



CHAIRMAN SPEAKS

Prof. (Dr.) M. Jayaraju FIE



The month of May 2023 was full of technical activities in Kerala State Centre. In connection with the 75th Anniversary of IEI KSC, a two-day National Seminar was conducted on 10th and 11th May 2023 at Thiruvananthapuram on the theme 'Recent Trends in Design and Application in Energy Development Programme'. The Seminar was well attended by over 100 delegates. Thirty Papers were presented. Also invited talks by Engineers/Scientists from CSIR, EMC, ANERT and Dept. of S&T, etc. made the Seminar worthwhile. As part of the event, an exhibition of projects by CET students and Electric vehicles by KAL was also organized.

World Telecommunication and Information Society Day was observed on 17th May 2023 by IEI KSC with a talk on the theme, 'Empowering the least developed regions of India through Information and Communication Technologies'. The talk was delivered by Er. R. Sajikumar, ITS, Principal General Manager, BSNL, Thiruvananthapuram. The emphasis was to ensure universal access to reliable and affordable communication services. In this regard, it is best to remember that without communication, we can never prosper and progress in life.

World Environment Day was observed in association with HLL Life Care Ltd., Thiruvananthapuram on 5th June 2023. This is the 50th Anniversary of World Environment Day and the theme was 'Solutions to Plastic Pollution'. The aim of World Environment Day is to raise the importance of a healthy and green environment. So we have to collectively beat plastic pollution by recycling plastic waste. The observance included the planting of saplings and seedlings of various trees and an industrial visit to HLL Life Care Ltd. Thiruvananthapuram.

The State Committee Election for the Session 2023 - 2025 is due in August 2023 and the process will begin with the formation of a Board of Scrutineers during the next State Committee Meeting.

HONORARY SECRETARY'S DESK

Er.Roy Mathew, MIE

Upcoming Events

14.06.2023 Talk on 'Accidents due to falling down in bathrooms' by Er. R. Subhash Chandra Bose FIE, Superintending Engineer (Retd), Kerala Public Works Department.

21.06.2023 Talk in Malayalam on 'Aashayavinimayathile Velluvilikal – 'Kudumbapachalathil' by Er.Matius Vengal, Director, Sanjeevani and Dr. G.Jayakumar, Former Principal, MG College and Deputy Director, Sanjivani.

28.06.2023 Being a holiday there will be no Wednesday talk.

05.07.2023 will be announced later



World Telecommunication and Information Society Day Celebrations

17.05.2023 The Institution of Engineers (India) Kerala State Centre celebrated World Telecommunication and Information Society Day. Prof (Dr) M Jayaraju, Chairman, IEI Kerala State Centre welcomed the gathering. Er. R. Sajikumar ITS, Principal General Manager, BSNL Trivandrum delivered the lecture on the theme 'Empowering the Least Developed regions of India through Information Communication Technologies'. After the talk Er. Roy Mathew, Honorary Secretary, IEI Kerala State Centre proposed the vote of thanks.



World Environment Day Celebrations

05.06.2023 World Environment Day celebrated at IEI Kerala State Centre premises from 9.00 a. m. to 9.30 a. m. Prof (Dr) M Jayaraju, Chairman, IEI Kerala State Centre and Er. Roy Mathew Honorary Secretary, IEI Kerala State Centre planted trees in the premises of Visvesvaraya Bhavan, the Institution of Engineers (India), Kerala State Centre, Thiruvananthapuram in the presence of Committee Members, Members, staff of IEI and members of TKM Alumni Association and also distributed seedlings to the participants.

From 10.00 a. m. to 12.30 p.m. conducted an industrial visit to HLL Life Care Limited, Peroorkada, Thiruvananthapuram and HLL Life Care Limited jointly celebrated the day by conducting a lecture on the theme 'Solutions to beat Plastic Pollution'. 25 nos IEI members attended the Environmental Day celebrations jointly organized by HLL and IEI Kerala State Centre at HLL Peroorkada Factory at 10 a. m.

Planting of trees by HLL Management & Trade union representatives Team and IEI officials at the entrance of HLL Premises (5 Trees planted). Followed to this, IEI members conducted a technical visit to the Effluent Treatment plant and RO plant. After the visit to the Effluent treatment plant and Ultrafiltration & Reverse Osmosis plant conducted by IEI members, Er Venugopal. S, –General Manager of HLL coordinated the visit. This was followed by conducting an Environmental Mock drill on an overflow of the aeration tank in ETP.

IEI members witnessed the mock drill. The mock drill was successfully completed and no non-compliance was there during the mock drill event.

After this, the official functions of the Environment Day celebration at JNMWC Hall of HLL Life Care Ltd, Peroorkada Factory started with an environment pledge taken by HLL Team & IEI members. Environmental Pledge was cited by Mr Gokul Babu, Manager (Safety & Environment) and followed the corporate song of HLL.

Mr Gokul Babu made the welcome speech during the occasion. This was followed by the inauguration of Environment Month celebrations 2023 by Sri V. Kuttappan Pillai V P (T&O).

Felicitation on world environment day was made by Ms Smitha LG, GM (Operations) & Unit chief PFT. Felicitation speech by Prof (Dr) Jayaraju M, Chairman, IEI Kerala State Centre and Er Roy Mathew, Honorary Secretary, IEI Kerala State Centre were also conducted.

