# The Institution of Engineers (India)

# Madurai Local Centre

Er.T.M.Jambulingam Bhavan, No.1, Vivekananda Nagar,
120 Feet Road, Surveyor Colony, Madurai – 625 007

# Monthly Connect March-2022

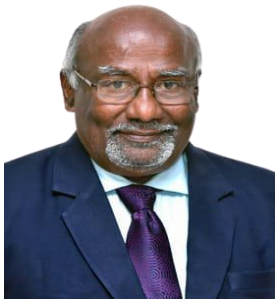
**Private circulation only** **e News: March 2022**

# The Institution of Engineers (India)
## Madurai Local Centre
## Monthly Connect March -2022

**Dr.N.SIVASUBRAMANIAN, FIE.,**
**CHAIRMAN**

**Dr.P.UDHAYAKUMAR, FIE.,**
**HON. SECRETARY**

## Chairman's Desk



**Dr.N.SIVASUBRAMANIAN, FIE.,**
**Chairman**

With Warm Greetings. It is heartening to note that IEI MLC news connect is reaching all our members regularly. I request all the members can share their knowledge and experiences in their field of domain. The latest happenings elsewhere may also be brought out wherever marvellous engineering excellence is depicted.

IEI MLC need to contribute in more technical activities by means of organising seminars, technical lectures, conferences in addition to industry –academia interaction in addressing engineering issues. The outcome of such activities should benefit to the society in terms of vision /goal of the Nation. The upliftment of Industrial growth, engineering excellence and advancement in the technology feeding to the growth of the national must be brought

out. The outcome of IEI's such activities must reach the concerned area/field with proper recommendations.

We have adequate man power resources which need to be identified for their talents and skill. The same has to be properly oriented to meet the skill needed for our vision. In this area, IEI play a major role towards the engineering community. We should stand united and dedicate our services for the above cause.

Once again, I congratulate and compliment the editorial team of IEI MLC news connect for consolidating of our activities and bringing out to all concerned. Unity is our strength and we must work exhibiting our solidarity to bring out engineering excellence.

With Best Wishes and Good Luck.

# Secretary's Desk

**Dr. P.UDHAYAKUMAR, FIE.,**
**Hon. Secretary**

My Greetings to you, all.

It is very enlightening to see that IEI MLC news connect is released every month.

Recent advancements in the field of engineering and technology can be shared by all of our members. More number of technical events pertaining to each Division can be conducted frequently. These kind of activities will provide not only knowledge sharing but also benefit the society.

Technological advancements, Excellence in the field of engineering and the nation's manpower should be properly utilized for the upliftment of society. IEI.s activities should ensure the same.

IEI, a part of engineering community should render its services for the benefit of mankind.

I congratulate all the members for their continuous support and their contribution towards the activities carried out by IEI MLC.

# EVENTS HELD DURING MONTH OF FEBRUARY 2022

| | | | |
|---|---|---|---|
| Name of Centre : | | | Madurai Local Centre |
| Title of Activity: | Technical Lecture Meeting on “Madurai Smart City” | | |
| Date: | 03.02.2022 | Venue: | Through Online Zoom Meeting |

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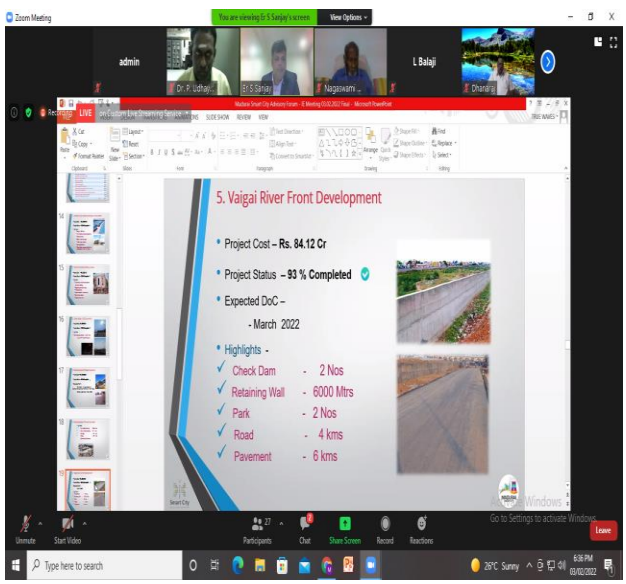


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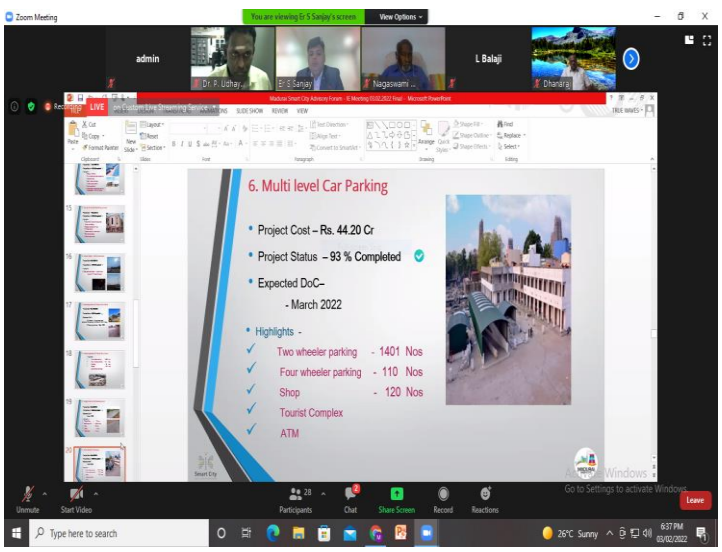

