

The Institution of Engineers (India)

TAMILNADU STATE CENTRE



BULLETIN



Dr. V. KARTHIKEYAN, FIE.
Chairman

Er.D.GOKUL,MIE
Honorary Secretary

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December 2024

From the Chairman's Desk.....



Dear Fellow Engineers,

It is my pleasure indeed to meet all of you through our News Bulletin.

I wish each and every member a happy and prosperous New Year 2025. I pray the almighty to shower his blessings on all of us for a healthy, prosperous and successful year ahead.

The Tamilnadu State Centre of the Institution of Engineers (India) was established on December 22, 1922, and marked its Centenary Year with grand celebrations on December 22, 2022. This year, the IE(I), TNSC is set to commemorate Founder's Day on 25th January 2025, in the IE(I) TNSC Auditorium, Chennai. I invite all the corporate members to participate in the celebration and make the event a grant success.

I am happy to state that I have attended the 39th Indian Engineering Congress at Kolkata during 21-23

December 2024. On behalf of IE(I), TNSC, we extend our heartfelt congratulations to Er V B Singh for assuming charges as the President of IE(I) during the event. Also, I am delighted to share that I have been appointed second time as the Chairman of Environmental Engineering Division Board (ENDB) for the session 2024-25.



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 tnsc@ieindia.org.

Regards

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

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



Dear Corporate Members,

I extend my warmest greetings to all my esteemed members!

The Institution of Engineers (India) is very proud that Dr V Narayanan, who has been appointed as the new Chairman of ISRO is the alumni of IE(I). On behalf of IE(I) Tamilnadu State Centre we extend our heartiest congratulations for his amazing future.

It is our aim to increase the membership strength of Tamilnadu State Centre to a considerable level and to establish students' chapter in the Engineering Colleges and Polytechnic Colleges in and around

Chennai. I seek the support of the Corporate Members to achieve the goals.

IEI Tamilnadu State Centre should increase the membership strength of our Institution. All our committee members and corporate members should aim for a massive membership drive in Engineering Colleges. Polytechnic Colleges and Industries requesting their faculties and engineers to enroll themselves as the members of IEI.

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.

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

IEI Alumnus Heads ISRO



Dr.V. Narayanan (born 1964) is an Indian Aerospace Engineer and rocket technologist. Government of India has appointed Er.V.Narayanan as the next Chairman of ISRO with effect from 14th January 2025. He is set to lead the organisation when there is the ongoing development of various programmes like Gaganyaan, Chandrayaan -IV and the launch of India's first space station.

Dr.V. Narayanan was born in Melakattuvilai Village near Nagarkoil in Kanyakumari District, Tamil Nadu to a farming family. After his diploma in Mechanical Engineering, he obtained Section-A & B Certificate from IEI. He joined BHEL Ranipet as Technical Apprentice after Diploma. Qualified with AMIE, joined ISRO. ISRO deputed him for his M.Tech.in Cryogenic Engineering and Ph.D.in Aero space Engineering at IIT Kharagpur and to NASA for training.

The Institution of Engineers , Tamil Nadu State Centre Celebrates the remarkable achievement of Fellow and Mechanical Engineering Alumnus , Dr.V. Narayanan.

Heartiest Congratulations and best wishes for this incredible journey ahead!

ONE DAY SEMINAR ON “THE ROLE OF TEXTILES IN FUTURE SPACE TRAVEL” (13-12-2024)

The Institution of Engineers (India), Tamilnadu State Centre, under the aegis of Textile Engineering Division Board, IE(I) in association with Thiagarajar Polytechnic College (SONA), Salem organized One Day Seminar on " **The Role of Textiles in Future Space Travel**" on 13th December 2024 at TPT Alumni Auditorium, Thiagarajar Polytechnic College, Salem.



Welcome Address by Dr.V.Karthikeyan, Chairman IE(I), TNSC

The event commenced with the auspicious Tamizhthaai Vazhthu at 9:30 AM followed by the lighting of the Kuthu Vilakku by dignitaries, students, and participants from various institutions.

Dr. V. Karthikeyan, Chairman, IE(I) Tamil Nadu State Center, Chairman, IE(I) ENDB and Principal of Thiagarajar Polytechnic College, delivered the welcome address. He welcomed the chief guest, committee members, and participants. Highlights of his address:

- Textiles are indispensable in overcoming the challenges of the space environment, from protecting human life to ensuring the success of complex missions.
- Textiles are vital in meeting the formidable demands of the space environment, serving as a cornerstone for protecting human life and guaranteeing the effectiveness of intricate missions.

