Newsletter

Volume 9, Issue 7, July 2019

Aspire

Mechanical Engineering

Achievements in Sports, Projects, Industry, Research and Education

All About Nobel Prize- Part 67

Enrico Fermi

The Architect of Nuclear Age

Enrico Fermi was an Italian and naturalized-American physicist and the creator of the world's first nuclear reactor, the Chicago Pile-1. He has been called the 'Architect of the Nuclear Age' and the 'Architect of the Atomic Bomb'. He was one of the few physicists to excel in both theoretical physics and experimental physics. Fermi held several patents related to the use of nuclear power, and was awarded the 1938 Nobel Prize in Physics for his work on induced radioactivity by neutron bombardment and for the discovery of trans-uranium elements. He made significant contributions to the development of statistical mechanics, quantum theory, and nuclear and particle physics.

Enrico Fermi was born in Rome, Italy, on 29 September 1901. He was the third child of Alberto Fermi, a division head in the Ministry of Railways, and Ida de Gattis, an elementary school teacher. As a young boy he was interested in building electric motors and playing with electrical and mechanical toys. With scientifically inclined friend, Enrico Persico, Fermi pursued projects such as building gyroscopes and measuring the acceleration of Earth's gravity.

In 1918, he was awarded a fellowship of the Scuola Normale Superiore of Pisa. He spent four years at the University of Pisa, gaining his doctor's degree in physics in 1922, with Professor Puccianti who told that there was little he could teach Fermi and often asked Fermi to teach him something instead. Fermi published a lot of his scientific works, among which one of them was sufficiently well-regarded that it was translated to German language and published in the German scientific journal Physikalische Zeitschrift in 1922.

While writing the appendix for the Italian edition of the book Fundamentals of Einstein Relativity by August Kopff in 1923, Fermi was the first to point out that hidden inside the famous Einstein equation ($E = mc^2$) was an enormous amount of nuclear potential energy to be exploited. In the same year, Fermi was awarded a scholarship from the Italian government and spent several months with Professor Max Born in Gottingen. In 1924, with a Rockefeller Fellowship, he moved to Leyden to work with P. Ehrenfest, and later that year he returned to Italy to occupy the post of Lecturer in Mathematical Physics and Mechanics at the University of Florence, a position that he held for two years.

In 1926, Fermi discovered the statistical laws, nowadays known as the "Fermi statistics," governing the particles subject to Pauli's exclusion principles. The next year, Fermi was appointed as the Professor of Theoretical Physics at the University of Rome, a post that he retained until 1938 when he emigrated to America.

During Fermi's early career in Rome, he focused on electrodynamic problems and theoretical investigations on various spectroscopic phenomena, but soon turned his attention from the outer

electrons towards the atomic nucleus itself. In 1934, he evolved the beta-decay theory, coalescing previous work on radiation theory with Pauli's idea of the neutrino. Following the discovery by Curie and Joliot of artificial radioactivity that year, Fermi demonstrated that nuclear transformation occurs in almost every element subjected to neutron bombardment. This work led to the discovery of slow neutrons, which led to the discovery of nuclear fission and the production of elements lying beyond what was until then the Periodic Table.

In 1939, Fermi was appointed Professor of Physics at New York's Columbia University, a position that he held until 1942. His experiments during this time led to the atomic pile (nuclear reactor) and the first controlled nuclear chain reaction, which took place in Chicago on December 2, 1942, on a volleyball field beneath Chicago's stadium. He then became one of the leaders of the team of physicists on the Manhattan Project.

After World War II, Fermi accepted a professorship at the Institute for Nuclear Studies of the University of Chicago. During the last years of his life Fermi occupied himself with the problem of the mysterious origin of cosmic rays, thereby developing a theory, according to which a universal magnetic field – acting as a giant accelerator – would account for the fantastic energies present in the cosmic ray particles. He died from stomach cancer in Chicago on November 28, 1954.

Professor Fermi was the author of numerous papers both in theoretical and experimental physics. Fermi was member of several academies and learned societies in Italy and abroad. Being early in his career, he was chosen among the first 30 members of the Royal Academy of Italy in 1929. He was the first recipient of a special award of $50,000 – which now bears his name for his work on atoms.

Many awards, concepts, and institutions are named after Fermi, including the Enrico Fermi Award, the Enrico Fermi Institute, the Fermi National Accelerator Laboratory, the Fermi Gamma-ray Space Telescope, the Enrico Fermi Nuclear Generating Station, and the synthetic element Fermium, making him one of 16 scientists who have elements named after them.

Source:
https://www.nobelprize.org/prizes/physics/1938/

Info to Alumni- Campus Update

External Recognition

Principal, Dr S. Salivahanan writes…

I am pleased to inform that seven departments (EEE, ECE, CSE,IT, Chemical, BME and Mechanical) of our college have been selected for "**Teaching Awards in Engineering**" based on Anna University rankings 2018. The Principal and heads of the departments have been invited to receive the awards from Thiru. K.P. Anbalagan, Hon'ble Minister for Higher Education, Tamilnadu in a function at Arignar Anna Arangam, Chetpet, Chennai on July 23, 2019.

Important Info on NIRF Rankings 2019: India Rankings have always tried their best in coming out with new categories / disciplines to rank. This year NIRF would like to further diverge rankings in subject areas and to start with the institutions will be given subject wise rankings in the following categories-

1. Computer Science Engineering
2. Electrical and Electronics Engineering
3. Civil Engineering
4. Mechanical Engineering
5. Chemical Engineering

On 08 June, 2019, National Doctoral Fellowship interviews were held at SSN College of Engineering.

