

Mechanical **Aspire**

Achievements in Sports, Projects, Industry, Research and Education

All About Nobel Prize- Part 25

The role of Teachers in shaping a potential Laureate

Chemistry Laureate Dr. Tomas Lindahl's speech at the Nobel Banquet, 10 December 2015.



The topic of my brief comments will be the crucial importance of our early mentors and teachers.

I had the privilege of attending an excellent state school in Stockholm. Bromma Gymnasium. Bromma is a green suburb of Stockholm, close to here.

In this school, I was fortunate to have excellent teachers in chemistry, biology, mathematics and literature.

As an arrogant youngster I took this for granted.

But during my upper high school years my family moved to central Stockholm, so it seemed convenient to **change school. This turned out to be a minor disaster. I did not like the teachers in the new school, and the teachers did not like me.** In fact, one of them **failed me in chemistry.** This was serious because I needed good marks to be able to enter the Karolinska Medical School in Stockholm at a later stage.

Thanks to the concern and help of my parents, **I was fortunately able to return to my previous school** and the excellent teachers there who supported me. In particular, I had inspiring help from an outstanding chemistry teacher. Her name was Karin Brandt. Mrs Brandt encouraged my interest in chemistry.

Thanks to my improved standing in chemistry, I was then able to enter Medical School. **This personal experience of mine shows how important our teachers can be, and they should have our strong and enthusiastic support.**

I had similar positive experiences at the Karolinska Medical School. I realised at an early stage that I might not become a very good doctor, but was fascinated by theoretical subjects, in particular medical chemistry.

As a result, I started as a graduate student with the legendary DNA chemist, Einar Hammarsten. He was the first scientist who showed in his early work that DNA is a very large molecule, a macromolecule, and he created an important Swedish school in the field. Personally, he was like a cat, with intense green eyes, and totally temperamental and inspirational.

With my teachers and colleagues at the Karolinska, I learnt to think freely and critically, and I also learnt the importance of basic science. Without outstanding teachers and new insights from basic science, progress in chemistry and biology would be much slower, and might even come to a standstill.

Watch him passionately speaking about this at <https://youtu.be/amHjoeqM-1M>

Info to Alumni - Campus Update

Conference Info



Dr.V.S.Gayathry

National Conference on Advanced Functional materials was organised by Dr.V.S.Gayathry and Dr. M.Siluvai Michael, Department of Chemistry, during 28 and 29th of Dec.2015.

About 30 papers were presented in these two days .



Dr.M.Siluvai Michael

After the floods..

Management Commits Rs.90 Lakhs for relief and prevention work



“We recently witnessed the worst torrential rains in nearly a century. The fury of nature quite disrupted our regular life. This crisis really brought to the forefront the humane angle and how united SSNites are - the first floor families accommodating the ground floor families in the staff quarters, sharing provisions, **the commitment and hard work of the maintenance team**, etc. This has largely helped us in making a quick turn around.

At this juncture, I would like to express the deep concern that the management felt for the safety and welfare of the SSNites. On behalf of the management, I am happy to inform you that we have allocated around Rs 90 lakh towards relief funds, repairing the damages caused by the torrential rains and various precautionary measures.”-Kala Vijayakumar

HR team collects and distributes clothes

“Thank you all for the timely help by responding to the mail for giving old cloths. This has helped many families who were stranded without anything.”

--Rebecca.T



On Dec 9th, Dr.V.Mahesh of Biomedical dept and his team sprang into action . His understanding of the need immediately after a flood..

“Preventing outbreaks of diseases like typhoid, dysentery, infectious hepatitis, and other diseases associated with flood waters should now be the major objective of relief work. Public education on community health should form the basis of intervention. Community sanitation, proper personal hygiene and immediate treatment of illness are the cornerstones of preventing disease outbreaks as flood waters recede.

Cleanup Procedures:

Bacteria, viruses and fungi must be killed in the cleanup process. The most widely accepted, safe and effective sanitizing agent is hypochlorite in the form of bleaching powder or commercial household bleach.

Time is an important consideration in cleanup. Pathogenic organisms will not become airborne as long as the surfaces they have contaminated remain wet. Thus, the only way these organisms can enter the body and cause disease is through water splashing into the mouth, mucous membranes, open cuts, etc. Once dried, organisms can be spread on dust particles by air movement. Therefore, it is important to “sow” bleaching powder into all wet and marshy areas and bring all contaminated surfaces into contact with bleaching powder as soon as possible.”

They created a Face Book page "**Chennai Silver Lining - A Sanitation Drive**" and sought help. And by the next five days, he writes....



Dr.V.Mahesh

Dear Colleagues

I thank the faculties who have contributed financially to to our Chennai Silver Lining drive,.I have given two bags @ our staff quarters, also to Thaiyur and Kalavakkam, If you want to lead this sanitation drive in your area, ping me so that I can provide the material to you.

So far we have used **15 Tons of bleaching powder** in Chennai.

Places like Saidapet, Perungalathur, Anna Nagar, Valasaravakkam, Medavakkam, Rajakilpakkam, Porur, Koturpuram, Vysarpadi, and more places benefited.

Mahesh

Even at a humble Rs.20 a kg, the cost of 15,000 kgs is Rs.3,00,000 and there could have been more expenses for transport, packing and distribution. In addition to physically getting involved, the ability to raise such huge funds in a short while is quite a task. Good job done -VeA

Alumni inform Universities and get extension of dates for their juniors



I received a Google doc link from Vaibhav Prakash (2011-2015 batch). In this link we can find various universities where current graduate students contacted either the admissions office or department for giving some **extension of deadline to UG students from Chennai**. We can also find the contacts of those graduate students in case there is some clarification required.

Thank You—Srinivasan, Final Year

<https://docs.google.com/spreadsheets/d/1WHqyHRmOASCUjUIwYtU1z6P8dca28W6BBGuecvbzxM/htmlview?pli=1#>

1.External recognition

Flute Performance in Music Festival

N.Visveshwar of Third year rendered flute performance during December music festival at

a. 15-12-15 , Chennai Cultural Academy, Nungambakkam – 2.45 pm to 4.15 pm

b. 16-12-15 , Bharatiya Vidya Bhavan , Mylapore – 6 pm to 8 pm

One of his programs was aired on the Chennai Medium Wave channel of AIR.