- Their applications span a broad spectrum, offering solutions to the harsh conditions and unique challenges posed by space exploration.



**Dr.V.Karthikeyan, Chairman IE(I), TNSC honouring the
Chief Guest Dr.K.Selvaraju with shawl and memento**

The chief Guest, **Dr. K.Selvaraju**, Secretary General, The Southern India Mills' Association, Coimbatore, delivers the inaugural address.



**Inaugural Address by the Chief Guest Dr.K.Selvaraju,
Secretary General, SIMA, Coimbatore**

Key points of his address:

- Textiles play a crucial role in space travel, serving both functional and protective purposes for astronauts, spacecraft, and equipment.
- Space textiles are integral to managing temperature extremes encountered in space. They incorporate thermal insulation layers that help regulate body temperature in the absence of atmospheric heat conduction. For instance, **phase-change materials** embedded within textiles help maintain optimal temperatures.
- Materials used in space textiles are flame-retardant and can endure high temperatures,

preventing catastrophic failures caused by fires or thermal overloads.

- Recent advancements in textile technology have led to the development of **smart fabrics** that integrate sensors for monitoring astronaut health and environmental conditions. **Graphite and carbon-fiber composites** are also increasingly used for their exceptional strength-to-weight ratios.

Dr. P. Mohanraj, Convener and Committee Member (TX) & Joint Secretary, IE(I) TNSC, delivered the thematic address. He emphasized the importance of unique Challenges of Space Travel. He also highlighted several key points relevant to the topic:

- Extreme conditions: Microgravity, radiation, and temperature.
- Comfort and Adaptability: Reducing fatigue and enhancing usability during long missions.
- Recyclable and Sustainable Fabrics: Reducing waste and enabling in-situ resource utilization
- Mars and Beyond: Preparing textiles for interplanetary exploration challenges



*Thematic Address by Prof Dr.P.Mohanraj,
Convener & Committee Member (TX) & Joint Secretary,
IE(I) TNSC*

Dr. K. Ramalingam, Managing Director, ISSOJET Berner Pvt Ltd., CEO, Kwaliti Products, Managing Director, Royal Welfit Health Club, Hosur, felicitated the gathering with his broad ideas on highlighting the diverse and miscellaneous usage of textiles and textile industries. He shared his experience of work and knowledge in looms and textile mills and also explained the timeline of the growth of the industry and modern integration in the equipment's used in

today's mills. He shared his experience on building his own textile business and inspired upcoming Entrepreneurs of our college with his wise oration.



*Address by the Guest of Honour Dr.K.Ramalingam,
Managing Director, ISSOJET Berner Pvt Ltd., CEO, Kwaliti
Product, Hosur*

Dr D Elango, Committee Member, IE(I) TNSC, delivered the vote of thanks, concluding the seminar with his insightful perspectives. In his address, he:

- Shared his insights on the seminar's achievements and its overall significance.
- Emphasized the unique attributes of space textiles, underlining their importance in shaping the future of space exploration.
- Congratulated all participants for their valuable contributions.
- Extended heartfelt appreciation to the host institution for their warm hospitality and exceptional organizational arrangements.
- Expressed specific gratitude to Dr. V. Karthikeyan, Chairman, IE(I) TNSC, for orchestrating the seminar in such a remarkable and impactful manner.



*Vote of Thanks by Dr D Elango, Committee Member,
IE(I) TNSC*

Invited Lectures

1. Dr.D.Raja, HoD /FT, Sona College of Technology, delivered an insightful speech highlighting the pivotal role of textiles in the aerospace industry. He delivered into the cutting-edge technologies and innovative materials employed in space exploration, offering a detailed presentation on the intriguing topic of **“Space Wear Technology.”**

He elaborated on the specialized materials essential for crafting space wear, emphasizing the critical characteristics of fabrics designed for use in outer space. These textiles are meticulously engineered to be both **lightweight and flexible**, ensuring astronauts can move with ease and comfort. A notable example he mentioned was **graphite fabric**, renowned for its advanced properties.



Invited Talk by Dr.D.Raja, Ph.D., HoD of Fashion Technology, Sona College of technology, Salem

He also discussed the importance of **durable fabrics** capable of withstanding extreme conditions, including high temperatures, intense pressure, and abrasion. He shed light on **Vectran fabric**, a material frequently employed to meet the rigorous safety standards required to protect astronauts in the unforgiving environment of space.

Further, he explained the role of **thermal management systems** and the integration of **multi-layered materials** to shield astronauts from the harsh and dynamic conditions encountered during space missions.