On 11 June, 2019, Dr Nanda S, Student Counselor, organized a workshop on “Effective Mentoring” for the members of the faculty.

The Career Development Centre organized company specific technical training program, between 17 June, 2019 and 22 June, 2019, for the final year students of SSNCE.

Inaugural Function of the “Training in Communication Skills and Personality Development” program, organized by the English Department for the students admitted under Rural Scholarship 2019, was held on 24 June, 2019.

On 24 June, 2019, classes commenced for the academic year 2019-2020.

Info to Alumni- Group Info

Info to Alumni- Department Update

External Recognition:

Dr. N. Lakshmi Narasimhan, Associate Prof/Mech, reviewed a Paper for the Int. Journal - J. Thermal Science (Springer) [19.06.2019]

Dr. K L Harikrishna, Associate Professor, served as the Chairman for Central Valuation [27.05.2019 - 02.06.2019]

Dr. K L Harikrishna

Dr. N. Lakshmi Narasimhan

Project Proposals:

There were two schemes open in June, for submitting project proposals
Core Research Grant (CRG) and Mathematical Research Impact – centric support Scheme (MATRICS).
The mech team has put in maximum efforts to utilise these two opportunities
---VeA

Core Research Grant Scheme

Dr.Vimal Sam Singh (Mech) alongwith Dr.Esther Florence (ECE), has submitted a proposal titled “Integrated structural design and development of mechanical robust radar absorbing composite structures”, for a funding request of Rs.27.26 Lakhs.

Dr.Vimal Sam Singh

Dr. Esther Florence

Dr.K.Rajkumar has submitted a proposal titled “Development of bio composite of Magnesium based alloy reinforced with bio compatible calcium carbonate particles through microwave processing” for a funding request of Rs.25.63 Lakhs.

Dr.K.Rajkumar

Dr.S.Rajkumar, alongwith Dr.R.Prakash, has submitted a proposal titled “Experimental Investigations on Gasoline Compression Ignition (GCI) Engine to Comply EURO VI Emission norms” for a funding request of Rs.35.02 Lakhs.

Dr.R.Prakash

Dr. M. Dhananchezian has submitted a proposal titled “Optimization of liquid nitrogen routing for cryogenic assisted machining of difficult-to-machine materials” for a funding request of Rs .21.82 Lakhs.

Dr. M. Dhananchezian

Dr. S. Soma Sundaram has submitted a proposal titled “Numerical and Experimental Investigations on Solar Powered Ejector Refrigeration Systems for Rural Applications” for a funding request of Rs.33.68 Lakhs

Dr. S. Soma Sundaram

Dr.V.E.Annamalai, along with Dr.P.Sangeetha of Civil, has submitted a proposal titled “Property enhancement of concrete by Abrasive industry waste” for a funding request of Rs.39.20 Lakhs.

Dr. P Sangeetha

Dr.A.S.Ramana along with Dr.M.Suresh, has submitted a proposal titled “Performance Investigations on PCM Integrated Greenhouse Drier” for a funding request of Rs.21.38 Lakhs.

Dr.S.Suresh Kumar, along with Dr.R.Damodaram, has submitted a proposal titled “Effect of heat treatment conditions on impact fracture of 17-4 PH stainless steel plates used in launch vehicle separation systems”, for a funding request of Rs. 29.69 Lakhs.

Dr. M Suresh

Dr.S.R.Koteswara Rao, along with Dr.K.L.Harikrishna, has submitted a proposal titled “Wire arc additive manufacturing of Inconel 625 components using robot assisted pulsed current and cold metal transfer MIG welding processes” for a funding request of Rs.24.88 Lakhs.

Dr.A.S.Ramana

Dr.S.Suresh Kumar

Dr.R.Damodaram

Dr.S.R.Koteswara Rao

MATRICS Scheme

Dr. S. Rajkumar has submitted a proposal titled “Modeling of turbulent kinetic energy and evaporation characteristics of multiple-injection common rail direct injection diesel engines” for a funding of Rs.6 Lakhs

Dr. S. Rajkumar

Dr.S.Vijayan has submitted a proposal titled “Studies on Blood Supply Chain Using Graph Theory Techniques.” for a funding request of Rs.6 lakhs

Dr.S.Vijayan

Dr. M. Selvaraj has applied for a project under MATRICS Scheme of SERB. Title “Development of Software for predicting the defect free weld parameters for friction stir welding of Aluminium alloy”. Fund requested Rs.6.0 lakhs.

Dr. M Selvaraj

Dr.K.S.Vijay Sekar

Dr. K. S. Vijay Sekar, Associate Professor submitted an external project proposal titled "Finite element analysis and optimization of material flow stress model parameters for accurate simulation of the machining process" to DST - SERB under MATRICS scheme. Fund requested Rs.6.0 lakhs.

Dr. N. Lakshmi Narasimhan has submitted a proposal titled “Numerical Investigations on the cooling of Lithium-ion batteries employing phase change materials (PCMs)” for a funding request of Rs.6 Lakhs.

