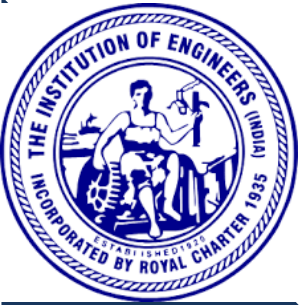


THE INSTITUTION OF ENGINEERS (INDIA)

TIRUCHIRAPPALLI LOCAL CENTRE

BHEL MAIN OFFICE ROAD, TIRUCHIRAPPALLI – 620 014

NEWS LETTER



JUNE – 2024

Vol. 06 – Pages: 37

CONTENTS:

- Nano fluid and its application in various fields
- Possible defects, causes and remedies in heat treatment of steels
- Digital innovation for sustainable development
- Local Crops, Varieties and Safe Food
- Exploring Horizons on Passion for Quality Excellence
- IEI-Sponsored International Conference, Seminar & Workshop
- IEI Message



ABOUT IEI TIRUCHIRAPPALLI LOCAL CENTRE (TLC)

The Institution of Engineers (India) or IEI is the largest multidisciplinary professional body that encompasses 15 engineering disciplines and gives engineers a global platform to share professional interest. Tiruchirappalli Local Centre of the Institution of Engineers (India) is located in Bharat Heavy Electrical Limited (B.H.E.L.) factory campus, Tiruchirappalli, Tamilnadu very close to the great engineering marvel, "the 1000 years old Grand Anicut aka Kallanai. Tiruchirappalli Centre was inaugurated in the year 1973. Technical lectures are being conducted every week covering all branches of engineering.



EDITORS

Er.R.Selvaraj FIE

Dr.S.Titus MIE

Er.R.Muhammad Ehsan MIE

Chairman

Dr.S.Ravimaran FIE

Hon.Secretary

Er.SP.Lakshmanan, MIE

Joint Secretary

Dr.S.Titus MIE

Er.R.Muhammad Ehsan MIE

EDITORIAL NOTE

Dear Members,

On behalf of The Institution of Engineers, Tiruchirappalli local Centre, the editorial board is happy to bring out the May month News Letter. In this issue, reports of technical and celebration day activities conducted by the TLC such as Nano fluid and its application in various fields, Possible defects, causes and remedies in heat treatment of steels, Digital innovation for sustainable development, Local Crops, Varieties and Safe Food, Exploring Horizons on Passion for Quality Excellence, IEI-Sponsored International Conference, Seminar & Workshops are presented. The committee of TLC meets every month under the leadership of our Chairman and secretary along with the senior members.

CHAIRMAN MESSAGE

Dear Esteemed Members,

We conducted our Golden Jubilee Celebration on 28th April 2024 in a grand manner. I extend my heartfelt thanks to our National President, State Chairman, all officials of the IEI Headquarters, and past Chairmen and Secretaries of IEI TLC for their support.

Our IEI TLC has grown significantly, with corporate membership increasing to 2,615. Additionally, around 865 students joined as student members of IEI. We have added approximately 10 student branches to our IEI TLC, all inaugurated by me in the last six months. This is a great achievement for our IEI TLC, made possible through the support of all our committee members.

I would like to express my special appreciation to our Secretary for his continuous support. My gratitude also goes to the past Chairmen and Secretaries of the chapter for their complete support and cooperation. With this spirit, we can continue to grow and add more laurels to our chapter in the coming years.

Warm regards,


Dr S Ravimaran
Chairman / IEI-TLC

Important Communications:

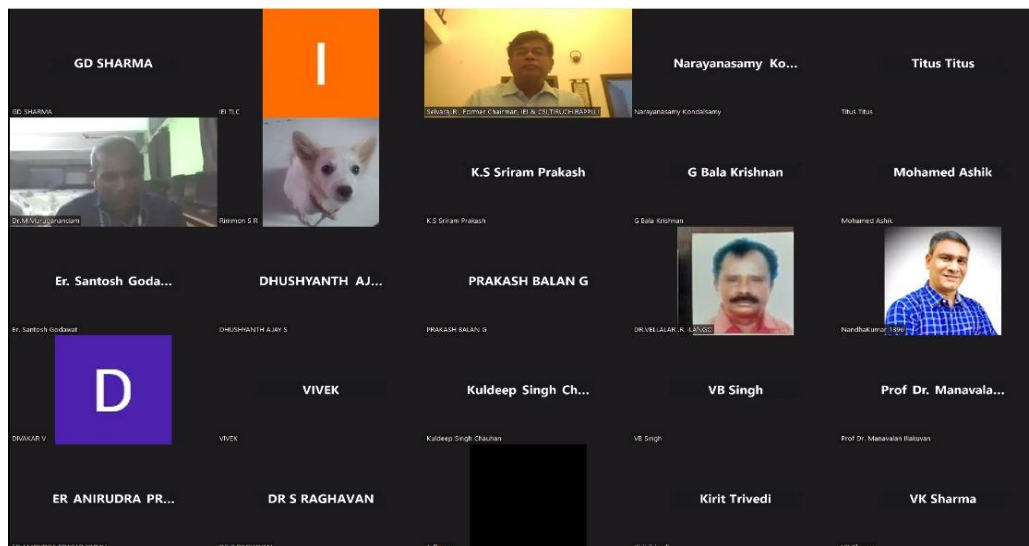
- IEI Tiruchirappalli Local Centre Chairman Dr.S.Ravimaran FIE inaugurated the student's chapter at K.Ramakrishnan College of Engineering (Autonomous) – on 25.05.2024 under Electronics and Communication Engineering.
- One Day Workshop on Fog Computing using Industry at University College of Engineering, BIT Campus Tiruchirappalli 5.0 during 11th July 2024.
- IEI Sponsored All India Workshop at K.Ramakrishnan College of Engineering (Autonomous) Tiruchirappalli, on "Role of AI in Hybrid Electric Vehicle and Battery Management Systems" scheduled on 9th and 10th August 2024.
- All India Workshop on Extended Reality and Metaverse: Tools and Technologies for Enhancing Teaching and Learning Process in Higher Education at Saranathan College of Engineering, Tiruchirappalli during 22nd & 23rd August 2024.

TECHNICAL ACTIVITIES:

1.Title : Nano fluid and it's application in various fields

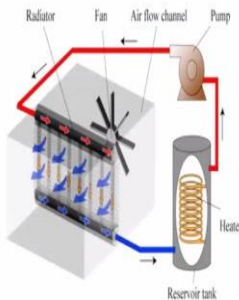
Name of Centre / Overseas Chapter:		TIRUCHIRAPPALLI LOCAL CENTRE	
Title of Activity:		Nano fluid and its application in various fields	
Activity under Divisional Board		Mechanical Engineering	
Date:	02-05-2024 at 06.00 p.m.	Mode:	Online
No. of Participants : 37			
<p style="color: red; margin: 0;">Speaker:</p> <p style="margin: 0;">Dr.M.MURUGANANDAM</p> <p style="margin: 0;">Professor & Head</p> <p style="margin: 0;">Department of Mechanical Engineering</p> <p style="margin: 0;">Mohamed Sathak Engineering College</p> <p style="margin: 0;">Kilakarai ,Ramanathapuram - 623806</p>			

The Tiruchirappalli Local Centre of The Institution of Engineers (India), in association with Indian Institute of Welding Tiruchirappalli branch, Computer Society of India, Tiruchirappalli Chapter, Safety Quality Forum - IEI /New Delhi, Indian welding Society Southern zone, Indian Institute of Metals Tiruchirappalli Chapter, Indian Institution of Industrial Engineering Tiruchirappalli, Indian Institution of Plant Engineers Trichy chapter, Kumari Arivial Peravai Kanyakumari and Indian Society for Non-destructive Testing Trichy chapter organized a lecture on 02nd May 2024 at 06.00 pm through virtual mode. Er.R.Selvaraj past chairman of IEI/TLC has presided over & welcomed the speaker Dr.M.MURUGANANDAM, Professor & Head, Department of Mechanical Engineering Mohamed Sathak Engineering College, *Kilakarai ,Ramanathapuram - 623806*. Er.Er.Nandhagopal, has introduced the speaker to the audience, Dr.S.Titus committee member of IEI/TLC proposed vote of thanks. Er.R.Selvaraj past chairman of IEI/TLC has proceedings the webinar.

