



**CHAIRMAN'S MESSAGE**

**Er. N. Rajkumar FIE**



The 695<sup>th</sup> (Special) and 696<sup>th</sup> meetings of Council was held on 1<sup>st</sup> and 2<sup>nd</sup> July at New Delhi. The Council discussed various issues which concerns Engineering in the country. In Kerala State Centre, Er. E. Sreedharan made a special technical talk on 15<sup>th</sup> July. Er. E Sreedharan stressed the lack of commitment among Engineers and advised Engineers to be more committed and prove their worth in Nation building. He expressed that Engineers are not given required professional importance in government services especially in Kerala and wanted IEI to look into the matter.

As he has correctly pointed out, the professionals and professional bodies are not given due recognition in the State. As advised by Er.Sreedharan, young Engineers should also strive to win over the society by their performance as done by Er.Sreedharan and similar personalities. Being the largest professional body in the country, we may have to react to the administrative intervention in our profession. The greatest need of the hour is an Engineers' Bill for the country.

**HONORARY SECRETARY'S DESK**

**Er. K. S. Udaya Kumar MIE**

**Kerala State Centre Diary**



**02-08-2017** Talk on 'Re Imaging India, Awareness Program for Engineers, by Er. Binish N., Branch Head, Birla Sunlife Asset Management Company Ltd., Thiruvananthapuram

**05-08-2017** One Day Awareness Programme for Engineering Graduates by Er.P.A.Prabhakaran.

**09-08-2017** Talk on 'Nepal' by Er. Amarnath Raj, CEO, In App, Technopark, Thiruvananthapuram.

**15-08-2017** 71<sup>st</sup> Independence Day Celebration. Hoisting of National Flag at IEI Kerala State Centre at 9 a.m.

**16-08-2017** Talk by Sri. Anil Kumar, Audit Officer, AG's Office, Tvpm

**23-08-2017** will be announced later

**30-08-2017** will be announced later

**17-08-2017** One Day Workshop on 'Mentoring Smart Skills for Becoming Engineering Professionals'. Contact: Phone: 0471-2322991,0471 - 2982102, Fax: 0471 - 2322992 E-mail: ietvm@gmail.com, keralasc@ieindia.org Please visit : www. ietvm.org

**METRO RAIL – THE FUTURE TRANSPORTATION IN BIG CITIES**

The Institution of Engineers (India), Kerala State Centre conducted a Special Technical Talk by Er. E. Sreedharan, Honorary Life Fellow, IEI and Principal Adviser, Delhi Metro Rail Corporation (DMRC) on the topic, 'Metro Rail – The future transportation in Big Cities' on 15<sup>th</sup> July, 2017 at Visvesvaraya Bhavan, Thiruvananthapuram.



*Er. E Sreedharan-Metroman speaking*

The programme commenced with silent prayer followed by lighting of 15 lamps by IEI Kerala State Centre Committee Members representing the 15 Engineering Divisions of IEI.

Later, Er. K.S. Udaya Kumar, Hon.Secretary, IEIKSC made the welcome address, pointing out that it was a blessing to have the 'Metroman of India' for a talk. Er. N. Rajkumar, Chairman, IEI KSC delivered the presidential address, stating that it was for the third time that Er.Sreedharan was delivering a talk at IEI KSC.

The technical talk covered Metro Rail in general and Thiruvananthapuram Light Metro in particular.Also, Er. Sreedharan vent his views on the poor standard of engineering education and the plight of Engineers.



*Er. K.S. Udaya Kumar*

At the outset, Er.Sreedharan pointed out that Metro Rail transportation applies only to big cities and not small cities with population less than a million. In big cities, Metro avoids congestion

by personalized vehicles. The urban transport system usually consists of Bus, Tramways and Metro. Of these, Bus Rapid Transport System (BRTS) does not lessen congestion and has not been successful. One way is exclusively reserved for buses. Coming to Tramways, it shares the right of way on roads with other vehicles. But at present it is used less. The third and most sought after mode of transportation nowadays is the Metro.

There are three types of Metro. viz: Heavy Metro, Medium Metro and Light Metro. For Metros to be successful, the population of a city should be at least between 1 million and 2 million. To select the suitable Metro, the criterion is the PHPDT (Peak Hour Peak Direction Traffic). Heavy Metro is used when PHPDT is 90,000 ie: when 90,000 people travel in one direction in one hour. Example is Delhi. Medium Metro is used when PHPDT is between 40,000 and 50,000. Example is Bengaluru. Light Metro is used when PHPDT is below 40,000. As of now there is no Light Metro in India.

#### **Advantages of Metro**

Metros can transport huge capacity of commuters. A Medium Metro is equivalent to 9 Bus Ways or 14 Ways of Car Traffic. Metro is run on elevated system or underground or mixed and pollution is nil being run on electricity. Metros are reliable, fast (30-40 kmph) and comfortable. Not all Metros are air-conditioned. Kolkata Metro is not a/c but the tunnels are partially a/c. Another advantage of Metro is that road accidents can be considerably reduced due to less number of vehicles.