Seminar Attended:

Dr.K.S.Vijay Sekar, Asso.Prof attended a seminar cum interactive session with Tecplot a company based in USA, which specializes in CAD / Computational fluid dynamics software such as Tecplot, Pointwise and Sculptor organized by IIT Madras at ICSR Auditorium. [12.06.2019]

Research Activity:

Dr. S. Suresh Kumar has presented a research paper titled “Numerical and Experimental Ballistic Performance Determination of Layered Aluminium Targets” at Mar Baselios College of Engineering and Technology, Trivandrum. The name of the conference is International Conference on Applied Mechanics and Optimization (ICAMeO-2019). [15.06.2019]

Dr. L. Poovazhagan

Mr. Vijaya Raja Ragavan G (Register number:16172997126/Ph.D/AR10),PT Research Scholar of Dr. L. Poovazhagan, gave seminar on the title,” Wire cut Electrical Discharge Machining of Ti-B_4C Metal Matrix Nanocomposites” [28.06.2019].

Dr. R. Damodaram has published a research paper titled “Friction welding of electron beam melted Ti-6Al-4V” in Materials Science & Engineering A, 761 (2019).

DC Meet:

Dr. R. Damodaram, Associate Professor, conducted the Confirmation DC meeting for his part time PhD scholar **Mr. K. Venkatachalam** [21-06-2019]

Student Activity:

Rohith N, Shriram S and Shri Raamanathan (4th year) completed an internship at Sundaram Clayton [20.06.2019].

Sathyaseelan S (4th year) completed an internship at Sundaram Fasteners [15.06.2019].

Saran Prasanth R R and Shibin P (4th year) completed an internship at Fanuc India [20.06.2019].

Mohitha U M (4th year) completed an internship at IIT-M [22.06.2019].

Pavithra Prabha (4th year) completed an internship at NIT Trichy [15.06.2019].

Santhana Krishnan K (4th year) completed an internship at Tube Investments of India [10.06.2019].

Faculty write up

Dr. A K Lakshminarayanan, Assoc. Prof/Mech writes…

Research Paper Publication

I am happy to inform that one of our research paper titled " Enhancement of properties of pure lead via underwater Friction Stir Processing for thermoelectric and battery applications " authored by C. Sekkappan (UG student), V. Vashist (UG student), A. K. Lakshminarayanan is accepted for publication in **kovove materialy-metallic materials** (Clarivate analytics impact factor – 0.636). I am also happy to note that this work was done using the SSN students internal funding.

Dr A K Lakshminarayanan

Faculty write up

Dr. N Lakshmi Narasimhan, Assoc. Prof/Mech writes…

Research Activity

On a humble note, would like to share with you that the paper titled, "COOLING OF A LITHIUM ION BATTERY USING PHASE CHANGE MATERIAL WITH AIR/DIELECTRIC FLUID MEDIA: A NUMERICAL STUDY" authored by myself and my Ph.D. student T. Amalesh has been Accepted for Publication in the Special Issue Renewable Energy and Power Systems of the Journal : **Journal of Proc. of Mech. Engg: PART-A: Energy and Power**, SAGE Publications, Indexed by Thomson Reuters (Clarivate Analytics) and under Annexure-1 Jl. list of AU.

Dr N Lakshmi Narasimhan

Mech Marvel - 55

Airless Tyres Become A Reality

On 4-6-2019, Michelin and General Motors presented a new generation of airless wheel technology for passenger vehicles — the MICHELIN Uptis Prototype (or “Unique Puncture-proof Tire System”) — at the Movin’On Summit for sustainable mobility. Michelin and GM also announced a joint research agreement under which the companies intend to validate the Uptis Prototype with the goal of introducing Uptis on passenger models as early as 2024.
Michelin and GM are testing the Uptis Prototype, beginning with vehicles like the Chevrolet Bolt EV. Later this year, the companies will initiate real-world testing of Uptis on a test fleet of Bolt EV vehicles in Michigan.

Airless tire technology has several benefits both for the vehicle driver and for the planet.
The tires use less raw material and less energy in their production.

- It reduces the number of scrapped tires from puncture or damage.
- Eliminates most irregular wear issues from over or under inflation.
- Reduces dangers on the road from blowouts and sudden flats.
- It is 3D-printed and 100% sustainable (entirely renewable or bio-sourced materials).

Uptis features ground-breaking improvements in architecture and composite materials, which enable Uptis to bear the car’s weight at road-going speeds. Because Uptis is airless, the breakthrough wheel assembly eliminates the dangerous risk of flat tires and blowouts:

- Drivers of passenger vehicles feel safer on the road.
- Operators of passenger vehicle fleets minimize downtime and improve efficiency resulting from flat tires and near-zero levels of maintenance.

Society at large benefits from extraordinary environmental savings through reduced use of raw materials for replacement tire or spare tire production. These innovations combine to eliminate compressed air to support the vehicle’s load, and result in extraordinary environmental savings: approximately 200 million tires worldwide are scrapped prematurely every year as a result of punctures, damage from road hazards or improper air pressure that causes uneven wear. These advancements through the Uptis Prototype demonstrate Michelin’s and GM’s shared commitment to delivering safer, more sustainable mobility solutions.

Video: https://youtu.be/VjiLzc9bD3Q

Source:
https://newatlas.com/michelin-gm-uptis-airless-tire/60004/

Corporate Story 55

MSME FOCUS

MBP Bearing Private Limited

From the website:

MBP Bearings deploys fully integrated manufacturing facilities featuring a wide array of diverse technologies under one roof to produce and manufacture an extensive and diverse range of critical auto components with advanced tribological properties. The cellular organization of their manufacturing setup affords flexibility for small batches and at the same time leverages the economies of big volumes. They manufacture 20 million bearings, 30 million bushes & 10 million thrust washers per annum. MBP's products and solutions ensure the company's close ties with mechanical engineering.

