

Mechanical **Aspire**

Achievements in Sports, Projects, Industry, Research and Education

All About Nobel Prize- Part 42

Some Facts on Albert Einstein's Nobel Prize

Born: 14 March 1879, Ulm, Germany

Died: 18 April 1955, Princeton, NJ, USA

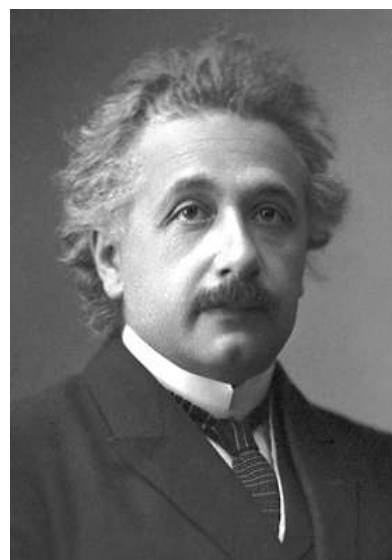
Affiliation at the time of the award: Kaiser-Wilhelm-Institut (now Max-Planck-Institut) für Physik, Berlin, Germany

Prize motivation: "for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect"

Field: theoretical physics

Albert Einstein received his Nobel Prize one year later, in 1922.

Prize share: 1/1



Life

Albert Einstein grew up in Munich, where his father founded an electrical engineering company. After studying at the ETH university in Zurich, Einstein worked at the patent office in Bern, during which time he produced several pioneering works in the field of physics. He was later employed at universities in Bern, Zurich, and Prague, and from 1914, in Berlin. After the Nazis seized power in Germany, Einstein immigrated to the US, where he worked at the Institute for Advanced Study in Princeton, New Jersey. Albert Einstein married twice and had three children by his first marriage.

Work

If metal electrodes are exposed to light, electrical sparks between them occur more readily. For this "photoelectric effect" to occur, the light waves must be above a certain frequency, however. According to physics theory, the light's intensity should be critical. In one of several epoch-making studies beginning in 1905, Albert Einstein explained that light consists of quanta - "packets" with fixed energies corresponding to certain frequencies. One such light quantum, a photon, must have a certain minimum frequency before it can liberate an electron.

Read his famous Nobel Lecture on Theory of Relativity, at

http://www.nobelprize.org/nobel_prizes/physics/laureates/1921/einstein-lecture.pdf

Info to Alumni- Campus Update

Dr.K.T. Selvan, Prof ECE writes



The MoU with San Diego State University has now been executed

The present MoU is valid for five years. An annual review at the departmental level can be done to take stock of how we are faring in respect of the collaboration. When we encourage quality collaborative research, it is my considered opinion that we should appreciate and acknowledge sincere efforts and not just end results, as it is not always that efforts lead to desired outcomes. For mech, Energy Engineering has been identified as a priority area.

Prof. V.S.Gayathri, HoD-Chemistry writes



The Department of Chemistry has been organizing Chemistry Research Drive Training Programme for the past two years in collaboration with Prof. Ramasubbu Jeyaraman Science foundation (an NGO). This year the event is scheduled to be conducted from 11th May 2017 to 10 June 2017.

This is a unique event where researchers who worked with Prof. Ramasubbu Jayaraman, arrange for free training for CSIR aspirants, in memory of their beloved Professor.

Mr. Amit Tyagi writes



New Delhi May 13, 2017: Shiv Nadar University, India's leading private comprehensive, research driven, multidisciplinary university and the reigning young University of the Year [FICCI Awards 2016] today celebrated its third convocation. Along with the graduation of its largest undergraduate batch yet, the convocation also marked the passing out of the University's first two doctoral students. A total of 440 students received their Doctoral, Master's and Bachelor's degrees from various streams including Engineering, Natural Sciences, Humanities & Social Sciences, Business and Arts.

Mike Lawrie (Chairman, President & CEO, DXC Technology, a newly merged company between CSC and Enterprise Services division of HP Enterprise, with approximate annual revenue of US\$ 26 Bn) attended the event as the Chief Guest and addressed the gathering.

The Convocation was also attended by Mr. Shiv Nadar, Founder and Chairman, HCL and Shiv Nadar Foundation, SNU faculty members, students and parents.

More info at <http://blog.shivnadarfoundation.org/general/shiv-nadar-university-hosts-its-3rd-convocation-ceremony>



Taylor & Francis Group

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DR. A.K. LAKSHMINARAYANAN

For your outstanding contribution in reviewing during 2016 for

Materials and Manufacturing Processes

The on-going contribution and dedication of our reviewers is invaluable in safeguarding the quality and high standard of academic integrity in the papers we publish.

On behalf of the Editors, Dr. T.S. Sudarshan and T.S. Srivatsan



Happy to share that, I have received a certificate for the third consecutive time from Taylor & Francis publishers in appreciating my reviewing efforts towards the articles submitted to "Materials & Manufacturing processes."
Dr. A.K.Lakshminarayanan

Invited as CII member

Dr.V.E.Annamalai was invited to be a Member of the Manufacturing Panel of CII Chennai Zone for the Year 2017-18 . Mr N.Anbu Chezhan, Process Excellence Manager-6Sigma,CPS & Lean, Caterpillar India Pvt Ltd is the Convenor of Manufacturing panel, CII Chennai Zone.

Book review

Dr M S Alphin, Associate Professor has been invited to review a book on Kinematics and Dynamics of Machinery from OXFORD University Press India

Publications

Dr M S Alphin, Associate Professor's paper titled "Biomechanical analysis and comparison of actual lumbarbone with lumbar bone prototype", got published in Biomedical Research, An International Journal of Medical Sciences, 28 (6): 2519-2523, 2017 (ISSN: 0970-938X, Imp factor:0.226, Science Citation Index Expanded, thomsonreuters). Authors: Navinkumar K, M S Alphin, Roopan Doss.