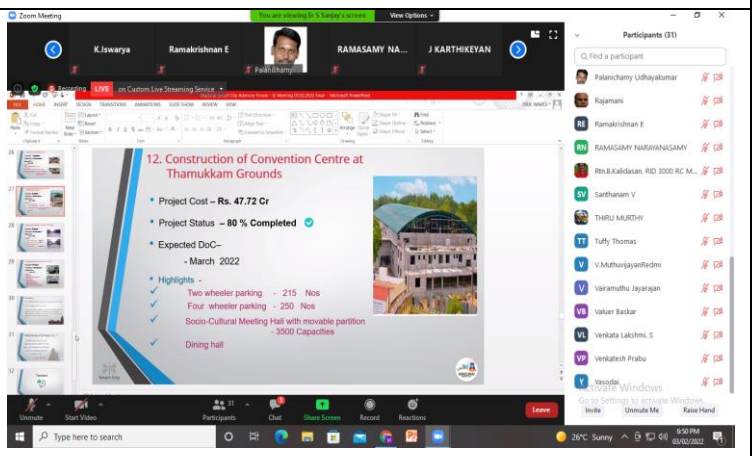

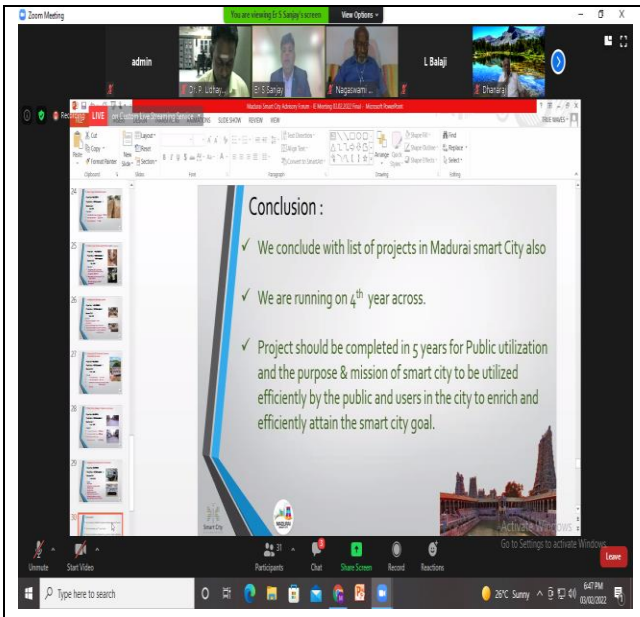


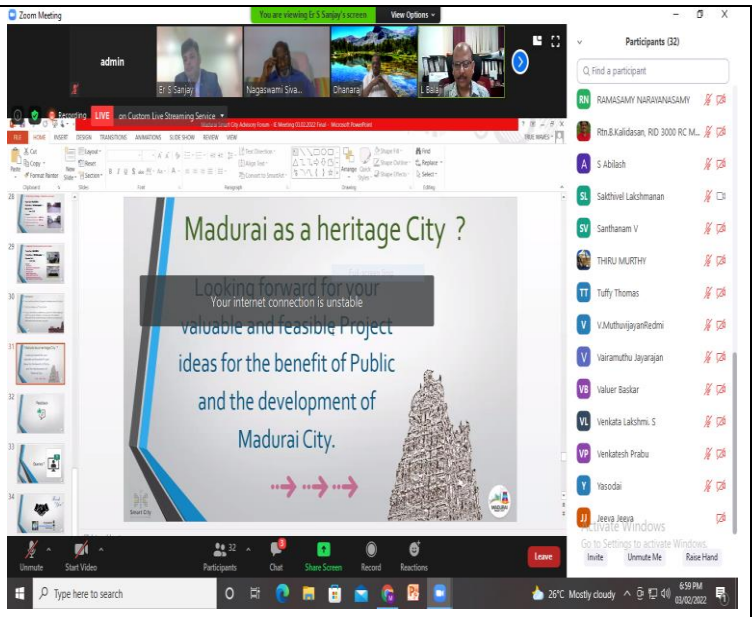


**Report on the Lecture Meeting held at Madurai Local Centre on 03rd February 2022 at 6.00pm through Online Mode**

The Institution of Engineers (India), Madurai Local Centre organized a Technical Lecture Meeting on the topic "MADURAI SMART CITY" through online mode held on 03.02.2022 at 6.00pm through Zoom Meeting. Mr. S. Sanjay, Member – Madurai Smart City Advisory Forum, Founder and Managing Director of True Waves Groups was the chief guest. Total No. of Participants: 32

Dr. N. Sivasubramanian, Chairman, The Institution of Engineers (India), Madurai Centre delivered the welcome address. Dr. P. Udhayakumar, Hon. Secretary introduced the chief guest. Mr. S. Sanjay delivered a Lecture on the topic "MADURAI SMART CITY". He explained about the

- ✓ Madurai Smart City Advisory forum objective and functions
- ✓ Madurai Smart City Advisory forum Setup
- ✓ 1000cr funds were utilized for Smart City Madurai
- ✓ Various Project involved breakup details in Madurai Smart City.