MBP is represented in almost all areas of mechanical engineering with its cast and forged parts, special profiles, linear guides and rotary connections. MBP's products are used in plastics machines, textile machines and machine tools as well as measuring machines. In high-precision applications MBP is an established supplier of hydrostatic bearing systems.

MBP's manufacturing facilities have access to the industry's best practices and a quality management system aligned with global standards. Their plants are certified for quality management systems for suppliers of automotive components and Occupational Health and Safety Management standard. In addition to their global production facilities, they operate and manage an international network of sales offices and distribution centers to supply over 30,000 customers quickly and efficiently, anywhere in the world. Their products include a wide range of bearings, universal joints, housings and sleeves. Their customers include Hero motocorp, GM motors and Bajaj auto to name a few. Their manufacturing plant is in the Shalimar industrial area of Delhi.

If interested to work here, contact- Mr. Praveen Kumar at 011-27491392

Amazing Innovation- 121

Urban Transport- a New concept from Scania

Scania's new battery electric self-driving urban concept vehicle is designed with the flexibility to shift from ferrying commuters to and from work in mornings and evenings, delivering goods during the day and collecting refuse at night.

The eight-metre-long bus module is built as one composite unit, substantially reducing weight. The cylindrical cell batteries are placed under the floor, thereby utilising otherwise dead space as well as contributing to better weight distribution. With the low vehicle weight of less than eight tonnes, the range with present-day batteries is estimated at 245 kilometres.

Countless cities are now catalysing change in urban transport, driven by the need for lower emissions and less congestion. Technological and infrastructural advances in electric and autonomous vehicles will be key enablers for cities when shifting to a sustainable transport system and Scania is building more towards this motive.

Source:
https://www.scania.com/group/en/taking-urban-transport-to-the-nxt-level-a-new-concept-from-scania-2/

Amazing Innovation- 122

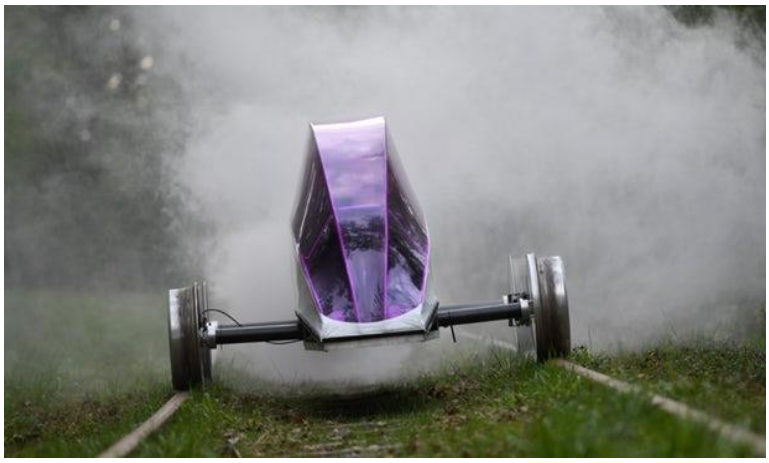
The Riutbag-secure backpack-with all zippers on the backside!

It is a backwards backpack for secure city travel. The first anti-theft backpack of its kind. It has no outer openings; they are all hidden against your back. That means, you can travel to work or on holiday with total peace of mind anywhere in the world. After 6 months of prototyping, the first RiutBag was created. The backpack is created by Sarah Giblin in 2014 who took her own saving and left her job to make her idea a reality.

Source:
https://www.riut.co.uk/pages/riutbag-story

Amazing Innovation- 123

Most Energy Efficient Vehicle

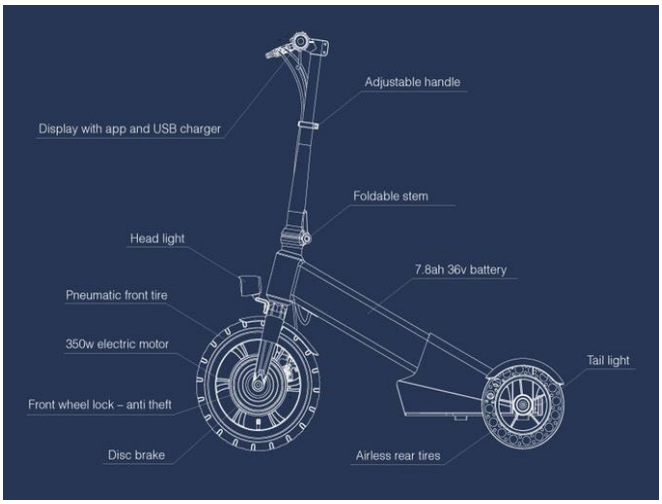


Once a year, the Delsbo Electric contest in Sweden challenges students to create and improve on the world's most energy-efficient vehicles. This year's champ, the Eximus IV, smashed the competition and all previous records with an electric equivalent of 687 MPGe (0.34 l/100km).
Eximus IV's success this year is due to extreme light weighting and aerodynamics, the team using ultra-light aircraft materials together with a new motor and wheels, and carrying out "extensive wind tunnel testing" despite the fairly slow pace of the "race". Eximus IV's new record is 0.603 watt-hours per person per kilometre. For the entire six-person sled, the efficiency works out around 687 MPGe, or 0.34 l/100km.

