Newsletter

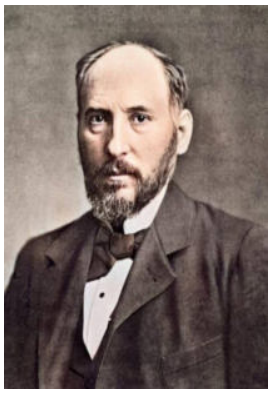
Volume 10 , Issue 8, August 2020

SSN Mechanical

Aspire

Achievements in Sports, Projects, Industry, Research and Education

All About Nobel Prize- Part 80

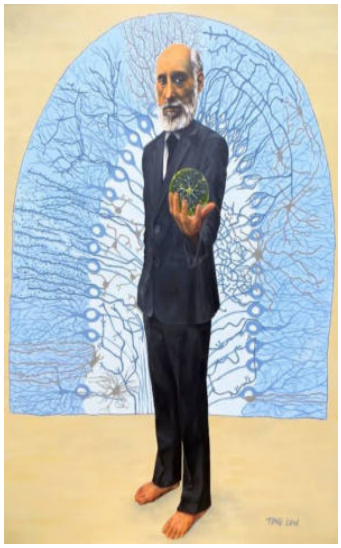


THE FATHER OF MODERN NEUROSCIENCE

Dr. SANTIAGO RAMÓN Y CAJAL

Santiago Ramón y Cajal was a neuroscientist, pathologist and histologist specializing in neuroanatomy and the central nervous system. His original ***investigations of the microscopic structure of the brain earned him the name of 'the father of modern neuroscience'. Cajal and Camillo Golgi received the Nobel Prize in Medicine in 1906, making Ramón y Cajal the first person of Spanish origin to win a scientific Nobel Prize.***

He was born on 1st May 1852 in the town of Petilla de Aragón, Navarre, Spain. Although extremely precocious and ebullient, he spent most of his childhood transferring schools due to his rebellious, impetuous and anti-authoritative attitude. His father apprenticed him first to a barber and then to a shoemaker, thinking it would help improve his deportment. He was a keen and prodigious painter but was forced by his father, who was an anatomy teacher, to take up medical studies.



Although uninterested at first, his interest in anatomy burgeoned during his summer trips accompanying his father to graveyards where they would study and sketch human remains. He later attended the medical school of University of Zaragoza. In 1873 after graduation, he took his Licentiate in Medicine at Saragossa and served, after a competitive examination, as an army doctor. He was later drafted in an expedition to Cuba in 1874-75, where he contracted malaria and tuberculosis. On his return, in 1875, he became an assistant in the School of Anatomy in the Faculty of Medicine at Saragossa. In 1877 he obtained the degree of Doctor of Medicine at Madrid, and in 1883 he was appointed Professor of Descriptive and General Anatomy at Valencia.

The pivotal event for Cajal's scientific career and for the development of modern neuroscience took place in Madrid in 1887. There he first learned about Golgi's method, a cell staining method which uses potassium dichromate and silver nitrate to (randomly) stain a few neurons dark black in color, while leaving the surrounding cells transparent. At the time, Cajal had only been studying the nervous system for one year, mainly to collect suitable illustrations for a book of histological techniques, and he had realized how inadequate the ordinary methods were to study the nervous tissue.

The need and drive to create a better technique led Cajal deep into the realms of neuroscience. Cajal subsequently worked on the retina, the cerebellum and the spinal cord, applying Golgi stain to the tissues, of which he worked out some modifications. He later went to Berlin in 1889, to the Congress of the German Anatomical Society, to show his findings to the leading authorities in the field, in order to convince them of the importance of his observations.On this occasion, he obtained the recognition of several qualified professors, including the eminent Swiss histologist Rudolf Albert von Kölliker (1817-1905), who from there on became a supporter of Cajal and of the "neuron doctrine," which would be officially enunciated by Wilhelm Waldeyer (1836-1921) in 1891.

Cajal was a fierce exponent of the idea that the nervous system was made up by a network of contiguous elements and not by a network of continuous elements (as stated by Joseph von Gerlach (1820-1896) and supported by most scientists, including Golgi). Camillo Golgi had believed, through his investigations, that the nervous system was made up by a widespread network of filaments in continuity one with the other (the rete nervosa diffusa, 'diffuse neural network'). Cajal, on the contrary, since his first observations, and in his subsequent studies, was fired by the idea that the nervous system is made up of billions of separate nerve cells. Cajal's work led to the conclusion that the basic units of the nervous system were represented by individual cellular elements. This conclusion is the modern basic principle of the organization of the nervous system.

Cajal also defined "the law of dynamic polarization," stating that the nerve cells are polarized, receiving information on their cell bodies and dendrites, and conducting information to distant locations through axons, which turned out to be the basic principle of the functioning of neural connections. Cajal's opus "Textura del Sistema Nervioso del Hombre y los Vertebrados" (1894-1904), provided the foundation of modern neuroanatomy, with a detailed description of nerve cell organization in the central and peripheral nervous system of many different animal species, and was illustrated by Cajal's renowned drawings, which for decades (and even nowadays) have been reproduced in neuroscience textbooks.

Although Cajal and Golgi held antipodal opinions throughout their careers, both of them were awarded the Nobel prize in Physiology or Medicine in 1906. In addition to the 1906 Nobel prize in Physiology or Medicine, Cajal has received numerous accolades such as Member of the Royal Academy of Sciences of Madrid (1895); of the Royal Academy of Medicine of Madrid (1897); of the Spanish Society of Natural History and of the Academy of Sciences of Lisbon (1897); Honorary Member of the Spanish Medical and Surgical Academy.

Source: https://www.nobelprize.org/prizes/medicine/1906/cajal/article/

Info to Alumni - Campus Update

Dr. V.E. Annamalai took charge as Principal in charge on 1st July 2020

His expression of gratitude and address to the faculty:

"Thanks to the Management for such an opportunity! We need to sustain what we have achieved and grow further. The existing cooperative team makes it possible. We will work towards transforming ourselves into a responsive group that honours its commitments without the need for follow up".

Immediate Priorities, as set out by management are:

- **Facilitating establishment of SNU Chennai**
- **Revitalising the Incubation & Innovation Centres**
- **Reaching out to all the alumni.**

Work definition for faculty for July 2020:

- **Conduct the Model test and complete the corrections.**
- **Prepare online content for one unit of each subject allotted and upload content in LMS.**
- **Attend training on Flipped Classroom and prepare one sample video for evaluation.**

Work definition for Non-teaching staff, for July 2020:

- **Skill enhancement in any two of the following areas, in consultation with HoDs:**
- **One course in Coursera**
- **English communication training (by internal/ dept faculty)**
- **Computer skills training (by internal/ dept faculty)**
- **Additional Lab skills training (by internal/ dept faculty)**

A few important decisions arrived at immediately, are:

- **Online classes for next semester subjects will start from August 3rd, Monday onwards.**
- **Biometric system of attendance is temporarily suspended, till an alternate method is arranged. Meanwhile, Attendance Registers will be used for recording attendance.**

Dr. N. Nallusamy took charge as Head of the Mechanical Engineering Department from July 1, 2020.

With faculty & Staff his message was:

"Whole hearted cooperation is solicited to work together to successfully achieve department endeavours. Active participation of all our faculty in the academic, research and administrative activities of the institution, will help in running the department successfully.

In his message for students:

"All of you are mature enough to manage your studies well and choose a career of your liking.Your stay at SSN is an opportunity given to you to accomplish academic excellence and become a person of good standing in your personal, professional and social life. I solicit your sincere cooperation in this regard."

Mrs. Rebecca Theophilus (Sr. Manager, HR)

The second session on 'Principles of Investment' in collaboration with Value Research was conducted on Thursday, July 16 from 12 noon to 1 pm. The session was open to all employees and their families as well.

Dr. Ramasamy P, Dean (Research)

For Faculty: President, SSNI has instructed that the date of submission of Internally Funded Faculty Projects be extended upto 31st July, 2020.

For students:

"STUDENT RESEARCH PROJECTS FOR INTERNAL FUNDING" are to be taken up for scrutiny. You may encourage the students of your department to submit proposals. You may advise the students to follow the attached project proposal format. The last date for submission of student projects is 31st August 2020.

1. **The President has instructed that priority should be given to 2nd and 3rd year students.**
2. **Projects with all final year students will be considered only when they involve Junior students.**
3. **Students with arrears are not eligible to participate.**
4. **Inter-departmental projects will be encouraged wherever possible.**
5. **A student will be considered for the new project only if he/she has completed a previously sanctioned project.**

Patent granted in the name of Sri Sivasubramaniya Nadar College of Engineering

A patent has been granted in the name of SSN College of Engineering for the work entitled *"Compact Mushroom Shaped Multi Band Antenna with Slot Loaded Elliptical Micro Strip and Improved Performance Diversity".*

Inventors of the patent are:

Dr. B. S. Sreeja, Asso. Prof./ECE, Ms. N. Nafiza, Dr. S. Radha, Prof. & Head/ECE, Ms. R. Chithra Devi.

SSN-Centre for Innovation and Best Practices in Education [SCIPE]

Inaugural meeting on July 15, 2020, with Dr.Ganesh Samudra, chaired by President

Opening Remarks by President:

"Happy that this idea of a Centre for Innovation and Best Practices in Education, is getting actioned now. COVID might have led to a lot of negatives, but one of the positive aspects is that it has fast tracked our search for good technology. We had constraints on how to offer several Open Electives in the structured Time Table. Now, COVID19 has taken off this restriction on working hours. This has really expanded our boundaries. When we call for adopting new approaches, our faculty are coming forward voluntarily. Flipped Classroom has come to stay. Unlearning the old method of teaching with chalk and relearning new methods of online teaching, have become the order of the day. Teaching online has been a source of learning for all of us also. Nice to have a Centre for Innovation and Best Practices inEducation.

This Centre will help us understand the best way of getting forward. None of us are experts. We will learn from one another and offer the best learning experiences for students. So, let us become Learner-centric in future."

