Newsletter

Volume 3, Issue 6, June 2013

Mechanical Aspire

Achievements in Sports, Projects, Industry, Research and Education

External Recognition

Prof.N. Nallusamy was invited to review a paper titled "Study of antioxidant effects on oxidation stability and emissions in a Methyl Ester of Neem Oil fuelled DI Diesel Engine" by the Journal of Energy Institute.

Prof. N. Nallusamy was invited to review a paper titled "Effect of methanol blending with Pongamia Pinnata Biodiesel and Diesel blends on engine performance and exhaust emission characteristics of an unmodified CI Engine" by the International Journal of Ambient Energy.

Prof. N. Nallusamy, was invited to deliver a Lecture on "Spray Characteristics of Diesel and Biodiesel fuels" in AICTE Sponsored Faculty Development Programme on Advances in Internal Combustion Engineering, organised by St. Peter's College of Engineering and Technology, Avadi, Chennai, 07 May 2013.

Dr. A.K.Lakshminarayanan was invited to review a research paper for Materials Science Engineering - A, Elsevier publications, 23 May 2013.

Dr. A.K.Lakshminarayanan, Received an invitation to serve as a Technical Commiteee Member and to review manuscripts for 2nd Global Conference on Materials Science and Engineering (CMSE 2013) which will be held in Xianning, China, on Nov. 20-22, 2013.

SSN Mech approved as Research Centre

SSN Mech becomes approved Research Centre under Anna University. Eleven scholars have chosen SSN Mech Research Centre for carrying out their Ph.D. related research work.

Guide in SSN Mech	Research Scholars-faculty from other colleges
Dr. M.S.Alphin	Mr. Paul Chandra Kumar Mr. G.Jaykarthikeyan Mr. S.Karthick Mr. Sudervelazhagan
Dr. B. Anand Ronald	Mr. Johnny Varghese Mr. Antonysamy Mr. Ramesh Kumar
Dr. A.K.Lakshminarayanan	Mr. G.G.Manimaran Mr. B.Rajabharathy
Dr.N.Nallusamy	Mr. T.Ranjit Mr. N.Ashok Kumar

Department Update

Info to Alumni

Mr. **A. S. Ramana** has joined as Assistant Professor in the Mechanical Engineering Department. He is about to submit his Ph.D.Thesis on "Investigations on the performance Evaluation of Thermal Energy Storage Systems" by June end , under the guidance of Dr. R.Velraj, Director, Institute for energy Studies Anna University. His credentials are :

*Master's degree with distinction in the field of Energy Conservation and Management from School of Energy, Bharathidasan University, Tamilnadu in the year 2000.

*about thirteen years of teaching experience.

*has published three papers in the reputed international journals

*has presented technical papers in national and international conferences.

*Co-Principal Investigator of AICTE sponsored research project on solar powered PCM integrated freezer(in his previous assignment at Sri Sai Ram Engineering College, Chennai)

*has coordinated several programmes to create awareness on renewable energy technologies.

Project Proposals Submitted

Dr. M.S.Alphin, submitted a proposal to DST under the Swarnajayanthi fellowship Scheme requesting a funding of Rs. 38 lakhs, for carrying out research on "Handle design to overcome vibration discomfort and performance through experimental analysis." (14 May 2013.)

Dr.S.Sureshkumar submitted a proposal to DST under the Swarnajayanthi fellowship Scheme requesting a funding of Rs.34 lakhs for carrying out research on "Development of low cost fatigue test rig for Structural Integrity Assessment of Mechanical Joints used in Aircraft, Ship Building and Automobile Applications" . (14 May 2013)

Internal Project Completed

The SSN Trust Sponsored student project titled "The 'Hydropneumatic bumper system " has been successfully completed with the product meeting the designed specifications. The hydro-pneumatic steel bumper was able to withstand a load of 36000 N under standard test conditions. The product is currently being explored for patentability. The project was executed by S.Kavitha, M.Manoj Kumar and Charles of Final Year Mechanical under the guidance of Dr.K.S.Vijay Sekar.

