

mechanicalAspire

Achievements in Sports, Projects, Industry, Research and Education

All about Nobel Prize

The teamwork behind X-Ray Diffraction

An unusual and unorthodox series of scientific discussions in a café led to **Max von Laue's** ingenious experiment that unmasked the true identity of X-rays.

In the years before the 1914–1918 War, Munich was one of the world's great hubs of scientific and artistic innovation. Painting, poetry and physics flourished in the capital of Bavaria – and a favourite meeting point of its protagonists was the coffeehouse at the Hofgarten, which was immortalised in T.S. Eliot's (Nobel Laureate 1948) poem "The Waste Land":

*Summer surprised us, coming over the Starnbergersee
With a shower of rain; we stopped in the colonnade,
And went on in sunlight, into the Hofgarten,
And drank coffee, and talked for an hour.*



Max Von Laue

Drinking coffee and talking at the Hofgarten café provided respite for more than just poets. The café was also the setting for a series of informal discussions between a mixture of physicists from the nearby university, discussions that would play a crucial role in uncovering the true identity of X-rays.

Café Lessons

The central figure in these coffee meetings was Arnold Sommerfeld. Sommerfeld was appointed professor of theoretical physics in Munich in 1906, but he was trained as a mathematician. So to help improve his knowledge of experimental physics, he asked Abraham Joffe – the assistant of the discoverer of X-rays, Wilhelm Röntgen – for some coaching. Joffe proposed that he and Sommerfeld should meet every morning in the Hofgarten café to talk about experimental physics.

Sommerfeld, initially the eager student, was himself an exceptionally gifted teacher, and soon the informal discussions widened to include crystallographers and chemists. His Hofgarten café circle, together with a Wednesday evening symposium at the university, created an atmosphere of open and creative discussion that was unusual in academic circles at that time. Sommerfeld might not have received a Nobel Prize, but no less than seven alumni of the "Sommerfeld school" would become Laureates – [Werner Heisenberg](#), [Peter Debye](#), [Isidor Rabi](#), [Wolfgang Pauli](#), [Linus Pauling](#), [Hans Bethe](#), and, first of all, [Max von Laue](#) in 1914 for his discovery of the diffraction of X-rays by crystals.

What Is Light?

Max von Laue joined Sommerfeld's group as a private lecturer in 1909, and he was immediately struck by the atmosphere that was "saturated with questions for the nature of X-rays." Röntgen's discovery of X-rays in 1895 had created a major stir, not just among physicians and the public for its use as a medical imaging tool, but also among physicists trying to understand what these mysterious rays were made from.

At the time, physics was in the middle of one of its greatest transition periods. For over 250 years eminent physicists had argued whether light behaved like a wave or a particle. Five years after Röntgen's discovery Max Planck founded his quantum theory, which stated that energy is made up from individual particles, or "quanta", in a similar way that matter is made up of atoms. In 1905, Albert Einstein extended Planck's theory by showing that the photoelectric effect – the small current flow and release of heat that occurs when light shines on a metal surface – could only be interpreted to mean that light behaved like particles.

Over a decade after Einstein's explanation of the photoelectric effect, it would eventually become clear that light behaves both like a wave and a particle. But at the time of the Hofgarten café meetings nothing was certain about the nature of light, or indeed X-rays.

Röntgen had shown that X-rays behaved like light waves in some senses; for instance, the way in which they affected photographic film. Röntgen even proposed that X-rays behaved more like longitudinal waves, such as sound waves, than transverse waves, such as water ripples. However, Röntgen also found that X-rays could neither be deflected when they passed from one medium to the other – for instance, from air to water or air to glass – nor could they be reflected, which are two fundamental characteristics of light waves. X-rays were unlikely to be charged particles because not even strong magnetic fields could deflect their direction.

Einstein's discussions about the photoelectric effect influenced discussions about the nature of X-rays, as a letter to Sommerfeld in January 1910 shows. If X-rays were waves, writes Einstein, how should a piece of metal be able "to store pot-shards of X-ray waves like a housewife until it can equip one of its electron children with enough energy that it can travel through space with the intensity it is entitled to by its X-ray birth?"