CII Awards Rs.50,000 for our project

Dr. N. Lakshmi Narasimhan along with E. Karthikeyan (2013- passed out student) and P. Karthik (II Year M.E. Energy Student) were invited to participate in the Tech Expo, Honeywell Eureka Challenge 2015.

A cash Prize of Rs. 50,000/- was awarded recognizing the project as the First Runner-Up. (12-12-2015) [detailed write up in Alumni info section]

Invitations to review

Professor N. Nallusamy was invited to review a technical paper titled "Exergy and exergoeconomic assessments of an electricity production system in a running wastewater treatment plant" for the international journal of Renewable Energy, published by Elsevier Ltd.



Professor V.E.Annamalai was invited to review a research paper titled " Room temperature and high temperature properties of Al-enriched alloyed coating reinforced by nitrides fabricated by laser surface alloying of Ti-6Al-4V", by the Journal Surface Engineering and Letters (World Scientific Publishers, Singapore).

Professor V.E.Annamalai was invited to review a research proposal on "Evaluation of Thermo-mechanical and Thermo-chemical Characteristics of MgO-C Refractory Castables with no Cement Addition" by the Science and Engg Research Board, DST.

Invited as Keynote Speaker for a Conference in Malaysia

"On behalf of the conference committees and all the program committees, we are pleased to invite you to join us due to your outstanding research background and good reputation. Herewith, the **Conference Organizing Committees would like to invite Dr. Vijay Sekar K. S., from SSN College of Engineering in India, to be our distinguished conference chair, technical committee member and give a plenary speech** at the conference site in Sarawak, Malaysia during July 16-18, 2016."



Read more about KSV at the conference link <http://www.icmst.org/keynote.html>



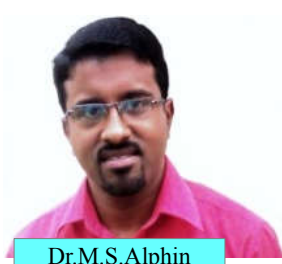
Selected for Second Stage of Project Competition

National Institute of Ocean Technology (NIOT) has selected the Third year Mechanical Engg student's project for the Second Stage -oral presentation. The student's competition is mainly focused to design an Autonomous underwater vehicle. The team members are **Mohammed Shajeeth**, **Mathan Kumar M** from **Mechanical Engg Department** and **Sathyanarayana S**, **Yash Oja** from **EEE Department**.

2. Research activities

Selvaarasan S (RA/Mech.), Presented his research titled "Analysis of Musculoskeletal disorders associated with welders" at International Conference on HWWE, held at IIT Bombay. Co-author: **Dr M S Alphin**..(9-12-2015)

Dr. M.S Alphin, presented a research paper titled Experimental study and dynamic characteristics of knee in vitro in 12th International Conference on Vibration Problems held at IIT Guwahati. (15-12-2015)



Dr.M.S.Alphin



Dr.M.Selvaraj



Dr.G.selvakumar



Dr.K.jayakumar



Dr.AKL

Selvakumar G and **Selvaraj M**, published a paper titled 'An Efficient Algorithm for Numerical Function Optimization: Particle Swarm Optimization' in the Journal of Manufacturing Engineering, Vol. 10, Issue 4, Dec 2015, Pp. 223-228. ISSN: 0973-6867.

Dr. K. Jayakumar presented a paper with the title of "Modeling and experimental investigation of cutting forces during micro end milling on titanium alloy" in the International conference on Precision, Meso, Micro and Nano Engg (COPEN9) conducted by IIT Bombay (12-12-2015). Co authors are from NIT, Calicut.

Dr.A.K. Lakshminarayanan, R. Saranarayanan, V. Karthik Srinivas, B. Venkatraman, had their paper on "Characteristics of friction welded AZ31B magnesium–commercial pure titanium dissimilar joints," published in the Journal of Magnesium and Alloys, Elsevier Publication, 3 (2015) pp. 315-321

Professor N. Nallusamy, published technical paper titled "Performance, combustion and emission characteristics of a compression ignition engine operating on pine oil" in the international journal "Bio fuels", 2015, Vol. 6, Nos.5-6, pp. 273-281. Co-authors are P. Tamilselvan and K. Vignesh, 2015 batch M.E. Energy Engg.

Mr. M. P. Sivaram, Research Associate working under **Prof. Nallusamy**, presented a technical paper titled "Experimental and numerical investigation of solar parabolic trough collector employed for thermal energy storage system " in the 1st International ISHMT-ASTFE Heat and Mass Transfer Conference - IHMTC2015, held during 17-20 December, 2015, Thiruvananthapuram, India. Co-authors are Dr. N. Nallusamy and **Dr. M. Suresh**.

Dr. S. Suresh Kumar has presented an international conference paper titled "Mixed mode fracture analysis of multiple cracks in flat and curved stiffened panels in aircraft fuselage structures" at GITAM University Hyderabad. The conference CAE 2015 was organized by Mechanical Engineering department on 10-12 Dec 2015. The co-authors of the paper are **Ashwin Clement H** and **Karthik R** of 2014 passed out Mechanical Engg students.

3. Programs attended

Dr.K.S.Vijay Sekar attended a one day workshop on "National and International Ranking Systems" at Hotel Courtyard Marriott, Chennai organised by Aasaan Edu Care.(19-12-2015) Dr.K.S.Vijay Sekar is the Coordinator for enabling SSN Institution's application to the National Ranking Framework, instituted by MHRD, GOI.



Dr.R.Prakash

Dr.R.Prakash attended Annual General Meeting of SAEINDIA SOUTHERN SECTION held on 28.11.2015 at Henry Maudslay seminar hall, Anna University, Chennai.

Dr.R.Prakash and **Mr.B.Jayakishan** attended a AU CFD sponsored FDP on THERMAL ENGINEERING from 15.12.15 to 22.12.15 at Mechanical Engineering, CEG, Anna University, Chennai.