Er Kuttappan Pillai VP (T&O) distributed compost made from ETP sludge of HLL to Prof (Dr) Jayaraju M, Chairman of IEI KSC.

All the members who attended the programme were given compost manufactured there as well as tree saplings.

This was followed by the Presentation of the Environmental Day theme 2023.

Theme: Solutions to beat Plastic Pollution and Presentation of Environmental Excellence of HLL were done. The presentation was made by Er Venugopal. S, FIE, IEI Kerala State Centre Committee Member (Chemical Engineering) and General Manager of HLL Life Care Ltd. Members of IEI gave excellent feedback on the Presentation

Mrs. Bindu. S, Assistant Manager (HLL) proposed the vote of thanks. The programme was attended by IEI members, Executives and Employees of HLL and Safe Forum members. This was followed by a guided plant visit to manufacturing areas and the Quality Assurance dept of HLL by IEI members. Er. Venugopal. S coordinated the visit.

The programme was over after lunch at 1 p.m. The programme was enjoyed by all members





Report on the Two-Day National Conference held on 10th and 11th May 2023 on “Recent Trends in Design and Application in Energy Development Programme”

The Institution of Engineers (India) organised a two-day National Conference on the 10th and 11th May 2023 in Thiruvananthapuram. The topic of the conference was “Recent Trends in Design and Application in Energy Development Programme.”

Energy demand worldwide is growing beyond the limits of installable generation capacity. Therefore, future energy demands should be met and improved efficiently and securely. Energy solutions should be supported by utilizing renewable energy sources. At present, the contribution of renewable energy to the world's primary energy is not high to meet the primary energy and electricity supplies. Both developed and developing nations are still using fossil fuels to meet energy requirements. In developing countries, the situation is more inconvenient than that for developed countries. Innovations in the sustainable development of construction technologies are essential in the present era of development. Cost, market share and policy have become the prime areas to focus on for renewable energy development. New enabling technologies related to renewable energies will also help to reduce environmental impacts so that the energy systems can be operated both securely and economically.

The Sub-themes of the conference were:

- Non-conventional Energy sources for Power Plant Design
- Eco-friendly materials in sustainable construction
- FEA and FMEA in Mechanical Design and Process
- Reverse Engineering and its Usefulness
- Refractories in Process and Power Plants

Prof. (Dr) M. Jayaraju, FIE, Hon Chairman, IEI Kerala State Centre, welcomed the dignitaries and other invited guests to the conference.

Er. P. Balakrishnan Nair, FIE, Member, MCDB and Organising Convenor, briefed the participants about the theme of the conference, and sub-themes and urged all to take part in the deliberations for the next two days.

Shri. K. Krishnankutty, Hon'ble Minister for Electricity, Government of Kerala, inaugurated the conference. The Minister stressed the need for taking forward the implementation processes of projects rather than trying to block the progress. The need for preparing project reports based on the applicable project considerations is very much essential rather than copying from ongoing projects. Cost is an important factor and this should be taken into consideration for efficient implementation. The Minister wished all success of the conference.

The Chief Guest of the function was Dr S. Somanath, Chairman of ISRO and Secretary of the Department of

Space, Government of India. The Chief Guest was felicitated during the event. Dr S Somanath, in his speech, mentioned that identifying and resolving the bottlenecks causes considerable delays in energy production. The research on how to tap the energy from space and make it available to the Earth is ongoing in the scientific world.

The keynote address was provided by Dr S. Unnikrishnan Nair, Director, Vikram Sarabhai Space Centre, Thiruvananthapuram. Dr Nair indicated that while solar energy is available, efforts shall be done to improve the implementation of solar power energy projects. Hydroelectric energy power projects are expensive and efforts should be on to see the possibility of energy from tidal waves.

Dr C Anandharamakrishnan, Director, CSIR-NIIST, Thiruvananthapuram was the Guest of Honour at the conference in his address mentioned that heat emission from buildings needs to be curbed. This consumes a lot of energy and scientists should focus their research towards identifying materials suitable to contain energy losses. We also should look for technology that can develop the potential of hydrogen as a green fuel.

Er Roy Mathew, Hon Secretary of the IEI Kerala State Centre, proposed a vote of thanks.

Day-1(Forenoon) Inaugural Session

The inaugural programme, Keynote Address

We conducted THREE invited lectures during the forenoon on Day – 1.

1. Dr Nisha G K, HOD, Electrical and Electronic Discipline, Mar Baselios College of Engineering and Technology, Thiruvananthapuram – “Plug-in Electric Vehicle and Grid Integration”
2. Dr T P D Rajan, Principal Scientist, CSIR-NIIST, Thiruvananthapuram – “Lightweight Metallic Materials for Automotive and Aerospace Systems”
3. Dr Ajith Gopi, Joint Chief Technical Manager, ANERT and Chair, IEEE Power and Energy Society, Kerala Chapter – “Renewable Prospects for Kerala – Opportunities and Challenges”

Day-1(Afternoon) Technical Session I

1 Invited Lecture (about 1-hour duration) and minimum 4 papers or two invited lectures/presentations

1. Invited Lecture by: Dr S. Ananthakumar, CSIR-NIIST
Topic: “Design and Development of Advanced Functional Materials for Energy Saving Cool-Roofs and Concretes”.
2. Invited Lecture by: Dr Shaji James P, Associate Director, Integrated Industrial Incubation Centre, Jyothi Engineering College, Cheruthuruthi. Topic: “Renewable Energy from Biomass”
1. Paper by. Jibin Bose, CET. Title: Study on the

microstructural correlation with physical characteristics of A356-20wt%SiCp Functionally Graded Composite.

