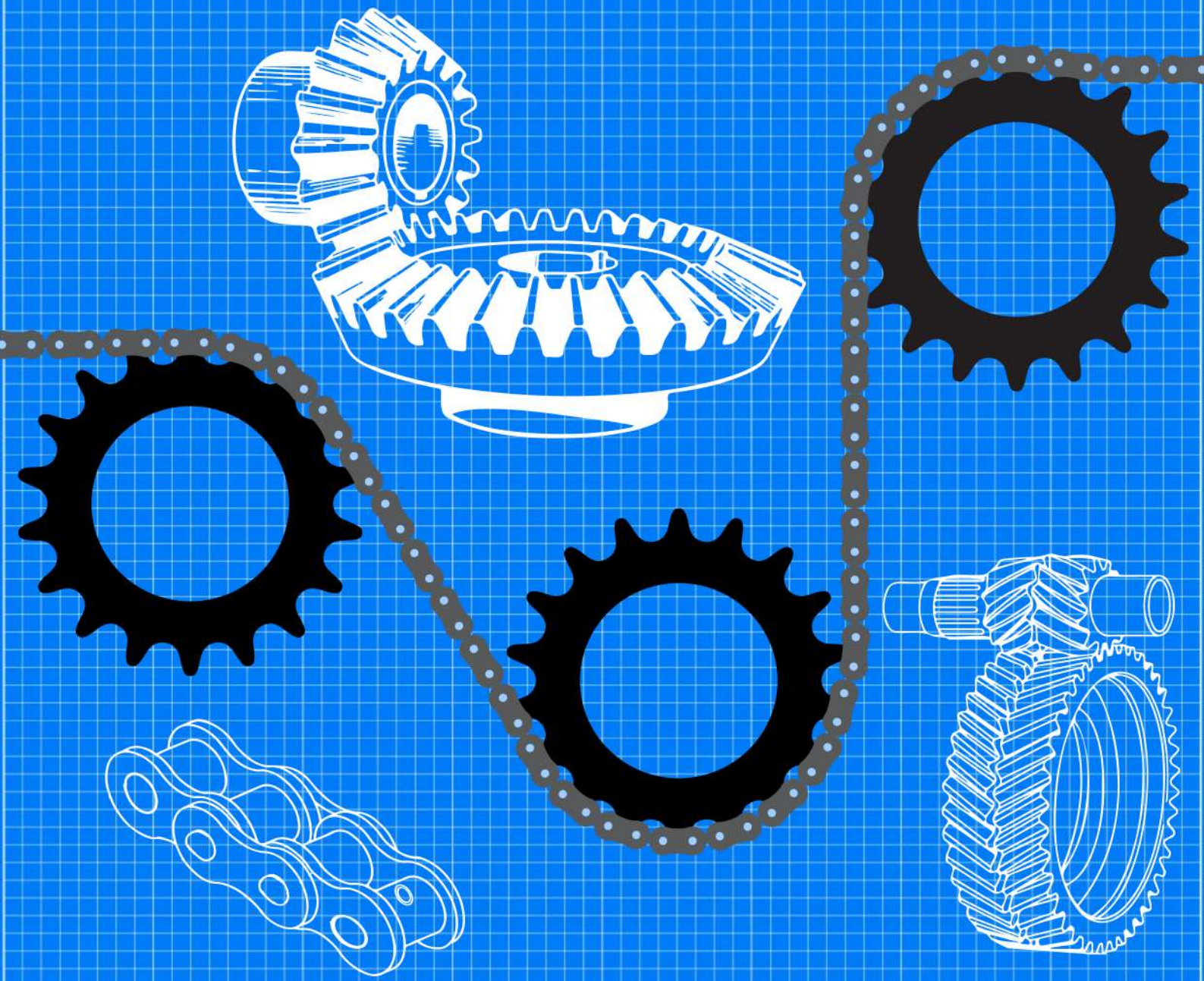
ASPiRE

ACHIEVEMENTS IN SPORTS, PROJECTS, INDUSTRY, RESEARCH AND EDUCATION

MONTHLY NEWSLETTER

DEPARTMENT OF MECHANICAL ENGINEERING

VOLUME - 13 ISSUE - 4 APRIL



SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING
RAJIV GANDHI SALAI (OMR), KALAVAKKAM, CHENNAI, TAMIL NADU, INDIA

FROM THE HOD'S DESK...

We are happy to bring out the April edition of Aspire!!

In the Nobel Laureates section, we profile Charles Richet, who won the Nobel Prize for Medicine in 1919 for his research on anaphylaxis.

Heartening to see Kiran Nadar being conferred the Chevalier de la Légion d'Honneur - the top French civilian honor for her contribution to the arts field. Come March, and it's the glory of Instincts that serenades the campus, a three-day cultural extravaganza that brings the best cultural talents of the students. SSN trophy was conducted enthusiastically, and it was heartening to see the fitness of our students across events.

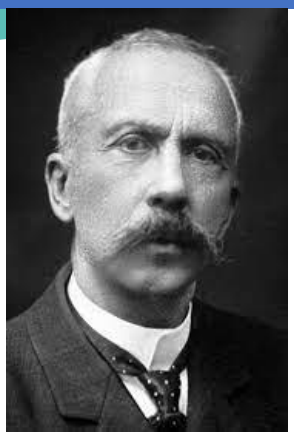
It was a month in our department with two international conferences – ICPPM and ARAM, apart from a series of knowledge and skill-inducing workshops and guest lectures. The ASM chapter has progressed well, and a brief is reported here. We visited an NSS camp and saw how our students had nurtured the young minds of a Govt village school.

A Team from Valeo India, an automotive company, visited the department and took stock of the research facilities and the skills of the faculty to explore the possibility of a mutually rewarding partnership.

The placement count stood at 75, with Lucas TVS and BGR Energy recruiting our students. Our 2011 batch alumni Muthumanigandan, shares his story of starting two companies, and Cynthia of the 2022 batch shares how the department shaped her journey. I hope you have a good time reading our April edition!!!

KSV | vijaysekarks@ssn.edu.in

CHARLES ROBERT RICHET



Charles Richet was born on August 26, 1850, in Paris. He was the son of Alfred Richet, Professor of Clinical Surgery in the Faculty of Medicine, Paris, and his wife Eugenie, *née* Renouard. He studied in Paris, becoming Doctor of Medicine in 1869, Doctor of Sciences in 1878 and Professor of Physiology from 1887 onwards in the Faculty of Medicine, Paris.

For 24 years (1878-1902) he was Editor of the *Revue Scientifique*, and from 1917 he was co-editor of the *Journal de Physiologie et de Pathologie Générale*. He has published papers on physiology, physiological chemistry, experimental pathology, normal and pathological psychology, and numerous research all done in the physiological laboratory of the Faculty of Medicine, Paris

In physiology, he worked out the mechanism of the thermoregulation in homoiothermic animals. Before his research (1885-1895) on polypnoea and shivering due to temperature little was known about the methods by which animals deprived of cutaneous transpiration can guard against overheating and how chilled animals can warm themselves again. In experimental therapeutics Richet showed that the blood of animals vaccinated against an infection protects against this infection (Nov. 1888).

