ASPIRE

ACHIEVEMENTS IN SPORTS, PROJECTS, INDUSTRY, RESEARCH AND EDUCATION

MONTHLY NEWSLETTER

DEPARTMENT OF MECHANICAL ENGINEERING

VOLUME - 13 ISSUE - 2

FEBRUARY

SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING

RAJIV GANDHI SALAI (OMR), KALAVAKKAM, CHENNAI, TAMIL NADU, INDIA

FROM THE HOD'S DESK...

We are delighted to present our February edition of Aspire!!

In the Nobel Laureates section, we profile William Bragg, who used X-rays as an instrument for the systematic revelation of the way in which crystals are built.

SSN celebrated its annual alumni meet – Tribute 2023 which saw many of our alumni gracing the occasion and reminiscing on the good old days. Glad to note that SNU Chennai hosted a quiz event and one of their faculty featuring in an article on TOI, while we wish to share the achievements of the SSN music club.

The placement count stands at 66 and good times are still ahead. Students share their experiences in campus placements in companies like Severn Glocon, Tekion and McDermott. An alumnus working in SCM shares his journey within and outside of SSN.

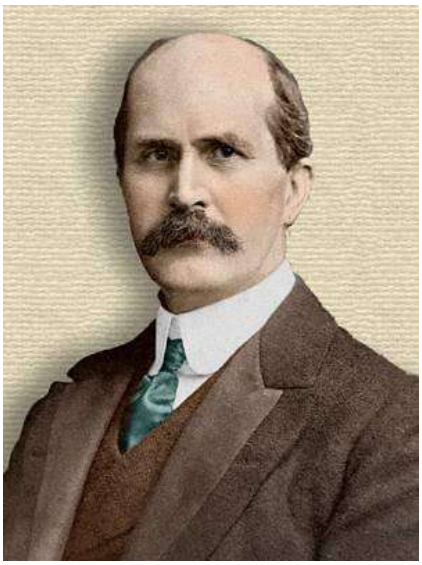
Our student Hari Madhavan shares his journey towards becoming an international master in chess. In mech marvel section we profile some amazing innovations like voice enabler for throat cancer patients and a low-cost harvester.

Our faculty showcase their research work in reputed journal publications with good and have been invited as a guest speaker, conducted workshops, visited the renewable energy expo, participated in Imtex 2023 event, invited as a Board of studies member, adapted a textbook on Materials science and have had discussions with Rane on consulting opportunities.

Happy reading and wishing you a sanguine February!!!

K.S. Vijay Sekar | vijaysekarks@ssn.edu.in

WILLIAM HENRY BRAGG – PIONEER OF X-RAY CRYSTALLOGRAPHY-Noble Prize Winner



William Henry Bragg was born at Westward, Cumberland, on July 2, 1862. He was educated at Market Harborough Grammar School and afterwards at King William's College, Isle of Man. He studied physics in the Cavendish Laboratory during part of 1885, and at the end of that year was elected to the Professorship of Mathematics and Physics in the University of Adelaide, South Australia.

Subsequently he became successively Cavendish Professor of Physics at Leeds (1909-1915), Quain Professor of Physics at University College London (1915-1925), and Fullerian Professor of Chemistry in the Royal Institution.

His research interests embraced many topics, and he was adept at picking up a subject, almost casually, making a significant contribution, then dropping it again. However, the work of Bragg and his son Lawrence in 1913-1914 founded **a new branch of the science of the most significant importance and significance, the analysis of crystal structure using X-rays.** Suppose the fundamental discovery of the wave aspect of X-rays, as evidenced by their diffraction in crystals, was due to von Laue and his collaborators. In that case, it is equally valid that the use of X-rays as an instrument for the systematic revelation of how crystals are built was entirely due to the Braggs. **This was recognized by the award of the Nobel Prize jointly to father and son in 1915.**

During the First World War, Bragg was put in charge of research on the detection and measurement of underwater sounds in connection with the location of submarines. It was probably in acknowledgment of his work and scientific eminence that Bragg was made a C.B.E. in 1917 and was knighted in 1920. The Order of Merit

followed in 1931. After being a Fellow since 1907, he was elected President of the Royal Society in 1935.

He was an honorary doctor of some sixteen universities and a member of the leading foreign societies. Many other medals and awards were bestowed upon him, among which may be mentioned the Rumford Medal in 1916 and the Copley Medal (its premier award) in 1930.

Campus Update

TRIBUTE '23!!

SSN values the time each student spent here in their 4years of study. Presenting a chance to reinvigorate their old days. A day to celebrate the alumni of our college.

A college which doesn't forget the passed out student, rather dedicate a day to once again live in their old memories. An event conducted by our college's alumni Team, known as Tribute 2023.

In this event, many alumni were presented with awards, Tree sapling distribution, etc.

SNU- QUBIZ!!!

Shiv Nadar University Chennai conducted its flagship event, a south India level quiz competition-QUBZ on Wednesday, 5th January 2023 at Kochi, Kerala.

This initiative, which is a part of EduQuest is meant to attract many students and provide them with opportunities to explore knowledge.

SNU is making a difference in the education field, by providing opportunities to students to excel in their school life.

SMC- ON ITS VICTORY MARCH

SSN, one of the esteemed colleges in Tamil Nadu aims not only in education as student's life goals, but also cherishes and nurture student's other skills and talents along the long journey they travel in SSN. SMC-SSN Music Club, one such club which is to enhance their singing ability and motivate students in Music.

In a recent competition, which took place in IITM, known as Saarang'23, a musical fest for students from different college. In that competition SSNites won the first prize, bringing laurels to the college.

The band members:

1. Dhruv S. Pathangi, II Year (Civil)
2. Shashank Panda, IV Year (CSE)
3. Pradeep G, IV(CSE)
4. Pragadeesh M, II(EEE)
5. Nikhil Rajkumar, III(ECE)

Likewise, another team showcased their talent in Loyala's Libazaar'23. This team won the 1st prize and brought laurels and goodies to the campus.

The band members:

1. HSJ Sahana, IV Year (IT)
2. Hrithin Ramji, III Year (CSE)
3. Pradeep G, IV Year (CSE)
4. Pragadeesh M, II Year (EEE)
5. Nikhil Rajkumar, III Year (ECE)

This group of students assured a path, which can be paved through music and set a role model for the students to aspire to in the near future.

Department Update

PLACEMENT UPDATE – MECH 2023 BATCH

Total Placement Count: 66

Adarsh Sahu got placed in McDermott.

McDermott is a premier, fully-integrated provider of engineering and construction solutions to the energy industry. Operating in over 54 countries, McDermott's locally-focused and globally-integrated resources include more than 30,000 employees, a diversified fleet of specialty marine construction vessels, and fabrication facilities worldwide.

HARI MADHAVAN SHARES-MY JOURNEY TOWARDS INTERNATIONAL MASTER

Many of you may not know me by face or would not have interacted with me as that has been my style from childhood. Ever since I was born (11th June 2003), I always had a feeling that my life's goal is to excel in chess, the game which I adore, love and life for. I am Hari Madhavan doing 2nd year Mechanical Engineering at this college.

My competitive chess journey started very early as I was enrolled in a tournament called Rock and Roll chess tournament while I was in UKG. I ended up in 4th place in that tournament and that's the beginning of my chess career, which I want to make as my profession. Even at that young age, that 4th place seemed little too less for my capabilities and dream… Started working on my game and by the time I was 8 years old, won the first district championship title of my career. That's when I started believing that this will be one of the many milestones I have to cross.

My rating opened during the KCF tournament and completed within a month during the tournament at St. Joseph's Engineering College.I have represented Chennai district in almost all categories (from under 9 to under 17). Have represented Tamil Nadu state in senior division and crossed the rating of 2,000 during the under 17 tournament in Thanjavur.