For example in Delhi, about 7 fatal and 70 non-fatal accidents occur daily and this has now been reduced after the introduction of Metro. Delhi Metro carries 30 million people daily which is equivalent to 3 lakh vehicles. Thus congestion and pollution on roads are avoided. Each commuter saves nearly one hour of travel every day.

Also, Metro brings about a change in social culture. When one enters a Metro, a discipline is created. Queues are compulsory. Cleanliness of stations and coaches are maintained. People respect cleanliness and hence littering of waste avoided. Thus social attitudes of people change.

#### **Problems of Metro**

Metros are highly capital intensive. Since Metro Systems can be elevated, underground, at-grade or mixed, the cost of construction varies from Rs.250 crores/km to Rs. 400 crores/km. The ticketing system is costly. Rate of return is hardly 2%. But the social return (benefits) is 18%.

#### **Delhi Metro**

The first Metro in India is Kolkata Metro. Started in the early 70's, it took 22 years to complete 17km. Cost increased 14 times and there was disturbance to the population during the construction. It is part of Indian Railways. Kolkata Metro is Broad Gauge.

Delhi Metro was started in 1990, when Delhi was exploding in size. It is not a Government Department. A new SPV (Special Purpose Vehicle) called DMRC (Delhi Metro Rail Corporation) was started. The unique difference is that Government of India and Government of Delhi each have 50% ownership. There is lot of autonomy. All the details of the project were formulated by none other than Er. Sreedharan. The operational and maintenance cost are very low. The fare is the lowest. Thus loan repayment is effortless. The fare is augmented with revenue from advertisements, rent from surplus lands, etc. DMRC is a financial success and a technical success. Seeing the success of DMRC, there are now 11 other Metros. DMRC revolutionized Metro construction and hand held the Metro development in other cities. Five more Metros, including that of Thiruvananthapuram and Kozhikode are planned.

#### **Thiruvananthapuram Metro**

At first Kerala Government wanted a Mono Rail System in Thiruvananthapuram and conducted feasibility studies. Mono Rail is not a good urban transportation system. It is good in an entertainment park or a pilgrim centre. A Detailed Project Report (DPR) is necessary and not a vague one. The tender for rolling stock was received poorly. Also the rolling stock is heavy. The Mono Rail is a total failure in Mumbai. So it was requested to go for a Metro. On seeing the terrain and narrow roads, a Light Metro seemed appropriate. It can negotiate steep gradients and sharp curves. Also, demolition of junctions can be avoided. But flyovers will be constructed. Coach height and width are less. Axle load is only 9 tonnes, whereas for Normal Metro it is 19 tonnes. Hence its civil work is less. The cost Rs.160 crores/km. The DPR was submitted in September 2016.

Phase One consists of Single Line from Technocity to Karamana. The yard is at Pallipuram. The distance is 21.8 km with 19 stations. The system is fully elevated. The train consists of 3 coaches which can be increased to 4 coaches in future. The estimated cost is Rs.3500 crores. Completion cost is Rs.4000 crores. The Internal Rate of Return is 4.2% and the Economic Rate of Return is 18.5%. Traffic studies were done by NATPAC. PHPDT is estimated to be 12,000 in 2020. The first stretch will be completed in three years.

After the Technical Talk, Er. Sreedharan made a striking note on the poor standard of Engineering education, honesty in profession and the plight of Engineers in India.

#### **Poor standard of Engineering Education**

According to him, Engineers have no social acceptance now. This is mainly due to the poor standard of Engineering education. Only 20% of young Engineers are employable. Nowadays students join Engineering courses because they do not get admission in any other course. The increase in the number of Engineering colleges have made admission easy for students with low marks. Er. Sreedharan made a fervent call to stop the business of starting Engineering colleges. He called upon The



Institution of Engineers (India), the biggest professional body of Engineers in the world to take the lead in improving the standard of Engineering education.

### Ethics in Profession

Further, Er.Sreedharan stressed the importance of honesty in Engineering profession. He made a clarion call to all Engineers to make themselves socially accepted by being honest to the profession and society. Punctuality and hard work was the only solution.

### Plight of Engineers

Before concluding, without mincing words, Er.Sreedharan lashed out at the present system, as in Kerala, of having IAS Officers as Heads of Government or quasi-Govt. Engineering Departments like PWD, KSEB Ltd., Kerala Water Authority, etc. In several other States like Gujarat and Maharashtra, it is only

the Engineers who head Engineering Departments. A Chief Engineer with more than 30 years of service had to work under an IAS Officer of 5 or 6 years of service. He underlined this deplorable condition leading to poor performance by Government Engineers. To avoid this he stressed the urgent need for the Engineers' Bill.



Er.V.Vijayakumar

As a mark of gratitude, Er. Sreedharan was presented a Memento by Er.N.Rajkumar, Chairman, IEI KSC and Er .K.S. Udaya Kumar, Honorary Secretary, IEIKSC followed by Er.V.Vimal Prakash, Past Council Member, IEI presenting the Necktie and Tie-pin of IEI. The largely attended function concluded with vote of thanks by Er.V.Vijayakumar, Past Chairman, IEI KSC.



