



Happy Republic Day

NITCAA Cochin In-house Bulletin

Issue:07

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www.nitcaa.org

the CLOCK is TICKING

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**Entrepreneur
Lectures**

P|8-9, 12-13

For a better Kochi



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VAT 69 Golden Jubilee



President's Message



Thankachan Thomas
President
NITCAA Cochin Chapter

Wishing all a very happy new year 2020. NITCAA Cochin is all geared up for a fresh set of activities for the road ahead. Request the wholehearted support and cooperation of all the members in this journey.

Rounding up the activities of year

2019, it has been a wonderful year with all our projects taking shape as planned. We are in the finishing stage of NITCAA Towers, the prestigious project of our chapter, which is due to be commissioned by July. All the other activities, training programs, entrepreneur development talk series, philanthropic activities, family meets, tours, the NiB etc. are well executed under the efficient leadership of our members.

Expecting continued support of the members.

Secretary's Report



Sameer Abdul Azeez
Secretary
NITCAA Cochin Chapter

As yet another edition of NIB is getting ready with news bytes, alumni tidbits and a little bit of nostalgia, I am reminded of an old paper cutting posted recently by one of our senior alumni members in the WhatsApp group of NITCAA Cochin Chapter. The news article was about the Golden Jubilee Reunion of the first batch of REC, a few years ago. That set me thinking on what would be going in the minds of these 'pioneers' of our alumni when they came back to their alma mater after such a long time! As a student at REC, I vividly remember the mélange of emotions in many of the alumni when they come for Silver Jubilee reunions. If 25 years could bring out such a cascade of nostalgic fervor, I cannot fathom the depth and range of sentiments that the Golden Jubilee Batch would have experienced! While it is another 8 years till the Silver Jubilee reunion of my batch, the NIT campus still gives me goose bumps, every single time I land there. It is interesting to see a little bit of the old times in the last few editions of NiB, in the form of photos shared by Alumni. Who knows, a few years from now, NiB itself will be

our go-to resource for reviving a little bit of those pensive reminiscences, whenever we feel like!

Coming to the developments in the Cochin Chapter of NITCAA, we had a very vibrant Family Meet on 2nd October 2019, with the District Collector very graciously attending the function as the Chief Guest. During the function, the keys of two homes that were built for relief to the flood affected were handed over to the respective families. The evening endured in full gaiety with songs, games and a little bit of magic for the little ones! This month we had another round of the NITCAA Entrepreneur Lecture Series, with two very engrossing lectures, one on 'Developments in Automobile Technology' by our own alumni Dr. Tomy Sebastian, who did us all proud by winning the Tesla Award recently, and the other on 'Increasing Relevance of Green Buildings' by Er. Shreeganesh Nair, a professional in the field of Green Energy. The NITCAA Tower is slowly getting into shape, with the entire structural works nearing completion. For the coming year, the Executive Committee has planned for many new initiatives, with at least one activity every month, besides our regular ones. We sincerely solicit the continued patronage of all our members towards these ventures.

Editor's Note

As the year 2020 dawned, the world woke up to a nightmare... Australia's worst ever bush fires, the enormity of which shook the globe, clearly an outcome of global warming and climate change. We were yet to get over the intense fires that ravaged Amazon, the largest rain-forest of the world, when the next in the fire series set off. Nature's fury striking back. Can any advancements in technology help us here!? Wish it could. It is the price we're paying, for the so called "development". Our greed has left nothing much for our children.

This issue of NiB is an attempt to draw attention to some burning issues relating to environment that we need to address at once, in order to slow down the pace of destruction. NITCA fraternity as always, is committed to lead the battle.

Compilation of contents for this issue was more trying, yet satisfying than before. Our generous members have never failed to support me in this endeavor. Naming a few would be unfair. Special mention of thanks to Dr. Tomy Sebastian, who was gracious enough to oblige for an interview.

Thanking the committee for their wholehearted support. Sponsorship courtesy for this issue, to our past president Shri Fazal Ali and Shri C M Varughese.



Ranjini
Ranjini Menon
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NITCAA Family Day, 2nd Oct



Invocation by Smt. Sethulakshmi Ravindran Nair



Welcome address by President, Thankachan Thomas



Chief Guest, District Collector, Kochi, Shri Suhas IAS



Report of the activities of NITCAA, Secretary, Sameer Abdul Azeez



Remembering Gandhiji, Vice President, Jacob Kurien



Handing over of key of NITCAA homes to Smt. Sulekha & Smt. Radha Vijayan



Handing over of key of NITCAA homes to Smt. Sulekha & Smt. Radha Vijayan



Honouring Noufal GK for his service in realising NITCAA homes



Release of NITCAA in-house bulletin, Nib issue 6



MC of the evening, Chitra Pai, entertaining the audience



Time for some lighter mood - and a sumptuous dinner

Entrepreneurship Development Lecture Series

Session1: Developments in Automobile Technology

8th Jan 2020

Speaker: Dr. Tomy Sebastian, Graduate in Electrical Engineering, NITC, MS IIT Madras, MASc , PhD, University of Toronto. Director, Halla Mechatronics, Michigan, USA