Dr.L.Poovazhagan, Assoc.Prof./Mechanical, published a paper titled "Optimization of material removal rate in wire EDM using fuzzy logic and artificial neural network" in the international journal of Applied Mechanics and Materials, co-authored by passed out batch M.E students.

Dr. G. Satheesh Kumar, Assoc. Prof., Mech, Chaired a session in the National Conference on Science, Engineering and Technology 2017 at VIT University, Chennai Campus.(3-5-17)



DC meetings



Dr.K.S.Vijay Sekar , Asso.Prof, conducted the Confirmation DC meeting for his PhD scholar Mr.C.Prakash. The external members were Dr.M.Pradeep Kumar, Anna University and Dr. A.Arockiarajan , IIT Madras. (11-5-17)

Dr M S Alphin, Associate Professor. Convened Second DC Meeting for PhD Scholar Mr Fantin Arokiaraj. Dr Baskaran, Associate Professor , MIT and Dr Davidson Jebaseelan , VIT University attended the meeting. (3-5-17)

Conference papers

Dr. M S Alphin, Associate Professor, Presented a research paper on Analysis and comparison of L4, L5 L6 lumbar bone with medical image and CAD based Prototype development and biomechanical testing in the International Conference on Healthcare in a Globalizing world Organized by Symbiosis International University, Pune.(4-6, May 2017). **He received best paper award (II Prize) for the Oral Presentation of the paper**

Research Seminar

Dr.K.S.Vijay Sekar's research scholar Mr.C.Prakash, presented a seminar on " Finite element analysis of drilling of GFRP Composites" on 08.05.2017 in the Seminar hall, Mechanical Engineering Department, SSN. (8-5-17)

Program attended

Dr.L.Poovazhagan, Assoc.Prof/Mechanical Engg., attended faculty development program on mechanical behavior of structural materials at SRM-Univeristy - Kattankulathur from 12.05.2017 to 18.05.214

Student Activity

Second Year

Murali T.S, was selected for the following events :

- Research Intern at IITM
- Mechanical design and development intern at Aquasolis
- Data Analytics intern at IIM Lucknow

Edwin Devassy K, was certified for completion of NPTEL online certification course - MATLAB Programming for Numerical Computation

Third year

Diwakar S, Attended International Conference on Advanced Functional Material at Adhi College of Engineering on May 3. Published a paper under Materials Today: Proceedings.

Belvin , Presented his project on two shelled safety system at national level conference and volunteered at the NSS blood donation camp. (5-5-17)

Faculty Write up

Dr. M S Alphin, Associate Professor, Presented a research paper on Analysis and comparison of L4, L5 L6 lumbar bone with medical image and CAD based Prototype development and biomechanical testing in the International Conference on Healthcare in a Globalizing world Organized by Symbiosis International University, Pune.

He received **best paper award** (II Prize) for the Oral Presentation of his paper.



Shri. J. P. Nadda, Union Minister for Health & Family Welfare, Adv. Ram Jethmalani Member of Parliament, Rajya Sabha and Dr. Henk Bekedam, WHO Country Representative, India were the Chief Guests for the Conference.



Project proposal submitted to DST

Dr. G. Satheesh Kumar has submitted a project proposal titled "Design, Development and implementation of Networked Cooperative Beach cleaning robots for smart cities" under the Swarna Jayanti Fellowship 2017 scheme of DST (Fund requested Rs. 56,18,800)

Interaction with TI (India) - Industry Institute Interaction Centre (IIIC) Murugappa Group**Minutes of the Meeting held on 05.05.2017 at IIIC (Avadi) campus at 10 a.m.****Members Attended**

1. Dr. N. Lakshmi Narasimhan, Associate Professor, Department of Mechanical Engineering
SSN College of Engineering, OMR, Kalavakkam-603110. TN.
2. Mr. V. Kumara Subramaniam, Sr. General Manager - Learning & Development
Industry Institute Interaction Centre (IIIC), Murugappa Polytechnic College Campus, Sathyamurthy Nagar
Avadi, Chennai-600062.

Dr. N. Lakshmi Narasimhan had a discussion with Mr. Kumara Subramaniam, on May 5, 2017 to explore the opportunities for interaction between SSN and Tube Investments (TI) India (Murugappa Group) through IIIC. Following are the minutes of the meeting :

Welcome Note

The meeting commenced at around 10.00 a.m. with warm greetings from Mr. Kumara Subramaniam (KS) followed by a note on TI (India) and Murugappa Group's initiatives on strengthening Industry-Institute interactions across the country. Following the introductory note was a briefing about the activities of IIIC by Mr. KS.

Purpose

The purpose of the meeting was to explore opportunities for interaction of SSNCE with TI India and IIIC. Dr. NLN highlighted the purpose of the meeting with a briefing about the industrial interaction initiatives of his department at SSN.

Student Interactions (Internships/Projects)

Mr. KS mentioned about the possibilities of student interactions through internships, joint projects at both UG and PG levels. Excited to mention that Mr. KS had already given his consent for internship to four of our students (2 UG and 2 PG students of our department) this summer. Dr. NLN took this opportunity to thank Mr. KS for the same. There is a possibility for the students to extend their work to final year projects based on the performance during the internship.

Faculty Interaction (Research/Internships)

Heartening to note that Mr. KS has a vision of national interest. His road map to the vision encourages academic fraternity in real time industrial problems where the academic knowledge would of great benefit in problem solving as well as knowledge sharing between the industry and academia. In line with his vision, he was happy to share that faculty level internships are possible with Murugappa Groups where interested faculty members can approach IIIC for more details.

KS about Energy Conservation Opportunities

Mr. KS was very positive about exploring opportunities with TI factories in and around Avadi especially on "Energy Conservation projects" in their industrial process units. He welcomed Dr. NLN for involving in Energy related projects. A brief mention about a wind mill owned and operated by Murugappa Group in South India and possible opportunity for a project was also made while the discussions got expanded to topics on renewable energy sources as well.

