Newsletter

Volume 6, Issue 5, May 2016

Mechanical Aspire

Achievements in Sports, Projects, Industry, Research and Education

All about Nobel Prize-Part 29

Nobel inspired Ig-Nobel Prize

When most useful research is awarded, why not award the most absurd research? This thought lead to what is called the **Ig Nobel Prize**. The word ignoble stands for meanness. These are awarded every year, in early October , for ten unusual or trivial achievements in scientific research. This is organized by the scientific humor magazine -Annals of Improbable Research (AIR).

The awards are presented by a group that includes Nobel laureates at a ceremony at **Harvard University**'s Sanders Theater, and they are followed by a set of public lectures by the winners at the **Massachusetts Institute of Technology.** **The stated aim of the prizes is to "honor achievements that first make people laugh, and then make them think"**. The first Ig Nobels were created in 1991 by Marc Abrahams, editor and co-founder of the Annals of Improbable Research

The 25th Annual Ig Nobel Prize Ceremony, conducted on September 17, 2015, introduced ten new Ig Nobel Prize winners - Each has done something that makes people laugh then think. **Winners traveled to the ceremony, at their own expense, from around the world to receive their prize** from a group of genuine, genuinely bemused Nobel Laureates, in Harvard's historic and largest theater.

Have a look at the research work that is awarded.....

Category	Reason for Award
Chemistry	for inventing a chemical recipe to partially un-boil an egg
Physics	for testing the biological principle that nearly all mammals empty their bladders in about 21 seconds
Literature	for discovering that the word "huh?" (or its equivalent) seems to exist in every human language
Management	for discovering that many business leaders developed during childhood a fondness for risk-taking.
Economics	for offering to pay policemen extra cash if the policemen refuse to take bribes.
Medicine	for experiments to study the biomedical benefits or biomedical consequences of intense kissing
Mathematics	for trying to use mathematical techniques to determine whether and how the Emperor of Morocco, managed, during the years from 1697 through 1727, to father 888 children.
Biology	for observing that when you attach a weighted stick to the rear end of a chicken, the chicken then walks in a manner similar to that in which dinosaurs are thought to have walked.
Diagnostic medicine	for determining that acute appendicitis can be accurately diagnosed by the amount of pain evident when the patient is driven over speed bumps.
Physiology	for carefully arranging for honey bees to sting him repeatedly on 25 different locations on his body, to learn which locations are the least painful .

For the Full list of 2015 prize winners, read http://www.improbable.com/ig/winners/#ig2015

There are several Indians who were awarded IgNobel prize. In 2005, Gauri Nanda of Massachusetts Institute of Technology won the Economics Ig Nobel for inventing an alarm clock that runs away and hides repeatedly, thus ensuring that people do get out of bed, and thus theoretically adding many more productive hours to the workday. See the full list at http://www.improbable.com/2014/10/04/indians-also-lead-in-improbable-research/

The Award Ceremony contains a number of running jokes, including Miss Sweetie Poo, a little girl who repeatedly cries out, "Please stop: I'm bored", in a high-pitched voice if speakers go on too long.

The ceremony is co-sponsored by the Harvard Computer Society, the Harvard–Radcliffe Science Fiction Association and the Harvard–Radcliffe Society of Physics Students.

Throwing paper planes onto the stage is a long-standing tradition at the Ig Nobels

History shows that trivial research sometimes leads to important breakthroughs. For instance, in 2006, a study showing that one of the malaria mosquitoes (Anopheles gambiae) is attracted equally to the smell of Limburger cheese and the smell of human feet earned the Ig Nobel Prize in the area of biology. However as a direct result of these findings, traps baited with this cheese have been placed in strategic locations in some parts of Africa to combat the epidemic of malaria.

The person who won both Nobel and IgNobel prizes

Andre Geim is the only Scientist who has won both the Nobels.

Geim's research in 1997 into the possible effects of magnetism on water scaling led to the famous discovery of direct diamagnetic levitation of water, and led to a frog being levitated. For this experiment, he and Michael Berry received the 2000 Ig Nobel Prize.

"We were asked first whether we dared to accept this prize, and I take pride in our sense of humor and self-deprecation that we did", says Geim.

Geim was involved in the development of a biomimetic adhesive which became known as gecko tape—so called because of the adhesiveness of gecko feet. It is hoped that the development will eventually allow humans to scale ceilings, like Spider-Man

Andre Geim

Geim's achievements include the discovery of a simple method for isolating single atomic layers of graphite, known as graphene, in collaboration with researchers at the University of Manchester and IMT. The team published their findings in October 2004 in Science. After several developments, in 2010, Geim and Novoselov were **awarded the Nobel Prize in Physics**.

Graphene consists of one-atom-thick layers of carbon atoms arranged in two-dimensional hexagons, and is the thinnest material in the world, as well as one of the strongest and hardest. The material has many potential applications and is considered a superior alternative to silicon.

Geim said one of the first applications of graphene could be in the development of flexible touchscreens, and that **he has not patented the material** because he would need a specific application and an industrial partner.

Geim firmly believes in working in multiple areas- "Many people choose a subject for their PhD and then continue the same subject until they retire. I despise this approach. I have changed my subject five times before I got my first tenured position and that helped me to learn different subjects."

Even though his early research was ridiculed with an Ig Nobel, later he was awarded the real Nobel Prize.

Info to Alumni- Campus Update

College Day

On Second April, Sixteenth Graduation Day was conducted.
Dr. Sahasrabudhe , Chairman of AICTE was the Chief Guest.

With a graduate degree in Mechanical engineering, Dr.Sahsrabudhe did his Masters in IISc. His teaching and administrative experience spans 25 years in places of repute like IIT Guwahati and College of Engineering Pune. He has taken over as Chairman of AICTE since July 2015. He has visited SSN earlier, leading the Peer Review Team.

Excerpts from his inspiring speech.....

- You are all in a festive mood. From now on, it is a great start in life for all of you.
- SSN is not new to me. I came here to evaluate and suggest approaches to excel.
- Now, I see great Transformation. The statistics like 300 Research Scholars sounds good. Last time, when I came, there were not many Ph.D. Scholars.
- SSN has not only good placements but also a vibrant EDC establishment. This is possible only by all your hard work and by the commitment of the Management.
- The support provided to the first generation learners-students of rural areas- by way of full fee support and other living expense support is just phenomenal. This innovative Rural Scholarship Scheme must be taken up by all Institutes all over the country.
- The large number of workshops, Seminars and Conferences happening in this campus must have created interest in students to understand and follow their passion.
- This day marks an important day in your life. With dedication, you worked for your degree and now you are going out as a Proud Alumni.
- This is a moment of pride to all those who contributed to your success-like your parents and your faculty.
- There are several Challenges we have to confront.
- In spite of the large expansion in colleges, our Gross Enrollment Ratio is only 23%. We want to take it to 30%.
- We are young in terms of population.50% of Indians are below 25 years and 65% are below 35 years of age. This youth population is a Challenge to India and to the Globe as whole.
- We are working towards equity and access to all students. But Nasscom survey says that our graduates' employability is poor. This pinches us.
- Soft skills like Team Building, time management etc are critical skills required -but most of us are not adept at it. Universities need to address this.

There are five challenges Universities have to address, if they want to become excellent.

1.Industrial Linkages : It is enough if we have sector specific engagements. The norm for Student to faculty ratio is 15:1. Many Institutions are not able to meet this norm. Now e have allowed contract faculty from Industry , even if they do not possess a Doctorate. This way, we believe Industry interaction may happen beyond the usual Guest Lectures and Industry visits.

2.Impetus for Research and Innovation : We were at position 60 in the Innovation Index compiled 5 years ago. But now we have slipped to the 80th position.

3.Establishment of National and International Networks : We need to sign MoUs that are active and implementable. Only then a vibrant atmosphere will be created for cross learning.

4.Enhanced Involvement of Alumni : In addition to providing funding, Alumni should get involved in inspiring current students and in supporting Labs.

5.Making University facilities available round the clock : If laboratory lights are on at nights and students and faculty are at work, it shows an excellent Academic ambience.

- Technology is changing rapidly. What we learn gets outdated in just 4 to 5 years. You should know that Learning does not stop. It has to be lifelong. In your lifetime, there will be at least 3 or 4 major technology changes. Keep abreast of what is happening around you.
- Information is at hand. Accumulation of basic knowledge is of limited use. Transformation of knowledge for Socio-economic application is important.
- Follow your dreams with passion. Whatever we get may not happen as we expected. Failure is first step to success. To err is okay, as long as we learn from it. Every failure is a learning on what should be avoided next time.
- The only speed breaker to our success is our mind set-mental block.
- Nothing is impossible, if we work sufficiently hard at it. Dr.APJ Abdul Kalam used to say , “All technical advances are the outcome of explosion of Science of earlier days. At no time, Science can subjugate mankind.”
- Identify your passion and start working towards it. It is a long journey ahead.
- You will get several opportunities to make things happen and impact the world. Leaders are those who step forward and make things happen. There are several Schemes announced by Govt of India like Swach Bharat, Make in India, in which you can participate. You can be the catalyst for Change. You are unprecedented to have so many well planned Schemes happening right now. Make use of this opportunity.
- Whenever you are in trouble, get back to the Alma Mater. They are always there to help you.
- Wish you a very Successful Life..!

College Day and Sports Day Report

17th Annual Sports Day and 20th College Day was celebrated on April 18, 2016 at Justice Pratap Singh Auditorium. Dr. C. Sylendra Babu, I.P.S., Addl. Director General of Police, Coastal Security, Tamil Nadu was the Chief Guest.

Dr.C.Sylendra Babu , did his IPS in 1987. As of 2012, he is serving as the Additional Director General of Police of the Coastal Security Group, Tamil Nadu. He holds a PhD in Criminology from the University of Madras. He is a voracious reader, motivational speaker and an avid fitness enthusiast.