Recipient of Nikola Tesla award, 2019, for his outstanding contributions on the utilisation of electrical energy. Dr Sebastian has done extensive research in the area of permanent magnet motor design and control issues and applications in steering systems. He has published over 45 technical articles and holds 25 US patents. In 2003, he was elected as a Fellow of IEEE. He served on the IEEE Industry Application Society Board during 2004-05 as the Chair of the Industrial Power Conversion Systems Department. During 2008-2009, he served as a distinguished Lecturer of IEEE Industry Applications Society.



Electric Power Systems in automobiles

Current scenario

- 0.12% of the cars running around the globe are electric.
- Electrification is not just electric cars.
- Electrical contents in the car: Navigation systems, Human-machine interface system, Electric power steering, Anti-lock brake system, Tyre pressure monitoring system, Heat seating, window lift and much more. Electrification and advanced control in vehicles are accelerating very fast.

Why electrification in cars?

1. **Improved safety**
To detect if the driver is sleepy or unwell. Automatic application of brakes when necessary- the car taking action without the driver initiating it, when needed, for better safety. A step towards autonomous cars.
2. **Fuel economy and emissions**
Electrically powered steering. Electric cars- Tesla electric cars- Model S car- engine space utilised for luggage, noise free, pollution free, high performance. 2018 Tesla Model 3 cost as low as 30 to 40 thousand USD.
3. **Driver comfort and convenience**
Automated parking system, Autonomous driving system
Google autonomous car caught global attention
Different levels of autonomy- level 4 being the absolute autonomy
All Tesla cars have some elements of autonomy, but need some more time for full autonomy
nuTonomy introduced driver-less taxi service in Singapore

What led to this phenomenal advancement in electrification? Power electronic switches with low switching losses, fast processors, cost effective machines, efficient analytical tools for design.

Challenges

Battery

1. COST- 200 USD /kWh.
2. SIZE- Energy density of gasoline is 13000 watt hr/kg, against lithium ion battery 250 watt hr/kg.
3. End of life management of the battery

New challenges

- Cyber security
- Connectivity
- Ethical issues in case of an accident
- Insurance



Key issues

- Cost effectiveness
- Compact packaging
- Safety- managing failure

Opportunities for business

Elements of electrification- Sensors, Communication- wired, wireless, Advanced control schemes, Software.
Need for technological developments to overcome the challenges

Session 2: Increasing relevance of Green Buildings

Speaker: **Sreeganesh V Nair**, Graduate in Civil Engineering, TKMCE Quilon

BEE Certified Energy Manger, EDGE AUDITOR, IGBC AP, Griha Trainer and Evaluator and a complete Building Physics and ECBC Expert with expertise in building simulation for energy modeling. MEP Designer and reviewer, Consultant, TERI Council for Business Sustainability.

Recipient of National Energy Award for Innovative Product CII, 2015, National recognition for exemplary performance in Water Management for GRIHA project 2017.



Why Green buildings?

For a healthier and happier life, “if life continues to exist on earth”.

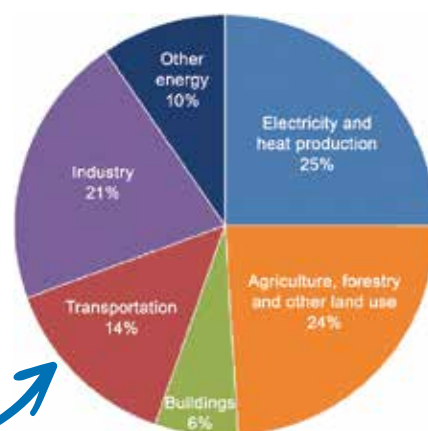
Facts

Climate change – It is happening. For an effect there is a cause

- Two thirds of Australia have burnt already
- Melting polar ice caps
- Rising sea level- depleting coastline
- Sahara Desert expanding by 20000 km/year
- Rising temperature in Kerala

Global greenhouse gas emissions by economic sector

- Electricity and Power generation, heat production
- Transportation
- Agriculture
- Buildings
- Other energy sources



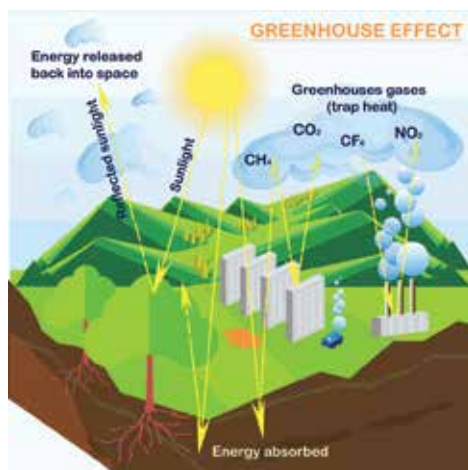
“Man is the only animal for whom his own existence is a problem which he has to solve”,