Other evidence, however, appeared to contradict Einstein's views. Röntgen's initial suggestion that X-rays could be longitudinal waves had been abandoned in 1904 when [Charles Barkla](#) at Liverpool University had shown that X-rays could be polarized. Despite the objections of Einstein, polarization was a strong argument for a transverse wave. Further experimental evidence suggested that X-rays were a form of electromagnetic wave, with a wavelength at least ten thousand times shorter than visible light. With evidence slowly accumulating that X-rays could be waves, Sommerfeld wrote in a paper in *Annalen der Physik* in early 1912 that now the "proof of diffraction would be a sort of a keystone" for the wave theory of X-rays.

Crystal Conundrum

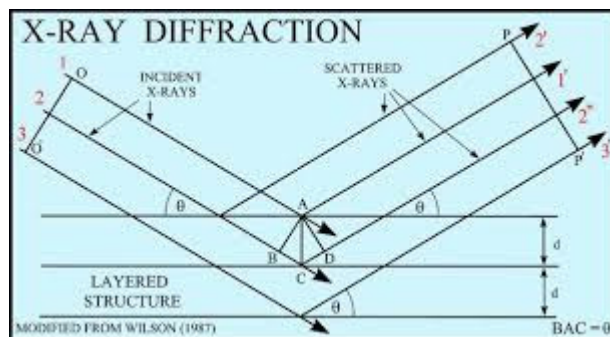
For all these discussions, it was in trying to solve another problem that von Laue unmasked the true identity of X-rays. Since his school days, Von Laue had a long affection for optics, particularly the wave theory of light. So he jumped at the suggestion from Sommerfeld that he should write an article on wave optics for the Encyclopaedia of Mathematical Science, not only because it reunited him with his favourite subject, but also because it forced him to think about how crystals are organized.

In 1850, Auguste Bravais had suggested that crystals are made up from atoms arranged in regularly ordered, repeating geometric patterns in three dimensions – known because of their appearance as space-lattice structures. Many institutes in Munich University had mathematical models of these proposed space-lattice structures, mainly thanks to the enthusiastic support of the theory by the crystallographer Paul von Groth, but no one had yet proved that crystals have this structure. von Groth was another frequent participant of the Hofgarten café circle, and thanks to him von Laue quickly learned about crystal optics, and soon became known as a local specialist in the subject.

Two Birds with One Stone

One evening in February 1912, the physicist Peter Paul Ewald sought von Laue's advice about some difficulties he was having with his doctoral thesis on the behaviour of long electromagnetic waves in the hypothetical space lattices of crystals. von Laue couldn't answer Ewald's question, but his mind began to wander.

Suddenly, a connection clicked in his mind. If diffraction and interference occurs when the wavelength of light is a similar size to the width of the slit of an optical grating, and if X-rays were indeed waves that have a wavelength at least ten thousand times shorter than visible light, then in theory the spaces between the atoms in a crystal might be just the right size to diffract X-rays.



If all this were true, von Laue thought, a beam of X-rays passing through a crystal will be diffracted, forming a characteristic interference pattern of bright spots on a photographic plate.

Sommerfeld was sceptical when von Laue approached him with this idea. He doubted the experiment would work, and besides he needed his assistants for other assignments. Nevertheless, Sommerfeld was generous enough to give von Laue the go ahead to carry out the study. von Laue designed an experiment in which he placed a copper sulphate crystal between an X-ray tube and a photographic plate. His assistants, Walter Friedrich and Paul Knipping, carried out the experiment. After a few initial failures, they met with success on 23 April, 1912. X-rays passing through the crystal formed the pattern of bright spots that proved the hypothesis was correct.

In a single elegant experiment, von Laue had proven the wave-like nature of X-rays and the space-lattice structure of crystals at the same time. When he received the Nobel Prize for what the Committee said was his "epoch-making discovery", Max von Laue gratefully acknowledged Friedrich and Knipping for their roles in the discovery; and for him it went without saying that he shared his prize money with them.

(Reproduced from Nobelprize.org)

Info to Alumni- Campus Update

Two new PG courses have been sanctioned in 2014-15

M.E. Medical Electronics (Biomedical engg dept)

M.Tech. Environmental Science and Technology (Chemical engg dept)

Info to Alumni- department Update



Mr. K. Jayakumar joined us on 2nd June 2014 as Assistant Professor. Mr. Jayakumar has about 10 years of experimental research experience in Manufacturing Engineering and Materials Processing combined with teaching. Prior to joining SSN he worked with the Indian Institute of Space Science and Technology (IIST), ISRO, Trivandrum, Kerala as Reader in the Department of Aerospace Engineering.