For him, learning is never ending. He has a B.Sc Agri, M.Sc. Agri, B.L, MA in population studies, MBA (HR) , Ph.D. (on Missing Children) and is still studying computer science and cyber crime investigation.

He has won President's Medal twice, Prime Minister's Medal once and Chief Minister's Medal twice. His service during the recent floods in Chennai is a story of bravery and service mindedness. He is an able Sportsman. He wants everyone to get into Central Services. He held the audience spell bound- periodically decorating his speech with humorous anecdotes. The text of his speech...

Normally, people call Collectors for College Day and people like me for Sports Day-for in Sports day we don't have to talk- just take a salute and watch the events. Now that you have invited me for a speech in the College Day function, I really feel overwhelmed.

You are a group of cream of students. I congratulate the illustrious son of the soil Dr.Shiv Nadar, for building such a great Institution in India. I cherish the opportunity to see such good people.

I am not here to give advices. I feel, generally people who give advices are not good people!

Leadership:Galileo said , “I cannot teach anything to anyone- but I can help you discover”. So, I am not going to teach you anything, but will let your discover something. Have you discovered that You are already a Leader? You are managing your parents, your teachers, your friends, your enemies and this is what is Leadership.

Money:Money is good. Like the singer troupe ABBA 's lyrics go “money, money, money, it is a rich man's world”. For you Learning is earning. Making money is not easy but simple.

Entrepreneurship:From your student representatives' speech, I understand that each department is supposed to conduct attractive conferences, get good foreign admissions for higher studies and also ensure 100% placements.
Engineering is not a course for going for a job. You should see the larger picture. Very rarely people get good salaries. Why ,with the same curriculum and same type of treatment one student gets paid 12 lakhs per annum while another gets only 3 lakh per annum?

I heard of a story. One student's parents were very anxious to know whether the college that they selected will get placements or not. The parents enquired with the Security watchman. He said, “This college gives 100% placement”. The parents were anxious to know how he is so confident. His answer was “even I studied here”! So, **don't pay too much attention to getting jobs. You must look at creating jobs.**

I have been with Coastal Security for quite a long time. India's share of global exports is just 1.6%. 90% of India's trade is done with Non-Indian ships. Our shipbuilding industry is very underdeveloped. We take 7 years to build a ship which South Korea builds in just seven days- using modular concepts of design. Engineering is application of knowledge. So, apply your knowledge to build new businesses, so that **instead of asking for jobs you can give jobs to others. The story of Honda is inspiring . Read it. (http://greatsuccessstory.weebly.com/success-story-of-honda.html)**

Discipline: Self -Discipline is essential for any achievements in life. Many colleges think that they must Discipline their students. In fact, **discipline is not the job of the college- it is the individual student's job**. What is the point in ensuring students maintain silence by placing faculties at the end of each row. That kind of forced discipline will not take you further.

Skill Management:Please remember- college is only a turning point that helps you in constant skill upgradation and skill management. “Give me a place to stand, a rod long enough and a prop strong enough, I will move the world.”-Archimedes. SSN is great opportunity that you had in your life- have you done your best with it?
Sports Day reflections:

Our Body is a miracle-it is a business asset. Body can give you pleasure if you are healthy. Body can give you pain if you are not healthy. Whatever position you are in, one hour of intense physical exercise is a must for well being. Sports hones your Leadership skills because it gives you the ability to understand, appreciate, love and punish people. It teaches you honesty, integrity and emotional stability. These are all various aspects of leadership.

Sports is team work. Japanese are well known for their team work and that is why they succeed in every walk of life.

Have you ever wondered why we have not won any medals in Olympics- in spite of having so many people? It is because we neglected Sports. We did not give the importance we give to cricket – to Sports. Incidentally Cricket is not a Sport authorised in Olympics.

Only in Olympics- all sovereign Nations compete and only if we win something there, we can feel great about it. So, irrespective of what job you are in , take up Sports for all round personality development.

Be healthy and cherish the opportunity of having studied in SSN – don't look for jobs but create jobs- All the best.

Srikanth Venkataraman, CTS spoke on work life balance....

IT is not a luxury. Alongwith education, you need to develop secondary skills like communication skills. We take three years for getting a graduate to be ready to face the customers. Try and reduce this tuning -in time.

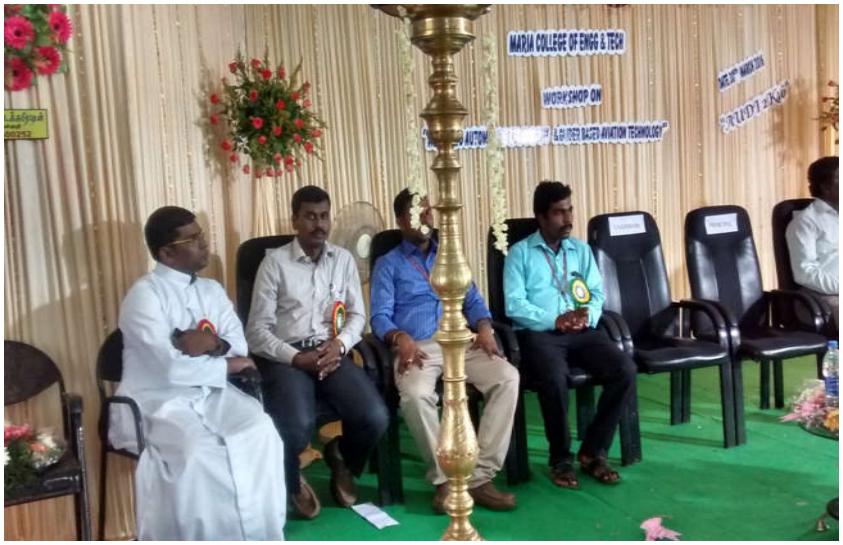
Business knowledge is also important. Read about what is happening in the business world. Simple bank transactions also are not learnt by many. You need to be strong in domain knowledge. Try and use your interest to develop domain knowledge. It is important to understand the business terms used by customer. After education, simply going for work for works sake is not good. Try to do more and reach your area of passion. It is a special skill to manage a balance between work and life.

The Department of English conducetd the prize-giving ceremony of the SSN Creative Writing Contest on 13 April 2016 . Mr. Shreekumar Varma, **great grandson of the artist Raja Ravi Varma,** was the Chief Guest . He distributed the prizes to the winners.-----info from Dr.Divya John

Events Info

SSN Alumni visited our campus to address the 3rd yr B.E/B.Tech, 1st yr M.E/M.Tech and 2nd yr MCA students to prep them for Placements next year. This session was mainly intended to give students a heads-up on Campus Placement. The students were guided on Resume building, Dress Code, Interview tips etc..A standard resume format was shown to the students during the session. - info from Ms.Asha.P, Alumni Officer

Info to Alumni- Dept Update- External Recognition



Chief Guest Invite..

Dr. B. Anand Ronald, was invited as a Chief Guest for the Inauguration of the One Day workshop on "*Advanced Automobile Technology and Glider based on Aviation Technology*" at Maria College of Engineering and Technology, Marthandam on 30 March 2016. Around 100 participants were present during the inaugural function. The chief guest spoke about the Role of Composite Materials in the Automobile and Aviation industry and also some insights on additive manufacturing in the automobile sector.

Performance in TV

Third year student Vishveshwar's flute performance was telecast on Raj TV on the occasion of Tamil New Year, between 6 30 am and 7:00 am.

Chief Guest Invite..

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Dr.L.Poovazhagan was invited as chief guest cum judge for UG (B.E) students project contest held at V.R.S College of Engineering and Technology, Villupuram

Research Reviews..

Dr. G. Selvakumar reviewed a technical paper entitled "A split-optimization approach for one-to-multiple process parameter optimization of Electrochemical Micro-Machining" for SpringerPlus

Professor N. Nallusamy reviewed the technical paper titled "Progress in high performance, low emissions and exergy recovery in Internal Combustion Engines" for the International Journal of Energy Research, John Wiley & Sons Publishers.

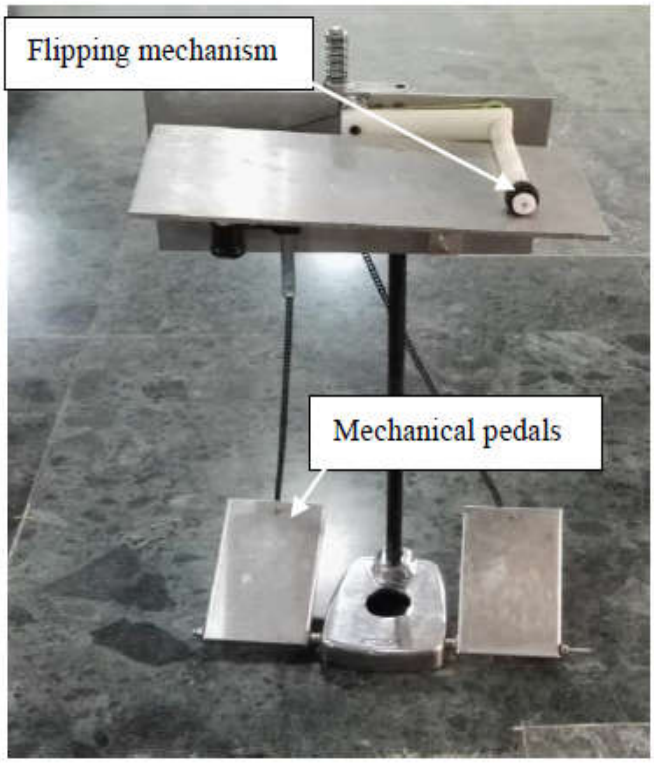
Professor N. Nallusamy reviewed the technical paper entitled "Experimental investigation to study the effect of hydrogen induction on performance and emission behaviour of a single cylinder diesel engine fuelled with palm oil methyl ester and its blend with diesel" for the Journal of Engineering Science and Technology, Taylar's University, Malaysia.