- Erich Fromm

CO2 emissions in industries- Coal, Oil, Gas, Cement Biggest contributors

-Thermal power plants 56%

- Efficiency of thermal power plants is only about 30%, which has many more losses over distribution. Country bleeds due to misuse of power. A burden on Indian economy.
- Need to move on to renewables and alternate energy sources.
- Adopt ways and means which cut down our power consumption
- Hence more and more green buildings



Urban sprawl

Uncontrolled growth of a city outwards into rural land. All cities in India are facing this. Need to regulate the rampant sprawling of buildings.

Sustainable city features

- Implementing LEED rating a mandatory requirement for building permits.
- Two cities in India, Pune and Noida has made green certification mandatory for obtaining building permits.
- Energy conservation Act, 2007 formulated first ECBC (Energy Conservation Building Code) mandated to be adopted by all states.
- Kerala adopted it 10 years later, in 2017. It was only in 2019 KMR, ECBC has become mandatory.

in conversation with Dr.Tomy Sebastian



To begin with, let me thank you for taking time off your busy schedule for this interactive session with us. We would love to hear about your professional journey starting from KELTRON in 1979 to your own company, Halla Mechatronics. Could you please share the actual milestones spanning these 40 years?

Getting into REC was the first milestone in my life, as I didn't even have a first class for pre-degree. I was the last ranked candidate for admission at REC and as I was interviewed by the Principal, Prof. Bahauddin, looking at my mark sheets he said, "you have to work much harder than the others". Those words struck me, and I took it to my heart.

Once in REC, I had friends who literally taught me how to study. Somehow, I got first rank in the 5th semester which automatically got me the post of chairman of Electrical Engineering Association in college. That was the first stint of leadership that came my way. Even though I never thought I had any leadership quality, I had to organise



Dr. Tomy (1978- Electrical) with his wife Reeny Sebastian (1985- Electrical)

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many programs, arrange seminars etc. A major program I took up that year, was to arrange an internship for the students with KSEB, first time in the history of REC. Lot of students could do the internship with various power stations across the state, for which I had to travel to Trivandrum to meet the Chief Engineer of KSEB. It was Venkataramany Sir who gave me all support for this activity. My first lesson in leadership.

After graduating, I got selected to Keltron along with several others. I happened to join R&D division of Keltron. Within a year, I applied for PhD program in IIT Madras. But I ended up in MS. My professor V.V Sastry was very good and after completing MS, he advised I go abroad and do PhD. I applied to all universities from which papers were published in my area 'power electronics'. Luckily, I could get admission and fellowship to study at University of Toronto, which

was one of the best ‘power groups’ in the world. So, I learned from world’s best professors. I did one more Masters’ there, under Prof. Dewan, who was the power electronics guru and then PhD under Prof. Slemon, who was an authority in machines. I was very lucky to have been guided by these eminent professors. I owe them quite a bit. Neodymium magnet which is used today in most of the permanent magnets was invented just one year before that, hence my topic for research was Permanent Magnet machines and drives.

After PhD, I joined Black & Decker, who were manufacturing power tools. My wife was also doing Masters at University of Maryland in Control Systems. Together my wife and I were hired by General Motors in 1992. They had steering division which made steering systems which was of course hydraulic then. But there were people who envisioned electric power steering system and hence they hired us to work on that. By 1998, the team developed electric power system and were first to launch into market, brushless motor based electric power steering. That went on to next generation and I was working there till 2013. During this period, GM went through changes and Delphi came into existence and the steering division was later spun off as Nexteer. The same was soon bought by a Chinese company. That was when a few of us decided to move out and Halla Mechatronics came into existence. Halla is a Korean company worth more than 10 billion dollars and Mando is its automotive division. We are a sister division to Mando. We make motor control unit for various applications. We also focus on advanced technology systems that are needed in Autonomous vehicles like steer by wire and brake by wire etc.

That was history and thus I happened to be at the right place at the

right time to be a part of the steering transformation from hydraulic to electrically assisted systems.

Any plans to come back and work in India?

Not at present, though I would like to involve in more and more activities here. As the President of IEEE Industry Applications Society, I got chance to work with industries in Kerala. Kerala section of IEEE has the highest number of IEEE IAS chapters. Hence, I’m able to interact with industries in Kerala. I see a lot of activities and growth here. I was instrumental in starting the IEEE International Conference on Transportation Electrification in collaboration with SAE(Society of Automotive Engineers) India, in 2015. The intention was connecting industry with academics.