My International Master (IM) title journey began when I first norm for IM completed in Serbia in November 2021. Second norm was completed in Madurai in July 2022 and the third norm during senior national tournament in Delhi in November 2022. Finally, got my IM title in January 2023 during the tournament. My journey towards IM title can be found at: https://www.chessbase.in/news/19-year-old-Hari-Madhavan-N-B-becomes-the-latest-International-Master-of-IndiaAt 19 I am very happy to be an IM but inside, I feel like I have just started and have a long journey ahead of me.

Like rightly said by Simon Williams, "The beauty of chess is it can be whatever you want it to be. It transcends language, age, race, religion, politics, gender, and socioeconomic background. Whatever your circumstances, anyone can enjoy a good fight to the death over the chess board."

International Journal Publication - SCI /Clarivate Indexed

Sampath, Santosh, and Sampath Vedamanickam. "Effect of Vanadium on the Microstructure, Transformation Temperatures, and Corrosion Behavior of NiTi Shape Memory Alloys." *Journal of Engineering Materials and Technology* 145.1 (2023): 011008.Clarivate Impact Factor: 1.626

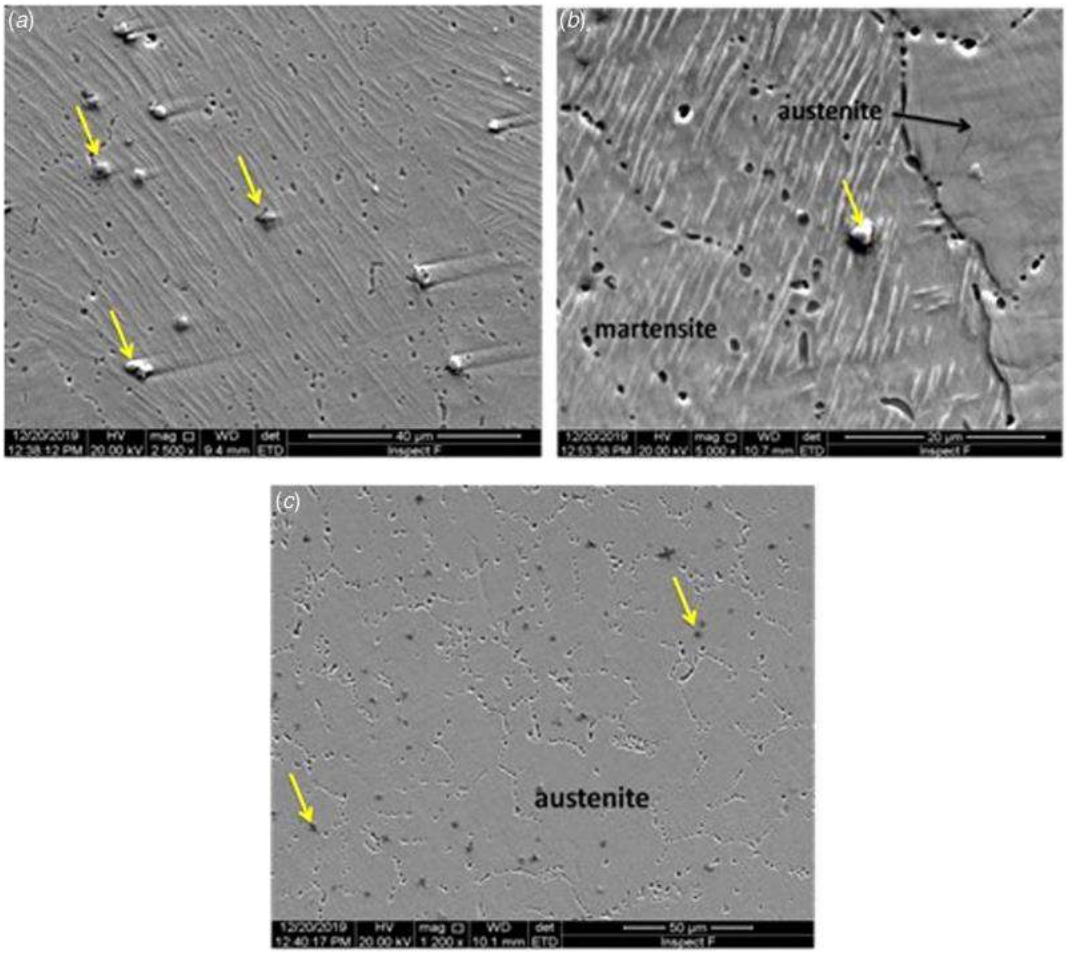


Fig. 5 Scanning electron micrographs of NiTi alloys with (*a*) 1 at% V, (*b*) 2 at% V, and (*c*) 3 at% V

International Journal Publication - SCI /Clarivate Indexed

Ragavan G, Vijaya Raja, Poovazhagan Lakshmanan, and Mariyappan Mahalingam. "Examining the surface roughness and kerf quality of micro-slots cut on the surfaces of Ti-B4C nanocomposites by WEDM: A desirability approach." *Materials Research Express* (2022).. Clarivate Impact Factor: 2.025

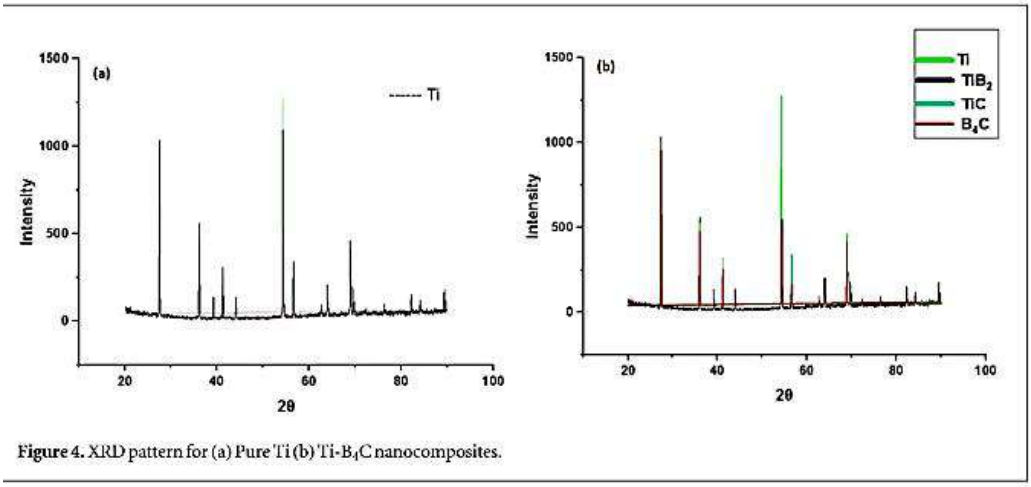


Figure 4. XRD pattern for (a) Pure Ti (b) Ti-B_4C nanocomposites.

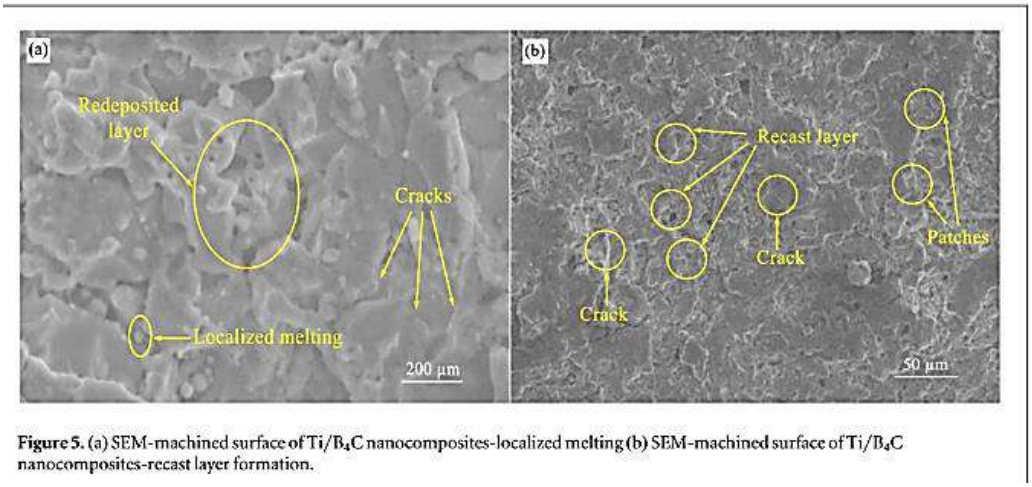


Figure 5. (a) SEM-machined surface of Ti/B_4C nanocomposites-localized melting (b) SEM-machined surface of Ti/B_4C nanocomposites-recast layer formation.