External recognition for student project

BOOK READING AID FOR DIFFERENTLY ABLED PERSON

By

Jayaganth.A , Chandar Pushpagarajan , C.S.Gowtham and Deepak Mani A of 3rd Year Mechanical



Myself A.Jayaganth and my project mates P.Chandar, C.S.Gowtham and Deepak mani from 3year mechanical engineering had applied for a National Level Project Competition `TECHNOBLAST 2016' held by Dronacharya group of institutions on the title '***BOOK READING AID FOR DIFFERENTLY ABLED PERSON'*** .After preliminary round of screening, our project was selected as one of the '50 projects to be presented on 'TECHNOBLAST 2016' and were invited to Dronacharya group of institutions . The idea to help the differently abled people was the common point of interest among my Project mates which made us come together as a team in building the idea .As we started our literature review on the list of equipment's available for differently abled people, to our surprise we were able to see a lot of equipment's being developed for people without legs and for Blind people .However there were only a very few equipment's available for people without hands and hence we decided to develop an equipment for people without hands in the market to empower them .So a person who cannot afford to buy a prosthetic hand will be able to read a book using this machine.

In the proposed machine, there are two mechanism used they are rack and pinion mechanism and tumbler gear mechanism, to roll the page upwards and flip the page operated by pedals using their legs. There are many other electronic gadgets available in the market to serve this purpose but they are expensive and are dependent on electric source .The proposed machine is completely independent of electrical source and is operated by innovative application of Simple Mechanical Systems making it cost effective . Even though the initial production of the proposed machine cost us Rs.24,000/- (approx.) due to repeated trial and error corrections , In real time production environment , the cost of the machine will be around Rs.6500/- which is comparatively much less than the cost of prosthetic hands and other electronic gadgets .Weight reduction can be achieved by using polypropylene material with less increase in the Selling price of unit machine Not everyone without hands can afford to buy prosthetic hands so our future work is to enhance the feature of the machine to enable them to eat , brush by integrating some additional mechanism in the same machine.

We are also glad to inform that the proposed machine is shortlisted for Anna University sponsored 'Titan Hackathon' competition on Product development .We would like to extend our heartfelt thanks to the Department of Mechanical for extending their full support for us in developing the product and preparing us for project presentations

National Level recognition for Sagar Malhotra

Last month I had taken part in a competition organised by LinkedIn and MTV called - LinkedIn MTV Get A Job Season 2. The ultimate prize of the contest being an opportunity for a two month intern ship in any of the listed companies.

I submitted my entry for an internship as the Brand Marketing Intern for Adidas India via LinkedIn just like 30,000 other candidates from across India and from all fields and walks including some from MBA and some working professionals too.

After the shortlisted me by examining my LinkedIn profile I was asked to submit an elevator pitch (1 minute video) talking about my strengths, qualities and answering a few of their questions. I successfully made it to the next round too.

For this round i was called to Delhi (all expenses covered by them) where i had to compete against 4 other selected candidates. The first round was one where we had to make a presentation on the topic - MAKE YOUR OWN BRAND NEW SPORT covering all aspects of this like rules , playing area referees and also explaining how we would market this new sport to the world! We were given only half an hour to do so.

I was one of the 2 candidates selected from the 5 for the personal interview round.

I gave it my all but ended as a runner up only to lose to the MBA graduate from Delhi, so didn't get the internship. All in all, it was a great exposure and experience. I got to meet the Global Managing Director of Adidas and got great insights from the HR there who taught me a lot.

The competition will be a telecast of this on MTV in the coming weeks!

Recognition from Employers...

Dr.N.LakshmiNarasimhan writes on Placement.
This is to inform that six of our students have been placed in different companies in the recent weeks. To keep you updated, pls. find the details below. The placement % stands at 84.35 out of 115 eligible candidates. We had very eminent companies this year thanks to our Placement Office and support from the department. For the remaining students efforts are being made to send their resumes across diff. companies. Soliciting your kind support.

List of students

Deepak Vishal (312212114028) - Unitech Transfer GmBH, Germany - Rs.23 L p.a. posting in Germany
Shivram P.R. (312212114099) - Toshiba Machines
Anandam Mallik (312212114009) - Toshiba Machines
Diwakar M (312212114033) - Renault Nissan TBC
K. Ramesh (312212114081) - Renault Nissan TBC
Mohan Sunderam (312212114064) – MRF
B. Samkamal (312212114316) - Robert Bosch

Recognition from University..

Dr.A.S.Ramana has been approved as Supervisor for guiding Ph.D s under Anna University. This increases the number of approved supervisors in mech dept to **29**

Info to Alumni- Department Update

Programs Conducted Dr.K.S.Vijay Sekar and Dr.S.Suresh Kumar conducted a One Day National Level Workshop " Refresher course in Finite Element Analysis" attended by 20 participants from various Institutions.

Research News

Dr. A.K.Lakshminarayanan, Asso.Prof/Mech published a research article titled "Enhancing the properties of friction stir welded stainless steel joints via multi-criteria optimization", Archives of Civil and Mechanical Engineering, 16 (2016) 605-617 - Thomson Reuters Impact Factor: 1.8

Dr.K.S.Vijay Sekar co authored a paper titled "Finite element analysis of the orthogonal machining process with A356 Aluminium alloy using 3D Model,"along with Mr.Sakri S.B, Technical Officer - C, Defence Research Development Laboratory , Hyderabad, India, Nithiya Sandhiya. Y. J.Thamizharasan. M. M (Both M.E. Manufacturing Engineering Students at SSN) which was presented at an Int. Conference ICONMERIT, NIET, Coimbatore, India on 30-31, March 2016.

Dr.K.S.Vijay Sekar co authored a paper titled "Finite Element Analysis of the Milling Process with Inconel 718 Super alloy,"along with Kailash S, Kailash V, Akshay M, Dhananjay D (All B.E. Mechanical Engineering Students at SSN) which was presented at an Int. Conference, ICONMERIT, NIET, Coimbatore, India on 30-31, March 2016

Dr.K.S.Vijay Sekar acted as Conference Chair for the Technical session on "Simulation" at ICMED 2016, organised by Mechanical Department, SSNCE.

Papers presented in the Int. Conference on Mechanical Engineering Design, ICMED 2016, SSNCE, India on 25-26, April 2016

Dr.M.Nalla Mohamed authored a paper titled "Estimation of aerosol emission in die sinking EDM process through numerical modelling," along with J.Sylvya Rebecca (M.E. Manufacturing Engineering Student at SSN)

Dr.M.Nalla Mohamed coauthored a paper titled "Development of novel natural composites with fly ash reinforcements and investigation of their tensile properties,"along with A.Praveen kumar (Ph.D Research Scholar cum JRF at SSN)

Dr.M.Nalla Mohamed authored a paper titled "Experimental Prediction and numerical modeling of Ductile Damage and Failure Modeling of Aluminium sheet metal specimen,"along with A.Praveen kumar (Ph.D Research Scholar cum JRF at SSN)

Dr.M.Nalla Mohamed authored a paper titled "Numerical modeling of energy absorption behaviour of aluminium foam cored sandwich panels with different Fibre Reinforced Polymer (FRP) composite facesheet skins,"along with Dr.D.Anantha padmanaban & Dr.M.Selvaraj

Dr.M.Nalla Mohamed coauthored a paper titled "Effect and contribution of weld parameters on peak temperature during friction stir welding,"along with Dr.D.Anantha padmanaban & Dr.M.Selvaraj

Dr. K.Jayakumar co authored a paper titled "Experimental study on effect of machining parameters and environment on drilling characteristics of Stainless Steel 304,"along with A. Jayaganth and A. Deepak Mani (All B.E. Mechanical Engineering Students from SSNCE)

Dr.K.S.Vijay Sekar co authored a paper titled "Finite element analysis of the effect of cutting speed on the orthogonal turning of A359/SiCp MMC,"along with Mr.Bhanu Prasad. V. V, Scientist-G and Group Head of CCG, DMRL, Hyderabad, India, Nithiya Sandhiya. Y. J.Thamizharasan. M. M (Both M.E. Manufacturing Engineering Students at SSN)

Dr.K.S.Vijay Sekar co authored a paper titled "Experimental Investigation and Finite Element Analysis of milling of Ti-6Al-4V Titanium alloy by studying cutting forces and chip microstructure,"along with Shivaram PR, Sushinder K, Nivedh Kannaa SB,Nisarg Gupta (All B.E. Mechanical Engineering Students at SSN)

Dr.K.S.Vijay Sekar co authored a paper titled "Finite Element Modelling of Orhogonal Cryogenic Machining Process,"along with Sriram S, Vignesh V, Pradeep Kumar M. (in collaboration with Anna University students and Faculty)

Project news

Project Approved

"Friction surfacing for repair of alloy 718 components", a project proposal submitted to DST by Dr.R.Damodaram has been approved. He has been asked to submit the quotes for amount estimation. Actual amount approved depends on lowest quotes .
Original proposal was for Rs. 22 lakhs.
(Rs.10 lakh for equipment, Rs.3 lakhs for consumables and Rs. 9 lakhs for Project Staff.)

Project Amount Confirmed as Rs.74.16 Lakhs

The proposal on Abrasive Waste Management submitted by Dr.VE.Annamalai and Dr.S.Sureshkumar was approved and were asked to submit quotes. The proposal, originally for Rs.69 lakhs, got escalated due to taxes in quotes . The quotes were submitted with a request to consider. SERB has been kind enough to accept this escalation and **have sanctioned a final amount of Rs.74.16 lakhs.**
Out of this, **Rs.52 lakhs is exclusively for "creation of capital assets."**
This amount has already been received at SSN, as the first instalment.

Project Applied.....