Mrs. Roshni Nadar Malhotra is the new Chairman of HCL

- **Roshni Nadar Malhotra is the new Chairman of HCL Technologies, the company announced in a regulatory filing on Friday.**
- **The 38-year-old succeeds her father Shiv Nadar. Earlier, she was the Executive Director and the CEO of HCL Enterprise. Roshni is the only child of HCL's founder, Shiv Nadar.**
- **She was featured in 'The World's 100 Most Powerful Women' list compiled and released by Forbes in 2017, 2018, and 2019, consecutively.**
- **Roshni is a Trustee of the Shiv Nadar Foundation, which is committed to the process of nation building by driving transformational leadership through education. As the Chairperson and driving force behind VidyaGyan, a leadership academy for the economically underprivileged, meritorious rural students of Uttar Pradesh, Roshni has been working toward nurturing future leaders from rural India who can act as catalysts of change for their communities, villages, and the nation at large.**

Source:https://www.indiatvnews.com/business/news-who-is-roshni-nadar-malhotra-chairman-hcl-technologies-shiv-nadar-daughter-634852

HCL Healthcare (HCL HC) for the benefit SSN Faculty and staff

HCL Healthcare Helpline No: 92110222

Email: covid19@hcl.com

I would like to inform you about an important venture of HCL Healthcare (HCL HC), which would be of benefit to you.As you may be aware, HCL HC has been providing healthcare services for the last 3 years for HCL and SNF. Along with the health check services they provide at their clinics, HCL HC has been running Care Plans (diabetes, hypertension, weight loss etc) continuously throughout the lock down along with their COVID helpline. I am happy to share with you that their COVID helpline has helped people across all entities, geographies and office locations.

HCL HC is now resuming their health check services. They have had a very promising start with several hundreds of bookings within a week. Their health check services have now been redesigned. For your convenience, it has been divided into the following 3 stages:

- **Stage 1 - Home visit**
- **Stage 2 - Online doctor consultations**
- **Stage 3 – Visit to HCL HC clinic (as per the convenience of the individual)**

HCL HC will be conducting a series of webinars for SSN to walk us through their offerings and for answering our questions. The health check services are also accessible and free for your family members, who are covered under our medical insurance scheme. Hope you optimally utilize HCL HC services for your well-being.

Gnananandan C, HR manager shares

"Successfully completed 8 weeks NPTEL online course on 'Managing change in organizations', IIT Kharagpur with a score of 99% based on continuous online assessment.SS

This course equipped me to facilitate the change process and act as a change leader. Helps in scanning the environment and finds out the need for change, types of change taking place and how to diagnose the kind of change system requires.

Eventually it helped me to innovate and bring in relevant, appropriate & sustainable changes in the long run and compete in an ever changing environment. Eagerly hoping to apply the acquired skills."

SSN in NIRF Ranking 2020

SSN is ranked National 44th in Engineering and No. 1 rank among affiliated Private Engineering college in India

SSN is appearing for Consecutive third years in the top 50 Engineering College list

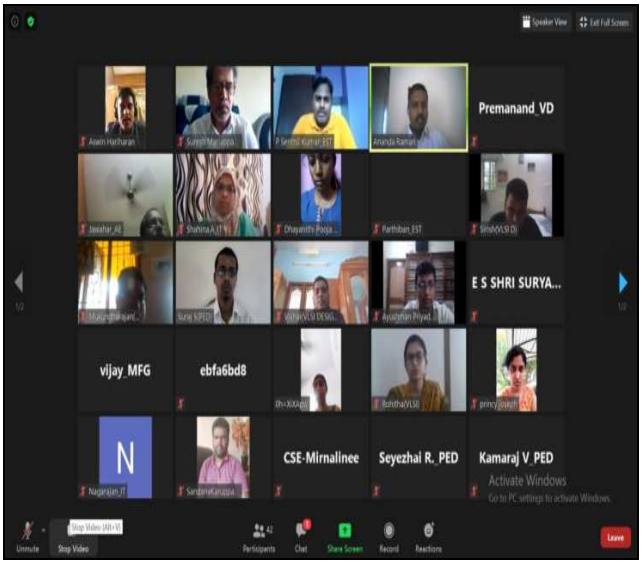
Ranked 83rd among all education institution in India

Virtual open day at SSN CE for all PG Student

Dr. M SURESH writes…

Virtual open day for all PG programs was conducted through ZOOM meeting on July-18 (Saturday). 113 applicants were invited for the meeting. Of these, 38 applicants who had already paid application fees, joined the meeting, along with the Head of the departments and faculty coordinators of each PG program.

The meeting was hosted by N. Ananda V Raman, Assistant Director – Marketing, SSN Institutions. The session started, with Ananda Raman giving a presentation on "An overview of SSN and discussion on common aspects of all programs". In the next session, faculty coordinators of each PG program interacted with respective student applicants, in individual breakout rooms of ZOOM. In the Mechanical Engineering breakout room, Dr. K.S. Vijaysekar and Dr. M. Suresh interacted with applicants for M.E. Manufacturing Engineering and Energy



Engineering programs. They also delivered a presentation about the curriculum, laboratory facilities, research areas, internal funded student projects and placement activities for both PG programs.

Media coverage, *India Today_Aspire*

India Today_Aspire has featured our President, SSN Institutions - Mrs. Kala Vijayakumar and her views on the topic- "Things that engineering students can focus on and learn in the post-COVID world" on their Instagram page.

Link: https://www.instagram.com/tv/CDBC9lcpe9u/?igshid=ng0o90y6pa80

COURSERA enrollment date extended

- **Several students and faculty of SSN CE made optimal use of the free access to COURSERA courses provided by the management over the past two months.**
- **Hence to foster their zeal to learn, enrollment date for the courses has been extended until September 30, 2020 for the benefit of the learners.**
- **The management exhorts students to leverage this opportunity to the fullest.**

Dr. Chitra Babu, Professor & Head, Department of Computer Science and Engineering congratulates "I am happy to share with all of you that the Stegcloak software developed by three of our III year CSE students has been featured 2 days back in the New India Express edex-Live." Congratulations to the team!

Dr. Aravindan C, Professor of Computer Science, SSN shares

He shares his First video on online education, as a part of the series of asynchronous and synchronous mode materials for discussion on online education.

Available at:

https://pro.panopto.com/Panopto/Pages/Viewer.aspx?tid=a8ffcef6-288e-43dd-a467-abf000a26cde

STUDENT ACTIVITIES

DATE	STUDENT ACTIVITIES DURING JULY, 2020
	SECOND YEAR
01/07/2020	**Aditya K, 2nd year,** Completed an online course on CAD and Digital Manufacturing in Coursera.
03/07/2020	**Gautam R, 2nd year,** Completed an online course on CAD and Digital Manufacturing in Coursera.
06/07/2020	**Krishnanand M, 2nd year,** Completed an online course on Introduction to Psychology in Coursera.
09/07/2020	**Mahendran P, 2nd year,** Completed an online course on Introduction to Aerospace Engineering: Astronautics and Human Spaceflight in EdX.
01/07/2020	**Muhilan.S, 2nd year,** Online courses completed in Coursera: • Microeconomic Principles offered by University of Illinois Urbana Champaign. • Introduction to Google Sheets. • Introduction to Game Designing offered by CalArts, California. • CAD/CAM/CAE for Mechanical Engineering.
15/07/2020	**Nandita Anand, 2nd year,** Online courses completed on: • Electrical vehicles offered by TVS • Introduction to Psychology in Coursera.
02/07/2020	**Nithish Kumar S, 2nd year,** Participated in an Online quiz during this lockdown period, which was organized by NSS.
02/07/2020	**Sai Charen V, 2nd year,** Participated in an Online quiz during this lockdown period, which was organized by NSS.
10/07/2020	**Tharun VS, 2nd year,** Completed an online course on Introduction to Psychology in Coursera.
04/07/2020 11/07/2020 27/07/2020 18/07/2020	**Vimal Kumar Bharathi B R, 2nd year,** Online Courses completed in Coursera: • Supply Chain Planning offered by Rutgers State University. • Supply Chain Sourcing conducted by Rutgers State University. • An Introduction to Forensic Science offered by Nanyang Technological University, Singapore. • Air Pollution- A global threat to our health offered by University of Copenhagen.
12/06-11/07/2020	**Pavithran, 2nd year,** Completed a one month internship at Hamari Pahchan NGO.
	THIRD YEAR
22/07/2020	**Iniyan V, 3rd year,** Attended L&T placement training program
22/07/2020	**Lokeshwaran A, 3rd year,** Attended L&T placement training program..

