MECH TIMES

Volume II Issue II



JO

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Study Tour

Study Tour of Atal Tunnel Under AICTE Youth Undertaking Visit for Acquiring Knowledge (YUVAK) Scheme: Students of Mechanical Engineering Department and team leader Mr. Divesh Bharti, AP (ME) Visited ATAL Tunnel under YUVAK Scheme from 24/11/2021 to 27/11/2021. Two engineers were assigned to the team on reaching ATAL Tunnel. The engineers briefed the group about tunnel constructions and features. They also discussed the SNFZ (Seri Nala Fault Zone), which was a massive hurdle in constructing this beautiful tunnel. Later they took the team to the control room and briefed them about different technologies they use to control the activities of the tunnel. They also showed various machinery and technologies used during the tunnel's construction.

At last, they took the team to the most critical place of the tunnel, i.e., Evacuation tunnel built for emergency purposes. They briefed us about the ventilation system available there. The tour was full of knowledge and very informative.



Technical Quiz Competition on HVAC

An online quiz competition on the topic of HVAC (Heating, Ventilation, and Air Conditioning) was conducted by the Department of Mechanical Engineering, SLIET, Longowal on 14th July 2021. The purpose of the quiz competition was to enhance student's knowledge in the field of HVAC.

The coordinators of the event are Mrs. Ankita Omer (A.P. (ME)) and Mr. Sumit Kumar (A.P. (ME)). More than 100 students participated in the quiz. The competition comprised of a series of 5 online quizzes, which were conducted at different times on 14th July 2021.

Three winners were announced based on cumulative timing and marks scored by the participant. The first position was secured by Mr. Ram Kumar, reg. no. 2040367 from GME first year. The second position was secured by Miss. Pankhuri Gupta, reg. no. 1810008 from Department of Electrical Engineering ICD final year. Mr. Gaurav , reg. no. 1916059 from CAC, Department of Mechanical Engineering, ICD second-year secured the third position in the competition.

STTP/FDP/Workshops Organized by the Department

1. A one-week online self-sponsored STC on Robotics and Automation-2021 was organized by the Department of Mechanical Engineering during July 26-30, 2021. Basic of Robotics and Automation was discussed along with 40 % practical demonstration. A total of 106 Participants, including Faculty, Scholars, and Students were, attended the STP. The participants were enlightened with the knowledge of Robotics and Automation, which is a vast and widespread need for industrial automation to defend Industry 4.0.



 "Fusion 360," a one-day workshop, was jointly organized by SLIET Longowal and Autodesk on 7th August 2021. More than 50 participants participated, including faculty members, B.Tech, M.Tech, and Ph.D. students attended the workshop.
FUSION 360 software by AUTODESK was installed for all participants free of cost. The workshop was completely free. The event is organized by Dr. Harish Arya, AP(ME), SLIET, Vyomkesh Mishra, and Prashant Kundnani, AUTODESK.



3. Department of Mechanical Engineering, SLIET Longowal, Sangrur, Punjab, has successfully conducted a one-week online Faculty Development Program (FDP) on "Manufacturing and Characterization of 3D Printed Materials (MC3DPM-2021)" sponsored by AICTE Training and Learning (ATAL) Academy Programme, New Delhi from 13th to 17th December 2021. The course was coordinated by Dr. Anuj Bansal and Dr. Anil Kumar Singla. The chief guest of the inauguration was Prof. Shailendra Jain, Director SLIET Longowal.

The course consisted of 13 technical sessions and one ethical session of two hours each, successfully conducted during five days of the system. Twelve technical sessions were conducted by eminent speakers from IIT's, NIT's, and NITTR India, and one session was conducted by an international speaker from Ulster University, UK. The process of manufacturing a component using 3D printing and its characterization was discussed in these technical sessions, and topics like history and importance of 3D printing technology in the industrial sector along with some case studies, types of 3D printing and their properties, post-processing of 3D printed component have been covered in detail. Various practical sessions also demonstrated manufacturing a part using 3D printers for metal and polymer during the course. An expert from CUHP Dharamshala conducted one ethical session on value education. The experts also interacted with the participants through the virtual mode of communication.

Ninety-nine participants, including faculty and research scholars from various institutes and industries, have registered for MC3DPM-2021. Out of them, 72 participants are from outside the institute. Regionally, the participants from all over India have registered for the course.