International Journal Publication - SCI /Clarivate Indexed

BALAKRISHNAN RAJESHUMAR, MASILAMANY SANTHA ALPHIN, VAJJIRAM SANTHANAM, and VIMALANATHAN PALANIKUMAR. "Mechanical, Vibration and Visco-elastic Behavior of Abelmoschus Esculentus Fiber Reinforced Epoxy Composite." Clarivate Impact Factor: 0.688

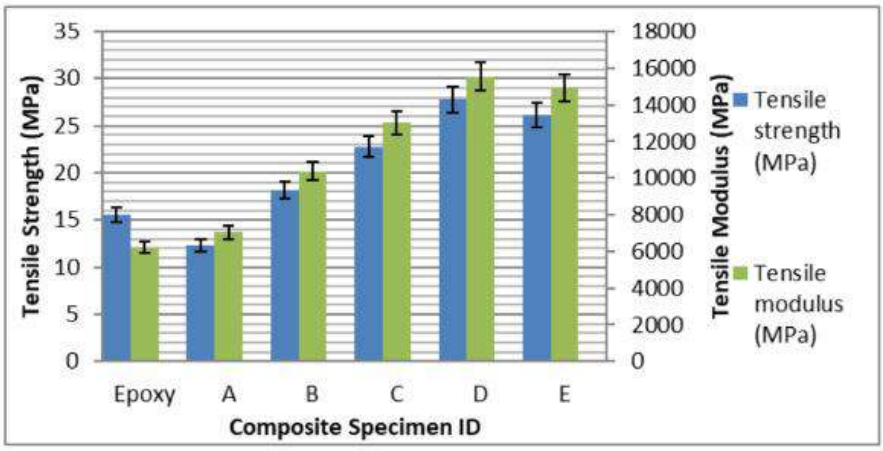


Figure 3. Impact of *Abelmoschus Esculentus* - Epoxy compositeson tensile Properties

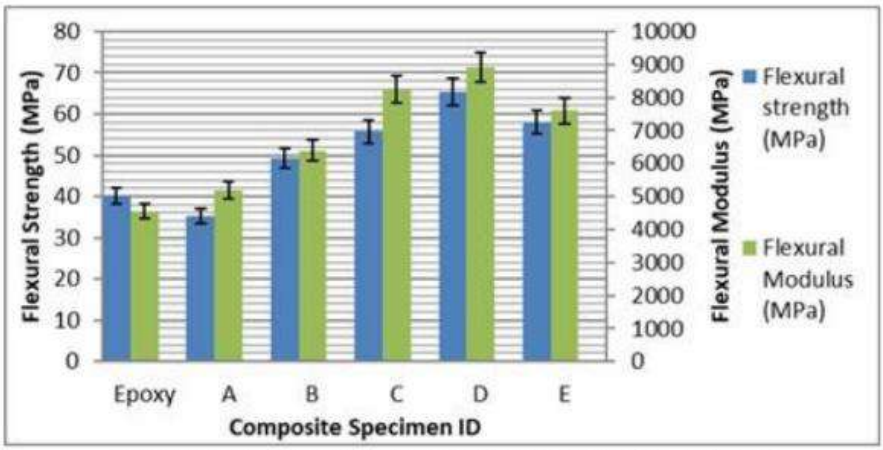
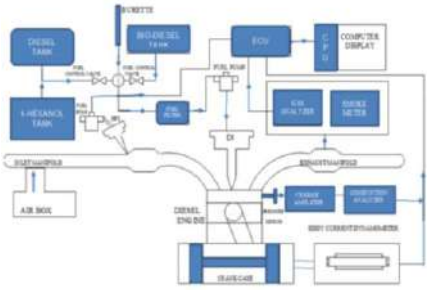


Figure 4. Impact of *Abelmoschus Esculentus* - Epoxy compositeson flexural properties

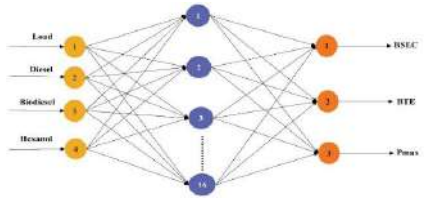
International Journal Publication - SCI /Clarivate Indexed

Anandavelu, T., Sundararajan Rajkumar, and Vinoth Thangarasu. "Dual fuel combustion of 1-hexanol with diesel and biodiesel fuels in a diesel engine: An experimental investigation and multi criteria optimization using artificial neural network and TOPSIS algorithm." *Fuel* 338 (2023): 127318. Clarivate Impact Factor: 8.035

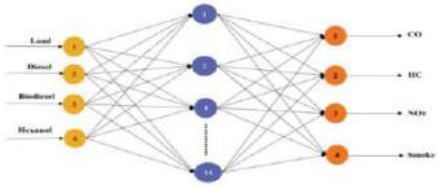
doi: https://doi.org/10.1016/j.fuel.2022.127318. **This paper can be downloaded at**https://authors.elsevier.com/a/1gNTi3iH4IMnG



The experimental setup



ANN configuration for performance-combustion model



ANN configuration for emission model

In this dual fuel combustion (DFC) study, 1-hexanol (HX) is injected at various premixed energy ratio (PER) of 10%, 20% and 30% in intake port, while diesel/waste cooking oil biodiesel are directly injected. Experiments are conducted using diesel (D100), B20, B50 and B100 in conventional combustion mode (CCM) and DFC mode at various loads. DFC with 10% PER increased the brake thermal efficiency at all loads vis-à-vis CCM. DFC abated NOx emission at low loads and augmented it at higher loads. Decline in smoke along with an increase in CO (except at rated load) and HC emissions are observed at all loads. Maximum NOx reduction is realised in DFC of D-HX by 37.81%, 26.68%, and 3.01% at 25, 50 and 75% loads. To optimise fuel combination and PER for an effective DFC, a multi-objective decision-making optimization technique TOPSIS is adopted. The data for optimisation are predicted as well using an

artificial neural network (ANN) model trained using experimental data. The optimal conditions in terms of improved performance and emission are arrived as the CCM of D100 for 25% and 50% loads and the DFC of B50 and B70 with 30% PER of 1-hexanol for 75% and 100% loads respectively.