**List of projects – Smart City Madurai**

| S. No. | Name of the Project | Project Cost in Rs. Crores |
|---|---|---|
| 1 | Infrastructure & Basic Amenities at Fruit Market | 12.00 |
| 2 | Tourist Amenities Building complex | 02.75 |
| 3 | Street Lights – LED Conversion | 30.25 |
| 4 | Redevelopment of Periyar Bus Stand | 167.06 |
| 5 | Vaigai River Front Development | 84.12 |
| 6 | Multi-level Car Parking | 41.96 |
| 7 | Heritage Development | 42.65 |
| 8 | Solid Waste Management | 25.22 |
| 9 | Water Supply Distribution System | 80.79 |
| 10 | Water Supply Source Augmentation (AMRUT Convergence) | 102.00 |
| 11 | Underground Sewerage system | 275.82 |
| 12 | Construction of Convention Centre at Thamukkam Grounds | 47.72 |
| 13 | Street Scape redesign - Pedestrian pathways | 50.21 |
| 14 | Integrated Command and Control Centre | 11.83 |
| | TOTAL | **974.35** |

Madurai Smart City Project is running on 4th year across. This project should be completed in 5 years for Public utilization and the purpose & mission of smart city to be utilized efficiently by the public and users in the city to enrich and efficiently attain the smart city goal.

Prof. Dr. P. Udhayakumar, Hon. Secretary, The Institution of Engineers (India), Madurai Centre delivered vote of thanks.

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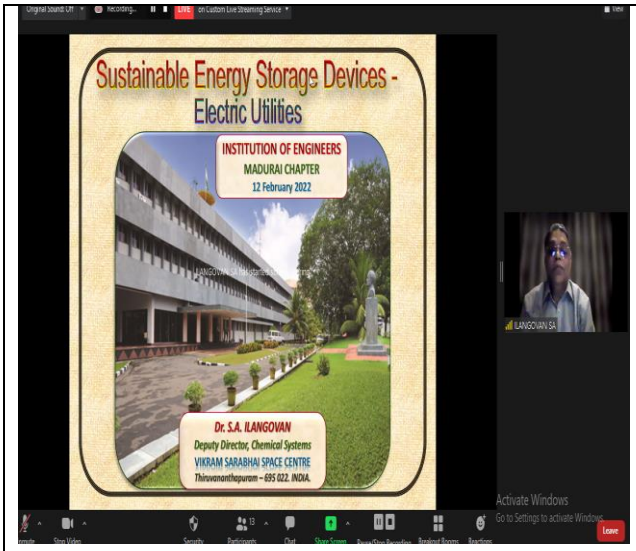
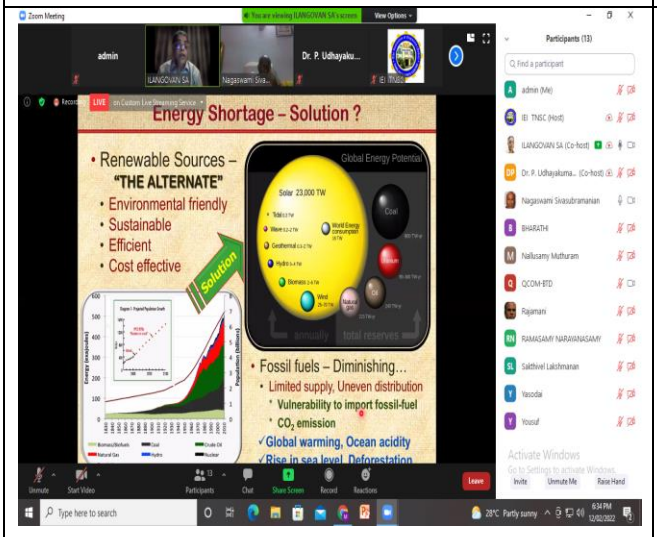
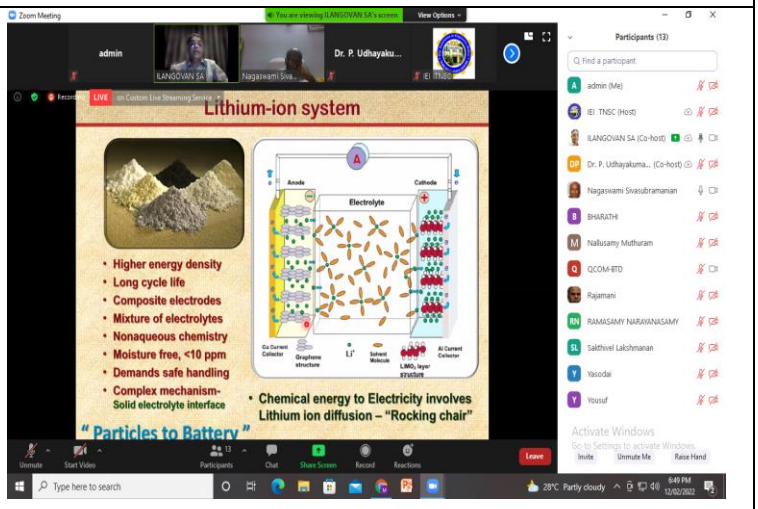
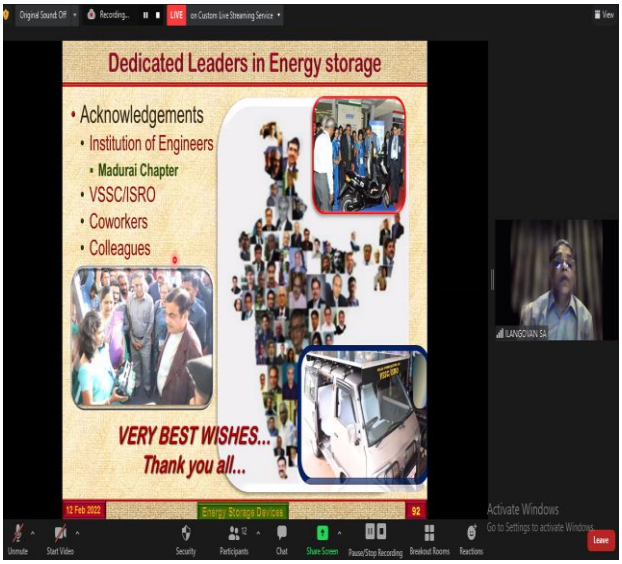
**11th EC Meeting held on 12.02.2022 at 5.00pm at The Institution of Engineers (India), Madurai Local Centre through Online Mode**

