Dr. Bhagat Singh

Associate Professor & HOD

Education: Ph.D.

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Contact No. : Ext. - 230

Areas of Interest: Machine Design and Vibration Analysis, Condition Monitoring and Fault Diagnosis of Machine Structures (Gears, Bearings, Beams, IC Engines, Pump, Refrigeration and Air Conditioner Units, Compressor, Turbines), Tool Vibration Analysis in Turning, Milling, Drilling, Grinding and Boring. Optimizaation, AI and Machine Learning, Data Analytics.

Brief Profile:

Dr. Bhagat Singh has done his B.Tech in Mechanical Engineering from NIT, Kurukshetra. He obtained his Master of Engineering from NIT, Rourkela in Mechanical Engineering. His specialization in M.Tech was Machine Design and Vibration Analysis. He was awarded PhD degree from NIT, Rourkela. The title of his Ph.D. dissertation was "Study of damping in layered and welded beams". Dr. Singh has 22 years of teaching and research experience.

Ph. D. Supervision : 08

- Dr. Shailendra Kumar: "Analysis of tool chatter in turning operation for mass production"(awarded in 2018)
- Dr. Prashant Kumar Shrivastava: "An optimal solution of parameters for machining of Inconel-718" (awarded in 2018)
- Dr. Yogesh Shrivastava: "Stability analysis of CNC lathe for higher material removal rate" (awarded in 2019)
- Dr. Akshay Jain: "Ascertaining optimal process parameters for laser cutting and drilling of basalt-glass hybrid composite" (awarded in 2020)
- Dr. Kedari Lal Dhaker: "Investigation of optimal parameters for laser trepan drilling of Inconel-718" (awarded in 2020)
- Mr. Abhishek Soni: "Design, analysis and fabrication of orthopaedic implants" (Thesis writing in progress)
- Dr. Pankaj Gupta: "Optimal process parameters for higher productivity and stable turning on CNC lathe" (awarded in 2021)
- Mr. Rohit Mishra: "Analysis of tool chatter in milling operation on CNC milling machine" (Ongoing)

M. Tech thesis guidance:

- Mr. Prem Prakash Mishra (122404), "Analysis of regenerative tool chatter in turning operation", M.Tech thesisdefended in June 2014.
- Mr. Yogesh Shrivastava (142408), "Investigation of tool chatter in turning operation", M.Tech thesis defended in June 2016.

Member of Professional Bodies:

- Senior Life Member of IACSIT Mechanical Engineering Society (MES)
- Member of IAENG (International Association of Engineers)
- Reviewer: International Journal of Mechanical Sciences (Elsevier)

- Reviewer:Ain Shams Journal (Elsevier)
- Reviewer:Engineering Structures (Elsevier)
- Reviewer:Journal of Manufacturing Processes (Elsevier)

