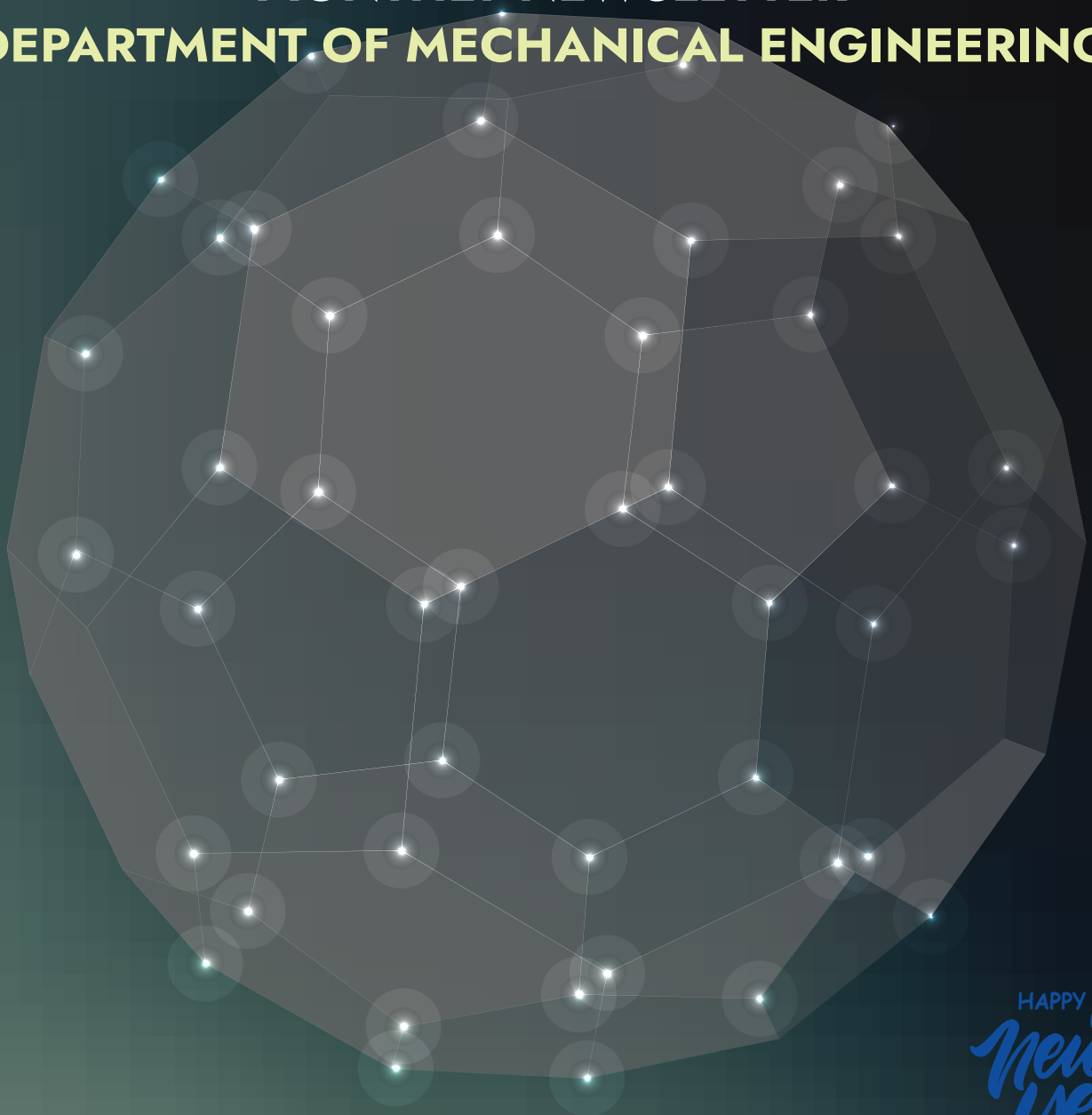
ASPIRE

ACHIEVEMENTS IN SPORTS, PROJECTS, INDUSTRY, RESEARCH AND EDUCATION

MONTHLY NEWSLETTER

DEPARTMENT OF MECHANICAL ENGINEERING



SSN | SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING

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

VOLUME - 13 ISSUE - 1 JANUARY

FROM THE HOD'S DESK...

Happy times are here again…. well, it's our new year edition…

In the Nobel Laureates section, we profile Charles Kuen Kao, who discovered light transmission through Fiber-optic cables.

SSN celebrated its graduation day and scholarship day, two annual events of immense value to SSN, one where the students receive their academic degrees as a testimony to their hard work and the second where they benefit from the philanthropy of SSN and its alumni and are awarded to meritorious and deserving students from all walks of life.

The knowledge and skill transfer given to our students reflects in the campus placements offers from L&T, Daimler, and others. The students share their placement experiences candidly which act as motivators and enablers for others.

Our faculty ably balance their academic work with research, which is see in their continuous high quality journal publications. On the industrial interaction front, a team of seven faculty members were invited to Maersk to explore opportunities in technical consulting and failure analysis. I was invited to deliver a talk on "Emotional intelligence" at Valeo, a global automotive company as part of their annual trainer day celebrations.

It's a matter of pride and happiness that 23 scholars from our department completed their PhD in 2022, the highest since becoming an Anna University research center. One of our faculty was invited by an institute in Gujarat to chair a mentoring workshop.

Our alumni share insights on their journey in the outside world and here's inviting all to Tribute 2023 on Jan 7th at SSN to meet and rewind a cherished, glorious past.

Once again wishing all a Happy, prosperous, and inspiring new year,

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

CHARLES K.KAO -NOBEL PRIZE IN PHYSICS-2022

Nobel Prize Winner of 2009 Charles Kuen. Kao, was awarded for his discovery of how light can be transmitted through Fibre-optic cables. He held dual citizenship in the United Kingdom and the United States. In 1957, Kao received a bachelor's degree in electrical engineering from the University of London. In the same year he went to work for Standard Telephones and Cables, a British subsidiary of the American telecommunications company ITT (International Telephone and Telegraph Corporation). Later, Kao received a doctorate in electrical engineering from the University of London in 1965. In 1966 he and British engineer George Hockham proposed that fibers made of ultra-pure glass could transmit light for distances of kilometers without a total loss of signal. After the first optic fibre was manufactured in 1970, much of the world's telecommunications were travelling through fibre-optic cable by the end of the 20th century.

In 1970, Charles Ken left ITT to spend four years at the Chinese University of Hong Kong, then later rejoined as chief scientist of its electro-optical products division in Virginia, later becoming ITT's director of engineering in that division. From 1983 to 1987, he was executive scientist and director of research at the ITT Advanced Tech Center in Connecticut. From 1987 to 1996, he was vice-chancellor and president at the Chinese University of Hong Kong. Kao then became chairman and chief executive officer (1996–2001) of Transtech, a Hong Kong fibre-optic company, and in 2000 he became chairman and chief executive officer of ITX Services, a technology transfer company.

CAMPUS UPDATE

SSN INSTITUTIONS GRADUATION DAY!!

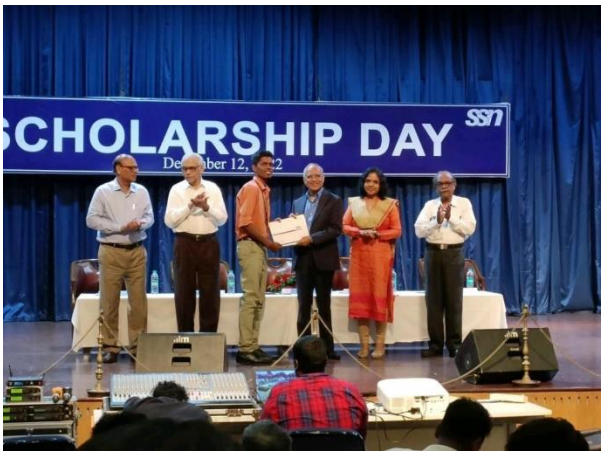
Graduation Day, a day which celebrates the 4 years of hard work displayed by our students. Many students were placed in notable companies of their dreams witnessed the graduation day on November 5,2022. People were elated to see their peers and reconcile with their memories, that defined their college life.

