking lecture, **Er. N. S. Anuradha** drew fascinating parallels between engineering principles and the functioning of the human mind. She explained that while the human body may be regarded as the hardware, the mind functions as its software, requiring regular understanding, upgrading, and debugging. She emphasized that the objective is not to change who we are, but to transform the way

we think, as the quality of our lives depends more on how we interpret events than on the events themselves.

The speaker elaborated on several key concepts, including viewing the mind as an engineering system where problems should be approached through investigation and root cause analysis. She explained that thoughts act like computer programs, producing outcomes based on the mental patterns we cultivate. Highlighting the concept of neuroplasticity, she emphasized the brain's lifelong ability to reorganize itself, enabling individuals to develop better habits and positive thinking.

She further discussed the importance of debugging the mind by replacing limiting beliefs with empowering perspectives, such as redefining mistakes as opportunities for learning rather than failures. Stressing the power of questions, she explained that the quality of our thinking depends on the quality of the questions we ask ourselves. Participants were also introduced to the concept of emotional engineering, encouraging them to respond thoughtfully rather than react impulsively by applying engineering approaches such as diagnosis, fault detection, and root-cause analysis to emotional situations. The lecture also highlighted the significance of small, consistent habits, comparing them to preventive maintenance in engineering, where continuous improvements lead to significant long-term results. Emphasizing the need for emotionally intelligent engineers, she reminded participants that while technology constantly evolves, human values remain timeless.

The speaker concluded by presenting five engineering principles for life:

1. Inspect before concluding—investigate instead of assuming.
2. Debug your thoughts—not every thought is a fact.
3. Upgrade continuously—Version 1.0 is never the final version.
4. Maintain the system—care for both physical and mental well-being.
5. Engineer yourself—build hope, compassion, resilience, and become the best version of yourself.

She concluded with an inspiring message that, just as great engineering structures are built one brick at a

time, great minds are developed one thought, one habit, and one choice at a time. The greatest engineering project, she noted, is the engineering of our own mind, ultimately leading to a better life.

The programme concluded with a heartfelt vote of thanks proposed by **Dr. J. Balamurugan**, Honorary Secretary, IE(I) Tamil Nadu State Centre.

The recorded session is available on the **IE(I) Tamil Nadu State Centre YouTube Channel**:
https://www.youtube.com/live/4gsRQC_rftk?si=zRnZzH9WARc8pTHb

MEMBERSHIP DRIVE

The Institution of Engineers (India) conducted a Membership Drive during the Graduation Day Ceremony of **SRM Valliammai Engineering College** held on **28th June 2026**, as resolved in the Council Meeting.

among engineering professionals and aspiring engineers.



In addition, **more than 350 graduates and parents** visited the membership stall, enquired about the various membership categories, and collected information for joining The Institution of Engineers (India).

The initiative received an overwhelming response from the graduating students and their parents. As a result, **57 AMIE memberships** and **16 MIE memberships (Parents)** were initiated. It was particularly encouraging to witness several **parent and son/daughter pairs enrolling together as members of IE(I)**, reflecting the growing trust and recognition of the Institution



This successful initiative, undertaken under the dynamic leadership and visionary guidance of our **President, Er. Manish Mahendra Kothari**, marks a significant step towards strengthening the Institution's membership base and engaging the next generation of engineers.

Our sincere appreciation goes to the **Membership Committee**, the **All India Student Committee (AISC)**, and all the volunteers whose dedicated efforts made this membership drive a grand success.

KNOW YOUR MEMBERSHIP

Dear Corporate Members,

We request all Corporate Members to kindly complete the **Know Your Membership (KYM)** form to enable us to update and maintain an accurate and comprehensive membership database.

Your cooperation in this matter is essential to ensure seamless communication and uninterrupted access to member services and benefits.

After duly completing the form, you are requested to submit it by email to datamemb@ieindia.org / ieitamilnadu@gmail.com or tnsc@ieindia.org

We look forward to your prompt support and cooperation.

The KYM form is available on the IE(I) website: www.ieindia.org.

FORTHCOMING EVENTS

Date	Title	Venue
31 st July 2026	One day workshop on Semiconductor-to-Edge Vision: A Workshop on Real-Time Image Processing Accelerators Using FPGA SoCs	SRM Valliammai Engineering College
3 rd Aug 2026	One Day Seminar on Next-Generation 6G Wireless Technologies for Sustainable and Intelligent Communication Systems	Pavendar Bharathidasan College of Engineering and Technology, Tiruchirapalli
5 th Aug 2026	One Day Seminar on Artificial Intelligence in Manufacturing	SRM Valliammai Engineering College

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Bulletin

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