Please elaborate on this aspect- Collaboration of academics with industry in India

It was my idea to put together SAE India and IEEE. IEEE is known for their academics’ side and SAE for its industry connect. By this conference conducted every two years, we are able to address many local issues and find local solutions, especially electrification of vehicles which is the thrust area now. This conference has been very successful in connecting industry and academics.

How fast do you expect a change in the automobile market in India?

Indian market has its own problems when compared to other countries. The mandate by Govt says by 2030 or so, a great percentage of market should be replaced by electric vehicles. Battery power is a challenge. Infrastructure problems here to facilitate charging are much more complex than other

western countries. But it’s up to us, engineers, to solve the technological hurdles.

Any major difference you see in the quality of engineering graduates in India and US? Of late, there is a lot of negative feedback on the low employability of engineering graduates from India. Have you felt so?

I cannot generalize. Still, anybody in the US would love to hire a graduate from IITs. It is the foundation that has to be laid in undergraduate study, and no rocket science is expected out of a fresh graduate. Fundamentals are still strong in Indian curriculum. The main difference in US undergraduates is broader understanding of applications. There, students are exposed to a bigger picture and a wider perspective, with more awareness on “why am I studying this”. Our study is a bit narrow, I must say.

Your suggestion on how NITCAA as a community can help budding engineers

Mentoring programs were taken up by NITCAA US chapter and we register as mentors, available to the students back here at NITC. We provide, a conduit to the older generation and required advice. We create an environment for free communication between the young and the professionals in the field. Alumni network can follow this example and encourage students to make use of this opportunity.

The most cherished memories from REC days?

The friendships created at the campus which last a lifetime.

Excerpts from a conversation with Ranjini Menon at RECCAA Club on 8th January

For a better Kochi



This edition of NiB introduces a new column – suggestions to improve quality of life in Kochi. Our veteran members address various issues

Infrastructure



Dani Thomas
1976- Civil

Project Director, DMRC and Chief
Administrator Officer, Indian Railways

Kochi with its greenery and backwaters is a beautiful place to live. The traffic blocks (slow moving traffic) due to poor condition of roads, flooding of city during heavy rains, dumping of waste on the road sides and canals, letting sewage to the drains and canals and the resultant stagnation of water and mosquito breeding are some of the issues to be tackled to make a better Kochi.

The cleaning of canals and provision of pumps to pump rain water during high tides and heavy rains will solve the flooding of the city to a great extent. The cleaning of Mullassery canal was taken up as a pilot project by DMRC under the leadership of Dr.E.Sreedharan during the year 2018-19 and the canal from KSRTC Bus stand to the backwaters near Children's park was cleaned fully, duly removing all blockages and silt upto the bed level. This has improved the flow in the canal and the flooding in MG road could be prevented to some extent. But heavy rains during high tides continue to

cause flooding of the canal and the feeder drains of MG road.

Pumping of rain water to the downstream side, duly blocking the flow of water in the reverse direction during high tide was the only solution to reduce flooding. A high capacity pump was installed near the downstream end of the canal with a movable shutter to block the reverse flow in the canal. This was found to be very effective during the monsoon of 2019 to control the flooding in MG road even when most of the roads in Kochi was flooded for hours together.

The drainage system of Kochi is to carry the drainage and rain water to the backwaters through the canals running all over the city. Since the average ground level of Kochi city is hardly 1m above the high tide level, the canal beds are almost level and there is no velocity of water flow especially during high tides. This results in stagnation of water and silting of canals requiring regular cleaning of all the canals at least once in a year before monsoon.

Since the pilot project of cleaning Mullassery canal along with provision of pump was found very effective, similar effort from Corporation for all the canals in Kochi will have long lasting improvement to avoid flooding and to solve the mosquito

menace to some extent.

The commissioning of metro in Kochi along with widening of the roads in the metro corridor must have reduced the traffic snarls to some extent. However, introduction of feeder services to metro stations and acceptance of metro as a pollution free mode of traffic by the general public will definitely improve the utilisation of metro services to reduce the traffic congestion in this corridor. Extension of metro to Tripunithura and Kakkanad which are in the pipeline will definitely improve the conditions on completion of these extensions.

The improvement of roads in Kochi is an urgent need by attending to the repairs in time, duly restricting the digging of the roads for laying of pipes and cables. Once the road is tarred, no digging shall be permitted for the next three years. This can be implemented by making a programme for repair of each road duly allowing the digging required by any authority for a barest minimum period to carry out the work, but not more than 3 months immediately after the monsoon so that the repairs can be completed well before onset of monsoon of next year. This requires planning by all concerned and execution of works strictly as per the programme made.