Publication@JUET

Publication details google profile link

- Pankaj Gupta and Bhagat Singh (2021), "Investigation of tool chatter using local mean decomposition and artificial neural network during turning of Al-6061" , Soft Computing, Springer, DOI: 10. 1007/s00500-021-05869-0, Accepted, (In Press).
- Pankaj Gupta and Bhagat Singh (2021), "A new ensemble approach to explore stability features in turning operation on CNC Lathe" , Journal of Mechanical Science and Technology (JMST), Springer, Accepted, (In Press).
- Pankaj Gupta, Bhagat Singh and Yogesh Shrivastava (2021), "Prediction of Stable cutting range using local mean decomposition merged with statistical approach" , Lecture Notes in Mechanical Engineering, Springer, Accepted, (In Press).
- Pankaj Gupta, Bhagat Singh and Yogesh Shrivastava (2021), "Grey relation analysis for optimal process variables during turning on CNC Lathe" , Material Today Proceedings Journal, Elsevier, Accepted, (In Press).
- Rohit Mishra and Bhagat Singh (2021), "Stability Analysis in Milling Process using Spline Based Local Mean Decomposition (SBLMD) Technique and Statistical Indicators" , Measurement, Elsevier, Vol. 174, pp. 108999.
- Pankaj Gupta and Bhagat Singh (2021), "Exploration of tool chatter in CNC turning using a new ensemble approach" , Materials Today Proceedings Journal, Elsevier, Vol. 43, pp. 640-645.
- Pankaj Gupta and Bhagat Singh (2021), "Analyzing chatter vibration during turning on computer numerical control lathe using ensemble local mean decomposition and probabilistic approach" , Noise & Vibration Worldwide, SAGE, Vol. 52, No. 6, pp. 168-180.
- Yogesh Shrivastava and Bhagat Singh (2021), "Tool chatter prediction based on empirical mode decomposition and response surface methodology" , Measurement, Elsevier, Vol. 173, pp. 108585.
- Akshay Jain, Bhagat Singh, Kapil K. Sharma, Yogesh Shrivastava (2021), "Fabrication, testing and machining of hybrid basalt-glass fiber reinforced plastic composite" , Indian Journal of Pure & Applied Physics, Vol. 59, pp. 258-262.
- Kapil K. Sharma, Yogesh Shrivastava, Eram Neha, Akshay Jain and Bhagat Singh (2021), "Evaluation of flexural strength of hybrid FRP composites having three distinct laminates" , Materials Today Proceedings Journal, Elsevier, Vol. 38, pp. 418-422.
- Kapil K. Sharma, Yogesh Shrivastava, Eram Neha, Bhagat Singh and Akshay (2021), "Investigation of Flexural Properties of Fabricated Hybrid Fibres Reinforced Composites" , AIP Conference Proceedings, Vol. 2317, No. 1, pp. 020016.
- Abhishek Soni and Bhagat Singh (2020), "Design of Polyetheretherketone Fixation Plates for Fractured Distal Femur" , International Journal of Biomedical and Biological Engineering, Vol. 14, No. 9, pp. 273-278.
- Pankaj Gupta and Bhagat Singh (2020), "Investigation of tool chatter features at higher metal removal rate using sound signals" , Acoustics Australia, Springer, Vol. 48, pp. 141-148.