Source:
https://newatlas.com/eximus-iv-worlds-most-efficient-vehicle/

Amazing Innovation- 124

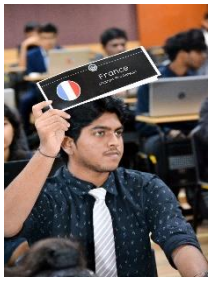
Future of Urban Mobility



City Rabbit has redefined pedestrian scooters in order to move people in a more fun, environment friendly and efficient way through cities
The design includes a pneumatic front tire significantly larger than regular electric scooters for a more comfortable ride. The front wheel includes a 350W hub engine and solid disc brakes. The two rear tires have air less technology for extra suspension. For safety a powerful disc brake to this design is included. The powerful disc brake is activated by pulling the brake lever with your left hand. This is similar to a standard bicycle. Because of the foldable design the CityRabbit can be easily parked and stored in the office, cafeteria or even in the back of one's car. The handlebar's height is adjustable to fit all heights. It is a battery chargeable machine and a USB port is available to charge phones. It requires the company's app to be downloaded and when the serial number is inserted, the ride is ready to go.

Source:https://www.kickstarter.com/projects/cityrabbit/cityrabbit/description

Alumni Update 1



Sharan Srinivasan

Sharan Srinivasan, final year, writes as a part of the Alumni Documentation series…

I would like to introduce to all of you, Akshay M (Batch 2012-16) who has gone on to pursue an MS in Industrial Engineering after completing his under-graduation at SSN. During his time at SSN, he actively involved himself in various club activities and projects which secured his admission into University of Illinois, Chicago (UIC). At the university, he served at the Office of Health Literacy and strived to create adequate awareness about health literacy by creating podcasts.

He also interned at Bobrick Washroom Equipment, Inc during his time at UIC and worked on several problems in the areas of optimization, quality control and supply chain management. He is also a holder of the Lean Green Belt and Six Sigma Green Belt certifications issued by the Institute of Industrial and Systems Engineers.
Akshay is now currently employed at Brose Group, Michigan as a Supplier Quality Engineer. In my interaction with him, I've covered a wide range of topics such as GRE, higher education in the US, difficulties related to job hunting and questions pertinent to the field of Industrial Engineering.

Please do look out for the mail containing the documentation of this interaction, which will be sent to all of you shortly.

Alumni Update 2

Info from Alumnus-as forwarded by Dr.K.S.Vijaysekar

My name is T.Surya Bharathi and I am an alumnus of SSN. I completed my Bachelor's degree in Mechanical Engineering in the year 2017. My friends (S.Vishnu Keshav, S.Prem Kumar, V.Vignesh) and I did our mini project, "Energy Harvesting from Vehicular Motion" under your guidance. With your help, I was able to draft my SOP and recommendation letter for my Higher studies applications. During my bachelors, I was a little reluctant to socialize but the short inspirational talks that you shared with me helped me with my personal and professional development. I am very grateful to have worked under your guidance. You had been an important part of my life and I want to thank you, sir

Currently, I am in the fourth semester of my masters in TU Munich. The past year had been quite a ride. It was difficult for me to get adapted to the new culture, language and the curriculum. I started learning German and I even started making conversations with people on the bus in German which helped me a lot. Step by step I was able to accustom myself to this new environment. Till now, I have completed my courses with good grades. I have also completed a 6-month internship at a company called Maschinenfabrik Reinhausen. Now, I am searching for a Master thesis in the field of Thermal Management or Energy Storage and I aim to graduate by June next year.

I attended the Graduation ceremony last year, but due to some personal work, I had to leave early and so I was unable to meet you last time. I hope to meet you soon when I come to India.

Looking forward to hearing from you.

Best Regards
T.Surya Bharathi
(MSc) Power Engineering TU Munich

Alumni Update 3

Akhilnandh Ramesh.of 2012-16 batch, currently working as Quality Assurance Engineer at Brakes India ltd , has posted an article on "A Strategical Framework for Digital Transformation in Small Scale Manufacturing Firms, in the Industry 4.0 Scenario" at https://www.linkedin.com/pulse/strategicl-framework-digital-transformation-small-scale-ramesh

Alumni Update 4

"STAY HUNGRY. STAY FOOLISH."

To those who are wondering why I started with this particular quote, when I was asked to write about the things that I learnt in SSN that helped me in the industry, the first thought that occurred to me was this. I am Durga M. I graduated in the year 2018, and I am currently working in Project Planning department of Ashok Leyland.

As most of your seniors would have already educated you on the placement processes and how to equip yourself for the industry, I would like to take it a step further.For a fresh graduate starting to work in an organization, it would be the most important and the most confusing phase of his/her life.

When I graduated from college, I was quite confused to discover that the Venn diagram between stuff I liked to do and stuff people would pay me to do contain very little overlap. Today, I understand that this is a totally normal predicament – especially when you're in the beginning stages of your career. The most important thing is to find ways to do the things you like regardless, carving out space for things that make you happy.

As you flee campus for the wider world, don't forget to take your syllabi – those listings of reading assignments and discussion agendas distributed by our professors. They may not seem handy, but in a few years, you'll remember an idea you need from a book whose title you can't recall. Even if the last round of finals may be over, there is still an infinite amount of studying to be done. Always be willing to "LEARN, UNLEARN and RELEARN".

