





Editor-in-chief Dr. K. Gopalakrishnan

Monthly Newsletter of the Indian Institution of Production Engineers

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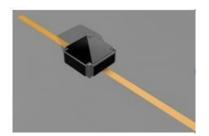
Proud IIPE Students' Chapters

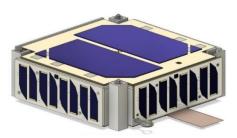
Jeppiaar Institute of Technology, Kunnam, Sriperumpudur, Chennai Sri Shakthi Institute of Engineering and Technology, Coimbatore GH Raisoni College of Engineering, Nagpur

Students Built 3 x 0.33U SlimSatellites and Ground Station for Launching their Satellites

Launch Schedule: Feb-Mar 2021 by PSLV, ISRO & IN-SPACe







As a part of *UNITYsat Program of Indo-Serbia Initiative*, the Students' Startup "TSC Technologies P Ltd", Bangalore has initiated the Joint Development of Students' Satellites at the above Institutions with the support of Indian Technology Congress Association (ITCA), Committee for Space Programme Development (CSPD), Serbia and 75 Students' Satellites Consortium. It is an "Affordable and Frugal Way to Access Low Earth Orbit!" by Academic Institutions. The new futuristic initiative of ISRO to provide "Single Window" for all required permissions for frequency allocation, Registration of objects (satellites0 before launch etc under "IN-SPACe" is encouraging Indian Private Industries, Start-ups in Space sector and Academic Institutions to realize the dream of accessing the space in the "New Space Era" of Space 4.0!

All the 3 Satellites of JIT, SSIET and GHRCE are "Technology Demonstrators" at Low Earth Orbit to test/demonstrate IoT in Space and Inter-Satellite Communication Mesh/Constellation etc are in the Qualification Test Phase and will be ready for launching by the end of January 2021. The proposed Launch Schedule will be during 3-4 week of February 2021! We congratulate the Students of IIPE Chapters at these Institutions and their Management for encouraging their students to build their own satellite, indigenously! More Technical Details of Students Satellites will be shared in 2021 New Year News Letter. For More Details of these Satellites, Contact: Mr. Nikhil, Founder CEO, TSC Technologies, M: 9741896297 or Mr. Sanketh, M: 9740496061.





K. K. Wagh Institute of Engineering Education and Research, Nashik Department of Production Engineering

WEBINAR ON TUNING INTO OPERATION RESEARCH

The webinar on topic "Tuning into Operation Research" organized by the Department of Production Engineering, K. K. Wagh Institute of Engineering Education and Research, Nashik in association with Indian Institution of Production Engineers (IIPE), Nashik Local Chapter on 24th October, 2020. The main objective of this webinar was to promote the use of Operation Research techniques to mathematically model and optimize the real industrial problem among the students and faculty. About 69 participants had register for this webinar on go to webinar platform. The webinar was inaugurated by Dr. K. N. Nandurkar, (Principal, K. K. Wagh IEER, Nashik). He also delivered the welcome address. The speaker for this webinar was Dr. Venkatesh Jonnalagedda, (Director, Quintessence Engineering Consultants LLP). He has 28 plus years academic and 12 plus years' industry consultation experience in the field of Operation Research. In this webinar he covered the basics of formulation mathematical models of real life situations such as trim loss problem in sheet metal industry, factory location problem etc. The session was very thought provoking and fruitful for all students and faculty. Dr. P. J. Pawar (Professor and Head, Department of Production Engineering, K. K. Wagh IEER) also expressed his thoughts on the topic. The program conclude with vote of thanks proposed by Dr. S. R. Gangurde (Professor, Department of Production Engineering, K. K. Wagh IEER). An e-certificates were distributed to attendees by mail. Prof. Santosh B. Sangle coordinated this event. To watch the recorded sessions of the webinar, scan the QR code shown above.

From the Pages of History...