SSN College of Engineering, a premier technical and management institute in Tamil Nadu and the first initiative of the Shiv Nadar Foundation in education, recently celebrated its 22nd Graduation Day. In a ceremony held at the SSN campus, 1,209 graduates were conferred their degrees. Of the graduating students, 66 are Anna University rank holders. Students of SSNCE from the departments of Electrical and Electronics Engineering, Biomedical Engineering, Chemical Engineering, and Information Technology secured the University's first ranks.

The ceremony was chaired by Mr. S. Chandra Das, Pro-Chancellor, NTU, Singapore; Mr. Vidyashankar Krishnan, Vice Chairman and Managing Director, M. M. Forgings Ltd. and Ms. Savitha Balachandran, CFO, Tata Technologies who were the Chief Guests. They addressed the students across three sessions. Also present at the occasion were Mr. R. Srinivasan, Chairman, SSN Institutions; Dr. Kala Vijayakumar, President, SSN Institutions; Dr. V. E. Annamalai, Principal, SSN College of Engineering and Heads of the Departments, SSN College of Engineering.

Speaking on the occasion, Dr. Kala Vijayakumar, said, "At SSN, we believe in a 360-degree approach to the development of our students towards the vision of our alumni becoming world-class socially responsible citizens of tomorrow. In addition to ensuring a sound grounding in academics, we also encourage exposure to various extracurricular activities and sports within the institution. It is very satisfying to see SSN alumni placed in various meritorious positions across a wide spectrum of engineering, manufacturing, IT industries, and Government services. I am sure the present graduating batch will make our institution proud of their achievements in the future. I wish them the very best.

SCHOLARSHIP DAY!!!



SSN celebrated the scholarship day on 12th of December commemorating the meritorious students with cash prizes and certificates. Students received cash prizes for Merit, Merit-cum means, Sports, Rural and Carnatic Music Scholarship.

Many notable guests filled the room with enthusiasm and motivation for the students. Lakshmi Narasimhan V. Principal Architect at Cognizant Technology Solutions. Dr. Kala Vijayakumar, President, SSN Institutions; R. Srinivasan, Chancellor of Shiv Nadar University Chennai; Dr. V. E. Annamalai, Principal, SSN College of Engineering and Heads of the Departments, SSN College of Engineering.

Students who benefited from the scholarship scheme shared their experiences and how the rural scholarship scheme benefited them. SSN turned out to be one of the colleges that appreciated their student's efforts and hard work, by handing them the fruit of their labors.

SSN'S SWIMMER!!!

Once again, he proved his mettle, bringing his college more medals and laurels. Rohit Ben from 2nd year civil bags gold medal for all the events mentioned below.

Events:

50 Freestyle

100Freestyle

100 Butterfly

400 Individual Medley

*4*50 Freestyle Relay*

*4*100 Freestyle Relay*

*4*50 Medley Relay*

*4*100 Medley Relay*

DEPARTMENT UPDATE

Placement Update -Mech 2023 batch

Total Placement Count: 66

S Abhishek, Nitish M, Pon Ayappan Anathakumar,and Saisenthur B were selected in **L&T.**

Larsen & Toubro is an Indian multinational engaged in EPC Projects, Hi-Tech Manufacturing and Services. It operates in over 50 countries worldwide.




Ashwin S,Girish Rameshkumar, Tharun Shankar and **Thaaneswaran Vijayan** got placed in Severn Glocon India Pvt Ltd. Severn manufactures and supports high quality valves for the energy industries. Its control, choke and small bore subsea valves are pre-eminent in the global market, underpinning the reliability and high performance of business-critical client infrastructure.




TEKION

Ram Prakash got placed in **Tekion.**

Tekion is a software development company that develops business applications on the cloud.

psiog DIGITAL

Srinivas Sridhar got placed in Psiog Digital (P) Ltd.

psiog digital is a software services company, driven by individuals passionate about the potential of IT for empowering businesses.

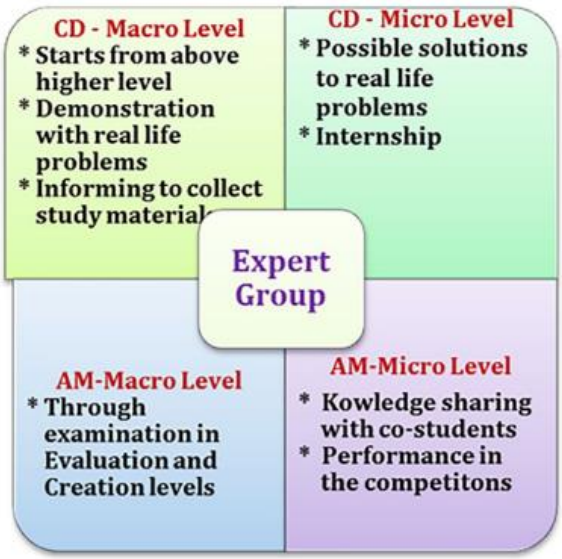
DAIMLER

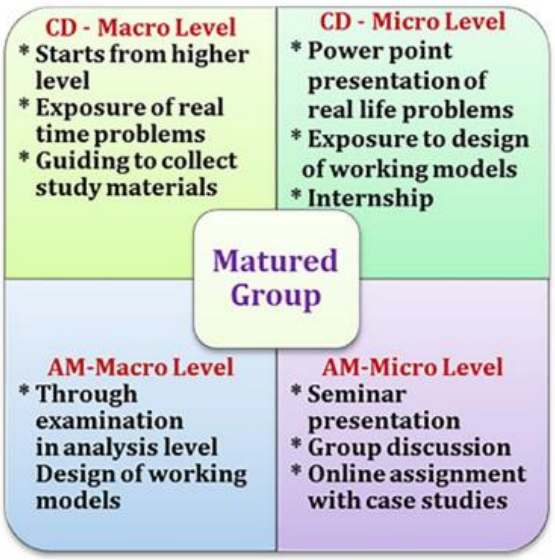
Sundharamahalingam B got placed in Daimler India.

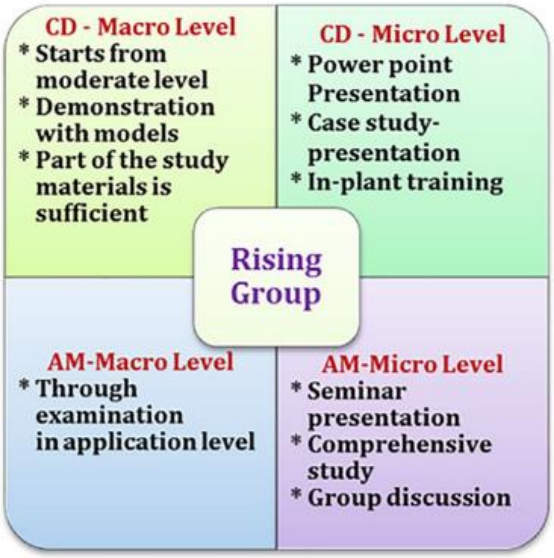
Daimler India Commercial Vehicles (DICV) is a wholly-owned subsidiary of Daimler Truck AG, and a full-fledged commercial vehicle player with a brand dedicated to its home market of India: BharatBenz.