As a new graduate, you may be convinced that the first job determines your career. IT DOES NOT. It's only now you can take risks that you would not be able to take later into your life. Lastly, but most importantly, "LEARN TO MARKET YOURSELF", for even if you are worth a million dollars, you will not be valued unless people know your existence.

I am sure that SSN and its skillful professors would have equipped you for the journey into the corporate world. But from there, your destination depends on you.

"DREAM BIG, BECAUSE THERE ARE NO LIMITATIONS
OTHER THAN THE ONES YOU SET FOR YOURSELF."

Regards,
Durga Muthuveerakumar

Forthcoming events

Workshop/Seminar

July 2019

- The **International Workshop on Smart Manufacturing and Metrology is** going to be held at IIT Madras, Chennai during **July 25 - 26, 2019.The Workshop is being organized by the Department of Mechanical Engineering, Indian Institute of Technology Madras in collaboration with Texas A & M University, USA.**

- **The Department of Mechanical Engineering, in association with Institute of Engineers (India) Karnataka state chapter, is organizing Two Days National Seminar on "Additive and Advanced Manufacturing (AAM-2019)", scheduled on 29th & 30th July 2019 at Bangalore Institute of Technology, Bengaluru.** E-Mail: bitmech.conf@gmail.com

Attention: ME students

- The Indian Institute of Welding, Chennai branch, American Welding Society, India International Section and Indira Gandhi Centre for Atomic Research (IGCAR) are jointly organising a bridge course in Welding and Fabrication during July 22-26, 2019 at IGCAR, Kalpakkam for the benefit of students completing first year M.E/M.Tech. Limited students will be paid TA for ONWARD/RETURN and they have to apply at the earliest to the organisers. This course completely FREE OF COST to the bright students completing their 1st year of course work and recommended by the Head of Department of the Institutes.

  Last date for submission of the duly filled Application form is July 15th ,2019

September 2019

- **A Three Day Short Term Course on Theory and Technology of Silicon Solar Cells will be held during 26-28 September 2019 at The National Centre for Photovoltaic Research and Education (NCPRE), Indian Institute of Technology Bombay (IIT Bombay).**
  Fees: Rs.6,000 for Scholars and Rs.12,000 for faculties.

  For more details, please visit https://portal.iitb.ac.in/cegipapp/courseDetails.jsp?c_id=2253

Conference

July 2019

- The 1st International Conference on Mechanical Power Transmission (ICMPT 2019) will be held at IIT Madras Campus, Chennai, India during 11-13 July 2019. More information is available at ICMPT 2019.

- The 11th International Exergy, Energy and Environment Symposium (IEEES-11) is organised by the Department of Automobile Engineering, SRM Institute of Science & Technology, Chennai, INDIA, during 14-18 July 2019. More info: http://www.srmuniv.ac.in/ieees-11

- The Department of Mechanical Engineering, Indian Institute of Science, (IISc), Bangalore, is organizing its conference, IndiaTrib - 2019, during 1-4 December, 2019. Receipt of abstract: July 15, 2019.

- The American Society of Mechanical Engineers announces the International Mechanical Engineering Congress & Exposition, to be held during Nov 8-14, 2019. Deadline for abstracts July 22, 2019

- The Mechanical Engineering Department of The Northcap University, Gurugram will be organizing a two-day International conference titled "4th International Conference on Emerging Trends in Mechanical & Industrial Engineering (ICETMIE-2019)" during October 10 & 11, 2019. There is tie-up with various renowned Journals like:

  1. Lecture Notes in Mechanical Engineering (LNME), Springer
  2. Facta Universitatis, Series: Mechanical Engineering
  3. SAE International Journal of Materials and Manufacturing

  Please see the Conference Website Link: http://icetmie-2019.ncuindia.edu/
  Paper Submission: https://easychair.org/conferences/?conf=icetmie2019
  Submit paper by July 25, 2019.

- "International Conference on Advancements in Renewable Energy (ICARE-2020)" will be held during 10-11 January 2020 in the School of Physical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, India. Deadline For Submission of Abstract : 30th July, 2019.Details at https://sites.google.com/view/manes-nanomaterial-energy/home

- Amrita Vishwa Vidyapeetham, Coimbatore, is organizing an International Conference on Advanced Materials SCICON '19 during December 15-17, 2019. Details at http://scicon.in/ Abstract submission by 31-July. Selected papers will be published in Scopus Indexed Journal

August 2019

- The Department of Mechanical Engineering of VFSTR (Vignan's Foundation for Science, Technology and Research,Deemed to be University), Vadlamudi, is organizing an International Conference on Emerging Trends in Mechanical Engineering (ICETME-2019). The Conference is scheduled to be held during 8 - 9th November 2019 in VFSTR, Vadlamudi, AP, India. The last date for submission of full-length paper is 30th August 2019. More information can be had at www.vignan.ac.in/icetme19.

September 2019

- The Institution of Engineers (India), Punjab & Chandigarh State Centre will be organising the International Conference on "Electronics & Communications, Renewable Energy and IoTs: Vision 2040" at Chandigarh, during September 07-08, 2019 under the aegis of the Electronics & Telecommunication Engineering Division.

- PPG Institute of Technology, Coimbatore, is organizing AIP International Conference on Inventive Material Science Applications [ICIMA 2019] , during September 25-26, 2019.

- The Department of Chemical Engineering of SSNCE is organizing the First International Conference on Recent Trends in "Clean Technologies for Sustainable Environment (CTSE-19) during 26-27 September 2019. Details in conference website- www.cleantechssn.com.