In 1913, he was awarded the Nobel Prize for his research on anaphylaxis. He invented this word to designate the sensitivity developed by an organism after it had been given a parenteral injection of a colloid or protein substance or a toxin (1902). Later he demonstrated the facts of passive anaphylaxis and anaphylaxis *in vitro*. The applications of anaphylaxis to medicine are extremely numerous. Already in 1913, over 4000 memoirs had been published on this question and it plays an important part nowadays in pathology. He showed that in fact parenteral injection of protein substance modifies profoundly and permanently the chemical constitution of the body fluids.

Campus Update

INSTINCTS 2K23 – MADE A ROAR

Instincts, one of the famous and energetic cultural events that takes place every year in our college gave an unprecedented wave of manifestation of mixed emotions to our college students and other college on March 9,10,11 2023 with the presence of famous artists like Dada movie's Hero Kavin, and Mr. M Sasi Kumar , movie actor and Dr.N Kannan IPS IG (North Zone). These people inaugurated our instincts with inspiring minds and lit the torch of innovation and joy.The First day ended with Choreo Night, where the famous team Bfab judged various college's dance performance. Each and every dance showed different stories and spectacular dance movements.

The second day started with the reels of fire; an event organized by SSN/SNUC Film club. The event is all about evaluating the short films done by students across various other college. The Chief Guests were Obell N Krishna, Director of "Sillunu oru Kadhal," Nedunchalai", Franklin Jacob Director of "Writer" and finally Ashwath Marimuthu Director of "Oh My Kadavule". The night commenced with the Proshow, the guest who made a splendid appearance of the large crowds were, Pugazh from Vijay Tv, Cooku with Comali, Ms. Revathy and Sean Roldan.

The third day started with Patti Mandram (Debate), where various college students participated and, ended in a special dance performed by the Tamil Club.

The three days of cultural event gave a peaceful relaxation, for all the students. An event that promotes student's healthy lifestyle by balancing their lives with fun filled events and soaring academics, That's SSN For You.

SNU'S RALLY OF ACHIEVEMENTS-2023

Dr. S. Vidhusha, Assistant Professor in the Department of Computer Science and Engineering, School of Engineering, Shiv Nadar University, Chennai, received the Young Women researcher award in Cognitive neuroscience at the 8th International Annual Women's Summit organized by the Venus International Foundation on March 04,2023.

The meet was attended by 50+ delegates across the globe from countries like Scotland, France, Bulgaria, Singapore, Kuwait, Oma etc. A moment of pride for SNU.

SSN TROPHY -2023

SSN trophy is an annual inter-college sports meet, where students from different college participate in various games like Football, Basketball, Badminton, squash,

Chess etc. Some SSNites managed to bring back some trophies back home, they managed to secure different places. The winners are:

Badminton	*Table Tennis:*	*Chess:*	*Squash:*	*Basketball:*
Men – 3rd Place	Men&	1st Place	4th place	4th place
Women- 4th Place	Women- 2nd Place			

KIRAN NADAR- CHEVALIER DE LA LEGION D'HONNEUR

Kiran Nadar is the Chairperson, Kiran Nadar Museum of Art, and a trustee of the Shiv Nadar Foundation. Besides being an avid art collector, she is an acclaimed international bridge player and a philanthropist. She is a key driver behind demystifying art to the common man through the KNMA, a philanthropic initiative in art. She has been acknowledged as a 'hero of philanthropy' by Forbes Asia Magazine in 2010 for launching India's first philanthropic private museum.

Kiran is a Trustee of the Shiv Nadar Foundation, which among its transformational educational initiatives has established the SSN College of Engineering in Chennai. Drawing from her diverse and rich experience in advertising and communications,

Kiran plays a very important role in defining the architecture and the aesthetics of the Foundation's Initiatives.

Kiran Nadar was awarded with the top French civilian honor in a special ceremony at the residence of France. It is the highest French civilian award, CHEVALIER DE LA LEGION D'HONNEUR(Knight of the legion of Honor) for her outstanding contribution in the field of art. Yet, another commemoration for the Shiv Nadar Family, for uplifting the spirt and inspiring many Indians.

Department Update

PLACEMENT UPDATE – MECH 2023 BATCH

Total Placement Count: 75

Dharshanraj B and Hariharan Manickam got placed in Lucas TVS.

Lucas-TVS is the leaders in Auto Electrical in India to day with 50 years' experience in design and manufacturing. 4 out of 5 vehicles rolled out daily are fitted with Lucas-TVS products.

Divine V got placed in L Cube Innovative Solutions.

L-Cube offers Custom Application Development, maintenance and support for software, network security and hardware. The company specializes in the integration of disconnected software applications, eliminating the need for redundant data entry with a concentration on offset printing, engraving, digital printing and mail houses.

Dharshanraj B got placed in RineX Technologies.

RineX is one of the finest E-learning platforms to all students and professional that facilitates studying top-notch technical certification courses from profound industry experts with the best study resources.

Divine V, Surendhar, TAMILSELVAN E and Erai Anbu G J got placed in GEA BGR Energy Group.

BGR Energy is one of the most diversified Indian companies in the Utility Industry offering end to end solutions ranging from product manufacturing to turnkey project execution.



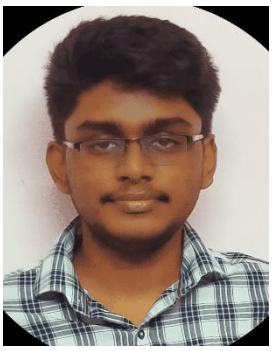

Erai Anbu G J got placed in Akash Byjus

Aakash is now collaborated with BYJUS in order to produce the best learning content for students. Aakash Educational Services Limited (Aakash BYJU'S) is a leading educational institution in India that provides comprehensive test preparatory services to students preparing for medical and engineering entrance exams, school/board exams, NTSE, Olympiads and other foundation level exams.

Enian Chandrasekaran got placed 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.

Dhanush Muthu N got placed in **KBR**.



KBR, Inc. is a U.S. based company operating in fields of science, technology and engineering. KBR works in various markets including aerospace, defence, industrial and intelligence.

International Journal Publication - SCI /Clarivate Indexed

Lakshmanan, Poovazhagan, 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* 9.12 (2022): 125009. Clarivate Impact Factor: 1.94

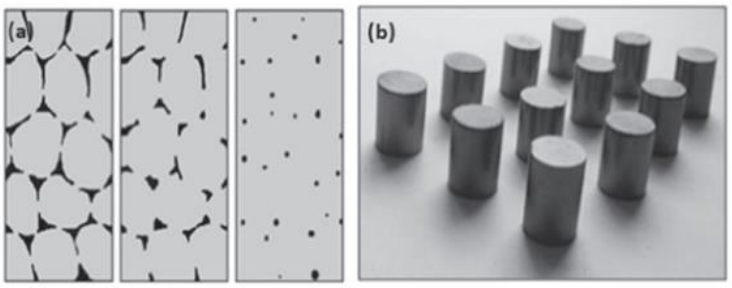


Figure 1. (a) Different stages of fusion(b)Sintered samples.

