



Department of Mechanical and Automation Engineering

New Letter (January 2020 - December 2020)

Women Education, Women Enlightenment, Women Empowerment

Courses Offered by Department: (i) B Tech -MAE, (ii) M Tech -R&A, (iii) 6 Year Dual Degree [B.Tech (MAE)+ MBA], (iv) PhD.

This New letter gives a gist of department achievement for the period January 2020- December 2020. The department has been growing by leaps and bounds and the whole credit goes to hard work put up by the dedicated faculty members, staff members and students under the able-guidance of our Hon'ble Vice Chancellor- Prof Amita Dev.

Student Achievements



Team shakti won lightest vehicle award- Rs 5000/- & a trophy. Competition held at o. p. Jindal university, Raigarh, Chhatisgarh. 13- 16 January



Shreya Dhawan won Mech-Aura 2019-2020, a national competition organised by Collins Aerospace in January 2020 in Bangalore, Karnataka and received a cash price of INR One Lakh.



Vaishali and Katya Sah, students of 3rd year MAE got the Kalpana Chawla Scholarship award which is awarded to three Women under graduate student across India for participation in SAE activities as Engineering students in memory of first Indian origin female Astronaut "Kalpana Chawla" for the year 2019-2020 by SAEINDIA Foundation during event held at Pride Plaza, Aerocity, Delhi on 10th February, 2020.



Team Aious participated in Formula Bharat competition held in Coimbatore in January 2020.



An Industrial visit was organized to M/s Kadence Robotics, Faridabad in month of January 2020. 36 girls from MAE Department participated.



EVENTS ORGANIZED



A Webinar was organized on **Mechatronics Concept Design Software** was organized for students in collaboration with M/s 3D Engineers- Seimens Solution Partner on topic: "Mechatronics Concept Design Software" on 18th August, 2020. The Webinar was organized by Dr. Manoj Soni, Professor in Department and was delivered by Industry Expert - Mr Prabodhan Purvant



A webinar was organized on Solid Works software for students in collaboration with M/s AET (Advanced Educare & Training) on **Solid Works** software on 9th May, 2020 . The Webinar was organized by Dr. N R Chauhan (Professor and T& P officer in Department) and was delivered by Mr Abhishek Kumar Singh, of M/s AET.



A webinar was organized on topic- "**Ansys Applications for Mechanical Engineering**" in collaboration with M/s ARK Info-solutions Pvt. Ltd on 14th September, 2020. The Webinar was organized by Dr. N R Chauhan (Professor and T& P officer in Department) and was delivered by Dr. Tushar Sharma, of M/s ARK Info-solutions p Ltd.



A Webinar was organized on topic: "**Virtual Commissioning Software**" for students and faculty in collaboration with M/s 3D Engineers-Seimens Solution on 6th October, 2020. The Webinar was organized by Dr. Manoj Soni, Professor in Department and was delivered by Industry Expert - Mr Hemant Agnihotri





ASME collegiate club of IGDTUW in collaboration with CADD Centre, New Delhi organized a 5-day winter training workshop on Solidworks, Ansys, and CFD in January 2020. The workshop was divided into two parts, Solidworks and Ansys where the course of Ansys covered basics of CFD as well.



ASME collegiate club of MAE Dept, IGDTUW in collaboration with Competences Factory and Aious Formula Student hosted a **two-day workshop on Engine Electronics, Electricals, and ECU control strategies**. Mr. Suraj, the founder, and CEO of Competences Factory (CF) hosted the workshop.

Department of MAE

1st National Conference Speakers to Deliver at

IGDTUW NCIMAE Online conference 2020

Prof Dumitru Nedelcu from Romania	DR.-ING. DANIEL HAHN from Germany	Prof R.A Khan from JMI, New Delhi	Prof S. Maib, Principal DTE, JMI, New Delhi	Dr. Arshad Noor Siddiqui from JMI, New Delhi	Dr. Mohammed Suhail from JMI, New Delhi
Urgent, Wood and Other Biodegradable Materials	Challenges with Upcoming Technologies	Design, Opportunities & Challenges	Medication	Vehicle Pollution in Urban Areas and its control	Friction Str Additive Manufacturing
					Prep for Robotic Grasping in Industrial Automation

18th September, 2020
10 AM Onwards

Motto: Women Education - Women Enlightenment - Women Empowerment

The Department organized its first National conference (NCIMAE) under guidance of Hon'ble Vice Chancellor- Prof Amita Dev on 18th September, 2020 in online mode. The conference attracted more than Three Hundred authors from over India and One Hundred and Ten papers out of which selected 39 papers were called for presentation. Esteemed Professors from India and Abroad gave plenary sessions and shared their research with the participants and attendees. The conference was appreciated by every one and has given a big boost to research culture in department.