Energy



C.M Varughese
1978- Electrical

CEO, Ever Green Energy Technologies

World Energy Conservation Day celebrated on 14th Dec every year, focuses on significant issues facing the future of mankind with respect of energy. At current reserve to production ratio, oil is expected to last around 45 years, gas around 65 years, coal around 200 years. The above timelines demonstrate the need for urgent world action for funding research and development of alternate energy sources, which are affordable, available in adequate quantity and perennial in nature.

The need for energy conservation and economical use of energy arises basically because of its features of universal usage, fast depleting resource and impact on climate change. World Energy Conservation Day is a big opportunity to help in taking initiatives to reduce above impact.

Energy, the yardstick of growth brought us the productivity and comfort of present level, but the excess use of same by greedy man, led to the largest disaster of the century, Global Warming, destroying the ecosystem in land and sea, affecting the whole lot of species of universe.

What bit we can do, as responsible citizens, to save our city:

a. Accounting for energy by energy measurement, reduce consumption by energy conservation,

energy efficiency and resorting to renewable energy for a net zero energy buildings. Solar roof at every home in next 10 years shall be the target.

b. Moving towards fossil fuel free transport in a faster way by adopting Electric Vehicles and public transports like Metros. Next vehicle be electric only.

c. Sticking to traffic rules and ensure adequate responsible parking

d. Practicing 3Rs- Reduce, Re-use and Recycle wherever possible thus increase asset utilization

The nature and its resources are not inherited by us from our ancestors but from our future generation and so shall preserve it for them.



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18kW DC Bharat Charger



25kW DC Wallbox



7.3kW AC Type 2 Charger



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Ecology

Revive Ambalappara project

Previously a rock body, scarred by human intervention, healed by nature over years, now adorned by pristine water bodies, green all around, silence enhanced by chirping of birds...



Ambalappara Quarry, Palachuvadu, W. Padamugal, Kakkanad, Kochi

Compiled by Sudhakaran K.K

This picturesque piece of land, 6 acres in area, including public and private property, is situated in the heart of bustling city.

On one side, flows the Edappally canal and on the other, is a huge waterbody more than 100ft deep, formed by quarries. It is the abode of large species of birds, including migratory.

In 2010, the local administration under the initiative of the then councillor Shri Noushad Pallachi, started execution of the project to develop this scenic spot and use this water body. Part of the project was carried out by planting a variety of trees and medicinal plants, butterfly park, en-



The board which is no longer there

couraging fishing and attracting local tourists.

But some interventions led to a halt of the project. This serene space is a neglected spot now, marred by plas-

tic litter and the water body fully covered by moss.

The plea to the district administration is to revive this project.



Ambalappara in bloom, a few images from the archives 2013-14



Present plight of the spot



No more such unpleasant sights-Plastic heap at Kalamssery temporary yard

Environment

Biodegradable/Compostable plastics made from Biopolymers

Compiled by **Ranjini Menon**

The Govt. of Kerala has finally implemented a ban on the use of one-time use plastic bags from 1st Jan, 2020. At this juncture we welcome the entry of its green alternative, an innovative material, Compostable plastics, into our market.

Replacing petroleum-based plastics with plastics designed to degrade, biodegrade, or compost can provide much environmental benefits. They hold the potential to reduce dependence on fossil fuels and foster the development of more sustainable products.

Biobased plastics are diverse group of plastics, exhibiting a tremendous range of characteristics similar to that of petroleum-based plastics. Made from plant-based products like corn/potato starch, sugar, vegetable oils, acids and alcohols, they are made through varying processes. Different grades of resins are made to cater to different end users and applications. These can be made in varying thickness, from 15 microns above, for various uses like food wraps, carry bags, garbage bags, straw, cutlery etc. with the same strength and flexibility as conventional plastics.

Definitions of Biodegradable & degradable plastic have also been proposed as per ASTM D-6400:

(i) Biodegradable plastic: A degradable plastic in which the degradation results from the action of



"I am not a plastic bag"

naturally occurring microorganisms such as bacteria, fungi and algae

(ii) Compostable Plastic: A plastic that undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds and biomass at a rate consistent with other known compostable materials and leave no visible, distinguishable or toxic residue.

Predominant Bioplastic Resins

POLYLACTIC ACID Polylactic Acid (PLA), is probably the most commonly recognized bioplastic, made by fermenting the dextrose derived from hydrolysis of corn starch.

POLYHYDROXY FATTY ACIDS (POLYHYDROXYALKANOATES,

OR PHA) Polyhydroxy fatty acids are the basis of a bioplastic made from the anaerobic digestion of starch.

THERMOPLASTIC (COMPLEXED) STARCH are derived from blending processed starch from a number of plant based products such as corn, with other plastics (biobased and/or petroleum-based)

Standards for Biodegradability and Compostability

These compostable products made from 100% bio-based material should be certified as per the governmental norms. They shall be tested in the CIPET (Central Institute of Plastic Engineering and Technology) or any other laboratory, recognized by CPCB (Central Pollution Control Board) for this purpose. The test shall be carried out as per Indian Standard IS/ISO 17088:2008. The certification process takes almost a year.