4. One-week ONLINE short-term course on 'Smart Manufacturing Technologies & Applications' (SMTA 2021) organized by the Department of Mechanical Engineering, SLIET, Longowal (20th-24th December 2021). The Coordinator of SMTA 2021 was Professor Shankar Singh. The objective of the proposed online short-term course is to share with the participants the cutting-edge research and development carried out by the speakers in the smart manufacturing domain for "Self-reliant India (Atma Nirbhar Bharat)."

The inauguration of the e-STC was held on 20th December 2021. The Chief Guest Prof. R.K. Garg, Director (Incharge) NIT, Jalandhar, and Guest of Honor Dr. S. P. S. Rajput, Professor (Mechanical), MANIT, Bhopal, graced the occasion with their virtual presence. Prof. Shailendra Jain, Director, SLIET & Chief Patron SMTA 2021, presided over the function. Prof. J.S. Dhillon, Dean (Academics) & Patron SMTA 2021, Prof. A.S. Shahi, HOD (Mechanical), & Chairman SMTA 2021, Dr. Shankar Singh, Coordinator SMTA 2021, were also present. All Deans, Head of Departments, and Faculty of SLIET, Longowal attended virtually.

The Coordinator, Prof. Shankar Singh, apprised that fifteen speakers delivered an expert talk in 5 days e-STC. Eminent Speakers were from the most reputed Institutions of India, including IITs, NITs, SLIET, NITTTR, Chandigarh, and GLA University (Mathura). They delivered expert talks within the spirit of the e-STC. One of the experts was Mr. Aditya Marathe, CEO of Nugenix Robotics (Kolhapur).

Out of 15 experts, four International Speakers were from Thailand [Asian Institute of Technology (AIT), Bangkok], Hungary [Savaria Institute of Technology], Northern Ireland (UK) [Ulster University], and Finland [Tampere University]. The eminent resource persons also interacted with the participants through Chat Box/Voice for intellectual discourse and exchanging ideas. A total of eligible 66 participants from different Engineering Universities/Institutes/Colleges & industries attended the online STC -SMTA 2021. Major thrust during the e-STC was laid upon Smart Manufacturing Processes for Industry 4.0, Industry Internet of Things (IIOT), Waste management through Additive Manufacturing, Simulation of Additive Manufacturing, Smart Manufacturing techniques, Smart Abrasive Flow for Nano Finishing of Biomedical Implants, Surface Metrology for Precision Manufacturing, Advanced Robotics, Role of Physical Simulation in Smart Manufacturing Industries, etc., to achieve game-changing productivity gains in intelligent manufacturing technology and to make a "Self-reliant India."

The Valedictory Function of e-STC on "Smart Manufacturing Technologies & Applications (SMTA 2021) was held on 24th December 2021. Chief Guest Prof. Shailendra Jain, Director, SLIET & Chief Patron SMTA 2021, and Guest of Honour Prof. J S Dhillon, Dean (Academics) & Patron SMTA 2021 graced the occasion.

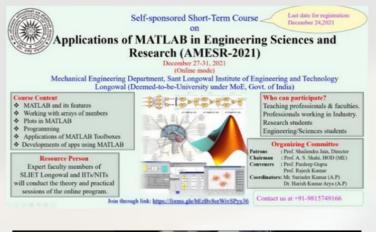
'You don't learn to walk by following rules. You learn by doing, and by falling over.' -Richard Branson

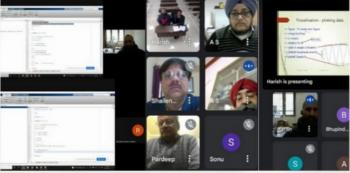


Inaugural function of e-STC on Smart Manufacturing Technologies & Applications (SMTA 2021)



"Being ignorant is not so much a shame, as being unwilling to learn." -Benjamin Franklin 5. Department of Mechanical Engineering, SLIET Longowal has successfully conducted a One-week Online Self Sponsored STC on the Application of MATLAB in Engineering, Sciences, and Research (AMESR-2021), during December 27-31. The course was coordinated by Mr. Surinder Kumar and Dr. Harish Arya under Prof. Rajesh Kumar and Prof. Pardeep Gupta's convenorship in the Department of Mechanical Engineering. The theme of this STC was on MATLAB and its applications with 40 % practically orientated demonstration. Faculty members, research scholars, PG students, and UG students from various reputed Institutes, including IIT, have participated and were enlightened with the field of MATLAB and its massive and widespread applications.