- Abhishek Soni and Bhagat Singh (2020), "Design of Hydroxyapatite-Polyetheretherketone Fixation Plates for Diaphysis Femur Fracture" , International Journal of Biomedical and Biological Engineering, Vol. 14, No. 6, pp. 172-177.
- Akshay Jain, Bhagat Singh and Yogesh Shrivastava (2020). "Identification of Safe Machining Range for Laser Drilling of Basalt-Glass Hybrid Composite Using Artificial Neural Network" , Smart Innovation, Systems and Technologies, Vol. 174, pp. 767- 775.
- Abhishek Soni and Bhagat Singh (2020), "Design of Stainless-Steel Implant for Fractured Distal Femur" , International Journal of Mechanical and Industrial Engineering, Vol. 14, No. 3, pp. 89-94.
- Pankaj Gupta and Bhagat Singh (2020),"Local mean decomposition and artificial neural network approach to mitigate tool chatter and improve material removal rate in turning operation" , Applied Soft Computing, Elsevier, Vol. 96, pp. 106714.
- Abhishek Soni and Bhagat Singh (2020), "Modeling of Titanium Alloy Implant for Fractured Distal Femur" , International Journal of Mechanical and Materials Engineering, Vol. 14, No. 2, pp. 48-53.
- Pankaj Gupta and Bhagat Singh (2020), "Ensembled local mean decomposition and genetic algorithm approach to investigate tool chatter features at higher metal removal rate" , Journal of Vibration and Control, SAGE, DOI: https://doi.org/10.1177/1077546320971157, Accepted (In Press).
- Abhishek Soni and Bhagat Singh (2020), "Modeling of Cobalt-Chromium-Molybdenum Alloy Implant for Fractured Distal Femur" , International Journal of Biotechnology and Bioengineering, Vol. 14, No. 3, pp. 32-37.
- Kedari Lal Dhaker, Bhagat Singh and Yogesh Shrivastava (2020), "Experimental investigation and parametric optimisation of the hole-circularity and recast layer during the laser trepan drilling" , Australian Journal of Mechanical Engineering, Taylor & Francis, DOI:https://doi.org/10.1080/14484846.2020.1794522, Accepted (In Press).
- Abhishek Soni and Bhagat Singh (2020), "Simulation and Analysis of Polyetheretherketone Implants for Diaphysis Femur Fracture" , International Journal of Medical and Health Sciences, Vol. 14, No. 4, pp. 97-102.
- Akshay Jain and Bhagat Singh (2020), "Parametric analysis dyeing laser cutting of basalt-glass hybrid composite" , Laser in Manufacturing and Materials Processing, Springer, Vol. 7, No. 1, pp. 111-139.
- Abhishek Soni and Bhagat Singh (2020), "Design and Analysis of Customized Fixation Plate for Femoral Shaft" , Indian Journal of Orthopaedics, Vol. 54, pp. 48-155.
- Akshay Jain, Bhagat Singh and Yogesh Shrivastava (2019), "Reducing the heat-affected zone during the laser beam drilling of basalt-glass hybrid composite" , Composite Part B: Engineering, Elsevier, Vol. 176, pp. 107294.
- Prashant K. Shrivastava, Bhagat Singh and Yogesh Shrivastava (2019), "Experimental Investigation of Dimensional Accuracy During Micro-Machining of Inconel-718 Sheet" , JUET Research Journal of Science & Technology, Vol. 5, No. 2, pp. 1-7.
- Akshay Jain, Bhagat Singh and Yogesh Shrivastava (2019), "Heat affected zone investigation during the laser beam drilling of hybrid composite using statistical approach" Arabian Journal for Science and Engineering, Springer, Vol. 45, pp. 833-848.
- Akshay Jain, Bhagat Singh and Yogesh Shrivastava (2019), "Analysis of heat affected zone (HAZ) during micro drilling of a new hybrid composite" Journal of Mechanical Engineering Science, IMechE - Part C, SAGE, Vol. 234, No. 2, pp. 620-634.
- Kedari Lal Dhaker, Bhagat Singh and Yogesh Shrivastava (2019), "Adaptive neuro-fuzzy inference system based modeling of recast layer thickness during laser trepanning of

Inconel-718 sheet" , Journal of the Brazilian Society of Mechanical Sciences and Engineering, Springer, Vol. 41, pp. 423.