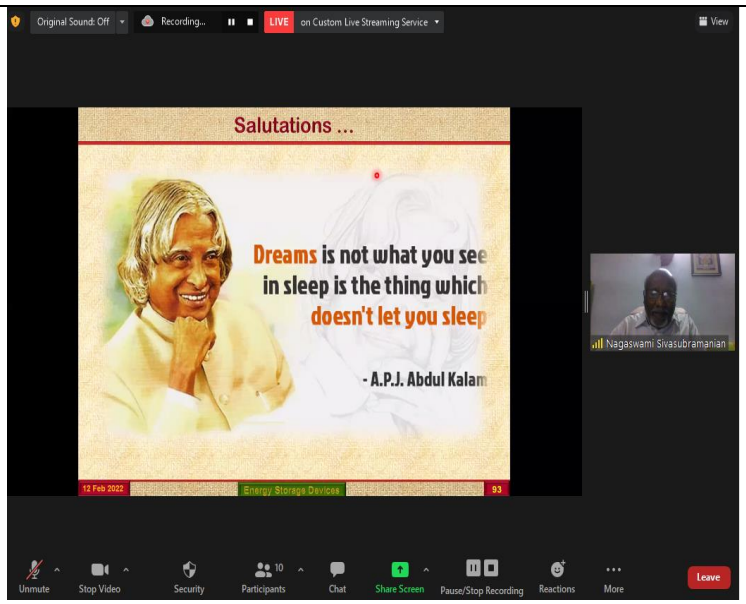
| | | | |
|---|---|---|---|
| Name of Centre : | | Madurai Local Centre | |
| Title of Activity: | Technical Lecture Meeting on “Sustainable Energy Storage Devices for Electric Utilities” | | |
| Date: | 12.02.2022 | Venue: | Through Online Zoom Meeting |








**Report on the Lecture Meeting held at Madurai Local Centre on 12th February 2022 at 6.00 PM.**

The Lecture Meeting was conducted on the topic "Sustainable Energy Storage Devices for Electric Utilities" on 12th February 2022 at 6.00 PM though Online Mode. Dr.S.A.Ilangovan, Deputy Director – Propellants, Polymers, Chemicals & Materials Entity, VSSC/ISRO, Thiruvanathapuram was the Chief Guest. Dr.N.Sivasubramanian, Chairman, Madurai Local Centre delivered the welcome address. Dr.P.Udhayakumar, Hon. Secretary introduced the chief guest. The numbers of participants were 34. The chief guest delivered the lecture. During the course of the lecture the chief guest explained that Sustained availability of clean energy for the future generation is an uncompromising need to protect the environment from disruptive contributions of fossil fuels. From climate change to the fast depletion of fossil fuel reserves pose serious concern to the society and global economy. To overcome such divisive impacts, research activities are focused towards safe methods using renewable energy capacity all the over world. On the other hand, the intermittent availability of energy from the natural resources claims the necessity for energy conversion and storage systems on a large scale. Arguably, the ever growing day-to-day applications based on portable gadgets to electric vehicles demand variable power delivery for mobility applications.

Among the several energy harnessing systems, rechargeable Battery systems, Fuel cells and Super capacitors are the major contenders to meet the energy storage demands for electric mobility. But, the main barriers to cost effective commercialization are the mass, cycle life and safety. On a fundamental basis, these parameters are intrinsically related to the governing physicochemical processes underlying the system operations.

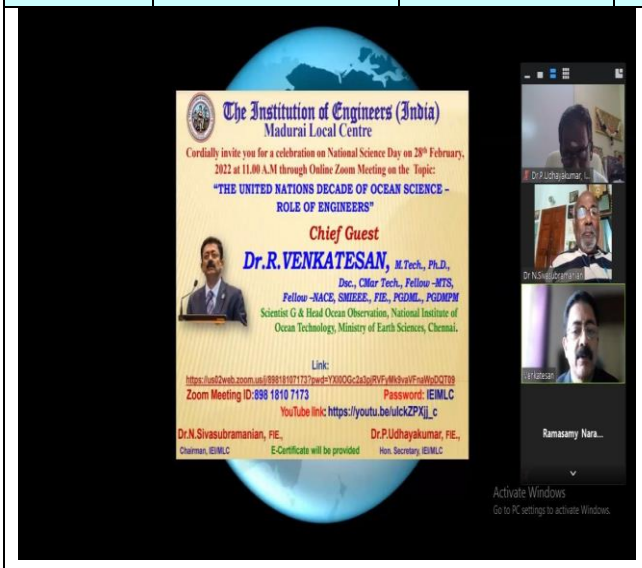
With the vast development of exotic materials, applications involving high power density and energy density are envisaged. By combining the concepts of battery and super capacitors in hybrid form seems to provide extended range wherein the battery acts as energy reservoir while the super capacitor meets the intermittent peak power moderation. This hybrid is poised to promote building better energy systems for renewed form factors leading to seamless integration of these devices for a multitude of applications including electric mobility. A flexible choice for designing efficient hybrid system to sustain high power and energy applications was discussed.