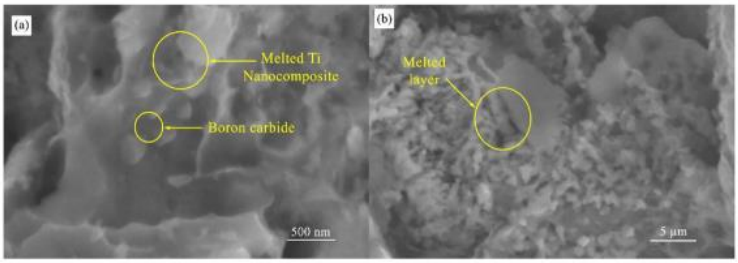


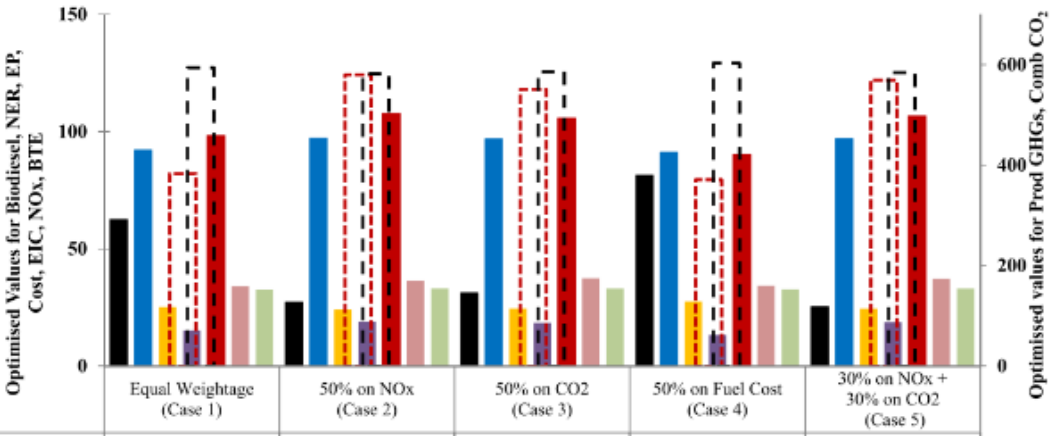
Figure 2. (a) Nano-B_4C dispersion in Ti matrix(b) Fusion of Ti in Ti-B_4C nanocomposites.

Table 1. Mechanical properties of Ti and B_4C.

Properties	Tensile strength in (MPa)	Modulus of elasticity in (GPa)	Hardness, brinell	Poisson's ratio
Titanium	310	116	70	0.34
Boron carbide	550	470	3580	0.21

International Journal Publication - SCI /Clarivate Indexed

Jeyaseelan, T., El Samad, T., Rajkumar, S., Chatterjee, A., & Al-Zaili, J. (2023). A techno-economic assessment of waste oil biodiesel blends for automotive applications in urban areas: Case of India. *Energy*, 127021.Clarivate Impact Factor: 8.875



	Equal Weightage (Case 1)	50% on NOx (Case 2)	50% on CO2 (Case 3)	50% on Fuel Cost (Case 4)	30% on NOx + 30% on CO2 (Case 5)
Biodiesel (%)	62.5	27.2	31.2	81.4	25.2
NER (/100) [-]	92.14	97.12	96.82	91.25	96.91
EP (/1000) [1/MJ]	25.2	24.1	24.5	27.5	24.4
Cost [INR/km]	15.1	18.9	18.4	13.3	18.7
EIC [INR]	98.34	107.8	105.8	90.26	106.7
NOx (/10) [g/km]	33.9	36.5	37.5	34.3	37.1
BTE [%]	32.58	33.06	33.05	32.67	33.04
Prod GHGs [g/km]	383	580	551	371	569
Comb CO2 [g/km]	594	582	586	603	584

Chart. 1. Optimised results for different cases.

International Journal Publication - SCI /Clarivate Indexed

M. Sunil, M. S. Alphin, S. Manigandan, S. Vignesh, S. Vigneshwaran, and T. Subash. "A review of comparison between the traditional catalyst and zeolite catalyst for ammonia-selective catalytic reduction of NOx." *Fuel* 344 (2023): 128125. Clarivate Impact Factor: 8.035

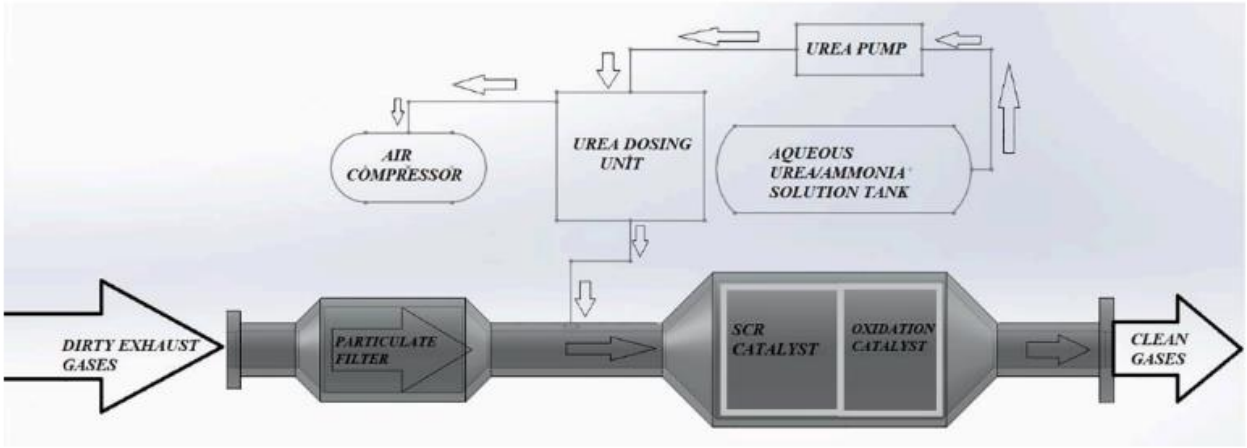


Fig. 2. Selective Catalytic Reduction experimental setup.

THE WORK IS CO-AUTHORED BY III YR MECH STUDENTS S. VIGNESH, S. VIGNESHWARAN, AND T. SUBASH

Scopus Publication

Harini, S., V. S. Kavya, and A. S. Ramana. "Recent Developments in Design and Operations of Solar dryer." *IOP Conference Series: Earth and Environmental Science*. Vol. 1100. No. 1. IOP Publishing, 2022. Scopus Impact factor: 0.45.

Kathiresan, Arun Vasantha Geethan. "Mechanical testing and characterization of tin–zinc–antimony–lanthanum lead-free solders produced using mechanical alloying and furnace melting techniques." *Soldering & Surface Mount Technology* 35.2 (2023): 115-122. Scopus Impact factor: 1.542.

Sundareswaran, R., S. Vijayan, Srinath Venkatesh, Lakshmi Narayan Mishra, and Said Broum. "Failure analysis of pump piping system using DEMATEL SVN methodology." *Neutrosophic Sets and Systems* 53, no. 1 (2023): 13. Scopus Impact factor: 0.39.

FACULTY WRITE-UP

GUEST LECTURE SERIES FOR THE MONTH OF MARCH 2023

Dr. M. Nalla Mohamed, and Dr. M. S. Alphin jointly organized a guest lecture on 14.03.23 to Second year Mechanical Engineering students. Dr. Christo Michael, Professor, School of Mechanical Science and Engineering, VIT-Chennai, delivered the lecture on "Becoming Engineer".

The guest touched upon the expectation of the industries, how to prepare the GATE, TOEFL, and Industry-4.0 and 5.0, and the latest trends in Mechanical Engineering like AI, Machine Learning, Materials Science, Sustainable Manufacturing, and Robotics.