October 2019

- SRM Institute of Science and Technology (formerly known as "SRM University"), is organizing the 3rd International Conference on Advances in Mechanical Engineering during February 24-29, 2020. Registration Rs.6000 for students and Rs.9,000 for faculty. Abstract submission by October 15,2019.
  Details at www.srmuniv.ac.in/icame-2020

November 2019

- The Department of Mechanical Engineering of National Institute of Technology, Tiruchirappalli (NIT-T), will be organizing an International Mechanical Engineering Congress (IMEC) – 2019 during 29th Nov – 1st Dec 2019.

December 2019

- Department of Mechanical Engineering of the Indian Institute of Science (IISc) Bangalore, is conducting The International Conference on Industrial Tribology during 1-4 December 2019. Complete details of the event at http://tribologyindia.org/

- 64th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM -2019) will be jointly organised by School of Mechanical Sciences and School of Basic Sciences (Mathematics), IIT Bhubaneswar during the period 9th-12th December, 2019.
  About ISTAM: https://istam.iitkgp.ac.in/#!/pages/home
  About IIT Bhubaneswar: http://www.iitbbs.ac.in/istam/

- Indian Institute of Technology (IIT) Bombay, is organizing the 7th International Conference on Advances in Energy Research (ICAER). The conference will be held from 10th to 12th December 2019 at VMCC, IIT Bombay.
  Website- http://www.ese.iitb.ac.in/icaer2019/conference.html#content1-1g

- Sardar Vallabbhai National Institute of Technology (S.V.N.I.T.),Surat, Gujarat, is organizing the 5th International Conference on Industrial Engineering (ICIE 2019) during December 12-14, 2019. Details at http://icie2019.com

January 2020

- 9th International Conference on Fracture of Polymers, Composites and Adhesives
  6-10 September 2020 | Eurotel Victoria, Les Diablerets, Switzerland.
  Abstract Submission by 17th Jan 2020
  Details at https://www.elsevier.com/events/conferences/esistc4conference/about

Challenges/Contests

July 2019 (Information shared by Mr. B. Jayakishan)

- FLCTD is holding a webinar on 3rd July 2019 and 10th July 2019 on the upcoming innovation challenges. You are invited to join the online discussions with the FLCTD team and understand more about the innovation challenges and clarify your queries, if any. Application invites are open for innovations in Waste Heat Recovery, Space Conditioning and Pumps & Pumping systems. For more details, visit https://www.low-carbon-innovation.org/

- SAE (Society of Automotive Engineers), an international organization announces an all over India student's competition program named 'TIFAN'.
  TIFAN stands for "Technology Innovation Forum for Agricultural Nurturing".
  The 2020 TIFAN challenge is to design & develop a "Self – Propelled Onion Harvester"

  Highlights-
  - Open for All Engineering & Agricultural Engineering undergraduate students
  - Minimum 15 to Maximum 25 students per team
  - Teams to design, develop & demonstrate "Self-Propelled Onion Harvester"
  - Exciting prizes worth up ₹ 5,00,000 to be won
    Team Registration – 8thApril to15thJuly 2019

For more details visit https://www.saeindia.org/jbframework/uploads/2019/06/TIFAN-2020-Invitation.pdf

August 2019

- National Design research Forum has announced a Student Design Competition in fifteen disciplines. Details at http://ndrf.res.in/doc/formawards.pdf
  Eligibility: Individual students from Pre-final or final year BE and ME.
  Last date to apply August 10, 2019.

Research News from MSP

Dr Muthu Senthil Pandian
SSN Research Centre

1. Dr. A.P.J.Abdul Kalam Award

The award will be presented by the Hon'ble Chief Minister of Tamil Nadu during the Independence Day Celebrations to a person who is a native of Tamil Nadu in recognition of his / her significant contribution in the field of Science, Humanities and the Welfare of Students. This award carries a cheque for Rs.5.00 lakh, 8 gram Gold Medal and appreciation certificate. A comprehensive bio data and application with all relevant particulars and supporting documents may be sent to the Education Department, Secretariat, Chennai-600009, on or before 02.07.2019. The Awardee will be selected by a Selection Committee, constituted by the Government of Tamil Nadu.

Website Links:

http://www.tn.gov.in/announcements/announce_view/101698

http://cms.tn.gov.in/sites/default/files/announcement/Abdul_Kalam_Award_2019.pdf

2.DST - Call for Project Proposals for the scheme "Science & Technology for Women"

The Objectives of the scheme are:
• To support research, development and knowledge generation with respect to various stages of life cycle of women
• To promote research, development and adaptation of technology to create gainful employment potential of women, reduce their drudgery, improve working conditions in local areas through inputs of S & T
• To improve the quality of life, look into health and nutrition of women through the application of S & T
Proposals are invited online in the prescribed format at the portal **http://onlinedst.gov.in.** The information about the SEED division, format, etc. is also given at the departmental website www.dst.gov.in. The proposals should be submitted on or before 30th July 2019

Website Links:

http://www.dst.gov.in/callforproposals/call-proposals-scheme-science-technology-women

http://www.dst.gov.in/callforproposals/fotmat-s-t-guidelines-scheme-science-technology-women

http://www.dst.gov.in/

3.New Call for Project Proposals for New Gen Innovation & Entrepreneurship Development Centre (New Gen IEDC) 2019-2020

Objectives of NewGen IEDC:

1. To channelize the knowledge and energy of youth towards becoming active partners in the economic development process

2. To catalyze and promote the development of knowledge-based and innovation-driven enterprises and promote employment opportunities amongst the youth, especially students

3. To inculcate a culture of innovation driven entrepreneurship

4. To act as an institutional mechanism for providing various services including information on all aspects of enterprise building to budding S&T entrepreneurs.