- Yogesh Shrivastavaand Bhagat Singh (2019), "Online monitoring of tool chatter in turning based on ensemble empirical mode decomposition and Teager Filter" , Transactions of the Institute of Measurement and Control, SAGE, Vol. 42, No. 6, pp. 1166-1179.
- Prashant Shrivastava, Bhagat Singh, Yogesh Shrivastava, Arun Kumar Pandeyand Durgesh Nandan (2019), "Investigation of optimal process parameters for laser cutting of Inconel-718 sheet" , Journal of Mechanical Engineering Science, IMechE - Part C, SAGE, Vol. 234, No. 8, pp. 1581-1597.
- Akshay Jain, Bhagat Singh and Yogesh Shrivastava (2019), "Investigation of kerf deviations and process parameters during laser machining of basalt-glass hybrid composite" , Journal of Laser Application, AIP Publishing, Vol 31, pp. 032017.
- Prashant Kumar Shrivastava, Bhagat Singh and Yogesh Shrivastava (2019), "Prediction of optimal cut quality characteristic of Inconel 718 sheet by genetic algorithm and particle swarm optimization," Journal of Laser Application, AIP Publishing, Vol. 31, pp. 022016.
- Shailendra Kumar and Bhagat Singh (2019), "A new approach to explore tool chatter in turning operation on lathe" , Australian Journal of Mechanical Engineering, Taylor & Francis, DOI: https://doi.org/10.1080/14484846.2019.1583713. Accepted, (In Press).
- Prashant Kumar Shrivastava, Bhagat Singh, Yogesh Shrivastava and Arun Kumar Pandey (2019), "Prediction of geometric quality characteristics during laser cutting of Inconel-718 sheet using statistical approach," Journal of the Brazilian Society of Mechanical Sciences and Engineering, Springer, Vol. 41, pp. 26-236.
- Yogesh Shrivastava and Bhagat Singh (2019), "A comparative study of EMD and EEMD approaches for identifying chatter frequency in CNC turning" , European Journal of Mechanics - A/Solids, Elsevier, Vol. 73, pp. 381 - 393.
- Shailendra Kumar and Bhagat Singh (2018), "Prediction of tool chatter in turning using RSM and ANN" , Materials Today Proceedings Journal, Elsevier, Vol. 5. No. 11, Part 3, pp. 23806-23815.
- Abhishek Soni, Shailendra Kumar and Bhagat Singh (2018), "Prediction of tensile strength of 3D printed part using response surface methodology" , Journal of the Brazilian Society of Mechanical Sciences and Engineering, Springer,Vol. 40, pp. 566.
- Yogesh Shrivastava, Bhagat Singh and Amit Sharma (2018), "Identification of Chatter in Turning Operation using WD and EMD" , Materials TodayProceedings Journal, Elsevier, Vol. 5, No. 11, Part 3, pp. 23917-23926.
- Shailendra Kumar and Bhagat Singh (2018), "Stable Cutting Zone with Improved Metal Removal Rate in Turning Process" , Iranian Journal of Science and Technology, Transactions of Mechanical Engineering, Springer, Vol. 44, No. 1-3, pp. 1-19.
- Yogesh Shrivastava and Bhagat Singh (2018), "Stable cutting zone prediction in CNC turning using adaptive signal processing technique merged with artificial neural network and multi-objective genetic algorithm" , European Journal of Mechanics - A/Solids, Elsevier, Vol. 70, pp. 238-248.
- Yogesh Shrivastava, Bhagat Singh and Amit Sharma (2018), "Analysis of tool chatter in terms of chatter index and severity using a new adaptive signal processing technique, in Experimental Techniques" , Springer, Vol. 42, No. 2, pp. 141-153.
- Shailendra Kumar and Bhagat Singh (2018), "Use of artificial neural network and multi-objective genetic algorithm approach to predict and ascertain stable cutting zone in

conventional turning process" , Noise & Vibration Worldwide, SAGE, Vol. 49. No. 5, pp. 191-214.

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- Shailendra Kumar and Bhagat Singh (2018), "Quantification of tool chatter and metal removal rate using wavelet denoising and statistical approach" ,Noise & Vibration Worldwide, SAGE, Vol. 49, No. 2, pp. 62-81.
- Shailendra Kumar and Bhagat Singh (2018), "Ascertaining of chatter stability using wavelet denoising and artificial neural network" , Journal of Mechanical Engineering Science, IMechE - Part C, SAGE, Vol. 233, No. 1, pp. 39-62.
- Shailendra Kumar and Bhagat Singh (2018), "Prediction of tool chatter and metal removal rate in turning operation on lathe using a new merged technique" , Journal of the Brazilian Society of Mechanical Sciences and Engineering, Springer, Vol. 40, pp. 53.
- Yogesh Shrivastava and Bhagat Singh (2018), "Stable cutting zone prediction in Computer Numerical control turning based on Empirical Mode Decomposition and Artificial Neural Network approach" , Transactions of the Institute of Measurement and Control, SAGE, Vol. 41, No. 1, pp. 193-209.
- Yogesh Shrivastava and Bhagat Singh (2018), "Estimation of Stable Cutting Zone in Turning based on Empirical Mode Decomposition and Statistical Approach" , Journal of the Brazilian Society of Mechanical Sciences and Engineering, Springer, Vol. 40, pp. 77.
- Yogesh Shrivastava and Bhagat Singh (2017), "Assessment of stable cutting zone in CNC turning based on empirical mode decomposition and genetic algorithm approach" , Journal of Mechanical Engineering Science, IMechE - Part C, SAGE, Vol. 232, No. 20, pp. 3573-3594.
- Yogesh Shrivastava and Bhagat Singh (2017), "Possible way to diminish the effect of chatter in CNC turning based on EMD and ANN approach" , Arabian Journal for Science and Engineering, Springer,Vo. 43, pp. 4571-4591.
- Shailendra Kumar, Yogesh Shrivastavaand Bhagat Singh (2017), "Prediction of tool chatter in turning" , International Journal of Engineering and Advanced Technology (IJEAT), Vol. 6, pp. 66-70.
- Amit Sharma, M. Hameedullah and Bhagat Singh (2016), "Sintering behavior of tin-base alloy under conventional and microwave heating" , JUET Research Journal of Science and Technology, Vol. 3, No. 1, pp. 69-79.
- Bhagat Singh and Amit Sharma (2015), "Identification of cracks in beams using a new merged technique" , JUET Research Journal of Science and Technology, Vol. 2, pp.95-107.
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- Vivek Soni, Bhagat Singh and Sharifuddin Mondal (2014), "Process Parameters Optimization in Turning of Aluminium using a New Hybrid Approach" , International Journal of Innovative Science, Engineering & Technology, Vol.1, pp. 418-423.
- Bhagat Singh and Bijoy Kumar Nanda (2013), "Dynamic analysis of damping mechanism in welded multilayered mild steel beams" , Aerospace Science and Technology, Elsevier, Vol. 29, pp. 58-73.
- Pankaj Gupta, Bhagat Singh and Yogesh Shrivastava (2020), "Prediction of Stable cutting range using local mean decomposition merged with statistical approach" , in Proceedings of 1st International Conference on Energy, Material Sciences and Mechanical Engineering (ENSME-2020) organised by Department of Mechanical