He completed B.E (Mech. Engg.) from Mookambigai College of Engineering, Trichy in 2002 and his Masters of Engineering from the Government College of Technology, Coimbatore in 2004. He is presently doing Ph.D (Part Time) in the National Institute of Technology, Calicut and has submitted his thesis.

His research interests include Machining processes, Composite materials processing and characterization, Design of experiments, Prediction and optimization techniques. He has published a number of papers in International journals and conferences.

Dr. M. Dhananchezian joined us on 2nd June 2014 as Associate Professor. Dr. Dhananchezian hails from Thiruvannamalai District. He has about 9 years of teaching experience. Prior to joining SSN, he was with Vel Tech Multi Tech Engineering College as Associate Professor.

He completed B.E (Mech. Engg.) from Adhiparasakthi Engg. College in 2003 and his M.E from Thanthai Periyar Govt. Institute of Technology in 2005 with Distinction. He completed Ph.D (Full Time) from the College of Engineering, Anna University in 2010. He has to his credit 23 publications in International / National Journals and International / National Conferences. He was the school topper both in SSLC and HSC. He was also the recipient of the National Doctoral Fellowship (NDF) award from AICTE for Ph.D.



Mr. R. Damodaram joined us on 18th June 2014 as Assistant Professor.

Mr. Damodaram completed B.Tech in Mechanical Engineering from Sri Kalahasteeswara Institute of Technology, Srikalahasti, Andhra Pradesh in 2007. He went on to do M.E (Mfg. Engg) from MIT, Chennai and completed ME in 2009. He joined as a Full time Ph.D scholar in IIT - M, Chennai. His PhD specialization is in Metallurgical and Materials Engineering. He has now submitted his thesis.

He was a recipient of MHRD - HTRA scholarship for 4 years in Indian Institute of Technology, Madras. His areas of interest include Mechanical Behaviour of materials, Strength of Materials, Welding processes and Material Science & Engineering. He has to his credit 14 publications in International Journals and International / National Conferences. He has been an active member in IVil - IIT for Village Organization.

Dr. G. Satheesh Kumar joined us on 20th June 2014 as Associate Professor. Dr. Satheesh Kumar completed B.E (Mech. Engg) from Government College of Engineering in 1998. He completed his M.E (Mfg. Tech) from REC, Trichy in the year 2000 and went on to do his Ph.D in Robotics from IIT, Madras. He completed the same in 2009. Prior to joining SSN, he was with Velammal Engineering College as Associate Professor.



His areas of interest include :

- Robotics,
- Mechatronics
- Control System
- Parallel Manipulators and
- Kinematics Dynamics.

He has to his credit 21 publications in International Journals and International / National Conferences. He has also authored a chapter in the book title "New Development of Manufacturing Robotic Systems and Automation".

He has been an active member in 'IIT for Villages' group (IvIL)

His extra curricular activities include Sword Taichi, Mansuria Kung-Fu martial arts, playing Chess, Football, Tennis and Arm wrestling. He has also served as Senior Under Officer in NCC.

Info to Alumni- External Recognition

Invited Lectures

Dr. N. Lakshmi Narasimhan delivered an invited Lecture on Hydroturbines during the FDP programme on Fluid Mechanics organized by Anand Inst of Higher Tech, Chennai. (June 26,27).

Dr. N. Lakshmi Narasimhan delivered a talk on "Effect of Combustion on the Dual Cycle - A Thermodynamic Cycle Approach" during the 10-day workshop organized by SAEINDIA SSNCE club at our campus. June 29



Invited Reviews

Dr. N. Nallusamy reviewed the following articles: 1. "Effective method to improve the efficiency of Diesel engine fuelled with Honge oil Methyl Ester (Home) and its blends with ethanol" for the International Journal "Clean Technologies and Environmental Policy" 2. "Experimental Investigation of antioxidant effect on oxidation stability and emissions in a methyl ester of Neem oil fuelled DI diesel engine" for the International Journal "Renewable Energy".