Mr.B.Jayakishan

4. Programs conducted



Dr.B.Anand Ronald



Dr.S.Vijayan

Dr. B. Anand Ronald, Dr. S. Vijayan and Mrs. R. Rajeswari, organised the National Conference on "*Recent Advances in Materials and Manufacturing*" - RAMM 2015 on 19 Dec. 2015



Ms.R.Rajeswari

5. Project proposed

Dr. M.Selvaraj submitted a project proposal on "Software for predicting the defect free weld parameters for friction stir welding of different thickness aluminium alloy" to the Sc and engg Research Board [SERB], DST. Value of project is Rs.18.16 lakhs.

6. Student Activities

Aravinth P Volunteered in Flood affected areas – Lakshmi Nagar, Lakshmiapuram with basic necessities needed for the people.(24-11-2015 to 15-12-2015)

Arjun Anil Kumar underwent an Internship at WWF, India (30-11-15 to 18-12-2015)

Venkataraman R went for InPlant training at ASHOKLEYLAND, Ennore plant. (8-12-2015 to 12-12-2015)

Vishakraj S, Siddarth N S, Vishal Onkhar went for Inplant training at Brakes India Pvt. Ltd, Padi and were trained in the departments of Actuation, Wheel Cylinder, Press Shop, Drum Brake Assembly and Tool Room. (7-12-2015 to 11-12-2015)

Gowtham P. Aravind B, ArunMozhiVa, Bhaskar P went for Inplant Training at "Arrow Coach Builders", Pudhupet, Madhuranthagam - www.arrowcoach.in (16 and 17 -12-2015)

Anandh R and A.Arjun III year, participated in the SAE organized open house session on "SAE Aerospace activity" on 19.12.15 at Hindustan International School, Guindy, Chennai.(19-12-2015)

Arun K V J , Parthiban , Arun Kumar N – IV yr and Narmadha –III yr Volunteered for the National Conference on "Recent Advances in Materials and Manufacturing(RAMM)" held at SSN College of Engineering (19-12-2015)

Conference attended -Faculty write up

Dr. M.S Alphin, Associate Professor, Presented a research paper titled Experimental study and dynamic characteristics of knee in vitro in 12th International Conference on Vibration Problems held at IIT Guwahati. Co-Author: Mr. Sriram Kausik (M.E Manuf 2015).



The 12th International Conference on Vibration Problems will be a part of a sequence on Vibration Problems and Vibration Sciences held since 1990. The first four of the activities were held in India and afterwards the events were held in Russia, Czech Republic, Turkey and lastly in Portugal in 2013.

In the year 2015, the conference is held in India and it is organised by Indian Institute of Technology Guwahati from 14 - 17 December 2015. Participants from 17 Countries made the Conference more interactive.

FDP Attended -Faculty write up

Dr. R. Prakash and Mr. B Jayakishan

One week faculty development program on "Thermal Engineering" was conducted by the Department of Mechanical Engineering, College of Engineering, Guindy, Anna University during 15th Dec, 2015 to 22nd Dec, 2015.

Many experienced faculty delivered lectures and solved problems on the topic. The program convener **Dr.M.R.Swaminathan** welcomed everyone and **Prof. E. Natarajan** from Institute for Energy Studies division, CEG inaugurated the workshop and delivered a lecture on Air Standard Cycles.

Dr. D. Mohanlal, Professor in Refrigeration and Air Conditioning division, CEG elaborated the role of Psychrometric processes on the environment heating and cooling applications.

Dr.M.R.Swaminathan explained the fundamentals of SI and CI Engines emphasizing on the emission norms to be followed for these types of engines. **Dr. M. Venkataramanan**, IES gave a detailed lecture on steam turbines and solved practical industry related problems on steam turbines using velocity triangles.

Dr. G. Nagarajan, Prof and Head, IC.Engines division explained the carburetion and fuel injection systems of an IC Engine and how modern engines used GDI, CRDI concepts of fuel injection into the inlet manifold. **Dr. P. Balachander**, co-convener delivered a philosophical talk about good learning habits for faculties handling tough engineering students.

Dr. R. Saravanan, Prof and Head, Refrigeration and Air conditioning, and **Dr. G. Nagarajan**, concluded the sessions by giving important advice on how to effectively teach based on student expectations.

The last session was presentation of feedback and action plans. The volunteers were asked to give their feedback about the workshop. The workshop came to end with certificate distribution.

Visit to Research Institute- Faculty write up



Dr.S.Sureshkumar

Dr.S.SureshKumar had presented A proposal to Naval Research Board On simulating the impact of missile on moving target.

The Review Committee had suggested to look for simulating the impact of underwater explosion. Based on this suggestion, he visited the TBRL



A Naval Mine



The impact of an underwater explosion

Dr. S. Suresh Kumar has visited [Terminal Ballistic Research Laboratory \(TBRL\) Chandigarh](#) to ensure the possibility of conducting Under water Explosion tests.(UNDEX)

Generally UNDEX experiments are conducted to determine the ship hull strength against shock waves caused by naval mines. Threats from naval mines are danger to the ship as they are considered as non-contact ballistic impact.

He interacted [Dr. Dinesh Kumar Paul \(Scientist-F, Joint Director of MEMWD\)](#) and Dr. Arun Agarwal (Scientist-G) regarding underwater explosion test facility.

The discussions had gone well and the team has shown their interest to appreciate student's project, and internship.

Facilities for conducting ballistic experiments both at air and water environments are well established at TBRL and the permission for accessing the experimentation facility is awaited.

Based on the interactions, a revised project proposal is being prepared for Naval Research Board.

Conference Conducted -Faculty write up

Dr. B. Anand Ronald, Dr. S. Vijayan & Mrs. R. Rajeswari

The National Conference on Recent Advances in Materials and Manufacturing (**RAMM 2015**) was scheduled to be held on 5 Dec. 2015. Due to incessant rains and consequent deluge, the date was rescheduled to 19 Dec. 2015.

With the able support and guidance of the management, Principal and HOD, we were able to plan within a short period of time, formulate and materialise it into a good conference. Currently our country is trying to attract the Industrial world to come and "MAKE IN INDIA". From our side, whatever delta contribution we make, will help the country grow in the right direction. Hence, we felt it is necessary to provide an appropriate forum for bringing together leading academicians, students and researchers to exchange and share their experiences, research results, practical challenges encountered and the solutions adopted in the field of Materials and Manufacturing.