- The talk was inspiring to the students as it explained the various exposure areas available for Mechanical Engineers.
- During the question-answer session, the students were interactive; some wanted to contact Dr. Christo by e-mail.

Dr. M. Nalla Mohamed, and Dr. D. Ananda Padmanabhan jointly organized a guest lecture on 20.03.23 for Second-year Mechanical Engineering students. Dr. K. V. Krishna Sastry, Former Head of, the Department of Mechanical Engineering, AVIT-Chennai, delivered the lecture on "**Green Earth Energy**".

Dr. K. V. Krishnasastry addressed the students.

- He highlighted various forms of renewable energy and gave an overview of many available forms of energy to the students.
- Dr. Krishna Sastry has been a resource person for our workshops earlier, too, and we all hope to utilize his services better in the future.

DR KSV AND DR V RAJINI VISIT NSS CAMP

The SSN NSS team had extended an invite to visit the camp in a government school in Thiruporur and myself along with Dr V Rajini, HOD EEE paid a visit on 17th March 2023. This was the second camp organized in the same school where last April 2022, the students had their hands full in cleaning up the entire premises, painting the

school walls a spotless white, redoing an entire classroom board, providing drinking water RO facility, planting saplings, and fixing wall cracks. This time, the volunteers had painted the ceilings, painted the school compound with thought provoking and science-based messages and engaged the children with communication skills classes. The school kids could remember the students by name and had developed a bond with them. The schoolteachers were all praise to the SSN volunteers and teachers for the development of the classrooms as well as instilling motivation to the kids. This time the students also painted another school in the vicinity, and we had the opportunity to visit that school too and were surprised to see how spotless the compound and dome appeared. Our sincere appreciations to the SSN NSS Faculty team as well as the inspiring student volunteers for endeavoring to make a difference to lives of young children!!!

VALEO INDIA TEAM VISITS MECHANICAL DEPARTMENT

The visit from Valeo India on 16th March 2023, went well with a discussion on student internships, projects, and placements as well as faculty internships from their end. From our end, we have offered conduct of value-added courses in their core areas, PhD registration, inclusion in BOS etc. They have invited us for a plant visit sometime later and we can have a look at their facilities. The Mechanical team had a discussion with Mr. Guruparan Pitchai, Valeo Expert / Mechanical Simulation Leader – NVH, Power Train Systems (PTS) Simulations division and made presentations in automotive related areas such as Bumper and crash safety devices, Robotics, Sensors, digital twins, PCM, alternate fuel engines. The Valeo team has invited us to visit their premises to further explore areas of mutual growth. Mr. Guruparan said,

"Thanks for the overview provided on the projects handled by the faculty team of the Mechanical department- It was Very impressive".

INDUSTRIAL COLLABORATION

3/25/2023: A team from Valeo company visited the college to discuss areas of mutual benefits in consultancy, internships, placements, guest lectures, registering for PhD etc. Mr. Guruparan Pitchai, Valeo Expert / Mechanical Simulation Leader - NVH, Power Train Systems (PTS) Simulations visited the Mechanical department and had discussions with faculty working in automotive field.

WORKSHOPS ORGANIZED

3/20/2023: Dr. B. Anand Ronald, Dr.C. Arun Prakash, Dr. Satheesh Kumar, Dr. S. Vijayan and Dr. Vimal Sam Singh, conducted a One Day Workshop on "Applications of Laser in Micromanufacturing and Sensing" on 22 March 2023.

3/25/2023: Dr. C. ARUN PRAKASH, Dr. R. VIMAL SAMSINGH, Dr. G. SATHEESHKUMAR, Dr. S. VIJAYAN and Dr. B. ANAND RONALD from the Department of Mechanical Engineering organized a one-day national workshop on 'Modelling & Simulation of Robots: Demystified' on 21.03.2023

3/25/2023: Dr. B. Anand Ronald, Dr. G. Satheeshkumar, Dr. C. Arun Prakash, Dr. S. Vijayan,

Dr. R. Vimal Sam Singh, conducted the One Day Workshop on "Applications of Lasers in Micromanufacturing and Sensing" on 22 March 2023 @ Department of Mechanical Engineering, SSNCE

OTHERS

3/1/2023: Dr.R.Vimal Samsingh of SSN College of engineering was appointed as Technical Expert member to review the Internet of things Lab and Industrial Automation Lab of AMET University

WEBINARS CONDUCTED

3/25/2023 Dr.M.NallaMohamed, and Dr.M.S.Alphin jointly organized a guest lecture on 14.03.23 to Second year Mechanical Engineering students. Dr.Christo Michael, Professor, School of Mechanical Science and Engineering, VIT-Chennai delivered the lecture on the topic “Becoming Engineer”.

3/25/2023 Dr.M.NallaMohamed, and Dr.D.Ananda Padmanabhan jointly organized a guest lecture on 20.03.23 to Second year Mechanical Engineering students. Dr.K.V.Krishna Sastry, Former Head, Department of Mechanical Engineering, AVIT-Chennai delivered the lecture on the topic “Green Earth Energy”.

NON-TEACHING STAFF ACTIVITIES

3/20/2023 : Mr. Balasundaram palanisamy / Lab assistant / Mechanical / attended one day webinar / Introducing Minitab’s measurement analysis module

INTERNATIONAL CONFERENCE ORGANIZED

3/15/2022 : Dr. K. Babu, Dr. M. Dhananchezian, Dr. K. Jayakumar (Conveners) Dr. R. Damodaram, Dr. S. Santosh, Dr. V. K. Anirudh (Co-Conveners) Dr. R. Rajeswari Dr. Divya Zindani (Organizing Secretaries) have organized International Conference on

Processing and Characterization of Materials (ICPCM 2022) on 7th and 8th March 2022.

3/20/2023 : "Dr. K. Babu, Dr. R. Damodaram, Dr. S. Santosh, Dr. V. K. Anirudh (Conveners) and Dr. M. Dhananchezian, Dr. K. Jayakumar, Dr. Divya Zindani, Dr. R. Rajeswari (Co-Conveners) have organized International Conference on Processing and Performance of Materials (ICPPM 2023) on 2nd and 3rd March 2023 in Association with ASM International Chennai chapter and Scopus Journals (Materials Today: Proceedings & Engineering Proceedings) The conference website is given below.

https://sites.google.com/ssn.edu.in/icppm2023

EVENTS ATTENDED

3/16/2023: FDP National Dr. A.S. Ramana, Associate Professor participated and successfully completed the 6-day Online UHV-II FDP organized by All India Council for Technical Education (AICTE) from 13th February to 18th February 2023.

3/20/2023 : Workshop National Dr A S Ramana, Asso. Prof. attended two days Discovery Workshop on Development of Technology Enabled Course Material organized by SSN SACE on 17 & 18th March 2023.

SCHOLAR INFORMATION

3/20/2023: DR. M S Alphin Covened the Viva-voce examination for the research Scholar Mr. Arun Kumar., 9 March 2023.

3/27/2023: Dr. Poovazhagan L, ASP/Mech. convened Ph.D viva-voce examination for his part-time research scholar, Mr. Parthiban K on 20.03.2023

INTERNATIONAL CONFERENCE ATTENDED

3/20/2023: Dr. K. Jayakumar, Associate Professor has presented the following papers at the International Conference on Processing and Performance of Materials (ICPPM 2023) on 2nd and 3rd March 2023 organized by the Department of Mechanical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai-603110.