Dr. NLN on Energy Storage Projects

Dr. NLN briefed about his recent projects on Energy Storage at SSN, industrial consultancies and interactions with industries as department level placement coordinator. The meeting was highly encouraging and was more on the positive side throughout, on strengthening our interactions with TI India & IIIC. Dr. NLN showed the videos

and photos of his recent energy storage projects at SSN with a short brief about the projects to Mr. KS.

MOU with SSN

Dr. NLN placed a request for signing an MOU between SSN and IIIC, which was agreed in principle by Mr. KS during the discussion. A draft of the MOU document shall be sent for his review. The MOU shall pave way to officially carry out activities between the two organizations on their mutual interests.

Invitation to Mr. KS

Dr. NLN invited Mr. KS for a visit to SSN Campus to strengthen the interaction. The labs & research facilities available at SSN can be shown to initiate future joint research interactions.

Action Plans (Short Term)

- (i) Draft of the MOU to be sent to TI - IIIC before 11.05.2017
- (ii) Dr. NLN to request officially for a week long internship under "Faculty Industrial Internship" enabling visit to all the four factories of TI (India) in and around Avadi to identify suitable Energy Projects.
- (iii) To involve two more students (PG/UG) in the identified project(s).

Action Plans (Long Term)

Long Term action plans shall be worked out in future based on the progress and sustenance of the short term assignments planned.

Hospitality

A great gesture, warm reception and hospitality by IIIC!! Thanks for the same.

Conclusion & Thanks

At the outset, Dr. NLN would like to thank Mr. Kumara Subramaniam and the IIIC Team for the discussion and encouragement to academic fraternity. Meetings with experts and visionaries like Mr. KS, in addition to the encouragement it gives, would serve as a motivation forever. I returned back with lots of positive thoughts on our interactions to happen with the prestigious Murugappa Group. All these would not have happened without the lead and introduction of self to Mr. KS by our HOD, Dr. V.E. Annamalai during the previous week. My thanks are due to him and our institution as well for providing opportunities for such industrial interactions.

Industry Interaction 2

Prof.V.E.Annamalai at the CII Manufacturing Panel meet on 19th May 2017



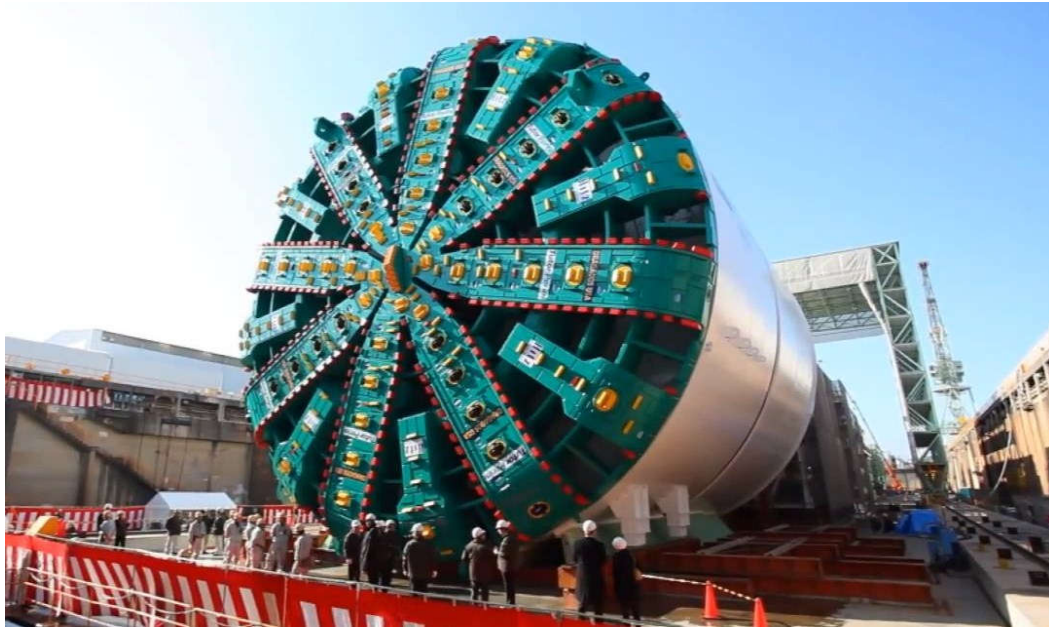
Second semester M.E (Manufacturing Engineering) students were taken to, Engineering Design Department (OptoMechatronics Lab) and Mechanical Engineering Department (Manufacturing Engineering Lab) on 02 May 2017. In the morning session, students were taken to the Manufacturing Engineering Section (Mechanical Dept.) and shown the working of Micromachining center, CO₂ Laser Beam cutting of Plates, Abrasive Water Jet Machining (AWJM), Cylindrical grinding, different Metrology equipments like Nano level Surface finish measurement, 3D Optical Profilometer, Form Tester, Coordinate Measuring Machine. In the afternoon session, students were taken to Optomechatronics Lab (Engineering Design Dept.), where they were demonstrated the use of various applications of Laser.

M.E Students along
with Dr. B. Anand
Ronald, Assoc. Prof.
Mech, SSNCE



Research Scholars of the Engg. Design Dept., explaining the applications of Lasers in different research domains

On April 4, the world's largest tunnel boring machine broke through to the open air after almost four years underground. Called ,Bertha the giant digger was tasked with the challenge of building a tunnel large enough to carry four lanes of motor traffic under the heart of Seattle. The story of how it made the 1.7 mi (2.7 km) journey under the skyscrapers of the port city is not only a tale of a remarkable machine, but also of civil engineering.



Bertha's journey started not in Seattle, but in Nisqually, Washington, about 60 mi (100 km) south of Seattle. On February 28, 2001 at 10:54 am, the rural community was the epicenter of a magnitude 6.8 earthquake that rocked the region.