2. Paper by Jasiya J, St Thomas Institute for Science and Technology Title: Experimental Investigations on Plastic Reinforced Concrete.
3. Paper by Shabnam Shahjahan, St Thomas Institute for Science and Technology. Title: Experimental Investigation on Comparative Study on Bearing Capacity of Stone Column Replaced with Ceramic Waste and Geogrid Encasement.
4. Paper by: Athira P, Kelappaji College of Agricultural Engineering.
Title: A semiautonomous e-robotic platform for eco-friendly agriculture.
5. Paper by: Avani Vineethan, St Thomas Institute for Science and Technology. Title: Experimental Investigations on Eco Brick using Saw Dust
6. Paper by: Sethuraman R S, Mar Baselios College of Engineering and Technology. Title: Battery Performance Analysis – A Preliminary Study
7. Paper by: Muhammed Shahanas, St Thomas Institute of Science and Technology. Title: Effect of Marble Dust and Banana Peel Powder in Strength Improvement of Clayey Soil.
8. Paper by: Ansa Jan, St Thomas Institute of Science and Technology. Title: Effect of Bamboo Mat on Clayey Soil Stabilized with Bamboo Leaf
9. Paper by: Tomson Sebastian, Energy Management Centre, Thiruvananthapuram, Title: Energy Conservation Building Code
10. Paper by: Krishnapriya A S, St Thomas Institute of Science and Technology. Title: Analysis in Strength of human hair fibre reinforcement concrete

Day-2 (Forenoon) Technical Session II

1 Invited Lecture (about 1-hour duration) and minimum 4 papers or two invited lectures/presentations

Invited Lecture by: Dr Ajith Prabhu, Chief Scientist and State Nodal Officer, Intellectual Property Rights Information Centre, Thiruvananthapuram Topic: "Impact of IPR in Reverse Engineering".

1. Paper by: Ashique Mohammed Ali S, Trinity College of Engineering, Thiruvananthapuram. Title: Design, Fabrication and Testing of a Variable Speed Darrieus Type Vertical Axis Wind Turbine for Residents in coastal line and Hillocks.
2. Paper by: Rahul M, St Thomas Institute for Science and Technology Title: Solar Powered Wheel Chair with Voice Control for Physically Challenged People.
3. Paper by: Athira Prasad, Jyothi Engineering College,

Cheruthuruthy, Kerala Agricultural University. Title: Application of Electrostatic in Plant Protection; Dynamics of Water-Based Droplets in Electric Field.

4. Paper by: Dr Binuja Thomas, Principal Scientist, Kerala State Centre for Science, Technology and Environment, Thiruvananthapuram Title: Modelling and Optimisation of Vacuum Impregnation Process Parameters for the Development of Intermediate Moisture Foods (IMF)
5. Paper by: Dr Gopalakrishnan Nair, Former Senior Scientist, ISRO and Visiting Professor NIAS (IISc Campus) Bangalore. Title: Nuclear Fusion – The Energy of Tomorrow.
6. Paper by: Abhijith P S, St Thomas Institute of Science and Technology.
Title: Helmet and Triple Ride Detection Using Deep Learning
7. Paper by: Vibin John, Sree Chitra Thirunal College of Engineering, Thiruvananthapuram. Title: Validation of Analytical Equation for Core Shear Buckling Mode of Honeycomb Sandwich Shell.
8. Paper by: Saisreedhar A, Mar Baselios College of Engineering and Technology, Thiruvananthapuram Title: "Review of Battery Thermal Management System of Electric Bus.
9. Paper by: Akul Ial, Mar Baselios College of Engineering and Technology Title: Flexible Single Valve PSA Oxygen Concentrators for Medical Applications
10. Paper by: Arsha SS, St Thomas Institute of Science and Technology
Title: Medical Waste Detection and Segregation using Robotic Arm

Day-2 (Afternoon) Technical Session III

Minimum 2 papers or two invited lectures/presentations

1. Paper / Lecture by B V Suresh Babu, Accredited Energy Auditor, Ottotraction, Bureau of Energy Efficiency, Energy Management Centre

Title: "Energy Management, Energy Audit, EC Act 2001 and Related Policies".

1. Paper by: Adarsh R, John Cox Memorial CSI Institute of Technology
Title: Automated Brain Tumour Classification using ResNet50: A Deep Learning Approach
2. Paper by: Hari Sankar, A K, St Thomas Institute of Science and Technology. Title: Plant Leaf Disease Detection System using VGG-19

Day-2 (Afternoon) Valedictory Session

Prof. (Dr) M. Jayaraju, Chairman, IEI KSC welcomed the Chief Guest for the Valedictory Session and other participants.