In couple years, all the states in India are expected to enforce ban on plastic carry bags and thereby our market should totally shift to this alternative product. Cost of production is about 40 to 50% higher than conventional plastics. But technology is advancing and the existing plastic industry should easily be able to adapt to the production of bioplastics.

References: https://cdn.ymaws.com/uscc.site-ym.com/resource/resmgr/images/Compostable_Plastics_101_Pap.pdf, www.cpcb.nic.in, IS/ISO 17088:2008
Natur Green Solutions, Kochi



Petrikoer Tech Labs, a new media company in Bangalore since last three years, is the brainchild of Sreejith Nair an NITC Alumnus, 2000 batch, Civil, and his friend Mrinal Mukundan.

Petrikoer is a young dynamic firm that helps its clients find better ways to grow. Petrikoer does that by focusing on three primary areas: creating relevant brand and customer experiences, driving accelerated growth strategies and leveraging digital as a transformative force.

The idea behind creating Petrikoer Tech Labs was to cater to the business needs of a few industry sectors. These industry sectors were handpicked by the founders for being mostly overlooked in the traditional marketing communication space. Petrikoer strives to address some of the most pressing issues in sectors such as technology, health-care, education and skill development—the four sectors Petrikoer mainly caters to. Petrikoer's mission is to drive transformative social impact for enterprises in these sectors by applying the principle of 'Collective Growth'.

Collective Growth and Social Impact are at the core of everything



Sreejith Nair, 2000 Civil



Petrikoer's approach to work is driven by the symbiotic relationship between strategy and design. The firm takes immense pride in creating content that tugs at the hearts without compromising on editorial integrity.

Sreejith and Mrinal do at Petrikoer. According to them, anyone who believes in either of their ideologies is always welcome to join the Petrikoer ecosystem. Between Sreejith and Mrinal, they have over three decades of experience working in these sectors. They both are creative people as well—Sreejith has been involved in theatre, feature and short films, while Mrinal is an amazing photographer whose shots have been published by international magazines.

According to their motto, Petrikoer helps its customers discover their "soul", forge their story, and live it every day. The soul can be any-

thing from a core value or an idea that made the business. Petrikoer converts this "soul" to be able to reach all the customers' stakeholders—internal and external—by building a strategic narrative.

Petrikoer's quest is to bring the soul story out by observing relationships, being part of conversations, detecting patterns, and seeking simple truths that sometimes stay elusive. Petrikoer does that by identifying the actual requisites and addresses them first.

Petrikoer strives towards shortening the distance between logic and intuition, insights and outcomes. This is also why Petrikoer recently launched its own video production division Raindrop Studio; to be able to convey the correct way the story is told. Petrikoer's and Raindrop Studio's most creative tools are:

Stories: To define brands, arrive at business Goals, Strategies and Outcomes.

Storytelling: To communicate ideas, to inspire and motivate and more with beautifully written content

Story visualisations: To paint a picture that speak a million words with stylish videos, beautiful artwork and easy to understand visual communication mediums

The firm's capabilities extend across all content on the digital spectrum—words, images and videos—which are carefully engineered using latest technology to host, support and grow viewership and readership. Petrikoer's strength lies in its people, who are professionals with experience using the best of methodologies and practices, and are a perfect mix of experience, passion and youth.

Sreejith says this about Petrikoer: *"We apply artistry to everything we do. To deliver the best value to our clients, we use a variety creative tools centred around the 'power of stories'. In a nutshell, we bring the breeze that makes the apple fall."*

www.petrikoer.com



1964-69 batch Golden Jubilee reunion



The VAT 69 boys

Sitting: John Mathai, Sudhakar Shetty, Aravindakshan V V, Shantharam Pai K, Bahuleyan P K, Subramanian N S, Dinesh Kumar, John Payyappilli, Gireesan K G, Narasimha Bhat, Ravi Samuel Ninan, Mathai P K, Gopinathan Unni A K, Thomas P M, Parameshwaran V, Suresh V S, Surinder Kumar Khanna and Gopal Narain Mathur **Standing:** Jose Thomas(K T Jose), SHankaran E, Jayakumar Panthalai, Omprakash Sadana, Gladson Eliezer D'Silva, Paul E C, Shaju Peter, Krishna Pillai R, Aby Abraham (E A Baby), Sethumadhavan P, Thomas K George, Shivaprasad R, Narayana Kammath C, Suresh Kamath A, Valsalakumar, Prakash Shankar P G, Davis R, Alappat Jose T L, Issac M S, Vijay Mohan Nilekani, Kurian Varkey, Pramod Hardikar, Issac Thomas, Pushpangadan K, Balakrishnan Nair P G, Krishnan M K, Venogopalan C V, Sebastian V K, Babu Peter, Ramakrishnan K R, Rajeevan M N, Chem (Velayudhan) Nayar, Dr. Abraham Jacob and Ramalingam A