- Machinability assessment of 7075 aluminum alloy during end milling (Authors: K. Jayakumar, Manikandan. L.)

- Effect of grinding parameters and coolants on grindability of Ti grade 9 alloy (K. Jayakumar)
- Optimization of cutting force and surface roughness in end milling of AA-TiCp composite (K. Jayakumar)
- Comparative performance studies of up and down milling on AA7075 plate (K. Jayakumar, Karthikeyan. A)

3/25/2023: Dr.M.Nalla Mohamed and U.G student Nitish Aaditya.L presented a paper entitled An Insight into harvesting sustainable electrical energy from sound hazards using pieso electric material in two days International conference on processing and performance of materials(ICPPM-23) at SSN College of Engineering during 2-3 March 2023

3/25/2023: Dr.M.Nalla Mohamed presented a paper entitled Numerical investigation on crushing responses and energy absorption behaviours of foam filled self-lock multi-cell tubesl in two days International conference on processing and performance of materials(ICPPM-23) at SSN College of Engineering during 2-3 March 2023

3/25/2023 Dr.M.Nalla Mohamed presented a paper entitled Investigation on cushioning effect and energy absorption characteristics cylindrical paper tubes under axial compression in two days International conference on processing and performance of materials(ICPPM-23) at SSN College of Engineering during 2-3 March 2023

NATIONAL CONFERENCE ATTENDED

3/11/2023 : Dr. N. Lakshmi Narasimhan, ASP/Mech, attended a National Conference on "EV Connect", Organized by the CII (Confederation of Indian industry) on March 10, 2023 at Feathers a Radha Hotel, Chennai.

PATENT

3/25/2023: Dr. Vimal Samsingh R, ASP/Mech, Dr. S. Esther Florence S, ASP/ECE, and Aditya K, Akash S, Ashwin A, Gautam R have a filed a patent on their invention titled “WEARABLE SELF-BALANCING, CONFIGURABLE MOBILITY ASSISTANCE APPARATUS (202241026270)” on 17.03.2023.

PROJECT SANCTIONED

Dr. Satheesh Kumar Gopal (PI), SSN College of Engineering, and Prof. Vijayalakshmi P, ECE, SSN College of Engineering (Co-PI) and by Dr. Dhanalakshmi M, Biomedical Engineering, SSN College of Engineering (Co-PI) and by Dr. RAJINIKUMAR P, Biomechanics, Tamilnadu Physical Education and Sports University (Co-PI)

PROJECT APPLIED

3/11/2023 Project Title: Development of A Hybrid Cooling System Using Phase Change Materials (PCMs) and Minichannel Cold Plates (MCPs) For Cooling Lithium-Ion Battery Modules, PI: Dr. N. Lakshmi Narasimhan, ASP/Mech, Co-PI: Dr. M. Suresh, ASP/Mech, Total Budget (INR). Rs.23,81,000/- Funding Agency: DOTE, Tamil Nadu under Chief Minster's Research Grant Scheme (CMRG 2023-24). Date of Submission: 08.03.2023

3/17/2023 Project Title: Survey Manipulator enabled with Visual Extraction of Character features, PI: Dr. C. Arun Prakash/AP/Mech, Dr. R. Vimal Samsingh/ASP/Mech; Dr. Esther Florence/ASP/ECE; Dr. K. Babu/ASP/Mech Total Budget(INR): Rs. 18,00,000/-. Funding Agency: MAERSK

3/20/2023 "Dr. K. Jayakumar, Associate Professor has applied a project titled “Hybrid unconventional machining of conductive and nonconductive materials” for the DST-SERB-CRG scheme with a total cost of Rs. 38.16 Lakhs on 19-3-2023.

Co-PIs: Dr. G. Selvakumar, Associate Professor, SSNCE & Dr. T. Suresh, PDF Scholar, SSNCE."
3/20/2023 Project Title : Process development for fabrication of Aluminium to Steel laminates by Roll Bonding,Pi :S.Vijayan/Professor,Mechanical Co-Pi Dr S.R.Koteswara rao Mechanical Total Budget (INR): 38,96,000. Funding Agency: Chief Minister's Research Grant
3/20/2023 Dr. M S Alphin Submitted a proposal to SERB- DST with the title Design and Fabrication of Selective Catalytic Reduction to promote a green environment by reducing NOx emission for 34 Lakhs. 15 Mar 2023.
3/21/2023 Tittle: Energy-saving machining strategies for hard-to-machine super alloys, Pi.K.Rajkumar, Budget-19 laks, Funding agencey:SERB-CRG
3/21/2023 Title: "ENVIRONMENTALLY SUSTAINABLE SOLAR THERMAL SYSTEM FOR COMMERCIAL UTILIZATIONS", PI: Dr. R. Prakash/ASP/Mech., Co-PI: Dr. N. Nallusamy, Professor & Registrar, Shiv Nadar University Chennai, Total Budgett (INR):24,53,060. Funding Agency: Chief Minister's Research Grant, GOVERNMENT OF TAMILNADU
3/21/2023 Title: Solar Pv/T Cogeneration System Integrated With Thermal Energy Storage System Using Nano-Enhanced Phase Change Materials, Pi : Mr. A. Surya, Research Scholar, Mech., Co-Pi : Dr. R. Prakash, Asp/Mech. Total Budget (Inr): 18,43,060/-Funding Agency: Chief Minister's Research Grant, Government Of Tamilnadu
3/21/2023 Title: HYBRID SOLAR PV-THERMAL ENERGY STORAGE SYSTEMS FOR COMBINED HEATING, COOLING AND POWER GENERATION FOR SUSTAINABLE ENVIRONMENT, PI: Dr. Prakash R., ASP/Mech., Co-PI: Sathishkumar K., Professor & Head Chemical Engg., and Chitra B, ASP/Chem., Total Budget (INR): 35,12,366. Funding Agency: DST - SERB
3/23/2023 "Design and development of a battery cooling module using hybrid heat pipe technology for an electric vehicle, PI: Dr. T. Micha Premkumar/AP/Mechanical; Mentor: Dr. B. Raja, IIITDM Kancheepuram/ Associate Professor/ Mech, Total Budget: 7.5 Lakhs, Funding Agency: SERB-TARE23"

3/25/2023 Project title: Rapid detection of food spoilage for better human health using Thermal imaging and Machine learning, submitted by Dr. G. Satheesh Kumar Gopal (PI), Dr. S. V. Jansi Rani (Co-PI) Dr. K. Sathish Kumar (Co-PI) and Dr. M. Sukumar Director of Food technology, Anna University (Co-PI) for Government of Tamil Nadu Department of Higher Education, Chief Minister's Research Grant for a budget of Rs. 39,02,840/- on 15.03.2023
3/25/2023 Development of an alternate cutting tool for manufacturing industry through hybrid cryo-processing technique, PI: Dr. M. Dhananchezian / ASP / Mech; Co-PI: Dr. K. Rajkumar / ASP / Mech, Total Budget: 43,49,400. Funding Agency: SERG-CRG.
3/26/2023 A Novel Product for Remote Diagnosis and Assessment of Osteoporosis in Elderly and Menopausal Women, PI: Dr.R.Vimal Samsingh/ASP/Mech; CO-PI :Dr.S.Esther Florence /ASP/ECE: 30,73, 400/-.Funding Agency: Chief Ministers Research Grant