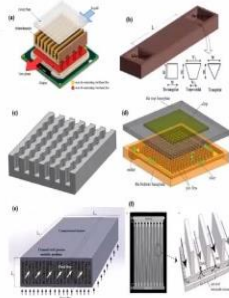


Thermal Management

Automotive cooling: engine efficiency improvement



Electronics cooling: computer chips, LED lights



Solar Energy

Enhancing solar thermal collector efficiency

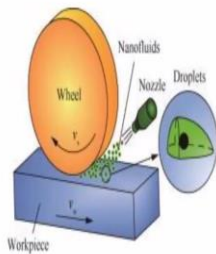


Overall efficiency increase in solar PV power generation

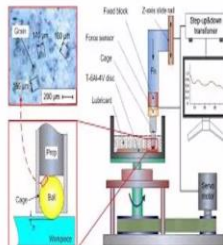


Manufacturing and Materials

Metalworking processes: heat dissipation, lubrication

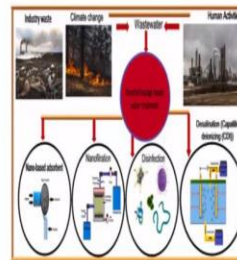


Industrial processes: casting, molding

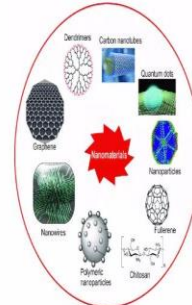


Environmental Remediation

Wastewater treatment: pollutant removal

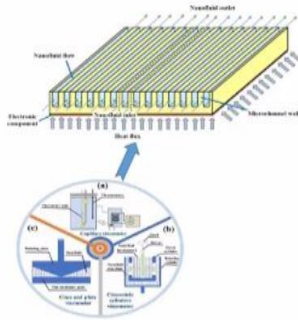


Water purification: contaminant removal

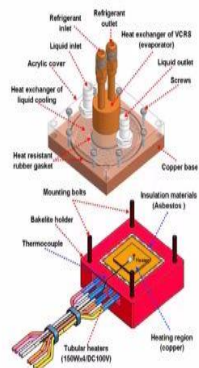


Electronics

Heat dissipation in electronic devices

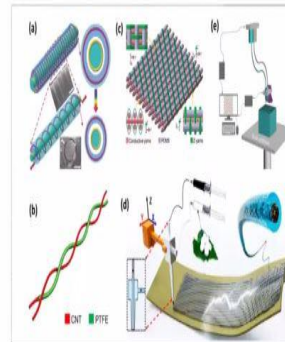


Miniaturization facilitation

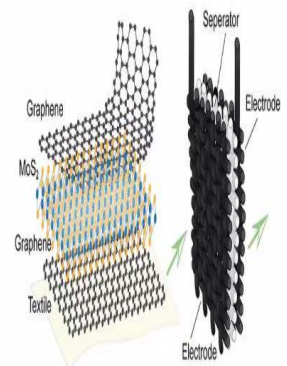


Textile Industry

Heat transfer enhancement in textile processes

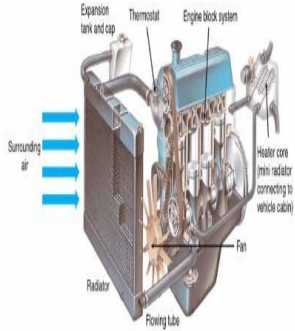


Functional textiles development



Automotive Industry

Engine cooling for improved efficiency



Thermal management in electric vehicles

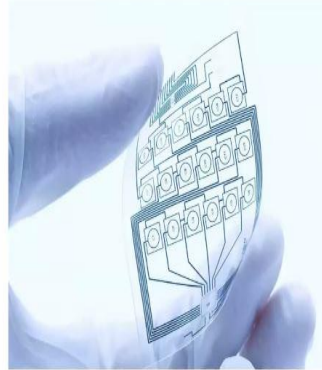
NANODIARY EXPLAINS

Battery Cooling with Nanotechnology

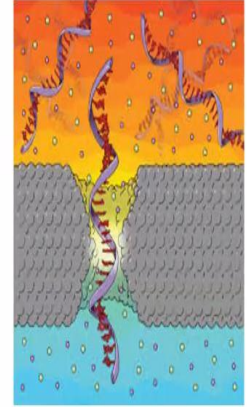


Nanoelectronics

Nanocomposite materials for electronic components



Nanofluidic devices for DNA sequencing

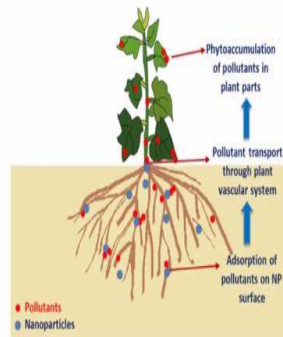


Agriculture

Pest control through nanoencapsulation

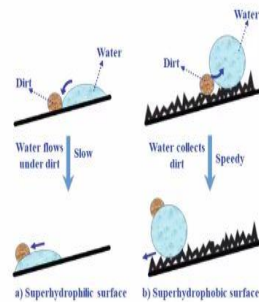


Soil remediation techniques



Nano-coatings


Self-cleaning surface



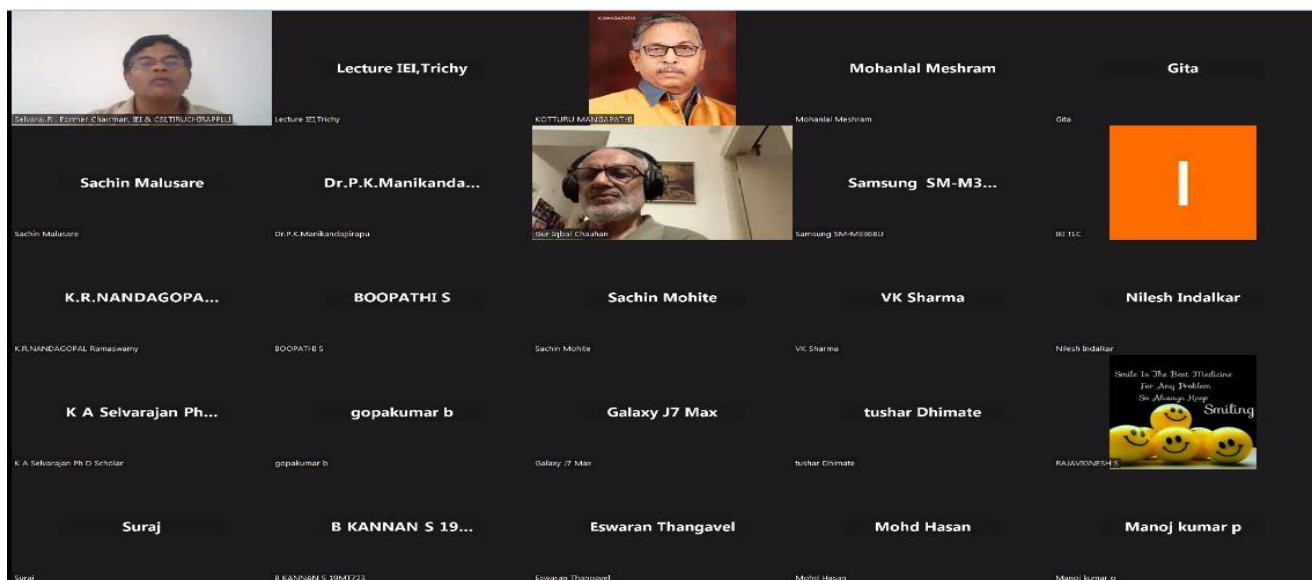
Anti-corrosion coatings



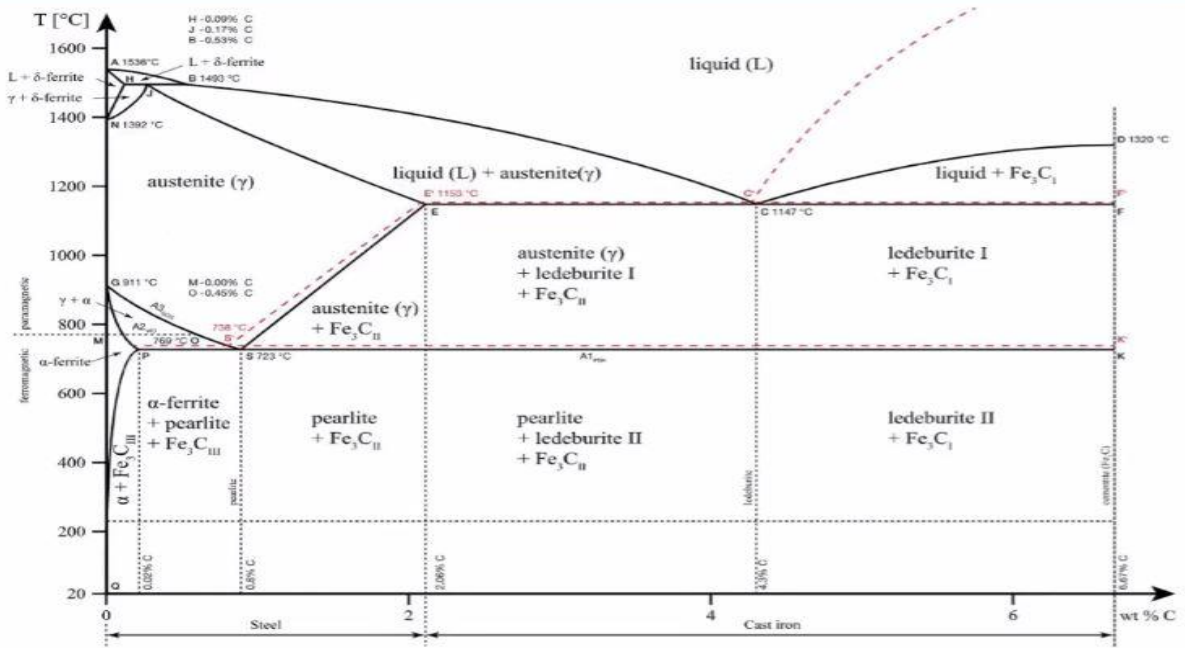
2. Title : Possible defects, causes and remedies in heat treatment of steels

Name of Centre / Overseas Chapter:		TIRUCHIRAPPALLI LOCAL CENTRE	
Title of Activity:		Possible defects, causes and remedies in heat treatment of steels	
Activity under Divisional Board		Metallurgy & Material Science Engineering	
Date:	07-05-2024 at 06.00 p.m.	Mode:	Online and offline
No. of Participants : 70			
<p style="text-align: center;">Speaker: Dr Vinoth kumar G Assistant Professor Dept. of Metallurgical and Materials Engineering National Institute of Technology Tiruchirappalli-620 015</p>			

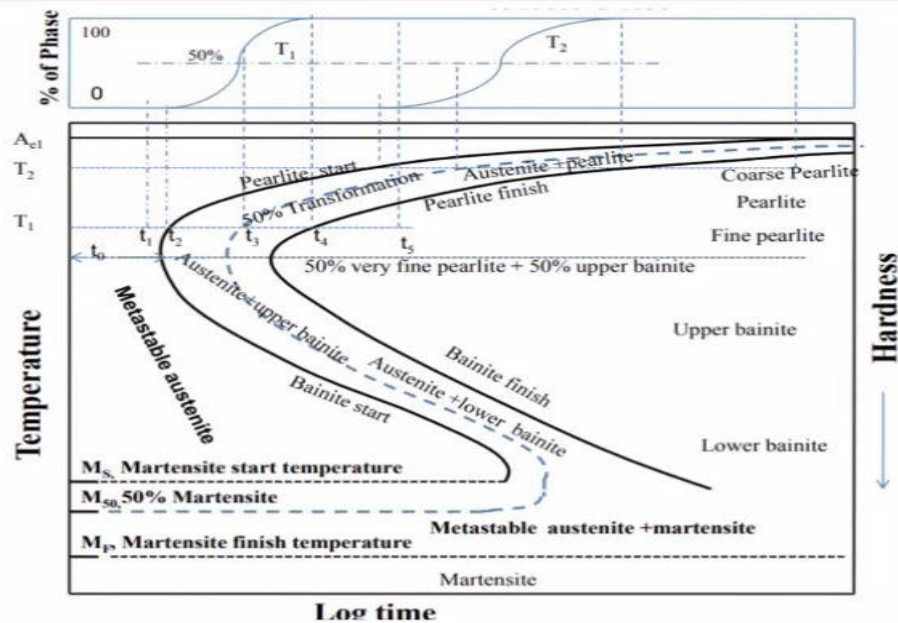
The Tiruchirappalli Local Centre of The Institution of Engineers (India), in association with Indian Institute of Welding Tiruchirappalli branch, Computer Society of India, Tiruchirappalli Chapter, Safety Quality Forum - IEI /New Delhi, Indian welding Society Southern zone, Indian Institute of Metals Tiruchirappalli Chapter, Indian Institution of Industrial Engineering Tiruchirappalli, Indian Institution of Plant Engineers Trichy chapter, Kumari Arivial Peravai Kanyakumari and Indian Society for Non-destructive Testing Trichy chapter organized a lecture on 07th May 2024 at 06.00 pm through the hybrid mode and virtual mode. Er.S.Lakshmanan past secretary of IEI/TLC has presided over & welcomed the speaker Dr Vinothkumar G, Assistant Professor, Dept. of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirappalli-620 015. Er.R.Selvaraj past chairman of IEI/ has introduced the speaker to the audience. Dr.S.Karuppasamy past chairman and present committee member of IEI/TLC has proposed vote of thanks.