Dr.N.Arunachalam



Dr. Rajiv Sharma, Assoc. Prof., IIT Madras,
who won the Best Paper award for his paper on ThermoForming

Chief Guest
Dr.N.Arunachalam of IITM
Releasing the Proceedings

In the Best Paper Award category,

The Second Prize went to
Mr.S. Sathish,
Research Scholar, NIT Trichy

And the Third Prize went to
Mr.J. Pradeep Kumar,
PG Student, Karunya University

We had very good response from a wide diaspora of institutions, ranging from Institutions of National importance like Indian Institute of Technology (IITs), National Institute of Technology (NITs), MIT, leading universities like VIT, SRM, Karunya University and many Anna University affiliated institutions in Tamilnadu.

We have also got [papers from neighbouring states like Andhra Pradesh, one from IIT – Indore](#) etc., giving the conference a truly national outlook. We received sponsorship from SVP Laser Technologies, Supreme Scientific Corporation & Apex Medical and Surgical Equipments.

Chief Guest, **Dr. N. Arunachalam**, Manufacturing Engg. Section, Dept. of Mech. Engg., **IIT Madras** delivered a talk about “**Prognostics for Sustainable Manufacturing**” in the inaugural function.

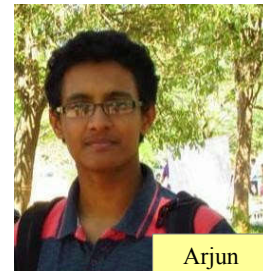
We had received 33 papers, which was split into 3 sessions, with one session being parallel.

Best paper awards were given to paper received from 1) IIT Madras 2) NIT Trichy and 3) Karunya University, along with a cash prize of Rs. 1000.

Student write up

SAE event

Anandh R and myself(A.Arjun) of Mechanical-A third year attended the Society of Automotive engineers [SAE] event held on 19th December at the Hindustan International school, Guindy. We discussed the various aerospace activities conducted in SSN inclusive of the SSN Aero club and proposed a few suggestions as to how this could be developed in the future.



Debut in Aerospace Conference

I'm happy to inform you that myself and three other researchers from our department (Naveen Yesudian, Arul T.S and Prof.S.Somasundaram) presented our research paper on “*Numerical Investigation on effect of turbulence modelling in a Supersonic flow across an intake geometry using OpenFOAM*” at International Conference on Aerospace and Mechanical Engineering 2015 (ICAME'15), a notable and most awaited conference for research fellows in the field of Aerospace.

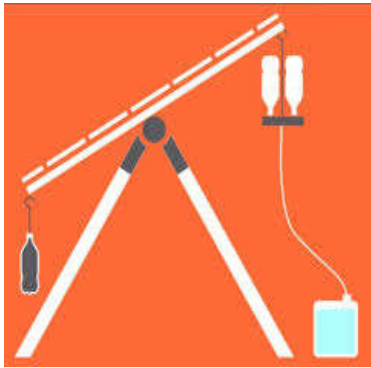
The most notable thing of all was that, [ours was the only paper selected for the conference with respect to Aerospace from Undergraduate level, where nearly 85% of the research papers were contributed by ISRO's VSSC and LPSC scientists](#) and we were appreciated for the level of research we had done at an undergraduate level. Also, we were encouraged to involve ourselves in intricate research at their labs in future. Additionally, I was asked by a few scientists from ISRO's LPSC to extend my research to its application at their centre. I sincerely wish to thank Prof. Somasundaram's high dedication and motivation in the research, despite of all technical difficulties faced by us in the earlier stage of our research. And I also wish to thank you and the department as a whole for providing a rich platform to perform our research. I wish that this research would form a platform for open source CFD tool OpenFOAM at our department (especially for high-speed fluid dynamics). -----N.Sankar Raju, Final Year

The Sun Saluter

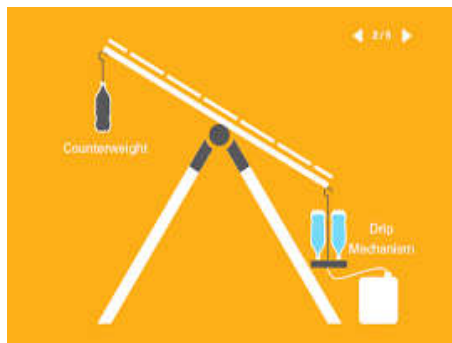
The SunSaluter is an ultra low-cost, passive, single-axis solar panel rotator (called a tracker). The SunSaluter boosts energy output by 30% by keeping a solar panel oriented towards the sun throughout the day. With improved efficiency, fewer solar panels are needed, and the overall cost per watt of solar energy is reduced. Conventional solar trackers use complex electronics which make them more than 30 times as expensive and prone to failure. That's why solar trackers have never made sense for the developing world - until now.

The SunSaluter features an adjustable design which allows it to integrate with any solar panel - no special tools needed. The solar panels are mounted on the rotating frame, a weight is suspended from one end, and a special waterclock is suspended from the other. As the water empties and the container gets lighter, the panel slowly rotates. The user can set the rate at which the waterclock empties, which controls the SunSaluter's rate of rotation.

By lowering the cost of solar energy, the SunSaluter help impoverished families eliminate the use of kerosene gas, work and study longer hours, and charge cell phones. Furthermore, the SunSaluter enables solar panels to produce energy more consistently through the day, beginning earlier in the morning and lasting later at night. This is critical for rural families who often wake at sunrise, and helps reduce the need for batteries to store energy that is normally produced mostly around high noon. Read about the wonderfully simple innovation at <http://www.sunsaluter.com/impact.html>



The SunSaluter also contains a water purifier so that each day it produces four liters of clean drinking water. By combining energy and water collection into one simple device, the SunSaluter improves consistent usage of the purifier, which is the Achilles heel of clean water programs. The SunSaluter boosts solar panel efficiency by 30%, so fewer solar panels are needed and overall system costs are reduced by 10-20%.



Amazing Innovations -2

The Sprout Pencil

The startup makes **plantable pencils** that grow into vegetables, herbs or flowering plants once you're done using them. Stausholm said the pencils, made from cedar in Pine City, Minnesota, are the perfect sustainable product because one "dying product is literally giving life to a new product."

Where a typical eraser would be, these wooden pencils have a capsule made from biodegradable material that contains a small mixture of seeds and peat.