TBMs (Tunnel boring Machines) are actually not that new. The first one was built by the famous engineer Sir Marc Kingdom Brunel in 1825 to dig the Thames Tunnel at Wapping in London. Along with Thomas Cochrane, Brunel invented a machine that was basically a giant iron can, called a "shield", turned on its side with one end open.

The closed end is pressed into the digging end of the tunnel and consists of rows of small doors where workmen remove the soil using picks and shovels. Meanwhile, the shield held up the tunnel walls. When enough was dug out, the doors were closed and jacks were used to push the shield forward and the walls were sealed with brickwork.

Over the next century, these machines became more sophisticated as power was added alongside drills and rotating digging heads. They eventually became common tunnel excavators and were used on projects like the Channel Tunnel across the English Channel, Japan's Seikan Tunnel from Honshu to Hokkaido, Switzerland's Gotthard Base Tunnel, and the Crossrail Tunnel under London.

Bertha

Named after Seattle's first woman mayor, Bertha is what is known as a soft rock TBM, as opposed to a hard rock TBM. The latter, as the name suggests, is essentially a big rock drill designed to bore through solid granite or something equally nasty. That's not to say that Bertha had an easy time of things. Far from it. Soft rock TBMs have to contest with sand, which can be as damaging to machinery as rock, as well as gravel, clay, loam, and the odd boulder or other surprises.

Bertha had a particularly hard time because the Seattle area was formed hundreds of thousands of years ago by a series of glaciers pushing too and fro during the great ice ages. This pushed up massive hills of debris made of eight different kinds of soil under the city center. In fact, the soils are so varied that across the face of the digging machine the soil types could vary radically. Worse, the line of the new tunnel runs from the waterfront, where Bertha was below the waterline, up under the city through 10 distinct geological zones to come out of a hillside, where the soil is bone dry.

It also didn't help that after a century-and-a-half of building, Seattle is a warren of foundations, pilings, cellars, sewage lines, railway tunnels, road tunnels, and pedestrian tunnels. And then there's the famous "underground city" that was buried and built upon after a fire devastated the city in the 19th century. Even before tunneling began, old deposits of fill soils had to be removed and areas strengthened to withstand the passage of the TBM.

To create a machine that was large enough for the job, Hitachi Zosen Sakai Works in Osaka, Japan was selected from a list of five candidate firms to design and build the 57-ft-diameter (17.4 m) mechanical behemoth. Because it weighs in at 6,664 tonnes (6,559 tons), it wasn't possible to ship Bertha across the Pacific in one piece, so after testing it was disassembled and shipped to Seattle, where it arrived in April 2013 and was put back together again at the bottom of an 80-ft (24.3-m) deep, concrete-lined pit on the waterfront in the shadow of the Viaduct.

How it works

When put back together, the WSDOT invited New Atlas and other members of the media to tour inside Bertha – and that in itself is an indication of just how large it is. Most digging machines are things you look at from the outside, but the Seattle TBM is so large that it's like a cross between a gigantic locomotive and a cylindrical factory 322 ft (98.2 m) long. Instead of a solid piece of machinery, it's filled with catwalks, ladders, and stairs. It even has a control room inside, as well as a pair of break rooms. Remarkably, despite its size, Bertha is largely automated and only needed about 25 people to operate it at any one time.

Cutterhead

The working head of Bertha is the cutterhead, which completely covers the front of the machine. It weighs a massive 2,132 tonnes (2,000 tons) and is covered with 260 steel teeth designed to break up soft soil and guide it through gaps inside the cutterhead, or grind up large boulders. Many even rotate to be replaced by other, different teeth as the job requires. This is turned by a 25,000 bhp (18,600 kW) electrical system and allows the cutterhead to rotate at up to 1.2 rpm and the machine moves forward at a speed of about 35 ft (10 m) per day.

One key factor when digging is the presence or absence of water. Depending on how you look at it, they can both be a blessing or a curse. On the one hand, having water in the soil ahead makes it easier to cut through and move, so if there isn't enough, Bertha is able to inject water and a soapy conditioner into the soil to break it up into a soft paste. But if there's too much, the cutterhead ends up ineffectual churning a load of liquid mud without going anywhere.

In addition, that excavated soil slurry must be made to go only where it's wanted. To do this, the cutterhead is pressurized to up to 5.6 atmospheres. This helps to force the slurry to stay in the cutterhead until it's removed, but it's a fine balancing act. The machine maintains a constant pressure on the trapped soil. If there's too little, the slurry just churns inside the cutterhead and the front face of the tunnel could fall in. Too much and the machine is pushing a wave of slurry ahead of itself.

One unpleasant aspect of the pressure system is when the cutterhead needs servicing. Pressure must be maintained at all times, so when a tooth is worn out or a boulder needs shifting, the workers have to take on the role of deep sea diver and pass through an airlock to work inside a pressurized bubble of air inside the cutterhead.

The slurry pipe

Directly behind the cutterhead inside the machine is the slurry pipe. This is a steel tube about 3 ft (1 m) in diameter that has a very important function. Without it, the slurry coming from the cutterhead would blast into the digging machine with five atmospheres of pressure behind it. Instead, the pressure is reduced until the slurry can pass safely through it impelled by an Archimedean screw onto a conveyor belt, which sends the soil back to the end of the tunnel and out to a waiting barge on a nearby pier. This expandable conveyor is joined by thousands of feet of cables and pipes to supply Bertha with power, water, conditioner, and other essentials.

The shield

The front part of Bertha is covered by the shield. As with Brunel's original machine, this is a cylindrical hull that holds up the sides of the tunnel wall and protects the machinery and workers from muck and water. It also allows the TBM to move forward. As it bores, Bertha crawls like an inchworm with the shield creeping forward and the rest of the TBM rolling up behind.

Inside the back rim are 56 hydraulic jacks forming a ring inside the shield that push it forward as the machine cuts by pressing against the reinforced concrete walls that line the already bored section of tunnel. This wall is made of 2-ft (0.6-m) thick concrete panels or segments. The rams push against the forward-most ring of panels and inches forward like a worm. In addition, there are other jacks used to align and steer the shield.