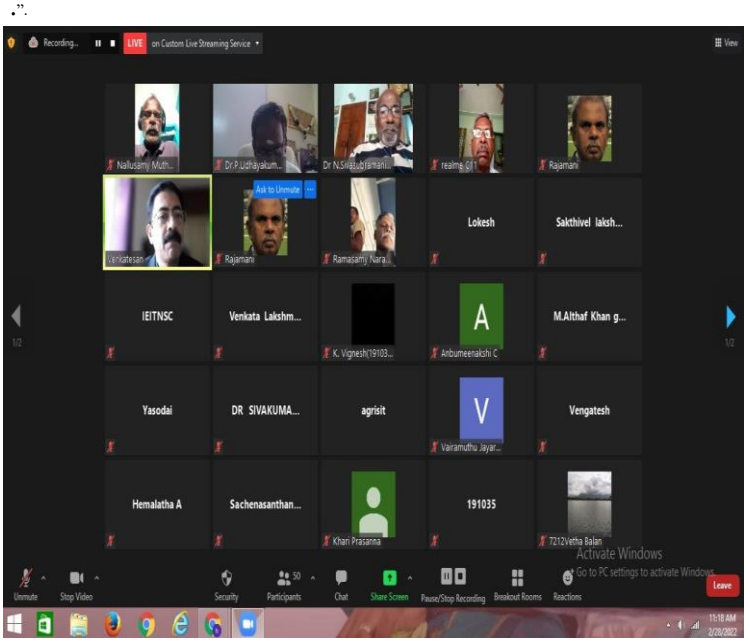
**GIST:**

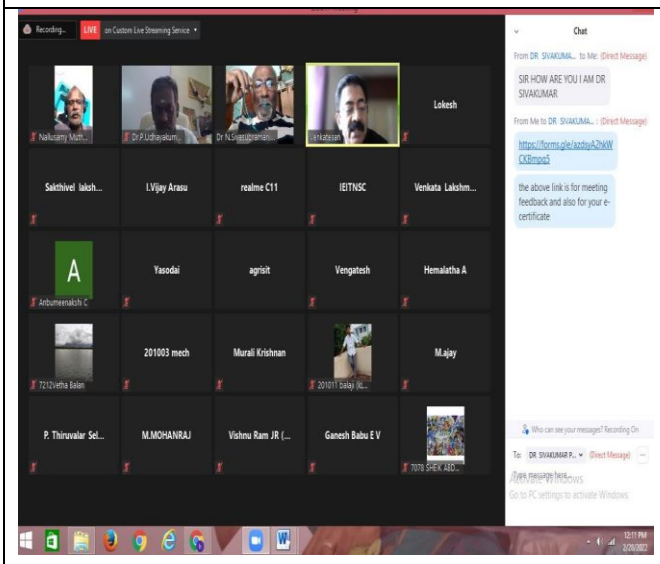
Sustained availability of clean energy is need of the hour to protect the society and environment from climate change and disruptive impacts by fossil fuels which are also fast depleting. To overcome such divisive contributions, research activities are focused towards safe methods using renewable energy sources worldwide. Intermittent availability of energy from the renewable sources claims the necessity for energy conversion and storage systems on a large scale. Among the several energy harnessing systems, rechargeable Battery systems, Fuel cells and Super capacitors are the major contenders to meet the energy storage demands for electric utilities.

Prof. Dr. P. Udhayakumar, Hon. Secretary, The Institution of Engineers (India), Madurai Centre delivered vote of thanks.

| | | | |
|---|---|---|---|
| Name of Centre : | | Madurai Local Centre | |
| Title of Activity: | National Science Day " Integrated Approach in Science and Technology for a Sustainable Future" | | |
| Date: | 28.02.2022 | Venue: | Through Online Zoom Meeting |


The Institution of Engineers (India)
Madurai Local Centre
Cordially invite you for a celebration on National Science Day on 28th February, 2022 at 11.00 A.M through Online Zoom Meeting on the Topic:
"THE UNITED NATIONS DECADE OF OCEAN SCIENCE - ROLE OF ENGINEERS"
Chief Guest
Dr.R.VENKATESAN, M.Tech., Ph.D., Dsc., CMar Tech., Fellow -MTS, Fellow -NACE, SMIEEE., FIE., PGDML., PGDMPM
Scientist G & Head Ocean Observation, National Institute of Ocean Technology, Ministry of Earth Sciences, Chennai.
Link:
Zoom Meeting ID:898 1810 7173 Password: IEIMLC
YouTube link: https://youtu.be/ulckZPXjj_c
Dr.N.Sivasubramanian, FIE., Chairman, IEIMLC
E-Certificate will be provided
Dr.P.Udhayakumar, FIE., Hon. Secretary, IEIMLC



**Report on the National Science Day Meeting held at Madurai Local Centre on 28th February 2022 at 11.00 AM.**

The National Science Day Meeting was conducted on the topic "Integrated Approach in Science and

Technology for a Sustainable Future" on 28th February 2022 at 11.00 AM though Online Mode. Dr.R.Venkatesan, M. Tech., Ph.D., Dsc., CMar Tech., Fellow –MTS, Fellow –NACE, SMIEEE., FIE., PGDML., PGDMPM., Scientist G & Head Ocean Observation, National Institute of Ocean Technology, Ministry of Earth Sciences, Chennai was the Chief Guest. Dr.N.Sivasubramanian, Chairman, Madurai Local Centre delivered the welcome address. Dr.P.Udhayakumar, Hon. Secretary introduced the chief guest. The numbers of participants were 122. The chief guest delivered the lecture.