Fe-Fe₃C phase diagram



Time-Temperature-Transformation diagram



Soft spots



Hardened steels show varying hardness at different points on their surface, is known as **soft spot**

Reason:

- Formation of vapour blanket between the quenchant and component during quenching, which hinders rapid heat dissipation
 - Remedies : using more efficient quenchant
- Localized decarburization of steel and inhomogeneity of microstructure
 - Remedies : Avoiding decarburization in heating
: Annealing or normalizing before hardening for more homogeneous structure
- Presence of foreign matters such as dirt and sticky scales on the surface of steel

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Oxidation



- Oxidation of steel takes place because of the presence of oxygen, carbon dioxide, and/or water vapour
- The equilibrium relationship between iron and iron oxide in the presence of CO and CO₂ or H₂ and H₂O at the operating temperature determines the degree of oxidation
- During oxidation, a thick oxide layer forms on the surface of the steel at 180 °C and porous and loose oxide layer is formed at 425°C
- With growth of such an oxide layer, there is continued disintegration of the component

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Over heating



- Heating for a long period at temperature exceeding normal value

Causes

- coarse grain microstructure, widmanstatten structure in annealed steel
- loss of ductility and toughness, sulphide inclusion segregates at austenite grain boundaries, Surface decarburizing and scaling

Remedies

- Normal annealing and normalizing for slight overheating
- Repeated normalizing for about 6 times

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Burning



- Heating for long duration at high temperature under oxidizing conditions or heating near to melting point of steel
- When steel is heated in a furnace and temperature crosses the solidus temperature, liquation occurs at the grain boundaries
- Phosphorus and sulfur lower liquation temperature
- Grain boundaries having
 - (a) regions enriched in carbon in first stage of burning
Remedies: Homogenization followed by double annealing
 - (b) non-oxidized cavities and blow holes in second stage of burning and
Remedies: Forging followed by annealing
 - (c) iron oxide inclusions in the third stage of burning, resulting in stone-like fracture and poor ductility
Remedies: Cant be solved

16

Quench cracks



Causes

- Internal stresses and non uniform cooling


Cannot be remedied but may be prevented by

- avoiding sharp projections, sharp corners and sudden change in size;
- eliminating stresses before hardening
- heating to minimum suitable temperature for hardening
- cooling slowly in martensitic range by using oil as the quenching medium
- quenching followed by tempering immediately

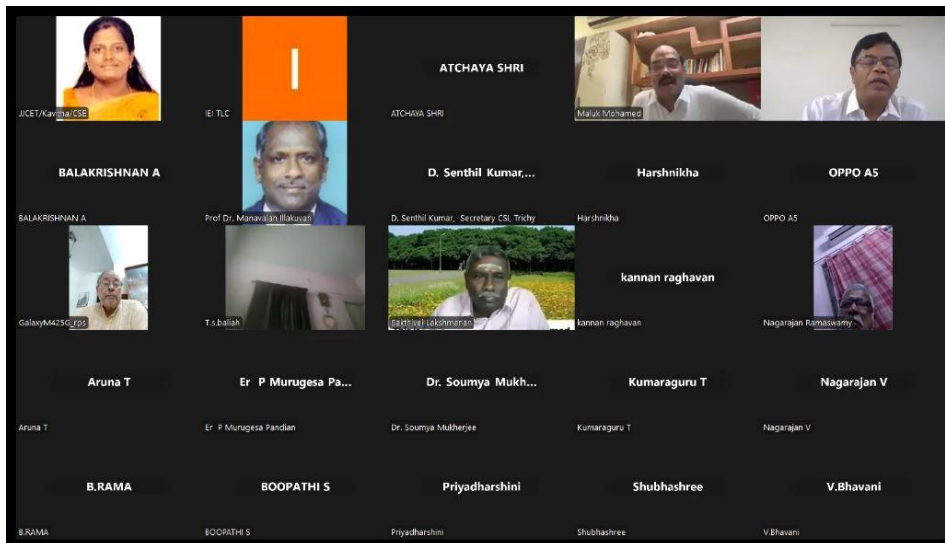


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3. Title: Digital innovation for sustainable development