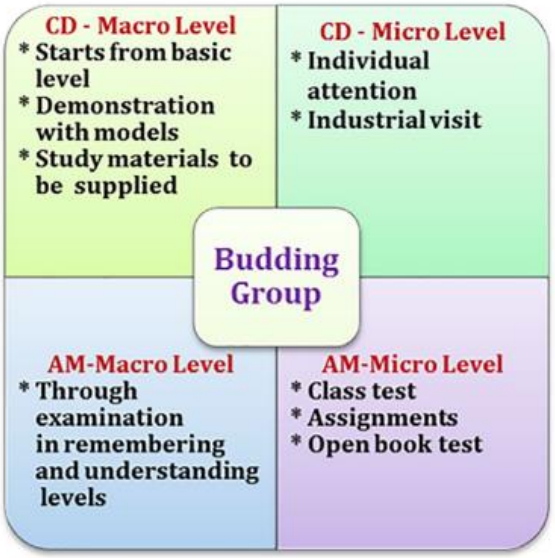
International Journal Publication - SCI /Clarivate Indexed

Lenin, N., M. Siva Kumar, and G. Selvakumar. "Application of Conceive, Design, Implement and Operate (CDIO) Strategy for the Development of Engineering Education in Indian Perspective." Journal of Education (2021): 00220574211016446. Clarivate Impact Factor: 0.196









International Journal Publication - SCI /Clarivate Indexed

Aarthi, R., and KS Vijay Sekar. "Post-weld friction stir processing of AA5083-F TIG welds with scandium added fillers." Materials Research Express (2022). Clarivate Impact Factor: 1.62

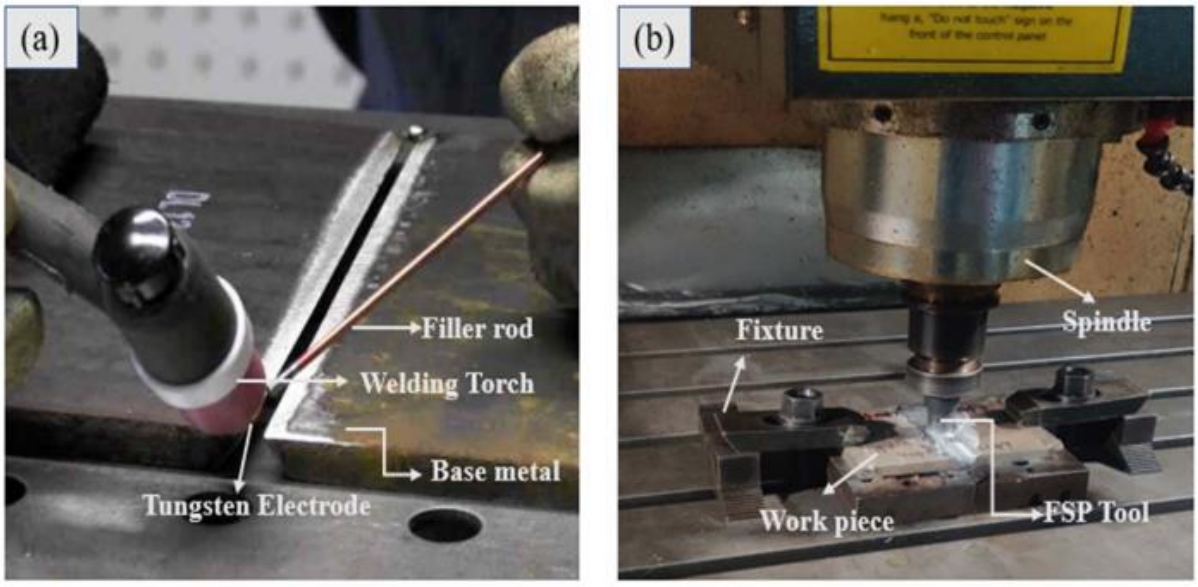


Figure 1. Welding process configuration of (a) TIG and (b) FSP.

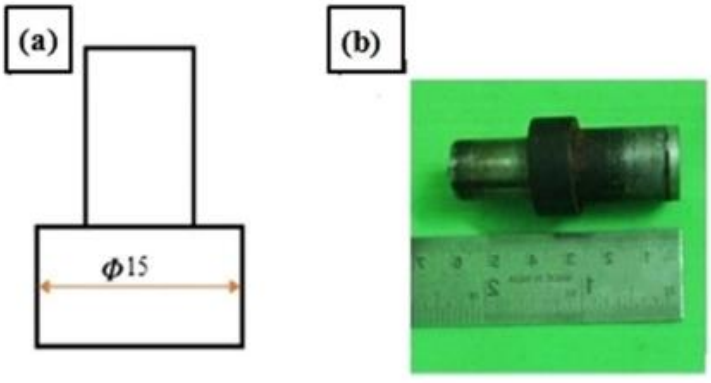


Figure 2. (a) Schematic diagram of pin-less FSP tool (b) Actual image of pin-less FSP tool.

International Journal Publication - SCI /Clarivate Indexed

Kumar, M. Sunil, M. S. Alphin, P. Senthil Kumar, and S. Raja. "A review on zeolite catalyst for deNOx performance in ammonia–selective catalytic reduction." Fuel 334 (2023): 126828. Clarivate Impact Factor: 7.658

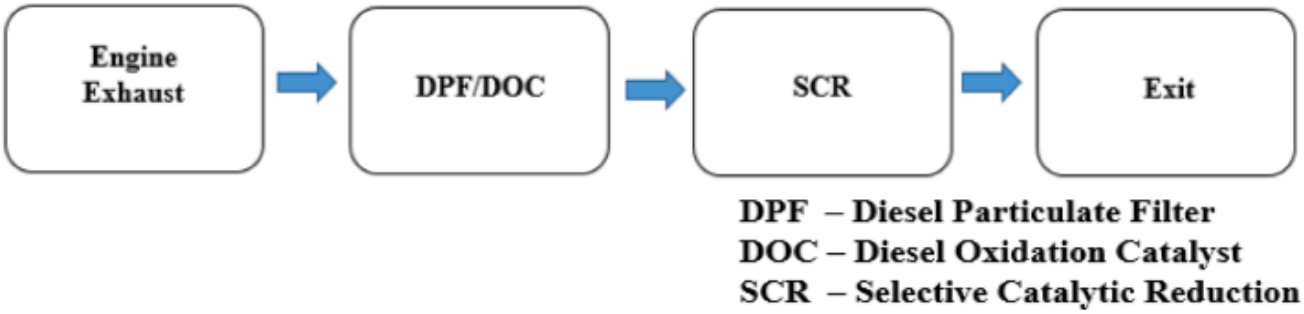


Fig. 1. Conventional configuration for SCR activity.

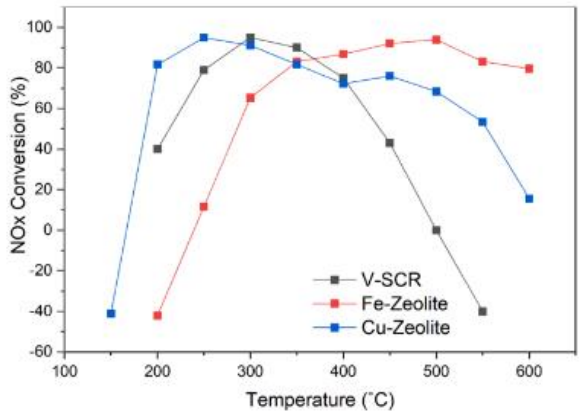


Fig. 2. NOx Performance behaviour over temperature.