Research Activity

Dr. N. Lakshmi Narasimhan's paper titled "Numerical studies on the performance enhancement of an encapsulated thermal storage unit", has been published online in the International Journal of Thermal Sciences. (N. Lakshmi Narasimhan, R. Bharath, Sarah Ann Ramji, M. Tarun, A. Siddarth Arumugam, International Journal of Thermal Sciences 84 (2014) 184-195)



Dr. M.S. Alphin. three Candidates got admission for pursuing PhD programme under Dept. of Mechanical Engineering, SSN College of Engineering in affiliation to Anna University, June 2014 Admission.

1.B.Rajeshkumar (Reg. No. 141299847)

2.S.Arunkumar (Reg. No. 1412299843)

3.V.Gopal (Reg. No.1413299737)



One PhD research scholar (Mr.C.Prakash, Reg no: 1413299719) has been granted provisional admission at Anna University, Chennai, under the guidance of Dr.K.S.Vijay Sekar, Asso.Professor, Mechanical Engineering

Programs Attended

Dr.K.S.Vijay Sekar attended a one day conference on Hyperworks applications organised by Altair Inc. in Chennai on June 6.

A.K.Lakshminarayanan, and L.Poovazhagan attended one week faculty development and training program on "Computer Integrated Manufacturing" at Anna university during 18-25th June 2014



Dr. A.S. Ramana, Asso. Professor attended Practice-oriented Workshop on Energy Audits and Energy Efficiency Organized by Asian Productivity Organization at National Productivity Council (AIP), Chennai (June 2-11)



Programs Conducted

Dr. N. Lakshmi Narasimhan and Dr. R. Prakash organized a 10 Day National Level Workshop on Automotive Design and Development as part of the SAEINDIA SSNCE activities. (June 20-29)

Internships arranged

Dr. N. Lakshmi Narasimhan arranged one month internship for 2 passed out Mech UG students at Brakes India Ltd. Sholingur.

Dr. N. Lakshmi Narasimhan arranged in plant training for 4 PG and 4 UG students at Southern Railways.



Student Activity



Murugappan S and Manikanda Balaji V of (7sem A) have presented a paper titled "Numerical and Experimental Crashworthiness Determination of Aluminum Tube Sections" under the guidance of **Dr.S.Suresh Kumar** at the International Mechanical Engineering Congress (IMEC 2014) held at National Institute of Technology, Trichy (June 13-15).

Their paper presentation was reviewed by Mr. Suriyanarayanan, CLRI and Mr. Ram Bishu, Professor, University of Nebraska Lincoln, USA. They gave their valuable suggestions and motivated our students to continue working in this field.

Faculty write up - Short cut virus removal



Jayakishan.B

All your folders in pendrive/flash drives or memory cards are converted into shortcut icons. Most of the people come across this type of issue with their working environment. If you have not formatted your flash drive then you can solve this problem. Just follow the below steps

Click on "**Start**" --> **Run** --> type **cmd** and click on **OK**.

Here I assume your pen drive letter as **K**: Enter this command. **attrib -h -r -s /s /d k:*.***

You can **copy** the above command --> Right-click in the Command Prompt and **paste** it.

Note : Don't forget to replace the letter **k** with your pen drive letter.

Now press "Enter".

That's it!!!! Now check for your files and folder in Pen Drive.

Faculty write up – utilising SSN Funding and Student Projects for Research progress

When I was doing PhD at IIT Madras, our Head of the Department used to tell us. “When you complete your PhD, it is not the end of your research, rather it is the beginning”. I took it as an inspiration and sincerely thought of doing that way. When I completed my PhD, I chose teaching and tried to work on my research.



Within six months of joining SSN, with the help of students, we developed a vapour adsorption cooling system, a year-round airconditioner and a gravity-fed heat pipe in 2012. Students played a major role in these activities. This gave me an encouraging feeling and I wanted to continue in this way with the participation of more number of students. Then came, **SSN funded student internal projects**. I got two projects and started working with the students. We developed a bubble pump and vortex tube cooler in 2013. Both are working satisfactorily and **we were able to publish four papers in international journals and conferences and filed a patent also**.

This year also, we are developing a Stirling engine and concentric annular heat pipe through **student projects funded by SSN**. We have future plans to develop an airconditioner cum auxiliary cooler with evaporative condenser and a multipurpose hand-held cooling cum cleaning device. Definitely, these activities are going to result in good publications.