Er. P. Balakrishnan Nair, Member, MCDB, Organising Convener, summarised the conference presentations and proceedings:

1. Summarising the Conference Proceedings:
 - Total Number of Invited Talks – 5
 - Total Number of Papers Presented – 25
 - Number of Papers submitted and not presented – 3
2. There were two electric passenger and cargo vehicles exhibited by the manufacturers, Kerala Automobiles Limited.
3. There was one GO-KART automobile sports car designed

by the students of the College of Engineering, Trivandrum was also on display.

4. Outstanding participation of students, presenters, faculties and IEI members in the Two days National Conference and 120 persons participated.

Valedictory Address and Distribution of Certificates for Participation and Presentation by Shri V. Sasi, Hon. Member of Legislative Assembly, Kerala.

Er Roy Mathew, Hon Secretary, IEI KSC proposed a vote of thanks. This was followed by the National Anthem.

The conference was announced and concluded at 5.00 p.m. on 11th May 2023.







Valedictory Function of Summer Vacation Class for High School Students

On 16th May 2023 Valedictory of the Summer Vacation Class for High School Students was held at Visvesvaraya Bhavan. Er. Udaya Kumar KS, FIE, Past Honorary Secretary, IEI Kerala State Centre. Er. P. Balakrishnan Nair, FIE, Committee Member, IEI Kerala State Centre. Mr. Sanal Kumar G, Faculty Member, Vacation Class, and Dr. R. Murukesan, FIE, Chief Engineer (Retd), Kerala PWD attended the function. Er. P. A. Prabhakaran was speaking on the occasion. Certificates and Electronic kits were distributed to student participants. Er. Roy Mathew, MIE, Honorary Secretary, IEI KSC proposed a vote of thanks.



Trichur Local Centre

17.05.2023: A technical session on the topic “Empowering the Least Developed Countries through ICT” was organized by Trichur Local Centre on World Telecommunication and Information Society Day on 17 May 2023. Sri. A. S. Sukumaran ITS, Principal General Manager Telecom, BSNL, Thrissur Telecom District was the chief guest. Dr. C. P. Sunil Kumar FIE, Chairman, TLC presided over the meeting. Er. P. Krishnakumar FIE introduced the chief guest formally and in detail. Er. V. Jayakumari FIE proposed the vote of thanks.



In the theme talk, Sri. A. S. Sukumaran asserted that steps have been taken to connect all villages, including remote ones, in the country through optical fibre. Communication connectivity has helped remarkably during calamities like floods. ICT helps in monitoring, mitigating and adapting to climate change. He said informed people, vibrant civil society and strong media are closely linked. To put it briefly, one of the factors that the development of countries depends on is how ICT tools are effectively used.

Dr C. P. Sunil Kumar, in the Presidential address, pointed out that technology, particularly ICT, has brought miracles in social networking. The connection has helped to break the traditional barriers. This has high stakes for underdeveloped economies with disproportionate factors. He said that ICT

IEI Trichur Local Centre has organised a Webinar on World Environment Day viz. 5 June 2023. The guest of honour Dr. P. A.



Soloman, Joint Director, Regional Directorate of Technical Education, Kothamangalam gave a technical talk on the theme “Beat the Plastic Pollution”. Dr. C. P. Sunil Kumar, Chairman presided over the programme. Dr. A. Surendran introduced the Chief Guest formally and in detail. Er. V. Narayanan proposed the vote of thanks.

Dr. Soloman has explained the management options for overcoming the crisis of plastic pollution, from the most favoured option to the least favoured option. He said that moving away from the current unsustainable model is better for the planet. A life cycle approach helps to balance economic needs. He also discussed the health effects of pollution in ground water, soil and oceans.

Dr. C. P. Sunil Kumar, in the Presidential address, pointed out that we have become addicted to use plastic products in the midst of severe environmental, social, economic and health consequences. Plastics including microplastics are now ubiquitous in our natural environment. But the world is waking up to the problem, and governments, industry and other stakeholders have started to act. He suggested everyone to be an advocate for change by adopting a Zero-Waste Lifestyle.

Kochi Local Centre

17.05.2023: World Telecommunication Day Celebration 2023

The webinar started with a welcome address by P A Salahudheen, chairman, of IEI Kochi Local Center. He welcomed Er Gopalan ITS, Dy Director General Services, and compliance Kerala LAS. During the inaugural speech, Chairman mentioned the difference in the Telecom scenario between the present and past about 40 years back Chairman concluded his inaugural address by welcoming all the dignitaries to the webinar, including all the national council members and senior engineers from various fields.



Prof (Dr) G Madhu introduced the speaker with details of the speaker's experience both in academic achievements and the critical position he had held by the speaker in the field of the Telecommunication department and other government agencies and missions.

Chief guest Er Gopalan ITS started his speech with a historic background of the celebration of World Telecom and information society day. Subsequently, he introduced the Theme of the world telecommunication day celebration for the current year as empowering the least developed countries through information and communication Technology.

He continued his speech with definitions of various terminologies involved in the theme statement such as least developed country and empowerments etc

The speaker clearly narrated how to empower undeveloped countries through Telecom technology. The speaker clearly explained the development in the field of communication, health care, education and general administration

The speaker concluded his speech by summing up all the points he explained and mentioned.