On announcement of the programme, online proposals link available at; **www.newgeniedc-edii.in and www.nstedb.com along with the necessary enclosures including consent for Terms & Conditions should be submitted**

4.DST - Indo- Poland Joint Research Programme

The Department of Science & Technology (DST), Govt. of India and Polish National Agency for Academic Exchange – NAWA (Poland), invite proposals for Joint Research projects in bilateral mode involving scientists & technologists from India and Poland.

The DST and NAWA (hereinafter referred to as the "Implementing Agencies") hereby invite Indian and Polish scientists/researchers to submit proposals for Joint Research Projects in the following scientific areas :
i) Natural Sciences
ii) Engineering and Technology
iii) Medical and Health Sciences
iv) Agricultural Sciences
Launch of call on NAWA and DST websites: 10 June, 2019

Project Submission Ends: 14 August, 2019

All documents and forms required for a project application are accessible at www.onlinedst.gov.in

5.DST - Announcement for inviting Research Training Fellowship for Developing Country Scientists (RTF-DCS) 2019-2020

This is to support young researchers and scientists from Developing Countries (except India) to work at any of the Indian research/academic Institution.

Website Links:

http://www.iuac.res.in/

https://aistic.gov.in/ASEAN/HomePage

http://www.iuac.res.in/rtfdcs.pdf

6.ASEAN - INDIA Research Training Fellowship (AIRTF) Scheme 2019-2020

To promote mobility of scientists and researchers from the ASEAN-Member Countries to India and provide them opportunity to work at Indian R&D/ academic institutions to upgrade their research skills and expertise.

ASEAN member states: **https://aistic.gov.in/ASEAN/memberState**

Website Links:ttps://aistic.gov.in/ASEAN/aistdfFellowship

http://www.iuac.res.in/airtf.pdf

http://www.iuac.res.in/

Inspiring Life Stories

Panyee's Football Heroes and Their Floating Pitch- How a group of Thai boys changed the lives of their island's inhabitants through their passion for football

Until three decades ago, life on the fishing island of Koh Panyee in southern Thailand was dependent on the Andaman Sea for food and income. Today, the island is a tourist destination famous for fresh fish and pearls - and its floating football pitch.

Inspired by the World Cup in 1986, a group of young football fans decided to form a football club and build a pitch on water since there was barely land to play - a decision that helped lift the island's communities out of poverty, unemployment and illiteracy.

The boys built up unique football skills after training on the unstable platform and soon began playing against other teams in Thailand.

Panyee FC won seven consecutive regional championships from 2004 and is considered one of the best football clubs in Thailand.

The original founders of the football club are grown men with children of their own, some playing in the Panyee FC teams.

"The inhabitants are proud of the club and encourage their children to play because it has changed their lives for the better," says Barasan, one of the Panyee FC founders who is now one of the coaches training children on the island.

"Nowadays the market is crowded with tourists. Trading has flourished and the demands on goods and services has increased."

Watch the video at https://www.aljazeera.com/programmes/aljazeeraworld/2018/07/panyee-football-heroes-floating-pitch-180711084826154.html

In this short film, children of Koh Panyee tell the story of how the original founders first built the floating pitch after being inspired by the 1986 FIFA World Cup and how it changed their lives.

Corporate Wisdom 65

Designing our Destiny

On a casual reading some months back, in one of the books, there was a mention about George Bernard Shaw .

He said " People are always blaming their circumstances for what they are. I don't believe in circumstances. The people who get on in this world are the people who get up and look for circumstances they want, and if they can't find them , they make them."

Well, it is pretty apparent. Isn't it ? And every person who discovered this, believed that he or she was the first one to work it out. We become what we think about.

Conversely, the person who has no goal, who doesn't know where he or she is going, and whose thoughts must therefore be thoughts of confusion, anxiety and worry- his life becomes one of frustrations, fear. How does it work ? Why do we become what we think about? If someone thinks about nothing … he or she becomes nothing.

A farmer has some land, and it is a good, fertile land. The land gives the farmer a choice; he may plant in that land whatever he chooses. The land doesn't care. It is up to the farmer to make the decision.

We are comparing the human mind with the land because the mind, like the land, doesn't care what you plant in it. It will return what you plant, but it doesn't care what you plant.

Now, let us say that the farmer has two seeds in his hand- one is a seed of corn, the other is nightshade, a deadly poison. He digs two little holes in the earth and he plants both seeds- one corn, the other nightshade. He covers up the holes, waters and takes care of the land.. and what will happen ? Invariably, the land will return what was planted. " As you sow, so shall you reap "

The human mind is far more fertile, far more incredible and mysterious than the land, but it works the same way. It doesn't care what we plant - success, or failure, a clear goal or confusion, misunderstanding, fear, anxiety and so on. But what we plant must return to us.

Think of it, the human mind is the last great unexplored continent on earth. It contains riches beyond our wildest dreams. It will return anything we want to plant. #WishingMostAndMore

Have a great day & wonderful week

R.Ramakrishnan

Group Chairman Office, GMR Group –Delhi

This edition of Aspire was compiled by Vinaya Krishna, with support from Saran Prasanth, Mohitha U M, Anupa Sri and Akshay Kanna.

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