INTERNATIONAL JOURNAL PUBLISHED

3/6/2023: Vijaya Raja Ragavan G, Poovazhagan Lakshmanan, 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
3/8/2023 S Harini , V S Kavya , A S Ramana Recent Developments in Design and Operations of Solar dryer IOP Conf. Series: Earth and Environmental Science
3/9/2023 T. Jeyaseelan, T.E. Samad, S. Rajkumar, A. Chatterjee and J. Al-Zaili A Techno-Economic Assessment of Waste Oil Biodiesel Blends for Automotive Applications in Urban Areas: Case of India Energy
3/13/2023 Arthur Jebastine Sunderraj,D.Ananthapadmanaban,Arun Vasantha Geethan Mechanical testing and characterization of tin–zinc–antimony–lanthanum lead-free solders produced using mechanical alloying and furnace melting techniques Soldering and Surface Mount Technology
3/20/2023: R. Sundareswaran1* , S. Vijayan2 , Sneha S , Srinath Venkatesh , Vishnu Prasad P R , Viswapriya G,Lakshmi Narayan Mishra and Said Broumi Failure

analysis of pump piping system using DEMATEL SVN methodology Neutrosophic Sets and Systems
3/23/2023: M Sunil Kumar, MS Alphin, S Manigandan, S Vignesh, S Vigneshwaran, T Subash A review of comparison between the traditional catalyst and zeolite catalyst for ammonia-selective catalytic reduction of NOx- Fuel
3/26/2023: L. B. Thamil Amudhu, R. Vimal Samsingh, S. Esther Florence and B. Sakthi Abirami - "Low-Profile Polymer Composite Radar Absorber Embedded with Frequency Selective Surface" , in IEEE Transactions on Components, Packaging and Manufacturing Technology

Student Write-Up

S.NO	DATE	ACTIVITY DONE DURING THE MONTH
		SECOND YEAR
1)	12/03/2023-18/03/2023	Bhavani • Attended NSS Camp
2)	23/03/2023	Saairithvik.V • Presented a paper in 'International Conference on Automation Robotics AI Mechatronics and Materials '
3)	04/03/2023	Uvaraj G S • Secured Second Place in Forensic 4.0 (Non-technical event) at Kumaraguru College of Engineering and Technology Coimbatore

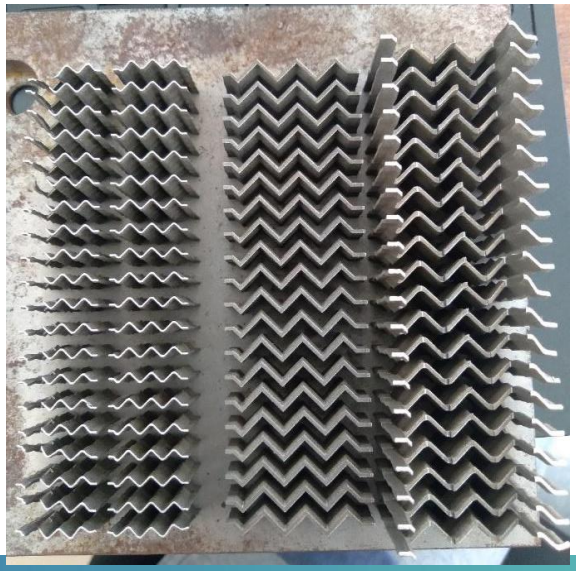
	12/03/2023 22/03/2023	• Volunteered in NSS Annual camp organised by NSS unit of SSN • Lead volunteer for pond Cleanup for NSS unit of SSN in collaboration with EFI for World water day on March 22nd"
		THIRD YEAR
		Srivatsan S
4)	14/03/2023 16/03/2023	• Published Research Paper on "Unravelling the effect of CO_2 laser machining parameters on the surface and shape memory characteristics of CuAlFeMn quaternary shape memory alloy" in Optics and Laser Technology Elsevier Journal Having Impact Factor 4.939. • Published Review Paper on "An Overview on Synthesis, Processing and Applications of Nickel Aluminides: From Fundamentals to Current Prospects" In Crystals, MDPI Journal having an impact factor of 2.670 • Participated and Won Fourth Place in Chess in SSN Trophy 2023.
5)	24/03/2023	Prasanna Perumaal S • Second runner up in Naan Mudhalvan Fusion 360 Design challenge- Level 3

INTERNSHIP AT IIT TIRUPATI BY MR. YOGESHWARAN . S. K, III YEAR, MECH:

Mr. Yogeshwaran was offered to do a summer internship by under Dr. Mamilla Ravi Sankar, Associate Professor of Mechanical Engineering, IIT - Tirupati for the period of 6 weeks from July 27 to September 7, 2022. It was his fortune to do an internship in such a well-established and reputed college. Dr. Mamilla Ravi Sankar is a well-known professor having an overall 2380 citations in multiple areas of research. His area of interest includes Advanced Machining process, Abrasive and Nano Finishing, Advanced Coatings and Tribology, Additive & Smart Manufacturing. He has published around 64 papers and is a recipient of many honourable awards. He worked on thin-walled structures and a brief abstract of his work is given below.

Abstract:

Thin-walled structures have been manufactured using conventional machining milling etc. and its properties have been researched and published extensively. 3D printing, as a swiftly emerging additive manufacturing process, can manufacture complex structural components efficiently with a high precision and lowed cost. Thin-walled structures make up a significant and growing percentage of engineering construction, with applications ranging from aircraft parts, bridges, ships, and oil rigs to storage tanks, industrial buildings, and warehouses. This paper is an attempt at reviewing this inoculation of these two new era technologies of manufacturing approach to manufacturing of these thin-walled structures. The major criterion for papers to be considered for publishing in Thin–Walled Structures is that they must be about thin–walled structures and the fundamental challenges that arise from thin–walled structures. Aspect ratio



refers to the proportion of wing length to wing width which is about 200 microns to 500 microns. In this work, the main aspects of 3D printing these thin-walled structures in high as aspect ratio is explained.

3D Bioprinters and thin-walled structures fabricated at IIT Tirupati

DEEPAK K , III-YEAR WRITES

Hello everyone, I am Deepak. K from third year and I am very happy to share my experience with you all on leading a path in entrepreneurship.

I always preferred being a business owner rather being an employee because of the perks and freedom it offered. I decided that I wanted to become an entrepreneur right after I finished my diploma in mechanical engineering before joining SSN, which led me in the process of searching ideas of business and ways to try them out during my college days, I registered my company Maatram engineering services at the year 2022 in the hopes of building a automation company that manufactures products to automate day to day chores, as well as products that would replace machineries that are expensive and time consuming.

As the first product 3D printers for various composites and alloys was chosen as the boom in the field was observed, and I was fortunate enough to be able to collaborate with our honorable professors Dr. K. S. Vijay Sekar and Dr. A. K. Lakshmi Narayanan. Who were a huge guidance in my path of learning about automations and be more aware in my path of becoming a entrepreneur. I would like to Thank them a lot for all their support and guidance that they provided me.