What happens to a wooden pencil after you wear it down to a stub? It gets tossed into the trash.

"There are 15 billion pencils made annually, and three million of those just in the United States. That's a lot of pencil stubs thrown away," said Michael Stausholm, CEO of Sprout World.

Denmark-based Sprout World wants to shrink this waste.

Sprout is a handmade sustainably harvested Ticonderoga pencil with a water-activated seed at its tip.

When it's too short to use, plant it, water it and watch it grow into either a herb or flower. Varieties include: organic basil, organic thyme, rosemary, mint, dill, marigold, forget-me-not and lavender.

You plant the capsule in a pot of soil and use the stub end of the pencil as a marker. The capsule dissolves and the seeds grow into a plant. The pencils come in 14 varieties (\$19.95 for a pack of eight), including tomato, lavender, basil, sunflower and green pepper. Watch the fun of pencils becoming plants at <https://youtu.be/zFgFAW9qj9c>

Amazing Innovations -3

Ocean Cleaning Bin

Dreamt up by two Australian surfers who had grown tired of taking to the local waters amid floating plastic and rubbish, the Seabin is basically a water filtering system designed for contained environments like yacht clubs, marinas and ports. Without needing to contend with stronger currents and ocean storms, here it can chip away at pollution in visible areas where there is plenty of human activity.



The mounting plastic waste in the world's oceans has been the subject of some pretty bold environmental undertakings, perhaps none more so than the [Ocean Cleanup Project](#) aiming to eradicate the Great Pacific Garbage Patch. The Seabin Project represents a smaller-scale approach, but it is noble in its aspirations all the same. Installation in ports and marinas sees this ocean-friendly trash can suck up the surrounding debris and even remove oil from the water.

It is installed on a dock and plumbed into a shore-based water pump. With the rim sitting even with the surface of the water, the pump sucks water into the bin and brings the surrounding trash, oil and detergent along for the ride.

A removable catch bag made from natural fiber then gathers the debris and the water is pumped through to an (optional) oil-water separator, before being fed back into the ocean once cleaned.



Watch the bin in action at <https://youtu.be/s3tjOEtoArg>

More info at <http://nautil.us/blog/this-floating-contraption-could-scoop-out-absurd-amounts-of-ocean-plastic?ref=nl111115>

Amazing Innovations -4

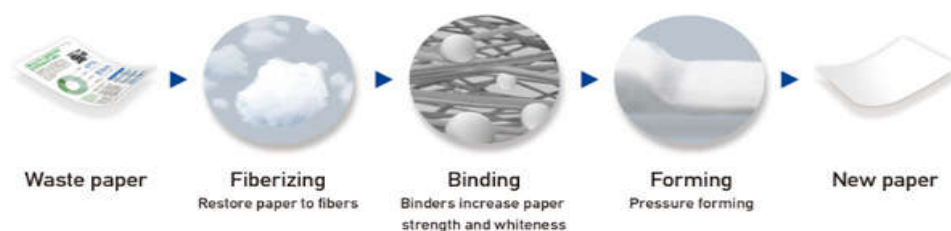
Turn waste paper into new paper



PaperLab-Epson's paper making system

Epson Develops the World's First Office Papermaking System that Turns Waste Paper into New Paper - PaperLab promises to revolutionize office recycling by securely destroying documents and turning them into office paper using a dry process .

Seiko Epson Corporation (TSE: 6724, "Epson") has developed what it believes to be the world's first compact office papermaking system capable of producing new paper from securely shredded waste paper without the use of water.



The Patented Process

Epson has an immense storehouse of ink and media expertise, as well as the ability to produce reliable, durable systems that will operate stably. In addition to these, Epson has developed Dry Fiber Technology without water, a new group of technologies for the PaperLab.

Watch the product concept movie at <https://youtu.be/2qLjml03ne8>

More info at http://global.epson.com/newsroom/2015/news_20151201.html

Info from Alumni -1

Attention- MS aspirants

I am part of the 2011-2015 batch of Mechanical Engineering, currently doing my Masters at Purdue.

Due to the recent unfortunate events at Chennai, we understand that there might be a delay in students completing their applications for MS in foreign universities. We approached the graduate committee regarding this issue and they were responsive to the situation. They have asked to mail the admission staff regarding the reason for the lateness in the application and the committee would most likely accept the application. I am also attaching the correspondence we had with the associate dean of the Graduate committee.



This is only with respect to Purdue. I am also trying to get information from other universities in the United States and will notify you of any developments. Please let the students know regarding this and that we are willing to assist them in any way possible.

Regards,
Adithya Vivekanandan, Graduate Student, Industrial Engineering
Purdue University, West Lafayette, Indiana

Info from Alumni -2

Karthikeyan Elangovan (now in Visteon) writes...

I am glad to inform you that our paper titled "DESIGN AND FABRICATION OF A COLD STORAGE UNIT FOR AN AIR CONDITIONED SPACE" won the second prize in the Honeywell Eureka Challenge 2015 which was conducted as a part of the Tech Expo event jointly organised by the Confederation of industries [CII], at Madurai on 11th and 12th Dec. 2015.



The event was a good platform for the students to interact with industries and it was a great gesture by the industries to come forward and try to increase the technical expertise of our country, to be at par with that of the developed countries.

The response from the delegates for our paper was highly positive and it was indeed a very unique experience to have our work recognized by people from the industry.

First of all thanks to you for giving us this great opportunity to represent our college in such a big forum and for constantly encouraging our students to take up innovative and industry related projects.

This success in entirety should be dedicated to Dr.N.Lakshminarasimhan, for guiding us in this project and thanks to him for being a guide and mentor in so many other ways including academics and beyond.

This paper was awarded Rs.50,000 as Second Prize. I take this opportunity to thank my team - E.Anand Babu, K.M.Janakiraman and S.Padmanabhan who dedicated themselves for this project and for always standing together through thick and thin.

Finally, thanks to Mr.P.Karthik, 2nd year ME - Energy engineering, for displaying tremendous character and good presence of mind on the stage during the paper presentation and wish him success in all his future works.

-----Karthikeyan Elangovan

Info from Alumni -3

Pranav Prakash of First Batch writes...



I write to you from my Christmas break here at the Young India Fellowship, with the modest hope that the past few months have been as eventful there at SSN as they have been here, in Delhi.