Name of Centre / Overseas Chapter:		TIRUCHIRAPPALLI LOCAL CENTRE	
Title of Activity:		World Telecommunication and Information Society Day 2024. Theme : “Digital innovation for sustainable development”	
Activity under Divisional Board		Statutory Days	
Date:	15-05-2024 at 06.00 p.m.	Mode:	Online -Zoom App.
No. of Participants :			
<p style="text-align: center;">Chief Guest : Dr.M.A.Maluk Mohamed, Co-Founder - Twin, Global Vice President (Research), Head, India Business, IITM Research Park, Taramani, Chennai – 600113</p>			

The Tiruchirappalli Local Centre of The Institution of Engineers (India), in association with Indian Institute of Welding Tiruchirappalli branch, Computer Society of India, Tiruchirappalli Chapter, Safety Quality Forum - IEI /New Delhi, Indian welding Society Southern zone, Indian Institute of Metals Tiruchirappalli Chapter, Indian Institution of Industrial Engineering Tiruchirappalli, Indian Institution of Plant Engineers Trichy chapter, Kumari Arivial Peravai Kanyakumari and Indian Society for Non-destructive Testing Trichy chapter organized a lecture on 15th May 2024 at 06.00 pm through virtual mode. Er.R.Selvaraj, past chairman of IEI/TLC has presided over & welcomed the chief guest Dr.M.A.Maluk Mohamed, Co-Founder - Twin, Global Vice President (Research), Head, India Business, IITM Research Park, Taramani, Chennai – 600113. Er.D.Senthil Kumar Hon.Secretary of Computer Society of India, Tiruchirappalli Chapter has introduced the speaker to the audience. Er.S.Lakshmanan past secretary of IEI/TLC has proposed vote of thanks.



Digital Innovation

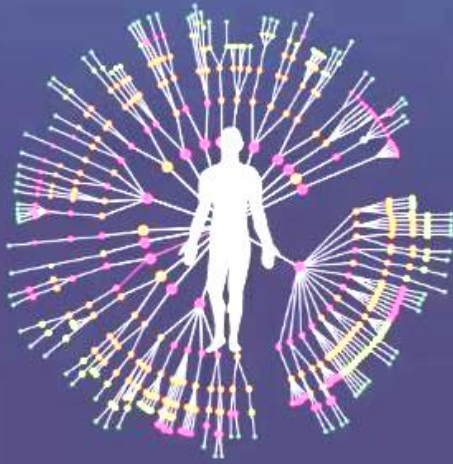
- Process of leveraging digital technologies
 - Artificial intelligence, blockchain, Internet of Things, big data analytics, and others,
 - To create new or improved products, services, processes, or business models.
 - It involves using technology creatively to address existing challenges, meet evolving needs, and unlock opportunities for growth and development.
- Efficiency and Optimization
- Access and Inclusion
 - Bridge gaps in access to essential services, information, and opportunities
- Data-Driven Decision Making
- Resilience and Adaptability
- Collaboration and Partnership
 - Across sectors, disciplines, and geographies

Month 7



<p>Blood Sugar 10.1 6.1 A1C</p> <p>T2D Meds Ryzodeg Diapron Vildapride NONE</p> <p>Rx Costs /yr \$8,031 \$850</p>	<p>Symptoms Constipation Sleeplessness Urinary Issues Erectile Dysfunction GONE</p>	<p>Belief "I have lost hope." "You have given me life"</p>
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Precisely healing the **root cause**



Dysfunctional metabolism is the root cause of chronic metabolic disease.

A dysfunctional metabolism occurs when external factors – including nutrition, sleep, activity, and stress — disrupt vital life-sustaining chemical processes. This leads to negative downstream effects in every system in the body and results in organ damage and multiple chronic metabolic diseases.

Healing the root cause reverses chronic metabolic disease.

The Whole Body Digital Twin™ delivers guidance targeted to improve the external factors causing metabolic damage — nutrition, sleep, activity, and stress. As these improve, the body's chemical processes return to baseline function, which reduces negative downstream effects, which reverses organ damage and metabolic disease.

Everyone's metabolism is unique. Their guidance should be too.

Medical research has shown that each person's metabolism functions differently, which creates significant challenges to healthcare providers' ability to understand and customize treatment for each patient. The Whole Body Digital Twin™ delivers guidance precisely tailored to each member's unique metabolism.

Twin AI / WBDT is trained on a comprehensive multi-dimensional dataset for metabolic health



Metabolic Profile
23 features across bloodwork (HbA1C, insulin resistance, Adipo-IR, triglycerides, HDL...), meds, etc.

Biological
Time series of cardiometabolic biomarkers from sensors + bloodwork
(Blood glucose, heart rate, active minutes, blood oxygen, resting heart rate, heart rate variability, blood pressure, weight, body fat %, visceral fat %, bone mineral %, body water %, muscle %, HbA1c, Insulin, Sodium, Calcium, Magnesium, Potassium, Chloride, AST, ALT, Total Cholesterol, HDL, LDL, Triglycerides, HD-CRP, ...)

Behavioral
Nutrition (87 nutrients: macromicrobiota)
Activity (Cardio, strength, duration, frequency, time of day)
Sleep (Duration, stages, debt)
Breathing (Respiration rate, meditation)
Preferences (Libas and Diets)

Heart Rate and Step Patterns
Per-Minute Time Series, 2880 data points per day

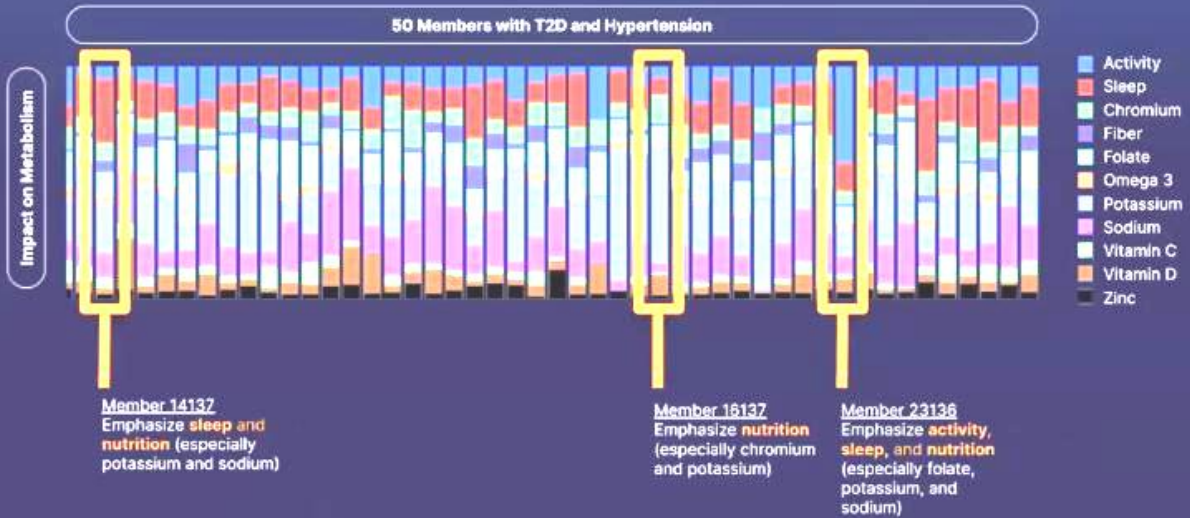
Meds + Symptoms
Medicines Taken (Compounds, dosage)
Symptoms (Blurriness, numbness, excess urination, headache, etc)

Mind Mood Energy Stress (HRV, RHR, life events)

Social Demographics
BMI, BMI CH, (BMI, Cholesterol, HDL, Triglycerides)