A proposal on " Optimizing the FSW Tool Design By Modeling Heat Generation and Flow" For a value of Rs. 34 lakhs has been submitted to Defence Research and Development organization (DRDO) by Dr.M.Selvaraj (PI) and Dr.S.R.Koteswara Rao (Co-PI)

Ph.D.Viva Voce

The Public Ph.D viva voce exam of Mr Rajakumar. Scholar of Dr.S.R.Koteswara Rao, was conducted on 4-4-2016.

Examiners: Dr M.Kamaraj, Professor at IIT Madras and Dr. S.Aravindan, Associated Professor, IIT Delhi
Title of the work: Studies on welding of Borated stainless steel 304B

Abstract of the work: Boron added stainless steels are used in Nuclear energy applications mainly in spent fuel storage caskets. Welding has emerged as the prime manufacturing process in these applications. This study investigates several traditional and modern welding processes such as GTA welding and its recently developed variants - Pulsed GTA, Nitrogen added GTA ,Activated flux GTA processes and Electron beam welding process with beam oscillation variants. It has been shown in the study that single pass butt welds on 10mm thick plates can be made using Activated flux GTA and EB welding processes at significantly lower heat inputs and the failure during tensile testing occurs far away from the weld zone, which is considered an advantage. The remaining processes can also be used to obtain defect free welds, but the fracture in a tensile test occurs Adjacent to the weld metal. Conventional MMAW filler 308 can be used to obtain better impact toughness. Metallurgical characterization of the welds were conducted and structure property correlations were brought out.Several recommendations on choosing processes and parameters were made.The presentation and content of the work were well appreciated by the examiners and audience.

The Ph.D seminar presentation of Prof.N.Nallusamy's research scholar (Part-time) Mr. K. Muralidharan (Reg. No. 1315299824), AP/Mechanical Engg, RMK Engineering College, on the title: "Experimental Investigation of Passive Solar Still augmented with Triangular Array of Fins", was conducted on 22-04-2016.

The Ph.D seminar presentation of Dr.A.K.Lakshminarayanan's Part-Time research scholar Mr. G. Manimaran (Reg. No. 1314299704), on the title: Friction stir welding of duplex stainless steel" was conducted on 29-4-2016

President meets mech students

On 13th April 2016, President met our students for an interactive session on improvements needed. She congratulated KVJ Arun, association president for his punctual and periodic monthly reports. She highlighted on the Internal funding scheme for student projects, the new initiative of Innovation Centre being set up for students' benefit and also on the Incubation Centre Scheme. Students may have an opportunity to work as interns with the start-ups expected to come up in our Incubation Centre. She also invited the outgoing Final year students to consider being Incubatees . President suggested that Senior students must consider knowledge sharing sessions for first year students.

Students responded with their activities on various fronts like building Cars for competitions, Aeroclub Activities and research activities.

Student Activities

Srinivasan G, IV Year, Shortlisted for the SSN Creative Writing Contest- fiction category- held by the Department of English for the short story "The Date" (13-4-2016)

Naveen Raj D, III Year, Winner of Inter- year Ball Badminton held @ SSN College of Engineering (1-4-2016)

Arun K V J, IV Year, 1rst Place in 1500 mts and 2nd place in 800 mts Inter year Athletic Meet of SSN 2016 (4-7 april 2016)

Surya Bharathi T , III Year, 400 mts and 100 mts Silver Medalist mts Inter year Athletic Meet of SSN 2016 (4-7 april 2016)

Deepak A , III year, 200 mts, 400 mts Bronze and 800 Gold Medalist mts Inter year Athletic Meet of SSN 2016 (4-7 april 2016)

Bennito Jeninth, II Year, Overall Champion of Athletics of SSN – 2016 Inter year Sports meet. (19-4-2016)

Faculty Write up

Dr. S.R. Koteswara Rao & Dr. B. Anand Ronald, attended the One day Awareness Course on "*Additive Manufacturing"* jointly organized by ASM International, Chennai Chapter and Dept. of Metallurgical and Materials Engineering, IIT Madras on **9th April 2016** at **IIT Madras**.
The first session was handled by Dr. Ramesh Raghavendra, SEAM Research Center, Waterford, Ireland on Metal Additive Manufacturing. The second session was on AM Technologies – Current and Future directions, by Dr.C.K. Srinivasa, Central Manufacturing Technology Institute, Bangalore. Dr. Deepa Srinivasan, from GE Power and Water, Banglore delivered a talk on AM Technology for Aerospace Industries.

The next talk was on Additive Manufacturing in Healthcare by Dr. G. Arumaikkannu, Anna University, Chennai. In the afternoon session, Dr. S. Soundarapandian, Dept. of Mech., IIT Madras dwelt on Additive Manufacturing in Biomedical applications. The last session was on Application and Material Properties using DMLS technology, by Mr. Joe Ajay from EOS GmbH India Branch.

Workshop on FEA

Dr.K.S.VijaySekar and Dr.S.Sureshkumar conducted a one day Refresher Course on Finite Element Analysis on first of April, 2016. The purpose is to simplify a tough subject and give an outline on how to get through the basics of the subject. There was a good response from students of other colleges, specifcally from KCG College of Engineering.

Finite element analysis is an important subject for Mechanical Engineering graduates, especially for those who dream of working in the R&D of leading manufacturing, automotive and aerospace industries. It is also an academically trending research area where enormous amount of cutting edge research is being conducted. Though many workshops focus on the application of finite element simulation using available software codes, very rarely the theory behind the applications is disseminated. We have also come across difficulties amongst the student community in understanding this subject, which is part of the VI semester Mechanical Engineering curriculum under Anna University.

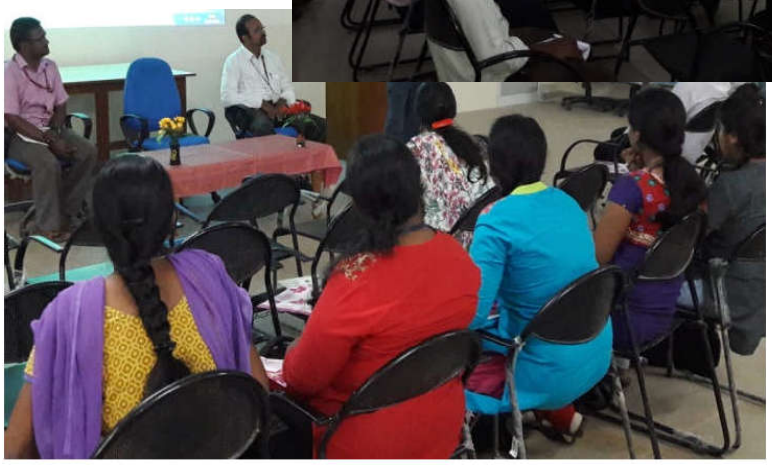
Hence this one day workshop was aimed at discussing the important topics of the current Finite element analysis syllabi and also touching upon relevant applications in solid mechanics and thermal engineering.

The Topics were: Introduction to fem, Weighted residual methods, FEM FORMULATION, BAR AND BEAM STRUCTURAL AND THERMAL PROBLEMS, BAR AND BEAM VIBRATION PROBLEMS, TWO DIMENSIONAL SCALAR AND VECTOR VARIABLE PROBLEMS, ISOPARAMETRIC FORMULATION

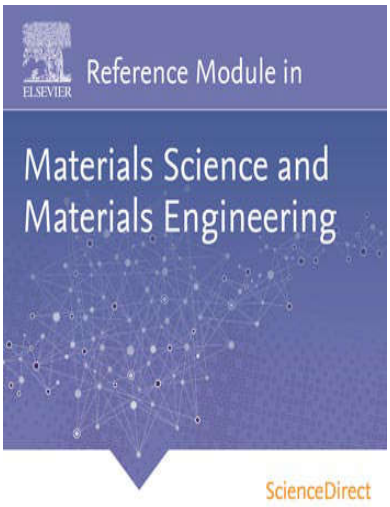
The workshop received participation from many colleges such as KCG College of Technology, Saveetha Engineering College, Surya College of Engineering and others. Postgraduate students, PhD Research scholars from Bio medical department, SSN and some students from Mechanical Engineering, SSN also attended the workshop.

We are happy to say that the participants gave positive feedback about the workshop and wanted more such events in the future. Some of the participants wanted hands on experience on FEA software and to cover topics related to application of the finite element method.

We take this opportunity to thank the SSN Management for giving us the necessary ambience to conduct the workshop and we also express our appreciation to all the enthusiastic participants.



Book Chapters – Elsevier Research



Elsevier Publications has brought out a
"Reference Module in Materials Science and Engineering".
This is an effort to revise and update old articles of importance and make them relevant to the current researchers.
Dr.V.E.Annamalai has three reviews with collaborative authors, in this research level book.

Corrosion of titanium and its alloys, pp.1-12
D.W.Shoesmith, JJ Noel & VE.Annamalai.
Corrosion of Zirconium and its alloys,pp. 1-40
TL Yau & VE.Annamalai ,
Degradation of Glass and Glass Ceramics pp.1-15
S.Oliver, BA.Procter, CA.May & VE.Annamalai ,

Guest Lecture

Dr.M.Nalla Mohamed and C.ArunPrakash coordinated the guest lecture organised by the Department of Mechanical Engineering on the topic' Introduction to new product development' delivered by Mr.Venkadesh Narayanan, Consultant, Fhysics Business Consultant Pvt Ltd, Chennai on 30.03.2016

Industry Interaction and MoU

Dr.N.Lakshmi Narasimhan was instrumental in getting MoUs signed with two industries, namely Barola Sports and M/s Ecologikol, for interactive research work.