I'm halfway through the Fellowship and, having met and learnt from some of the brightest individuals I've had the pleasure of knowing, it's been a truly enriching experience thus far, with the cusp of the new year carrying the promise of even better experiences to come.

For those considering applying to Fellowships in India, in general, or the YIF, in particular, if you have questions, just shoot me a message anytime. I'm embarrassingly inactive on social media but I do still check my emails. I'll try to help out any way I can.

With wishes for a truly happy new year..

Best ,

Pranav

<http://www.hondajet.com/hondajet/innovations>

Honda is officially shipping jets for the first time. The ceremonial first delivery of the HondaJet executive light jet was recently made at the world headquarters of Honda Aircraft Company in Greensboro, North Carolina.



The jet itself measures 42.62 ft (12.99 m) long with a wingspan of 39.76 ft (12.12 m) and a height of 14.90 ft (4.54 m). Inside, it can be configured to seat up to five or six passengers with 17.80 x 5 ft (5.43 x 1.52 m) of interior space and 4.83 ft (1.47 m) of head room, making it taller and roomier than many competitors in the same class.

HondaJet is being manufactured in North Carolina, and Honda plans to target the lower end of the light jet market at first, offering the craft for sale to North America, South America and Europe through a dealer network, with pilot training already underway at its headquarters.

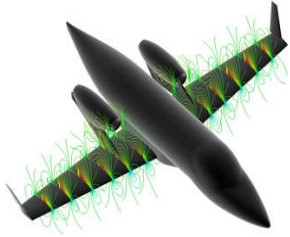
The milestone came on December 23, two weeks after HondaJet received type certification from the US Federal Aviation Administration for a craft that **Honda claims is the fastest (at 420 knots or 483 mph) and most efficient in its class.**

The company credits the HondaJet's performance and efficiency to its configuration, with **engines mounted over "natural-laminar flow" wings and fuselage made from lightweight composite materials rather than aluminum.** It says a "combination of co-cured integral structure and honeycomb sandwich structures, results in increased cabin space, better performance, and greater fuel efficiency."

Credit: [Honda Aircraft](http://www.hondaaircraft.com)

The Innovations...

The culmination of cutting-edge innovation makes the HondaJet the world's most advanced light business jet. It climbs and cruises faster, soars higher, offers more room and less noise, and uses less fuel.

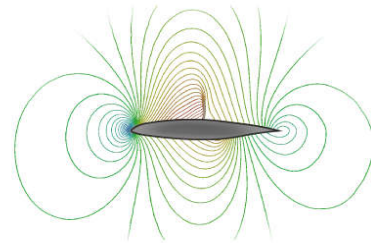


Move the engine. Shift expectations.

A breakthrough in aeronautics, the **Over-The-Wing Engine Mount** was engineered and proven by Honda after more than 20 years of extensive research and development. This innovative technology not only breaks the conventional mold set by the aerospace industry, but also provides category-leading advancements such as a more spacious cabin, noise reduction, and increased fuel efficiency.

Natural Laminar Flow (NLF) maximizes performance.

Advancements in aerodynamics and NLF technology were applied to the design of the main wing airfoil and fuselage nose shape of the HondaJet to reduce aerodynamic drag. This cutting-edge engineering innovation contributes to high cruising speed and increased fuel efficiency.



Lightweight structure, heavyweight performance.

Unlike many jets that use aluminum, the HondaJet employs a lighter yet strong composite fuselage. The fuselage is created from a cutting-edge combination of co-cured integral structure and honeycomb sandwich structures. This results in increased cabin space, better performance, and greater fuel efficiency.



The Sanmar Group has come a long way since its first international foray back in the 1970s. Since then, the Group has set the benchmark for global partnerships in a range of industry segments. These are partnerships based on trust, transparency and respect for intellectual property rights.

Characterised by strong and conservative financial practices, the Group has a track record of steady growth and consistent excellence in all of its businesses.

The Group has 100% or majority or significant holdings in all its businesses. These businesses are professionally managed and grouped in industry segments as follows:

- [Chemicals](#) (including [Speciality Chemicals](#))
- [Engineering Technologies](#) ([Products](#) and [Steel Castings](#))
- [Shipping](#)

The Sanmar Vision

“Combining integrity with excellence to ensure prosperity to all stakeholders on a continuous basis”

Products of the Engineering Division



Products Division

● [Flowserve Sanmar](#)

A joint venture with [Flowserve Corporation](#), USA, Flowserve Sanmar is the market leader in engineered mechanical sealing devices. Mergers and acquisitions have brought major seal players together under the Flowserve umbrella, with a product range that today includes BW®, Durametallic®, Pacific Wietz™ and Pac-Seal®. The company is a major force in the petroleum, petrochemical, power, chemical, food and pharmaceutical markets. Located at Karappakkam, Chennai.

● [BS&B Safety Systems](#)

Established in 1981 as a joint venture with [BS&B Safety Systems Inc](#), USA, this company was the first in the country to manufacture rupture disks and rupture disk assemblies along with burst alert sensors.

BS&B Safety Systems (India) has been manufacturing, marketing and servicing the Indian industry now for over 30 years. For over 80 years, BS&B Safety Systems has been a world leader in pressure relief technology. Located at Karappakkam, Chennai.

● [Sanmar Engineering Services](#)

Sanmar Engineering Services is directed at enhancing the brand equity of Sanmar Engineering Technologies Limited companies by providing proactive customer support and service for all their products. A trail blazer in equipment repair and services, Sanmar Engineering Services delivers the technology of tomorrow with the personalised service of yesterday all aimed at:

- Improving plant reliability
- Performance enhancement
- On-site maintenance, trouble shooting, repair & testing
- Upgradation of products
- Training to plant personnel

Location : Bhatinda, Egypt, Jamnagar, Hazira, Vadinar.

● Xomox Sanmar

○ [Xomox Valves Division](#)

Its enduring relationship with [Xomox Corporation](#), USA (a subsidiary of Crane Co.) — a global manufacturer of a full line of process valves and actuators — has enabled Xomox Sanmar to meet the exacting requirements of the Indian chemical process industry. It is now an important base in the Asia Pacific region for sourcing fluorocarbon sleeved and lined plug valves for Xomox Corporation. It has a capacity of over 60,000 valves a year. Located at Viralimalai, Tiruchirapalli.