Science is "a systematic enterprise that builds and organizes Knowledge in the form of testable explanations and predictions about the world". **The UN 2030 Agenda for the conservation of ocean:**

•Preamble

•Declaration

•Sustainable Development Goals

•Means of Implementation and Global Partnership

•Follow-up and Review

**The 2030 Sustainable Development Goals**

•The main goals focus on the **5 P**s

•**People**: the wellbeing of all people

•**Planet**: protection of the earth's ecosystems

•**Prosperity**: continued economic & technological growth

•**Peace**: securing peace

•**Partnership**: improving international cooperation

•These five aspects are interdependent

•Therefore the SDGs demand integrated thinking as well as integrated approaches to achieving the goals

We owe 7 breaths out of 10 to the ocean. It generates between 50% and 80% of the oxygen we

breathe and absorbs a third of the carbon dioxide ($CO_2$),emitted into the atmosphere. It hosts the largest habitat on the planet, but only 5% of the sea bed has been explored to date. But now the ocean is under threat.

**Accumulation of Debris in Deep Sea Environments**

Submersible observations in Mediterranean canyons (a and b: plastic bottles at 1000 m depth at two different locations in the Marseille canyon, 43°03′00″ N, 05°00′00 ″ E) and above the polar circle, under ice floe (c and d: individual plastic bags, 2200–2600 m depth at Hausgarten, Fram strait, 79°03′80 ″ N, 04°11′60 ″ E). (Courtesy Barnes et al.. 2009)

**Marine Debris in Great Nicobar-2003**

Unexpected waste originating in Islands due to adjacent foreign countries and plastic could be carried by currents and circulated continuously in open sea and carried to near shore. •The Coastal areas of Sumatra, Singapore, Malaysia, Indonesia and other South East Asia countries and by International Shipping service not disposed properly and dumped in to sea which will carried by currents. No proper solid waste management in adjacent foreign countries.

**Cyclones:**

More cyclones occur in the Bay of Bengal than the Arabian Sea and the ratio is approximately 4:1. Frequency of cyclones on the east and west coasts of India between 1891 and 1990. Nearly 262 cyclones occurred (92severe) in a 50 km wide strip on the east coast. Less severe cyclonic activity on the west coast-33 cyclones (19 severe). The Bay of Bengal is normally warmer than the Arabian Sea and thus contains more heat energy for Cyclones to grow and maintain themselves.

A clean ocean where sources of pollution are identified reduced or removed. A healthy and resilient ocean where marine ecosystems are understood and managed. A productive ocean supporting sustainable food supply and a sustainable ocean economy. A predicted ocean where society understands and can respond to changing ocean conditions. A safe ocean where life and livelihoods are protected from ocean-related hazards. An accessible ocean with open and equitable access to data, information, and technology and innovation. An inspiring and engaging ocean where society

understands and values the ocean in relation to human wellbeing and sustainable development. Argo-a profiling float for measuring temperature and salinity, along with reference level velocities, through the upper 2000m of the Ocean in real time.

**India's Deep Ocean Mission**

1. Development of technologies for Underwater Vehicles Underwater Robotics & Deep-ocean mining
2. Technological innovations for exploration and conservation of Deep Sea biodiversity.
3. Deep Ocean Survey and Exploration
4. Advanced Marine Station for Ocean Biology
5. Energy and Fresh water From Ocean
6. Development of Ocean Climate Change Advisory Services

Prof. Dr. P. Udhayakumar, Hon. Secretary, The Institution of Engineers (India), Madurai Centre delivered vote of thanks.