UNISEC and ITCA Team from NHCE

Team Consolidated bagged a Prize for developing a Working Prototype of a 2U CubeSat Modular Satellite Bus within the 48 hours time frame. **Solution:** This project aims to create a Satellite bus which can be used for nanosatellite payloads so that it makes development and utilization of NanoSat Technology easier and faster. The Sub-Systems are On Board Computer, Electrical Power Supply and Communication System.



Winning Team – Modular Satellite Bus: UNISEC and ITCA Team from NHCE
L to R: Mr. Manas, BCIC, Mr. Mithun, Mr. Sanketh, Mr. Denzel, Ms. Richa, BCIC, Mr. Nihkil, , Ms. Athira and Dr.C.S.R. Prashanth

2U Modular Cube Satellite Bus built by IIPE Chapter @ NHCE



Getting Featured By BCIC Team: UNISEC and ITCA Team from NHCE IIPE Chapter: Built 2U Modular Satellite Bus: Mr. Mithun, Mr. Shyam, Mr. Nihkil, Mr. Sanketh, Ms. Athira and Mr. Denzel



NHCE IIPE Chapter's Satellites Team with Ms. Lucille Baudet - Open Cosmos, UK, Dr. Margarita Safonova - Russia and Dr. J. Ramkumar, Professor, IIT Kanpur, Mr.Binu, IIA during interaction to Evolve Creative/Novel Payload for the CubeSat at NHCE today (03 Sept) at Conference Room.



www.iipeonline.org

IS CLARITY BETWEEN THE ENGINEERING DISCIPLINES BLURRING?

Dr. M S Ganesha Prasad,

Dean, New Horizon College of Engineering, Bangalore

URL: https://theeducationpaper.com/is-clarity-between-the-engineering-disciplines-blurringdr-m-s-ganesha-prasad-dean-new-horizon-college-of-engineering-bangalore/



Because of unprecedented situation, due to COVID 19, Job markets in INDIA is changing drastically; Industries like IT, IT support and services, Engineering service industries needs engineers who are very much comfortable with online tools.

Very recently to develop video streaming apps like Zoom, Skype etc, Govt of India sanctioned Rs one crore as start-up fund. To co-up with the present and future market trends and sustain in the competitive world one has to improve certain skill sets which are not only related to soft skill sets like — Customer services, Bilingual or multilingual, Strong interpersonal skills, Self-motivation and Creativity, Emotional intelligence, oral and written

communication skills, In addition to these skill sets, for an engineer's belongs to any domain must & should equip with technology skills like Artificial Intelligence, Machine Learning, Deep Learning, Autonomic computing, Cluster analysis, Cognitive computing, Data science, Genetic algorithm and Unsupervised learning. The simple definitions of these technologies are

Artificial Intelligence: The technology **AI** may be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. Artificial intelligence refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic like their actions.

Machine Learning: It is a branch of artificial intelligence based on the idea that systems can learn from data, identify patterns and make decisions with minimal human intervention. Machine learning is a method of data analysis that automates analytical model building.

Deep Learning: Also known as deep neural learning or deep neural network. This is a subset of machine learning in artificial intelligence (AI) that has networks capable of learning unsupervised from data that is unstructured or unlabelled.

Autonomic Computing: Autonomic computing is a computer's ability to manage itself automatically through adaptive technologies that further enhance computing capabilities and cut down on the time required by computer professionals to resolve system difficulties and other maintenance such as software updates.

Cluster Analysis: This is a tool used for Machine Learning or Deep Learning which ultimately reduces the computing time. This basically groups similar contents either in organised or unorganized databases. This technique is more popularly used in heterogeneous database for segregating of the data.

Cognitive Computing: These are the computerized models, used to simulate the human thought process. Experts in this domain achieved great mile stones initially by adopting these models to the pet animals like dogs / cats. In general where ever there is complex situations, where the answers may be ambiguous and uncertain, tools like Cognitive Computing really plays major role.

Data Science: This is an inter-disciplinary field which uses scientific methods, processes, algorithms and systems to extract knowledge and insights from many structured and unstructured data.

Genetic Algorithm: A genetic algorithm is a meta – heuristic tool inspired by the process of natural selection that belongs to the larger class of evolutionary algorithms. The genetic algorithm is a method for solving both constrained and unconstrained optimization problems that is based on natural selection.