The lining rings are made of 10 concrete panels, with each ring weighing 360,000 lb (163,000 kg) lined with rubber gaskets to keep water out. Some panels are shorter than the standard size to allow the tunnel to curve in certain sections to allow it to go left, right, up, or down. Behind each panel is forced grouting to stabilize the tunnel.

One interesting thing about the lining panels is that they are not laid by hand, but by a pair of robotic erector arms that collect the panels from an electric tram and place them precisely against the inner wall of the steel shield in a staggered pattern. Having two arms allows Bertha to lay down panels twice as fast as other machines. As the shield moves forward, the grouting is injected into the exposed gap where the steel once was and the process continues. Based on previous motorway tunnel borings in Spain, this gap is designed to be as small as possible to improve stability.

Control room

Also inside the shield is the control room, where the workers monitor Bertha's systems by computer, guide it, look out for signs of earth shifting unexpectedly, or if too large a boulder is encountered that might have to be broken up by hand. Behind this is the break room, which might seem like a luxury unless you remember that by the time the digging was completed, the walk back for lunch would have been almost two miles.

Trailing gear

If the shield is Bertha's head, then the trailing gear is the digestion system. Articulated and resting on massive rollers, the 300 ft (91.4 m) of girders and gear contain the machinery to supply the TBM with grout and grease. In its intricate interior are the pumps and ventilation equipment as well as restrooms, a kitchen for the crew, and a rear control room to handle the section's operations. It's also where the liner sections are collected from a small electric railway car called a Segment Transport Truck and moved forward for placement.

Then, after a final six-inch course correction in March 2017, Bertha was at the end of its long and controversial journey. On [April 4](#), after over two years of delays, the giant drill cut through the concrete plug at the reception pit built for it at Sixth Avenue North and Thomas Street near the present SR 99 route. With suitable drama, the great machine ground its way through the plug, sending up clouds of dust as water jetted out and huge chunks of cement and rebar crashed into the pit as the press looked on.

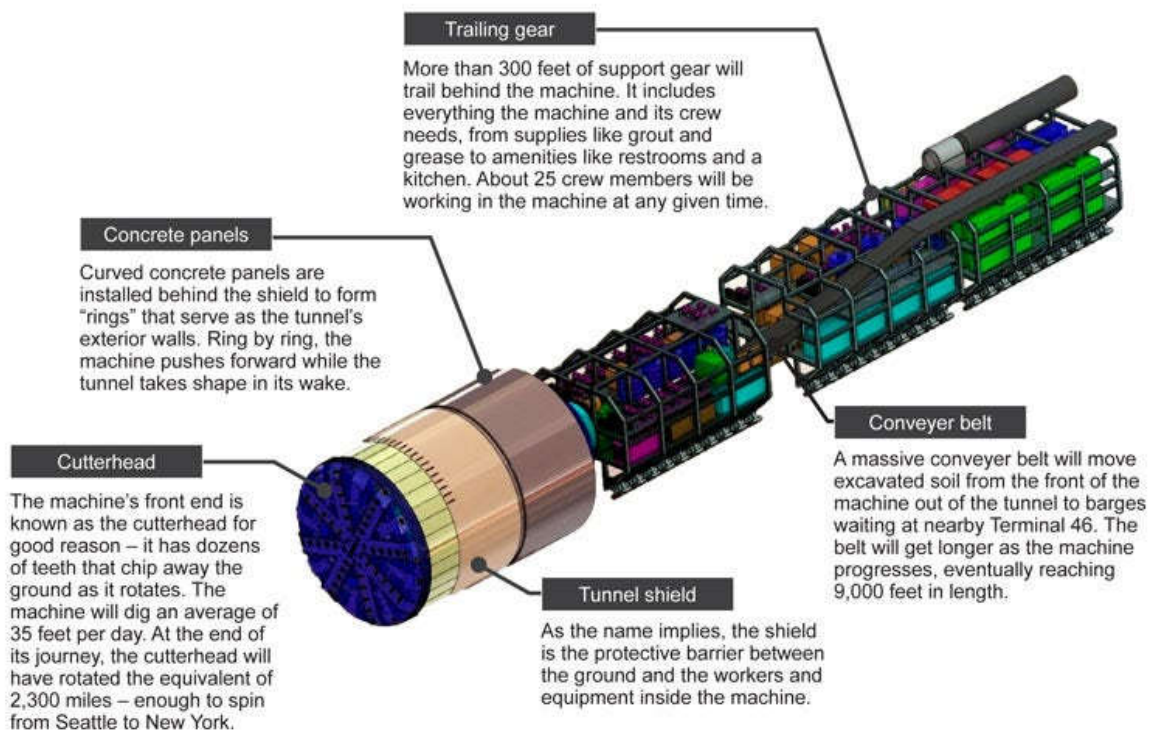
The end of Bertha

Instead, Bertha is currently being dismantled in the pit at the north end of the tunnel, which will afterwards become part of the ramp connecting with the motorway. The cutterhead and shield are being cut up into pieces smaller than 20 tons (18 tonnes), so they can be taken away by road, and most of the steel used to build the machine will be taken to a local iron foundry to be melted down to build the fittings inside the tunnel. As for the motors, pumps, electronics, and the rest, they will be sold back to Hitachi.

Meanwhile, work will shift to the inside of the tunnel to build the double two-lane decks that will carry cars north and south. The seams of the lining need to be minutely inspected, electrical systems need to be installed, fire fighting apparatus fitted, and the ventilation brought online. There will even be a system of "variable signage" that can be altered to suit present traffic and road conditions.

If all goes to plan, the tunnel will open to traffic in 2019 – two years and over US\$200 million dollars outside of plan.