VAT 69 The four years of
togetherness made
memories that last a
lifetime

Fifty two of them with their spouses, got together at Wayand Silverwoods Resort from 3-5 Nov 2019, with a day visit to the campus



They were studious indeed!!! 🤔👏



Reliving the taste of meals served by Vijayettan, an integral part of REC memories

REUNIONS



1976-80 batch family at Udaipur city palace, 19th Oct 2019

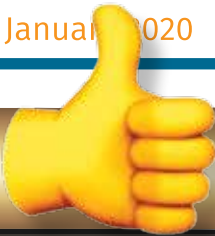


1982-86 batch at Alibagh, Mumbai, 18th Jan 2020



1985-89 batch at RECCAA Club Kochi, 2nd Jan 2020

Three cheers to them



Ramachandran K V, 1972 batch



A cycle ride with a mission: A unique way to observe 'World Energy conservation Day'. Organised by Pedal Force, Kochi, they rode all the way up to Munnar and back, on 13th and 14th Dec. Kudos to Ramachandran K V, who was one among the 22 young and energetic ones who made it.



Shilen Sagunan, 1987 batch

Shilen Sagunan receiving the Midas Investor Award by Destination Kerala. He is currently the Chairman of Malabar Innovation and Entrepreneurship Zone (Mizone) and Malabar Angels.



Sudhakaran K K, 1971 batch

തൂക്കക്കര സാംസ്കാരിക കേന്ദ്രത്തിന്റെ സമഗ്ര സംഭാവനയ്ക്കുള്ള ആദരം, പക്ഷി നിരീക്ഷകനും, ഫോട്ടോഗ്രാഫറും, പ്രകൃതി സ്നേഹിയുമായ ശ്രീ. കെ.കെ. സുധാകരൻ, സിയാൽ ഡയറക്ടർ ശ്രീ. A. C.K. നായരിൽ നിന്ന് ഏറ്റുവാങ്ങുന്നു.

TOUR TIME



NITCAA - RECAA Club family tour, Pune-Lonawala-Lavasa, Nov 2019



REC Memories

by Gita Ramachandran (Chandrasekharan) REC 1978 (Electrical)

The four years in REC were so eventful that, it is really difficult to pick my favorite memory. However, there is one incident which I vividly remember even after so many years.

In the late 1970s, REC had a smattering handful of girls who joined aspiring to be engineers. There were about 6 ladies in the senior batch, 9 in ours, 9 in junior batch and may be 10 in the next, from all disciplines put together. During our final year at REC, in the year 1978, when the annual arts festival competitions came around, new categories in solo and group dance for women, were also announced as the strength of girls had started increasing.

Our batch, comprising of some of the most versatile and talented youngsters wanted to win the Championship Trophy for the year. The "year spirit" was reaching its pinnacle and our batch already had participations of girls in tableau, drama and group song events. Girls of our batch decided to participate in the solo and group dances, to increase the points for our batch. The only problem was that none of us were trained dancers or had even participated in dances elsewhere.

I happened to be a day scholar and had some contacts, which we decided to make use of. For the solo dance, I



English drama

approached a dancer friend and requested her to teach a solo number to one of my class mates. I accompanied her to my friend's house in Calicut on all week ends, to ensure that the solo item was ready in all respects and could turn out to be a worthy contender. All those who have witnessed the scintillating dance on the stage can never ever forget that.

Taking up the Group Dance was the next item, on the agenda. We decided that, 8 of us will perform on the stage and the 9th person will sit through the rehearsals as a stand-by. You can imagine the plight of those eight girls who had never ever danced in their life, having no idea of rhythm, going on a public stage where they were sure to be welcomed with hoots and whistles. Putting up a group dance was a major challenge in those days, four decades back, unlike today, where you have visual media in plenty to refer to.

The dance master took one look at us, struggling to learn the first few simple steps he taught us, and shook

his head, indicating that this may not work out. Forget grace, we could not even dance to a proper rhythm. Co-ordination and synchronization were out of question. It was with great effort, that we were able to convince him to proceed with us. The long and short of it was that, he taught us few steps with gypsy (Tambourine), with just a few beats, where four of us were to enact the female part and the other four the male part.

Without any music the dance held no promise. But we were not ready to give up so quickly. So, we approached the orchestra team of our batch, which was one of the best orchestra teams in REC that year. They agreed to put together few tunes to go with the steps. As the competition day drew close, we became a bundle of nerves. We could have literally fainted when we were called to perform, but once we went on stage, all the adrenaline kicked in and we finished the dance, ignoring all the whistling and hooting. Even to this day, we don't know if we made any mistakes, or went out of sync, or missed any beats, as we did not have video recordings in those days.