Unsupervised Learning: UL is a type of machine learning algorithm used to draw inferences from datasets consisting of input data without labelled responses. The most common unsupervised learning method is cluster analysis, which is used for exploratory data analysis to find hidden patterns or grouping in data.

Generally with the added technical skill sets the engineer can comfortably connect to the surroundings. Most of the software / hardware products which are available with us are actually making use of such technologies. The primary responsibility of the engineers is to be aware of these technologies irrespective of the domain he/she belongs to, everyone definitely need a certain level of comfort around technologies.

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Regarding these new technologies one needs to learn from basic level till to an extent of understanding oneself, engineers in most roles will be required to access data and determine how to act on it. On a more fundamental level, everyone needs to be able to understand the potential impact of new technologies of their industry, business, or in their job.

Today we need to understand the speed at which the technology is changing in the present and future workplaces, the responsible engineers have to be alert and able to manoeuvre and enjoy these technologies. Human brains not only are flexible, but are also need to be adaptable as we are required to adjust to shifting workplaces, the expectations from all the organisations are very high, particularly for beginners needs to work with their skill-sets. For the fourth Industrial revolution once ability is not only to see the technology changes as the burden but as an



model building.

opportunity to grow and innovate.

People who can work comfortably in changing work environment will show that, they like changes in the working environment then to be static, this attitude of adopting to change management is very much essential, because skills required for the professional services is dropped drastically to an average of 6 years only, it's time for all of us to begin acquiring skills that will make us valuable resources in the future workplace. Fast-paced technological innovations mean that most of us will soon share our workplaces with artificial intelligences and allied technologies. This may be possible by adopting a commitment to lifelong learning so you can acquire the skills you will need to succeed in the future workplace. At present the soft-skills are considered to be required skills, but to survive in this competitive world one at-least need to know the knowledge of Artificial Intelligence, Machine Learning allied technologies. Understanding these technologies may not requires good amount of technical knowledge base, but one need to distinguish between present what is and future technologies.

-For Computer Science and other IT

Branch engineers must know the concepts of daily used instruments/products to upgrade the same by using above technologies.

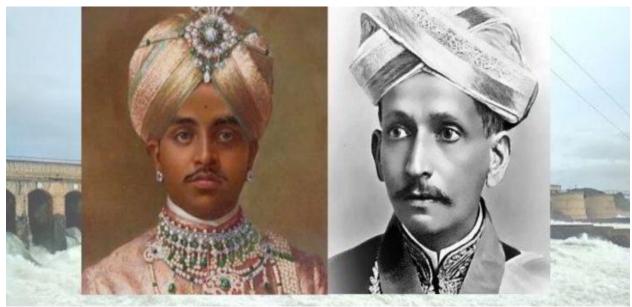
-For Mechanical Engineering and other aligned branch engineers must know the interfacing of the products/ processes to the IT technologies mentioned above.

In totality as we progress for better tomorrow the lines between engineering disciplines are blurring. We like to mention to all the budding engineers that, if you are good in analysis better choose the branches like Core engineering disciplines. If you are good with algorithmic thinking then CS/IT branches may be good for you. Everything will be in place once you clear about your strength and do what you enjoy most.

As mentioned by Sri Jaggi Vasudev Sadhquruji "Memory is not intelligence. Having more information does not make one more intelligent." Also "Alertness and consciousness are what will make a person superior," as artificial intelligence takes up the task of remembering and carrying information but without good logic one cannot build machine/hardware/software which can perform like a human brain.

So, one has to upgrade the skill sets to meet the present day requirements, but with more ethical manner, because the logic will apply back to the humans.

A TOUCHING TALE BEHIND THE CONSTRUCTION OF KRISHNA RAJA SAGAR (KRS) DAM BY KRISHNA RAJA WODIYAR IV



KRS stands proudly as a testament to a humble king, brilliant engineer and the toil of thousands of men and women who made it an architectural wonder that it is.