Bertha- the Schematic diagram



Source: Newatlas.com, Wikipedia,

<http://www.globaltelematics.com/pitf/tbm-comparison.htm>

Celebrity Fashions Ltd is one of India's consummate garment exporters with the capability to manufacture the largest number of trousers in the country. The company is engaged in manufacture and sale of garments. The company has their own national premier menswear brand, Indian Terrain. The company has two subsidiaries, namely Indian Terrain Fashions Ltd and Celebrity Clothing Ltd. The company has two divisions, namely exports and domestic divisions. Exports division is further sub-divided into Tops and Bottoms division. The Domestic division (brand Indian Terrain) and Bottoms division cater to different markets / products. The company's products include men's or boy's shirts, women's or girl's shirts, men's or boy's shorts / trousers and women's or girl's shorts / trousers.

Studio Celebrity

Studio Celebrity is the design studio of Celebrity that has been at the forefront of design and product development for the last six years. Studio Celebrity was the first to use WGSN (Worth Global Style Network) in India. WGSN is an online fashion trend prediction service. They provide clients with various design support – such as

- CADD – for plaids & prints
- Trend analysis
- Life style presentation

They offer a one-stop-shop solution for design and product development to their customers.

Product Development Centre

Celebrity Product Development Centre aims to provide a full & comprehensive service to all internal and external customers. With a highly skilled Technical Team that has the capabilities of developing concepts through to final product, customers can have total confidence that their specific and individual requirements will be met.

Close liaison with all suppliers ensures that the latest technology and specialist technical knowledge is integrated to ensure as partners we achieve the final results our customers require.

Clients



Export Division

- **PRODUCT DEVELOPMENT CENTRE** has Automated Pattern Systems ,Automated Grading/marker Making ,Automated Costing System and Washing/Dry Process capabilities and Embroidery capabilities
- **STUDIO CELEBRITY** has CADD – for plaids & prints, Trend analysis, Life style presentation, What in – analysis and many more
- **GARMENTING** has Cutting room,
Five spreaders and 2 cutters capable of cutting 50,000+ trousers a day Eton lines
Fourteen etonised lines, The Sewing floors
Equipped with state of the art automatic collar making cuff making and bottom hem attaching machines
- **Completion section has**
Washing- a washing capability of 35,000 garments a day
The Finishing - Equipped with body presses, vacuum process
Performance Finishes -Include wrinkle free, stain free in the pre- cure and post cure form.

Profile of the Founder



Mr. Venkatesh Rajagopal, Chairman and Managing Director of Indian Terrain Fashions Ltd., born in a family of Civil Servants, is a **first generation entrepreneur**.

He did his post graduation in Economics and joined the civil services as an **IPS Officer** in the year 1979. He served for 10 years and resigned in 1988, after which he began his career as an entrepreneur.

In the same year he started Celebrity Fashions Private Ltd and took it public in the year 2005. Celebrity Fashions is currently doing revenues of Rs.225 crores and is one of the premier apparel manufacturing company in India catering to leading global brands.

In the year 2000, Venky Rajgopal launched 'Indian Terrain' to cater to the needs of domestic markets. It was listed in the year 2011.

Indian Terrain has today grown to be a truly national brand with its presence firmly established across the entire country. The brand is today one of the three top casual wear Brands in the country and has currently recorded retail revenues of Rs.500 crores

Careers- Info from their website: We're always on the look out for young dynamic individuals looking for **careers in designing , technical, and manufacturing departments**.

Interested candidates may send in their resume's to hr@celebritygroup.com

Get a set of downloads from <http://www.celebritygroup.com/investors.html>



Elbow strips away most mechanical parts of a traditional cassette player, resulting in a strikingly minimal and simplified design.

User interaction is made easy and intuitive thanks to bi-axial arm and control wheel, while allowing more playback control than ever before.

In addition to boasting a slick, clean aesthetic, Elbow can be pinned to clothes and fabrics, turning your favorite tape into a fashionable accessory.

ELBOW was conceived with burning passion by, and for, cassette tape lovers!



Look at the mechanical drive system innovation at http://elbow.co.nf/img/ELBOW_PRESS.pdf

Amazing Innovation- 22

Los Angeles-based tattoo artist Nate Siggard has developed a way for body art to incorporate sound as well as images. The idea originated when Siggard's girlfriend Juliana watched Siggard tattoo song lyrics on a customer and wondered what it would be like to be able to listen to a tattoo. Siggard soon realized that he could in fact make that happen.

Siggard recorded Juliana and their daughter saying "I love you", and tattooed himself with the waveform of the recording. When he posted a video of the playback on Facebook, it immediately went viral and he began receiving requests for similar tattoos. After writing a patent for the Soundwave tattoos, Siggard launched his new business, [Skin Motion](#).

To begin, a person uploads or records up to a minute of audio into the Skin Motion app or website. Skin Motion uses the recording to generate a Soundwave image. The image is then taken to any of the tattoo artists in Skin Motion's licensed Artist Network. Once completed, a picture of the tattoo is uploaded onto Skin Motion's platform – when the user points the camera on their mobile device at the tattoo, the app recognizes the waveform pattern on the tattoo and plays back the audio recording.



According to Siggard,

most of the enquiries about the tattoos have come from people wanting to preserve the voice of loved ones who have passed on;

but requests have also included tattoos of favorite quotes and jokes.

Although still in development, Skin Motion expects the app to be available for release in June 2017.

Amazing Innovation- 23

World's first autonomous. Zero emissions cargo ship



Norwegian company Yara has teamed up with maritime technology company Kongsberg to build the world's first all-electric and autonomous container ship, which is set to hit the high seas late in 2018.

The hi-tech container ship, named Yara Birkeland, will carry chemicals and fertilizer from Yara's Prossgrunn production plant to the nearby towns of Brevik and Larvik. It will first operate as a manned vessel in 2018, before transitioning to remote operation in 2019 and fully autonomous control by 2020.