Faculty Write up

FACULTY ACTIVITIES

Dr. B. Anand Ronald

- **11/07/2020**
  - **Conducted the DC meeting for Part Time research Scholar C. Arun Prakash (1514299279) through the Online mode**
- **26/07/2020**
  - **Completed on Online course in Coursera on "Introduction to Virtual Reality" offered by University of London & Goldsmiths, University of London**
- **25/07/2020**
  - **Handled a session on "Virtual Reality and Manufacturing" in the Online AICTE sponsored STTP on "Cyber Physical Manufacturing Systems for Future Industries (CPMS)" organised by IFET College of Engg., Villupuram.**
- **20.07.2020 to 25.07.2020**
  - **Attended an AICTE Sponsored Online 6-day Short Term Training program (STTP) on "Cyber Physical Manufacturing Systems for Future Industries" Organised by IFET College of Engineering, Villupuram**

Dr. M Suresh

- **20.07.2020**
  - **A research article titled, "Performance enhancement studies on evaporative cooling using volumetric heat and mass transfer coefficients", co-authored by Dr. M. Suresh has been published online in the Journal, "Numerical Heat Transfer, Part A: Applications" (published by Taylor & Francis). 2019 Clarivate Analytics Impact factor: 2.96**

Dr. L Poovazhagan

- **13.07.2020**
  - **Convened the confirmation DC meeting for his PT scholar Mr.C.Gopinath, working as an assistant professor in St.Joseph College of Engineering, Sriperumbudur on 13.07.2020 through ZOOM online platform**
- **14.07.2020**
  - **Convened the confirmation DC meeting for his PT scholar Mr.K.Parthiban, working as an assistant professor in AKT Memorial College of Engg. & Tech. on 13.07.2020 through ZOOM online platform**
- **22.07.2020**
  - **Delivered a webinar (through ZOOM) at AICTE sponsored FDP organized by the IFET college of engineering, Villupuram on 22.07.2020. The topic of the lecture is "Additive and lean manufacturing"**
  - **Completed two online COURSERA courses Finance for everyone, McMaster University Advanced manufacturing process analysis, Sate University of New York**

Dr. K. Jayakumar

- **20.07.2020**
  - **Attended one day Webinar on "Shape Memory Alloys-An overview of principles, processing, applications and current trends" Organized by Department of Mechanical Engineering, SSN College of Engineering.**
- **13.07.2020 to 18.07.2020**
  - **Attended 6 days AICTE sponsored online short term training programme (STTP) on "SMART MANUFACTURING - OPPORTUNITIES AND CHALLENGES" organized by Department of Mechanical Engineering, St. Joseph's College of Engineering, Chennai-119.**
  - **The STTP covered Smart Manufacturing, Industry 4.0, Advanced Robotics, Smart materials and their applications in industry 4.0, Additive manufacturing- WAAM, Green manufacturing with MQL, Industrial Internet of Things (IIoT), Manufacturing analytics using DOE, etc.**
  - **For each session, attendance and feedback were taken. At the end of sixth day, an online Quiz was conducted on the topics covered.**
- **19.07.2020**
  - **Attended one day Webinar on "Entrepreneurship in Modern Agriculture" Organized by Sri Venkateshwara College of Engineering, Bengaluru.**
- **28.06.2020 to 04.07.2020**
  - **Attended Online Faculty Development Program (FDP) on "Advanced Manufacturing Processes" organized by Department of Mechanical Engineering, Karpagam College of Engineering, Coimbatore-032.**
  - **The speakers covered Simulation of forming processes, Friction stir processing, Advanced machining processes, Advances in TIG welding and Sheet metal forming processes, Additive manufacturing- 3D printing, etc.**

Dr. M. Nalla Mohamed

- **Completed a 4 weeks course on "3-axis machining with autodesk fusion 360" in the Coursera platform introduced by Autodesk CAD/CAM for Manufacturing Specialization.**
- **Highlights of the course:**
  - **The course was very useful to learn the CNC program for 3-axis machining in Autodesk Fusion 360.**
  - **It enabled us to easily create and interpret engineering drawings from the 3D models, to understand different tool libraries, create and simulate the tool path for different manufacturing operations, and generate CNC codes for various three-axis tool paths.**
  - **The course content was quite interesting with videos and learning examples, challenging exercises as course assignments, review of our assignment with 3 external reviewers to complete the course.**
  - **Overall, it was a nice learning experience through the COURSERA platform by Autodesk.**
  - **Participated in a webinar on "Understanding Windmill Gearbox" Organized by *Francis Xavier Engineering College, Tirunelveli* on 19th July, 2020.**
- **Participated in a webinar on "Friction based Additive Manufacturing for Industry 4.0" Organized by *SSN College of Engineering, Chennai* on 22nd July, 2020.**
- **Submitted the project proposal titled "Investigation on crashworthiness analysis of hybrid cylindrical corrugated tubes for Automotive applications" for internal funding for the amount of Rs.4.5 lakhs.**

- **Participated in a webinar on "Additive Manufacturing: Fundamentals and Applications" Organized by *Francis Xavier Engineering College, Tirunelveli* on 14th July, 2020.**

Dr. A. K. Laksminarayanan

A technical talk titled "Friction based Solid State Additive Manufacturing Techniques"was delivered in a One day National Webinar on "Recent Advances in welding and Additive Manufacturing" Jointly organized by Indian Welding Society (IWS), Hyderabad students chapter and Methodist College of Engineering & Technology, Hyderabad. Around 234 participants from various educational institutions and industries participated in this webinar.

Successfully completed 6 Six days AICTE sponsored Online Short Term Training Programme(STTP) on "SMART MANUFACTURING – OPPORTUNITIES AND CHALLENGES" organized by Department of Mechanical Engineering, St. Joseph's College of Engineering, OMR, Chennai, from 13th July 2020 to 18th July 2020.

Webinar Series on "Materials Performance and Characterisation" during 20-22nd July 2020.

Dr. A. K. Lakshminarayanan, Coordinator

Three webinars as a first phase of the webinar series on "Materials Performance and Characterisation" were conducted by the Department of Mechanical Engineering on different aspects of materials processing, fabrication and testing.On 20th July 2020, the webinar series was inaugurated with a welcome address by Dr. N. Nallusamy, Professor & Head of Mechanical Engineering, where, he elaborated the theme of this webinar series in detail. Then the technical talk was delivered by one of the SSN alumni, Dr. S. Santosh, Postdoctoral Fellow, Indian Institute of Technology Madras on"*Shape Memory Materials - An overview of principles, processing, applications and current trends".* Around 65 participants had attended this programme. On 21st July 2020, Dr. Saranarayanan Ramachandran, Postdoctoral Research Associate, University of Manchester, UK, who is also an alumnus of SSNCE delivered a technical talk titled on "High-fidelity imaging the local structure-property relationships of weld sub-regions" *".* Around 72 participants had attended this webinar. On 22nd July 2020 Dr. Sree Sabari, Postdoctoral Fellow, delivered a technical talk titled on *"Friction based additive manufacturing for Industry 4.0".* Around 78 participants had attended this webinar

A wide spectrum of participants from various national and international institutions/organization namely, Loughborough University, UK, Indian Institute of Technology Madras, IIT Bombay, IIMT UNIVERSITY, Galgotias University Greater Noida UP, Ibri College of Technology, Oman, Bapatla Engineering College, Bapatla, PSG College of Technology, Anna university-MIT CAMPUS, R.M.K College of Engineering and Technology, ST.Joseph's College Of Engineering, Methodist College of Engineering and Technology, M/s Arise Steel Industries / Tiruchirappalli, Sreenivasa Institute of Technology and Management Studies-Chittoor, Suzlon Energy Ltd, L&T, FRFCF PROJECT, Kalpakkam, Sree Vidyanikethan Engineering College-hyderabad. Sri Venkateswara College of Engineering and Technology-Chittoor and Scientists from IGCAR and ISRO, WRI-BHEL, Trichy, Bhabha Atomic Research Centre, Kobelco Welding India Pvt Ltd, Ilahia college of engineering and technology muvattupuzha Kerala, Kalinga Institute of Industrial Technology (KiiT) – Bubaneswar, Chandigarh University participated in all the three webinars. A special thanks Dr. N.P.Rajesh, Head, SSN-Crest for his timely help by providing zoom account credentials.

Dr. S. Santosh

IITM, Chennai

Dr. Saranarayanan R

University of Manchester, UK

Dr. Sree Sabari,

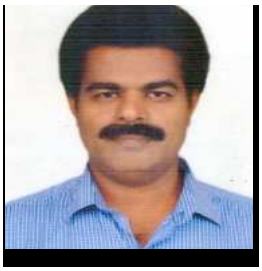
University of Coimbra, Portugal

Courses & Training programme attended by Non-Teaching Staff

Staff Name	Designation	Courses Completed in Coursera	English Communication skills attended
Mr. S. Nagarajan	Lab Instructor	5	Yes
Mr. K.Arumugam	CARPENTER GRADE-II (SR.GRADE)	3	Yes
Mr. J. Ponmuthuraja	Machinist Grade-I Sr.Grade	2	Yes
Mr. P.Nandhakumar	Turner Sr Grade I	1	Yes
Ms. R. Vasanthi	Junior Executive (Sr.Grade)	4	Yes
Mr. M. Krishnasamy	Lab Assistant Grade-II	1	Yes
Mr. R.Subramani	WELDER-SGr-1	1	Yes
Mr. M. Giridharan	Lab Assistant Grand-1 (SR-Grade)	2	Yes
Mr. P. Bala Sundaram	Lab Assistant Grade-1	1	Yes
Mr. B. Bharathi	LAB ASSISTANT GRADE-I (SR.GRADE)	1	Yes

Mr. S. Nagarajan, Lab Instructor, attended various certificate and training programme during July 2020, which are given below.

1. **Alison Certificates for courses related to solar energy, plate heat exchanger, steam boilers, effective communication technique.**
2. **Received Certificates of Appreciation for the Online Quiz program in" Production Engineering" conducted by the Department of Mechanical and Production Engineering, Deccan College of Engineering & Technology, Nampally, Hyderabad on 16/07/2020.**
3. **Participated in a one day webinar titled "Manufacturing Process in Sheet metals" organized by the Department of Mechanical Engineering, Gnanamani College of Technology, Namakkal, Tamil Nadu on 17.07.2020.**
4. **Participated in a one day webinar under the title "Design thinking" organized by the Department of Mechanical Engineering, Gnanamani College of Technology, Namakkal, on 20.07.2020.**
5. **Participated in a 2 days online webinar for the "Computer Skills Training" conducted by Department of IT, SSN College of Engineering, Kalavakkam from 27th to 28th of July 2020.**



Mr. S. Nagarajan

Ms. R. Vasanthi

Mr. P.Nandhakumar

Mr. R. Subramani

Mr. M. Giridharan

Mr. P. Bala Sundaram

Metal Casting practice for activity based learning

Dr. A.K.Lakshminarayanan writes….

Activity based learning is very essential to understand the core concepts of manufacturing engineering. As an initiative to develop hand-on-experience training modules for 2nd year students, a mock practice session on "Fabrication of lead alloy rods using metal moulds" was conducted on 14/07/2020. Lead alloy with a melting point of 327 oC was melted in open coal fired furnace. Then the liquid molten metal was then poured into a metal mould. Six rods with a dimension of 20 mm diameter and a length of 150 mm were fabricated.