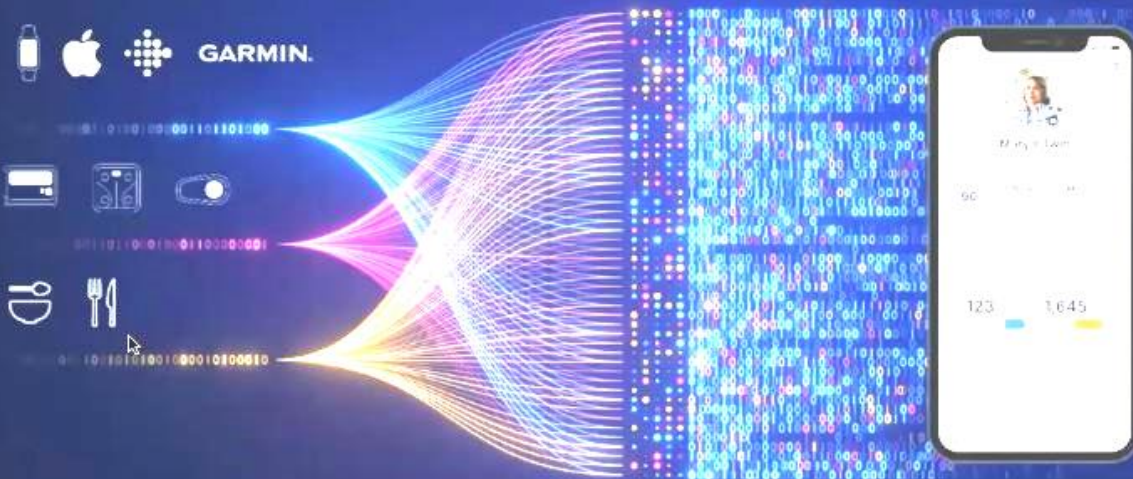
Precision Treatment Is Unique For Each Individual



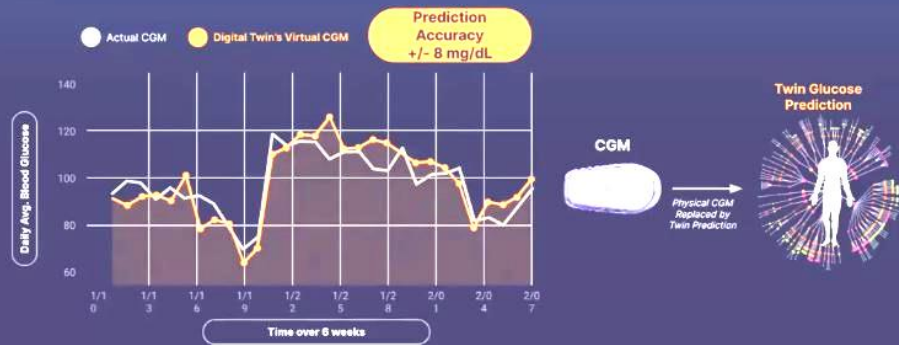
twinkl

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It's *no simple machine* that delivers this *simple experience*



Physical CGM Replaced with Twin Glucose Prediction



twin

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The Twin Journey



twin

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Twin is a...


Metabolic Health Service for Life

Precision Health Guidance

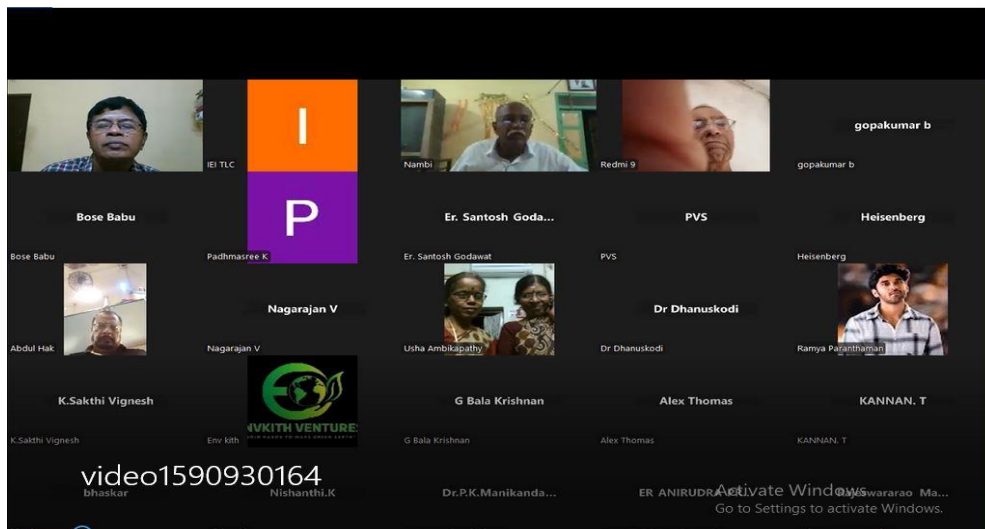
Compassionate Care

Whole Body Digital Twin Technology

4. Title: Local Crops, Varieties and Safe Food

Name of Centre / Overseas Chapter:		TIRUCHIRAPPALLI LOCAL CENTRE	
Title of Activity:		Local Crops, Varieties and Safe Food	
Activity under Divisional Board		Agricultural Engineering	
Date:	21-05-2024 at 06.00 p.m.	Mode:	Zoom App.
No. of Participants : 63			
<p style="color: red; font-weight: bold;">Speaker:</p> <p style="color: blue; font-weight: bold;">Dr.V.Arivudai Nambi M.Sc (Zoology), M.Phil (Ecology), Ph.D. (Futures Studies), Independent Expert on Biodiversity, Bolleneni Hillside, Perumbakkam Main Road, Nookampalayam, Chennai – 600 131</p>			

The Tiruchirappalli Local Centre of The Institution of Engineers (India), in association with Indian Institute of Welding Tiruchirappalli branch, Computer Society of India, Tiruchirappalli Chapter, Safety Quality Forum - IEI /New Delhi, Indian welding Society Southern zone, Indian Institute of Metals Tiruchirappalli Chapter, Indian Institution of Industrial Engineering Tiruchirappalli, Indian Institution of Plant Engineers Trichy chapter, Kumari Arivial Peravai Kanyakumari and Indian Society for Non-destructive Testing Trichy chapter organized a lecture on 21st May 2024 at 06.00 pm through the Zoom App.. Er.R.Selvaraj Past Chairman of IEI/TLC has presided over & welcomed the speaker Dr.V.Arivudai Nambi M.Sc (Zoology), M.Phil (Ecology), Ph.D. Er.PV Subramanian Past Chairman of CSI has introduced the speaker to the audience. Er.S.Lakshmanan Past Secretary of IEI/TLC has proposed vote of thanks.



Farmer Science and Modern Science in area of crops and varieties

Selection of crops and varieties for storage and use during the next season

- Season
- Duration
- Taste
- Land Type (Rainfed or Irrigated, Saline Soils)
- Ecology
- Non-shattering type suited for threshing

Components of rainfed agricultural system

Crops – Range of millets

Livestock – Cattle for manure and labour

Trees on farm – Mostly for supplemental income and consumption

Forests – Grazing, greens, non-timber forest products

Cropping Calendar in Drylands of Javadis

Vaikasi Vidhaippu – Purratasi Aruppu - Saying

Primary cropping Season – Vaikasi (South West Monsoon)

Secondary cropping season – Karthiai (North East Monsoon)



Green Revolution and Consolidation of Modern Food System

From Production for consumption to production for commerce

Green and Gene Revolution (1960s-2000)

- Electrification and expansion of dug wells
- Tractorization
- Widespread use of Hybrid and BT Seeds, Chemical Fertilizers and Pesticides
- Use of Power Tillers
- Use of Combine Harvesters (Wheel and Belt Types)
- Mechanized Transplanters

Deskilling in Agriculture

Consolidation of the Food System

- Village Level Rice Mills
- Scaled Up Rice Mills
- Modern Rice Mills
- Ultra Modern Rice Mills

Deskilling in Food Processing and Food Preparation

Recent Largescale Agrarian Landscape Transformation in Tamil Nadu



Landscape Transformation in the light of urbanization, industrialization and globalization



- **Cashew** driven dryland transformation in 1970s
- **Mango** driven dryland transformation in 1980s
- **Coconut** driven transformation of Garden and Wetlands during 1990s

- The rapid growth of Bengaluru and Hosur
- The expansion of Tiruppur, Erode and Coimbatore

Reference: State of India's Forests, Forest Survey of India (FSI)

- **Crop Diversification** Driven using Native Paddy 2018-2023

- The growth and urbanization within Tamil Nadu and associated "New Rurality"

Paddy varieties cultivated by farmers (50 varieties)

Arcot Kitchali Samba	Kattuyanam
Arupatham Kuruva	Kolli Kar
Athur Kitchali Samba	Kothamalli Samba
Basmathi	Kottarann Samba
Bhavani	Kullan Kar
Burma Gouni	Kuruvi Kar (Red)
Chinglepatu Sirumani	Maduvumlungi
Chinna Samba	Manalvari
Chinnar	Mani Jeeraga Samba
Gandhasali(a)	Mani Samba
Ilupai Poo Samba	Mapillai Samba
Jasmine	Mullankaima
Jeeraga Samba	Mysore Malli
Jeeraga Samba (Scented)	Mysore Malli (Red)
Jeeraga Samba (Thulasi)	Navara
Kalabath	Neelan SambaOdisha
Kalanamak	Scented Jeeraga Samba
Kalar Palai	Ottadayan
Kalurundai Samba	Ottukitchali
Kamban Samba	Pachaai perumal
Karundan Samba	
Karunkuruva	
Karuppu Gouni	



The Future of Safe and Clean Food



Sustainable transition is a solution oriented research field aiding humanity with normative goals in its transition to sustainability (Abson *et al* 2017)

பொங்கலை முன்னிட்டு சிறப்பு சந்தைப்பாடக நாளி முடிவாகும் நாட்பெறுக!!!