ECOLOGIKOL
PARTNERING SUSTAINABILITY

BAROLA
GROUP
Lets Fly
ISO 9001:2008

Dr. A.K.Lakshminarayanan visited IGCAR and had a discussion with Dr. M.Vasudevan, Scientific Officer H+, Advanced Welding Process and Modelling Section, towards submitting proposals to UGC-DAE and BRNS (19-4-2016)

Mr.C.Arun Prakash was instrumental in getting an MoU signed with M/s Fhyzics consultants, for providing trainng in Mechatronics.

International Conference Report - ICMED 2016

On behalf of the Department of Mechanical Engineering, We, Dr.M.Selvaraj, Dr.M.S. Alphin, Dr.M.Nalla Mohamed and Dr.G.Selvakumar organized **the 'International Conference on Mechanical Engineering Design - ICMED 2016'** on **25 - 26 April 2016** at SSN College of Engineering. We thank you all for making the conference a **grand success**.

Conveners




It is our great privilege to summarize the report of the International Conference on Mechanical Engineering Design - ICMED 2016. For conducting the conference, we received the sponsorship from **Indian National Science Academy, Indian Society for Technical Education, Supreme Scientific Corporation and Atalon Ltd**, apart from SSN College of Engineering.

The ICMED-2016 conference was inaugurated by Chief guest **Prof. C. Jebaraj**, VIT University,in the presence of Guest of Honor **Ozlem Salman**, Istanbul Technical University, Turkey, **Prof. S. Salivahanan**, Principal, SSN College of Engineering, **Prof. Ve. Annamalai**, Head of Mechanical Engineering Department on 25th April 2016. The conference souvenir and CD was released during the inauguration by the dignitaries on the dias. The keynote address was delivered by distinguished guest **Prof. C. Jebaraj** on 'Engineering Design and its future perspectives on manufacturing'. It was interesting and well received by the audience. Totally, **101** Papers were presented in three parallel sessions held at Central seminar Hall, CSE Seminar Hall, ECE Seminar Hall at SSNCE.

A total of 403 abstracts were received through our own developed website link. Our peer review committee had scrutinized 173 full length papers for oral and poster presentation in the conference. Among the selected papers, 5 were from foreign countries such as Turkey (2), Portugal (2) and Algeria (1). The remaining Papers were by Indian researchers from various renowned academic institutions and R&D organizations across the Country.

Paper contribution from Foreign Countries and Indian region

Foreign Countries	India			
Turkey (2)	• AndhraPradesh	• Utterkand	• Puduchery	
Portugal (2)	• Assam	• Karnadaka	• Punjab	
Algeria (1)	• Chattisgarh	• Kerala	• Goa,	
	• Jharkand	• Madya Pradesh	• Rajasthan	
	• Odisa,	• Maharashtra	• Tamil Nadu	

Paper contribution from Research Institutes and Universities

Research Institutes

- IGCAR-Kalpakkam
- CVRD-Chennai
- DRDO
- CECRI-Karaikudi
- Larsen and Toubro Ltd

Universities

- Istanbul Technical University
- Dublin City University
- NITs
- Birla Institute of Technology Mesra
- PSG Tech
- Anna University
- AC Tech
- Pune University
- BITS
- NMIMS University
- Thapar University

The next day program was started with keynote address on the topic simulation using finite element method' by Mr. Mohamed from MAFTREE-Chennai in the Central Seminar Hall. Next to the keynote address, 35 and 38 papers were presented by oral and posters. Based on the feedbacks from the delegates, the Conference was evaluated as a very successful one.

This conference featured with **2** Plenary Lectures, **136** full paper presentations in 12 sessions and 38 poster presentations and presence of 2 foreign delegates, 173 peer reviewed original research papers from four different countries.

For viewing the abstracts please go through the below link.

https://sites.google.com/site/icmed2016/acknowledgement/conference-announcements-1/submissionofabstractsextended

Photos link https://goo.gl/photos/nJmowBbF8Ye7VoMz6

Conference abstract book link https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxpY21lZDIwMTZ8Z3g6M2FhNjU2MTc2NWQwZDk0OQ

Student write up

P.Shivaram,
Final Year Mechanical
writes..

WRITE UP ON VALEDICTORY FUNCTION

Date: 15-04-2016 at Mini Auditorium

INTRODUCTION

Valedictory function is a tradition that has been followed in the department of mechanical engineering since its inception, instead of farewell parties. It is conducted in a very professional manner by the students. The main purpose of the function is to pass on the knowledge and experience of the outgoing final year students to their juniors, so that clarity in functioning of the department and the future path by the students is established. It has a strong sentimental value as well, considering the fact that it would be the last time the final year students shall be assembling together.

The function went on smoothly on a crisp and effective schedule. The agenda was as follows:

1.Welcome address by the Faculty in charge 'Mr.R.Vimal Samsingh'

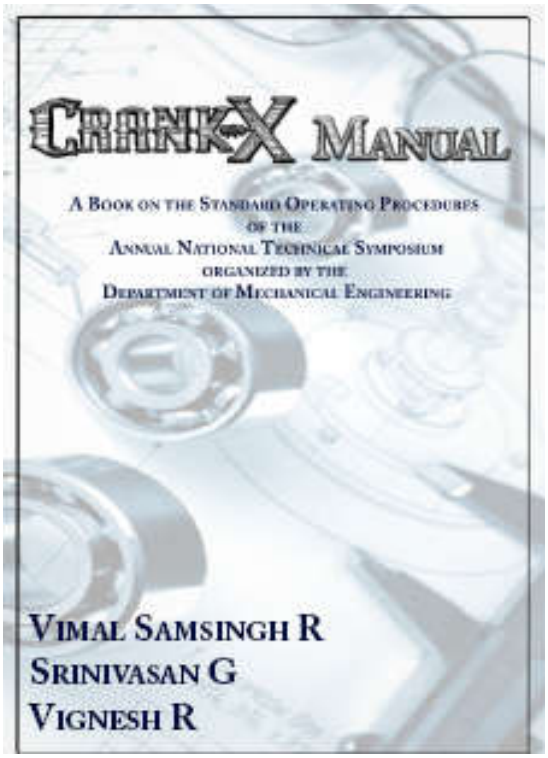
2. Address by the Head of the Department

3. Knowledge sharing session by the respective club representatives

4. Transfer of responsibility to New office Bearers of the Association of Mechanical engineering for the year 2016-2017

5. Prize Distribution Ceremony acknowledging the contributions of the students of Mechanical Engineering for the year 2015-2016

The function started with a welcome address by Mr.R.Vimal Samsingh followed by the address of HOD.



ISO style documentation of How to conduct Symposium

KNOWLEDGE SHARING SESSION

The glorious substance of the valedictory function is when the seniors pass on their knowledge and experience to juniors. This happens through a series of presentations by various students who have been taking up active roles in the department. They shared their contribution to the department, their learning and the experience they acquired during the course of their tenure.

Starting with Placements which was taken by Raghul, the session went on to cover various aspects of student participation in clubs and societies like Saaral Tamil Mandram, NSS, YRC, EDC and LOP. Our contribution to it was shared on the big stage and it is hoped to reach the juniors in the right spirit so that they carry on the good work and perhaps enhance it to the next level. The basic structure of the presentations expressed the initiation of the activity in the department, followed by the achievements and activities that took place in the past academic year and finally, the vision that we had for the juniors.

Moving on, the other clubs namely SSN Aero club, robotics club, SAE and the Go-kart teams shared their experiences and their vision into the future.

This session was concluded by throwing light on Crank-X 2015 followed by the release of Crank-X manual authored by Mr Vimal Samsingh R, Srinivasan G and Vignesh R. **This was a new element in the function which was introduced this year.**

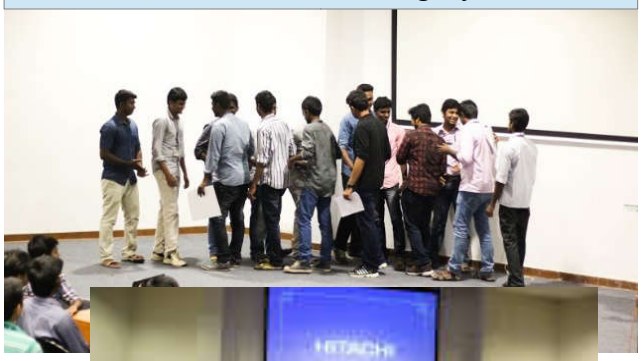
The manual would act as a rules of procedure for the forthcoming batches to conduct Crank-X in a more professional and well organized manner.

The knowledge sharing session covered almost every possible activity of the 4th years in the college and it is expected to give the forthcoming batch, a crystal clear insight of their objectives, mission and their expectations in the next year.

TRANSFER OF RESPONSIBILITY

On account of the retiring current final year batch from responsibilities of the department, an official transfer of responsibility to the new office bearers took place. The outgoing final year students, represented by the core committee members handed over the responsibility to the newly elected core committee members of the current 3rd year students. The president of the department Arun KVJ handed over the crank-X manual and the report to the new president Visveshwar N. This was a symbolic representation of the taking over of department duties by the new office bearers of the Association. The final year students presented a memento as a memory of their time in the department to the HOD.

The outgoing team wishing the New team in Cricketing style..



Handing over of Crank-X manual

CEREMONY FOR AWARDING CERTIFICATES OF EXCELLENCE

This tradition is to award the final years, third years and the second years for their achievements throughout the academic year. Some final year students were honoured with mementos while others were awarded with certificates.

This concluded the Valedictory function in a professional and cheerful manner. It is a memorable experience for everyone, especially the final year students, since it might be the last time they assemble together.

Mech Marvel - 17

The Half-cycle

Why spend time folding your bike in half when you can just jump on half a bike and ride? A unique last mile solution, the German-designed Halbrad (that's "Halfbike" in English) packs the two wheels, pedals and handlebars of a bicycle on a re-engineered rear triangle. This half-bike actually looks more like a third of a bike, and it pedals the streets and carries and stores easily thanks to those compact dimensions.