Industry Interaction

Prof.V.E.Annamalai was invited by CII to present a webinar on "Innovative Problem Solving -TRIZ", On 28th May 2013, for The benefit of Manufacturing Panel Members of CII

Research Activities

Dr. N. Gnanasekaran, Presented a technical paper titled " Stochastic and deterministic based optimization techniques for a lumped system" in the 2nd International Conference on Advanced Materials, Manufacturing, Management and Thermal Sciences (AMMMT-2013) held at Siddaganga Institute of Technology, Tumkur, Karnataka during 03-04 May, 2013.

Dr.K. Babu, Presented a technical paper titled "Synthesis and Characterization of CNT Nanofluids for Heat Transfer Applications" in the 2nd International Conference on Advanced Materials, Manufacturing, Management and Thermal Sciences (AMMMT-2013) held at Siddaganga Institute of Technology, Tumkur, Karnataka, 03 - 04 May, 2013.

Mr. K.L.Hari Krishna , Presented a research paper titled "Microstructure and Mechanical properties of Friction stir welded and Tungsten Inert Gas welded on Magnesium alloy ZM21" at the International conference on Engineering Materials and Process – 2013, held at Hotel Radha Reagent, Chennai, 23 – 24 May 2013.

Dr.V.E.Annamalai attended the Doctoral Committee meeting for a Research Scholar of Prof.Ilayaperumal, Anna University, on 22nd May2013.

Student Research

A Research paper titled "Finite Element Simulation of the Orthogonal Machining process with Al 2024 T351 Aerospace Alloy" has been accepted for presentation at the International Conference on Design and Manufacturing, ICoNDM 2013, organized by IIITDM, Chennai. The paper will also be published in the International Journal of Procedia Engineering, an Elsevier Publication.This paper is the outcome of the Final year project executed by R. Seshadri , I. Naveen , Sharan Srinivasan, M.Viswasubrahmanyam and guided by Dr.K.S.Vijay Sekar.

Mohammed Mustafa Shariff, Shail Khanna, K.S. Karthikeyan, Manish Kumar Jha presented their paper "On the properties of Surface Composite by Friction Stir Processing in LM25 cast Al alloy with SiC as reinforcement" in the International Conference on Emerging Materials and Processes, ICEMAP-2013, held at Tagore Engineering College ,Chennai, during 23-24,May2013. This project work was guided by Dr.K.Elangovan.

Workshops Attended

Dr.V.E.Annamalai, attended a one day workshop on "Visioning for SSN", conducted by Mr.R.Ravishankar, Lead Performance Consultant, HCL Technologies, 08 May 2013.

Dr.K.S.Vijaysekar, Dr.S.Sureshkumar and Dr.K.Elangovan attended a one day workshop on Advances in Composites, held at VIT University Chennai campus.(31-5-2013)

M.E.Manufacturing students visit IIT Madras

Dr. B. Anand Ronald, organised and accompanied I yr M.E (Manuf. Engg) Students for Lab Visit (Laser Lab, Manufacturing Lab, Central Workshop) to IITM, on 07 May 2013.

Prof. Nilesh. J.Vasa (Prof. and Head / Dept. of Engg. Design) welcomed the students and gave a video presentation on "***Introduction to Lasers***". Basic concept about the laser as well as application of laser were illustrated.

Next, students visited the "*Laser Lab*" and the current research project done by research scholars, especially the application of laser to find the salt deposition on the wind mill blade and detection of deposition of copper in the transformer oil using Lasers were demonstrated. In the above application's Nd:YAG Laser were used to concentrate on the target which generate plasma. Through the plasma they calculate light intensity. Light intensity is proportional to the amount of salt deposited on the windmill blade.

I year M.E (Manufacturing Engg.) students accompanied by
Dr. B. Anand Ronald along with Prof. Nilesh J. Vasa (IITM – Engg. Design) and his Research Scholars.

In the afternoon, Manufacturing Lab and Central Workshop facilities were demonstrated. Students were briefed on Micromachining, Surface Finish measurement, CNC bending machine, Laser Cutting Facility, Co-ordinate measuring machine, EDM wire cutting machine, and Dynamometers for Force Measurement. They also visited the Gear Lab, Fibre Reinforced Plastics Lab and Metal Joining Lab.