வரக்கொக சந்தைக்குவரும் காய்கறி, கீரை, கிழங்கு, தின்பண்டங்கள் அனைத்தும் வரும்.

பச்சரிசி திருவிழா

18^{வது} வாரம், 13-01-2023

கலசபாக்கம் கற்றுட்டா இயற்கை விவசாயிகளின் வரவேற்பு...

சிகாயம், தூய்மை உயர்வு, தக்காயம், கூட்டாயம், மணியாயம், ஆத்தாங்காய் உயர்வு, பேசாயம், காய்க்காய்,	இலம்பு உயர்வு, மணி சிகாயம், பத்தாயம், குங்காயம், நெயர், கரும்புக்காய்.	இவற்றின் அளிவினை 60 ரூபாயில் தொடங்குகின்றது. சில ஏக்கரில் தொடங்குகின்றது உள்நாடு அல்லது ஏனைய 40 ரூபாயில் தொடங்குகின்றது.
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சிறப்பு சந்தைப்பாடக காலம் 10 முதல் மாலை 6 வரை

தொடர்புக்கு: 99431 50351

கலசபாக்கம் - அக ஆண்கள் பேருந்து பஸ்ஸிற்கு எதிரில்.

கலசபாக்கத்தில்

நாள்: 16/10/2023, திங்கட்கிழமை

சுமார் 16^{ம்} உலக உணவுநிலைப்போட்டி, சுவைக்க விவசாயிகளின் வரவேற்பில் (அக ஆண்கள் பேருந்து பஸ்ஸில் எதிரில்)

நேரம்: காலை 9 முதல் மாலை 5 வரை.

உணவுத்திருவிழா

கலசபாக்கம் இயற்கை உணவு வளக்கூட்டில் அனைத்து இலகை உயர்வு (குடி-945)

- விழாவில், மது சரிசி தூய்மை, காய்க்காய்கள், பழங்கள் தின்பண்டங்கள் மற்றும் பல உணவுப்பொருள்கள் விற்பனைக்கு கிடைக்கும்.
- மலக உணவு குறித்த கலந்துரையுடன் உள்நாடு.
- கற்றுட்டா உயர்வு, மது விவசாயம் பற்றியும், கிடைத்தல்பற்றி கலந்துரையுடன்.
- எந்திரங்களை வேளாண்மையில் உபயோகப்படுத்தும் குறைத்து, கிராமிய பண்பாட்டை குறித்தும் தீர்மான உயர்வு குறைக்களை கலந்துரையுடன் உணவுத்திருவிழா.

கலசபாக்கம், திங்கட்கிழமை 16/10/2023 (குடி-945) கலசபாக்கம், திங்கட்கிழமை 16/10/2023 (குடி-945)


உணவு விருத்தியாள் : முருகேசு குமாரசாமி - விவசாயி, முத்துக்குமாரசாமி - விவசாயி.

தொடர்புக்கு: சி.பா - 96293 13023 [குறிப்பிடுகாணவியிலிருந்து வந்த அனைத்து அழைப்புகளும் வேண்டாம். தளறி]

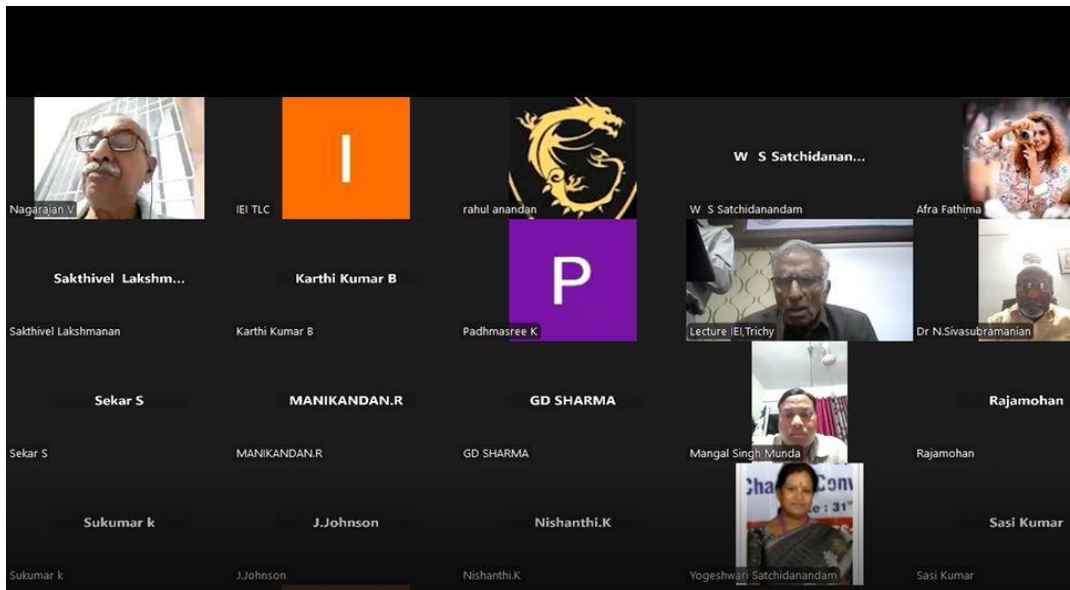
அனைத்துவரவுகள் சுமார் 1000 அனைத்துவரவுகள்

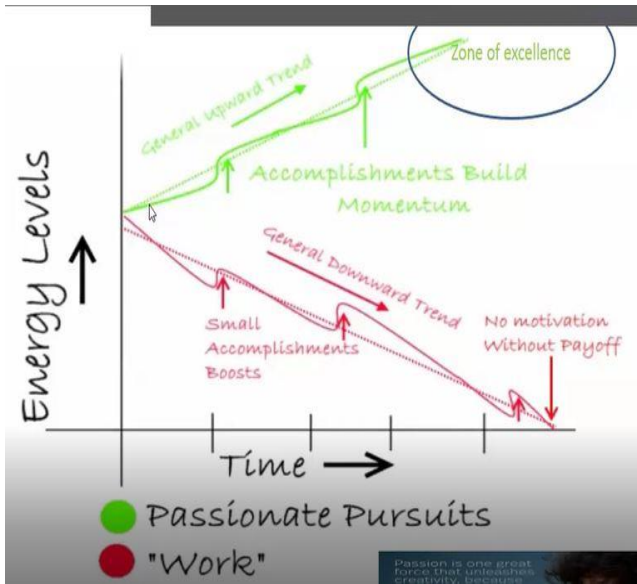
இவ்வளவு : பாரம்பரிய விவசாயம் - மலக - கலசபாக்கம்.

5. Title: Exploring Horizons on Passion for Quality Excellence

Name of Centre / Overseas Chapter:		TIRUCHIRAPPALLI LOCAL CENTRE	
Title of Activity:		Exploring Horizons on Passion for Quality Excellence	
Activity under Divisional Board		Mechanical Engineering	
Date:	28-05-2024 at 06.00 p.m.	Mode:	Online and offline (Hybrid mode)
No. of Participants : 90			
<p style="text-align: center;">Speaker: Er. Kannan Rahavan TQM Consultant Visiting Faculty & National and International Jury for ICQCC Tiruchirappalli - 620019</p>			

The Tiruchirappalli Local Centre of The Institution of Engineers (India), in association with Indian Institute of Welding Tiruchirappalli branch, Computer Society of India, Tiruchirappalli Chapter, Safety Quality Forum - IEI /New Delhi, , Indian welding Society Southern zone, Indian Institute of Metals Tiruchirappalli Chapter, Indian Institution of Industrial Engineering Tiruchirappalli, Indian Institution of Plant Engineers Trichy chapter, Kumari Arivial Peravai Kanyakumari and Indian Society for Non-destructive Testing Trichy chapter organized a lecture on 28th May 2024 at 06.00 pm through the hybrid mode (online & Offline). Er.D.Harsha Past Chairman of IEI/TLC has presided over & welcomed the speaker Er. Kannan Rahavan,TQM Consultan..Er.R.Selvaraj,Past Chairman of IEI/TLC has introduced the speaker to the audience .Er.S.Lakshmanan past secretary of IEI/TLC has proposed vote of thanks.