International Journal Publication - SCI /Clarivate Indexed

Sermaraj, M., K. Ramanathan, D. R. Rajkumar, and M. S. Alphin. "Effect of crack and vibration of waste tyre rubber hybrid composite for energy absorption applications." *Progress in Rubber, Plastics and Recycling Technology* (2023): 14777606231152508. Clarivate Impact Factor: 2.171

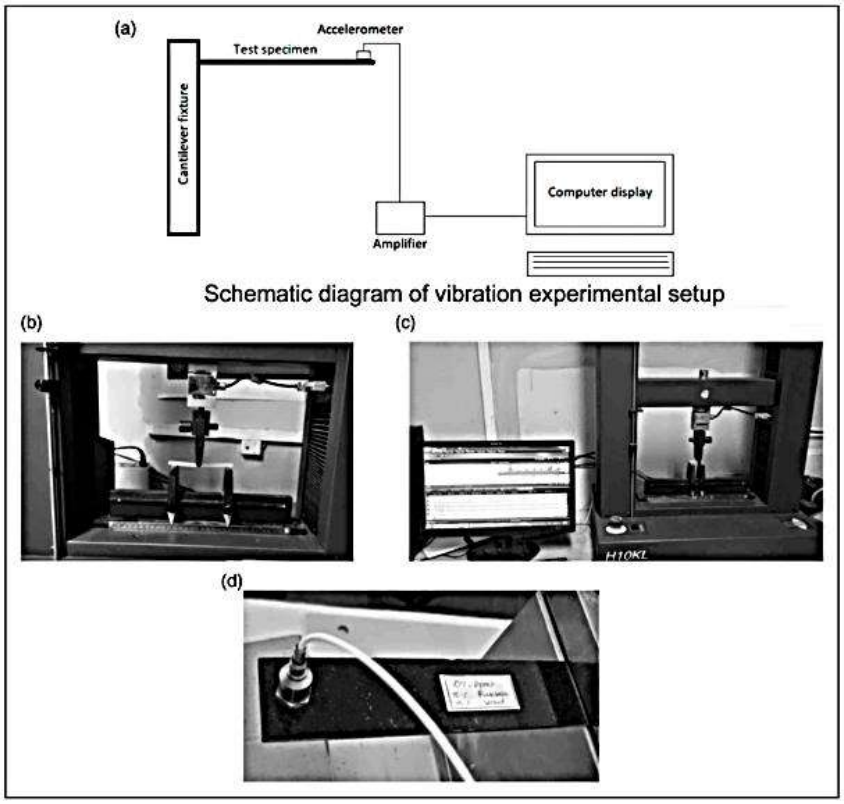


Figure 3. (a) Schematic diagram of vibration experimental setup. Loaded sample for (b) Fracture toughness test (c) Shear test (d) Vibration test.

International Journal Publication - SCI /Clarivate Indexed

Ramesh Kumar, K., and M. Selvaraj. "Investigations on Integrated Funnel, Fan and Diffuser Augmented Unique Wind Turbine to Enhance the Wind Speed." *Journal of Applied Fluid Mechanics* 16.3 (2023): 575-589. Clarivate Impact Factor: 1.5

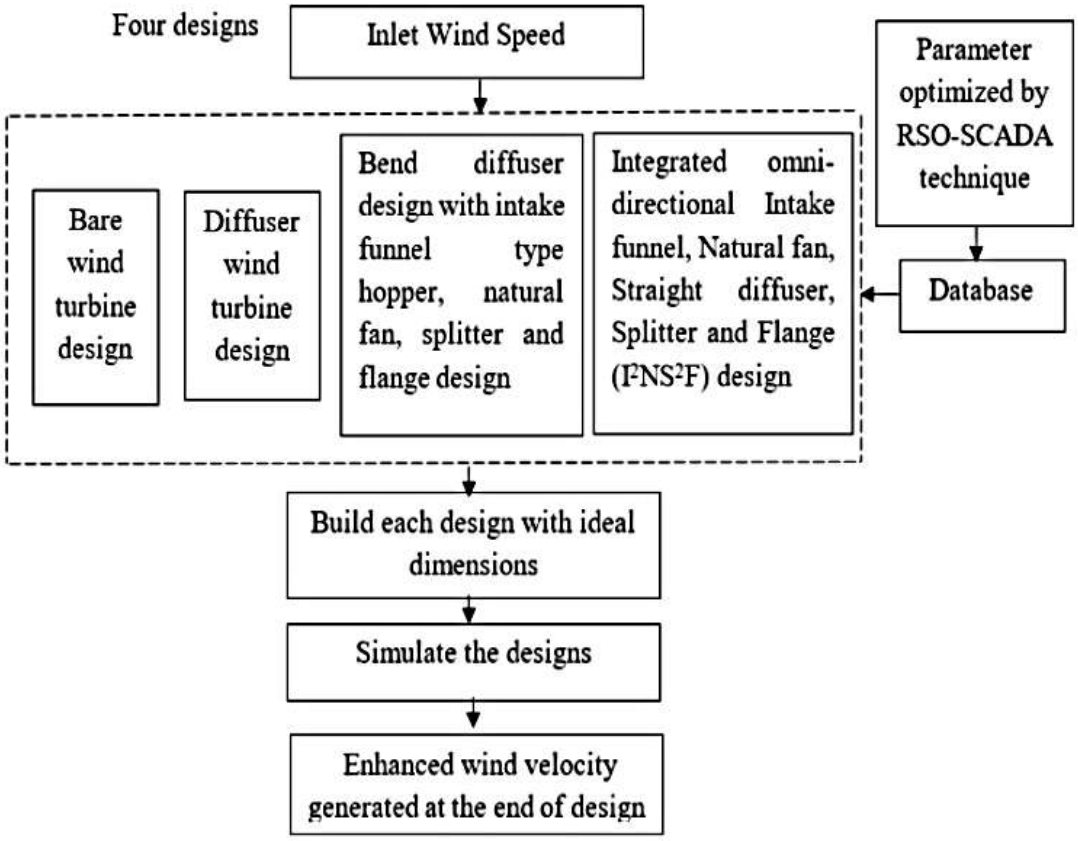


Fig. 1. Design flow diagram of the proposed methodology.

International Journal Publication - SCI /Clarivate Indexed

Krishna, N. Manoj, M. Selvaraj, Arul Kulandaivel, and S. Lakshmana Kumar. "Neural intelligence and regression analysis in modeling and optimization of flank wear during turning of Monel K500." *JOURNAL OF CERAMIC PROCESSING RESEARCH* 23, no. 5 (2022): 656-665. Clarivate Impact Factor: 1.2.

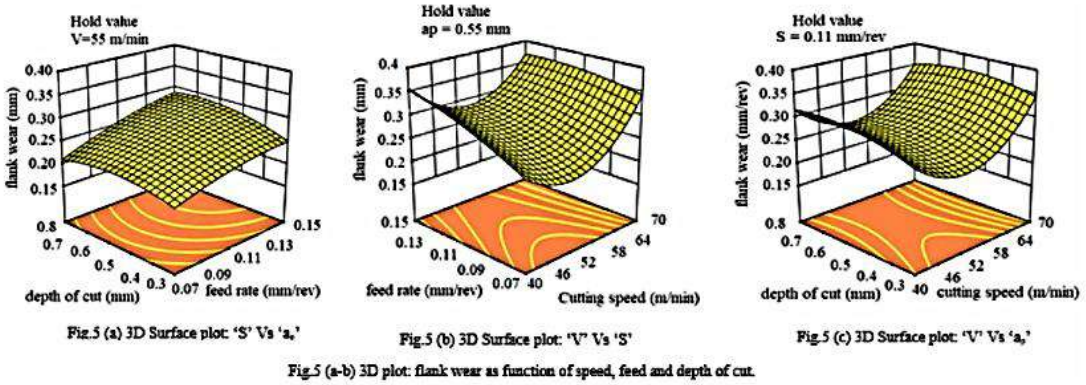


Fig.5 (a) 3D Surface plot: 'S' Vs 'a,' Fig.5 (b) 3D Surface plot: 'V' Vs 'S' Fig.5 (c) 3D Surface plot: 'V' Vs 'a,'

Fig.5 (a-b) 3D plot: flank wear as function of speed, feed and depth of cut.

Fig. 5. (a-c) Surface Plots.

