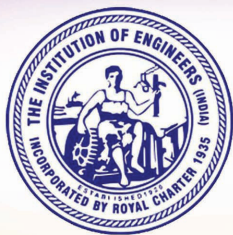


The Institution of Engineers (India)



T. N. STATE CENTRE

BULLETIN

Er. S. Kannan, FIE
Chairman

Er. K. N. Sivaraju, MIE
Honorary Secretary



Vol. 20 : No. 06

March 2022

From the Chairman's Desk.....



It gives me very great pleasure to meet you all through this News Bulletin.

MISSION for IEI TNSC

The Indian government proposed to have a 5 Trillion Dollar Economy and the Tamilnadu government envisages One Trillion Dollar Economy for Tamilnadu. Engineering is one of the key influences that shape our world physically, digitally, socially and economically.

It was discussed in the pre centenary celebration meeting of Tamilnadu State Centre that the IE(I) with diversified Engineering expertise is expected to play a vital role and in view of the above a road map can be drawn in these lines to achieve One Trillion Economy for Tamilnadu. The IE(I) TNSC shall prepare a vision document for 2030.

A High-Level committee is constituted to evolve a IE(I) TNSC Vision document with deliverables to achieve a long-term goal to contribute to the growth of this state with engineering expertise in IEI Tamilnadu State Centre. This proposal would contain a multidisciplinary approach in highlighting engineering expertise. The committee would meet periodically through online/in person and is expected

to submit this draft document in 4 months of duration.

IEI Local Centres are requested to provide technical inputs to this High-Level Committee. It is an immense pleasure to share that the IE(I), Tamilnadu State Centre celebrated the World Engineering Day for Sustainable Development on 5th March 2022 at IE(I) Tamilnadu State Centre Auditorium, Chennai. We had Padmabhushan Thirumalachari Ramasami, FIE Former Secretary Department of Science and Technology (Govt. Of India), Former Director Central Leather Research Institute, Chennai as Chief Guest and Guest of Honour are Dr C Muthamizhchelvan FIE, Vice Chancellor, SRM Institute of Science and Technology, Chennai and Dr T M Gunaraja, FIE Past President, IE(I).

The IE(I) Tamilnadu State Centre celebrating the centenary year throughout this year December 2022 has decided to conduct more technical activities. I invite all corporate members to participate in the technical activities for this year and support the IE(I) Tamilnadu State Centre.

I request all the corporate members to bring in more and more new members into the IEI with the slogan **“EVERY MEMBER INDUCT NEW MEMBER”** to double the strength of IEI Tamilnadu. More young minds and talents are requested to join us to travel together and benefit from each other's contribution towards the economic growth of our nation.

I request all our corporate members to visit our **IEI TNSC YouTube Channel and SUBSCRIBE** for further notification of technical events.

WORLD ENGINEERING DAY

Theme “Build Back Wiser Engineering the Future”

5.03.2022



Dignitaries Lighting the Lamp

United Nations Educational Scientific and Cultural Organisation (UNESCO) has declared 4th March as World Engineering Day for Sustainable Development considering the global awareness and understanding of the role of engineering in modern life. IEI being an international Member of World Federation of Engineering Organizations (WFEO), would like to request the engineering community in India to Celebrate this day in a befitting manner and organise events to mark the occasion.

The Institution of Engineers (India) TamilNadu State Centre celebrated the World Engineering Day for Sustainable Development on the theme “Build Back Wiser Engineering the Future” on 5th March 2022 at IEI TNSC auditorium, Chennai.

Padmabhushan Thirumalachari Ramasami, FIE Former Secretary Department of Science and Technology (Govt. Of India), Former Director Central Leather Research Institute,



(L-R) Er R Ramdoss, Dr T M Gunaraja, Padmabhushan Thirumalachari Ramasami, Dr C Muthamizhchelvan, Er K N Sivaraju

Chennai was the Chief Guest and inaugurated the event. Dr T M Gunaraja, FIE Past President, IE(I) and Dr C Muthamizhchelvan FIE, Vice Chancellor, SRM Institute of Science and Technology, Chennai was the Guest of Honours.