○ [Pacific Valves Division](#)

A joint venture with [Pacific Valves](#), a subsidiary of [Crane Co.](#), Pacific Valves division of Xomox Sanmar Limited offers the full range of highly reliable Gate, Globe and Check Pressure Seal Valves. Typical applications of these field proven valves include power stations and process industries involving the flow control of steam, water, gas, oil and other non-aggressive media. Located at Viralimalai, Tiruchirapalli.

● [Tyco Sanmar](#)

A joint venture with [Tyco International](#), USA — the world leader in fluid control products — Tyco Sanmar offers a whole series of pressure relief valves, accessories and solutions.

In addition to the complete range of Crosby pressure relief valves, Tyco Sanmar repertoire also includes the Anderson Greenwood range of pilot operated pressure relief valves. It has a capacity of over 15,000 valves a year. Located at Viralimalai, Tiruchirapalli.

Steel Castings Division

● [Sanmar Foundries](#)

Sanmar Foundries based at Viralimalai, Trichy, a state-of-the-art fully automated steel foundry has a capacity of 30,000 tons per annum, servicing its domestic and global customers from its Investment Foundry, Sand Foundry and Machine Shop. The foundry supplies a large variety of steel castings for Valves, Earth Moving, Railroad, Construction & Mining and Automotive segments.

● [Matrix Metals](#)

Matrix Metals, a constituent of Sanmar Engineering Technologies Limited, provides foundry solutions in steel castings, machining and many other value added services. Through the combined global efforts of our foundries, Matrix Metals has the capacity to annually produce 60,000 tons of high quality steel castings, making Matrix Metals a premier global provider of such products.

Chemicals division

- **Chemplast Sanmar Limited** -Over forty years old and the flagship company of The Sanmar Group — is a major manufacturer of PVC resins and Chlorochemicals.
- **Sanmar Speciality Chemicals Limited (SSCL)** ,located in Berigai, Tamil Nadu, 60 km from Bangalore, is involved in the manufacture of Advanced Organic Intermediates for the Pharmaceutical, Agrochemical, Flavours and Fragrances, and other fine chemical applications.
- **Cabot Sanmar is a joint venture between [Cabot Corporation](#) of the USA and The Sanmar Group, India.** Cabot Sanmar Limited manufactures and markets Fumed Silica (Colloidal Silicon Dioxide/ Fumed Silicon Dioxide) under the brand name of CAB-O-SIL®. While the basic research in Fumed Silica was undertaken in 1988, the company put up a pilot plant in 1990. **Cabot Sanmar is the only manufacturer of Fumed Silica in India.**
- **TCI Sanmar Chemicals S.A.E.**-The Sanmar Group acquired Trust Chemical Industries in 2007 (now TCI Sanmar Chemicals S.A.E.) located at Port Said, Egypt with the intent of setting up the world's first large green PVC producing plant utilising the latest state-of-the-art technology. TCI Sanmar is presently engaged in manufacture of Caustic Soda with a capacity of 2,00,000 TPA.

Corporate social Responsibility (CSR)

Chemplast Sanmar **provides 35 lakh litres of drinking water every day to villages around Mettur**. The water has improved the lives of 12,000 families. In addition to the pipeline, Chemplast has built water tanks in partnership with the Government of Tamil Nadu in the 'Namakku Naame' scheme. The Group has adopted the governing principle of not drawing any ground water in order to maintain the water table for the general community. Instead, the company uses desalinated seawater in its coastal plants, although the aquifer runs very close to the surface. This is part of the company's environmentally conscious water-management strategy.

To benefit the citizens of Mettur and nearby localities, Chemplast **Sanmar has built a new railway station** with attendant facilities at Mettur Dam. Chemplast Sanmar has contributed Rs.6 crore for the construction of the new railway station at Mettur Dam with all modern facilities and conveniences for the public. This has immensely benefitted the local population.

Chemplast Sanmar **runs three schools at Mettur** - Vaidheeswara Higher Secondary School, Vaidheeswara Primary School and Vaidheeswara Vidya Mandhir Matriculation Higher Secondary School. These schools are enabled with qualified teachers, well-equipped labs and libraries.

Healthcare Centres -Chemplast **Sanmar maintains three Rural Healthcare centres** at Chitrapet, Nochikadu and Semmankuppam villages, located around Cuddalore. On an average 2,000 people get free and better health care every month from these health centres. Sanitation- **90 toilets were constructed** at Chitrapet village.

Community Development in Chennai

Mrs. Madhuram Narayanan Charitable Foundation

Mrs. Madhuram Narayanan Charitable Foundation funds the 'Save-a-child' scheme and provides a lifeline to children with heart disease through Apollo Hospitals Charitable Trust. The foundation works with the philanthropic wings of industry associations such as the Confederation of Indian Industry and NGOs such as The Banyan and REACH for tuberculosis research.

Sri Sankara Schools

The Sankara Schools ([Sri Sankara Senior Secondary School, Adyar](#) and [Sri Sankara Vidyashramam Mat. Hr. Sec. School, Thiruvanmiyur](#)) in Chennai have made a name for themselves as well-known institutions. These schools offer curriculum, which are of the highest standards, and are professionally run by a Board of Trustees.

Madhuram Narayanan Centre

The [Madhuram Narayanan Centre for Exceptional Children](#) founded by The Sanmar Group in 1989 provides early intervention and specialised training for children with various types of developmental delays and associated conditions. Training at the Centre is based on the 'UPANAYAN' – Early Intervention programme developed indigenously by a team of experts. The Centre in its 20+ years service has on its journey, guided, counseled and trained parents in the care of over 3,500 children.

Sports front

The IIT-Chemplast cricket ground is a jewel in the crown of Chennai cricket. The pavilion was declared open by the legendary Neil Harvey in 1998. The ground is a world-class facility with a fine outfield and sporting wickets, besides an elegant pavilion that combines old-world charm and modern comforts.



In 2012, Sanmar's flagship cricket team Jolly Rovers won the prestigious 'Palayampatti Shield' for the TNCA senior division league for the eighth time since 2000. Significantly, Jolly Rovers has won the shield 17 times. Former Indian wicket keeper Bharat Reddy has been in-charge of talent spotting and nurturing Chemplast supported teams for more than 30 years.