The speaker answered all the queries raised by the participants

After the discussion vote of Thanks was expressed by the Hon Secretary of Kochi LC Er K S Babu. The webinar ended at about 08.35 p. m.

05.06.2023: World Environment Day 2023 on the theme ‘Beat Plastic Pollution

The webinar started with a welcome address by P A Salahudheen, chairman, of IEI Kochi Local Center. He welcomed Prof (Dr) S Bijoy Nandan Professor of Marine Biology and Biochemistry & Dean Faculty of Marine Science, CUSAT, Kerala. In the Inaugural speech, Chairman mentioned the importance of environmental protection and the abuse of Plastic harming nature and living organisms, predominantly aquatic life. He warmly welcomed all the eminent engineers, Council Members and committee members in the webinar.

Prof (Dr) G Madhu introduced the speaker with details of the speaker's experience both academics and experts in the field of environmental engineering, especially Marine biology. He also mentioned his research work in the field of Marine Biology and Biochemistry

Chief guest Dr Bijoy Nandan started his speech with an explanation of world environment day observation and its significance as well as the historical background of the observation of world environment day

Speaker Dr S Bijoy Nandan started his speech with an explanation of the evolution of society from the Stone Age to the Plastic Age. He described Plastic as a necessary Evil which is now an unavoidable part of human life. Same time such necessary Plastic creates challenges to the ecosystem He also explained that the per capita Production of plastic is about 48 kg per year The amount of Plastic Produced worldwide over very high and we can estimate the impact of such Plastic on the environment.

He explained with visuals about plastic waste production and its mismanagement and impact on water bodies and oceans. The speaker explained what is Marine litter its impact on fish and the presence of microplastics in fish and kinds of seafood and to Human body. He explained the presence of Microplastics not only in marine organisms but in the Human body, Human blood and even in Human sperm. The Speaker reiterated as the situation is very much alarming which causes various issues in human metabolism and causes various types of Cancers to Human beings. Then He explained about various type of Plastic debris dumped in the oceans such debris create plastic Island in the oceans which is a serious threat to nature in general and aquatic life.

The speaker explained the Indian scenario in microplastics and its consequence on the environment and marine life through the life cycle same affects human beings through the consumption of Marine products

The speaker concluded his speech with ways and means to compact the plastic menace in general and steps taken to minimize the abuse of Microplastics in particular.

He continues his speech for about one Hour and 30 Mints. The speaker answered all the queries raised by the participants.

After the discussion vote of Thanks was expressed by the Hon Secretary of Kochi LC Er K S Babu. The webinar ended at about 9.15 p. m.

Palghat Local Centre

05-06-2023: The Institution of Engineers (India), Palghat Local Centre observed the World Environment Day. Dr. Divya P.V, Associate Professor, Department of Civil Engineering, Palakkad was the Keynote speaker. This year's theme for World Environment Day was 'Solutions to Plastic Pollution'. The Chairman of the Centre Er K. Madanamohan presided over the function. He also delivered an introductory speech on the theme of the day.



- The function started at 6.00 p.m. with a silent prayer. Er K. Madhanamohan, Chairman IEI Palghat Local Centre Presided over the Function. A two-minute silence was observed for those who lost their lives in the Odisha train tragedy.
 - Welcome Address & Introduction of the theme: Er K. Madhanamohan, Chairman IEI Palghat Local Centre
 - Introduction of the keynote speaker: Dr C. Pradip, Hon. Secretary of IEI Palghat Local Centre introduced the Keynote speaker to the audience.
 - Keynote address: Dr Divya PV, (Civil) Associate Professor IIT, PKD delivered the keynote address on the theme of the day.
 - Discussion: After a detailed presentation on the theme of the Day there was a detailed discussion in which the problems of plastic waste mixing with organic waste, laxity among the people in waste management, the need to arrange the education system to inculcate civic sense in children at school level were also discussed.
- Er. Sujatha Vijayan, Chartered Civil Engineer; Er. K. Ravindran Former Technical Member of Kerala Water Authority and Er. AV Rajappan, Managing Director of Navabharat Systems also spoke at the event.
- Vote of thanks: Dr C. Pradip, Hon. Secretary of IEI Palghat Local Centre proposed a vote of thanks

In the technical session, Chairman Er. K. Madana Mohan, Chairman IEI Palghat Local Centre delivered an introductory speech on the theme of the day 'Solutions to Plastic Pollution', in which he explained the different types of plastics and the plastic waste generated from the products made from them. He described the scale of plastic waste generated globally and the serious problems that fine plastic particles can cause to humans and other animals if they

enter the body. He said that the following methods should be used to solve this.

Reduce: lowering the amount of waste produced

Reuse: using materials repeatedly

Plastic ban: on thickness less than 50 microns

Extended Producer Responsibility

Recycling: use these to make new materials

Mechanical recycling: it preserves the molecular structure of the polymer and mechanically crushes and remelts it to granulate and this granulate is used for making new plastic products

Chemical Recycling: involves extraction, depolymerisation and conversion (pyrolysis/gasification/depolymerisation)

Pyrolysis: thermal degradation of plastic waste in the absence of oxygen generates pyrolytic oil then fuel

Gasification: heating polymer in the presence of oxygen and water, converts plastics into Synthetic gas, which can be converted to fuel or chemical feedstock.