Lighting of Lamps



Er. N Rajkumar presenting Memento



Er. V. Vimal Prakash presenting IEI Necktie & Tiepin



## IEI Alumni Association

The first meeting of IEI Alumni Association of Kerala State Centre was held on 23rd July 2017 at IEI Kerala State Centre, Thiruvananthapuram. Er.N.Rajkumar, Chairman of Kerala State Centre presided over the function. 13 members were present. Chairman explained the necessity and functions of the Alumni in detail. All members explained their experience in passing Section B examinations as well as the gains after obtaining AMIE.

The following members were elected to form Executive Committee. Er.N.Rajkumar, Chairman, IEI, Kerala State Centre. Er. K.S. Udaya Kumar, Honorary Secretary, IEI, Kerala State Centre and Er.U.Balagopalan, Convenor, IEI, Alumni Association.

Free Membership is open for persons who have passed Section-B examinations of IEI. For any clarification, contact Er.U.Balagopalan, FIE. Mob: 9447211666.

## 'KRISHI NALLAPADAM'

The Institution of Engineers (India) Kerala State Centre in association with Agrifriends (students welfare organisation) conducted a Workshop on 'Krishi Nallapadam' on 17<sup>th</sup> July 2017 at The Institution of Engineers Hall, VisvesvarayaBhavan, Thiruvananthapuram. This was the 10<sup>th</sup> Award Ceremony for outstanding students doing modern agricultural practices in



Er. K.S Udaya Kumar honouring Shri. T.P Sreenivasan



Er. N Rajkumar speaking

their schools in Kerala.. The students took an oath related to the glimpses of agriculture development in the country. The function was inaugurated by Chief Guest Shri.T.P.Sreenivasan, (Former Indian Ambassador). During the function dignitaries were honoured. Shri.M.P.Loknath, Patron, Agri Friends welcomed the

gathering. The function was presided over by Er.N.Rajkumar, Chairman, IEI Kerala State Centre. Shri.A.M.Sunil Kumar, Director, Agricultural Department and Shri.Raghavan C., Joint Commissioner, Pareeksha Bhavan honoured the participating Schools by giving trophies. Er. K.S. Udaya Kumar, Honorary Secretary, IEI Kerala State Centre honoured the Chief Guest, Shri.T.P.Sreenivasan and Shri.KollamPanicker, Patron, Agri Friends.

Mr.S.Jayakumar, Agricultural Officer, Nanniyode Krishi Bhavan co-ordinated the activities and presented an awareness programme for the school students .

## Inauguration of GATE 2018 Guidance Class

The function on 15.07.2017, started with silent prayer. Er.S.Radhakrishnan, Honorary Director, CERCON welcomed the students and parents. Er.N.Rajkumar, FIE, Chairman, IEI, KSC inaugurated the guidance class by lighting the lamp and delivered the inaugural address. Er.S.R. Vijayamohana Kumar, FIE, Committee Member, IEI, KSC and Dr. K. Jayakumar, Committee Member IEI, KSC felicitated the function. The function concluded with vote of thanks by Er. Udaya Kumar K S, Honorary Secretary, IEI, KSC.



Inauguration- L-R- Er. N Rajkumar, Dr.K. Jayakumar, Er.Udaya Kumar K S, Er. S Radhakrishnan and Er.S.R. Vijayamohanakumar

## CONDOLENCE MEETING



The Institution of Engineers (India), Kerala State Centre held a condolence meeting on 05-07-2017 at the sad demise of **Er.K. Thomas Poulouse**, FIE, Past Honorary Secretary and Past Chairman, IEI KSC. Er. K. Thomas Poulouse was closely associated with the events in Kerala State Centre even after his tenure as Chairman. Er.N.Rajkumar, Chairman, IEI Kerala State Centre read out a condolence message.

## Kerala State Centre- WEDNESDAY TALKS - Glimpses

**05-07-2017** Talk on 'Bit Coin, Block Chain and Beyond' by Mr.Satish Babu, President, InApp, Technopark, Thiruvananthapuram.



**12-07-2017** Talk on 'GST – Special Relevance to Kerala' by Mr. Sreedhar E., Trainer for GST, Faculty, National Academy for Customs and Excise.



**19-07-2017** Talk on 'Relevance of Life Skill Course in Engineering Profession' by Prof.Sasi Narayanan, Assistant Professor, College of Engineering- Trivandrum.



**26-7-2017** Talk on 'Project Management' by Er.K.M.Muthanna, Assistant Vice President, IL &FS Townships & Urban Assets Limited (ITUAL).



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# Voice of Kerala Engineers

August 2017

To



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**The Institution of Engineers (India)**

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

Phone: 0471-2322991,0471 - 2982102, Fax: 0471 - 2322992  
E-mail: ieitvm@gmail.com, keralasc@ieindia.org  
Web: www.ietvm.org

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