Patents filed

A patent application has been filed by Dr Pooja Bhati on 5th August, 2020 on IOT enabled non tumble cloth drier. Patent Filing No. is 202011033497.

Research grants

An amount of ₹ 680,000.00 was received by Mrs Mehak Sharma, PhD scholar under guidance of Dr Manoj Soni for ongoing project –“Design and Development of Temporomandibular Joint Prosthesis” from DST . Total project cost is Rs 21 lakh.

Publications by Faculty Members & Research Scholars (SCI / SCOPUS Journal / conference)

All faculty member and research scholars in department are constantly engaged in research activities. The papers which have been published in the period from January 2020 - December 2020 are briefed below:

1. Mehak Sharma, Dr Manoj Soni, A musculoskeletal finite element study of a unique and customised jaw joint prosthesis for the Asian populace, Evergreen - Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 07, Issue 03, pp351-358, September, 2020.
2. Mehak Sharma, Dr Manoj Soni, Direct Metal laser Sintering of Ti6Al4V alloy for patient specific Temporo Mandibular Joint prosthesis implant , Materials Today Proceedings. Aug 2020, DOI: doi.org/10.1016/j.matpr.2020.07.417;
3. Saraswat M, Nathi Ram Chauhan, Sharma VK, Shukla RK, Sharma K. Assessment of Biomass Potential in Engine Emission Reduction. Journal of Scientific & Industrial Research, January, 79, pp. 77-80, 2020.

4. Chandra D, Nathi Ram Chauhan, Rajesha S. Hardness and toughness evaluation of developed Al metal matrix composite using stir casting method. *Materials Today: Proceedings*. January 2, 2020. Elsevier
5. Saxena ND, Nathi Ram Chauhan, An overview on characterization of CuO based nano lubricant. *Materials Today: Proceedings*. January 23, 2020. Elsevier
6. Nathi Ram, Comparative Dynamic Performance of Configurations of Hole-entry Journal Bearings under Turbulent Regime. In *Recent Advances in Mechanical Infrastructure*, pp. 287-299, 2020. Springer
7. Saraswat M, Nathi Ram Chauhan, Comparative assessment of butanol and algae oil as alternate fuel for SI engines. *Engineering Science and Technology, an International Journal.*, Feb., 23(1), pp. 92-100. Elsevier
8. Nathi Ram, Characteristics of Symmetric Hybrid Worn Slot-Entry Journal Bearings under Turbulent Regime. *International Journal of Mechanical Engineering and Robotic Research*, March, 9(3), pp. 459-463, 2020
9. Dr. N.R. Chauhan, Saurabh Kumar Yadav, "Characteristics of Symmetric Hybrid Worn Slot-Entry Journal Bearings under Turbulent Regime", *International Journal of Mechanical Engineering and Robotic Research*, Vol.9, No.3, March 2020. pp. 459-463;
10. Samta Shastri, Yusuf Parvez, N. R. Chauhan, Wireless Power Transfer System for SCORBOT ER-4U Robotic Arm, *International Journal of Power and Energy System*, Vol.40 No.3, pp.103-111, ACTA Press DOI:10.2316/j.2020.203-0044;
11. Rituvika Narula, Urfi Khan, Nathi Ram Chauhan, "Autonomous Navigation of Mobile Robot using Shallow and Deep Neural Network, *International Journal of Mechatronics and Automation*, Inderscience publishers, Vol.7 No.2, 2020 pp.64 – 71
12. Dr V.K. Chawla, Prof A.K. Chanda, Prof Surjit Angra, "Evaluation of Tool Selection Rules in the flexible Manufacturing System", *International Journal of Industrial Engineering & Production Research*, Volume 31, Issue 1 (IJIEPR 2020) .
13. Sharma, N., Chawla, V., & Ram, N. (2020). Comparison of machine learning algorithms for the automatic programming of computer numerical control machine. *International Journal of Data and Network Science*, 4(1), 1-14.
14. Chawla, V. Automated CNC Programming by the Restricted Boltzmann Machine Algorithm. In *Advances in Electromechanical Technologies* (pp. 691-709). Springer, Singapore.
15. Chawla, V., Angra, S., Suri, S., & Kalra, R. (2020). A synergic framework for cyber-physical production systems in the context of Industry 4.0 and beyond. *International Journal of Data and Network Science*, 4(2), 237-244.
16. Chawla, V. K., Chhabra, D., Gupta, P., & Naaz, S. (2020). Evaluation of green operations management by fuzzy analytical hierarchy process. *Materials Today: Proceedings*.
17. Aggarwal, A., & Chawla, V. K. (2020). A sustainable process for conversion of petrol engine vehicle to battery electric vehicle: A case study. *Materials Today: Proceedings*.