It is no wonder that we walked away with the first prize amidst all the cheering and support from our male batch mates who were all there, in the front cheering. Not even an India-Pak cricket match could beat this fervor.

Three cheers to the 1978 batch!!!



The bold and beautiful ones of 1978 batch



Our 'gypsy' dance

‘മാതൃഭാഷമലയാളമേ’



Dr. R. Ravindran Nair
Retd. Prof. & Dean REC Calicut

മിണ്ടിത്തുടങ്ങുന്ന കുഞ്ഞിന്റെ ചുണ്ടിലെ
മിണ്ടാട്ടമാണുഹാ, മാതൃഭാഷ!
അമ്മയെക്കണ്ടുചിരിക്കാൻ ശ്രമിക്കുന്ന
സമ്മോഹനമായ സ്നേഹരൂപം!

പുഞ്ചിരിതഞ്ചുന്ന കൊഞ്ചലിൽ കേൾക്കുന്ന
സഞ്ചിതശക്തിനീ മാതൃഭാഷ!
രോഗംശമിപ്പിക്കാനാശ്വാസമേകുന്ന
രാഗമായ് മാറുന്നോൾ മാതൃഭാഷ !

രാവിൽക്കളിത്തൊട്ടിലാട്ടിക്കളിക്കുന്ന
നോവർന്നശീലാണു മാതൃഭാഷ !
എത്തുകെൻചാരത്തു ചേതനചോരാതെ
കാത്തുകൊൾകെന്ന നീ മാതൃഭാഷേ!

എത്തിപ്പെടാത്തൊരൻ ഹൃത്തിന്റെ ചിപ്പിയിൽ
മുത്തായിമാറു മലയാളമേ!
എത്തിപ്പിടിക്കാൻ കഴിഞ്ഞില്ലേ സൗഭാഗ്യം
ഉത്തുംഗ ശ്രേഷ്ഠയാം ഭാഷയായി?

ഭാഷതൻകൂട്ടത്തിൽ നർത്തനമാടുന്നീ
ഭൃഷകളുണ്ടല്ലോ വേണ്ടുവോളം!
തുഞ്ചനും കുഞ്ചനും ലാളിച്ചുമേളിച്ചു
തുഞ്ചത്തുകേറ്റിയ കാവ്യഭാഷേ

എത്തിനോ മന്മനം നിന്നെയോർത്തിടവേ
ചിന്തുന്നുചിത്തത്തിൽ സ്നേഹധാരാ!

ഗാഥചമച്ചൊരാൾ കണ്ണന്റെഭക്തിയാൽ
ബോധംജനിപ്പിച്ച ശ്രേഷ്ഠഭാഷേ,

കൃഷ്ണന്റെ ഭക്തിയാൽ വാതംശമിപ്പിച്ച
നിഷ്ണാതനായവൻ നിന്റെ ശിഷ്യൻ !
വള്ളത്തോളുള്ളുരുമാശാനുമിന്നു നാം
ഉള്ളത്തിലോർക്കും കവിത്രയങ്ങൾ !

ചങ്ങമ്പുഴയൊരു പ്രേമാത്മനായകൻ
മങ്ങാത്തകീർത്തിയുദിച്ച താരം!
നാലുപതിറ്റാണ്ടിലെത്താത്ത ജീവിതം
നാല്പതു ഗ്രന്ഥങ്ങൾ നൽകിമൊത്തം!

ആലോലസാന്ദ്രയാം നമ്മുടെ ഭാഷയെ
മാലോകർ വാഴ്ത്തുന്നു വിസ്മയത്താൽ!
എത്രയെഴുത്തുകാർ നിന്റെയുപാസകർ
യാത്രചെയ്തെത്തിഹാ,ജ്ഞാനപീഠം!

ശങ്കരൻജീയെന്ന ശ്രേഷ്ഠകവിന്ദന്റെ
ഓങ്കാരനാദം ശ്രവിച്ചു മേന്മേൽ
ഓടക്കുഴൽതന്റെ മാന്മരശക്തിയിൽ
ആടിക്കുഴഞ്ഞവൾ കൈരളി നീ!

ഓയെൻവി തന്നുടെ ഗാനത്തിൽ ശക്തിയാൽ
മായാവിലാസങ്ങൾ കാട്ടിപിന്നേം!
ലോകംപടർന്നുകിടക്കും മലയാളി
മുകമായിങ്ങോട്ടു നിന്ദിച്ചാലും

വാടൊല്ലേ കൈരളീ,തെല്ലുംതളരാതെ
ചാടുന്നീ മേലോട്ടേയ്ക്കാകുംമട്ടിൽ!
(മഞ്ജരി)



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