Awards

On the eve of National Teacher's Day 2021, the Prestigious "Dr. Sarvepalli Radhakrishnan Distinguished Professor 2021" was conferred to Prof. Arvind Jayant by CENTER FOR PROFESSIONAL ADVANCEMENT, A Unit of IMRF Regd with Govt of India NITI Aayog NGO Darpan.

The award was conferred on September 5, 2021, during an online celebration of NATIONAL TEACHERS DAY 2021 at the CPACE campus, A.P., India. The award was presented to Prof. Arvind Jayant to appreciate his dedication and commitment to teaching and research in the Industrial Engineering field.

"If I have seen further it is by standing on the shoulders of Giants." — Isaac Newton

STTP/Workshops Attended

1. Dr. Shankar Singh, Professor (Mechanical), attended "Online Mentoring Workshop for HP, Punjab, Chandigarh and Uttrakhand" organized by NITTTR, Chandigarh (02-06 August 2021), with due nomination by the Director, SLIET.

The sessions were very interactive throughout. Eminent speakers at the event were from NITTTR (Chennai; Bhopal and Chandigarh), who shared their knowledge and experiences.

Mentoring is a proven approach to drive rich learning and development for mentees and mentors. It is a learning relationship between a senior individual (Mentor) and a lesser skilled protégé (Mentee) to improve the latter's knowledge or take advice. The sessions of the five-day workshop also featured the NITTT (National Initiative for Technical Teachers training) prescribed eight modules. The Lectures were divided into two sections for each module—Features of Module and Use of module & Rubrics.

2. Dr. Shankar Singh, Professor (Mechanical), attended Two-week Faculty Development Program (FDP) on 'Opportunities and Challenges on Electric Vehicle' (online mode) (16th to 27th August 2021) organized by the Department of Mechanical, Electrical, Electronics, and Communication Engineering (EECE) of Sharda University, Greater Noida, Delhi NCR.

The main objective of the FDP was to introduce advanced academic research and industry practices in the field of electric vehicle development, including quality research in the education system of the electric vehicle Sector.

The outcome of the FDP was:

- Introduction & major components in EV
- Types of electrical drives used in EV
- Architecture design for EV
- Electrical protection and control system
- Energy storage solutions
- Battery management system
- EV charging station

3. Dr. Sunil Kumar, Dr. Vivek Kumar, and Mr. Sumik Kumar have attended "One-week Online Self Sponsored STC on Application of MATLAB in Engineering, Sciences, and Research (AMESR-2021)" organized by SLIET Longowal during December 27-31. The main objective of the FDP was to introduce the participants to MATLAB and its application.

> "Two things are infinite: the universe and human stupidity; and 1'm not sure about the universe." — Albert Einstein

Faculty Publications

1. Yadav, Nitin, and Rajesh Kumar. "Study on piezoelectric ceramic under different pressurization conditions and circuitry." Journal of Electroceramics (2021): 1-10.

2. Vashishtha, Govind, and Rajesh Kumar. "Autocorrelation energy and Aquila optimizer for MED filtering of sound signal to detect a bearing defect in Francis turbine." Measurement Science and Technology 33.1 (2021): 015006.

3. Vashishtha, Govind, and Rajesh Kumar. "Pelton Wheel Bucket Fault Diagnosis Using Improved Shannon Entropy and Expectation Maximization Principal Component Analysis." Journal of Vibration Engineering & Technologies (2021): 1-15.

4. Vashishtha, Govind, and Rajesh Kumar. "Centrifugal pump impeller defect identification by the improved adaptive variational mode decomposition through vibration signals." Engineering Research Express 3.3 (2021): 035041.

5. Singh, M., D. Singh, and A. S. Shahi. "Experimental studies on the effect of postweld heat treatments on the pitting corrosion and impact toughness of GTA welded martensitic stainless steel joints." Indian Journal of Science and Technology 14.24 (2021): 2081-2087.

6. Saini, Pardeep, et al. "Optimization of process parameters in end milling of Al-4032 based metal matrix composite using TGRA." Advances in Materials and Processing Technologies (2021): 1-13.

7. Saini, Pardeep, and Pradeep K. Singh. "Optimization of end milling parameters for rough and finish machining of Al-4032/3% SiC metal matrix composite." Engineering Research Express 3.4 (2021): 045009.

8. Kumar, Sumit, and Pardeep Gupta "Prioritizing Key Business Actions of an Indian Automobile Industry Using Efficient Interpretive Ranking Process (eIRP)." Management and Production Engineering Review 13 (2021).