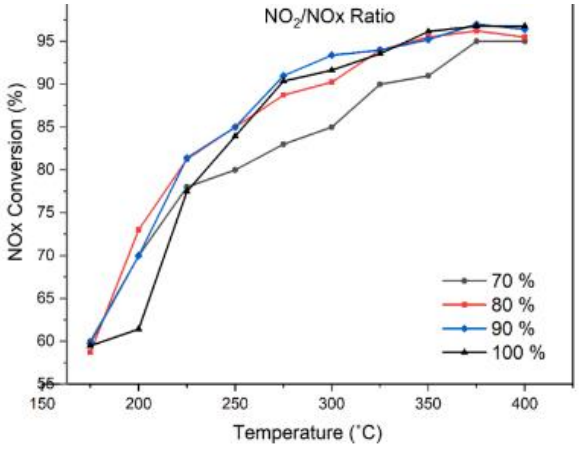
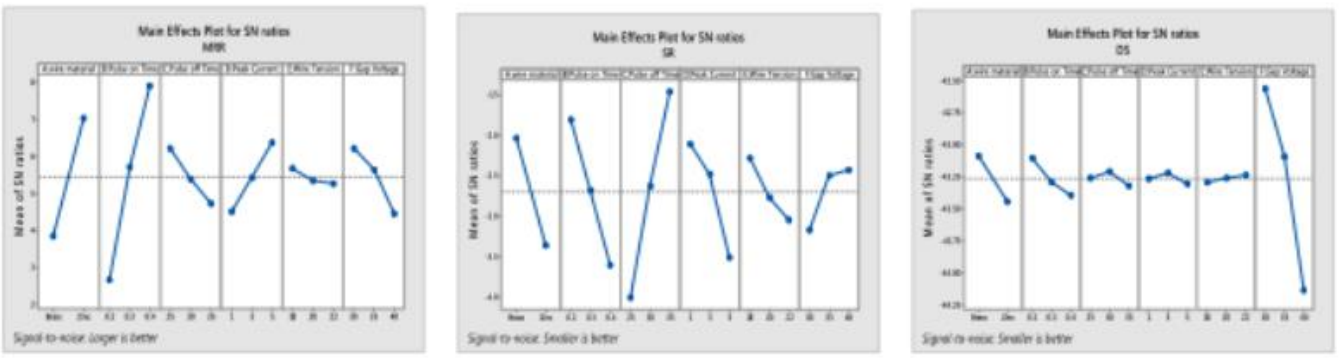


Fig. 3. NOx Conversion for Fe-Zeolite.

International Journal Publication - SCI /Clarivate Indexed

ARULSELVAN, S., D. RAVINDRAN, G. SELVAKUMAR, and A. ARUL MARCEL MOSHI. "STUDY ON THE INFLUENCE OF ZINC-COATED WIRE MATERIAL ON 3D PROFILE MACHINING OF INCONEL 825 ALLOY USING WEDM PROCESS." Surface Review and Letters (2022): 2250151. Clarivate Impact Factor: 1.24



(a) MEP for MRR. (b) MEP for SR. (c) MEP for DS.

Fig. 4. MEP of input parameters for each output response.

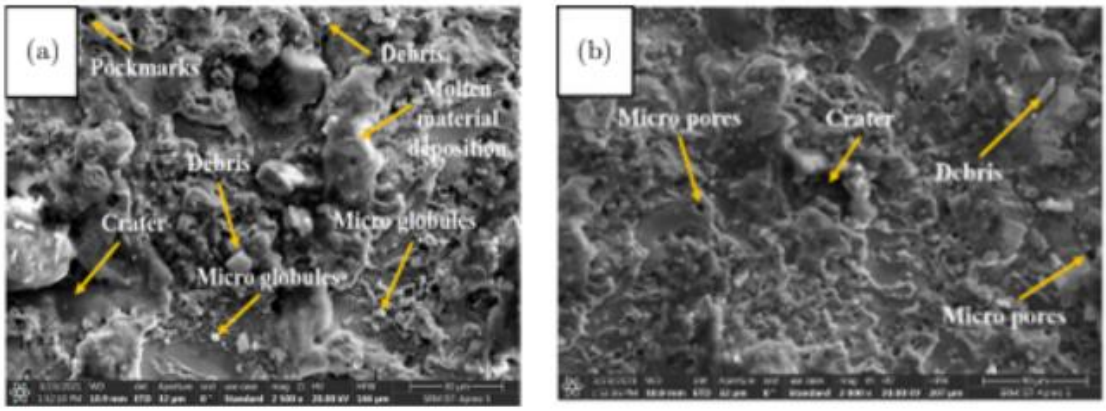


Fig. 5. SEM images taken on the machined surfaces. (a) Image of surface machined with zinc-coated brass wire (T16); (b) Image of surface machined with pure brass wire (T08).

International Journal Publication - SCI /Clarivate Indexed

Suresh, T., K. Jayakumar, G. Selvakumar, and S. Ramprakash. "Experimental Investigation on Improvement of Machinability of SS 304 Through Multipass Cutting in WEDM." Arabian Journal for Science and Engineering (2022): 1-14.Clarivate Impact Factor: 2.807

Fig. 5 Rough and trim cut with wire offset

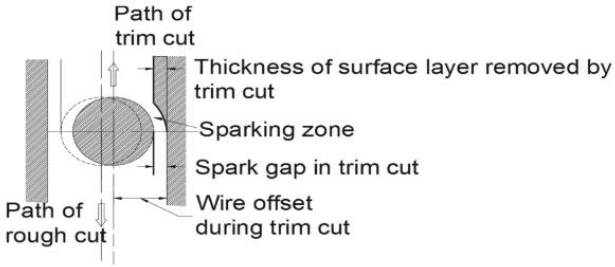


Fig. 6 Arrangement for roughness and hardness measurement

Hardness Tester

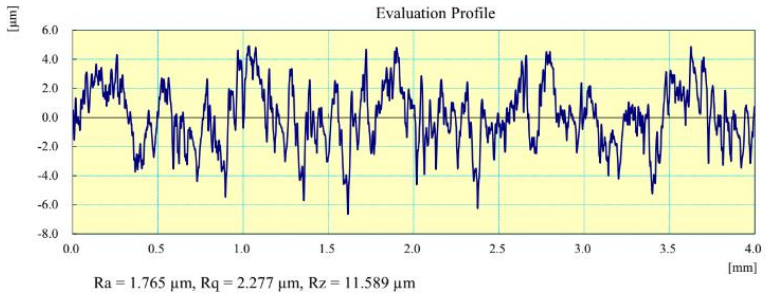


Fig. 7 Surface roughness profile from Surftest SJ210 for the 4th experiment

Scopus Publications

Jayakumar, K., et al. "Experimental Studies on Surface Roughness and Temperature Rise During End Milling of AL 7075." Recent Advances in Materials Technologies. Springer, Singapore, 2023. 427-435. Scopus Impact factor: 0.19.

Kumar, P. Naveen, K. Jayakumar, and S. Senthur Vaishnavan. "FSW on AA5083 H-111 and AA5754 H-111 dissimilar plates with scandium intermetallic layer." Materials Today: Proceedings (2022). Scopus Impact factor: 0.36.

Vaishnavan, S. Senthur, K. Jayakumar, P. Naveen Kumar, and T. Suresh. "Effect of ER5183 filler rod on the metallurgical and mechanical properties of TIG-welded AA5083 and AA5754 joints." Materials Today: Proceedings (2022). Scopus Impact factor: 0.36.

Balamurugan, S., K. Jayakumar, B. Anbarasan, and M. Rajesh. "Effect of tool pin shapes on microstructure and mechanical behaviour of friction stir welding of dissimilar aluminium alloys." Materials Today: Proceedings (2022). Scopus Impact factor: 0.36.

Kandasamy, R., S. Balamurugan, K. Jayakumar, M. Ilangkumaran, J. Murugesan, and R. Karthick. "Fabrication and characterization of Basalt/ATH/Epoxy hybrid composites." Materials Today: Proceedings (2022). Scopus Impact factor: 0.36.