The Indian cricket team has a close connection with the IIT-Sanmar cricket venue. Over the years, many cricket icons have trained at the IIT-Sanmar ground. Yuvraj Singh and Zaheer Khan had their first camp here before their maiden tour to Kenya. Harbhajan Singh attended trials to join Chemplast in 1997. Even the likes of Richard Hadlee have commented on the pitches and pavilion at the ground and their being of a far superior quality. The IIT Sanmar cricket ground had the unique opportunity to host the Indian team during their 2011 World Cup for practices.

Players

The Sanmar Group has the distinction of contributing some outstanding talent to the Indian team. VB Chandrasekar, S Venkataraghavan, L Sivaramakrishnan, Robin Singh, Anil Kumble, Harbhajan Singh, Dinesh Karthik, S Ramesh, L Balaji, Piyush Chawla, Munaf Patel, S Badrinath, R Ashwin, Murali Vijay, Sujith Somasundar, Hemang Badani, Tinu Yohanan and Dinesh Mongia are some of Sanmar's contributions to Team India.

Environmental Commitment

Chemplast Sanmar pioneered the concept of **Zero Liquid Discharge**

The company has installed Zero Liquid Discharge (ZLD) facilities at its Mettur plant at an investment of Rs.27 crore. In Cuddalore and Karaikal, the ZLD has been the norm right since the inception of the units. These plants completely recycle and reuse liquid effluents. The ZLD facility involves significant recurring revenue outgo, which Chemplast embraced as its duty and contribution to the protection of the environment. **The facility ensures that no treated effluent from the plant operations will be discharged on to the land or into the sea.**

In September 2009, [Chemplast](#) became the first chemical manufacturer to achieve 100% ZLD in all its plants.

The Sanmar Group plays a responsible role in water conservation, with none of its coastal plants drawing any water from the ground. These plants resort entirely to converting seawater by means of contemporary desalination technology. In Cuddalore, an aquifer runs just three metres below the surface and the entire water requirements are met by a sea water desalination plant set up at an investment of Rs. 20 crore.

Careers at Sanmar

Their Career page reads as

“Do you aspire to be a part of a fast-expanding, diverse global organisation with unlimited opportunities to grow? Then search for the right position for you at The Sanmar Group.

Whatever your career path, we offer a conducive, merit-based, performance-based environment with potential for career growth.

You will enjoy a world of opportunities at Sanmar, with its wide industry reach and international footprint.

Launch your career now...it is better late than never.

If you are interested in exploring a career with us, please send us your resume at careers@sanmargroup.com”

More info at <http://www.sanmargroup.com/careers.php>

For Group Brochures , visit <http://www.sanmargroup.com/group-brochures.php>

Research Facility Info

The **Department of Mechanical Engineering, KPR Institute of Engineering and Technology, Coimbatore**, has established a new **Centre for Machining and Material Testing (CMMT) Lab**. The lab comprises of basic fabrication and testing of composite materials, as well as equipment for machining of various components. Faculties, students and researchers can make use of the facility for their project and research activities, on charge basis. (equipment available and charges info- available in SSN Mech dept library)

Forthcoming Events

- **Department of Mechanical Engineering, KPR Institute of Engineering and Technology, Coimbatore, Tamilnadu, India**, in association with **Mokpo National University, South Korea** is organizing an International Conference on “**Technological Advancements in Materials and Manufacturing for Industrial Environment**” on **4th and 5th March, 2016** at *KPR Institute of Engineering and Technology, Coimbatore, Tamilnadu, India*.
Submission of abstracts : 10 – 01 – 2016
The conference announcement, paper submission details, registration details and **online transfer details** are available at conference website www.tammie.in
- SNS College of Technology, Coimbatore, Tamilnadu, INDIA, is organizing an “**INTERNATIONAL CONFERENCE ON MECHANICAL AND BUILDING SCIENCES-(ICMBS 2016)**” on 25 & 26 March, 2016. All information's and updates regarding the conference will be made in website periodically. In case of difficulties in submitting the abstract at the conference webpage, it may please be mailed to icmbs2016@gmail.com. All accepted papers will be published in scopus indexed journals as listed in Anna university Annexure. Website www.snscticmbs.com Last date for paper submission Jan 20th, 2016.
- **International Conference on Mechanical engineering design -ICMED 2016**
(to be conducted by SSN Mech team)
Last date for submitting ABSTRACT and FULL Length Paper is extended to 28 Jan 2016 and 15 Feb 2016 respectively. *Conference website:* <https://sites.google.com/site/icmed2016/>
- Sixth International Project Competition scheduled on 2 & 24 Feb , 2016. Carries a Prize of Re.one lakh. Abstract submission 11 Jan 2016. www.veltechuniv.edu.in
- Tribute – the Annual Alumni meet is scheduled on Jan 2nd, 2016.
- The Challenge-
Envision the skies of 2035 and design an airspace system that allows vehicles to safely and efficiently navigate dense and diverse airspace.
Total Prize Amount \$15,000 <https://herox.com/SkyForAll>



All of us keep saying that we need to think only good and positive about others . It is easier said than done . While we are aware it is good to be positive, the challenge is how to begin & sustain this as our nature.

The easiest and the most definite way to be positive about others is to build this into your thought process, “ I am grateful to them because...”

Since gratitude and disturbances cannot coexist, by just starting the thought process “ I am grateful to them because ...”, you have already neutralized the negative possibilities.

It is possible to be good even to those who have been bad to you by thinking in this direction even about them, “ I am grateful to them because ...”. Anything that is born from the womb of gratitude can only be positive.

The icon in the desktop of a computer or a laptop is not the software, but the gateway to the software. Similarly, all of us have mental icons for every relationship.

Some incident, some dominant memory, some picture, some hurt, some happy moment, some loving experience... something from that relationship **becomes the mental icon for that relationship.** Without that mental icon being right, we cannot think and feel right about that relationship.

So examine, what are your mental icons for each of your key relationships and get that right.

When the mental icons are right, your first thoughts and first feel of that relationship becomes right.

And what is well begun is half done.

Change your icons and enjoy great relationship with everyone around you - Ramki



The Mech Team
Wishes You All a Very Happy New Year
2016