"Philip Crosby"

- Quality is conformance to requirements.

"Dr Edward Deming"

- Quality is a predictable degree of uniformity and dependability, at low cost and suited to the market.

"Dr Juran"

Quality is fitness for use/purpose.

"Dr Mortiboys"

Quality is synonymous with customer needs and expectations.

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Quality can be quantified as follows

$$Q = P/E$$

$$= 1 ? Or > 1$$

Where Q= Quality
P= Performance
E= Expectations - today it's exploration -society- planet

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passion takes from 1 to > 1

- 1 Fitness for Use**
 - Quality means the product or service does what it is intended to do.
 - Poor quality of a product or service cost users if it doesn't do what it is supposed to do.
- 2 Meeting Customer Expectations**
 - Quality is satisfying the customer.
 - The customer defines quality.
 - The customer perceives the quality of the product or service.
- 3 Exceeding Customer Expectations**
 - Quality is the extent to which the customers or users believe the product or service surpasses their needs and expectations.
 - Quality is delighting the customer.
- 4 Superiority To Competitors**
 - Quality is how a company's products and services compare to those of competitors or how they compare to those offered by the company in the past.

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Our exploration -

Journey To Excellence: A path of continuous improvement

Quality

WE ARE REACTIVE
WE ARE PROACTIVE
WE ARE EXCELLENT

Exciting Q

IMPROVE

STABILITY BEHAVIOURS AND SHARED VISION

VELOCITY BEHAVIOURS AND INNOVATION

AGILITY BEHAVIOURS AND INNOVATION

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Brian L. Joiner joins us

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(most articulate voice of the new breed of management gurus)

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How was it Possible?

BUILT TO LAST
Successful Habits of Visionary Companies

- P&G 1837-
- AMERICAN EXPRESS- 1850
- JOHNSON&JOHNSON-1886
- MERCK - 1891
- GE- 1892
- NORDSTROM- 1901
- FORD- 1903
- IBM- 1911
- BOEING - 1915
- WALT DISNEY- 1923
- MARRIOTT-1927
- MOTOROLA -1928
- HEWLETT-PACKARD 1938
- SONY, WAL- MART- 1945-

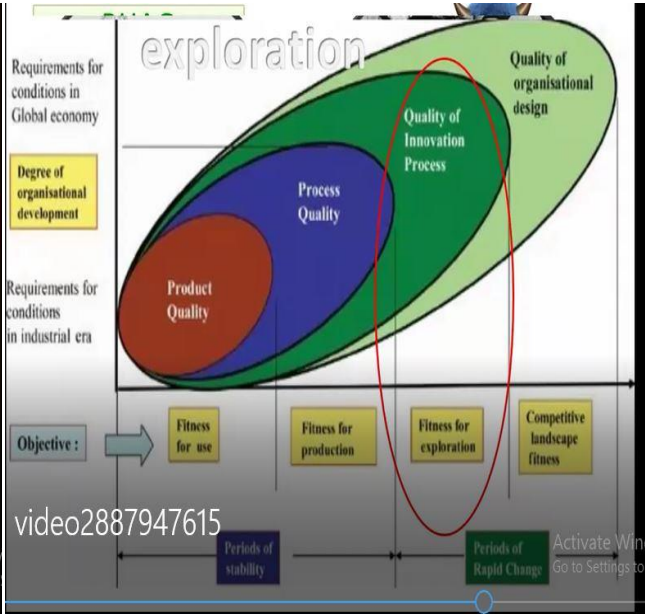
video2887947615

Joiner Triangle adopted by Ford, as the Fire Triangle of heat/oxygen/fuel: if one is lacking, the fire goes out!

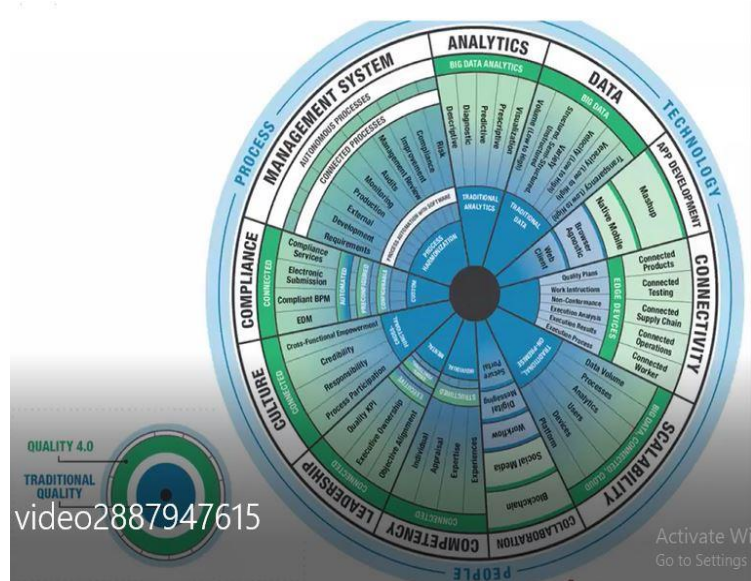
Digital Triangle as a strategy framework for creating the concept of a 'Smart Enough' Factory: I 4.0 HR 4.0 Q 4.0



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Activate Win Go to Settings

IEI-TLC Sponsored International Conference ICETEST2004 @ KRCE:

The center for Research and Funding of K. Ramakrishnan College of Engineering (Autonomous) Samayapuram, Trichy has conducted a two day *International Conference on Emerging Trends in Engineering Science and Technology – ICETEST – 24* sponsored by **Institution of Engineers (India) IEI – Tiruchirappalli Local Center**, Trichy on 23rd & 24th May 2024 at the campus of K. Ramakrishnan College of Engineering. The grand function was inaugurated with the prayer song along with lighting the holy lamp by the dignitaries. Dr. Lipo Wang, Professor, School of Electrical and Electronic Engineering of Nanyang Technological University, Singapore has consented to be the chief guest for the first day program and enlightened the participants with recent updates on science and technology in the field of medical and he also explained the need and importance of taking up inter disciplinary projects. Dr. S. Arul Daniel, Professor (High Administrative Grade), Department of Electrical and Electronics Engineering, National Institute of Technology, Trichy was invited as the guest of honour to grace the conference with his broad knowledge. Mr. Pannerselvam was also present along with the dignitaries. Dr. M. Maheshwari, the head, Dept. of ECE of K. Ramakrishnan College of Engineering welcomed the gathering with her endearing words.

Dr. S. Titus has explained the nature of the conference and he registered that the organizing committee has received a total of 201 papers on different topics. Dr. D. Srinivasan, the principal of K. Ramakrishnan College of Engineering has addressed the gathering and discussed the importance of doing projects along with other departments also. Dr. R. Kamaraj, the controller of Examinations has appreciated the organizing committee and the authors in his felicitation address. The first day of the conference has come to an end with the proposed Vote of thanks by Dr. S. Manikandan, the head, Dept. of Information Technology.

The second day of the Conference has started with the prayer song along with welcome address given by Dr. K. Dhayalini, Professor, Dept. of EEE & the head of Academic Affairs. Dr. S. Ravimaran, Professor and Head of Data Science, Saranathan College of Engineering, Chairman of IEI – Tiruchirappalli Local Centre, Trichy has accepted to be the chief guest and delivered a speech on importance of being intelligent, interested and innovative to be a successful in life. Dr. S. Titus, professor, Dept. of EEE and the Head of R&D has delivered a speech of gratitude. He thanks everyone who have supported directly or indirectly to make this conference in a grand manner.

Participants were invited from various colleges and they also have actively participated in this two day international conference and presented papers on various themes. The participants / presenters / authors / co-authors were appreciated with certificates. This remarkable conference was organized by Dr. S. Titus, Professor, Dept. of EEE and the Head of R&D and by Dr. Ravichandran, Professor, Dept. of Mechanical Engineering and the Assistant Head of R&D with the support of Dr. C. Jayalakshmi, Professor, Dept. of ECE and the Head.



