

Quarterly News Letter published by Trivandrum Engineering Science and Technology Research Park

From the Director's Desk



Dr. Jiji C.V

Principal, College of
Engineering Trivandrum

TrEST Research Park, an initiative of College of Engineering Trivandrum, was established by Government Kerala with the aim of promoting industry-institute interaction. The idea is to encourage our students and faculty to interact with industry with the spirit of mutual benefit. This would equip them to solve industry problems and thereby enhance their employability. Over the last two years the Park has come up with several successful mutually beneficial initiatives by bringing faculty, students and industry leaders together. Our collaborative ventures with M/s Entuple and M/s Westghats through the Centres of Excellence in Electric vehicle and Microchip design respectively have created an environment for our faculty and students to work on cutting edge technology in electric vehicle design and RISC V processor design. It is encouraging to note that a good number of our students from EC, EE, CS and ME could associate with these projects and contribute significantly in solving specific problems as part of their M.Tech dissertations. Besides, the state-of-the-art facilities available in the Park enable our students to take up high end research projects as part of various international competitions and challenges which otherwise would have been impossible. Let's hope that the proposed 40,000 sq.ft. building complex for the research park to be established in CET campus and the expanding infrastructure would cater to the needs of collaborative research in emerging areas. Thus, in the coming years we expect our faculty, research scholars and students to work with more MNCs and startups engaging in fruitful research initiatives.

New CEO for TrEST Park

Dr. Koshy P. Vaidyan took charge as the new CEO of TrEST. Dr. Koshy has more than two decades of experience in Global Tier 1 organizations like Ernst & Young and Tata Consultancy Services and in Govt.



Dr. S Ushakumari, (former Project Head, EV Center of Excellence, TrEST) welcoming Dr. Koshy P Vaidyan as TrEST CEO

Currently, Director, Information Systems in Finance Department, he also holds charge of Chief Executive Officer, TrEST Park (Trivandrum Engineering Science and Technology Research Park).

He has been with Ernst & Young, where he has led the Enterprise Business Architecture team, and has worked on major global IT Transformation programs of Ernst & Young. He has been able to develop enterprise architecture for Global Delivery Services Portfolio, and was able to provide guidance on IT Standardization, Application Rationalization and alignment to Business / IT Strategy.

He has been the Centre of Excellence Lead of Product Engineering group, and has handled IT Service Management Consulting roles, and delivery of some of the key projects in Tata Consultancy Services. He holds Ph.d in ECE from University of Kerala, and B.Tech and M.Tech in Electronics Engineering from CET.

His areas of research include machine learning, neural networks, soft computing, non-linear system identification, adaptive networks and bioinformatics. He is certified on The Open Group Architecture Framework

(TOGAF) and ITIL. He is also a Fellow of the Institution of Electronics and Telecommunications Engineers (IETE) and a senior member of the Association of Computing Machinery (ACM).

He is inventor of a patent on Software Product Performance Maturity Model and has received Outstanding Leadership Award by Regional Activities Board, IEEE Region 10, Singapore.



An MoU between Hykon India Limited and TrEST Research Park has been signed, which will facilitate joint research and development in various power electronic technologies pertaining to Electric Vehicles.



Patent Corner



Congratulations to Shri. Shyam Kumar, the Managing Director of Innovation Experience receives patent from Govt. of India for Solar Power Peak Load Minimiser System and Method



Congratulations to Dr. Jino Joy Thomas, former research scholar of the Electronics and Electrical Engineering department who received patent for inventing High Power Geared Electrical Vehicle under the guidance of Dr. S Ushakumari, (former Project Head, EV Center, TrEST)

Welcoming the New Project Heads



Dr. Arun Kishore W.C
Project Head EV CoE
Professor, Dept. of
Electrical and Electronics
Eng., CET



Dr. Shajahan E.S
Project Head ERC
Associate Professor,
Dept. of Electronics
Communication Eng., CET



Dr. R.M. Shereef
Supporting Faculty EV CoE
Professor, Dept. of
Electrical and Electronics
Eng., CET



Prof. Anurenjan P.R
Supporting Faculty ERC
Assistant Professor,
Dept. of Electronics
Communication Eng., CET

Incubation Updates

ENGEN DEALERS & CONSULTANTS PVT LTD



The MD of Innovation Experience, Shyam Kumar the Solar Auto Riksha

Enegrn Dealers & Consultants Pvt. Ltd..is a member of TrEST Research Park, known in the brand name

Innovation Experience. It is a social infrastructure company that applies clean technology development with human-centered design, and the core focus is to achieve positive social impact.