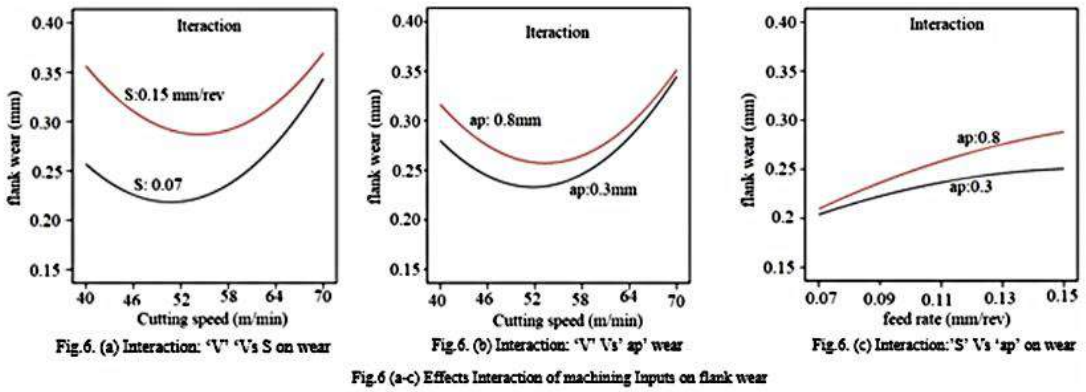


Fig.6. (a) Interaction: 'V' 'Vs S on wear Fig.6. (b) Interaction: 'V' Vs' ap' wear Fig.6. (c) Interaction:'S' Vs 'ap' on wear

Fig.6 (a-c) Effects Interaction of machining Inputs on flank wear

Fig. 6. (a-c) Interactions of Flank Wear.

International Journal Publication - SCI /Clarivate Indexed

Naveenprabhu, V., and M. Suresh. "Performance assessment of annular fins and cellulose cooling pad on heat transfer enhancement of evaporative heat exchangers using volumetric heat and mass transfer coefficients." *Numerical Heat Transfer, Part A: Applications* (2022): 1-24. Clarivate Impact Factor: 2.569

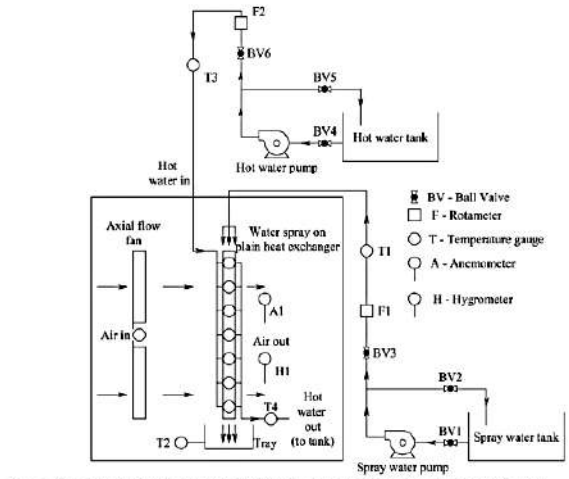


Figure 1. Experimental schematic diagram of FCWHX unit – plain tube heat exchanger without cooling pad.

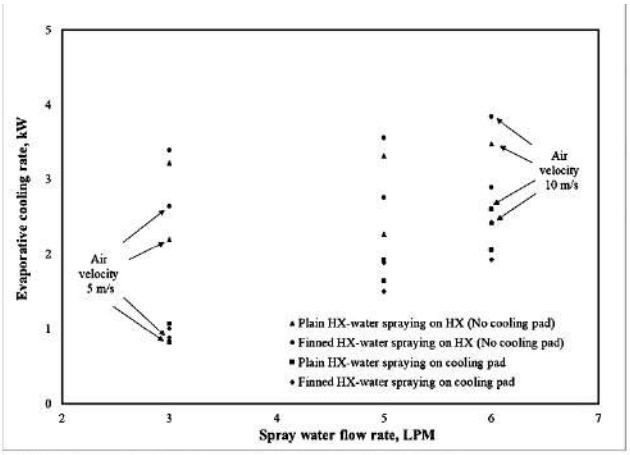


Figure 11. Effect of spray water flow rate on evaporative cooling rate at different air velocities.

Scopus Publication

Selvaraj, M. "Compression behavior of perforated steel laminated elastomeric bearing." *Materials Today: Proceedings* (2022).. Scopus Impact factor: 0.4.

Selvaraj, M. "Vibrational Study on Effect of Iron Particle Blend Elastomers Layer in Epoxy/Glass Fibre Composite." *Recent Advances in Materials Technologies: Select Proceedings of ICEMT 2021*. Singapore: Springer Nature Singapore, 2022. 99-109.Scopus Impact factor: 0.4.

Selvaraj, M. "Regression Model for Prediction of Heat Generation and Peak Temperature During Friction Stir Welding of Steel." *Recent Advances in Materials Technologies: Select Proceedings of ICEMT 2021*. Singapore: Springer Nature Singapore, 2022. 183-192.Scopus Impact factor: 0.4.

Nalla Mohamed, M. "Influence of Linear and Stepped Variation in Wall Thickness on the Energy Absorption Efficiency of Square Tubes Under Axial Compression." *Recent Advances in Materials Technologies: Select Proceedings of ICEMT 2021*. Singapore: Springer Nature Singapore, 2022. 291-302..Scopus Impact factor: 0.52.

NallaMohamed, M. "Improving the crashworthiness of circular tube energy absorber by introducing different Gaussian curvatures on surface." *Materials Today: Proceedings* (2022).Scopus Impact factor: 0.5.

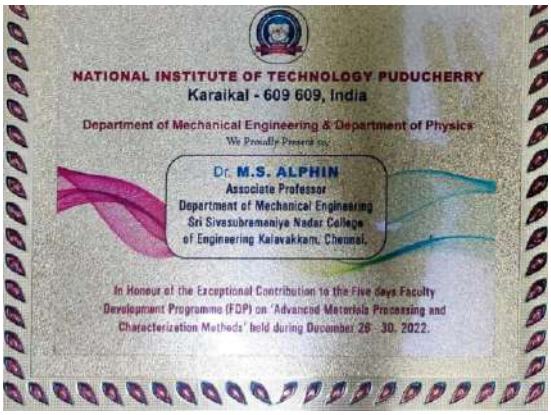
Dhananchezian, M. "Surface roughness and insert wear in turning Ti-6Al-4 V and Inconel 600 alloys with tungsten carbide inserts under dry conditions." *Materials Today: Proceedings* (2022).Scopus Impact factor: 0.36.

Dhananchezian, M. "A tool wear analysis of an Inconel 600 turned TiAlN coated carbide insert at various cutting speeds." *Materials Today: Proceedings* (2022). Scopus Impact factor: 0.36.

Lakshmanan, S., M. Pradeep Kumar, and M. Dhananchezian. "Optimization of turning parameter on surface roughness, cutting force and temperature through TOPSIS." *Materials Today: Proceedings* (2022). Scopus Impact factor: 0.36.

FACULTY WRITE-UP

DR. M S ALPHIN DELIVERS A LECTURE IN NIT PONDICHERRY AS A GUEST LECTURER



Dr. M S Alphin delivered a lecture on Vibration in the Faculty Development Programme, "Advanced Materials Processing and Characterization Methods," organized by the Department of Mechanical Engineering and the Department of Physics from 26.12.2022 to 30.12.2022 at the National Institute of Technology NIT-PY.

DR. KSV WORKS ON A TEXTBOOK "INTRODUCTION TO MATERIALS SCIENCE FOR ENGINEERS."