I found a way for trying out my research ideas as well as publications/patents through SSN funded student projects.

1. L. Bruno Augustin, Jigar Golecha, K. G. Sai Shreenaath, Vishnu Swami, M. Suresh, 2013, “Numerical simulation of bubble pump using different working fluids”, International Journal of Mechanical Engineering & Research, vol. 3, no. 5, p. 335 – 340.
2. L. Bruno Augustin, Jigar Golecha, K. G. Sai Shreenaath, Vishnu Swami, M. Suresh, 2013, “Numerical studies on bubble pump with alternate working fluids”, International Journal on Theoretical and Applied Research in Mechanical Engineering, vol. 2, no. 3, p. 97 – 103.
3. L. Bruno Augustin, Jigar Golecha, K. G. Sai Shreenaath, Vishnu Swami, M. Suresh, 2013, “Numerical studies on the performance of a bubble pump”, Applied Mechanics and Materials, vol. 330, p. 203 – 208.
4. L. Bruno Augustin, Jigar Golecha, K. G. Sai Shreenaath, Vishnu Swami, M. Suresh, 2014, “Experimental and Numerical Investigations on a Bubble Pump”, communicated to Journal of Heat and Mass Transfer (Springer).

International Conferences

1. Subash S, Keshika V, Gokul Ram P, Praveen S and Suresh M, 2013, “Performance analysis of a vortex tube cooler”, poster presentation, 22nd National and 11th International ISHMT - ASME Heat and Mass Transfer Conference, IIT Kharagpur, Kharagpur, December 28-31.

Patent

1. Subash S, Keshika V, Gokul Ram P, Praveen S, "Multipurpose hand-held cooling cum cleaning device" Application no. 4883/CHE/2013, filed at Indian Patent Office on October 30, 2013.

Looking at Dr.Suresh's firm belief in the utility of SSN funded student projects, he has been assigned the task of co-ordinating the internally funded projects like a final year project, with Dedicated project initiation, standard periodic reviews and final closure report.

Faculty write up – Workshop attended

Practice - Oriented Workshop on Energy Audits And Energy Efficiency

Organised by

ASIAN PRODUCTIVITY ORGANIZATION

&

NATIONAL PRODUCTIVITY COUNCIL (AIP) CHENNAI, INDIA

2 - 11 June 2014



About the Workshop

In the inaugural Program, Senior Program Officer, APO underlined the importance and immediate need for energy efficiency implementation programs in present situation and APO activities in the field of green productivity. The Electrical inspectorate, TNEB outlined the initiatives undertaken by State and Central Governments in promoting energy efficiency. The NPC Chennai activities and its infrastructure facilities were elaborated by NPC Director.



The workshop included lectures, case studies and demonstrations of energy savings through experiments in lab. The topics covered during the sessions focused on energy savings in compressed air system, pumping system, boilers, furnaces, fans, motors and lighting systems. Renewable energy and advanced energy technologies such as Fuel Cells were also covered. The workshop was very effective in understanding the energy savings obtained through different techniques. Some of the energy saving techniques that can be adopted in industries and/or buildings are

- Correct selection and operation of equipments for maximizing energy efficiency
- Control of Air/Fuel ratio in burners
- Reduced leakages in compressed air/steam/water system.
- Reduced heat leakages through proper insulation.
- Reduced pressure drop by optimized pipe size in compressed air/steam/water system.
- Use of Variable Frequency Drives (VFD)
- Use of Compact Fluorescent Lamps (CFL)

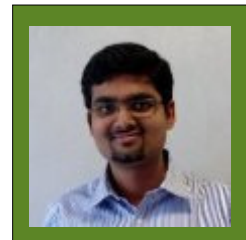
About the organizers

APO is an international organization devoted to productivity movement by developing human resources. It has applied productivity enhancement methods to promote the socioeconomic development and growth of the Asia-Pacific region. In 1961, the leaders of eight Asian nations, acting together in the spirit of mutual cooperation, gave birth to the organization. National Productivity Council (NPC) of India has established 'Centre of Excellence for Training (CETEE)' at Dr. Ambedkar Institute of Productivity, NPC, Chennai, under Indo-Japanese collaboration, Department of Industrial Promotion Policy and Bureau of Energy Efficiency, Govt. of India. It is a unique facility housing the state of the art laboratory for promoting knowledge and skills in the area of energy efficiency and energy conservation through practical hands-on training.