Lead (as fish sinkers) is the most widely used material for fishing. This data will be uploaded along with a demonstration video as a pre-class material and the following trigger questions will be discussed in the inclass sessions. 1) How to cast a tube geometry? 2) Why lead is used as fish sinkers? 3) Is it safe and environment friendly? 4) If not, what are the alternate materials to suit this application.

Lead alloy scrap

Melting

Pouring progress

Pouring completed

Product removal

Fabricated Lead alloy rods

My sincere appreciation for the following non-teaching staffs for their dedicated efforts in preparing and conducting the experiments.

Mr. K. Arumugam

Mr. M. Krishnasamy

Mr. B. Bharathi

Mr. J. Ponmuthuraja

Dr. K.S. VIJAYSEKAR writes...

Successfully passed a National Level Online Learning cum E- Quiz Programme on "Today's Tools for Tomorrow's Teaching (TTTT)", conducted by the Department of Education, IDE, University of Madras on July 5th 2020.

Webinars attended:

1. **Attended a webinar titled "Smart manufacturing using Industry 4.0" organised by SIM Technologies Pvt. Ltd, Chennai on July 7th 2020. The webinar delivered by Mr. Gandhidass Ravichandran, a veteran in the field, discussed the process of Industry 4.0, its potential applications, challenges and issues in its implementation across various sectors.**
2. **Attended a webinar titled "Explore New Possibilities: HP 3D Printing Solutions for Higher Education", organised by Redington India Limited on July 9th 2020. The webinar showed how the industry - endorsed HP Multi Jet Fusion Technology can forge new ways to bring ideas to life and create a brighter and more innovative future. It also focused on how universities and research institutes can adopt HP Multi Jet Fusion Technology for research and development initiatives, with a case study on the HP digital manufacturing lab created in collaboration with NTU, Singapore.**
3. **Attended a webinar titled "Factory Automation using Yaskawa Industrial Robot" organised by the Department of Electronics and Communication, Jerusalem College of Engineering in collaboration with Axis global institute of Industrial Training, Chennai on**

July 10th 2020. Various industrial applications and case studies were dealt with, which showcased the capabilities of the Yaskawa Industrial Robot.

4. Attended a webinar cum panel discussion "Conversations" on July 10th, 2020, featuring Raul Rai - Director, Good Earth and Co founder of Nicobar, Samrath Bedi -Executive Director, Forest essentials India, and Sanjay Garg - Founder of Raw Mango along with Anubha Bali, Director, Career Development Centre & Alumni Relations, Shiv Nadar University organised by the Shiv Nadar Foundation. The conversation was a candid talk of how the lockdown posed a challenge to their business and how they handled the crisis situation, getting in touch with their potential customers through the digital mode.
5. Attended a webinar on "Super efficient diamond tool manufacturing" organised by DMG MORI on July 17th 2020. The webinar highlighted that Diamond tool production by laser with High Speed Mode 3.0 could achieve 150% faster speed and 50% lower cost per part compared to EDM method.
6. Attended a webinar titled "Industry 4.0: Opportunities and Implementation Challenges in Manufacturing", organised by the Department of Mechanical Engineering,Misrimal Navajee Munoth Jain Engineering College on July 25th, 2020.
7. Attended a webinar titled "Advanced Characterization and Micro structural Analysis" organised by the Dept. of Mechanical Engineering, St. Joseph Institute of Technology, delivered by Dr. Dan Sathiaraj, IIT Indore on July 29th 2020. The webinar focused on the various characterisation techniques such as SEM, TEM, EDAX, Spectroscopy, EBSD, APT etc.. with discussion on interpretation of textures and microstructure of various materials.
8. Attended a webinar titled "Advanced Characterization and Micro structural Analysis" organised by the Dept. of Mechanical Engineering, St. Joseph's Institute of Technology, delivered by Dr. Dan Sathiaraj, IIT Indore on July 29th 2020. The webinar focused on the various characterisation techniques such as SEM, TEM, EDAX, Spectroscopy, EBSD, APT etc.. with discussion on interpretation of textures and microstructure of various materials.
9. Attended a webinar titled "HP 3D Printing: How Additive Manufacturing is Solving Supply Chain Disruptions" organised by Redington India Limited on July 30th 2020. The webinar discussed how 3D printing using HP Multi Jet Fusion Technology was helping industries shorten the development time of a product, thereby reducing time to production and market as well. In comparison to traditional machining and analog work flow across the supply chain, the 3D printing of large assemblies in a single shot or multi layered printing of many identical parts have considerably reduced the time to manufacture as well as resulted in significant manufacturing costs as exemplified through case studies.
10. Attended a webinar titled "Industrial tools for design and development" organised by the Dept. of Mechanical Engineering, St. Joseph's Institute of Technology, delivered by Engineers from AVTEC and Mercedes Benz R&D on July 31st 2020.

Click this link for details of other webinars participated and coordinated by Dr. K S Vijaysekar

Virtual Open Day for M.E. Manufacturing Engineering

Coordinated " The Virtual open day" for the M.E. Manufacturing Engineering program, as a part of the PG open day organised by SSN on July 18th, 2020. The aim of the Open day was to converse with the potential PG candidates who have registered for joining SSN this academic year. The program was enthusiastically attended by the students who applied for the M.E. Manufacturing Engineering course and consequently 2 students who attended the program were given admit letters.

Faculty Development Programme

Attended a Two day Virtual FDP on "Deep Learning Models and Applications" organized by the Department of Electronics and Communication, SSN College of Engineering, Chennai between July 20 and 21, 2020. The 2 day program dealt with the fundamentals of deep learning models, the underlying concepts and classifications, and the potential applications in today's digital world.

Distinguished Lecture series

Attended a Two day Distinguished Lecture series delivered by Professor R. Natarajan, Ramaiah University of Applied Sciences, Former Chairman AICTE and Former Director IIT Madras on July 22-23, 2020, on the topic "Accreditation, Quality, Rankings, Benchmarking and Roadmap for excellence in

Higher and Technical education". The two day lecture discussed the assessment of quality in HEI's in India, brought out a detailed comparison between ABET and NBA, outlined the positive influences of NBA and touched upon the initiatives to align with the Washington Accord. On a question posed by me on the need to bring out a separate NIRF ranking for the private sector, given the huge gap in autonomy and funding in comparison to the Public sector, Prof. Natarajan replied that some measures were in discussion on this, but reiterated that soon the private sector will catch up with the public sector and move up in the NIRF rankings.

Successfully completed the following courses on Coursera:

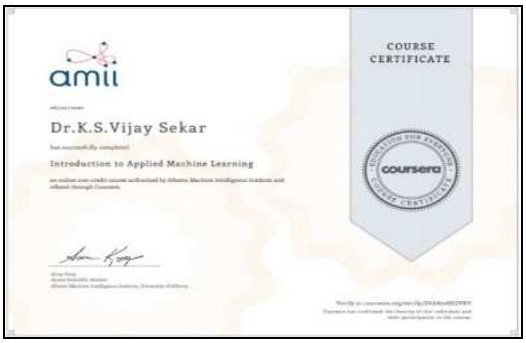
- Science of Well-Being - Yale University

  This was a well timed course delving deep into the happiness quotient of individuals and giving extensive tips on how to lead a meaningful and happy life. The course delivered by Prof. Laurie Santos in a laid back manner, traverses the challenges and misconceptions of happiness and prods us to think with clarity on what makes one happy. The course could be made mandatory for all students and faculty given its well intended theme and timely content.

- Introduction to Applied machine learning - Alberta Machine Intelligence Institute

  This course introduces one into the world of machine learning in a simple yet effective manner. The fundamental concepts of various approaches to machine learning are followed by data interpretation and analysis and end with case studies of successful machine learning models in the real world.

  The course is recommended for anyone who wishes to get a bird's eye view of machine learning with effective examples.



Dr.D.ANANTHAPADMANABAN writes...

Report On Webinar Attended On 03/07/2020

A webinar was conducted by Dr. L. Ashokkumar, Professor, EEE Department, PSG Tech, Coimbatore. The topic of the webinar was Electric vehicles. There were 90 participants in all out of which most were from Mechanical and Automobile Engineering. The idea of attending this webinar was to gain knowledge on the recent materials used in electric vehicles and also to build contacts.

Report Of Webinar Attended On Friction Based Solid State Additive Manufacturing Techniques On 08/07/2020

MCET, Hyderabad, in association with Indian Welding Society, Hyderabad chapter organized a webinar on 08/07/2020 between 11.00 A.M and 12.30 P.M. The speaker was Dr. A.K.Lakshminarayanan, Associate Professor, Department of Mechanical Engineering, SSN College of Engineering. Dr. AKL started his webinar by giving a detailed history of additive

manufacturing. He talked about the problems associated with dissimilar metal welding using fusion welding, especially with regard to Aluminium, Stainless steel and Magnesium. He talked in detail about additive manufacturing techniques like friction welding, friction stir welding, friction surfacing and friction assisted spot and seam welding.

Report On Webinar Attended On Advances In Foundry Engineering And Career Opportunities For Students On 17/07/2020

A webinar was organized by SRM University, Vadapalani on 17/07/2020 from 11.00 A.M to 12.30 P.M. The speaker was Mr. Sekar, CEO of RVJ Techno services, which is offering consultancy in foundry and allied industries. 90 participants participated in the webinar and feedback was taken after the webinar was over.