The program started with invocation, followed by lighting of the lamp by the dignitaries. The welcome speech was delivered by Er R Ramdoss, Immd. Past Chairman, IE(I) TNSC. Dr T M Gunaraja explained about the World Engineering Day for Sustainable Development.

Dr C Muthamizhchelvan has elaborated in detailed about the general principles for sustainable engineering of the future.

Dr T Ramasami delivered the thematic address with power point presentation.

What does wiser engineering connote?

- ▶ The term *engineering* is derived from the Latin *ingenium*, meaning “cleverness” and *ingeniare*, meaning “to contrive, devise”
- ▶ Engineering is the use of principles to design and build machines, structures, and other items, including bridges, tunnels, roads, vehicles, and buildings and many more.
- ▶ All these constructions call for cleverness in choice of materials, creativity in design, stability and robustness of structures, use of appropriate and optimized levels of energy, minimization of wastes, durability and shelf life of products etc.
- ▶ Wiser engineering: Demands sustainability of the entire life cycle of the engineered products and services with low carbon foot print

05-03-2022

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SUSTAINABLE DEVELOPMENT GOALS



| Wisdom in choice of | Sustainability Criteria | | |
|---|--|--|--|
| | Bearable | Viable | Equitable |
| Materials | Renewability and local availability | Economic use and cost share | Benefit sharing among stakeholders |
| Design | Eco friendly | Minimalistic | User friendly |
| Structural engineering | Robustness and climate resilience | Engineering economics | User friendly |
| Construction, fabrication | High efficiency of material use | Market competitiveness | Fabrication/ construction friendly |
| Energy options | Preferable renewable energy | Energy viability & use sustainability | Equitable Resource & Benefit sharing |
| Atom/ Energy efficiency in use | Maximum | Pragmatic efficiency in use | Energy consumption per HDI delivered |
| Process wastes | Minimum if not nil | Environmental economics | No or low eco threat |
| Recycling of materials | Maximum reusability after use | Costs of collection and recycling | Benefit sharing of recycling / reuse |
| Carbon foot print and Total Life Cycle analysis | Low nett carbon footprint and reusable | Break even point of zero carbon footprint of development | Intergenerational sharing of natural resources |

Planning forward for 2050

- ▶ Human population may have reached 10 billion at its current growth rate
- ▶ Per capita availability of arable land for agriculture, water and other natural resources would have fallen by say 30% from current levels
- ▶ Zero hunger and no poverty SDG goals demand more than doubling of agricultural productivity of land and quantum increases in water productivity from current levels. New Agri/ water engineering a must
- ▶ Business-as-usual threatens severe increases in GHG emissions and hence sea level rises. Mitigation

measures based on low carbon footprint path are essential. New energy engineering is a priority

- ▶ Water and sanitation, energy security, affordable health and nutrition security challenges are plenty.
- ▶ Breakthroughs in engineering for shaping the future are essential

Er R Ramdoss, Imm. Past Chairman, IE(I),TNSC honoured the dignitaries with shawl and memento.

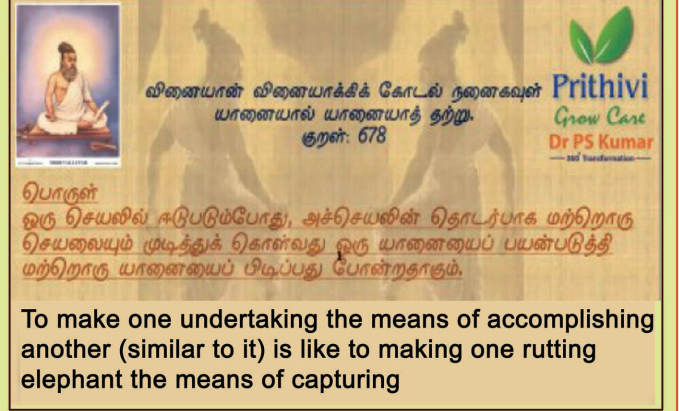
Er K N Sivaraju, Honorary Secretary of IE(I),TNSC proposed the Vote of thanks.