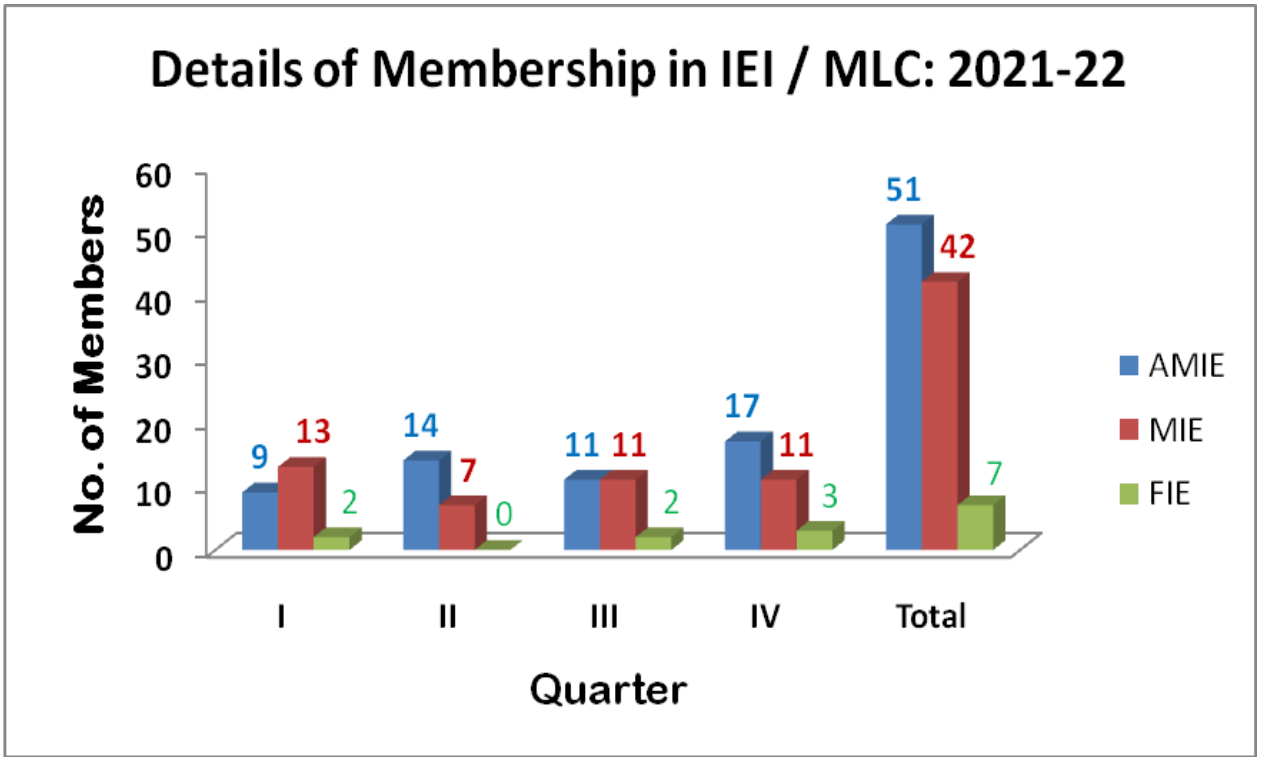
**Dr. N. Sivasubramanian, Chairman, IEI / MLC and Dr. P. Rajamani, Past Chairman, IEI / MLC – Chief Guest for National Science Day held at Kamaraj College of Engineering and Technology, Virudhunagar on 28.02.2022**
**Total no. of students participated: 88**

INSTITUTION'S

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

## DETAILS OF MEMBERSHIP IN IEI / MLC (2021-22)

| Quarter | AMIE | MIE | FIE | Total |
|---|---|---|---|---|
| I Quarter (Apr 2021 – Jun 2021) | 9 | 13 | 2 | **24** |
| II Quarter (July 2021 – Sep 2021) | 14 | 7 | - | **21** |
| III Quarter (Oct 2021 – Dec 2021) | 11 | 11 | 2 | **24** |
| IV Quarter (Jan 2022 – Mar 2022) | 17 | 11 | 3 | **31** |
| **Total** | **51** | **42** | **7** | **100** |



## BENEFITS OF CORPORATE MEMBERSHIP

| | | |
|---|---|---|
| ✓ Practice of Engineering Profession | ✓ Registration as Professional Engineers | ✓ Use of Designatory Letters |
| ✓ Continuous Professional Development | ✓ Peer Networking | ✓ Knowledge Resources |
| ✓ Access to Technical Publications | ✓ R&D Grants for Members | ✓ Certification Programs at Reduced Rate |
| ✓ Chartered Engineer Certificate | ✓ Participation in Technical Event | ✓ Guest Houses Facility |

## NEW MEMBERSHIP (W.e.f 01.04.2022)

| **AMIE**<br>**Associate Member**<br>**Rs.5,900/-** | **MIE**<br>**Member**<br>**Rs.8,260/-** | **FIE**<br>**Fellow**<br>**Rs.20,060/-** |
|---|---|---|
| **Lifetime Membership** | **Lifetime Membership** | **Lifetime Membership** |
| **Criteria** | **Criteria** | **Criteria** |
| **Age**<br>21 Years | **Minimum Age**<br>30 Years | **Minimum Age**<br>40 Years |
| **Qualification**<br>BE / B.Tech or Equivalent | **Qualification**<br>BE / B.Tech or Equivalent | **Qualification**<br>BE / B.Tech or Equivalent |
| | **Experience**<br>8 Years post qualification Experience | **Experience**<br>15 Years post qualification Experience |

**Chartered Engineer Certificate: Rs.29,500/-**

## UPGRADE MEMBERSHIP (W.e.f 01.04.2022)

| AMIE -> MIE<br>Associate Member to Member<br>Rs.3,540/- | AMIE -> FIE<br>Associate Member to Member<br>Rs.15,340/- | MIE -> FIE<br>Member to Fellow<br>Rs.13,452/- |
|---|---|---|
| **Lifetime Membership** | **Lifetime Membership** | **Lifetime Membership** |
| **Criteria** | **Criteria** | **Criteria** |
| **Minimum Age**<br>30 Years | **Minimum Age**<br>40 Years | **Minimum Age**<br>40 Years |
| **Qualification**<br>BE / B.Tech or Equivalent | **Qualification**<br>BE / B.Tech or Equivalent | **Qualification**<br>BE / B.Tech or Equivalent |
| **Experience**<br>8 Years post qualification Experience | **Experience**<br>15 Years post qualification Experience | **Experience**<br>15 Years post qualification Experience |

## Abridged Eligibility Guidelines for FELLOW (FIE)

Eligibility:

1. **Age:** Minimum 40 years on the date of application.
2. **Educational Qualification:** BE/B.Tech or equivalent qualification recognized by the Institution shall be accepted for various classes of membership. Other qualification may be accepted in consultation with the Equivalence Committee.
3. **Experience:** Any applicant with BE/B.Tech or equivalent qualification recognized by the Institution and a total post-qualification experience of atleast 15 years and holding a position of high responsibility.
4. **Position of High Responsibility for:-**

   (I) Applicants from Indian Army/ Navy / Air Force/ Paramilitary Force should have a total post- qualification experience of atleast 15 years in the rank of Lt Col or above in Indian Army and equivalent posts in Indian Navy / Air Force/ Paramilitary Force.