Alumni Info 1

Rohit Subramaniam writes....

I am happy to let you know that have completed my MS coursework, and thesis defence, and will be graduating in August. My thesis was on "COMPUTATIONAL FRAMEWORK TO ASSESS ROLE OF MANUFACTURING IN MATERIAL-DEFECT RELATED FAILURE RISK". I have attached a soft-copy of my thesis report for your reference.



I have received a job offer as a Design Engineer with KS Kolbenschmidt, a Germany based manufacturer of automotive parts. They have a Technical Center in Auburn Hills, Michigan, and that is where I will be working starting this month. My role will mainly involve CAD/CAE analysis in the design of heavy duty diesel engine pistons.

Before I start working there, I am on a brief vacation to Chennai. I would like to visit SSN on a day when it will be possible to meet you. Kindly let me know what date would be convenient.

Thanking you,

Sincerely,
Rohit Subramanian

Rohit and his colleagues Karthik Gopalaswamy, Sibi Chakravarthy, Mohammed Raseem, Suneesh Kaul and Parvathram visited us and shared their experiences. Thanks to their gesture of thinking of visiting us whenever they happen to be in Chennai.

Alumni Info 2

Pranav Cherishes his association with his Class of '14

As the curtains draw down on four illustrious years at SSN and as each new day bears witness to new encounters, one cannot help but introspect on the lessons and experiences that have led each of us to where we are today. It doesn't take one long to realize, however, that most of these experiences could be directly attributed to the fact that one has spent a significant fraction of his/her time in the company of distinction. Indeed the benchmarks set by those before us have always been daunting to say the least and the accolades won by the first three batches of Mech before us are insurmountable.



- the recipients of both the Best Outgoing Student Award as well as
- the Best Sportsperson Award for the batch of 2014,
- the Presidents of both the Entrepreneurship Development Cell
- as well as the English Literary Club,
- the founding President of the Aero-modelling club,
- more than three-fourths of the active roster of the NSS,
- a pair of Placement Coordinators who have set an example for departments that have existed for twice as long as we have,
- a formidable Supra team that has reached the national stage for the very first time,
- teams that reached the national finals in SAE competitions,
- project groups that developed patent-worthy projects before they turned 21,
- both members of one of the best men's doubles tennis teams in the state,
- a former Cultural Secretary,
- two former winners of the Best Speaker Contest and
- a team that literally dominated the ranks of the organizing team behind Instincts, having taken up all the key portfolios including Overall Event Coordinator, Treasurer, Documentation Head and
- the Heads of no less than half the committees that formed the core group including the Sponsorship Team, Stage Management team, Content Development Board, and the Food and Stalls team.

To say it's been a privilege to have been part of this class wouldn't do it justice. But to not say it at all would be a bigger transgression; it undoubtedly has been the greatest.

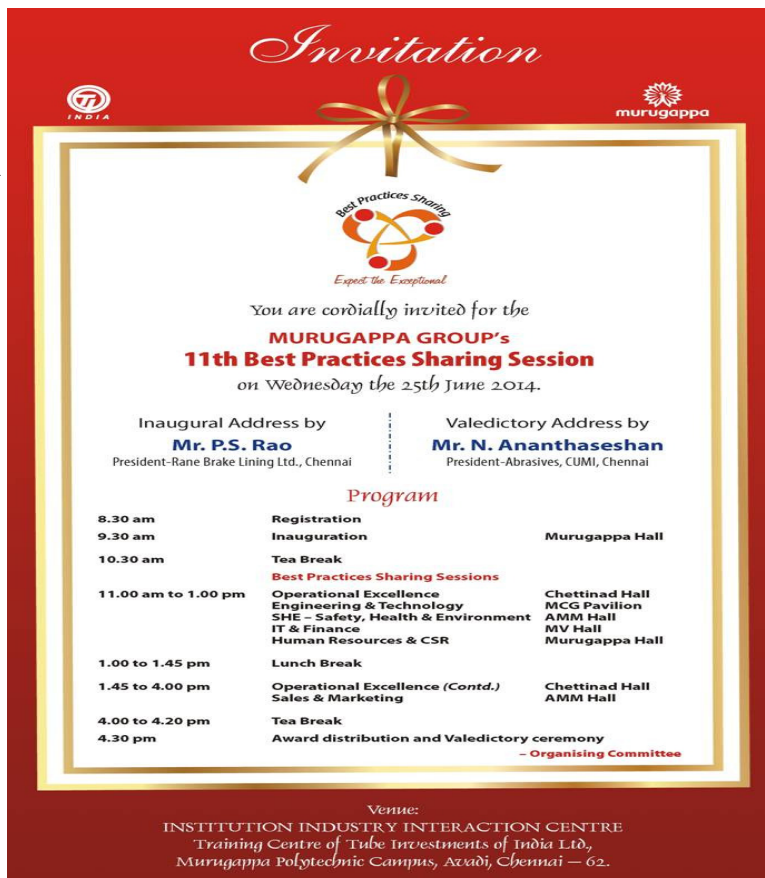
Prof.V.E.Annamalai was invited by Murugappa Group to judge the presentations in their Annual Best Practices Sharing Session.....