9. Verma, Pratima, et al. "Addressing strategic human resource management practices for TQM: the case of an Indian tire manufacturing company." The TQM Journal (2021).

10. Kumar, Sumit, and Pradeep Gupta. "Addressing Nonfinancial and Financial Performance Issues of an Indian Manufacturing Organization Using SAP-LAP Framework Analysis." Journal of Advanced Manufacturing Systems (2021): 1-26.

11. Shah, Prassan, et al. "Tool wear, hole quality, power consumption, and chip morphology analysis for drilling Ti-6Al-4V using LN2 and LCO2." Tribology International 163 (2021): 107190.

12. Rathi, Ankit, Singh, Shankar, Shailesh Kundalwal, and Arun Kumar, Adhesive and viscoelastic response of MWCNT/ZrO2 hybrid epoxy nanocomposites; Journal of Mechanics of Materials and Structures 16, no. 3 (2021): 281-292.

13. Singh, Kushal Pal, and Singh, Shankar, Effect of cryogenically treated tool electrode during electric discharge drilling (EDD) of Inconel 800; Materials Today: Proceedings (2021). (In Press)

14. Mahendra Kumar Jangid, Sunil Kumar and Jagtar Singh, 2021, "Trajectory tracking optimization and control of a three-link robotic manipulator for application in casting" International Journal of Advanced Technology and Engineering Exploration, Vol 8(83) pp 1255-1267, ISSN (Print): 2394-5443 ISSN (Online): 2394-7454.

15. Sunil Kumar, Vikas Rastogi, Prabhkiran Kaur, 2021, "Active Vibration Control of Two Flexible Link Underwater Manipulator" ICBGM'2021 Nov 8-10, 2021- San Diego, California USA - ©2021 Society for Modeling & Simulation International (SCS)

16. Shrikant Bhardwaj, Arvind Jayant 2021, "A review on the experimental study of oxyhydrogen HHO blends with gasoline, diesel, and biofuels in I.C engine" accepted for publication in Int. J. of Environment and Waste Management

17. Vivek Gupta, Arvind Jayant 2021 "A novel hybrid MCDM approach followed by fuzzy DEMATEL, fuzzy ANP, and fuzzy TOPSIS to evaluate Low Carbon Suppliers" Evergreen- Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, 8(3), pp. 544-555.

18. Kumar, Vivek, Vikas Rastogi, and P. M. Pathak. "Simulation and optimization of suspension parameters of a high-speed train." International Journal of Vehicle Noise and Vibration (In Press).

19. Kumar, Vivek, Vikas Rastogi, and P. M. Pathak. " Ride comfort assessment and improvement in high-speed railway vehicle " International Journal of Heavy Vehicle Systems (In Press).

If something's important enough, you should try. Even if - the probable outcome is failure. Elon Musk "Don't take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck." Dr. APJ Abdul Kalam

Creative Corner

भारत की नारी ~ कौशिक

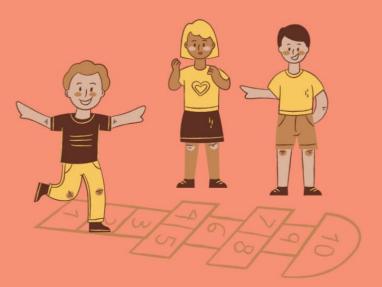
भारत की नारी हो तुम कुछ भी कर सकती हो, क्या बोल रहा समाज यहाँ फिर क्यों उससे डरती हो, तुम कन्धा मिला के लड़कों से आगे निकल सकती हो, ये लोग गिराएंगे तुम्हे पर हिम्मत इतनी की हर बार उठ सकती हो,

भारत की नारी हो तुम कुछ भी कर सकती हो।

किसी के लिए प्यार तो किसी के लिए इज़्ज़त बनती हो, अपने पवित्र कदमो से खुशियों का आंगन भरती हो, तुम करुणा की देवी जीवन मे प्रेम भाव भर सकती हो, काली बनकर तुम अन्याय भी मिटा सकती हो, भारत की नारी हो तुम कुछ भी कर सकती हो।

ये संसार तुमसे है तुम इसे संभाल सकती हो, डटकर सामना मुसीबत का करना तुम सबको सिखा सकती हो, कोई मुकाबला नही उसका जिस तरह तुम ममता को पाल सकती हो, अपनो के लिए हारकर भी मुस्कुराना सिर्फ तुम ही दिखा सकती हो,