In my decade long association as an adaptor and contributor with the Pearson publishing group, I have worked on several world class textbooks to adapt the US version to the SI version for circulation in the Asia Pacific region. In recent times, Pearson has created global editions of some of these textbooks. I was given an opportunity to adapt the renowned James F Shackelford book on materials science, which is a world class textbook on the fundamentals of materials. My work involved changing about 150 end of chapter problems from the US edition and providing sketches and worked out solutions for inclusion in the solution manual. It was as fulfilling as challenging and reviewed by subject experts from Swinburne (Australia) and Istanbul (Turkey) universities. I am sharing the title page with the credits here.

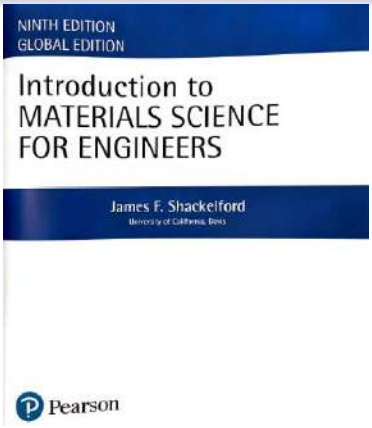
JAMES F. SHACKELFORD
Davis, California

Acknowledgments for the Global Edition

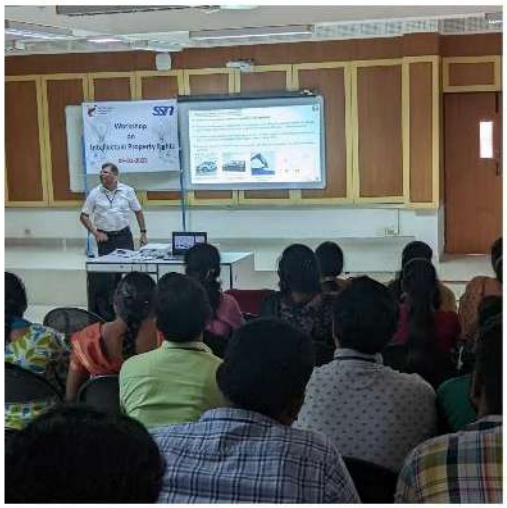
Pearson would like to acknowledge and thank the following for their work on the Global Edition:

Contributor
K. S. Vijay Sekar, Sri Sivasubramaniya Nadar College of Engineering

Reviewers
Durul Huda, Swinburne University of Technology
Tanay Karademir, Istanbul Bilgi Üniversitesi
Murat Saribay, Istanbul Bilgi Üniversitesi



WORKSHOP ON INTELLECTUAL PROPERTY RIGHTS CONDUCTED ON 9 JAN 2023



The Department of Mechanical Engineering and Computer Science Departments organized a 1-Days “Workshop on Intellectual Property Rights" at our college premises on 9 Jan 2023, Monday.

Convenor/ CoConvenor

Dr. T T Mirnalini

Dr. M S Alphin

Dr. V Balasubramanian

Dr. Micha Prem Kumar

Speakers:

Dr. Jack Kenned, NIT Py

Dr. G Rajaram, Head- Rand D, THEJO

Dr. Kantha Babu, Anna University

REPORT ON VISIT TO RENEWABLE ENERGY EXPO HELD ON 22ND JANUARY 2023 AT THE CHENNAI TRADE CENTRE

The 5th Edition of the Renewable Energy Expo was organized by the Renewable Energy Expo Team, a division of WT between the 20th, and 22nd of January 2023 at Chennai Trade Centre, Nandambakkam, Chennai. Solar Cell, Solar thermal and other ancillary equipment, Bioenergy, wind energy manufacturers,

consultants and project developers displayed their products and expertise. The Expo assumes significance given that renewable energy capacity has increased by 286 % in 7.5 Years in our country and offers good cleantech business growth prospects. Expo showcased recent trends and opportunities in the renewable energy field and witnessed enthusiastic participation from all stakeholders. M K Madhu, founder of Swaadle Tech and a proud SSN alumnus displayed his innovative Solar LED Brick Light at the Expo. Our Best Wishes to him to scale greater heights!

DR KSV INVITED AS BOS MEMBER AT VELAMMAL ENGINEERING COLLEGE

I was invited to attend the BOS meeting at Velammal Engineering College, Chennai, on 20th January 2023 for the Mechanical and Automobile Engineering departments, having been nominated as a member for three years, for the period from 2022-23 to 2024-25.

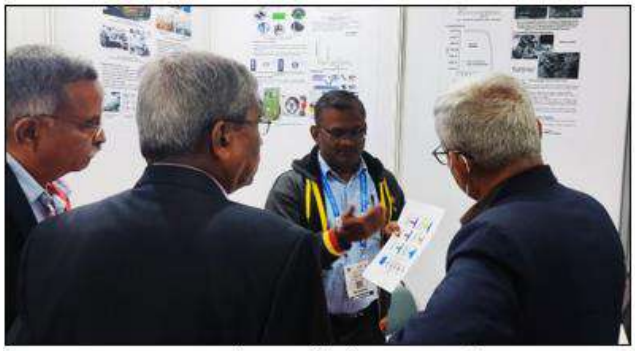
REPORT ON INDUSTRY – INSTITUTE INTERACTION ACTIVITY

The Indian Machine Tool Manufacturers' Association (IMTMA) organized the international machine tool and manufacturing technology exhibition 'IMTEX 2023 & Tooltech 2023' along with Digital Manufacturing at Bangalore International Exhibition Centre (BIEC) in Bangalore from 19th to 25th January 2023. This exhibition offered a platform to the academia in the form of i2 Academia Pavilion. It is an Industry-Institution Pavilion, a forum for academic and R & D institutions to showcase their research initiatives and activities. Around 22 stalls in i2 Academia Pavilion were devoted to institutions including IIT Madras, IIT Bombay, PDPM

Institute of Information Technology, Jabalpur, PSG Tech, SASTRA University, and many others to display their research activities in the form of posters. Out of more than 100 colleges applied, only 22 were selected and SSN team was one among them.

On behalf of Mechanical Engg dept, **Dr. S. Suresh Kumar and Dr. S. Santosh** participated in the exhibition and displayed their project posters in the i2 academia pavilion. The poster themes were: 1. Ballistic Performance of Aluminium 6061-T6 Targets with 'Bio-inspired Pattern' and Internal Grooves (SSK), 2. Additively manufactured NiTi – reinforced smart composites for improved vibration damping (SS). Both themes attracted the faculty and students from many educational institutions as well as people from industries.

As a part of the i2 Academia Pavilion initiative, IMTMA formed a panel of juries to evaluate the project posters. Jury members were impressed by both project themes displayed by SSNCE. Based on the final presentation and interaction with juries, the projects were assessed and awarded. SSNCE was able to highlight in the exhibition that our projects are research oriented as well as industry relevant.



Interaction with jury members

while receiving the presentation certificate

NON-TEACHING STAFF

12/28/2022	Mr. BALASUNDARAM P / LAB ASSISTANT / MECHANICAL / DR.K.S.VIJAYASEKAR-HOD MECHANICAL / ALLOTED WORK TO CIVIL DEPARTMENT OFFICE RELATED WORK FROM 17.12.2022 . WEEK DAYS OF MONDAY TO FRIDAY 8.30 AM TO 10.30 AM
1/23/2023	MR.BALASUNDARAM P LAB ASSISTANT / MECHANICAL / ATTENDING CIVIL OFFICE RELATED WORK FROM 17.12.2022 TO..... 8.30 AM TO 10.30 AM MONDAY TO FRIDAY WORK ALLOTED BY HOD MECHANICAL DR. K.S. VIJAYASEKAR

INDUSTRY COLLABORATION

1/23/2023	Mr. R Rajesh, President, Corporate, Rane holdings Ltd, visited the Mechanical department on January 7th, for a discussion on mutual areas of collaboration and zeroed in on a problem solving opportunity in Steering column sensors. The visit was facilitated by Dr Chandran, CEO, SSN incubation Centre.