The most immediate benefit of the new operation comes from a major reduction in NOx and CO2 emissions as the company shifts its product transportation from what previously required 40,000 truck journeys a year to this new, all-electric shipping pathway.

"With this new autonomous battery-driven container vessel we move transport from road to sea and thereby reduce noise and dust emissions, improve the safety of local roads, and reduce NOx and CO2 emissions," says Svein Tore Holsether, President and CEO of YARA.

<https://youtu.be/VjTKL4hm4B0>

Amazing Innovation- 24

Detachable cargo trolley with bicycle



If you've got a lot of stuff to haul around, then cargo bikes are great. If you're just commuting, however, they're pretty heavy and cumbersome. Does this mean that if you do both things, then you need two bikes? Well, not necessarily. The TReGo turns your existing bike *into* a stuff-hauler.

Originally designed as a [graduation project](#) by Israeli industrial designer Ofir Yadan in 2012, the TReGo is now hopefully headed for production, as it's the subject of a just-launched Kickstarter campaign.

In a nutshell, it's an aluminum hand truck that temporarily replaces a regular bike's existing front wheel. Its two 16-inch wheels tilt into turns, and are each equipped with a separate hydraulic disc brake – the brakes are both activated by a single lever that's slipped onto a handlebar-mounted receptacle, located above the existing front brake lever.

Watch TreGo in action at <https://youtu.be/E-TKgK0MrXY>

Alumni Info



Ramya R of 2013-17 batch ,
has got admission to MBA in IIM Indore.

Kind Attention - Alumni

IIT Madras offers
M.Tech in Automotives through
Remote Learning. No need to be
physically present at IIT.
This is for industry members only.

Efforts for non placed students

Dr.N.LakshmiNarasimhan, Placement Co ordinator writes.

A proof of our student placement coordinator's efforts for the non-placed. Wish to share the fwd contents.

My special appreciations to Vinay Srinivas for the initiative.

Vinay Srinivas, last year placement co ordinator, has been approached by Crofters- a startup company regarding recruitment. Even though he is out of campus, Vinay has taken the efforts to check with me and track the non placed students to pass on this info.

"We Crofters a Chennai based startup funded by CEDI NIT Trichy is looking for Mechanical Engineering graduates willing to work in a startup environment ,ready to shoulder bundle of responsibilities and work at odd timings.The interested candidates can mail us at hello@crofters.in with the subject as - Application for Supply Chain Management Role.

We do not have restrictions on CGPA.
Candidates from Chennai will be given more preference.
Job Title - Assistant Manager, Supply Chain

The Job Description-

- Coordinate risk elimination actions with buyers and logistics.
- Audit the capacity and quality of contracted suppliers.
- Compile and disseminate corrective action lists to the appropriate teams.
- Outline steps for the standardization of processes.
- Analyze supply chain, bottle necks, slack time, durability, repeatability, and other metrics.
- Research new technologies and methods and apply them as needed.

Compensation - 3 Lakhs Per Annum (CTC)

Perks - Flexible work hours, Conveyance and exposure to work in a early stage funded startup.



About Crofters (<http://crofters.in/>):

Crofters is working towards a sustainable, diversified agriculture with a range of products and technologies that empower people to grow local fresh food. Designed and built in India Crofters intelligent, indoor gardening appliances educate and inspire people to think differently about food and sustainable living.

Forthcoming events

June 2017

- Departments of Mechanical Engineering of **Chennai Institute of Technology** is going to conduct a **Faculty Development Training Programme (FDTP)** on **“ME 6010 ROBOTICS”** is scheduled from **05.06.2017 to 12.06.2017**.
- Department of Mechanical Engineering is organizing the Two Days Faculty Development Program titled **“DIGITAL MANUFACTURING TECHNIQUES AND APPLICATIONS”** on 09 & 10 June, 2017 at KIT-Kalaingar Karunanidhi Institute of Technology, Coimbatore.
- **KPR Staff Training Academy** at KPR Institute of Engineering and Technology, Coimbatore is organizing a Two day National Level Workshop on **“Implementation of Outcome Based Teaching and Learning in Higher Education & NBA – SAR Preparation”**, 16th & 17th June 2017.
- Department of Mechanical Engineering of S.A. Engineering College, (Poonamallee – Avadi Mai Road, Thiruverkadu, Chennai – 77) is organizing a **DRDO sponsored** National Workshop on **“Advanced Manufacturing Processes applied to Combat Vehicle Components”** on **23rd June 2017**.

The major highlights of the Workshop: *Hands on Training in manufacturing of components using 3D Printing machines, Live demonstrations on Non Destructive testing of various components, Friction stir welding of high strength alloys.*

Dr.S.Mahadevan & Dr.P.Sevvel, Email: workshopmech@saec.ac.in

July 2017

- 3 Days Workshop on Making of Solar Cookers, 3-5 July 2017, Centre for Energy & Resources Development, IIT- Varanasi. **Only seventy seats for B.Tech . No registration fee.** Write to Prof.Santoshkumar, IIT BHU at santosh.kumar.mec@iitbhu.ac.in
- **National Conference on Advances in Materials & Processing Challenge & Opportunities (AMPCO-2017), 30th November - 2nd December 2017, Department of Metallurgical & Materials Engineering, Indian Institute of Technology-Roorkee, Roorkee-247667, Uttarakhand**
Last date for submission of Abstract is **15th July 2017**.