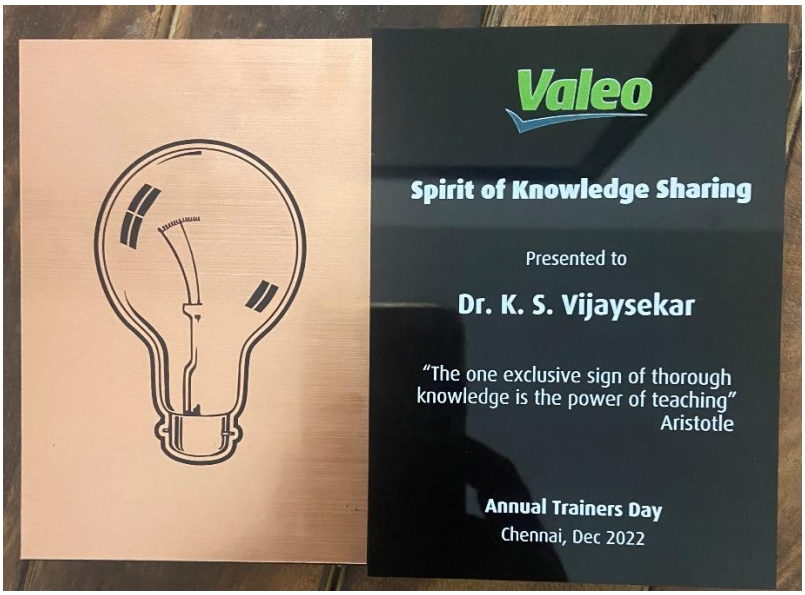
Subbiah, M., S. Balamurugan, K. Jayakumar, and R. Karthick. "Analysis of engine cylinder block with fins by varying different materials." Materials Today: Proceedings (2022). Scopus Impact factor: 0.36.

Jayakumar, K., and PJ Abdul Rahman. "Effect of end milling parameters on MRR and hardness variation of AA7075." Materials Today: Proceedings (2022). Scopus Impact factor: 0.36

FACULTY WRITE-UP

HOD DELIVERS A TALK ON "EMOTIONAL INTELLIGENCE" AT VALEO

It was a delight to present a talk on "Emotional intelligence and its context today in professional life" at Valeo, a global automotive company. The audience were the company's technical trainers conducted as part of their annual trainers day celebrations. There was a festive mood in the gathering, and it was icing on the cake that the topic was one that has always been dear to me, one where it delves on the importance of understanding human emotions in the context of achieving good work-life balance. I was able to regale the audience with personal and professional experiences at the core of the narrative, laced with unalloyed humor as its fulcrum. I thank the entire organizing team from Valeo for this wonderful opportunity and for making the day memorable with their kindness and hospitality.



FACULTY MEMBERS VISIT TO MAERSK PLANT
A REPORT BY DR. N. LAKSHMI NARASIMHAN

We are glad to share with you that a team of faculty members of our department made a visit to A.P. Moller-Maersk Terminals India Pvt. Ltd. (referred to as APM Terminals

India or simply Maersk here in), Minjur, Chennai on 20.12.2022, to discuss in detail about a possible project pertaining to failure analysis of a critical component at the company's site. The team had received a formal invitation for the visit post an initial discussion on the problem, that was held online a few days before the visit. Mr. Satheesh Samuel from Maersk and Dr. N. Lakshmi Narasimhan, ASP/Mech, SSNCE coordinated the interactions.

During the Visit...

The Team comprising of seven members from SSNCE was well received at the company's premises by Mr. Samuel and his colleague. The day commenced with a formal introduction between the members both sides. The self-introduction was followed by an address by the Business Head, Maersk who highlighted the need of the hour of Maersk and future focus. Following the introductory note, Mr. Satheesh Samuel gave a clear picture on the agenda for the day. Mr. Rahul P.V., colleague of Satheesh was introduced who along with Satheesh accompanied the team to the site for the entire day. The team was first taken to the site where the Reach Staker (Crane) was in operation. The actual component that experienced the frequent failure was physically shown and the operation was demonstrated for a better understanding. The team formed into groups and had a thorough technical on-site interaction with Rahul and Satheesh. Later, the team was taken to different areas within the plant for identifying potential projects that can value-add to sustainability goals of the company. The morning session concluded with a visit to the Cold Storage high class facility, where an in-depth information on the systems and process were shared. Mr. Satheesh highlighted a few challenges that the company currently face as regards the cold storage facility and its operations.

Lunch & Concluding Meeting

Post the site visit in the morning, the afternoon session commenced after a quality lunch, with an exchange of ideas & thoughts based on the observations, between the team members and Mr. Satheesh. A concise task as regards the cold storage unit was discussed by Mr. Satheesh. The team was grouped into two with one group targeting Component Failure Analysis while the other targeting the Cold storage facility. The visit concluded with an overall summary and consolidation of the immediate action plans

needed from both sides. Overall, the visit was an eye-opening opportunity to all the members and introduced different interesting real-time industrial problems. Based on the visit and subsequent discussions, it appears that there exists a scope for a couple of interesting joint projects that can be carried out with the industrial support.

As a team, we would like to express our sincere thanks to our Principal, and HOD/Mech for their kind consent, support and encouragement for the visit and interactions. A special thanks to our Management for giving such a healthy eco-system conducive for industry-institute networking. A wholehearted thanks is always due from our side to Mr. Satheesh, Mr. Rahul P.V. and the company - Maersk and its Business Head, for giving us an opportunity for interaction. We also thank them for all the arrangements made for the visit with a great hospitality. More than anything, words cannot express our sincere gratitude for the time the Maersk team had shared with us amidst their tightly packed schedules. We look forward to a strong and healthy interaction between SSN and Maersk on a long term.

LIST OF FACULTY MEMBERS VISITED MAERSK ON DEC 20, 2022 (TUESDAY)

Manf Team:

1. Dr. S.R. Koteeswara Rao, Prof/Mech
2. Dr. A. K. Lakshminarayanan, Assoc. Prof/Mech
3. Dr. S. Suresh Kumar, Assoc. Prof/Mech
4. Dr. R. Damodaram, Assoc. Prof/Mech

Thermal/Resource Optimization Team:

1. Dr. N. Lakshmi Narasimhan, Assoc. Prof/Mech
2. Dr. K. Babu, Assoc. Prof/Mech
3. Dr. R. Vimal Samsingh, Assoc. Prof/Mech

PHD COORDINATOR WRITEUP ON THE NUMBER OF PHD SCHOLARS' COMPLETION

REPORT BY RESEARCH COORDINATOR - DR. K JAYAKUMAR

I am happy to say that our department has produced 23 PhD scholars (10 FT +13 PT) this year alone, which is the highest number since the start of the research center. Special thanks to SSN Management for the constant support of PhD scholars. Also, thanks to all the faculty and technical staff of the Department of Mechanical Engineering for achieving this and off course congrats to all the awardees for their focus and determination.

RESEARCH MENTORSHIP AT UNITEDWORLD INSTITUTE OF DESIGN (UID), KARNAVATI UNIVERSITY, GANDHINAGAR, GUJARAT

A REPORT BY DR. DIVYA ZINDANI

I was invited as one of the research mentors during one of the research workshops (Research-O-Pedia 2.0) organized at the Unitedworld Institute of Design (UID), Karnavati University, Gandhinagar, Gujarat, between 21/12/2022-23/12/2022. Faculty members and research scholars from industrial design. Communication design, fashion and lifestyle and interior design were guided and motivated to publish the research work being carried out by them.

TWO DAY FDP ON ADDITIVE MANUFACTURING
A REPORT BY DR. D. ANANTHAPADMANABAN

A 2-day FDP was conducted by VelTech Multimedia Dr. Rangarajan Sakunthala 987 College of Engineering. The FDP was conducted online on the 15th and 16th of December 2022. The topic of the FDP was Additive Manufacturing. Since everyone has to go into Additive manufacturing day, I felt that attending a workshop or FDP would be useful.

The first talk between 9.30 to 10.45 A.M. was on the current and future scope of additive manufacturing. The videos presented were useful and shared the products manufactured by 3D printing. The second session from 11.15 to 12.45 P.M. by Dr. Dinakaran gave a new process called Wire plus Arc additive manufacturing Additivities talked about the basics of additive manufacturing.

The first talk on the second day between 9.00 to 10.30 A.M. was given by Dr. Ramaprabhu, Scientist, DRDO .Dr. Ramaprabhu gave a few ideas on applying for research projects and the possible organizations supporting that particular research problem. Some of the projects and funding areas are as given below-

1. Grain orientation versus Mechanical property-ARDB Materials Board.

2. Effect of HIP on defect and fatigue /creep properties of AM parts for workhouse alloys-DRDO ER & IPR or DRDO IDF fund.