Dr. Divya, the Keynote speaker spoke about 'Green Geotechnics' and how plastic waste can be used for purposes including road filling. She described the accumulation of plastic and other organic and non-organic solid waste in big cities including Mumbai, Chennai and Delhi. She pointed out the problems with the presence of gases such as methane in these deposits and the toxic fumes that can be generated when they catch fire. She also described how plastic waste can be used as road filling and how can geotechnical engineers be of help.

In the detailed discussion that followed the lecture sessions, the problems of plastic waste mixing with organic waste, and laxity among the people in waste management were also discussed. The panellists also highlighted the need to arrange the education system to inculcate civic sense in children at an early age. The program highlighted the willingness to organize classes and seminars in schools under the leadership of The Institution of Engineers to create awareness among children about the serious problems caused by plastic waste.

Er. Sujatha Vijayan, Chartered Civil Engineer; Er. K. Ravindran Former Technical Member of Kerala Water Authority and Er. AV Rajappan, Managing Director of Navabharat Systems also spoke at the event. Honorary Secretary Dr C. Padip expressed the vote of thanks.

17-05-2023 World Telecommunication and Information Society Day 2023

Brief Details about the Programme:

The World Telecommunication and Information Society Day 2023 was celebrated by the Palghat Local Centre of IEI in association with The Institution of Electronics and Telecommunication Engineers (IETE) Palakkad Centre at Hotel Gazala, Palakkad.



- The function started at 6.00 p.m. with a silent prayer. Er K.Madhanamohan, Chairman IEI Palghat Local Centre Presided over the Function.
- Welcome Address: Dr C.Pradip, Hon. Secretary, IEI Palghat Local Centre delivered the welcome address
- Presidential Address: Er K.Madhan Mohan, Chairman, IEI Palghat Local Centre delivered the presidential address
- Introduction of the keynote speaker: Dr B. Rajesh Menon, Hon.Jt. Secretary of IEI Palghat Local Centre introduced the Keynote speaker to the audience.
- Presentation of ITU Council Message: Mrs D Hema, Hon. Secretary, IETE, Palakkad Centre Presented the ITU Council Message
- Keynote address: Er. M S AJAYAN Chairman, IETE and General Manager, BSNL, Palakkad delivered the keynote address on the theme of the day.
- Discussion: After a detailed presentation on the theme of the Day there was a detailed deliberation amongst the dignitaries and audience regarding various Telecom Technologies like 5G, OFC etc.
- Vote of thanks: Er. D Hema, Hon. Secretary, IETE, Palakkad Centre Proposed vote of thanks

In the technical session, Er. K.Madhan Mohan, Chairman IEI Palghat Local Centre described the innovative changes taking place in the field of information and communication technology and their role in changing the standard of living of the people and the relevance of this year the theme is "Empowering the Least Developed Countries through Information and Communication Technologies". He invited keynote speaker Er M.S.Ajayan, General Manager, BSNL, Palakkad to speak more deeply on the subject.

In his lecture, Er M.S.Ajayan elaborated on the following points.

In India, Telecommunication began with the introduction of the Telegraph- Indian P and T Service is one of the oldest in the world First experimental Electric Telegraph line was started between Calcutta and Diamond Harbor (WB) for the use of British East India Company- At that time the Post and Telegraph Department occupied a small corner of PWD Further long distance telegraph lines were established between Calcutta, Agra, Mumbai, Chennai etc. In 1854,

telegraph services were opened to the public. In 1880, an Anglo India Telephone Company named Oriental Telephone Company Ltd approached Gol for a license to establish Telephone Exchange in India.

Though Govt initially resisted as it wanted a monopoly in the communication sector, the license was later granted and TEs were opened in Calcutta, Bombay and Madras on 28th January 1882. Calcutta Telephone Exchange was named Central Exchange and got established with 93 subscribers.

Radio Broadcasting in India started in 1927 and All India Radio was set up in 1937. Number of Telephones in the country was around 80,000 by 1948, that is, by the time of independence, which grew up to 5.07 Million, viz 50Lakh in 1991.

With Liberalisation, Privatisation and globalisation knit into the policies of Govt of India, efforts started right from the early 80s to introduce more competition and ensure more capital inflow to the telecom sector. During the prime ministership of Rajiv Gandhi, Mr Sam Pitroda an NRI executive was invited to India to form the Centre for Development of Telematics (C Dot) which manufactured electronic exchanges in India for the first time.

In 1985, Dot was separated from P&T Dept, and it was responsible for providing telecom services in the entire country in 1986, MTNL and VSNL were formed to provide services in Metros as well as to provide international long-distance communication services respectively. TRAI was formed in 1997. TDSAT in 2000 BPL Mobile Communications, established in 1994, was one of India's first mobile network operators. It began commercial operations in 1995

He also explained the commencement of BSNL and other telecom companies in India. Competition in the Telecom Industry: India has a record of keeping the lowest Telecom tariff plans as compared to other countries. This has resulted in a severe price war and cutthroat competition among telecom companies. Market share is one of the major areas of concern for telecom companies.