Clearly aimed at the ever-growing personal urban mobility market, the Halbrad is a simpler commuter bicycle that looks perfect for the smallest city apartments and tiny houses. To ride the super-compact bike, you sit on the saddle, grab hold of the handlebars that run below the saddle, and pedal away.

It looks more similar to riding a unicycle than a bike, but the Halbrad website says that it only takes minutes to learn. The bike features a two-speed drivetrain and a coaster brake. It has a 35-in (90-cm) turning radius and can stand by balancing the front wheel and pedal.

At 39 in (99 cm) high by 31 in (79 cm) long and just under 20 lb (listed at 9kg), the Halbrad is designed to be easy to pick up and carry – perfect for taking on a train or or inside an office. Its compact size also makes it easier to store than a full-sized bike.

The video below shows the Halbrad in action on both the road and some light off-road terrain.

https://youtu.be/TQIC138vmlE

Attention: Design Fabrication Project teams

Corporate Story 17

Hindalco (Aditya Birla Group)

Hindalco ranks among the global top five aluminium producers based on shipments and is an integrated producer with low cost base and strong presence across the value chain. Hindalco's diverse aluminium downstream offerings –extrusions, flat-rolled products, foils, wire rods, billets, etc. find applications in various industries ranging from automobiles to packaging and pharmaceuticals.

Vision
To be a premium metals major, global in size and reach, excelling in everything we do, and creating value for its stakeholders.

Mission
To relentlessly pursue the creation of superior shareholder value, by exceeding customer expectation profitably, unleashing employee potential, while being a responsible corporate citizen, adhering to our values.

Values

- Integrity-Honesty in every action
- Commitment-On the foundation of integrity, doing what it takes to deliver, as promised
- Passion-Missionary zeal arising out of an emotional engagement with work
- Seamlessness-Thinking and working together across functional silos, hierarchy levels, businesses and geographies
- Speed-Responding to stakeholders with a sense of urgency

Milestones

1958 Incorporation of Hindalco Industries Limited.1962 Commencement of production at Renukoot (Uttar Pradesh) with an initial capacity of 20,000 MTPA of aluminium and 40,000 MTPA of alumina.
1967 Commissioning of Renusagar power plant – a strategic and far-sighted move.
1999 Aluminium alloy wheels production commenced at Silvassa and Brownfield expansion of metal capacity at Renukoot to 242,000 TPA.
2000 Acquisition of controlling stake in Indian Aluminium Company Limited (Indal) with 74.6 per cent equity holding.
2002 Amalgamation of Indo Gulf Corporation Limited's copper business, Birla Copper, with Hindalco, effective from April 1.
2003 Hindalco acquires Nifty copper mine in March 2003, through Aditya Birla Minerals Limited
2004 Copper smelter expansion to 250,000 TPA.
2007 Successful acquisition of Novelis, making Hindalco the largest in aluminium rolling and among the global top five metals majors, with a presence in 12 countries outside India.
2010 Expansion of copper rod mill to 160 KTPA.
2013 First metal tapped at Mahan Aluminium. , Utkal Alumina Refinery goes on stream.
2015 Mahan and Aditya Aluminium smelters and Utkal refinery come onstream.

Companies

1.Novelis Inc :Acquired by Hindalco in 2007, Novelis is the world leader in rolled aluminum products, delivering unique solutions for the most demanding global applications, such as beverage cans, automobiles, architecture and consumer electronics. Our unique material advantage, customer-focused innovation and unparalleled commitment to sustainability define the Novelis brand.

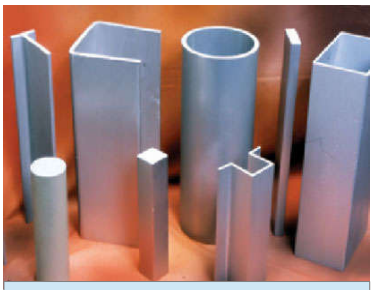
2.Aditya Birla Minerals: Aditya Birla Minerals is an Australian mining company with a focus on copper production and exploration. Based in Perth, West Australia, the company conducts its activities at the Birla Nifty Copper Operation in the Great Sandy Desert, WA. Aditya Birla Minerals is part of the Aditya Birla Group and is part owned by Hindalco.

3.Hindalco-Almex Aerospace: Hindalco-Almex Aerospace Limited manufactures high-strength aluminium alloys for applications in the aerospace, sporting goods and surface transport industries. A joint venture between Hindalco and Almex Aerospace, Hindalco-Almex operates a first-of-its-kind facility in India, which is exclusively devoted to high-performance aluminium alloys.

Products: Aluminium, Copper and Chemicals are produced in various forms.

Aluminium is used extensively in the transport industry due to its high strength to weight ratio and its excellent impact absorption qualities. Western countries use an average of 140kg of aluminium per vehicle, whereas it stands at 40kg per vehicle in India. Aluminium foils have many usage in food and pharma industry.

Flat products for truck flooring



Extruded products

Foil for tablet packing

Foils for blister packing of capsules

Foils for shaped packings

Hindalco's Copper division operates one of the largest single location custom copper smelters in the world. The Custom Smelter complex at Dahej in state of Gujarat in the west coast of India houses copper smelters, refineries, rod plants, captive power plant, a jetty and other utilities.

Hindalco produces copper cathodes, continuous cast copper rods in various sizes and also precious metals like Gold and Silver. The co-product Sulphuric acid is also utilised to produce Phosphoric acid and fertilizers like di-ammonium phosphate (DAP). Hindalco is the only manufacturer in India for 19.6mm diameter copper rod used for railway electrification.

Gold and silver have an affinity to copper ore and are found in certain quantities in the concentrate supplies. The precious metals are extracted after copper refining to produce 99.9 per cent pure gold, silver and selenium. The residue contains traces of platinum and palladium, which are sold as platinum group metal mix, commonly known as PGM.

Chemicals

Calcined Aluminas: Calcined alumina is widely used in various industries. These aluminas are classified on soda, degree of calcinations, fineness and particle size distribution. These alumina grades are white crystalline powders that are predominantly alpha alumina of high chemical purity and consistent physical properties .

Alumina hydrate: Alumina hydrates are classified in based on fineness and particle size distribution. Coarse Alumina hydrate, a crystalline white powder, is available in both moist and dry forms are recommended in the manufacture of water treatment chemicals like aluminium sulphate (alum), PAC (Poly Aluminium Chloride), zeolite, aluminium fluoride, glass, etc. Fine alumina hydrates are fine white powders are used as fillers in paper and in Sheet Moulding Compounds, Dough Moulding Compound etc. They also function as flame retardants and smoke suppressant in cables, rubbers, plastics, etc.

Envirnonmental Sustainability

Recycling of aluminium and copper greatly reduces energy and environmental impacts. Aluminium can be recycled over and over again without degradation in quality. Aluminium recycling requires 95 per cent less energy than virgin metal. Hindalco's downstream units in India and Novelis manufacturing facilities in several countries have dedicated aluminium recycling and remelting facilities. They recycle process scrap from customers and scrap collected from the market together with their own process scrap.
Their copper smelting facility at Dahej also undertakes recycling of copper scrap and recovery of copper from slag discarded by conventional production activities.

Careers at Hindalco

Hindalco's vertical and horizontal integration in the aluminium and copper industries offers opportunities for a range of employment positions. Its presence in multiple locations across geographies offers opportunities for employees to be exposed to various nations and cultures.

Hindalco's philosophy

- All employees have potential which can be harnessed
- Leadership potential is not fixed and can be developed
- We will invest differentially in talent and help our managers realise their career aspirations
- The primary ownership of development rests with the individual
- We will create appropriate development opportunities to enable employees to harness and optimise their capabilities and grow in their careers
- We will adopt structured processes and practices to develop a leadership pipeline for business needs

Hindalco's belief

- Talent looks for growth — provide opportunities at the right time
- Leadership competencies/requirements have to be viewed in context
- Have appropriate rewards and recognition in place
- Top management and business leaders should drive processes — not HR alone
- Leaders developed and positioned at key positions build credibility
- Demand will outstrip supply — build the pipeline
- Instil a deep commitment to talent throughout the organisation, starting at the top
- Embed a talent strategy in the overall business strategy
- Convincing employees of commitment to their development is critical to engagement and performance
- Line managers control most of the drivers of performance and retention

For a career with Hindalco and online applications, visit http://www.hindalco.com/careers

Amazing Innovation 1

Recycling Tyres at room temperature

Researchers at Durham University in the United Kingdom have developed an approach to breaking down rubber in materials at room temperature. The chemical process uses catalytic disassembly, eliminating the energy-intensive methods of currently-used tire recycling methods.

In a paper published in the journal Green Chemistry, the Durham researchers explain how the process works and how it could be used to recycle vehicle tires, latex gloves, and other polymer-based items which are manufactured in the millions of tons every year. The long-chain hydrocarbon molecules and unsaturated carbons in these rubbery materials are traditionally very difficult to recycle or reprocess easily; especially vehicle tires.

The traditional method for reprocessing rubber is to drastically change the temperature of the rubber compounds to break them down, either by heating them for milling, or freezing them to fracture them. These are energy-intense and leave a crumb product which is then mixed with new elastomers to produce new material, often with a loss in hardness or malleability.

These losses mean that most recycled rubbers are not re-used for the purpose they were originally formed, but are instead recycled into other products lower down the use chain. This often means that the cost-benefit for recycling is diminished.

The Durham researchers believe that their chemical process may be used to allow the materials to be recycled back into their original use – so a recycled tire could be made into a new tire. Their cross metathesis reaction breaks down rubbery polymers into viscous liquids that can then be reformed without degradation. The process could also be used to create the crumb now commonly produced, but at much lower cost.

The process discovered uses Grubbs' catalysts to break down polybutadiene (PBd) networks at their double bonds via cross-metathesis (CM) reactions to produce readily soluble molecules. As the chains fragment, the material disintegrates into rubber crumb at room temperature. Grubbs' catalysts are easily synthesized and readily-available commercially.