3. Best Heat treatment cycle to improve properties, and reduce residual stresses-mention of T5 cycle for Al/10 SiMg-ARDB Materials panel.

4. NDT techniques to identify defect size up to 0.4 mm (linear) and 0.15mm(volume) for complete shape with 100 % coverage and build volume of at least ½ meter envelope.-DRDO TDF and CARS fund.

The second talk was by Dr. Kalaimani on 3D printing of graphene based composites and the third talk was by Dr. Elango Natarajan on biopolymers.

I attended the 2 day program to get a feel of additive manufacturing and also to know about the areas of research and possible funding and to that extent it was useful to me.

NON-TEACHING STAFF

11/23/2022	J. Ponmuthuraja / Machinist Grade- I (Sr. grade)/ Department of Mechanical Engineering. 22nd Graduation Day (Entry Pass Checking Committee) duty.
12/20/2022	MR. BALASUNDARAM P / LAB ASSISTANT / MECHANICAL / COMPLETED ALISON COURSE OF " BEGINNER DIGITAL PHOTOGRAPHY "

INDUSTRY COLLABORATION

12/23/2022	Dr. N. Lakshmi Narasimhan, ASP/Mech, Organized a visit for a team of faculty members including him to A.P. Moller Maersk Terminals India Pvt. Ltd., Minjur, Chennai on 20.12.2022, to discuss about a few projects the company had already shared. The team members visited the plant were: Dr. S.R. Koteeswara Rao (Prof/Mech), Dr. Suresh Kumar S. (ASP/Mech), Dr. A.K. Lakshmi Narayanan (ASP/Mech), Dr. K. Babu (ASP/Mech), Dr. R. Damodaram (ASP/Mech), Dr. R. Vimal Samsingh (ASP/Mech), and Dr. N. Lakshmi Narasimhan (ASP/Mech).

12/23/2022	Dr. N. Lakshmi Narasimhan, ASP/Mech, organized an online meet with Mr. Satheesh Samuel from A.P. Moller Maersk Terminals India Pvt. Ltd., Minjur, Chennai on 17.12.2022, to discuss joint project opportunities. The faculty members who attended the meeting were: Dr. S.R. S.R. Koteswara Rao (Prof/Mech), Dr. Suresh Kumar S. (ASP/Mech), Dr. A.K. Lakshmi Narayanan (ASP/Mech), Dr. R. Damodaram (ASP/Mech), Dr. K. Anirudh Venkataraman (Asst. Prof/Mech) and Dr. N. Lakshmi Narasimhan (ASP/Mech).

SCHOLAR INFO

11/29/2022	Dr. S. Rajkumar, ASP/Mech conducted the PhD public viva voce examination for his part time research scholar Mr. Surulivel Rajan T
12/8/2022	Dr. K. Jayakumar, Associate Professor, conducted the 4th DC meeting for his PhD. Scholar, Mr. P. Naveen Kumar (1514299821-Part Time) on 29.11.2022
12/21/2022	Dr KS Vijay Sekar, Prof & Head, Mechanical attended the DC Synopsis meeting of Mr. Sugin Elankavi, PhD scholar at Hindustan University, Padur on 21.12.2022
12/22/2022	Dr. K Jayakumar, Associate Professor/Mech. Engg., conducted final Viva for his PhD scholar Mr. A. Madhan Kumar (Reg No: 1512299801-Part Time) on 19.12.2022.
12/22/2022	Dr. K Jayakumar, Associate Professor/Mech. Engg., conducted final Viva for his PhD scholar Mr. P. Naveen Kumar (1514299821-Part Time) on 21.12.2022.

12/22/2022	Dr. K. Jayakumar, Associate Professor/Mech. Engg attended 3rd DC meeting (Synopsis meeting) of Mrs. Aarthi R, PhD scholar of SSNCE Mechanical Engg., registered in Anna University on 23.12.2022.

INTERNATIONAL CONFERENCES ATTENDED

12/21/2022	A. Surya, Research Scholar, presented a paper titled "Performance Evaluation of a Thermal Energy Storage System with Stainless Steel Encapsulated Phase Change Material" in the 9th International and 49th National Conference of Fluid Mechanics and Fluid Power (FMFP-2022) organized by the Department of Mechanical and Industrial Engineering at Indian Institute of Technology Roorkee, during 14-16 Dec 2022. (Co-Authors: Dr. N. Nallusamy, Registrar, SNU Chennai; Dr. R. Prakash, ASP/Mech; and M. Chandraesh, Final Year Mech Student)

EXTERNAL RECOGNITION

11/29/2022	Dr. D. Ananthapadmanaban ,ASP/MECH acted as a Technical Committee member for the 11th International Conference on Materials Science and Engineering (ICMSET) held at Tokyo during November 26th to 28th November,2022 and was given a certificate of appreciation.
12/20/2022	Dr. L. Poovazhagan, ASP/Mech attended the first DC meeting of the part time research scholar Mr. Rasaiya, who is pursuing PhD at Sathyabama University-Chennai on 19.12.2022.

PROPOSAL SUBMITTED

11/30/2022	Dr. G. Satheesh Kumar, Associate Professor, Department of Mechanical Engineering, as the Principal Investigator, and Dr. S.Sakthivel Murugan, Associate Professor, Department of ECE, Dr. Arun Ramaveerapathiran, Assistant Professor, Department of EEE and Dr.T.Mirunalini, Associate Professor, Department of CSE, as the Co-Investigators have submitted a project proposal titled "Hybrid ROV with Dexterous Robotic Manipulator for Deep Ocean" for consideration under "Collaborative Research under Deep Ocean Mission", Ministry of Earth Sciences, GOI for a budget of Rs. 5988400/-

STUDENT WRITE-UP

S.NO	DATE	ACTIVITY DONE DURING THE MONTH
1)	02/12/2022	*SECOND YEAR* V.Swarun • Winners under aesthetics category and secured 3rd position under lap time category in Hovercraft competition conducted during INVENTE
2)	05/12/2022	• Winners of Hovercraft competition under aesthetics category and secured 3rd position under lap time category conducted during INVENTE Vijay Ram Prasadh S • Winner at | MARKETIZE'22 | SSN LAKSHYA
3)	02/11/2022 27/11/2022	*THIRD YEAR* Srivatsan S • Attended SAE Aero workshop 2023 and CFD workshop Sarath Sankar
4)	30/11/2022	• Completed NPTEL Course on "Introduction to Composites system design" Mohamed Hasim S

5)	30/11/2022	• Completed NPTEL Course on “Work System Design”. R.Vaitheeshwaran • Secured Elite+Silver Certificate in NPTEL course named Work System Design.
6)	03/12/2022	*FINAL YEAR* Rithvik JP • COMPLETED NPTEL COURSE
7)	03/12/2022	Rahul Kumar Rauniyar • Completed NPTEL Course on "Environment and Development"
8)	03/12/2022	Varshini A • Completed NPTEL Course
9)	03/12/2022	M.Ragavan • Completed a course on “Environment and Development”

SRINIVAS, IV-YEAR WRITES

Hello, I am Srinivas of Mechanical B. PSIOG digital consists of four rounds - Aptitude, Logic test followed by technical and HR interviews. The aptitude round comprised 91 questions that tested your problem-solving and logical reasoning. After the aptitude test, the Logic test was conducted for 45 minutes where a simple question was given, and you were expected to build a logic for that without using any programming language. After the logic test, they conducted a technical interview where they asked basic questions like tell me about yourself, and questions from your resume, especially from the projects you have mentioned on your resume. After that, they asked questions on the logic of what you wrote on the test. They tested your approach, evidence, and problem-solving from it. After the technical interview, in the HR interview, they asked about you and your family, your interests, and hobbies and they

asked why you joined an IT company. Finally, believe in yourself, answer confidently and work hard consistently to get success (i.e. Job). All the best guys!