Engineering, National Institute of Technology (NIT), Delhi, India during October 30 - November 1, 2020.

- Bhagat Singh (2020), "Simulink Based Online Chatter Detection Using 1-D Wavelet Transformation" , in Proceedings of National Conference on Recent Trends in Theory and Practices in Engineering, Management, Media & Law (TIIPSCON 2020) held at Trinity Institute of Innovations in Professional Studies (TIIPS), Greater Noida, U.P., India, during June 12-13, 2020, pp. 1-6.
- Bhagat Singh (2020), "Simulation of Chatter Severity in Turning Using Signal Processing Approach" , in Proceedings of National Conference on Recent Trends in Theory and Practices in Engineering, Management, Media & Law (TIIPSCON 2020) held at Trinity Institute of Innovations in Professional Studies (TIIPS), Greater Noida, U.P., India, during June 12-13, 2020, pp. 1-5.
- Yogesh Shrivastava and Bhagat Singh (2017), "Application of EEMD in determining tool chatter behavior using ANN approach" , in 10th International Conference on Precision, Meso, Micro and Nano Engineering, (COPEN-10), at IIT Madras, India, ISBN: 978-93-80689-28-9, December, 7-9, 2017, pp. 745-748.
- Yogesh Shrivastava and Bhagat Singh (2017), "Chatter analysis in turning using ensemble empirical mode decomposition" , in International Conference on Manufacturing Technology and Simulation(ICMTS) at IIT Madras, India, July 7-8, 2017, pp. 29-32.
- Shailendra Kumar, Bhagat Singh and Gavendra Norkey (2017), "Simulation of tool chatter in turning process" , in International Conference on Manufacturing Technology and Simulation (ICMTS) at IIT Madras, India, July 7-8, 2017, pp. 73-76.
- Shailendra Kumar, Bhagat Singh and Gavendra Norkey (2017), "Prediction of tool chatter in turning using RSM and ANN" ,in International Conference on Advances in Materials and Manufacturing Applications, at Amrita University, Bangalore, India, August 17- 19, 2017.
- Yogesh Shrivastava, Bhagat Singh and Amit Sharma (2017), "Identification of Chatter in Turning Operation using WD and EMD" , in International Conference on Advances in Materials and Manufacturing Applications, at Amrita University, Bangalore, India, August 17- 19, 2017.
- Shailendra Kumar, Yogesh Shrivastavaand Bhagat Singh (2017), "Prediction of tool chatter in turning" , in International Conference on Novel Approaches in Science, Engineering and Technology (NASET-2017), organized by Madhav University, Abu Road, Rajasthan on February 24-25, 2017, pp. 66-70.
- Shailendra Kumar, Yogesh Shrivastavaand Bhagat Singh (2016), "Chatter detection and quantification using hybrid computational approach" , inProceedings of 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR-2016), held at College of Engineering, Pune, Maharashtra, India on December 16-18, 2016, pp. 728-732.
- Yogesh Shrivastava and Bhagat Singh (2016), "Simulation and Analysis of Tool Chatter in Turning Operation" , in Proceedings of Sixth International Congress on Computational Mechanics and Simulation(ICCMS-2016) held at IIT Bombay,June 27-July 1, 2016, pp. 1379-1382.
- Shshank Garg, Rounak Chawla and Bhagat Singh (2014), "Crack detection in cantilever beams using a new hybrid approach" , in Proceedings of 4th IRF International Conference held at Pune, 16th March, 2014, ISBN: 978-93-82702-66-5, pp.73-78.
- Rounak Chawla, Shshank Garg, Sachin Banerji and Bhagat Singh (2014), "Identification of multiple cracks in a cantilever beam using a new hybrid approach" , in Proceedings of