Background Details:

- The king of Mysore, **Krishna Raja Wodeyar IV** (called "Rajarishi by Mahatma Gandhi) and Sir M. Vishweshwariah were in a pensive mood.
- They had reached a dead-end.
- The proposed Krishna Raja Sagar (KRS) dam was 6 months away from completion and they had run out of money.
- Just 8 months ago, the king had **mortgaged** his family **jewels** to the king of Benaras.
- The gueen has given her favourite necklaces and family heirlooms for the project.
- But eventually, that too ran out in mounting labour and construction costs.
- According to the human psyche, they say, when we are cornered and have nowhere to go, sudden and un-expected courage takes over our very being.
- A man thus subjected will pull off all odds in a sortie mainly because he has nothing to lose. **Sir MV** had an impractical idea but wanted to attempt.
- That morning, he sent out messages to all village headmen that he wanted to meet them in a village near Mandya the next day at 4 pm.
- The royal messengers rushed out to village after village delivering the important Communication. The agenda was **not** mentioned.
- Sir MV expected at the most **5 to 10 village** headmen would come to the meeting due to short notice.
- Next day, they reached the meeting at 3:50 pm.
- There were more than **500 people**, village elders and the younger crowd included.
- All wanted to hear the great engineer who was building this huge lifeline.
- There was another man walking with Sir MV.
- The crowd gasped.
- For most of them had never seen the King up so close.
- The king was genteel, but education had taught him humility.
- He walked amongst the crowd, spoke to them as a commoner, mingled and finally took up the stage.
- He spoke. From the heart. In their language. He did not hide anything.
- He said that he needed help. And asked the villagers if they would work for free for 4 weeks until he found out a solution.
- He told them that he was thinking of mortgaging one of the palaces. Here was a king who was like them,
 without money and was about to mortgage his house. "Just like us," they thought. But what touched them
 most were his vulnerability and simplicity. The king had connected. The effect was electrifying.

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• However, no one responded. A month of **free work** meant depleted savings for some, and for others, starvation.

The Climax:

- Next morning at 6:30 am Sir MV met the King and they commenced discussing mortgaging the palace when the **king's secretary** suddenly rushed inside.
- He exclaimed, "You got to see this." Everyone hurriedly went to the **palace balcony**. The sight was one to behold.
- First, they saw a few, then **hundreds** and then **thousands**. Wave after wave of people were streaming into the palace courtyard. Farmers, teachers, cart-drivers, old men, women many with toddlers **people of all sort** and sizes came to do their **tiny bit** to complete the dream that was KRS.
- The king, queen, courtiers and Sir MV watched the spectacle with unbelievable eyes.
- With moistened eyes, the king held out his hand and placed it on his heart a gesture of deepest gratitude.
- Even the non-emotional Sir MV was moved.
- The people of Mysore would **not** care if they were not paid, but they would complete the dam braving whatever odds that came their way.
- **KRS** stands proudly as a **testament** to a **humble king**, **brilliant engineer** and the toil of **thousands** of men and women who made it an **architectural wonder** that it is.
- But above all, it is a symbolic representation of a miracle that can be achieved if your heart is pure and intentions are well.
- The sophisticated canal system from KRS to Shivana Samudra has enabled mother earth to deck herself in lushest of green. This area is called the **green gold of Karnataka**.

Source: https://www.pgurus.com/a-touching-tale-behind-the-construction-of-krishna-raja-sagar-dam-by-krishna-raja-wodeyar-iv/

Profile of Mr. Chandar Shekharr



Mr. Chandar Shekharr is a Communication Process Enhancer and a passionate trainer. He conducts result-oriented programs on 'life-skills' and 'Best Communicating Practices'.

He strongly believes that along with qualification each individual must have 'Best communication Practices', for a holistic growth to the Career. With nearly three decades of work experience in industries and corporate world, he understands the requirements for the need of communication for building the career. His approach brings a considerable difference in the performance of the team members. His method of interaction with the students and method of imparting knowledge are result-oriented.