SCHOLAR INFO

1/13/2023	Dr. K. Jayakumar, Associate Professor/Mech. Engg., attended the 1st DC meeting of Mr. R. Rajesh, PhD scholar of K. Ramakrishnan College of Engineering (Autonomous), Mechanical Engg., Trichy, registered in Anna University, Chennai on 06.01.2023.
1/20/2023	Dr. M. Dhananchezian, Associate Professor, conducted the first DC meeting for his part-time research scholar, Mr. M. Manimuthu (23132991128) on 04.01.2023.

WS ORG

1/21/2023	Three sessions were conducted as a Pre-Conference Workshop under the title "IOT for Smart System" for the IFIP 7th International Conference on Computer, Communication and Signal Processing (ICCCSP 2023), January 4 - 6, 2023 organized by the Department of Information Technology, SSNCE on 4th January 2023. 'Research challenges & Innovation in Robotics' by Dr. Satheesh Kumar Gopal, 'Build your automation framework with us' by Dr. C. Arun Prakash and 'Internet enabled automation' by Dr. Vimal Samsingh

9 Jan 2023	Dr. M S Alphin, Mechanical Engineering and Computer Science Departments organized 1-Days “Workshop on Intellectual Property Rights" at our college premises on 9 Jan 2023, Monday.

EXTERNAL RECOGNITION

1/2/2023	Dr. M Selvaraj Guest lecture on Engineering Mechanics organized by Sri Vidya College of Engineering and Technology, Virudhunagar 16 December 2022
1/6/2023	Dr. M S Alphin delivered a guest lecture on Vibration in the Faculty Development Programme, “Advanced Materials Processing and Characterization Methods,” organized by the Department of Mechanical Engineering & Department of Physics from 26.12.2022 to 30.12.2022 at the National Institute of Technology NIT-PY, 30 Dec 2022.
1/13/2023	Dr.D.Ananthapadmanaban, Associate Professor was invited by Bharath University to act as external examiner for final year project viva on 10th January,2022
1/14/2023	Dr. C. Arun Prakash, AP/Mech, is appointed as "Reviewer of Technical Books" in Regional Language scheme of AICTE for 2nd year for the subject Engineering Mechanics.
1/23/2023	Dr K.S. Vijay Sekar, Professor and Head, was invited to be a member of the BOS for the Mechanical and Automobile Engineering departments in Velammal Engineering College, Chennai.
1/24/2023	Dr. K. Jayakumar, ASP/Mech, acted as a Technical Committee Member for 11th International Conference on Material Science and Engineering Technology (ICMSET 2022), Tokyo, Japan, during November 26-28, 2022.

1/27/2023	Dr.S.R.Koteswara Rao delivered an invited lecture on "Wire arc additive manufacturing using twin filler wire welding systems" at Defence Metallurgical Research Laboratory (DMRL), Hyderabad on 25-01-2023, as part of their Continuing Education Program (CEP) conducted for Scientists working at different DRDO laboratories.
1/27/2023	Dr S.R.Koteswara Rao chaired a conference session on " Solid State Welding" at the National Welding Seminar (NWS2022) conducted by The Indian Institute of Welding at Chennai Trade Centre during 19-21 January 2023

FDP ATTENDED

12/28/2022	Dr.D.Ananthapadmanaban, Associate Professor attended a 2 day FDP on Additive Manufacturing on 15th and 16th December,2022 .The event was organized by VelTech MultiTech Dr Rangarajan Dr Sakunthala Engineering College.

S.NO	DATE	ACTIVITY DONE DURING THE MONTH
1)	20/01/2023-22/01/2023	*SECOND YEAR* Ajay Srikanth M • SSN-SNUC MUN
2)	10/01/2023	*THIRD YEAR* B. Maalolan
3)	19/01/2023-25/01/2023	• Did an online course on "The Arduino Platform and C Programming" from coursera Sarath Sankar • Formula Bharat 2023

Student Write-Up

THAANESHWARAN V, IV-YEAR WRITES

Hello everyone! Here I have shared my selection process of Severn Glocon.

First the company schedule the PPT session. The whole process happened offline at our CDC. There were three rounds including:

1. Aptitude and Domain test

2. Technical interview

3. HR interview

1. Aptitude Round:

a) General Aptitude:

This round has 40 questions covering from quants, verbal reasoning and Data interpretation. A time limit of 40mins were given to solve. The questions were not tough at the same it was not too easy. Preparation on Profit/loss, Work, time, distance, Probability will be more than enough to crack this round. Calculators were allowed to be used, so time was not a constraint to finish this round.

b) Domain Test:

This round consists of 45 questions, each question carrying 1 mark. The domain test covered topics on all mechanical engineering topics such as Thermodynamics, Fluid Mechanics, Strength of materials, Manufacturing Technology, Dynamics, and Kinematics of machinery. A time limits of 45mins was given to solve. The level of difficulty was intermediate. For both the rounds there were no negative marking.

Around 16 people attended the above rounds and from that 14 were shortlisted for the technical interview.

2) Technical Interview:

The interview was based mostly on area of interest mentioned in the resume. Technical questions on basics of mechanical engineering topics were also asked. One panelist conducted the interview. The few questions as follows.

1. Tell me about yourself.

2. Questions on valves and fittings.

3. Questions on various Flow measuring devices available.

4. Questions on pumps and compressor.

5. Questions on various manufacturing process.

6. Department which I was interested. (Knowing about the

job role will help to answer)

This interview went about 35mins. Overall, Confident answers with good communication skills will help to crack this round. So be confident. Out of 14 people they shortlisted 8 for HR interview.

3) HR interview:

This was an interview about 25mins. Here the HR ensure that the candidate will stay for the long time in their company. He asked about my family background and any higher studies ideas. He asked some HR questions like,

1. Why should I hire you?

2. Why you choose Mechanical engineering?

3. Your hobbies?

MCDERMOTT RECRUITMENT PROCESS (2023 BATCH)

McDermott recently conducted a recruitment process for new hires, which took place at their office. The process consisted of several stages, including an offline test, a group discussion, and a final round of interviews.

The offline test consisted of technical questions, aptitude questions, and an essay writing component. Most of the technical questions were very basic such as, “What is the Second Law of Thermodynamics?”, “What is Hooke’s Law?”. Whereas the aptitude questions were pretty standard. We were not allowed to use calculators during the test. The test lasted for one and a half hours, and the results were announced within an hour of completion.

The next stage of the process was a group discussion, in which selected students from the first round were divided into two groups. We were provided with three different topics and were asked to choose one to discuss. The topic of discussion for my group was "OTT platform vs Theaters," and the group discussion had two rounds. The first round was a general group discussion, while the second round involved each student speaking for one minute on what could be concluded from the group discussion. The results of this stage were announced immediately.

The final round of the recruitment process was an interview, in which the interviewer tested the candidate's technical skills and HR skills. All questions were based on the candidate's resume. After the final round, the candidates were allowed to leave the campus, and the results of the recruitment process were announced within a month.

Overall, the recruitment process at McDermott was thorough and well-organized, providing an opportunity for candidates to showcase their technical and HR skills. The timely announcement of results ensured that candidates were informed of the status of their application in a timely manner.

Mech Marvel

Amazing Innovation 229

THE ₹50 VOICE BOX!

Dr. Vishal Rao, a Bangalore based oncologist, has developed a voice prosthesis that can help throat cancer patients speak after surgery. And unlike the extremely expensive ones available in the market today, this device will cost just Rs. 50.

Voice prosthesis is a device made of silicone. It is used to help patients speak when the entire voice box, or larynx, has been removed. In such cases, the windpipe and food pipe are separated from each other, either at the time of the surgery or later, creating an opening between the two. The device is then placed in this opening. Dr. Rao explains that the voice box basically vibrates with the help of air provided from the lungs. The mechanism behind the prosthesis is that instead of the vocal cord vibrating, the food pipe is made to vibrate with the back end of the prosthesis sitting at the food pipe.