திருக்குறளில் பொறியியல் Engineering in Thirukkural

The Tamilnadu State Centre of the Institution of Engineers (India) organised the lecture meeting on the topic "Engineering in Thirukkural" on 13th January 2022 at 6.00 pm through online Zoom Meeting.

At the outset, Er. S. Kannan, FIE Chairman, IE(I) Tamilnadu State Centre welcomed the gathering. Er D Gokul, MIE Joint Secretary introduced the guest speaker Er P S Kumar, Managing Director, ETAsmart Pvt.Ltd., Chennai. He explained Engineering in Thirukkural with power point presentation.

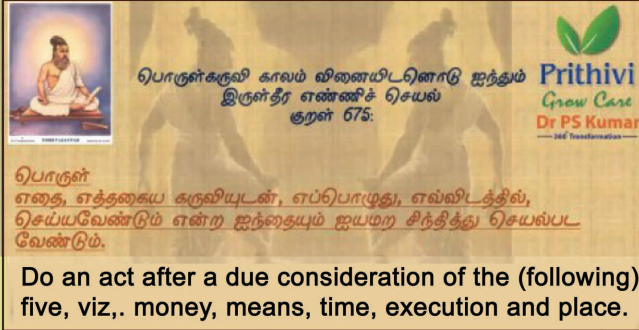
Er K N Sivaraju, MIE, Honorary Secretary of IE(I) Tamilnadu State Centre proposed the vote of thanks.



வினையான் வினையாக்கிக் கோடல் நனைகவுள்
யானையால் யானையாத் தற்று.
குறள்: 678

பொருள்
ஒரு செயலில் ஈடுபடும்போது, அச்செயலின் தொடர்பாக மற்றொரு செயலையும் முடித்துக் கொள்வது ஒரு யானையைப் பயன்படுத்தி மற்றொரு யானையைப் பிடிப்பது போன்றதாகும்.

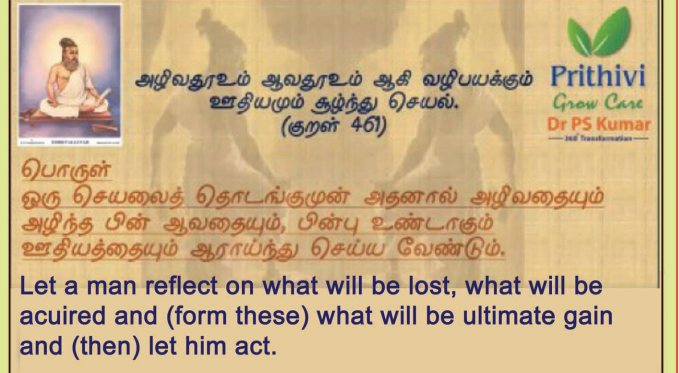
To make one undertaking the means of accomplishing another (similar to it) is like to making one rutting elephant the means of capturing



பொருள்கருவி காலம் வினையிடவினாடு ஐந்தும்
இருள்தீர எண்ணிச் செயல்
குறள்: 675

பொருள்
எதை, எத்தகைய கருவியுடன், எப்பொழுது, எவ்விடத்தில், செய்யவேண்டும் என்ற ஐந்தையும் ஐயமற சிந்தித்து செயல்பட வேண்டும்.

Do an act after a due consideration of the (following) five, viz., money, means, time, execution and place.



அழிவதரஉம் ஆவதரஉம் ஆகி வழிபயக்கும்
ஊதியமும் ஆழ்ந்து செயல்.
(குறள் 461)

பொருள்
ஒரு செயலைத் தொடங்குமுன் அதனால் அழிவதையும் அழிந்த பின் ஆவதையும், பின்பு உண்டாகும் ஊதியத்தையும் ஆராய்ந்து செய்ய வேண்டும்.

Let a man reflect on what will be lost, what will be acured (and form these) what will be ultimate gain and (then) let him act.

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Posted on: 15th March 2022

Posted at: Egmore RMS (Patrika)

Bulletin

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