Abstract Submission: <https://www.iitr.ac.in/ampco2017/abstract.html>

Website: <https://www.iitr.ac.in/ampco2017/index.html>

Dec 2017

- The 6th International Conference on Advances in Energy Research (ICAER) is organized by the Department of Energy Science and Engineering, Indian Institute of Technology Bombay. The conference will be held from 12th to 14th December 2017 at the Victor Menezes Convention Centre, Indian Institute of Technology Bombay, India.
The deadline for full paper submission is June 30th 2017. Please refer the conference website at www.es.e.iitb.ac.in/icaer2017 for important dates and other latest updates and information about ICAER 2017.
Papers for ICAER 2017 would be selected for oral or poster presentation on the basis of peer review. Detailed instructions for paper submission are available on the conference website:

www.es.e.iitb.ac.in/icaer2017

Research News from MSP

{ 1 }

A detailed booklet on
12 Standard Career Guidance Counseling-2017
has been released by
Tamilnadu School Education Department, Tamilnadu
You can download the booklet at



Dr. Muthu Senthil Pandian
SSN Research Centre

<https://drive.google.com/file/d/0BwpC-9IEQAb7T3F2ZzQ5NzVKTnM/view>

{ 2 }

Applications are invited from outstanding scientists/ researchers holding Ph.D. degree and having regular positions in recognized S&T institutions/universities and actively engaged in research in frontline areas for deputation abroad during the Calendar year 2018 in all fields of **Science including Engineering, Medicine & Agriculture** for short term visits (2-4 weeks for senior scientists) and long term visits (3 months for junior/younger scientists) under the Scientific Bilateral Exchange Programme with overseas Academies/Organizations in **China, Czech Republic, France, Germany, Hungary, Iran, Israel, Kenya, Mauritius, Nepal, Philippines, Poland, Scotland, Slovak Republic, Republic of Slovenia, Sudan, Taiwan and Turkey.**

The detailed guidelines and application form can be downloaded from download form section of <http://www.insaindia.res.in>. The hard copy of application duly completed and endorsed by the Head of the Institution should be submitted latest by **June 23, 2017** to **The Assistant Executive Director (International), Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi - 110002**. The soft copy of complete application (**single PDF file only**) should be email to: intacademy@insa.nic.in Please include your **Name, Area of Research and Proposed Country** in the subject line of your email.

The soft copy filename should be saved as: *Name of Applicant_Proposed Country*. Incomplete applications will be rejected and no further correspondence shall be made.

Website: <http://www.insaindia.res.in/>

{ 3 }

CSIR (Council for Scientific and Industrial Research) , has called for Senior Research Fellowship (SRF) and Research Associateship (RA) positions.- 2017

Last date for submission of online application: **30th June 2017.**

Details at <http://www.csirhrdg.res.in/>

{ 4 }

Professional Training in CSIR - National Metallurgical Laboratory (NML), Jamshedpur-831007, Jharkhand. There are SEVEN training courses in Materials. You can see in the PDF document.

Each course is designed for a limited number of participants and participation shall be accepted on the first-cum-first basis.

Download PDF document (18 MB): <http://www.nmlindia.org/download/CALENDER.pdf>

Home: <http://www.nmlindia.org/>



A Teacher was writing table of 5 on the board:

5X1=3, 5X2=10, 5X3=15, 5X4=20, 5X5=25

5X6=30, 5X7=35, 5X8=40, 5X9=45, 5X10=50

After writing she turned back towards students and found that everybody was laughing at her.

On asking the reason for laugh, couple of students got up and told, “Ma’am- first line of the table is wrong...It should be 5”

Hearing this Teacher (smiling) explained. “I wrote the first line wrong on purpose, because I wanted you to learn something important. This was for you to learn how the real world will treat you. I wrote 9 correct lines but nobody congratulated me but one mistake and everybody pointed at it.

Moral of the story:

The world will never appreciate billion right things you do but will criticize for one wrong doing. Therefore, never ever get disheartened if somebody criticizes you. Take it positive and rise above all criticisms.

Thanks & Regards –

Kishore Babu, HR - Department

SCHWING Stetter India Private Limited

Automotive Research Association of India update

Q3 Issue of ARAI Update, has been released, covering following topics:

- ☐ **ARAI-TIFAC Golden Jubilee Transport Vision Conclave**
- ☐ **Test Facility Management / Upgradation / Integration / Automation Services**
- ☐ **ARAI-ACMA Customer Meet 2016 – Exploring Possibilities & Promoting Synergy**
- ☐ **Simulation-Based Development of SCR System for Automotive Application**
- ☐ **ARAI Knowledge Centre Services**

This e-publication is hosted on ARAI website < www.araiindia.com >.

Please use below given link for browsing the contents / downloading the publication:

☐ https://www.araiindia.com/cpanel/Files/NEW_55201732236PMARAI-Update_Oct-Dec2016.pdf

Paradoxes are part of existential design. Let us take an example of a flowing river to understand this paradox in the design of a human being.



R. Ramakrishnan

It seems as though the river is running bordered by the two banks. Yet, beneath the river the two banks actually connected.

Deep inside, there are no two banks- just one continuous flow appearing to be separated at the surface by the flowing river. Yet, the banks derive their destiny from the river.

On the banks of Ganges and on the banks of Indus they say „, yet all mud and all sand is just one continuous flow.

Spiritually the spark of life that enlivens me and the spark of life that enlivens all beings, is one and the same. Spiritually all the human beings are connected like the banks of the river.

Yet, physically I am unique and I am only one of my kind. I am completely different from every other being in the world, in every sense. Like the Ganges and Indus follow their own paths and have their own identities.

Whenever the spiritual need within me expresses itself, because of all beings and I are one and the same. I feel like being with all. The need for connectivity manifests itself and I wish to be part of the crowd, a fraternity and an association. I want to be the “We!” .

However, whenever the physicality of my being takes over, the physical needs of individuality take over and I crave for identity- I want to be different from others. I want to be above others, I want to be ahead of others. I want to be the “I”.

So, I will remain caught between these paradoxical needs- the spiritual need for connectivity and hence the desire to relate with all, and the physical need for individuality and hence the need for personal identity.

So this leads to sometimes I will complement others and complete them. At other times I will compete with them and make them feel incomplete. When I have this I will want that, and when I have that I will want this.

Life is designed by the Wisdom above so that I can flow between these two seemingly different needs, though deep inside they are two sides of the same coin. Growth happens when we move between these paradoxical needs.

Have a great day,
Ramki.