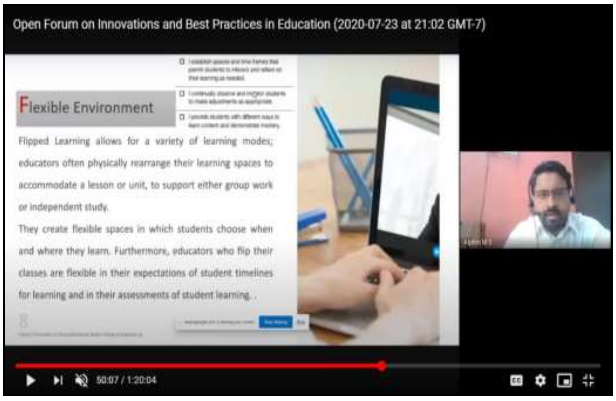
Webinar Attended On Excellence Through Tqm On 23/07/2020

A webinar was conducted by the Chennai Institute of Technology by Mr. B.Sunder Rajan, Partner and Principal Consultant, Peepal tree Consultants Ltd. The speaker started with the dictionary definition of excellence and compared it with the Industrial definition. He showed photos of famous people who strived for excellence like Abdul Kalam, M.S.Subbulakshmi and Sachin Tendulkar…

The full write-up by Dr. Ananthapadmanaban is available to read here.

Dr. M S ALPHIN writes...

1. **Delivered Guest Lectures for two days, Webinar on Human Factors in Design conducted by AAA College of Engg and Tech.**
   - **Day1: Human Factors and occupational Biomechanics (16-7-20)**
   - **Day2: Human Vibration and Biodynamic Analysis (17-7-20)**



2. **Delivered an online presentation as a resource person on Flipped learning in an Open Forum organised by SSN Center for Innovation and Best Practices in Education (SCIPE) in the Campus on 24 July 2020.**

- **The lecture focused on creating preclass video and flipped learning flow. *PPT, Meet recording link and Preclass video model* is here for your reference.**

Dr. SATHEESH KUMAR GOPAL writes…

- **Gave an invited talk at the Faculty Development Program on Robotics and Automation, organized by the School of Mechanical Engineering, VIT Chennai campus, on 17.07.2020. The topic of the presentation was 'Modelling and Practical aspects of Mobile Robots'. The 5 days FDP was scheduled to happen between 13th-18th of July 2020.**

Virtual Lab discussion on 26th July 2020

Led by the CAD/CAM laboratory coordinator Dr. KS. Vijay Sekar, the discussion on the requirements for CAD/CAM labs for virtual existence was attended by:

- **Dr. M. Nalla Mohammed**
- **Dr. R. Rajeswari**
- **Dr. G. Selva Kumar**
- **Dr. S. Suresh Kumar**
- **Mr. Giridharan**
- **Dr. Satheesh Kumar Gopal.**

A few key takeaways:

- **Need for a camera of considerable quality for recording experiments & Need for a monitoring tool to observe and direct students simultaneously**
- **Need for a tool to distribute access of licensed software, in the absence of free limited student edition for all the software**
- **Capture of step by step explanation of model building and analysis on CAD software, with voice over for asynchronous engagement**
- **Need for Digital board was felt, though could be utilized from the shared resources of the department, if available. Most of these would be pursued through the regular and asymmetrical pathways to provide a seamless learning experience for the students. The meeting was concluded on the note that the first video would be ready with voice over, shortly.**

Submitted IFSP proposals with three student teams:

- **Prem Kumar T, Sarvesh Karthikeyan S and Gokul Prasath V – 2nd year, Mech on the title Design of a reconfigurable tree climbing robot of varying geometry for harvesting applications**
- **Sam Sherin Raj. S, Sundar. G. M, Santheesh Murugan. M - 3rd Year, Mech along with Saravanan. A - 3rd Year ECE on the title Development of Autonomous Multifunctional Domestic Robot for Disinfecting, Cleaning and Fire Fighting.**
- **Anna Mathew, Shahul Sameer, Sreya Mary Thomas, Sriya N C – 2nd year, Mech on the title Amphibian Robot for Clearing Debris in water bodies.**

Dr. Satheesh Kumar Gopal shares his experience on Online Webinar on "*Open book examination awareness*"

Dr. Satheesh Kumar Gopal attended the online webinar talk on "Open Book Examination Awareness - An Introductory Session" on July 29, 2020 (Wednesday); 11:00 am organized by the department of Biomedical Engineering. The resource person was Dr. Raja Murugadoss, Vice Principal of GMR Institute of Technology, GMR Nagar, Rajam, Srikakulam, AP.

Dr. Satheesh Kumar Gopal shares his experience on webinar attended: 3DEXPERIENCE: A Virtual Journey

Attended the 3DEXPERIENCE: A Virtual Journey, a Dassault Systèmes' series of digital programming designed to inspire and enable one to drive growth and innovation in today's challenging global environment. The journey began on July 29th with a live stream Plenary Session with presentations from Dassault Systèmes executives and customer presenters from Lockheed Martin and Parker Hannifin. The core learning from this event:

- **Daussalt has built a new tool for all kinds of businesses to provide a 3D experience of everything starting from design to the final delivery and beyond, clubbing people, ideas and data as its core. With this tool they believe in transforming the traditional belief system:**

  Product economy ⟶ Experience economy

- **They strongly believe in 'Only progress is human!' and 'Experience is human!'**
- **They also believe that the virtual world extends the real world. So this tool would enable one to harmonize nature, product and life, which usually is a lost cause in the real world.**

- **They have a strong set of customers vouching for them with enviable proofs.**
- **Printed ventilators, Rapid hospitals @ Wuhan, China, Cars built for subscription (Canoo), Virtual Hong Kong, Digital thread & Affordability initiatives for Lockheed Martin are a few that were highlights of the event, where this tool had already played a role..**
- **With 15% loss in industrial production, 21% drop in retail sales in April 2020, 37% drop in auto sales and greater than 15% unemployment in April 2020, all in the US, the actions taken by Dassault are applaudable as seen in the next figure. They have invested billions into this product for the benefit of humanity. Hence it might be wise if we grab this opportunity!**

The future episodes of this series are:

- **August 26: Fueling Innovation for the New Agile Enterprise**
- **September 23: Modeling & Simulation, Additive Manufacturing**
- **October 14: Enabling Business Continuity using the Cloud**

Dr. M SURESH writes...

A Guide for creating e-learning video using PANOPTO

I have enclosed a presentation on "How to make video in panopto and upload in LMS".

The entire presentation is prepared using screen shots. You can use this and make your video lectures in Panopto (and upload in LMS)

https://drive.google.com/file/d/1jLpmOnglsc1oHcK83a2UMzk0vThbLchM/view?usp=sharing

Dr. C ARUN PRAKASH writes...

- **I have completed the following two courses in Coursera.**
  - **Introduction and programming with IoT Boards**
  - **Introduction to Applied Machine Learning**
- **I also participated in a Workshop "IEEE - ABET Webinar on Accreditation and Quality of Engineering Education in South Asia" organised by IEEE India Council on 8th July 2020.**

Dr. B ANAND RONALD writes...

- **Completed an online course in COURSERA platform titled "Introduction to Virtual Reality" offered by University of London, Goldsmiths, tutored by Dr. Sylvia Xueni Pan and Dr. Macro Gillies.**
  - **Virtual and Augmented Reality are gaining prominence wherein the experience of the user in the environment is at a higher level. This course gave an Introduction to VR and its Applications in different domains, the hardware that constitutes the VR system, some concepts and issues in VR. It was good to learn something new in a relatively new domain, which has a great potential especially in the present circumstance for offering Virtual learning.**
- **Attended an Online 6 day AICTE Sponsored STTP on "Cyber Physical Manufacturing Systems for Future Industries (CPMS)" from 20 – 25 July 2020, conducted by IFET College of Engineering.**
  - **The inaugural address was given by Prof. Dr. Yusri Bin Yusof, Universiti Tun Hussein Onn Malaysia (UTHM), Malaysia. The session was followed by resource persons from prominent industries like TVS Sensing solutions, LUCAS TVS, FANUC India; leading academic institutions like IIT Tirupati, IIT Indore, VIT, IIITDM; from foreign institutions like Universiti Brunei Darussalam etc. I also handled a session on "Virtual Reality and Manufacturing" for 1.5 hrs in the STTP.**

Mr. B. JAYAKISHAN writes...

- **6th to 8th July 2020**
  - **"I actively participated in the three days International webinar on "Autonomous Vehicle Technology in Digital Era" organised by Dept of Automobile Engg, HICET, Coimbatore."**
- **4th July 2020**
  - **"I ardently participated in an online technical webinar on "Desirable Skills for the Future" on 4th July 2020 organised by Dept of Automobile Engg, Easwari Engineering College, Chennai"**
- **29th June to 4th July, 2020**
  - **"I also participated in the following webinars conducted by the Dept of Mechanical Engineering, St. Joseph's College of Engineering, Chennai**
    - **i. Advanced Combustion Concepts**
    - **ii. Material Developments for Diesel Particulate Filter**
    - **iii. Electronic Control of Fuel Injection Systems**
    - **iv. Diesel Engine Emission Control Technology**
    - **v. Role of Nanoparticle Additives in Engine Research**
    - **vi. Engines, Hybrids and Electric Propulsion"**

Student Write up

Sabareesh, II year writes..

BOOKARY📖

Hello ssnites,

I am Sabareesh from 2nd year mechanical engineering. The following is the write-up about our startup.

Co-founders are Rohit K, Monisha J, Viswapriya G (IInd year, mechanical department) and Sanjay Kumar K.

'Bookary' is a startup aiming to bring the library to your doorstep. We are an online library that brings you the good-ole paperback books.We'll get you the books you've been dying to read from the libraries around you. We developed a website through which you can rent the book you want at a nominal price, and we will deliver it to you at your doorstep and the app is under development, logging onto it you'll be able to find the libraries around you and all you have to do is browse through the catalogue and find your book, and our book-bearer will deliver it to you and pick it back when you are

done reading. We hope this would resurrect the habit of reading in youth and children. If you are someone with an amazing collection of books and you are happy to lend it, you can become our lending partners and your books will make the money for you. We promise safe delivery of books.

- **Why did we start?**

We all know libraries are extremely resourceful yet under-utilized at this digital age; we've gotten lazy to go to a library and read a book. Though we found alternatives like ebooks, despite the harmful effects of blue light and the cost of ebooks, nothing can compare to the satisfaction of reading a paperback book. So, we thought why not get the books to readers at their home.