“If you send air into the food pipe through the lungs, it will vibrate, create noise, and that can be converted into intelligent speech with coordination from the brain. As food or water should not fall into the lungs, it is a one-way valve device,” he elaborates. The device weighs 25 grams and is 2.5 cm long.

Why is the device called ‘Aum’?

“In older scriptures, ‘Om’ was written as ‘Aum.’ ‘A’ stands for creation, ‘U’ for sustenance and ‘M’ for annihilation. These are the three basic principles of our universe. When a person speaks again after losing his voice box, for me it is more like rebirth, like Aum being recreated, because it is the origin of all sound,” concludes Dr. Rao.

Amazing Innovation 230

A MECHANICAL ENGINEER'S LOW-COST HARVESTER CLEARS STONES, MAKES LAND CULTIVABLE IN HOURS

In 2016, K Deepak Reddy graduated with a degree in mechanical engineering from Hyderabad and returned to his native village Borancha in the Sangareddy district of Telangana.

One day, while out and about on errands, he came across a vast farmland that was lying vacant. "The land areas had been empty since my childhood days. When I started making frequent visits to the area, I realised that no crops had grown

there for years," he says.

Deepak tells The Better India that he asked farmers nearby why hundreds of acres of land had remained barren for years, and was told it was due to the large amounts of stone debris, which had made it unfeasible to carry out any farming activity in the area.

"I also learned that removing stones from the land required huge expenses, and marginal farmers with 5-7 acres of land could not afford to spend thousands of rupees for the task, in addition to the investment required for agricultural activity," he explains.

The 26-year-old says that he worked for years to build the harvester. "My idea was to build a machine that is suitable for Indian farmers. It needed to be low-cost with basic features. However, I thought that if it could also harvest potatoes and root vegetables, it would add value to the machine," he says.

Deepak says he worked on a concept where the equipment is attached to and pulled by a tractor moving forward. "The blade attached at the bottom of the machine digs the soil to fish out stones and drops them onto a conveyor belt. The net structured belt system rotates along the axis and, in the process, filters the soil, dropping it back on the ground. The stones remain on the conveyor and are transferred to another belt for the second filtration stage, segregating the remaining soil. After that, the stones are collected in a storage bucket," he explains.

He adds that the same principle applies to potatoes and other root vegetables.

The multi-purpose harvester is not only cost-effective but also efficient in terms of the time and effort required. "A farm labourer charges Rs 5,000 and spends an entire day removing the stones from an acre of land. However, my machine can accomplish the task in a matter of four hours, at the cost of Rs 1,500 per acre," he says.

Deepak says efficiency is a crucial factor for farmers, as the machine makes harvesting vegetables easier and quicker. "The earlier the farmers reach the market with their produce at the beginning of the season, the better the profits," he adds.

For now, he is hopeful his product will be market-ready soon and make way for commercial use in farms across India.

Alumni Write-Up

PARTHIBAN AZHAGANANTHAM, BATCH 2012-16 SHARES…

SSN, A Place for Finding yourself! 25-Dec-2022

I want to thank SSNCE for the wonderful journey I had during my college days. The guidance and learning provided at every step along with a total build-up of a professional character is credited to SSN Management, Mentors, Teachers, and Friends. I received a vivid exposure during my college days, which helped me not only to begin a professional career, but to sustain and achieve standard growth in this competitive corporate environment.

First year of college went like an extended part of school without any fear of board exams, but excitement of being in SSN and enjoying the rules of freedom. When I enter the department in second year, I get to feel the engineering vibe, and my mind starts thinking whether I'm in the right platform with the right ticket or not. So, I started searching myself in all the directions. Any course of study will help you in understanding the concepts, upgrading the skills, and gaining the knowledge. But how the course helps you in the future in terms of finding better opportunities and earning out of it, that you must find outside the classroom. I started visiting industries, attending In-plant trainings and Internships. Internships are not only for understanding the industry processes, but also helps you to find the industry and its environment the suitable workplace for yourself or not.

Apart from Academics, SSNCE provided a space for improving my passion towards writing and photography. I participated in Vikatan student reporting scheme 2014-15 and secured an Excellence award for my writings and photographs. I was a member of SSN Photography club, I remember most memorable moments like Instincts, Crank-X (Symposium of Mechanical Department) and Inaugural event of Vamasundari park. Volunteering for NSS events, attending camps made me a better human being.

Became a Student Secretary of Saaral Tamizh Club is the best part during my final year, which teaches me a lot, like utilizing the time as much as possible, People management for delegating the task to others and finding better team for an event, financial management for prioritizing and spending your account wisely, Marketing while hunting the sponsors. Since SSN providing importance to the extracurricular activities, I had given importance to my passion too, which helped me to wrote three books in Tamizh and became a finalist of Amazon Pen to Publish 2018 (https://www.amazon.in/ParthibanAzhaganantham/e/B07MFT7V25).

The train arrived; I started my journey. Before I completed my course, I decided that neither blue collared core industry jobs nor software coding jobs would be my cup of tea or coffee. There is a path in-between, I found that, that's how I become a Supply Chain Management Consultant. Reaching to Big4, a long journey but a wonderful one. Now, I have confidence that my ticket is worth travelling to a better destination.

When you become a student at SSN, you're not just beginning your engineering degree, you're joining a place where you will find yourself for the rest of your life. Thank you SSN for making me a better version of myself.

With lots of Memories,
Parthiban Azhaganantham,
Senior Consultant, EY India.
(BE- Mechanical Engineering; Batch 2012-16)
You can reach me through,

Email: parthibanaz@gmail.com

LinkedIn

Profile: https://www.linkedin.com/in/parthiban-azhaganantham439b1b9a/

COMPETITIONS UPDATE

"PARTICIPATION IS THE FIRST STEP TOWARDS SUCCESS"

Case Study:

Link: Link To Register

Marketing:

Link: Link To Register

Case Study Competition:

Link: Link To Register

CORPORATE WISDOM

From the desk of Ramki -– Aspire to Inspire

From the desk of Ramki -– Aspire to Inspire

HappyMorning

One person was in a Taxi which was taking him to the airport. The driver was driving in the right way when suddenly a black car jumped out of a parking space right in front of the Taxi.
The taxi driver slammed on his brakes, skidded and missed the other car by just inches. The driver of the other car whipped his head around and started yelling at the Taxi driver.

The taxi driver just smiled and waved at the guy and was very friendly in the response and not disturbed or not got provoked.

So the passenger asked the taxi driver " Why did you just do that ? This guy almost ruined your car and sent us to the hospital !!"
The taxi driver replied " The Law of garbage truck"

He further explained that many people are like garbage trucks. They run around with full garbage, full of frustration, full of anger and full of disappointment. They cannot see the better side of the life. As this garbage piles up , they need a place to dump it and sometimes they will dump it on you. Don't take it personally.

Just smile, wave and wish them well and move on. Don't take their garbage and

spread it to other people at home or work or on streets. The bottom line is that successful people do not let garbage trucks take over their day.
As human beings we cannot get provoked by others action.

Life is too short to wake up in the morning with regrets, so …love the people who treat you right. Pray for the ones who don't

Life is 10% what you make it and 90% how you take it .
#WishingMostAndMore

Have a garbage –free day ! Wonderful week ! R.Ramakrishnan

GMR Group India, Email:r.ramakrishnan@gmrgroup.in

EDITORIAL TEAM

Dr. Alphin M S

Dr. Satheesh Kumar G

Shivani S

Rufus Derrick

Vallikannan M

AbiramiSubbiah

Ponroshan D

Kavya s

Harish

feedback to ***aspire @mech.ssn.edu.in***