Innovation Update

Display turns water surface into an interactive digital screen

Japanese researchers have unveiled the AquaTop, which consists of a display projected onto the surface of water, controlled by interacting with the liquid.

Demonstrated at the Laval Virtual conference in France earlier this year – where it won the Interface and Materials Award, as well as the Grand Prix – the interface was developed by researchers at the University of Electro-Communications in Tokyo. The AquaTop uses cloudy water to act as a projection surface and detects gestures with a Kinect. The creators engineered the system to use the water surface as an integral part of its control – for example, one action is carried out when users dip their fingertips to interact with a screen object, and another when they approach the item from underneath the water. On-screen items also react to the movement of the water, meaning that they can be moved or changed by simply disrupting the surface with a splash, or scooping up the water and placing it elsewhere.

The system has currently been rigged up primarily as a platform for games – with an underwater speaker included to create ripples when a goal is achieved – although the researchers have also demonstrated how it could be used to interact with computer files such as images and video. The following video shows the AquaTop in action: http://www.youtube.com/watch?v=IJjAfEVEfZQ

AquaTop shows the possibilities of widely-available consumer products in the creation of engaging and intuitive new ways to interact with digital objects. Considering how many of us take our devices with us wherever we go, this could be used practically – bringing electronics safely into the bathroom, for example – or for creating unique public displays. If water can become a medium for digital interaction, surely the possibilities are endless?

Attention - Graduate Engineering Trainees....

Coefficient of peacefulness (COP) – an assessment of whether to stay or to switch job

Happiness is all about acceptance in the work teams that you are in. If your boss and people around you accept you as a trustworthy person, then you start liking your job.

If you cannot win over their hearts, you feel singled out and start wondering is this the right place for me. Now, how to judge your acceptability into any team? The method that follows will give you a simple tool to assess your position in a team.

It is all about behaviours. People like people who have similar behaviour! Birds of the same feather flock together! In the Table given below, compare your behaviour against each item and take a score of the column that suits your behaviour. For example, if I always go late to meetings, my score for item 1 is 1. If I do things without reminding, my score for item 2 is 5. Compute your total score.

Do the same for your boss and get his score based on how he behaves in each situation.

S.No	Activity	Score 1	Score 3	Score 5
1	**Punctuality for meetings**	Late by 10 minutes	On time	Early by ten minutes
2	**After meetings**	Does not do tasks even after being reminded	Does if reminded	Does without reminding
3	**Additional work**	Considers a burden	Likes to do extra work only if necessary-occasionally	Always looks for extra work as opportunities
4	**Willingness to own ideas and outcomes**	Always gives oral instructions	Prefers written hints with oral instructions	Always communicates through written down procedures.
5	**Intellectual independence**	Always plays safe -follows what others have done	Does after checking own ideas with others	Can guide others with own ideas
6	**Creative or innovative talent**	Likes only routines. Afraid of trying anything new	Likes to try new things that have been proven by others in some other area. Risk only in whether a proven concept will work in our area.	Willing to try entirely new ideas. Driven by the possible gain and not bogged down by the risk involved.
7	**Ethical standards and integrity**	Rules are only for others	Stick to rules wherever possible	Stick to rules at any cost-even if it creates personal damage
8	**Ability to function independently**	Always needs someone to assist	Can work alone most of the times	Can do myself always.
9	**Attitude**	Me first	Team first	Company first
10	**Relationship with higher ups**	Shys away	Meets when required	Creates opportunity to meet higher ups
11	**Loyalty to higher ups**	Submit and surrender	Fight if cause is personal	Fight for common cause
12	**Resourcefullness**	No one comes seeking help	Some people seek help	Many depend on you for their work completion
13	**When friendship confronts business needs**	Maintain friendship and give up the task	Maintain task and risk the loss of friendship	Convinces other person to see the business point of view and retains both business and friendship
14	**Ability to work with others – others consider us as**	Better to avoid	Okay to work with	Enthusiastic and Inspiring
15	**Higher ups consider us as**	Threatening and Non co-operative	Co-operative	Reliable and trustworthy member of the team