PON IYAPPAN, IV-YEAR WRITES

Selection Process:

1.Online Test

2.Interview First Round – Online Test (at CDC)

After applying on the Neopat portal we received mail from L&T to fill in the profile details. Then, 47 of us got shortlisted for the first round. The test contained 4 sections – Analytical Ability, Verbal Ability, Numerical Ability, and Technical. The 'CareerRide' YouTube channel was of great help to me during my Aptitude preparation. The Technical section contained both theoretical questions and problems as well. You need knowledge of various core subjects to answer the technical section. For example, they asked about problems from the Bending Moment Equation (SOM), Work done for any thermodynamic process, overall work done of heat engines connected in series (Thermodynamics), etc. The Test was conducted at CDC and Invigilated by L&T Staff. Please bring a fully charged laptop.

Second Round – Online Interview (TR + HR round) Out of 47, 18 got shortlisted for the interview round. Time slots of 15 minutes were allocated for each candidate. They might call you earlier than your time slot, so be ready for it. My time slot was 2 P.M but they called me to attend at 12.30 P.M. First, I was asked to introduce myself. Then, they asked questions from SOM. Those questions were the basics of SOM. They asked about my project. I explained my third-year project (DNF- Universal Conveyor). Then, they asked how my project differs from the existing Conveyor. I explained the difference and also explained how my project will be helpful in construction (because L&T ECC is a Construction company). Then, I was asked about L&T's Projects.

They gave a gist of their work nature (site work, timings, etc.) and asked for my opinion. In turn, I answered by explaining my work nature as a Student Placement Coordinator in our college. (I explained the work and timings of SPCs). By doing this I tried to assure them that I will be a good fit for their role.

At last, they asked me about my family and my plan for studying further. Interview Questions:

1. Introduction
2. About my Project
3. About L&T's current Projects
4. Flexibility
5. Family details
6. Higher studies plan

Note: First, I Prepared Strength of materials for my first company, Then I also prepared thermodynamics for my second company, then I included Fluid mechanics in my preparation for L&T. I referred to the 'Yourpedia' YouTube channel for my technical interviews. It was of great help during my preparation.

MUTHUVELAN M , III-YEAR WRITES

This is Muthuvelan Mutharasu from third year mechanical engineering. I would like to extend my deepest gratitude to Dr.P.Kaythry , our Principal Dr.V.E.Annamalai and my HOD Dr.Vijay Sekar for providing me this wonderful opportunity to attend the ten days NSS

Adventure camp at Atal Bihari Vajpayee Institute of Mountaineering and Allied Sports(ABVIMAS - Manali). A total of ten students from Anna University were selected for the adventure camp and I represented SSN.

A total of 70 students attended the camp from Tamil Nadu,Maharashtra ,Uttar Pradesh and Goa. We all became a family within days. We attended the basic mountaineering

course which trained us on rock climbing,rappelling,river crossing,and trekking.We were divided into six ropes with each rope having members from all state. Our daily routine started at 5:30 am with the morning exercise for 2 hours. It wasn't that easy because we weren't allowed to wear gloves and ear cap at -5 degree Celsius for getting acclimated with the climate.

Then we took turns for serving food and carrying the rucksack for each day. We used to start our trekking at morning 8:30 am sharp and walked for 20 km daily which included rock climbing. Even though we had harnesses ,anchors, helmets ,rope the fear of falling held us back but when we fell ,the thirst of thrill lifted us up to climb again.

Every wound made us motivated to climb higher. We were also trained in mountain manners, mountain safety and knot class in the evening. Mountaineering taught us what life is and how nature can change one's mindset.

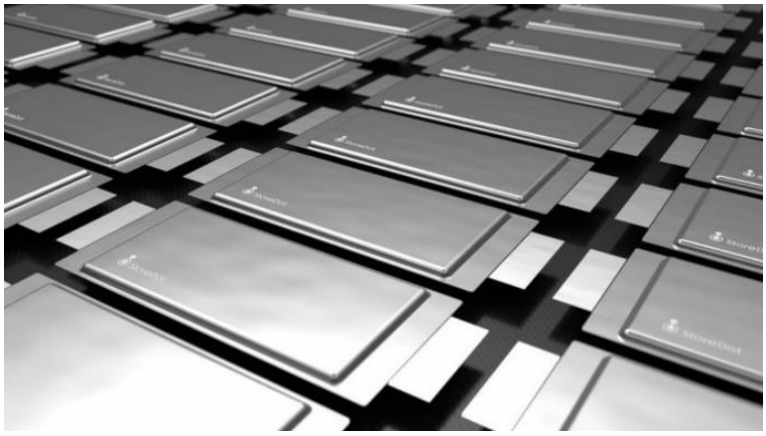
This camp turned me into a worldly citizen with tolrance,patience and I Practiced gratitude. I got friends for lifetime and understood that language is not a barrier for friendship.

On the last day I was selected for giving a speech in culturals program and I spoke in all native languages like Marathi, Konkani, Hindi, English and Tamil about Unity and my experience about the camp. My trainees were really supportive and took keen care about our safety. Overall, this was a life changing experience for me in my 20 years of life. I got friends from all over India. I thought I would never climb a rock but now I'm certified in basic mountaineering because of ABVIMAS

MECH MARVEL

Amazing innovations 227

Silicon based Batteries are the future?



Traditionally, Electric Vehicle Batteries have been using Graphite Anodes, but recently, the EV battery market has started to incline towards silicone-based batteries. The use of silicon in car batteries is not a new discovery. Attributing to its high energy capacity (higher than carbon-based anodes), the silicon-based anodes seemed to be a better solution, but there was a major drawback. The silicon anode tends to expand by almost 300% during the charging process due to the accumulation of Li ions, and while discharging, it shrinks down. Due to the induced stress, the anode develops cracks and disintegrates.

This problem, however, was solved, but the cost of manufacturing was higher than that of manufacturing graphite batteries. Many of the silicon-based anodes required complex materials and high-cost machinery to be produced.

Group 14 Technologies defied this conundrum by developing a low-cost solution based on a coating of carbon. Marketed under the term SCC55, the battery boasts a capacity that is 5 times greater than a conventional EV battery and 50% more energy density. The carbon coating keeps the silicon in the most ideal form-amorphous, nano-sized and carbon encased, leading to a long life of battery. The materials used are not complicated to synthesise and can be immediately used in production lines without any major changes.

Amazing innovations 227

A Chilling Facade.

10 percent of the world's electricity is consumed by air conditioners and fans. The glass facade of a skyscraper can get so hot that you can fry fried eggs on it - a major factor in a rise in average temperature in cities. Aerial photos of metropolises such as Singapore taken with a thermal imaging camera show that temperatures in built-up areas are around 10 degrees higher than in green parks. Around 60 percent of the incoming rainwater evaporates over natural surfaces and thus ensures cooling. Sealed road and building surfaces, on the other hand, only allow 10 percent of water to evaporate, leading to another global problem: devastating floods caused by heavy rain with damage worth billions.

A hydro active facade was presented at the University of Stuttgart, which not only cools the exterior walls and the interior of the building but also the surrounding urban space. The textile façade elements called »HydroSKIN« absorb water when it rains and release it again on hot days for evaporative cooling.

Hydro active elements represent an effective facade solution for neutralising the urban heat island effect with minimal use of resources. The HydroSKIN facade element is such a hydro active element. The core of HydroSKIN is a so-called spacer fabric: two textile layers that are kept apart by threads and are therefore well ventilated. The high air circulation promotes the evaporation of water and increases the cooling effect of the facade. The knitted fabric is surrounded on the outside by a water-permeable textile cover that allows almost all raindrops to penetrate and, at the same time, protects the knitted fabric from dirt, insects, and leaves. A film on the

inside drains the water into the lower-profile system. From there, it can either be stored in a reservoir or used directly in the building, reducing water consumption. On hot days, water is fed back into the facade element.