Through the help and guidance of our professors I was able to participate in the I-NITIATE event conducted by the IITM GDC team , which helped me look into new aspects of product development and customer identification .The four days program was both exciting and a very good opportunity to learn. In the four days program we spent our first day in IITM research park where we were also given a tour in their research facilities and the other three days the event was conducted in SSN which was a very rich experience. Where we got to present our Ides and business model. Overall it was a very good learning opportunity.

I would like to advice any student who is willing to become an entrepreneur to try and connect with our alumnees and other people who have succeeded in their path who would be a great mentor and inspiration. And also explore all the schemes that are being provided by our government under various platforms such as Startup India, TN startup , MSME,etc.

HARIHARAN M , IV-YEAR WRITES

Hariharan Manickam got placed in Lucas TVS. The description given below explains the process of selection . It consists of three rounds:

1. Technical Test: About 120 questions covering the fundamentals of fluid dynamics, thermodynamics, manufacturing processes, etc. were included in the test.
2. Group Discussion: The shortlisted students' group discussion occurred in front of company representatives. The

main goal of this round was to check the students' confidence level and thought process.

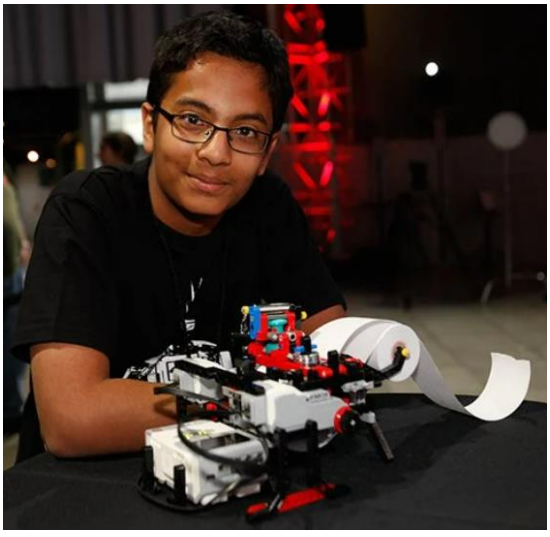
3. Interview: I was initially asked to introduce myself by the interview panelist. He then inquired whether I was interested in design, production, or sales. He began to enquire about the production process, SOM, and KOM after I said my interest was in design or manufacturing. The inquiries were all quite elementary, such as what are the different casting types, what is the Whitworth Quick Return Mechanism, and so on. He also asked a few fundamental questions about other subjects. I provided the most accurate responses I could. The interviewer was incredibly courteous; he didn't hurry anything and gave me enough time to reflect.

I am wishing you guys all the best with your placement processes!

Mech Marvel

Amazing Innovation 233

Meet the 13-Year-Old Who Invented a Low-Cost Braille Printer



According to the National Federation of the Blind, fewer than 10 percent of 1.3 million blind Americans can read Braille. By comparison, in the 1950s, more than half of blind children learned to read the series of raised bumps. Shubham Banerjee stumbled across these facts, just as he was trying to come up with an entry-level engineering project in January 2014 for a science fair.

The 12-year-old realized that while many people have devices able to read aloud in some capacity, assuming voice-to-text

should replace Braille is a costly proposition and one many people simply can't afford. What if he could significantly reduce the cost of a Braille printer from $2,000—the going rate for a traditional Braille printer-embosser—to $200? Some Silicon Valley startups had been trying to do the same but with little success.

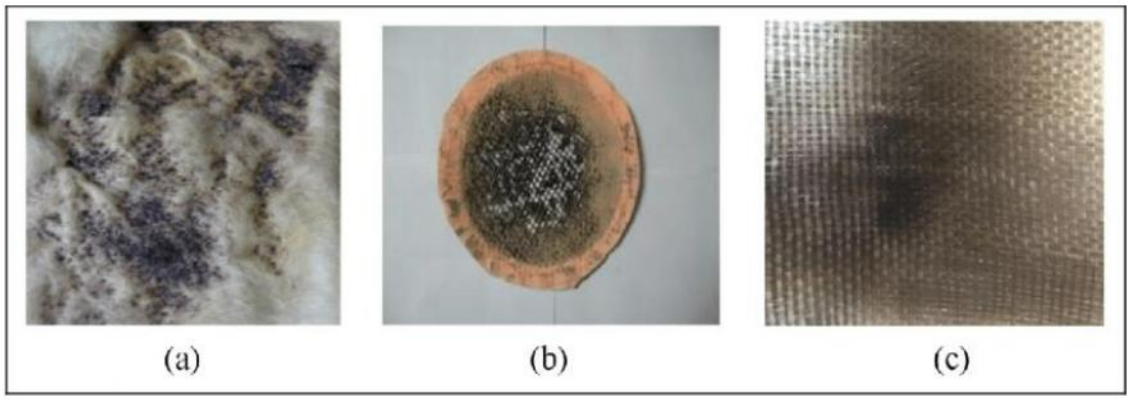
It took several weeks and several attempts—seven, to be exact—before Banerjee built a working prototype, using a Lego Mindstorms EV3 robotics kit and some small electrical components that cost a few dollars, that printed the six dots of the Braille sequence.

Now 13 years old and a Santa Clara, California high school freshman, Banerjee is the inventor of Braigo, a ground-breaking low-cost Braille printer-embosser. The Braigo printer is a small, portable machine that looks a lot like any other printer—only it spits out strings of raised bumps instead of flat text on a page.

Banerjee co-founded a small company, Braigo Labs, to help further develop the printer for educational and home use, as well as provide open source documentation to anyone who wants to buy the Mindstorms kit and try making a Braigo v1.0 at home. ("Braigo" is a portmanteau of "Braille" and "Lego.") Braigo v2.0, an assembled off-the-shelf version, will hit the market this fall.

Amazing Innovation 234

Experimental investigation on the performance of non-metallic flexible fire-resistance materials in flameproof diesel engine locomotive



Three kinds of flexible refractory fiber materials were used to **verify the performance of fire resistance**, according to explosion-proof principle and test methods of flame arrests. Then, a comparison of transmission efficiency between flexible refractory fiber arresters and general arresters was given. The aim of this is to verify the properties of non-metallic flexible fiber materials in fire resistance and transmission efficiency so that we can apply it to the flameproof diesel engine locomotive.

Theoretically, refractory fibers have good performances of air permeability and complex internal space, so it can provide with absorption area. First, irregular porous structure increases the cooling area. The temperature of the flame can decrease under the ignition point and quench after the heat exchange. Tiny pores of the porous materials, moreover, increases the probability of absorbing free radicals during chain reaction so as to prevent the combination of free radicals and premixed gas. Then, the chain reaction will slow down and even terminate.

The investigation was aimed at **testing the performances in fire-resistance** and transmission efficiency of non-metallic flexible materials in flameproof diesel engine locomotive which may replace traditional metal flame arresters with low gas transmission efficiency. On the basis of the chain reaction mechanism, the mixed gas was burnt in the experiment, and the free radical which can be absorbed by tiny pores of flexible fiber materials and quenched was released.