He highlighted the challenges that lie ahead for innovation in space research and space wear

technology, inspiring the audience to think beyond current limitations and explore future possibilities.

2. Mr. V.R. Karthikeyarayan, Associate Professor, NIFT, Chennai. He started his speech that the earlier space race between USA & USSR. How LAIKA became the first dog to travel to space. What were the challenges faced by the scientists to send the dog to space, keep it alive, monitor its activities and most importantly what did it wear to space. This was followed by YURI GAGARIN's successful trip to space and back and what was he wearing when he became the first human being to go to space and return. How the scientists under huge time constraints made space flight by humans a success.



Invited Talk by Mr.V.R.Karthikeyarayan, Associate Professor,NIFT, Chennai

He explained about how space travel requires a lot of calculated moves to achieve greater goals in dangerous areas where survival becomes the priority. He briefed about the early space suits which were actually fighter jet suits that were enhanced to withstand the challenges of space travel. How after a few years humans landed on the moon and did experiments. How the space suits were developed for different purposes like travelling to space, getting involved in extra vehicular activity, walking on the surface of the moon, living for extended periods of time in outer space or inside space stations, etc. He also explained about how the chosen cosmonauts were trained extensively to survive in the harsh conditions of space. He emphasized on the importance of space suits to keep humans alive in the challenging, dangerous and extreme conditions of space.

He also talked about what Neil Armstrong and later other moonwalkers wore during their visit to the moon. The technical challenges that were successfully conquered were part of his presentation. What materials were used in previous spacesuits and what materials will be used in the near future for such space suits. He concluded by stating that there is a huge opportunity for youngsters to get involved in catering to the textile needs of future space travelers.

Papers were presented on the topics Natural or Artificial Textiles for space suits, Advanced and Technical Textile for Space wear, Suitability of Indian textiles for Space exploration, The role of smart Textile in supporting human performance beyond Earth, Advance Textiles for Space wear, Fashionable Space Wear for Space Exploration, Fashioning the Future of space exploration, and Sustainable fabrics for space suits.

The Valedictory Session

The seminar concluded with a valedictory function that showcased the event's success and impact. Mr.B.Munusamy, HoD, Textile Technology, warmly welcomed the attendees, including dignitaries, IE(I)

committee members, participants, students and presented the comprehensive summary report.



Award of certificates by Dr.V.Karthikeyan, Chairman IE(I), TNSC

Dr. V. Karthikeyan, Chairman, IE(I) TNSC, Chairman, IE(I) ENDB and Principal of Thiagarajar Polytechnic College, Salem delivered an uplifting valedictory speech, praising the organizing team's dedication. The event featured the distribution of certificates to participants, the recognition of chairpersons with shawls and mementos. Ms. C. Jayanthi, Lecturer in Textile Technology at TPT, then delivered a sincere vote of thanks. The seminar concluded with the National Anthem, marking the end of a successful and informative event.

NEW PRESIDENT OF IEI

Er. VB Singh, a distinguished Engineer and Legal Expert was elected as the President of The Institution of Engineers (India)[IEI] for the Session 2024-25 at the 727th Meeting of the IEI Council held in Hyderabad. He assumed the office of President, IEI, at the 105th Annual General Meeting of the Institution, held in Kolkata on 22 December 2024 during 39th Indian Engineering Congress.

Congratulations to the New President (IEI)



Know-Your-Member (KYM)

Is your mobile number & e-mail updated with us ? If not, then please forward your Know- Your-Member (KYM) form immediately for participating in IEI Election process.

You are requested to forward your KYM along with the self-attested copy of photo ID proof to the address given below:-

Deputy Director (Membership)
The Institution of Engineers (India)
8 Gokhale Road, Kolkata 700020
Email: datamemb@ieindia.org

The form is available on IEI Website or scan the code:

https://www.ieindia.org/WebUI/ajax/Downloads/WebUI_PDF/HIGHLIGHTS_DOCUMENT-3332.pdf





The Institution of Engineers (India)
TAMILNADU STATE CENTRE
Centenary Year (1922 – 2022)



Cordially invites you for the

Founder's Day Celebrations
of IE(I) Tamilnadu State Centre

Date : 25th January 2025
Day : Saturday
Time : 04.15 pm

Venue
IE(I) TNSC Auditorium
Chepauk, Chennai - 600005

Chief Guest



Dr. ARIVUOLI DAKSHANAMOORTHY, CChem FRSC FICS
Professor(Retd), Former Director, Crystal Growth Centre
(UGC- National Facility for Crystal Growth)
Anna University, Chennai

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

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

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Bulletin

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