$$\text{COP} = \frac{\text{your score}}{\text{boss's score}}$$

Values of COP and what they indicate

COP	Indication	Impact
Below 0.5	Boss feels you are **useless**, since many a times he needs to complete a job that you started	You may be the first person recommended for any activity that falls out of your boss's control-he wants to get rid of you at the earliest.
0.6 – 1.0	Boss feels you can do things exactly in a way he wants but with some scope for corrections. You are **very close to his approach** but always need some guidance from him.	You are like a son who needs grooming . Boss treats you with parental care and goes out of the way to help you whenever you are in trouble.
1 and above	You are at peace, but Boss feels threatened-for you are better than him and may someday make him redundant. But you know many things that boss needs to show to his higher ups and therefore you are a "**Necessary Evil**"-a person who is necessary for getting things done but a person who is reminding the boss of what he is not capable of.	You may be facing more and more controls and check points from boss. Check points are informers who normally spy on you on those aspects that you do better than your boss. Your peace depends on how much trust you can build in your boss that you will not use your extra skills against your boss.

Everything depends on getting a good boss. If boss is extraordinary and his score is very high, then almost every other person's score is less than 1. Every person has something to learn from his boss and the boss is not afraid of anyone in his team. In such cases, everyone works with trust and accepted leadership, leading to a grand success on team targets.

If boss is a bit mediocre and scores less, then mediocre performance of others also gets accepted. Any good performer in such a team lands up in big trouble, because his COP with respect to this boss is far above 1 (maybe around 1.5)-which is extremely threatening for the boss. Such persons come under continuous monitoring-for boss wants to always keep a watch on these potentially dangerous high performers!

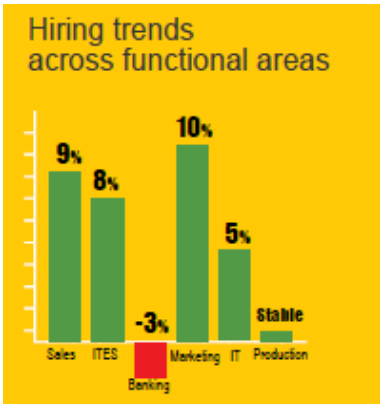
So, assess the behavioural traits of your boss, compare with that of yours and see whether there is any chance of peace in current job. As you may now understand,

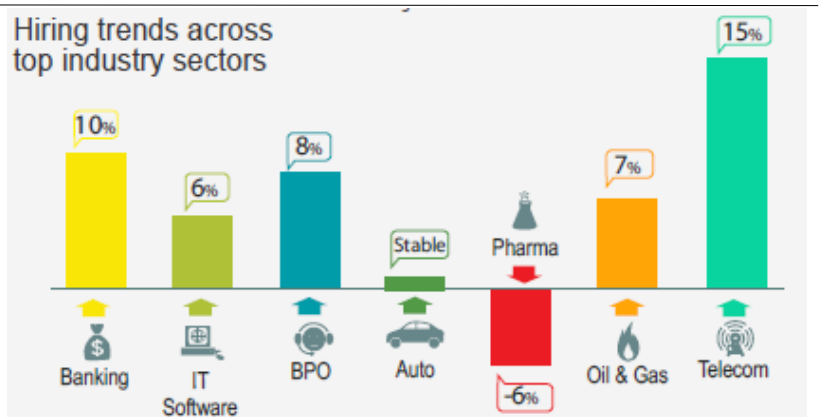
switching job is not going to solve the problem;

it is the new boss and his behavioural score in relation to yours, that matters.

It may be easier to find another department in the same company, that has a suitable boss for you ! Alternately, you can adjust your behaviour to fall within the 0.6-1 range of your boss- by underplaying some skills. Act smart and be peaceful.

Job Market data from Naukri





For a detailed report, please visit the link

http://w10.naukri.com/mailers/recruiter/JobSpeak_pdf/jobspeak_apr2013.pdf?othersrcp=15878&wExp=N

Passion Parade

Akhilnand Ramesh, a student of first year mech is immensely passionate about automobiles. He is so passionate that he has gone for internship in first sem holidays to an auto company and then written a small manual about what he learnt about automibiles. It is a well written manual that simplifies the understanding of auto parts and how the auto components function. You may request your copy by mail. Now, Listen to him on his passion...