He is a Diploma and a Graduate Engineer and has completed Masters in Manufacturing Management. He has worked from the entry-level to manage and lead a business unit. He has also completed his Masters Diploma in Training and Development from a prestigious institute — IATD. His core career growth was around the training and

He has conducted many technical training and is very passionate about the 'Preventive Management' approach. He considers human life very precious and gives great importance to 'Safety in the work area'. His sessions are full of inspiration and are filled with learnings for the participants. Eminent Judges and lawyers, Doctors from the academic and the medical field, senior executives from various MNCs' have participated in his sessions and have been immensely benefited. His core value is 'The Empathetic approach brews SUCCESS'.

Interview with Mr. Chandar Shekharr

When you look back what is the biggest lesson you have learnt from you experience.

As an individual, learning never stops and is a lifelong activity. We meet many individuals who have different approaches to similar circumstances. Every individual or circumstance has shaped me as to what I am today. I have learnt to accept my past without any regret and also my present with a confidence to handle the future without any fear. This is possible when I realized that it is better to be grounded at all times even when things around us is spinning out of control. By sharing our knowledge you not only enable others but also internally carve a pathway in your life that supports you lifelong.

The turning point in your life:

The day I decided to become an entrepreneur was the day my life encountered a curve. In my journey as an employee, I picked up many technical skills. Alongside, I was also helping my employer realize his dreams. Now, as an entrepreneur I am supporting and planning a role for others. I am assisting others to realize their dreams too.

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Tell us more about your educational qualification? How it is enabling you to offer best to students.

I have a Technical and Management educational background which is the basic foundation and certificate or authorization for practicing the qualification. Practical knowledge was imparted to me during my journey of 3 decades with many individuals. As mentioned before, learning is continuous and learning from others' experience is like taking the elevator instead of stairs. My experience and my life learnings (both personal and technical) are the qualities which enable students to make me their elevator to reach their career goals.

How are you connected to MSME Govt of India?

Currently, I am associated with Pradhan Mantri Jan Kalyankari Yojan Prachar Prasar Abhayan (PMJKYPPA) as an associate trainer. Here, my role is to present all Kalyankari Yojanas of the Government to the common man through training and by way of social media. Apart from this, I had lead an MSME for 15 years where I had the opportunity to interact with various Industrial Departments.

Going forward what are the goals you really looking for:

There seems to be a lot of ambiguity about the life after campus. I wish to bridge the gap between the campus life and corporate/working life. My desire is to hand hold the students during their transitional journey to become holistically successful. I wish to empower them to contribute to the might of youth for the benefit of mankind.

Tell us about tools, which you like to share with students' community.

For life or career survival, communication skills play a vital role. I will be helping them realize and demonstrate the importance of soft skills. Also, I will be demonstrating that by cultivating best inter-personal practices, they can effectively can shape their career.

I will also prepare them for the challenges of corporate - work environment by strategizing their transition from campus life to corporate life. In the process they get to gain an understanding of the GEMBA management technique and how to lay the foundation for KAIZEN culture. Moreover they need a mentor to be kept updated with the latest information and technology in order to move with the ever changing trends. I want be instrumental for them to keep up with times ahead.

WE SALUTE Mr. O.P.KHANNA FOR HIS SELFLESS SERVICES TO NEEDY HEART FOUNDATION

A few weeks ago, we celebrated the first five of our 10 partner hospitals that partner with NHF. This week we share our gratitude also with the five other hospitals that helped us to expand our cardiac surgery assistance program for the needy in our second decade of operation.



Learn more: https://www.facebook.com/needyheartfoundation/posts/849776485773754.

These world-class hospitals have significantly grown the scope of NHF's activities. And cumulatively, our 10 hospital partners have performed 10,000 heart surgeries for the needy. This is #7 in our series celebrating 20 chapters of the NHF journey. Have you LIKED this story? SHARE with family and friends: https://www.facebook.com/needyheartfoundation.