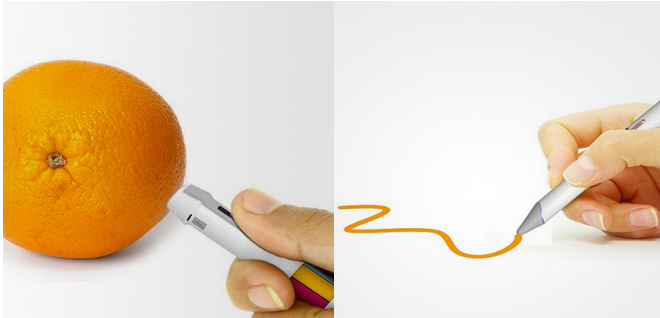
After a year's internship, TVS has agreed to consider them for placement.



Tube Investments of India has agreed to support five Internship projects from July 2014 till May 2015 for M.E.Manufacturing students.



Amazing Innovations - 1



Website: www.getscribblepen.com
Contact: contact@getscribblepen.com

Scribble

The pen features two ends — one with a nib and one with a scanner. Users can press the scanner against any surface to capture its color, which is translated into a six-character hex code that stores its RGB value. The pen also features five refillable cartridges that are made up of cyan, yellow, magenta, black and white inks. When an object is scanned, the pen mixes the right amount of each ink to replicate its color and enable users to immediately draw in it. Alternatively, the pen can be connected to a device via Bluetooth or micro USB and the color can be used for digital work, while a stylus version of the device is also available for drawing tablets and touchscreens. Scribble's sensor can detect up to 16 million colors, and up to 100,000 scanned colors can be stored on the pen at any one time.

The pen is set to retail at USD 149.95 and the stylus at USD 79.95, with the team preparing a Kickstarter campaign in the near future. Are there other ways to bring digital capabilities into the physical world?

Amazing Innovations - 2



SHAPES POP UP
WITH OUR COOL INK

CreoPop lets you draw three-dimensional objects with ease. Just press the button and create any shapes you like. There are no hot parts so CreoPop is safe for both adults and children. The possibilities are endless. Let your imagination flow.

CreoPop uses light sensitive ink that is solidified using the built-in UV light. There are no hot parts, no melting plastic and no bad smell. Changing ink takes just a few seconds.

The amazing selection of inks include elastic, magnetic, glow-in-the-dark, nice smelling and body painting inks. We even have ink that changes color with temperature and ink that conduct electricity made for school science classes.

CreoPop is battery operated and charged through micro USB. So there is no power cord that gets in the way of creating designs.



You have conductive inks, glow-in-the-dark inks, body inks, magnetic inks, temperature sensitive inks and even elastic inks.

With elastic ink, you can make a product and stretch it!

With magnetic ink, you can make a product and stick it to metal surfaces magnetically.

With body inks, you can draw a tattoo.

<http://www.creopop.com/>





The Netherlands' Cablean Sportveld is a multi-surface field that can be turned into a sports pitch, an advertisement, or a solar farm at the push of a button.