He also explained the Covid Pandemic – Impact on Telecom Industry and said that the governments recognized the importance of the telecom industry and its role during the Covid Pandemic period as the telecom industry has helped the government in handling the pandemic.

He said his company BSNL has taken the lead in providing connectivity to Tribal villages – Taking FTTH connectivity to the remotest tribal villages for the benefit of tribal students was one such challenging task which was wholeheartedly welcomed and appreciated by the public at large.

Next was the debate where he answered the technical queries of the audience,

Kollam Local Centre



28.04.2023: The Institution of Engineers (India), Kollam Local Centre and IEI Kollam Local Centre EEE Students Chapter TKM College of Engineering Jointly conducted an IoT (Internet of Things) workshop on 28th April 2023 from 10 a.m. to 4 p.m. The program was started at 10.00 am with an inaugural address by Dr. Sheebe R (Hon. Secretary, IEI Kollam Local Centre). The session was handled by Ajesh J S. He is the Student mentor of C-rob TKMCE. It was basically an introductory level workshop on basic concepts of IoT and the integration of hardware and software using IoT.

IoT is a vastly growing field with applications ranging from agriculture, healthcare, robotics, defence, etc

The workshop was open to all years and branches, having almost 50 Participants registered for this workshop. The event was evoked with vibrant and energetic participants, receiving a positive response throughout. Hardware kits and refreshments were provided to all the registered Participants.

02.05.2023 The Institution of Engineers (India), Kollam Local Centre organized a workshop on PIC microcontrollers on 2nd May 2023 in association with EEE Students Chapter TKM College of Engineering, Kollam from 10 a.m. to 4 p.m. The session was handled by Gowthem R and it was a basic introductory-level workshop on PIC for beginners. He is currently the student mentor of idea lab TKMCE.

The workshop was intended for 3rd-year students and had almost 25 participants from various years and branches. All the registered candidates for this workshop were enthusiastic and the session received a positive response from their side. A hardware kit including a microcontroller and other components necessary to work on the workshop was given to the participants. The program ended up with refreshments for the participants.

25.04.2023 The Institution of Engineers (India), Kollam local Centre and IEI Electrical and Electronics Engineering Students Chapter, TKM College of Engineering conducted a workshop on “Advanced Control Systems using Beam balance” on 25th April 2023 from 10 a.m. to 4 p.m. The session was handled by Muhammed Salmun and it covered basic concepts of control systems with a hands-on session. Muhammed Salmun is a Junior Engineer at Techosa Robotics, Kollam.

The workshop was open to all students and had almost 60 participants from various years and branches. The workshop



overall received a positive response and helped the attendees to achieve basic knowledge on various aspects of designing a system from a control system point of view. Students were insisted to bring laptops for better analysis and refreshments were provided to them.

17.05.2023 Based on the theme “Empowering the Least Developed Countries through Information & Communication Technologies”, the celebration of World Telecommunication Day 2023 was observed by IEI Kollam Local Centre at TKM College of Engineering, Kollam on May 17, 2023. The event was organised by “The Institution of Engineers (India), Kollam Local Centre”.

The event started off with a silent prayer and then Dr Sheeba R (Hon. Secretary, IEI Kollam Local Centre) delivered a welcome address. Due to the unavailability of the chairman of IEI KLC, Er. Ajayan R (Executive committee member, IEI KLC) gave the presidential address. Dr Pasmadas M

(Assistant General Manager, BSNL, Kollam) was the invited chief guest for the event and he inaugurated the function.

The second session was a technical session in which Dr Padamadas M delivered an invited talk on the topic “Empowering the Least Developed Countries through Information & Communication Technologies”. The session was an interactive session and during his talk, he emphasised the tremendous growth and advancement of communication technology. About 50 participants attended the event. The forenoon session ended up with a vote of thanks by Er. Sanalkumar K (Executive committee member, IEI Kollam Local Centre)

07.05.2023 Report on Webinar Conducted By Mechanical Division 2023

The webinar was organized by The Institution of Engineers Kollam Local Centre on 07/05/2023, Friday at 7.30 p. m.





through Google Meet Platform. The Program started with Welcome Address by Dr Sheeba R MIE, Hon. Secretary of IEI KLC. Followed by Introduction of the Speaker was delivered by Er. Sreekumar. R, APME of Baseliros Mathews II College Engineering, Sasthamcotta, the Executive Committee Member of IEI KLC. The speaker Was Dr K. E. REBY ROY, Currently working as a Professor of, the Mechanical Engineering dept. of TKM College of Engineering, Kollam, He is the Dean of International Collaborations and Head of Career Guidance of TKM College of Engineering, Kollam. He presented a webinar on the Topic of “Cryogenics and its Applications in Aerospace”. He explained from basics of Cryogenics and Its various applications in different fields especially aerospace, the working Cryogenic Engine which is used to Power ISRO GSLV rockets. The program was attended by 65 students and Faculties of various engineering colleges.

In the afternoon session “The Institution of Engineers (India), Kollam Local Centre” organized a student Project Expo as part of world telecommunication Day. A total of 6 teams were registered for the event. Our main chief guest Dr Padma Das M evaluated all the projects.