(II) Applicants working/worked in PSUs in India at a Senior Managerial position and having a total post-qualification experience of atleast 15 years will be eligible for Fellow (FIE).

(III) Applicants working/worked in CSIR or other Govt research Laboratories/ Institutions with a total post-qualification experience of atleast 15 years should be at the grade of Scientist E or above to be eligible for Fellow (FIE).

(IV) (A) Applicants working/worked in other Central / State Government organizations should have a total post-qualification experience of atleast 15 years and be at the rank of Superintending Engineer or above.

(B) Applicants working/worked in other Central / State Government organizations should have a total post-qualification experience of atleast 15 years out of which minimum 8 years is in the rank of Executive Engineer.

(V) Professors/ Associate Professors working/worked in Universities / Degree Colleges who have attained a total post-qualification experience of atleast 15 years.

(VI) Applicants working/worked as Principal in a Polytechnic with a total post-qualification experience of atleast 15 years would be eligible for Fellow.

Post qualification experience of 15 years in above mentioned posts(s) and equivalent post(s) in other organization shall be considered for Fellowship (FIE).

(VII) Self Employed applicants for Fellow (FIE) may be classified into two categories:

(A) Those who own organizational setups.

(B) Individual Practitioners e.g. Consultants/ Surveyors/ Valuers/Loss Assessors etc.

**'Position of High Responsibility' for:-**

(A) Self Employed applicants who own organizational setups should satisfy that

(i) He/ She is having a total post-qualification experience of atleast 15 years.

(ii) Best of the last 3 years' annual turnover as reflected in the certificate by Chartered Accountant or IT Returns should be 5 crores or above.

(iii) Minimum age of the organization should be 10 years.

(B) Individual Practitioners (e.g. Consultants/ Surveyors/ Valuers/ Loss Assessors etc.)

(i) He/ She is having a total post-qualification experience of atleast 15 years.

(ii) Self Employed applicants (e.g. Consultants/ Surveyors/ Valuers/ Loss Assessors etc.) should have minimum gross total of individual annual income of Rs. 20 lacs as reflected in any of the last 3 years' Income Tax Returns.

(VIII) The applicants working in Private organization will be eligible for Fellow (FIE) on satisfaction of the following condition:

The applicant should have a total post-qualification experience of atleast 15 years and his/her salary/compensation package should be Rs. 2 Lakhs per month [US$ 3,000 per month or equivalent for applicants working abroad] as per salary slip/ Income Tax Return as applicable.

*N.B.*

*1. Every applicant is supposed to enclose documentary proof in support of his/her satisfying the respective eligibility criteria as mentioned herein above.*

*2. Every applicant should satisfy all the criteria listed in 1, 2 & 3 viz., Age, Educational Qualification & Experience and Professional Attainments of atleast 15 years and holding a position of high responsibility at the time of submitting the application.*

*3. The position held as In-Charge or Officiating shall not be considered as relevant position.*

## Abridged Eligibility Guidelines for MEMBER (MIE)

Eligibility:

1. Age: Minimum 30 years on the date of application.

2. Qualification recognized by the Institution and included in the rules and syllabi shall be accepted for various classes of membership. Other qualification may be accepted in consultation with the Equivalence Committee.

3. Experience :

    1. Minimum post-qualification experience should be 8 years.
    2. In case of Self-Employed/ Consultant Engineers or those holding relatively lower position of responsibility like Sub Asst Engineer, Supervisor, Overseer etc. minimum requirement of post qualification experience should be 10 years.

## Abridged Eligibility Guidelines for ASSOCIATE MEMBER (AMIE)

Eligibility:

1. Age: Minimum 21 years on the date of application.

2. Qualification recognized by the Institution and included in the rules and syllabi shall be accepted for various classes of membership. Other qualification may be accepted in consultation with the Equivalence Committee.

3. Experience: The applicant is supposed to be engaged / shall have been engaged in the design or execution or operation of Engineering works.

## Forth Coming Events:

1. 12th EC Committee Meeting is scheduled on 12.03.2022 at 5.00pm in our office premises
2. World Engineering Day Celebration is scheduled on 12.03.2022 at 6.00pm in our office premises
3. AMIE Summer 2021 Examinations is to conduct in our office premises from 20.03.2022 to 26.03.2022.
4. World Water celebration – Student Poster Presentation is scheduled on 22.03.2022 at 2.00pm at Kamaraj College of Engineering and Technology, Virudhunagar.
5. World Water celebration is scheduled on 22.03.2022 at 6.00pm in our office Premises

**EDITOR:**
**Dr.P.UDHAYAKUMAR, F.I.E.,**
**HON. SECRETARY**
The Institution of Engineers (India),
Madurai Local Centre,
Er. T.M. Jambulingam Bhavanam,
No.1, Vivekananda Nagar,
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