With most of its efforts conducted in the agricultural state of Kerala, Innovation Experience works with government and local private organizations to develop a portfolio of economically efficient and environmental sustainable products such as solar air conditioners to waste management.



The Solar Electric Boat developed by Shyam Kumar and team

They have worked with prestigious organizations like KAU, KSCSTE, etc., in designing and developing engineering solutions. They were selected as one of the five winners of the Innovation Challenge Program funded by Columbia University in 2018.

Currently, the company also focuses on developing an advanced wind-solar hybrid street light and a hybrid boat project with a team of students and faculty members from CET.

WESTGHATS TECHNOLOGIES

Westghats Technologies is a fabless-semiconductor technology company focusing on artificial intelligence (AI) and intelligent vision. They develop power-efficient neural processor chips for bringing AI into small, low-power embedded devices. They also provide ASIC design services to wireless and automotive semiconductor design houses in the US, Japan, and India.

The company has been granted US patents for their unique hardware acceleration architecture that enables high power efficiency for AI computing.

Westghats Technologies, in participation with TrEST

Research Park, is working with students and faculties of CET for various fabless semiconductor design activities. CET students also get opportunities to work and learn as interns and project associates for various design activities.

INQBE INNOVATIONS PVT LTD

The company develops innovative products in Power Electronics, Drives, and Renewable Energy and provides consultation support to several companies across India including product design support until product launch.

They have set up a separate wing for R&D within TrEST Park, focusing on developing products that could bring about a social impact. There are products in the developmental stage, including low-cost chargers for Electric Vehicles, Battery Management systems, Solar Air conditioners.

They work closely with CET students. Three students from Electrical Engineering and Computer Science Engineering, departments were hired as interns last year. The company has also conducted training programs for the students of CET, focusing on real-time hardware implementations. They donated an Inverter Drive kit to the Power Electronics Lab of the college.

Pi Beam

Pi Beam is a startup founded by Visakh Sasikumar, alumnus of CET which builds sustainable and affordable micro-mobility electric vehicles.

Pi Beam is the first Indian company to offer pedal-assisted electric trikes for logistics and passenger movement. Pi Beam has raised a bridge round of Rs 5 Crore from GAIL (India) Ltd. The company develops connected e-vehicles for two-, three-, and four-wheeler offerings for last-mile logistics and shared and owned passenger movement.

They are looking forward to getting associated with the companies in TrEST Park and the co-development of the controller, in the use of motor and vehicle test bench facilities for their vehicles, in Ansys & Hypermesh for FEA simulations.

They were in the news headlines this year when the

company launched an innovative idea of an essential delivery mobile cart service in Perungudi (Chennai), after tying up with a few stores during COVID-19.



PiBeam's electric cart, also known as PiCart, has been deployed in Chennai Corporation



PiBeam's PiMo, an electric two-wheeler that can charge faster than a smartphone and comes with a range of 50 km.

Tyrannus Innovative Engineering & Research Academy (T.I.E.R.A Pvt. Ltd.)

Tyrannus Innovative Engineering & Research Academy (T.I.E.R.A. Pvt. Ltd.) started in October 2015 as a Technology Business Incubator (T.B.I.) company inside College of Engineering Trivandrum. Their main domains of expertise are Industrial Condition Monitoring, NVH testing, drives, controls, and automation. T.I.E.R.A. is currently operating from TrEST Research Park, focusing on developing complete solutions in industrial and structural test and measurement systems for sound and vibration applications.

The company launched four innovative and economical products in 2020 which are T DAQ IEPE, T-ViB Software, T DAQ MEMS, and T Scope.

T.I.E.R.A signed two MoUs last year with the Dept.

of Civil Engineering, National Institute of Technology, Tiruchirappalli and the Department of Civil Engineering, National Institute of Technology Calicut.

The research scholars from CET worked with TIERA's in-house Product development and Advanced Dynamics and Control Lab, CET. They were able to present their published research papers at two distinguished conferences. The company hired seven students from CET. TIERA has applied for an international patent which is under process.



Digital Signal Conditioner, T DAQ IEPE developed by Tryrannus

Augsense Lab

Augsense Lab started as an AI-based weather prediction solution. They have done R&D in Cubesat design, an AI-based solution to reduce the cost of computer tomography, a SLAM-based solution that maps the vehicle's route that reaches an unknown terrain where we can't use GPS to track the location.

Eight students from CET completed an internship in the Augsene lab last year. From the interns, the company hired a student. They have applied for a patent, and a research paper is about to get published in IEEE journal.

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