Public facilities are often developed with one purpose in mind, but with a bit of innovative thinking, they can be designed to change their form in different situations. Sports venues are particularly suited to this — many stadiums are already capable of hosting multiple different events. Now the Netherlands has opened the first [Cablean Sportveld](#), a multi-surface field that can be turned into a sports pitch, an advertisement, or a solar farm at the push of a button.

The field is based on a [trilon](#) system, in much the same way that mechanical advertisement hoardings are able to switch the message they display. The pitch consists of strips that make up the full surface, and each strip is attached to a moving 3-sided axle. The first Cablean Sportveld to be installed is now in place in Eindhoven, and serves as a synthetic grass pitch, an astro-turf sports surface, and a solar farm, although the device could also serve as a billboard.

Watch the video below (in Dutch) to see the innovation in action:

https://www.youtube.com/watch?feature=player_detailpage&v=N5daXBFbmDE
http://www.hetkompasliedrecht.nl/lokaal/cablean_opent_eerste_roterende_sportveld_3034520.html#.U4_mgnY5pls

Innovation Challenge- Driverless Car for Indian Roads

Deadline: 2014-08-09
Award: \$700,000

We want to revolutionise driving on Indian roads. This innovation carries the promise of transforming our lives and addressing a range of challenges: from decreased road mortality rates and driver fatigue, to increased environmental friendliness that makes transportation more inclusive for people of all abilities –the possibilities are endless. This [document](#) contains complete information on the Challenge including quantified deliverables, evaluation criteria, and timelines. **Applications now open.**

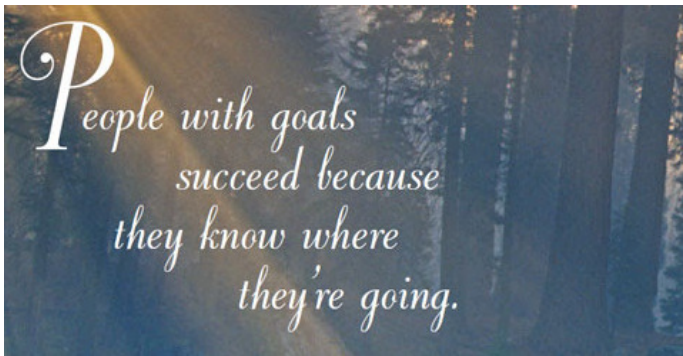
Approach document 40 pages at

http://www.sparktherise.com/user-content/2/Programs/RisePrize/Driverless_Car_Challenge_-Rise_Prize-.pdf

Alumni Tracking – First Batch of PG (2012-14)

 Allwin Roy. Y Intern TVS Srichakra	 Arul Nicholas . T AP, Madha Engg College	 Arularasan . R AP,Loyola Inst of Techy	 Arun Mani.A Awaiting Placement	 Clifford Benjamin Raj. R Placed in CTS
 Dileep .K AP, SVCE	 Gobivel .K Intern TVS Srichakra	 Gowri Manohar . R Intern TVS Srichakra	 Jayabarathi . M AP, MRK Institute of Techy	 Kaushik Balaji . K Placed in CTS
 Naveen Kumar .S.V. Placed in Infosys	 Rajadhurai . B Awaiting Placement	 Rajan . P Planning for Ph.D. studies	 Saranarayanan .R AP, SVCE	 SatishKumar .P Awaiting Placement
 Shanmugasundharam .A Intern TVS Srichakra	 Sibi Varshan .M Placed in Danfoss	 Vinayakram .A Awaiting Placement	The First Batch of M.E.Manufacturing has passed out. Their whereabouts in a Nutshell.....	

Since Internship appears to be a better option, for current batches, we are working on internship right in the third semester. Already fixed 5 for M.E. Mfg with Murugappa Group and 6 for M.E. Energy with Forbes Marshall. These internships will double up as the student's project also.



Mr.R.Ramakrishnan,
Advisor, GMR Group

On a casual reading some months back in one of the books there was a mention about George Bernard Shaw . **He said “ People are always blaming their circumstances for what they are. I don’t believe in circumstance. The people who get on in this world are the people who get up and look for circumstances they want, and if they can’t find them , they make them.”**

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

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

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

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

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

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

Think of it, the human mind is the last great unexplored continent on earth.

It contains riches beyond our wildest dreams. It will return anything we want to plant.

Have a wonderful day !

Ramki