ALUMNI WRITE-UP

ALUMNI MEET

Date: 28/12/2022
Time: 11 Am
Venue: LH-2 classroom
Faculty coordinator : Dr C Arun Prakash
Student coordinators: Rahul,Preetha and Taushik from 2nd year
Guest: Subramanian Ramasamy Batch : 2015-2019

SSN Mechanical Alumni Association have arranged a talk on higher studies in USA with Mr. Subramanian Ramasamy , who is currently pursuing PhD in University of Illinois, Chicago. The event began at 11 in the morning. He started the session by stating “Why to choose US to pursue masters degree? ”. He said that US is one of the global leaders in technology and research opportunities in US is always one step ahead of the other countries. USA also provides fund during their graduate course for students to motivate them to learn new concepts and apply them in research-oriented studies. This means of research helps to gain a lot of practical experience in projects. Further he added that, US also provides job opportunities both ON campus and OFF campus internships. He explained about ON campus and OFF campus opportunities that are prevailing in US like work with research labs, as a co-worker with professor and as research assistant under a professor. Then he continued by discussing about the Visa processes and difficulties in attaining it. He also discussed about the job opportunities after higher studies in US, like they provide around 3 years of time to work and gain experience after the masters programme under the scheme called OPT. He discussed about the fees structure that exist in Universities which ranges up to 50 to 60 lakhs in total including University, books, and exam fees. He suggested that these fees can be compensated by both ON and OFF campus job. The eligibility criteria include clearing GRE with a minimum of 310 out of 340 and for IELTS of 6.5/9. with a minimum CGPA of 6.5 you can aim for moderate Universities and with scores above 9 you can choose good Universities. Then he discussed about

the documents required while applying like LOR from a professor you worked with, GPA Score card, A clear SOP, Official score card of GRE, IELTS, TOEFL and Experience certificate in technical events. He said about an app called `YOCKET', which helps students to connect with professionals and different people with aim of getting into Us. The event came to an end by discussing about the hardships that an international student needs to face during his studies at abroad. Q&A session was held on the topic of leading mechanical streams today and in future.

E-mail of Gest: subramanian2698@gmail.com
LinkedIn: https://www.linkedin.com/in/subramanian-ramasamy041a3510

RADHAKRISHNAN VENKATARAMAN (BATCH 2013-17 SHARES)

It was June 9th, 2017, when the day we had all waited for finally arrived. Interestingly, it was the first time the Anna University server displayed the results without crashing. I could finally call myself an engineer and was excited to step into the corporate world, and I really looked forward to the road ahead. But now, when asked to write and share about my experiences in SSN, I really look back fondly on those days, and it takes me on a memorable walk down memory lane. Through this article, I shall take you all through

certain learnings that helped me survive the 4 years of engineering and the journey I took post SSN.

One of the first things that I learned through this journey of mine is that it is not wrong to accept that you don't know. You are definitely not alone with everything going over your head. Give it your best shot, and things will definitely start getting better. Being insecure definitely does not help. This leads me to my next point: get to know yourself better and prioritise the different tasks that you need to do. You might think that you will be able to handle everything that comes your way. This ends up with you overestimating yourself. You are no demigod who can manage everything at once. Prioritizing became important and taught its value. It also taught me to accept myself with all my weaknesses (we often tend to focus only on our strengths while ignoring our weaknesses). This is something that I have taken forward in the next phase of my life as well. One more thing that I have learned is that luck plays a huge factor in deciding your fate. The best that can be done by us is to concentrate our efforts on the things that are in our hands. And there is no point in

whining over things that are not under our control. When you look back at these instances, you will realise there was no point in wasting your time and energy. Just remember that everything happens for a reason. This will help us become more accepting of our surroundings. These were things that helped me survive the shocks of the corporate world after I finished my engineering degree.

After my 2 years of work experience, I went on to do my MBA at the S.P. Jain Institute of Management and Research, which is one of the top B-Schools in the country and specialises in marketing. I now head the retail FMCG sales channel for ITC in Chennai and North TN. The learnings of my four years in SSN have definitely been instrumental in my journey ahead. Amidst all the hectic tasks of the corporate world, I do look back and reminisce about the good old days of engineering, which have definitely been some of the most formative years of my life.

For all those who are interested in pursuing a career in management or sales and marketing and are interested in taking up CAT, they can reach out to me on LinkedIn - Email – rkv2610@hotmail.com

COMPETITIONS UPDATE

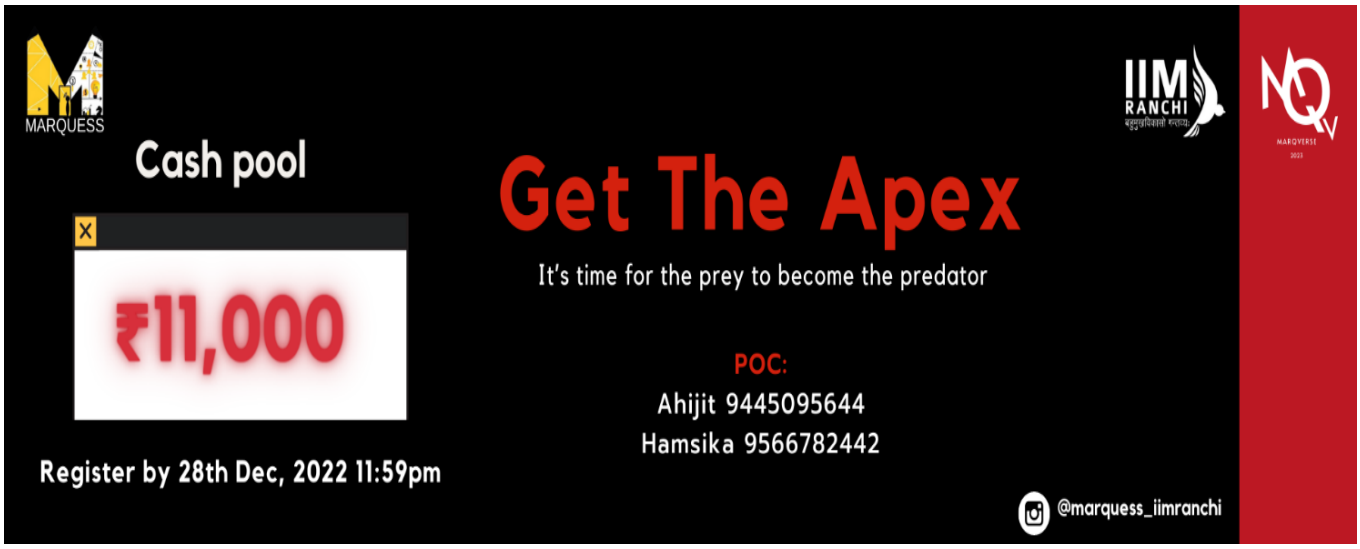
"PARTICIPATION IS THE FIRST STEP TOWARDS SUCCESS"

An advertisement analysis:

Link: Link to register

Marketing:

Link: Link ro register



Case Study Competition:

Link: Link to register

CORPORATE WISDOM

From the desk of Ramki -– Aspire to Inspire

FROM Ramki

Happy Morning – Aspire to inspire

As human beings, we all interpret the happenings in our lives, which leads to perception, which leads to actions.

In the presence of love, events are interpreted differently

- When ego pops its head, events are interpreted differently.
- If the person is a stranger, the event is interpreted differently.
- If it is a relative, then the interpretation is different.
- If it is a human from that community, then the interpretation is different.
- If they are from a linguistic background, then there is a different generalisation for them.

Like we have the icons on our desktop, we hold icons for every person in our head.

- Some icons represent good people,
- Some wonderful people,
- Some not so good,
- Some we cannot stand,
- Some are the worst kind, and so on...

These icons serve as the spectacles through which we perceive people and accordingly interpret what they do and do not do. When he or she is a good person in our head, then even a wrong from him or her is nullified and accepted. When he or she is a bad person in our head, even a right from him or her is negated and overlooked.

Essentially, whether they are good or bad in our heads is completely different from actual reality. That is why the same person can be perceived as a devil by one person and an angel by another.

#WishingMostAndMore Have a great day & wonderful full weekend.

R.Ramakrishnan

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

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