- **When did we start?**

We, a group of 5 engineering students participated in a Stackathon (A Startup hackathon) conducted by studymonk. Inc, Our idea "the library at the doorstep" got us runner up. And we got selected to the accelerator program by Studymonk. Inc to establish our startup in real-time.

Links to our social media handles and website:

- Instagram
- Facebook
- Website

Ashwin Ballal, III year writes...

In response to mentor's (Dr. G Satheesh kumar) inquiry regarding student's well being during lockdown

"Respected sir,

Thank you for reaching out and enquiring about my wellbeing.

I have been taking precautions during this period and have not fallen sick through this lockdown period. I am generally feeling good as I have been able to make use of this period to gain knowledge and experience in fields that I am interested in.

I have completed a 5 course specialisation on Coursera titled "Foundations of Management" given by IESE Business School in Barcelona, Spain. The specialisation consists of the following courses:

- Accounting: Principles of Financial Accounting
- Finance for Managers
- Marketing: Customer Needs and Wants
- Organisational Behaviour: How to Manage People
- Analysis of Business Problems: Capstone

I thank the college for providing this opportunity to use Coursera free of cost to further our learning during this time. I intend to take up a few more courses to learn Python programming and also to learn how Python can be used for Data Science.

Apart from this I have been interning at a company called "Investocracy". They are a company that aims to bring startups primarily in India and Africa to Japanese investors for funding. My work includes research on the startup and venture capital industry in India and other parts of Asia as well, with a focus on the different sectors for investment such as consumer technology, education technology or even space technology. I found this internship on Internshala and the duration is 1 month with a small stipend at the end of it.

I have also started writing football analysis articles for a UK based company called "Ronnie Dog Media" which publish magazines weekly and have various football websites such as "Total Football Analysis" and "Football Bloody Hell" along with league specific websites for the various leagues around the world. As of now I have already had 3 articles published and hope to publish one every week from now on. I am not receiving any pay for this but I am merely doing it as a passion of mine to analyse football and to have that presented to top football clubs and players through this popular website and company is very satisfying.

Links for my articles:

https://footballbh.net/2020/05/22/trent-alexander-arnold-201920-scout-report-tactical-analysis-tactics-3/

https://footballbh.net/2020/05/29/joe-jacobson-201920-scout-report-tactical-analysis-tactics/

These are all the things that I have been doing during this lockdown period and overall, I am more than happy with how I have kept myself busy in such a time. Once again, I thank you for reaching out to me. Thank you."

Pavithran, II year writes...

Hello fellow students,

I'm Pavithran, Mechanical B, 2nd year. I have participated in the IMUN (International Model United Nations) online conference 11.0.I have also completed an one month internship in IMUN as a campus ambassador.

M Vignesh IV year writes..

Hosted an online webinar on "Industrial 2021" via zoom, organised by i2i skills in collaboration with Dassault systemes and Danzer technovations. An interactive, informative and enlightening session which encompassed the following segments:

- **Welcome address , Guest speaker introduction, Lecture by guest speaker with a vivid and engrossing presentation,topics discussed: Industrial expectations for job seekers post pandemic, Job relevant skills, Covid's impact on Mechanical industries, Interactive Q & A session with participants interceded by the host, Vote of thanks, Feedback**

Sharveshwaran IV year writes…

To do something constructive and keep myself occupied during lockdown, I joined a startup called i2i skills. i2i skills is a key player in consultancy and research with a wide array of services.

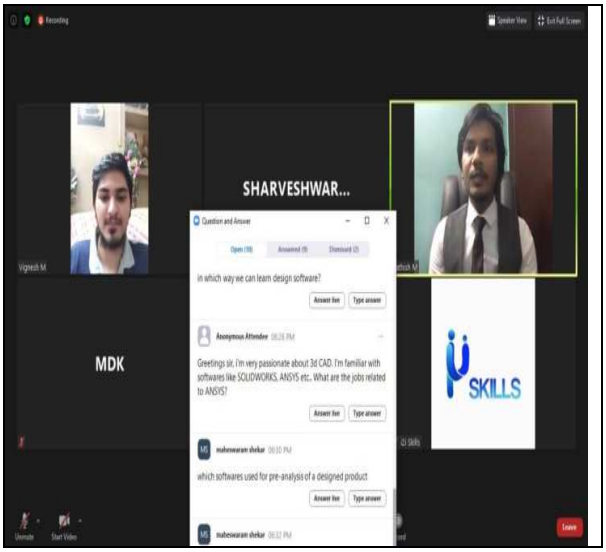
I acquired the following skills during my brief tenure as intern:

- **Event organization**
- **Digital marketing**
- **Content writing**
- **Professional negotiations**

The webinar on "Industry 2021" was a great coup, with more than 75 participants, we were elated by the overwhelming participation and inundated willingness of the participants to take part in the future events of i2i skills. We at i2i skills thank VIGNESH M for hosting the event and the participants from SSN CE for partaking.

Visit our web page: https://i2iskills.com/

Contact at: https://i2iskills.com/contact-page/



Divyadarshan GM final year writes...

Hey cricket enthusiasts! Check out my engrossing article published in this renowned sports blog. 🇵🇰 Babar Azam: The Linchpin of Pakistan's batting - Player analysis 🏏 https://totalcricketanalysis.com/analysis/player-analysis/babar-azam-the-linchpin-of-pakistans-batting-player-analysis

Mech Marvel - 68

Researchers from the UK's Durham University and Germany's Fraunhofer Institute claim they've come up with the world's first manufactured non-cuttable material, just 15 percent the density of steel, which they say could make for indestructible bike locks and lightweight armor. The material, named Proteus, uses ceramic spheres in a cellular aluminum structure to foil angle grinders, drills and the like by creating destructive vibrations that blunt any cutting tools used against it. The researchers took inspiration from the tough, cellular skin of grapefruit and the hard, fracture-resistant aragonite shells of molluscs in their creation of the Proteus design.

To know more, read this article of the NewAtlas newsletter.

Also watch this YouTube video of an angle-grinder going against the lightweight Proteus material.

Corporate Story 68

Sickle Innovations

The seeds for Sickle Innovations were sown at the Indian Institute of Science and later the company was founded in 2014 with the support of Indian Institute of Management, Ahmedabad. The secret to their success lies in their very motto, Need-based Innovation; the company addresses an acute and pressing need for development and progress in the agricultural sector using innovative engineering solutions to resolve debilitating issues faced by the farmers of our nation.

Sickle Innovations sells hand tools and low-powered equipment under the brand Hectare. Some examples of these products include weeding tools, solar traps, neem fruit harvester etc.

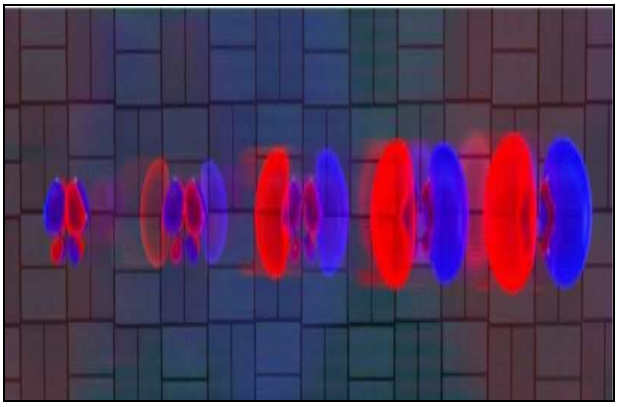
Another brand of theirs, Marsh Harrier, deals with machine vision based grading solutions completely designed and developed in India.

The company has won several awards to date, the most notable of which include 'The Farm Tech Startup of 2018' by ICFA, 'Innovative Company of the Year' by ISBA in 2016 and a spot in the Top 35 Startups of the Country by the Prime Minister's Office.

Read more about them at: https://sickle.in

Amazing Innovation- 173

Molecular movie



Scientists in the US and UK are the first to observe electrons rearrange their positions in molecules during the early stages of a light-driven chemical reaction. They did so by firing ultrashort light and X-ray pulses at the molecules to create "movies" of electron motion. The technique promises to shed further light on chemical processes such as bond making and breaking. Their method could also be used to study other ultrafast processes in physics, chemistry, and biology.

Intriguing? Read more at this website.

Amazing Innovation- 174

JIO glass

Reliance Industries Limited (RIL) during its 43rd Annual General Meeting (AGM) showcased a new Mixed Reality solution, called Jio Glass. A demo was showcased as to how the Jio Glass will work when it is made available to the public. RIL has stated that the new Jio Glass is designed for teachers and

students to enable 3D virtual rooms and conduct holographic classes via the Jio Mixed Reality service in real-time. Apart from this, they can also be used to perform virtual meetings.

"Jio Glass is at the cutting edge of technology that provides best-in-class Mixed Reality services to give users a truly meaningful immersive experience," said Kiran Thomas, President, Reliance Industries Limited during the keynote. To recall, during RIL AGM 2019, Jio showcased a HoloBoard Mixed Reality Headset, which had similar functionalities. The Jio Glass seems to be the follow up to that project. The Jio Glass will weigh 75 grams and will need to be connected to a smartphone with a cable to power it. The company has said that it will come with 25 in-built apps to allow augmented reality video meetings and more. Not much is known about the specifications of the product or what all things it can do. However, during the AGM, the company did mention that the product will take advantage of 5G services, which Jio is currently working on. RIL has partnered with Google for its Jio products, which means that both the companies will be able to collaborate with each other and develop the product.

Source: https://indianexpress.com/article/technology/gadgets/what-is-jio-glass-6507071/

Alumni Update

Yashaswin Harathi (Mech' 19 Batch) writes...

Hello, SSNites!! This is Yashaswin Harathi of the Mechanical Engineering Department (batch 2015-2019). I'm currently doing my MS in MechE - Research at Carnegie Mellon University. This summer, I'm a research fellow at J-Lab at CMU. I'm working on swab materials to detect COVID on hospital surfaces using surface enhanced Raman spectroscopy (SERS).