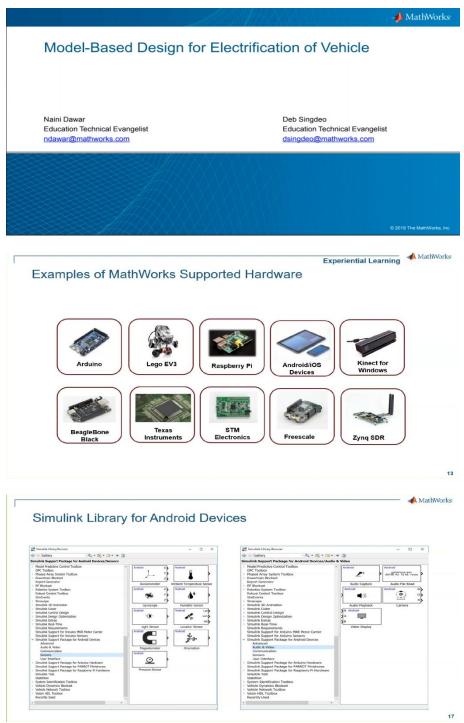
NHF/RNHF will be crossing 10000 "Free Heart Surgeries for Children" in 2020 from 2002! Mr. O.P.Khanna was Former Chairman of IIPE! We Salute Mr. O.P.Khanna, Chairman, NHF and his team along with Collaborative Hospitals and Expert Heart Surgeons!



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A Technical Webinar on "MODEL-BASED DESIGN FOR VEHICLE ELECTRIFICATION"

A technical webinar conducted by the experts from **MathWorks** for the students of New Horizon College of Engineering on "MODEL-BASED DESIGN FOR VEHICLE ELECTRIFICATION". The session was conducted in WebEx app for a duration of 3 hours. More than 100 participants were a part of this session. Various topics were discussed which includes Traditional Design Process, Model based Design with Simulink, Different approaches for Modelling Dynamic Systems, MathWork Product Overview, Simulink Image Inversion Model, Etc...



Glimpses of the Technical Session



IIPE Chapters interested in Launching Their Own Satellites or to establish the UNISEC India Chapter at Their Institutions can contact: Dr. K. Gopalakrishnan, National Secretary, IIPE at profgoki@yahoo.com or M: 98451 73730

India-Israel Partnership

- Innovation, Robust Technology Base, Disruptive Technologies
- Academic Research to Products and Solutions
- Approach to Outreach Educational Programmes Industry & Institute
- Mastered in Space Technology
- Strong in Communication, Observation Science and EducationInternational Co-operation, Bilateral Agreements with India including Student
- Exchange Programmes and Joint Projects
- · Funds Grants, Soft Loans etc

How Institutions Can Engage

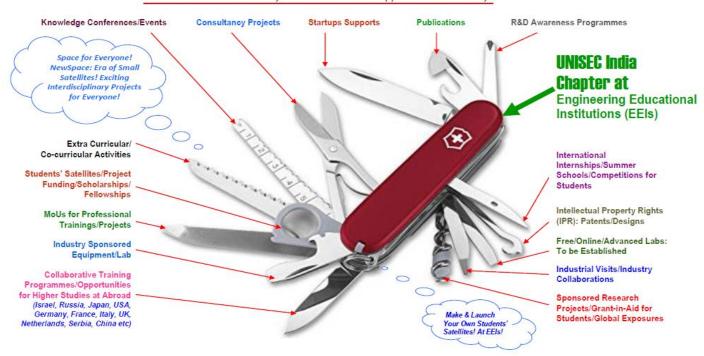
- Build Strong "Space Technology" Competencies
- Hands on Development Experience- Students and Faculty Members
- More Industry Interaction (Real Time)
- State-of-the-art Technology Interventions
- Create New Job, Start-ups and Incubation facilities
- Nurture Future Space Engineers/Scientists
- Technology Demonstration S&T Research
- Support Education Outreach
- Make Students Future Career Ready

UNISEC India: Secretariat @ 4th Floor, #3, First Main, BDA Layout, Kodihalli, HAL 2nd Stage, Bengaluru – 560008, Karnataka, India; **Contact Info:** +91 80 6559 2501, +91 80 4850 8380; Website: www.unisec-india.in



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