The researchers also discovered that increasing temperature and reaction time improved the breakdown process, also offering a faster way to facilitate rubber compound breakdowns when producing crumb. The resulting oil is low in molecular weight and non-polymers (oligomers), both conducive to easy re-use of the polymers being recycled.

http://pubs.rsc.org/en/Content/ArticleLanding/2016/GC/C5GC03075G#!divAbstract

Amazing Innovation 2

Multi spanner

Wrenchit is a lightweight multi-spanner with 10 different interchangeable wrench bits - including spoke wrenches and a bottle opener - that's designed for making small-scale bolt adjustments on the go. Each wrench slots into the sleeve and can be cycled to the top for use .

The Wrenchit consists of a 13.4 cm long and 2.3 cm wide (5.3 in x 0.9 in) stainless steel sleeve which houses the interchangeable wrench heads (which add 2 cm to the length when loaded). The combined weight of the sleeve and 10 wrench heads is just 100 grams (3.5 oz), making it lighter than your standard mobile phone. While it may lack a little in leverage, it shouldn't suffer from the slippage issues you get with a shifting spanner and should slide into hard to reach spaces, making it useful on small, fiddly jobs.

The tool includes 6-13 mm wrench bits and a wing nut wrench, along with specialized Shimano spoke wrenches. The chassis holds five wrench bits at a time, with the remainder riding along in the pouch. There's also a fitting for that ubiquitous and seemingly essential addition to all pocketable multi-tools – a bottle opener.

Read more at http://mininch.com/

Amazing Innovation 3

The bike that you can pedal with your arms and legs

The Varibike features both a traditional leg-powered drivetrain, and a handlebar stem-mounted set of cranks that the rider turns with their arms. That **arm power is transmitted from those cranks down to the main drivetrain via a rubber-sheathed chain drive.** This setup allows the rider to cruise along using leg power only, arm power only, or a combination of both. According to the Varibike company, a study conducted by the University of New Mexico indicated that a rider's maximum power output could be increased by over 30 percent when using both their arms and legs, as opposed to only their legs. Of course, using all four limbs would also provide a more complete work-out.

More info at http://varibike.com/Seite32.html

Watch the varibike in operation at https://youtu.be/0jhp3kGShLk

Amazing Innovation 4

Junk Tyres as mosquito traps

Mosquitos like old tires. More specifically, female mosquitos like to lay their eggs in the cool, stagnant water that often accumulates within them. Now, in the fight against mosquito-borne diseases such as the Zika virus, the Government of Canada is using that fact against the insects.

Researchers with the Grand Challenges Canada initiative have created a highly-effective mosquito trap, each one of which is made from a single discarded tire.

Known as the ovillanta, the trap is made from two 50-cm (19.7-inch)-long sections of tire, placed together to form a sort of cave. Water is placed in the bottom section, along with a milk-based non-toxic solution that attracts mosquitos. Additionally, a strip of paper is placed within to float on the water. Female mosquitos subsequently fly into the ovillanta, lay their eggs on the paper, and deposit pheromones in the water to let other mosquitos know that it's a safe breeding site.

The catch is, twice a week the paper is removed and checked for eggs, then burned or sterilized using ethanol. Additionally, using a release valve on the bottom section, the water is drained and any larvae present are filtered out and destroyed. The filtered water is then placed back in the trap for reuse – it becomes more attractive to mosquitos over time, as more and more of the pheromones are deposited and concentrated within it.

In a 10-month field test conducted in Guatemala, a system of 84 ovillantas allowed users to collect almost seven times as many *Aedes* mosquito eggs as were collected using 84 standard traps placed in the same locations. Additionally, use of the new traps is said to be about one-third the cost of destroying larvae in natural ponds, and about 20 percent the cost of spraying for adult mosquitos – it's also considerably more environmentally-friendly than the latter.

The research is being led by Dr. Gerardo Ulibarri of Ontario's Laurentian University, working with colleagues Angel Betanzos and Mireya Betanzos of the National Institute of Public Health of Mexico. Plans call for a program to be established in which local people, living in areas prone to maladies such as Zika or dengue, will build and maintain the traps.

Source: Grand Challenges Canada

National Institutional Ranking Framework

"The Ranking framework will empower a larger number of Indian Institutions to participate in the global rankings, and create a significant impact internationally too. I see this as a sensitization process and an empowering tool, and not a tool for protection."

Ms. Smriti Zubin Irani, HRD Minister

The final framework identified nearly 22 parameters in five major heads, several of them are similar to those employed globally such as excellence in teaching, learning and research. However, there are a few which are India-centric, reflecting aspirations of the rising numbers of young people of a vast nation. Country-specific parameters relevant to the Indian situation include regional and international diversity, outreach, gender equity and inclusion of disadvantaged sections of society.

Results of the ranking:

The IITs (old and new) lead the league tables for Engineering (Category A-Research & Teaching) occupying the first eleven positions. Predictably, the first five IITs, established during 1950s and early 1960s, take the first five positions led by IIT Madras the top slot with a weighted score of 89.42 followed by IIT Bombay, IIT Kharagpur, IIT Delhi and IIT Kanpur with weighted score of 87.67, 83.91, 82.03 and 81.07 respectively.

Other Institutions of Tamilnadu are as below-Obviously deemed universities and autonomous colleges

1	Indian Institute Of Technology, Madras	89.41
12	National Institute Of Technology, Tiruchirappalli	74.45
13	Vellore Institute Of Technology -Vellore	74.40
24	Psg College Of Technology-Coimbatore	67.80
29	Thiagarajar College Of Engineering-Madurai	66.51
34	Coimbatore Institute Of Technology-Coimbatore	62.58
40	Shanmugha Arts Science Technology & Research Academy (Sastra) -Thanjavur	61.11
44	Karunya Institute Of Technology And Sciences - Coimbatore	59.29
46	Kongu Engineering College -Perundurai	59.06
47	sona College Of Technology-Salem	58.97
50	Amrita Viswa Vidyapeetham-Amrita Nagar (Po) ,Ettimadai	58.78
53	Kumaraguru College Of Technology-Coimbatore	58.44
54	B.S. Abdur Rahman Institute Of Science And Technology -Chennai	57.80
62	Bannari Amman Institute Of Technology-Sathyamangalam	56.21
66	Noorul Islam Centre For Higher Education -Kanyakumari	55.45
72	Hindustan Institute Of Technology And Science (Hits) -Chennai	54.32
80	Indian Institute Of Information Technology, Design & Manufacturing (IIITD&M) Kancheepuram-Chennai	52.64
90	Sri Ramakrishna Engineering College-Coimbatore	50.55
94	Adhiyamaan College Of Engineering (Engineering & Technology) -Hosur	50.04
98	Anand Institute Of Higher Technology -Chennai	49.41

There was provision for separate ranking in two categories that are engaged in research and teaching (Category A), and those engaged mainly in teaching (Category B).

SSN had applied under category B.
But the list for Category B was not released.
Reason cited in the MHRD site is :

"Unfortunately, data from the Category B institutions in all domains continued to exhibit major inconsistencies despite our best efforts to remove them. It was decided, therefore, that no rankings be announced for Category B institutions this year. "

SSN School of Management has secured 33rd position at an ALL INDIA LEVEL, in the Management Institutions Category- A Institutions (Teaching and Research), with an overall Score of 61.76.

Read the full text at
http://mhrd.gov.in/sites/upload_files/mhrd/files/nirf_booklet_FINAL_02_04_16_01-00PM.pdf

Forthcoming Events

1 **Department of Mechanical Engineering**, is organizing one day National Conference on **"Processing and Characterization of Advanced Engineering Materials (NCPCAEM - 2016)"** on **6th May 2016 (Friday)** at SSN College of Engineering, Chennai. All the accepted papers of this conference will be published in "**Journal of Manufacturing Engineering (ISSN No 0973-6867)". The Journal is indexed in Google scholar.**
Conveners **(**NCPCAEM 2016)

Dr. K. RAJKUMAR, Dr. L. POOVAZHAGAN and Dr. K. JAYAKUMAR

2 The Department of Mathematics, SSN College of Engineering, Chennai and the Chennai Chapter of Society for Reliability and Safety Engineering (SRESA), Mumbai will be organizing the 3rd National Conference on Reliability and Safety Engineering (NCRS-2016) **during 01-03, December, 2016** at SSN College of Engineering, Chennai. All Mech, Energy and Manufacturing students working on aspects of safety and reliability are welcome to share their work.

3 The Department of Mechanical Engineering, R.M.K. Engineering College is organizing a One day National Conference on **RECENT INNOVATIONS IN MECHANICAL ENGINEERING (RIME) - 2016** on 3rd May 2016(Tuesday). The full paper of maximum 7 pages in double column with single line spacing , IEEE format in MS-WORD and also in PDF form can be sent by email to rime2016@rmkec.ac.in. Alongwith paper the registration fee must be attached as DD .(Rs.500 for UG / PG Students & Rs.750 for Research Scholars)

4 The ICFAI Foundation for Higher Education is a Deemed University under Section 3 of UGC Act. 1956, It comprises of IBS Hyderabad (Faculty of Management), Faculty of Science and Technology (FST), Faculty of Law (FOL). FST, IFHE is organizing 1st International Conference on Emerging Trends in Mechanical Engineering (ICETiME 2016) during 23 – 24th Sept, 2016. The conference covers the research areas under different themes related to the conference title.**Important Dates:**Abstract Submission Dead line : 16.05.2016

5 The Manufacturing Research Centre, University of Johannesburg , is organizing the first International Conference on Sustainable Materials Processing and Manufacturing, at Skukuza, Kruger National Park, South Africa. The conference will be held from January 23-25, 2017. The link https://www.etouches.com/smpm Submit abstract at https://www.eiseverywhere.com/eSites/165114/Homepage

6 The department of Mechanical Engineering of K L University Vijayawada, in association with IIT Varanasi, is organizing " 5 th International Conference on Recent Advances in Composite Materials(ICRACM)" during 15th – 18 th Dec, 2016. Students and authors are requested to send extended full paper by e-mail: icracm2016@kluniversity.in For details, visit http://www.kluniversity.in/ME/pdf/ICRACM.pdf
Abstract submission by 15th June, 2016. Registration Rs.3,000 for Academics and Rs.2,000 for Scholars.