Alumni Write-Up

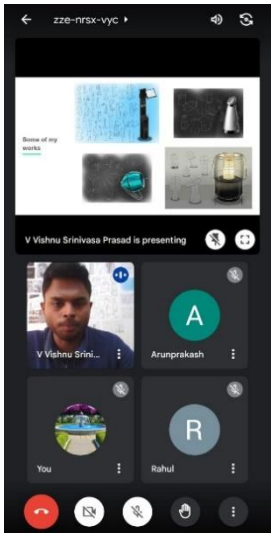
TALK ON INDUSTRIAL DESIGNING

THIS REPORT IS ON THE TALK GIVEN BY Mr. V. VISHNU SRINIVASA PRASAD ON THE TOPIC: 'INDUSTRIAL DESIGNING', ORGANISED BY SSN MECHANICAL ALUMNI ASSOCIATION

DATE: 28th March 2023
TIME: 9 AM
VENUE: Mechanical Seminar Hall

FACULTY COORDINATOR: Dr C Arun Prakash
STUDENT COORDINATORS: Maalolan B, R Vaitheeshwaran (3rd Year)
Preetha R, Rahul P, Venkata Siri (2nd year)

GUEST: Mr. V. Vishnu Srinivasa Prasad



A session on INDUSTRIAL DESIGNING was organized by SSN Mechanical Alumni Association on 28th March 2023 at 9 AM. This amazing talk was given by our Alumni, Mr. V. Vishnu Srinivasa Prasad who did his Master's degree in Designing at the Indian Institute of Technology, Hyderabad and is working as a lead designer in Design Objects, Bangalore. He is also the co-founder of Myions, a healthcare start-up. Even though he joined us online, the event was successful with more than 50 students participating with enthusiasm.

He started his lecture by introducing what is industrial designing and talked about various factors that influenced him to choose it. He shared his experiences in learning industrial designing which helped the participants to understand deeper about the same. He then explained, how industrial designing plays a major role in our day-to-day life. He also discussed the several skills that are needed to pursue Industrial designing.

He continued by sharing his various design works which made the participants get inspired. After influencing the students with his unconvincing works, he guided them on how to become an Industrial Engineer. He mentioned that obtaining a degree in this field is essential, followed by developing our skills through self-study and working on design projects in our spare time.

Later, he talked about the design exam CEED (Common Entrance Exam for Design) and elaborated on the skills and knowledge we should have to crack this exam with

a good score. He mentioned some top institutes that offer a master degree in Designing. He also gave info about the self-sponsored courses available with separate entrance exams.

He ended his lecture by expatiating about the job opportunities and the scope this field has right now. Questions were asked by the participants on how he managed to face the challenges in pursuing this field to which he answered with confidence that passion is all that matters. Thus, this event brought an impact on many student participants and mainly, they got a clear-cut idea of the Industrial designing with his bewildering lecture. After the session, we collected feedbacks from students which were positive, and several participants also added that this session was worth attending.

MUTHUMANIGANDAN D OF BATCH 2007-2011 SHARES...

I am from the first Mechanical batch. I had ultimate fun on and off college. I thank all my professor and HOD for giving me the freedom to explore opportunities and gain exposure outside the college by giving me abundant OD.

I would like to thank National entrepreneurship network for helping me find the entrepreneur in me. I began a startup during the 2nd year of my college, learnt and gained lot of experience.

After graduation I worked for a couple of years and did my Masters and MBA from NTU (Singapore) and Stanford (USA) respectively. The freedom and exposure I gained during college has helped me become what I am today.

Currently I run two companies. First one is into financial services and second one is an Insure tech and Health tech startup, incubated by NASSCOM.

CYNTHIA JOY OF BATCH 2018-2022 SHARES...

There are several things I wish I had known and told my younger self when I was attending SSN, looking back on my time there. Moving into a new home, making new friends, and taking a whole new course of study made my first year of college incredibly novel and exciting. In all honesty, the first year was the best for experimenting, trying out different sports, and attempting to determine which NPTEL courses to take to get credits later. The Internally Funded Projects during my first semester, in my opinion, provided the best opportunities for practical experience.

My shift into the mechanical engineering department and the beginning of our rigorous mechanical engineering studies occurred in the second year. Although at first difficult, it was also incredibly fascinating. The mechanical department's faculty is top-notch and always willing to assist you with new projects, research, or even to dispel any ridiculous worries you may have. My second and third years seemed to be primarily devoted to determining what I should do with my life going forward and making the necessary preparations. If earning an undergraduate degree with a placement is a student's goal, I would strongly suggest they begin preparing in their second and third year. If a student's goal is to pursue a master's degree, they should similarly attempt to prepare for the exams and do as many projects/papers as possible.

The last year was one of the greatest because I finally had the opportunity to apply what I had learned in the classroom to the workplace and learned how to use concepts to address problems in the real world. Additionally, one of the nicest experiences I've ever had was hosting Invente and working with such a large team with so many responsibilities.

Overall, I think my time at SSN was fantastic, and if I could provide any advice, it would be to always be open to new experiences. Do amazing activities with clubs like

Lakshya and try to be an entrepreneur. Use resources like Coursera and NPTEL to learn as much as you can because doing so will be beneficial in the long term. It is highly advisable to learn how to code because it is beneficial in all industries. Working for the Association of Mechanical Engineers and holding leadership roles involves a significant learning curve and is an amazing experience. You may fail multiple times over the course of your four years but don't give up whatever is meant to be will eventually work out and your hard effort will undoubtedly pay off in the end. Make the most of the time you have left in college as it is one of the most wonderful experiences you will ever have! All the best!

Feel free to reach out to me if you have any questions or just want to chat.

Email:cynthia18036@mech.ssn.edu.in

LinkedIn: https://www.linkedin.com/in/cynthia-joy-070684196/

COMPETITIONS UPDATE

"COMPETITIONS TEST YOUR SKILLS"

Quiz:

Link: Link To Register

Poetry Contest:

Link: Link To Register

Maharaja Agrasen Institute of Technology

Website Creation:

Link: Link To Register

CORPORATE WISDOM

From the desk of Ramki -– Aspire to Inspire

From Ramki

Happy Morning – Aspire to Inspire

Just imagine if our organs for our own body starts communicating to you ,sharing their experience , and voice their feelings openly to you.

- The heart of a human will tell " I began beating when you were in the womb of your mother and I will keep beating till you reach the tomb. Relentlessly I keep working with so much intensity and enthusiasm. And I know " I can '' and " I will '' till the end. After all, if not, that will be the end. If this is what I can do as just an organ of your body, hey Human, as the Master of this body, is it not possible for you to work with relentless intensity and enthusiasm in whatever you do, if only you too believe " I Can " and " I will".
- The hand of the human will tell " I dirty myself to keep other parts of the body clean. If anybody tries to hurt any other part of the body, I volunteer to take the hurt unto myself, and protect the other parts of the body. I know " I can" and " I Will" take the responsibility for every part of the body. Hey, Human then, is it not possible for you to assume responsibility for the welfare of all your near and dear ones with belief , " I can " " I will ".
- The legs of the human will tell " I take you wherever you want to go. I always believe, " I Can " and " I will". Hey human, then can you also believe that it is possible for you to achieve every dream of yours with the belief " I can " and " I will" .

If you don't believe " I can" , even God cannot help you. If you believe " I Can " and " I will" even God will not stop you. In fact he will support you. So don't let anyone tell you " You can't" .

If you have a dream, simply go and get it. Live your dream and make it happen.

It is all yours

Have a wonderful day & great weekend

Ramki
#WishingMostAndMore

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Email:r.ramakrishnan@gmrgroup.in

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