The support I received from SSN has played a huge part in what I am today. I was awarded with merit scholarships for outstanding academic performance for three continuous years. Apart from excelling in academics, I think it's important to focus on extracurricular activities as well. I was appointed the President of the Mechanical Engineering department which gave me an avenue to express myself as a leader. It helped me learn about the value of planning, organizing and communication. This experience was a learning curve which enhanced my decision making abilities while encouraging people to be innovative. Subsequently, I was also appointed as the treasurer of Instincts which was yet another great experience. Sports have been a major part of my life. SSN recognised my contribution to the football team by awarding me with a special sports scholarship. The support from HoD, professors, through academics and otherwise, their constant encouragement inspired me to achieve more. I will forever be indebted to them.

During my undergrad, I had completed an IFP in addition to the projects in the curriculum that laid the foundation for interest in research. With my current degree at CMU focusing more on research than coursework, my research background from SSN has enhanced my ability to approach and solve problems in the right manner.

My advice to juniors looking to pursue higher studies would be to gain some research or industry experience, through internships or otherwise, as it adds tremendous value to your application and it becomes easier to land a job, either in industry or academia. All the best!

CONVERSATION WITH ALUMNUS MOHAN SUNDERAM (Mech' 2016)

Mr. Mohan Sunderam of the Mechanical Department (batch 2012-2016) has completed his Masters from Technische Hochschule Ingolstadt (THI) in Germany as of June 2020. His previous work experiences include positions at MRF tyres and Uber Technologies, Inc. He is currently employed at Fraunhofer IVI.

Linkedin profile: https://www.linkedin.com/in/mohansj94

*The editors guild of the mechanical engineering department had a skull session with our distinguished alumnus over the telephone. Mohan Sundarem has few valuable insights to share with budding higher studies aspirants, especially for those who are yearning to pursue **Masters degree in Germany or Europe.***

Q1. **The first question that everyone has. How expensive is studying in EU countries, esp. Germany, which has been a preferred destination for mechanical engineers over the years?**

A: **Most German universities do not have tuition fees, meaning for your course, for one semester, you only pay in between 50-200 euros depending on your university. Therefore, when you do masters in Germany you basically pay for your subsistence and this can come up to 800 euros per month (max). As per German visa regulations students from abroad must have an "BLOCKED ACCOUNT" which can provide for the students' subsistence every month. So just to sum up the financial point, a Masters student will need roughly 10,000 euros per year (includes everything).**

Q2. **What minimum CGPA is optimum for presenting a strong academic foothold?**

A: **Most German universities don't explicitly ask for a specific level of GPA, but since the Masters admissions can be quite competitive, a GPA of at least 7.5-8 is considered decent. But then if you have a GPA less than that but have good work experiences or projects and ideas in the area you are applying then they can make up for your GPA. Just to emphasize though, the better the GPA, the more the chances of getting an admit.**

Q3. **What are the important aspects of our profile that are most sought after apart from our academic scores (CGPA)?**

A: **This question completely depends upon the university you are applying to. If you are applying to a Technical University (TU as they call it here) then they completely focus on your project, bachelor thesis (final year Project) - predominantly academic stuff. But if you apply to FH or TH which are more industry oriented they look for work experience or internships and those sorts of things. But I suggest that you think of a project for your final year in the direction you want to study. For example, if you want to work in automotive do a project in some simulations with cars, if you are interested in energy then work on renewable energy and so on. That will provide a proper base for your future.**

Q4. **Do universities require students to take up exams like GRE, IELTS, TOEFL, etc.? Are any of these exams compulsory?**

A: **Most German universities ask for an English language exam. But I would suggest you take TOEFL more than IELTS because all German universities accept TOEFL whereas all US universities accept IELTS (atleast, this is what I heard from friends). So keep your options open. Also some German universities make GRE and GATE score as a requirement for admission but most German universities don't have that. So it is better to just take TOEFL if you are sure that you want to come to Germany or for that matter any European university.**

Q5. **How important is German language (or other) proficiency to secure an admission? Is it necessary to have any of the several grades from A1-C2 certification?**

A: **This again is university specific, but as far as I know if you have A2 German knowledge then you can apply to upto 75-80% of the universities. Some colleges also have course specific requirements. For example, a production master will need you to have A2-B1 level certificates whereas a CAE masters will need maybe just an A1 level. So you have to check it specifically.**

Q6. **Can you talk about the research infrastructure over there? Are students offered exposure to research and industry workings in way of internships and other opportunities?**

A: **Normally all the universities here have either a separate research lab or have direct collaborations with the industry for research. This is a very good opportunity for Masters students to earn a lot of money during your course work. Ideally you can work with a professor on a project in line with your course. I worked in the research division of my college (CARISSMA) and was able to earn upto 750 euros per month while I was doing**

my coursework. This really reduces the amount of money you need to complete your Masters. Most universities also have a compulsory internship in the course work, so that's a nice way to get to know the industry and is very helpful to eventually get a job. If during your internship you work well and show real inspired work, I am pretty sure the company would hire you directly as a full time employee as soon as you finish your masters. There are lots of internship opportunities but some companies also require German skills. So I suggest you get at least a A2 certificate by the time you apply for internships. Within the university English is the language of communication, so to get a research student job you need not worry about German.

Q7. **How good are the job prospects after completion of MS or any other salient graduation? What are the various career opportunities that await the students there?**

A: Regarding job opportunities I would just say that it is not easy to find a job but at the same time it is not impossible too. Only thing you need to remember is that you just have to apply to the relevant companies and relevant posts and also try to network a little bit. If I can get a job in Germany, you too for sure can get a job here, no doubts. Just that it requires some dedication and effort. So after masters your career can take broadly two verticals: a PhD or an industry based job. Phd pays slightly less than an industrial based job but after the PhD you probably earn twice the masters guy. So it really depends on what you want in life. Industries of course can be divided further into numerous subdivisions but I guess that completely depends on the student's choice of course.

Q8. **Finally, a question that is lingering on everyone's mind. How different is the MS and international student landscape due to the COVID-19 pandemic? Are there any setbacks or, on the contrary, advantages?**

A: Covid has changed everything to be honest. There are no more in person classes as of now, everything is online. Exams are online and so on and so forth. But things are becoming better. Germany is almost back to NORMAL. So I would say in 3-4 months, things hopefully will be back to how they were. Currently you would probably be hearing about a lot of pay-cuts and job losses. But in Germany already there are plans to increase the production capabilities of the factories so this will in the long term lead to jobs. So yes the immediate situation is not too good but in a year max everything should be back to normal and there will be a huge hike in hiring in the automotive sector at least. Other sectors should follow suit but I don't have much information on them to be honest.

For further queries, you can contact him at his personal mail: *mohansj.94@gmail.com*

Mr. S. Santhosh (M.E Mfg' 2015) is now a postdoctoral Researcher at IITM

Mr. S Santhosh of M.E Mechanical engineering (2013-15) has submitted his thesis in IIT Madras and is now a postdoctoral researcher at the department of Mechanical engineering, IIT Madras

Forthcoming events

International Conference on Functional Materials, Manufacturing and Performances

12–13 September 2020 | Jalandhar City, India

https://conferences.lpu.in/icfmmp/call-for-papers.php

30th September 2020	Submission of full papers (In Template)

International Conference on Mechanical, Electronics and Computer Engineering 2020 - (ICMECE 2020)

22 April 2020 | Kancheepuram, Tamilnadu, India

Smart India Hackathon Grand Finale 2020!

The World's largest Hackathon, SIH 2020 is programmed to be organised by MHRD & AICTE on August 1, 2 and 3 (2020). Nodal center: SSN College of Engineering, Rajiv Gandhi Salai, Kalavakkam

Smart India Hackathon 2020 (SIH 2020)
(World's largest Hackathon - Organised by Ministry of HRD & AICTE)

1,2,3 August 2020

SMART INDIA HACKATHON 2020

Nodal Centre : Sri Sivasubramaniya Nadar College of Engineering
Rajiv Gandhi Salai, Kalavakkam – 603110

Ministries allocated to our Nodal Centre and problem statements:

Sl. No.	Ministry	Problem code	Problem statement	No. of teams
1	Great Learning	GL32	Attention Span Detection in Online Instructor Led Sessions	5
2	TCI	PU131	Prediction of tariff rate	2
3	FIS Global	SM445	Data Mining Robot using AI / ML	5
4	FIS Global	SM446	Jarvis (software robot assistant) for corporations	5
5	Autodesk	BN147	Ultra compact personalized flying vehicle	5

Total No. of Teams to SSN Nodal centre: 22

Detailed description of the problem statements can be found in SIH Website.

Admissions 2020 open for M.E/M.Tech Programs!

SSN College of Engineering invites eligible candidates to apply online for its under graduation (UG) and Post Graduation (PG) programs in Engineering.

Attractive scholarships available to encourage meritorious students.

Apply now! Hurry!

For admissions visit: https://www.ssn.edu.in/admissions/

HCL HACK IITK2020

HCL HACK IITK2020 is a Cyber Security hackathon brought to you by IIT Kanpur C3i Hub which is among the top centres in the world and India's number one Research Center in Cybersecurity

Who can participate?

- **Students**
- **Employed Professionals**
- **Startups (Founders/Cofounders)**

Teams of 2 or 3 members.

The hackathon has three rounds spread over 12 days.

More at: https://hackathon.iitk.ac.in

International conferences on robotics and artificial intelligence

Research News from MSP

From SSN Research center offered by Dr. Muthu Senthil Pandian & Other sources

Dr. M S Pandian

The Swayam course on "Time to hone your pedagogical & ICT skills" could be enrolled from July 31 onwards.