7 Two days Workshop On 3D FRACTURE MECHANICS SIMULATION-CRACK GROWTH SIMULATION | Remaining Life Prediction, during 11-12th May 2016 @ DHIO Research and Engineering Pvt Ltd., Bangalore.
Contact for More Details : + 91 9591994642, 9900138009, info@dhio.in

Registration Fee for · Students & Research Scholars : INR 2,500.00

· Faculties and Industry : INR 3,500.00

Registration fee to be paid in the name of "**DHIO – Center for Excellence"** Payable at Bangalore

For details, contact Dr. T Jagadish.T,HOD – Department of Mechanical Engineering,

Bangalore Institute of Technology, Bangalore, Email : tjagadish@bit-bangalore.edu.in

Phone : +91 98450 58654

8

Attention: Automotive Enthusiasts

Republic Motors, Punjab supported by SAE India Collegiate Club of KCT and Department of Automobile Engineering is conducting an **one month Summer Internship Program on "CAD designing, Vehicle Dynamics and Student Formula Manufacturing**" from **18th May to 17th June 2016 at Kumaraguru College of Technology (KCT), Coimbatore.**

This Summer Internship Program visions to increase skill set of engineering grads through practical internship where students will first design & calculate all the design parameter and then manufacture a formula student vehicle. This will be a useful training program for the students interested or members in Baja, Supra and Gokart teams.

Republic Motors have been conducting these similar workshops for the past 3 years in Bhopal and other places and they are the organizers of International Go-Kart Championship every year at LPU, Punjab.

The interested students can register online at http://republicmotors.in/sip/.

They can visit FB page https://www.facebook.com/RepublicMotors.in/?fref=ts or contact KCT Coordinator: Mr.Rahul Karthick @ 96777 34765 for details

Alumni News

Shashank Suresh, after completing MS abroad, has returned back to India and is now working at *Royal Enfield motorcycles*, with the product development division.

Gomathisankar Ganesan, of 2008-12 batch is now Industrial Engineer at *Roca Sanitario, S.A.* since June 2015 at Perundurai. Prior to this, he was Assistant Engineer at Hinduja Foundries Ltd, Sriperumbudur from February 2013 to May 2015

This is **Niranjan** from the first batch of Mechanical Engineering and I graduated in 2011. I just wanted to inform you that I have just graduated from the *Post graduate program of IIM Bangalore and will be joining GEP consulting as a Senior consultant in June.*

This has been made possible for me because SSN gave me a platform that jump started my career with an offer from Ford motor company which then in turn helped me get an admission from the prestigious b-school. For that I am really grateful to the institution, the Mechanical department and most importantly the staff.

I also fondly recollect how you used to tell me that I was suited for a career in management and marketing. Those words gave me the confidence to go ahead in making a career choice in management. Thank you for that sir.

When I was studying at SSN, I used to wish that there was a senior batch to guide me in making career choices. I am sure that there are some students currently having the same questions as I. Please let me know if I can be of any assistance in that regard. Thanks and regards for all the help back in college : Niranjan J, Post Graduate Program 2014-16, IIM Bangalore

Other Department Round up

In the recently conducted Research Meeting, the Dept of Electrical and Electronics Engineering was recognized as the Best Research Department. One of the best researchers was also from EEE.

They have been consistently winning this award over the years-which means there is something to learn.

It is worth benchmarking EEE, to study their approaches to research, the journals they publish, their h index, their citations etc -to enhance our research content.

Competitions

Safer Mobility for the Future Contest

Deadline: 2016-05-30 *Award: $50,000*

Although vehicle safety continues to improve, Magna International realizes there's no time to rest. We recognize that the effort to find the next great safety innovation can come from anyone in any walk of life.

With that philosophy as a driving force, we are challenging the public, inventors, creators and everyday commuters to share their ideas to improve vehicle safety. We are looking for groundbreaking ideas that we can help bring to the road, creating a safer driving experience for drivers, passengers and pedestrians.

Safety in automobiles can mean a lot of different things. Sometimes it means improving driver performance through improved awareness, response time, or limiting distractions. It could also be something that provides structural support in the event of an accident. See our safety categories for more details.

HOW TO ENTER
•Develop an idea that has the potential to improve vehicle safety, and write an original, 500-word essay describing your idea.
•Fill out all required fields on the entry form, agree to the Official Rules, paste in your essay, attach any additional documents that help describe your idea, and click SUBMIT.
•Entrants will receive e-mail confirmation that the entry was received.

1st place - $50,000; 2nd place - $25,000; 3rd place - $15,000

Enter Contest Here: http://www.magnachallenge.com/

India Innovation Challenge

Deadline: 2016-07-31, Award: INR 50Lakhs

Calling all innovators, thinkers and makers of the country to join the revolution! Give your ideas a jump-start by sculpting your innovation with technical support from Texas Instruments, business mentorship & incubation from the best minds of the country.

This contest is for students from Indian engineering colleges who have a dream to create something new, aspire to make a difference and contribute to India's success towards becoming an innovation hub.

Design - Innovative products with technical mentorship & resources from TI

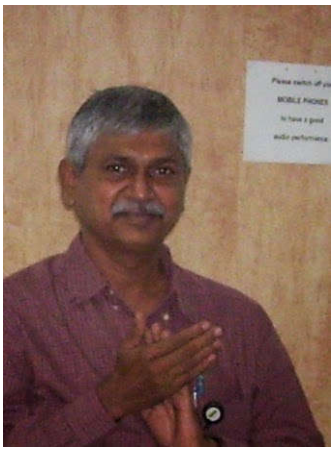
Incubate - With mentors from India's smartest brains from IIM Bangalore

Launch – Your product with seed funding from the Department of Science and Technology (DST)

Enter Contest Here:
https://e2e.ti.com/group/universityprogram/w/contests/2411.innovation-challenge-india

Inspiring Life Stories

Know your Time Zone



Mr/Kishore Babu
Schwing Stetter

This is not a story, but something that will make you to relax……

Kenya is two hours ahead of Nigeria, but it does not mean that Nigeria is slow, and it does not mean that Kenya is faster than Nigeria. Both countries are working based on their own "Time Zone."

Someone is still single. Someone got married and 'waited' ten years before having a child, there is another who had had a baby within one year after marriage.

Someone graduated at the age of 22, yet waited 5 years before securing a job; and there is another who graduated at the age of 27 and secured employment just after national service.

Joyce Meyer started her own ministry at age 41 and still alive today at 71 years old.

Someone became CEO at the age of 25 and died at the age of 50 while another became a CEO at the age of 50 and lived to 90 years.

Everyone worked based on their 'Time Zone'..

Some people have everything that work fast for them.

Don't bother much about those things and you work in your "time zone".

Takeaways from the above lines: Colleagues, friends, relatives associates, younger one(s) might "seem" to go ahead of you. Don't envy them, it's their 'Time Zone.'. Don't get into comparison mode as everyone comes with his individual time zone destiny to learn their unlearnt lessons of life...Your time will come too when you have experienced that unlearnt lesson of life to enjoy that fuller experience ... Hold on, be strong, stay true to yourself. All things shall work together for everyone's good at their right time. You're not late… you're on TIME!!!

Corporate Wisdom 29	The Art of Forgiving

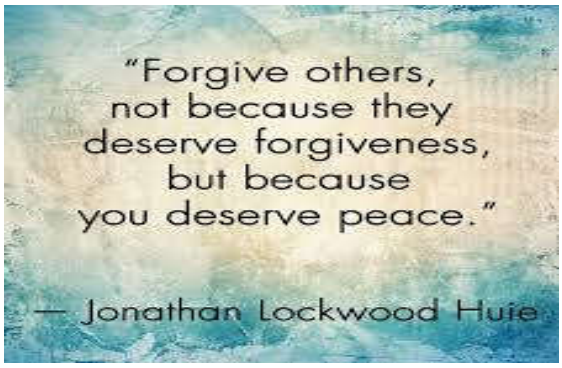
Forgiveness is not something you are doing for the benefit of your friends, colleagues, relatives or associates., but for your own benefit.

As human beings we cannot forget, since deep memories are never lost. Especially the incidences which were very bitter, let down or very happy ones.

- Happy incidences give positive feelings, but the incidence which were bitter give us negative thoughts, ego, vengeance etc. While we cannot forget them, we can forgive and move on.
- Change the feelings associated with the incident and the person in that incident.
- By doing so, you may continue to have a memory recall of that incident, but you will never have an emotional reliving of the incident.
- The scars will remain, but the injury would be gone.
- As long as we don't change the feelings associated to the incident and the person involved in that incident that caused the hurt, we will continue to relive the same emotions.
- If he or she is your best friend or colleague, as we have stated, then realize that the person is much bigger than the instances of what happened between the two of you.
- Recall and relive the hundred special moments between the two of you, instead of the ten disturbing moments.
- **Don't let the thorns blind you to the roses**.

If we believe God loves us and forgives all our mistakes, why can't we love and forgive others!.

- **Forgiveness is the most powerful thing we can do for our self towards Inner excellence .**
- **If we can't learn to forgive, we can forget about getting to higher levels of awareness.**
- **Forgive everyone, including self.**
- **Drop guilt by forgiving yourself.**
- **Drop hatred by forgiving others.**



Wishing you most & more
Have a great day !

R.Ramakrishnan