3rd IRF International Conference held at Hyderabad, India on 18th May, 2014, ISBN: 978-93-84209-18-6, pp. 118-123.

Conference/Seminar/Webinar/FDP/Work Shop and Training Programs attended @ JUET

- Delivered expert lecture at "National Workshop on Advanced Manufacturing Technologies (NWAMT)" , organised by JUET, Guna, Madhya Pradesh, India and sponsored by CSIR, MPCST, during September 27-29, 2013.
- Attended National Workshop on "Additive Manufacturing (NWAM-2015)" organised by JUET, Guna, Madhya Pradesh, India during November 19-21, 2015.
- Training on "Solid Works CAD Expert" during December 16-18, 2016 and April 1-2, 2017 conducted by TRANNSCAD - Indore, Madhya Pradesh, India.
- "Faculty development program for students Induction (FDP-SI)-Human Values" , organised by AICTE during September1 6- 18, 2019 at JUET, Guna, Madhya Pradesh, India.
- Webinar on the topic "Introduction to vehicle accident reconstruction and injury biomechanics" organized by Department of Mechanical Engineering, Galgotias College of Engineering & Technology (GCET), Greater Noida, India, June 3, 2020.
- Webinar on the topic "Net Zero Energy Building" organized by Department of Mechanical Engineering, Poornima College of Engineering, Jaipur, India on June 3, 2020.
- Webinar on the topic "Challenges to Food Safety & Government Guidelines during Covid-19 Pandemic" organized by Department of Mechanical Engineering, Priyadarshini Bhagwati College of Engineering, Nagpur, India on June 4, 2020.
- Webinar on the topic "Solar Energy: Introduction and Current Trends in India" organized by Department of Electrical Engineering and Electronics & Communication Engineering, Poornima Institute of Engineering & Technology, Jaipur, India on June 4, 2020.
- Webinar on the topic "Finite element modelling of metal forming" organized by Department of Mechanical Engineering, Poornima College of Engineering, Jaipur, India on June 5, 2020.
- Presented paper entitled, "Simulink Based Online Chatter Detection Using 1-D Wavelet Transformation" , in Proceedings of National Conference on Recent Trends in Theory and Practices in Engineering, Management, Media & Law (TIIPSCON 2020) held at Trinity Institute of Innovations in Professional Studies (TIIPS), Greater Noida, U.P., India during June 12-13, 2020.
- Presented paper entitled, "Simulation of Chatter Severity in Turning Using Signal Processing Approach" , in Proceedings of National Conference on Recent Trends in Theory and Practices in Engineering, Management, Media & Law (TIIPSCON 2020) held at Trinity Institute of Innovations in Professional Studies (TIIPS), Greater Noida, U.P., India during June 12-13, 2020.
- Webinar on the topic "Introduction wheeled mobile robots and challenges" organized by Department of Mechanical Engineering, Poornima College of Engineering, Jaipur, India on June 17, 2020.
- Webinar on the topic "Diversity and Culture - Strategies for Working with Differences" , organized by Achieve Centre for Leadership & Workplace Performance, Minneapolis, USA on June 28, 2020.
- Webinar on the topic "State Level Online Awareness Programme on PDS-ShodhShuddhi in Madhya Pradesh" , organized by ShodhShuddhi, The Ministry of Education, Govt. of India on July 15, 2020.