Website: www.swayam.gov.in

Institute for Adult Learning, Singapore, An institute of SUSS (Singapore University of Social Sciences), Singapore Research Grant Call 2020 on

Workforce Development and Lifelong Learning

Last date for submission of project proposal: 03.08.2020

Website: https://www.ial.edu.sg/access-research/grants-and-schemes/wdarf-grant-call.html

Department of State Bureau of Energy Resources

The Energy Resource Governance Initiative (ERGI) Academy

Last date for submission of project proposal: 09.08.2020

Website: https://www.grants.gov/web/grants/search-grants.html

Department of State U.S. Mission to Turkmenistan

Developing Potential of the Women Entrepreneurs in Fashion Design

Last date for submission of project proposal: 10.08.2020

Website: https://www.grants.gov/web/grants/search-grants.html

NSF-National Science Foundation

Centers for Chemical Innovation (CCI)

Last date for submission of project proposal: 11.08.2020

Website: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13635&org=NSF&sel_org=NSF&from=fund

Department of Science and Technology (DST)

Letter of Intent for Integrated Clean Energy Material Acceleration Platform(IC-MAP)

Last date for submission of project proposal: 14.08.2020

Website: https://dst.gov.in/sites/default/files/ICMAP%20Call%20Document%20%281%29.pdf

Department of BioTechnology (DBT)

Newton Bhabha Fund PhD Placement Programme for the year 2020-21

Last date for submission of project proposal: 16.08.2020

Website: http://dbtindia.gov.in/sites/default/files/Newton%20Bhabha%20Fund%20PhD%20Placement%20Call%20Guidelines.pdf

Department of Biotechnology (DBT) & Department of Science and Technology (DST)

BRICS COVID-19 Call: Application Response to COVID-19 pandemic coordinated call for BRICS multilateral projects 2020 BR ICS countries

Last date for submission of project proposal: 18.08.2020

Website: https://dst.gov.in/sites/default/files/BRICS%20COVID-19%20Call%28FINAL%29.pdf

Department of Education - USA OSEP: National Center to Improve Faculty Capacity to Use Educational Technology in Special Education, Early Intervention, and Related Services Personnel Preparation and Leadership Personnel Preparation Programs CFDA Number 84.327F

Last date for submission of project proposal: 21.08.2020

Website: https://www.grants.gov/web/grants/search-grants.html

Department of Agriculture Business and Cooperative Programs

Delta Health Care Service Grant Program

Last date for submission of project proposal: 24.08.2020

Website: https://www.grants.gov/web/grants/search-grants.html

Funding Agency:DoD-Department of Defense,

Dept. of the Army – USAMRAA DoD Tick-Borne Disease, Career Development Award

Last date for submission of project proposal: 27.08.2020

Website: https://www.grants.gov/web/grants/view-opportunity.html?oppId=325508

Department of BioTechnology (DBT)

A call for proposals under the Innovations partnership between India and Sweden-Artificial Intelligence for advancing healthcare across India and Sweden

Last date for submission of project proposal: 28.08.2020

http://dbtindia.gov.in/whats-new/call-for proposals (or)

Website: http://dbtindia.gov.in/sites/default/files/digital%20healthcare%20Vinnova%20final.pdf

Department of BioTechnology (DBT)

Advertisement for Call For Proposal For Starting Skill Vigyan Programme

Last date for submission of project proposal: 30.08.2020

Website: http://dbtindia.gov.in/whats-new/call-for-proposals

Department of Biotechnology (DBT) ATGC Call advertisement

DBT Invites Proposals under Accelerated Translational Grant for Commercialization (ATGC) Program to Translate Research Leads Early Stage Validation and

Encourage Academia to Develop Product/Process/Application.

Last date for submission of project proposal: 31.08.2020

Website: http://dbtindia.gov.in/sites/default/files/DBT-%20ATGC%20Advt.%20July%202020.pdf

Department of Science and Technology (DST)

ASEAN-India Research Training Fellowship (AI-RTF)

Last date for submission of project proposal: 31.08.2020

Website: https://aistic.gov.in/ASEAN/aistdfFellowship

Call for Applications under Accelerate Vigyan (AV) *

'ABHYAAS' is now open for winter season (Dec 2020-Jan 2021)

Website: https://www.acceleratevigyan.gov.in/

Another new component 'SAYONJIKA' under AV is also launched, as an open-ended program, to catalogue the capacity building activities in S&T supported by all government funding agencies in the country.

Closes by 31st August 2020

Website:https://serbonline.in/SERB/AbstractFilePath?FileType=E&FileName=AV_Brochure.pdf&PathKey=DOCUMENT_TEMPLATE

***News offered by Dr. S Vijayan**

Anna University PhD 2020 regulations released *

The Synopsis shall be accepted only when the scholar has published at least one research article (in the regular issue of the journal concerned) after joining the programme in the regular issue of the referred impact factor Journals in the field of specialization based on his/her research work as first author or second author, (if the Supervisor is first author) or one patent granted based on his/her research work.

The filing date of the patent should be after the date of provisional registration of the PhD Programme.

For more details visit: https://drive.google.com/file/d/18mZcM2N5wYoYol6p1x9tsKlCgkb_25Fq/view?usp=sharing

***News offered by Dr. M S Alphin**

Department of Bio Technology (DBT)

Opportunities for India-EU Co-Funding of Joint Proposals under Horizon 2020 : Work Programme 2019-20 On Health, Bioeconomy, Clean Energy And Biotechnology

Last date for submission of project proposal: 1st September 2020

Website: http://dbtindia.gov.in/sites/default/files/Webnotice-CoFunding_EU-IND_2019-20_DBT_FINAL.pdf

Department of Science and Technology (DST) India-EU Joint Call on Integrated Local Energy Systems

Last date for submission of project proposal: 1st September 2020

Website https://dst.gov.in/callforproposals/india-eu-joint-call-integrated-local-energy-systems

Department of Bio Technology (DBT)

AMS-DBT Newton International Fellowship for Postdoctoral Research

Last date for submission of project proposal: 3rd September 2020

Website: http://dbtindia.gov.in/sites/default/files/AMS-DBT%20Newton%20Intl.%20Fellows%20-%20Scheme%20Notes%20-2020_0.pdf

Department of Health and Human Services Centers for Disease Control and Prevention – ERA

Study to Explore Early Development (SEED) Follow-up Studies

Last date for submission of project proposal: Sep 03, 2020 (Online – Nov 10, 2020)

Website: https://www.grants.gov/web/grants/search-grants.html

Inspiring Life Stories

Life story of Man of the Millenium – Palam Kalyanasundaram

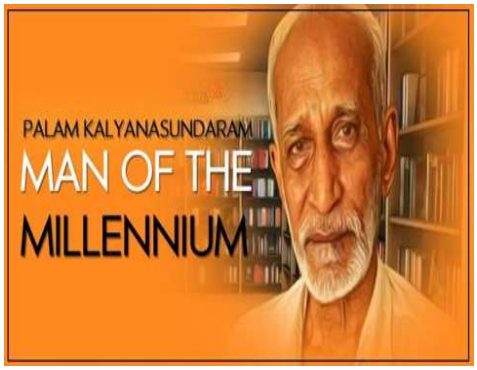
ஈதல் இசைபட வாழ்தல் அதுவல்லது

ஊதியம் இல்லை உயிர்க்கு.

\- Thirukkural 231

This Thirukkural means, "By giving to the poor, our life should be full of praise. There is nothing that a human can aspire for".

In 1962, when the India – China war broke out, the then Prime Minister Shri Jawaharlal Nehru made a request to the people of India through radio, to donate freely for the defence fund. This young man, by name, Kalyanasundaram, who was studying in Pachaiyappa's college, Madras (then) heard this and he went and met the then Chief Minister Shri K. Kamaraj and gave away a gold chain that he was wearing. The Chief Minister was highly impressed by the gesture. A life journey, which started thus, by giving to the needy, continues to this day.



Palam Kalyanasundaram was born on 10th May 1940 in a tiny village called Melakarivelangulam in Thirunelveli, to well to do parents. His village had no electricity, roads, shops, transport facility, leave alone a school and so he had to walk 10 kilometers to go to the nearest school. He was the only one to go to that school from his village and so he felt lonely. He thought, at that age, that it would be fun to have a few friends along with him to walk all the way and give him company to the school. But no one in the village could afford school education and so he decided to bear the school, books, clothes expenses for the other children in the village. The seeds for helping poor children education were thus sown. He lost his father at a young age and his mother inspired him to support the poor in their needs.

Want to learn more about Palam Kalyanasundaram and his noble deeds? Check out the full article by Kumarasubramanian V here:

https://drive.google.com/file/d/1ap6pWXe1Qg0mlFAMPe8NGL6pXqRV8ngD/view?usp=sharing

Corporate Wisdom 80

Introspection

From the desk of Ramki — Aspire to Inspire

Greetings!

Most successful people became what they became because much after all of us went to sleep they were still working. If I need everything from life, then I need to first give everything I have got to life. Winston Churchill said, "I have nothing to give but my

blood, toil, tears and sweat." We don't have to give all that. We just need to forego some of our likes and some of our dislikes, so that we can have all of the purpose that we desire so dearly.

- **If we have to reach where I have never reached, then I will have to take the path that I have never taken.**
- **If I have to achieve what I have never achieved before, then I will have to do the things that I have never done before.**
- **If I have to accomplish what no one has ever accomplished, then I will have to do what no one has ever done.**

Simple: Either subordinate your likes and dislikes to the purpose of your life or subordinate the purpose of your life to your likes and dislikes.

This simply explains why it is so crowded in the bottom of the pyramid. For the few, who have chosen to be one above the crowd, their likes and dislikes, even their life is insignificant compared to the purpose of their life.

There are only two options in life. Either ignore the small things to achieve higher goals, or subordinate the bigger goals to small things. If you want to be somebody in life, if you want to stand above the crowd, if you want to be someone who will be looked up to, then there is just one choice for you. You need to subordinate your likes and dislikes, ignore the small things and keep focusing on larger goals.

I like sleeping, I dislike exercise.

- **I like fried food. I dislike salads and sprouts.**
- **Beyond my likes and dislikes,**
- **I also know I can do a lot more with my life if I am fit and healthy.**
- **So why not subordinate my liking for excessive sleep and fried foods, as well as my dislike for exercise, sprouts and salads to the purpose of being healthy in life.**

#WishingMostAndMore

Have a great day & wonderful weekend! Stay Safe

R.Ramakrishnan
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