The first prize was awarded to the project Inverted Pendulum comprising members Balabhaskar S S, Bharat P S, Arjun S J, and Rahul Raj R of TKM College of Engineering, Kollam and the second prize to the project Dynamic Wireless Charging comprising members Krishnanunni M R, Pratheesh S, Shanuja Shaji, Abhishek S Kumar of TKM College of Engineering, Kollam. A cash prize of Rs 5000/- was awarded as the first prize and Rs 2000/- was awarded for the second prize. A complimentary cash prize of Rs 1000/- was awarded to the remaining 4 teams.



An International Conference on Sustainability ‘RESILIENCE 360’ was conducted by “The Institution of Engineers (India), Kollam Local Centre” in association with the “Department of Civil Engineering, Providence College of Engineering, Chengannur”. The conference was inaugurated by Dr. Sunil Kumar B, Director, IIC, Chavara on 17th May 2023 at Einstein Seminar Hall of Providence College of Engineering. This conference was intended to bring together the various facets of science and approach the issues of sustainability in a holistic manner. The conference proceedings were unveiled by Dr. B Sunil Kumar and Dr. V John Kurian. Many invited speakers were present in the conference from different parts of the world. The invited talks were arranged in such a manner that the discussion topics covers a broader perspective of sustainability. The talks were mainly regarding the various aspects of sustainability like Anthropology, Construction Practices, Green Chemistry, Food, Rural development etc... There were oral presentations on each day that are evaluated by respective session chairs and based on the evaluation a best paper award was also declared. In the valedictory function Dr.M G Gracious, Rtd. Principal, MA College, Kothamangalam made the keynote address and Dr.Santhosh Simon, Principal, Providence College of Engineering presided the function. Head of the department Dr.Sainu Franco, Coordinators of the event, Ms. Jain Suzan Zachariah, Ms. Reshma Rajendran B, Mr. Nibin Varghese graced the occasion.

Kozhikode Local Centre

25.05.2023: A Technical Presentation was held on 25th May 2023, by The Institution of Engineers (India) Kozhikode Local Centre, in connection with the World Telecommunication and Information Society Day-2023, from 2.30 p. m. to 4.30 p. m. at Morickap Resort, Wayanad.

Dr Sabiq Puthiya Valappil, Principal, of KMCT College of Engineering was to



deliver the theme lecture; however, owing to some urgent commitment he could not come and participate in the function. Therefore the chairman introduced the topic and spoke elaborately on the theme of the day “Empowering the Least Developed Countries through Information and Communication Technology” including the Recent trends in telecommunication technology.

Er K Shaju MIE, Hon. Secretary, welcomed the audience. The talk was much informative and useful and was followed by an active discussion. The speaker cleared the doubts raised by the participants.

The function concluded with a vote of thanks by Er Manu Raj, Chartered Engineer, IEI Kozhikode Local Centre.



Kerala State Centre- WEDNESDAY TALKS - Glimpses

24-05-2023 Talk on ‘Our Earth and Our Engineer Raw Materials and Value Addition for Electric Vehicles’ by Dr. R. Bhima Rao Geo Scientist & National Mineral Awardee (Ministry of Mines, Govt. of India) Advisor to Mineral, Govt. of India Former Chief Scientist, CSIR-IMMT, Govt. of India, Bhubaneswar



31-05-2023 Talk on ‘Arbitration in Environment and Climate Change’ by Dr. K. R. S. Krishnan Director Karunya Institute of Science & Technology (A deemed University)



CERCON

Guidance Classes for GATE 2024 Examination for the following Engineering Branches

- Civil Engineering
- Electronics & Communication Engineering
- Electrical Engineering
- Computer Science & Information Technology
- Mechanical Engineering

Classes will commence from June 2023 (Course Duration: 9 months)

The registration fee has to be paid in one installment by cash / Cheque / Demand Draft in favor of “The Institution of Engineers (India), Kerala State Centre” payable at Thiruvananthapuram along with the application.

Voice of Kerala Engineers

June 2023

To

Date of Publication : 07-06-2023

If undelivered please return to:

The Institution of Engineers (India)

Kerala State Centre
Visvesvaraya Bhavan
Opposite Kanakakunnu Palace
Thiruvananthapuram - 695 033

Phone: 0471-2322991

E-mail: ieitvm@gmail.com, keralasc@ieindia.org

Web: www.ieitvm.org

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Editorial Board : Er.Sarat Kumar K, MIE, Editor, Er.Balakrishnan Nair P, FIE, Er.K.R.Suresh Kumar, MIE, Er. R.K.Subramoniam, MIE, Prof. (Dr.) M. Jayaraju, FIE, Chairman-KSC, Er.Roy Mathew, MIE, Honorary Secretary-KSC

Printed and published by Prof. (Dr.) M. Jayaraju, FIE, Chairman on behalf of The Institution of Engineers (India) Kerala State Centre. Printed at Akshara Offset, Kunnumpuram, Thiruvananthapuram (Ph: 0471-2471174). Published at IEL-KSC, Visvesvaraya Bhavan, Opposite Kanakakunnu Palace, Thiruvananthapuram. Editor: Er. Sarat Kumar K.