- Webinar on the topic "Opportunities and Future Prospects of Mechanical Engineering" organized by Department of Mechanical Engineering, Jaypee University of Engineering and Technology, Guna, India on July 19, 2020.
- Presented paper entitled, "Investigation of flexural properties of fabricated hybrid fibres reinforced composites" in International Conference "ICAAMM-2020" , organized by Department of Aeronautical & Mechanical engineering, MLR Institute of Technology, Hyderabad held on July 24 - 25, 2020.
- Webinar on the topic "Use of Emerging Technologies and Our Changing Role" organized by Department of Mechanical Engineering, Jaypee University of Engineering and Technology, Guna, India on July 26, 2020.
- Faculty development program on the topics "Online teaching-learning" and "Connect and relate online" organised by JUET, Guna, Madhya Pradesh, India on August 11, 2020. Resource Person: Padma Shri Prof. D. B. Phatak, Indian Institute of Technology, Bombay, India.
- Faculty development program on the topic "Online teaching-learning: Guru Dakshta" organised by JUET, Guna, Madhya Pradesh, India on August 14, 2020. Resource Person: Prof. Aparajita Ojha, Chief Investigator, Electronics and ICT Academy, IIITDM, Jabalpur, India.
- Webinar on the topic "Examination Reforms in Higher Education" organised by JUET, Guna, Madhya Pradesh, India on August 21, 2020. Resource Person: Dr. Neeraj Saxena, Advisor - AICTE, India.
- Faculty development program on the topic "4 IR and Emerging Technology" organised by JUET, Guna, Madhya Pradesh, India on August 28, 2020. Resource Person: Prof. Lance Fung, Murdoch University, Australia.
- Faculty development program on the topic "Ambient intelligence for smart living" organised by JUET, Guna, Madhya Pradesh, India and on September 11, 2020. Resource Person: Prof. Vincenzo Piuri, Department of computer Science, University of Milan, Italy.
- Webinar on the topic "Presentation Skills" organised by JUET, Guna, Madhya Pradesh, India and Cambridge Assessment English on September 25, 2020. Resource Person: Ian Cawley, Cambridge, UK, Global Product Manager for Business (BEC) Qualifications.

Online Certification Courses Completed @ JUET

- "Mechanics of Materials I: Fundamentals of Stress & Strain and Axial Loading" offered by Georgia Institute of Technology.
- "Write Professional Emails in English" offered by Georgia Institute of Technology.
- "Digital Manufacturing & Design" offered by SUNY, The State University of New York.
- "Introduction to CAD, CAM, and Practical CNC Machining" offered by Autodesk.
- "The 3D Printing Revolution" offered by University of Illinois at Urbana-Champaign.
- "Grammar and Punctuation" offered by University of California, Irvine.
- "Project Management: The Basics for Success" offered by UCI, University of California, Irvine.
- "Renewable Energy and Green Building Entrepreneurship" offered by Duke University.
- "Materials Science: 10 Things Every Engineer Should Know" offered by University of California, Davis.
- "Intro to Digital Manufacturing with Autodesk Fusion 360" offered by Autodesk.
- "Electric Power Systems" offered by SUNY, The State University of New York.

- "Cyber Security in Manufacturing" offered by SUNY, The State University of New York.
- "Book writing" offered by Researcher Academy, Elsevier.
- "Finding the right journal" offered by Researcher Academy, Elsevier.
- "Fundamentals of peer review" offered by Researcher Academy, Elsevier.
- "Going through peer review" offered by Researcher Academy, Elsevier.
- "Open science" offered by Researcher Academy, Elsevier.
- "Research collaborations" offered by Researcher Academy, Elsevier.
- "Research data management" offered by Researcher Academy, Elsevier.
- "Social impact" offered by Researcher Academy, Elsevier.