भारत की नारी हो तुम कुछ भी कर सकती हो।।





यादें दोस्तो की ~ कौशिक

तस्वीरों में कैद होके रह गयी आज दोस्ती कहीं, मिलना तो चाहते है पर जिंदगी की भाग दौड से फ़ुरसत नही, कभी वादा किया था हमने साथ नही छोडेंगे, आज अपने ही कितने वादों में उलझे हुए है, जिंदगी में सबकुछ हासिल करके आज हम दोस्तो से बिछडे हए है, सच मे बहुत खूब दिन थे वो जो हमने साथ बिताए, काश कुछ ऐसा हो जाये हम मिले उन दिनों में एक बार फिर दोस्तो, बस यही उम्मीद रखता हूं अपनी दोस्ती से , अगर न हो हरदिन तो किसी एक दिन ही याद कर लेना दोस्तो। मुझपे दोस्ती के कर्ज इतने है कि मैं उतार ही नही सकता, कभी हँसा कभी रोया जिनकी वजह से चाह कर भी आज कुछ बातें उन्हें बता नही सकता, पर इस अलग दुनिया में आज भी उनका साथ है, बचपन की तरह वो आज भी लाजवाब है, और साथ रहना हमेशा इसी तरह दोस्तो , बस यही उम्मीद रखता हूं अपनी दोस्ती से , अगर न हो हरदिन तो किसी एक दिन ही याद कर लेना <u>दोस्तो</u>।

Alumni Corner Words from Alumni's

My college days are unforgettable and in fact, those days are the most happiest and fruitful days in my life. I proudly feel that I cherished every moment of my college. Being a SLIETian makes me feel proud. My experience in SLIET was just amazing. I got infinite love and lessons from my faculties of ME department, their teachers made me do Work Hard for the way to success. I miss those days of SLIET. I just want to thank the wonderful faculties of SLIET. I am proud to be a SLIETian.

> Dr. Santosh Kumar (GME/2K7) Associate Professor & HoD, ME K. K. University, Nalanda

I am feeling proud and honored to give my feedback about the college days in a departmental magazine. It was the golden period of my life that can never be forgotten. SLIET gave me a platform to grow and explore knowledge, skills, aptitude along with education and honored B. E. Degree. I always found a positive and healthy environment in campus with all teachers, staffs, seniors, juniors along with all friends and campus people all were highly supportive like a very big expended family. So I can simply say that it was one of the best time of my life that can not be forgotten.

Rupesh Kumar Singh (GME/2K2)

Managing Director: Technor Engineering Products Pvt. Ltd. Mohali, Punjab

One of the most interesting phase and golden period of life that gives me an immense exposer and opportunity to mix up with persons of different cultures of India. I also learnt how to deal with persons having different nature and culture which makes me to emerge as a better person. During my stay at SLIET, I actually understand the meaning of unity in diversity with diverse cultural ethos of our country.

Change is the part and parcel of life, I should always try adapt and cope up with prevailing situation in order to overcome the obstructions coming in the way of progressive and prosperous life. I should endeavor to remain calm, cool and happy even during the most adverse situation in life.

Hanumant Prakash Srivastava, GME96, SENIOR MANAGER (MECHANICAL), NHPC LTD. Being a student of SLIET University was the most delightful experience. Most of my career achievement foundation was built in the University. Teachers, Natural Environment, and Exploring Opportunities are tremendously appreciable.

Abhijeet Singh CTD 2K16 Founder and CEO Eduread

To become a good engineer practical exposure is a must and the good thing about SLIET is that it has all the facilities for the same. The technical teams, clubs are quite active. To name a few that would be Junkyard, Green rangers. Apart from these, social clubs are also present like the happy club to cheer you up when the rate of heat/mass transfer is extremely unpleasant. The ground staff is quite friendly and the rules and regulations of the college are quite functional and fair enough. The faculties of the ME department are very helpful and supportive.

Saurabh Praksh(GME/2K14) Software Engineer Date The Ramp

To keep the experience part short, I would say it was fun with friends around, and got to learn a lot from my stint with the team may that be the technical part, personality development, or developing interpersonal skills.

As far as advice is concerned I would say that enjoy your college life to the maximum while keeping a balance between your academics and extracurricular activities. At the end of your graduation, you need some work to show to the companies or institutions.

> Pandrangi Kalyan GME 2017 GET, Godrej

Be thankful for what you have; you'll end up having more. If you concentrate on what you don't have, you will never, ever have enough Oprah Winfrey.



Department of Mechanical Engineering

MECH TIMES

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