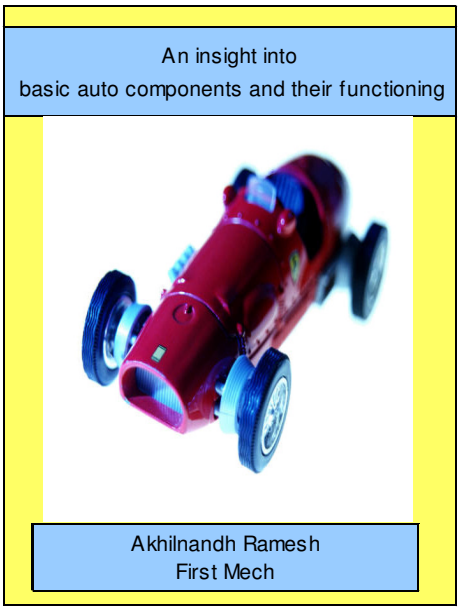
I was interested in cars from a very young age. According to my mother I could recognize various cars going on the road from the age of three. I became more actively interested when I was in class Five. I used to draw cars and bikes on a rough note. However I did not know any technical specifications of the vehicles.

Then on one fine day,in September 2005,when I was in class Six ,out of curiosity I bought the AUTOCAR INDIA, September 2005 issue which was on sale in a newspaper shop near my house. It was that issue of the magazine(an anniversary issue) that really made me get more interested in cars. It gave me information on what was happening in the Indian car Industry and history of Indian car industry. My parents understood my interest for cars and subscribed to that magazine.

As years progressed,my love for cars propelled me to read further online about the global automobile industry and cars took me to trucks and then to planes and then to ships andthen to trains and finally to military-defence vehicle.

Now I can identify almost every car in the Indian roads and a lot of cars worldwide. I can also recognize various aeroplanes-fighters and passenger planes being used by airforces and airlines worldwide, and also various locomotives used by Indian Railways till date.

I am an ardent car enthusiast and follow the global automobile scenario. I am also an active railfan and a member of IRFCA:Indian Railways Fan club, an online forum for train enthusiasts.I often report Locomotive sightings on that website.



My love for automobiles made me pursue mechanical engineering.I found that during my first year of college, all of us had only little or no technical knowledge on what we see commonly and often use: an automobile. That made me arrange for a 3 day in-plant training for myself and my friends in Sundaram Motors,a leading automobile marketing brand in South India.

What they taught us in the 3 days was indeed very useful for all the 6 of us who went for the training. That training taught us the basics and exposed us to a career option as an automobile engineer.

I found that many did not know the functioning of basic mechanical devices we see often: a motor,an automobile,an engine etc and hence decided to develop an informative booklet that explains to a layman what an automobile consists of. I would be glad to share a copy for those who want to understand how an automobile works-pl send me a request mail

I plan to become an automobile engineer after pursuing automobile engineering in the future-either as M.S or M.Tech,after working for a few years in a core company(after finishing my B.E). I would like to do research projects in under-graduation relating to automotive drive-trains and design and eco friendly and alternative propulsion vehicles. On a long run, I would like to start my own research company that offers R&D consultancy and product design mainly in automobile design,alternative vehicle propulsion technologies and innovative green-transportation solutions for masses.

akhilnandh ramesh <nandh_ramesh94@yahoo.co.in>

Alumni Feedback

Ashwath Parthasarathy
Of 2008-12 Batch

I am currently pursuing my Masters in Industrial and Systems Engineering at North Carolina State University. It has been a wonderful experience studying in the US. The coursework demands a sound quantitative reasoning ability and a lot of dedication. As far as Industrial Engineering goes, Mechanical Engineering courses on Manufacturing Engineering, Production Planning and Total Quality Management help the most. It is pretty useful to learn a programming language properly. Proficiency in Microsoft Excel and Microsoft Access is important .

I feel that the learning imparted at SSN, academically and otherwise, coupled with the exposure I have attained studying abroad, has helped me grow as an individual. I have taken courses on Quality Engineering, Supply Chain Logistics, Production Planning, Operations Research, Lean Six Sigma, Statistics and Database Management so far. I will be working as a Six Sigma intern at ADT Corporation in the Summer of 2013.