Dr. S. Arul Daniel, Professor, Department of Electrical and Electronics Engineering, National Institute of Technology, Trichy and Dr. D. Srinivasan, the principal of K. Ramakrishnan College of Engineering, released the Conference ICTETEST-2024 Proceedings



Chief guest Dr S.Ravimaran, IEI-TLC Chairman given the Valedictory address and distributed the certificates at KRCE in the International Conference on Emerging Trends in Engineering Science and Technology (ICETETST- 2024). Dr.R.Kamaraj/COE, Dr.S.Titus and Dr.M.Ravichadran/Convener are present





IEI –TLC Sponsored Conference at Mahath Amma Institute of Engineering and Technology, Pudukkottai

IEI Tiruchirappalli Local Centre Chairman Dr.S.Ravimaran FIE inaugurated the International conference on Futuristic advancements in Engineering science, Technology and Management – on 30.05.2024, at Mahath Amma Institute of Engineering and Technology, Pudukkottai.



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3rd MAY, 2024

IN ASSOCIATION WITH

THE INSTITUTION OF ENGINEERS (INDIA)

.....CHIEF GUEST.....

Dr. S.RAVIMARAN

CHAIRMAN – THE INSTITUTION OF ENGINEERS (INDIA)



Dr.S.V.ALAGARSAMY
CONVENOR



Dr.C.GOPIKRISHNAN
CONVENOR



Dr.P.BABU AURTHEERSON
PRINCIPAL





IEI –TLC Sponsored Seminar @ KRCT on 9th May 2024



K.RAMAKRISHNAN COLLEGE OF TECHNOLOGY

(AUTONOMOUS)

(ACCREDITED BY NAAC WITH "A+" GRADE ISO 9001:2015 & ISO 14001:2015 CERTIFIED)
SAMAYAPURAM, TRICHY – 621112.

DEPARTMENT OF ECE
IN
ASSOCIATION WITH INSTITUTION OF
ENGINEERS STUDENT'S CHAPTER

Career Guidance for Electronics Engineers and Project Management

With

Dr. J. Sathyanarayanan

ASST.EXECUTIVE ELECTRICAL
ENGINEER IN SOUTHERN RAILWAYS



Er.S.Samidas

Chartered Engineer, General
Manager(Retd), BHEL



 Thursday, 09 May 2024
1.30 pm to 4.00 pm

Dr.M.Kavitha

IEI
Co- Ordinator

Dr.S.Syedakbar

HOD

Dr.N.Vasudevan

Principal



Chief Guest Er.S.Samidas, Chartered Engineer, General Manager (Retd) BHEL Trichy addressed the Gathering at K.Ramakrishnan College of Technology, Trichy.



IEI-TLC Inaugurated New Students Chapter @ KRCE-ECE DEPARTMENT

K. Ramakrishnan College of Engineering (Autonomous)
Department of ECE - IEI Students Chapter-ECE Branch
Institutional Membership code: IM000599-3
Students' Chapter Code: 621112/KRCE/EC

The Institution of Engineers (India) IE(I) head quartered in Kolkata aims to promote the needs of the student community, acts as a platform to connect with global engineers and actively encourages R&D programs through various promotional aids. In addition, supporting many types of activities such as Lectures, Seminars, Symposia, Workshops and other educational programs. The Institution of Engineers India (IEI) Students Chapter-ECE Branch at K. Ramakrishnan College of Engineering, Trichy, Tamil Nadu is recognized as an authorized Students' Chapter. The Institution of Engineers (India), Kolkata, approves it. The inauguration of IE (I) Student's Chapter was held on 25th May 2024.

Student Chapter of IEI was inaugurated at Department of Electronics and Communication Engineering, K. Ramakrishnan College of Engineering, Trichy, Tamil Nadu on 25th May 2024. Dr.S.Ravimaran, Chairman, IEI, Tiruchirappalli Local Centre, Trichy was Chief Guest and Dr.D.Srinivasan, Principal, K. Ramakrishnan College of Engineering felicitated the function. Dr.M.Maheswari, Professor & Head, Department of Electronics and Communication Engineering, K. Ramakrishnan College of Engineering welcomed the guests and participants for the program and briefed about the departmental activities and achievements.

Dr.G.Kalpanadevi, Faculty Advisor, declared the names of Executive Committee Members of IEI Students' Chapter- ECE Branch for the Academic year 2024-2025 and discussed about activities scheduled in coming future in the students' chapter. All student members were felicitated by the guests.

Dr.S.Ravimaran, Chairman, IEI, Tiruchirappalli Local Centre, Trichy declared the IEI Student Chapter opened and briefed about the activities of IEI, Headquarters and Tichy Local Centre. He also discussed the importance of technical activities to student community and assured all possible help from Local Centre to the chapter for organizing technical activities. Dr.D.Srinivasan, Principal, K. Ramakrishnan College of Engineering shared his experience, knowledge, expertise and enlightened everyone present in the function.

Dr.C.Jeyalakshmi, Professor, ECE presented the vote of thanks.



Chief Guest Dr.S.Ravimaran, chairman/IEI-TLC inaugurated the IEI student’s chapter at KRCE. Dr.D.Srinivasan, Principal, K.Ramakrishnan College of Engineering (Autonomous) delivered the felicitation address.

IEI-TLC Sponsored All India Workshop @ KRCE

The Institution of Engineers India (IEI)- Tiruchirappalli Local Centre (TLC) organized Two-day All India workshop on “Recent Developments in Additive Manufacturing Process” Under the Aegis of Mechanical Engineering Division Board, IEI on 24-05-2024 and 25-05-2024 in K.Ramakrishnan College of Engineering (Autonomous), Tiruchirappalli. In this workshop totally 184 participants have been attended from various institution. The eminent speakers have been invited from reputed institutions and Industries for this workshop. Dr.S Ravimaran, Chairman of IEI-TLC & HOD-AIDS Saranathan College of Engineering, Trichy, delivered the welcome address and highlighted the importance of this workshop and the activities of IEI to the participants. Dr.N.Siva Shanmugam, Professor, Department of Mechanical Engineering, National Institute of Technology, Tiruchirappalli, Tamil Nadu inaugurated the workshop and delivered the inaugural address. Dr.D.Srinivasan, Principal, K.Ramakrishnan College of Engineering (Autonomous), Tiruchirappalli delivered the presidential address during the inaugural function. In forenoon session, Dr.N.Siva Shanmugam delivered the talk on “Introduction to Additive Manufacturing”. Afternoon session was handled by Dr.G.Mahesh, Associate Professor, Department of Mechanical Engineering, Saranathan College of Engineering, Tiruchirappalli and he delivered the talk on “Role of Optimization Techniques in Additive Manufacturing Process”. The hands on Training was to participants in 3D printing machine by the resource person.

Day 2 the first session was handled by Dr.M.Ravichandran, Professor, Department of Mechanical Engineering, K.Ramakrishnan College of Engineering (Autonomous), Tiruchirappalli and he delivered the lecture on “ Laser Based AM Process”. The next session was handled by Dr.V.Dhinakaran, Head (R&D), GESCO Healthcare Private Limited, Chennai and he delivered the talk on “Laser Based AM Process and its Applications in Biomedical Industries”. The afternoon session was handled by Dr V. Anandkrishnan, Professor, Department of Production Engineering, National Institute of Technology, Tiruchirappalli, Tamil Nadu and he delivered the lecture on “Challenges in Metal Additive Manufacturing Process”.





The valediction function was addressed by the Chief guest Dr V. Anandkrishnan, Professor, Department of Production Engineering, National Institute of Technology, Tiruchirappalli. The participant was honored by the Chief guest with certificates. The vote of thanks was delivered by Dr.M.Ravichadran, Professor, Department of Mechanical Engineering, K.Ramakrishnan College of Engineering (Autonomous), Tiruchirappalli.



IEI-TLC MESSAGE by Er.R.Selvaraj, Past Chairman

Dear Sir / Madam,

On 11-05-2024, Saturday, Er.R.Selvaraj and Er. N. Gopaldaswamy, Former Director, M/s Dalmia Cements (Bharat) Ltd, & Former Chairman, IEI, Tiruchirappalli Local Centre were invited for the Valedictory function of 1st International Cement Conclave conducted by Quality Circle Forum of India, Madurai & Ahamedabad chapters and travelled to Madurai & attended the above conference. The conference was attended by 250+ delegates from 41 cement Industries across India. He delivered an excellent talk about Personality Development, Management Techniques and how the cement Industries evolved and developed over the past 5 decades. The talk is available in YouTube.

Er.R.Selvaraj and & Er. N. Gopaldaswamy was honored with Goddess Meenatchi Statue. I was asked to introduce Er. N. Gopaldaswamy Sir to the Delegates of FICC - 2024. The Cement Conference FICC - 2024 was conducted at 10th & 11th of May 2024, at M/s Fortune Pandiyan Hotel, Madurai.

R. Selvaraj,
Tiruchirappalli.





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