List of Publications

Patent Published

1. **M. Dhanda**, A. Kukreja, and S.S. Pande, "Methods and electronic device for generating spiral tool path for CNC machine using point cloud" (Indian patent Application no: 202121044148 A, Publication Date : 31/03/2023)

Publications-Journal Papers

1. **M. Dhanda**, B. Rogers, S. Hall, V. Dhokia, "Reviewing Human-Robot Collaboration in Manufacturing: Opportunities and Challenges in the Context of Industry 5.0, Robotics and Computer-Integrated Manufacturing, Elsevier, vol. 93, 2025, 102937, https://doi.org/10.1016/j.rcim.2024.102937
2. K. Chauhan, J. Karloopia, R. S. Walia & **M. Dhanda**. "Recent advances in magnesium alloys and its composites for bioimplant applications: Processing, matrix, reinforcement, and corrosion perspectives", Critical Reviews in Solid State and Materials Sciences, Taylor & Francis, pp.1-42, 25 Mar 2024. https://doi.org/10.1080/10408436.2024.2323010
3. **M. Dhanda**, A. Kukreja, M. Patel and S.S. Pande. "On modelling and analysis of voxel-based force prediction for a 3- axis CNC machining", Advances in Materials and Processing Technologies, Taylor & Francis, pp.12, 3 Jul 2022. https://doi.org/10.1080/2374068X.2022.2095757
4. Rahul O V, V Sharma, V Mishra, A Gupta, **M. Dhanda**, R. S. Walia, Manoj Kumar and Diana Petronela Burduhos- Nergis, "Mathematical Modeling and Experimental Validation of Surface Roughness in Ball Burnishing Process", Coatings, MDPI. vol.12, no.10, pp.15061516, 9 Oct 2022. https://doi.org/10.3390/coatings12101506
5. A. Kukreja, **M. Dhanda**, and S.S. Pande. "Efficient Toolpath Planning for Voxel-based CNC Rough Machining", Computer Aided Design and Applications, Taylor & Francis, vol.18, no.2, pp.285-296, Nov 2021. https://doi.org/10.14733/cadaps.2021.285-296
6. **M. Dhanda**, A. Kukreja, and S.S. Pande. "Adaptive Spiral Toolpath Generation for CNC Machining using Point Cloud Data", Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, SAGE Publisher, vol.235, no.22, pp.6240- 6256, 13 Apr 2021. https://doi.org/10.1177/0954406221990077
7. A. Kukreja, **M. Dhanda**, and S.S. Pande. "Voxel-Based Adaptive Toolpath Planning using GPU for Freeform Surface Machining", Journal of Manufacturing Science and Engineering, ASME, vol.144, no.1, pp.011013- 011023, 6 Jul 2021. https://doi.org/10.1115/1.4051535
8. **M. Dhanda**, A. Kukreja, and S.S. Pande. "Region-based Efficient CNC Machining using Point Cloud Data", Journal of Computing and Information Science in Engineering, ASME, vol.21, no.4, pp.41005-41016, 11 Feb 2021. https://doi.org/10.1115/1.4049216
9. **M. Dhanda**, A. Kukreja, and S.S. Pande. "Adaptive Toolpath Planning Strategy for Free-form Surface Machining using Point Cloud", Computer Aided Design and Applications, Taylor & Francis, vol.16, no.2, pp.289-307, Sep 2019. https://doi.org/10.14733/cadaps.2019.289-307
10. **M. Dhanda**, B. Haldar, and P. Saha. "Development and Characterization of Hard and Wear Resistant MMC Coating on Ti-6Al-4V Substrate by Laser Cladding", Procedia Materials Science, Elsevier, vol.6, no.1, pp.1226-1232, Apr 2014. https://doi.org/10.1016/j.mspro.2014.07.196
11. S. Bansiya, **M. Dhanda**, and P. Saha, "An Approach towards Repairing of Nimonic Alloy Component through Laser- Based Layered Manufacturing Technique," International Journal of Engineering Research and Application, vol. 3, no. 5, pp.1349-1354, Oct 2013, ISSN: 2248-9622.

12. A.S. Rani and **M. Dhanda**, "Analysis and Synthesis of Solar Tracker using Timer Mechanism," International Journal of Advanced Information Science and Technology, vol.3, no.11, pp. 82-86, 2014, ISSN: 2319:2682. https://doi.org/10.15693/ijaist/2014.v3i11.82-86

Book Chapter Published

1. A. Verma, P. Dureja, **M. Dhanda**, R.S. Walia, "Additive Manufacturing: A Look at the Current Technology, Materials, and Applications", Advances in Manufacturing and Processing of Materials, pp 233-251, Apple Academic Press, 23 Aug 2024, ISBN 9781003408345
2. S. Mehta, P. Gauba, S. Kaushal, P. Ali, **M. Dhanda**, RS Walia, "Developments in Hybrid Abrasive Flow Machining: A Review on Models and Analyses", Recent Trends in Mechanical Engineering. Lecture Notes in Mechanical Engineering. 8 June 2023, Springer, Singapore. https://doi.org/10.1007/978-981-19-7709-1_38, ISBN 978-981-19-7708-4
3. **M. Dhanda**, A. Kukreja, and S.S. Pande, "Efficient CNC Toolpath Generation Using Point Cloud", Advances in Simulation, Product Design and Development, 19 September 2022, Springer, Singapore, https://doi.org/10.1007/978- 981-19-4556-4_1, Lecture Notes in Mechanical Engineering, ISBN 978-981-19-4556-4
4. Kukreja, H. Mane, **M. Dhanda**, S. S. Pande, "Voxel Based Strategy for Efficient CNC Machining" Advances in Forming, Machining and Automation, 24 November 2019, Springer, Singapore, https://doi.org/10.1007/978-981-32-9417- 2_50, Lecture Notes on Multidisciplinary Industrial Engineering, ISBN 978-981- 32-9 417-2

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1. E. Pietras, B. Kiefer, S. Hall, **M. Dhanda**, H Zhao, V. Dhokia, G. Borzone, N. Krauger, L. Bodenhagen, "Co- Adaptation in Human-Robot Training Scenarios", 34th IEEE International Conference on Robot and Human Interactive Communication, Eindhoven, Netherlands, August 25th to 29th, 2025.
2. S. Hall, **M. Dhanda**, V. Dhokia, "Towards an ontology to capture human attributes in human-robot collaboration", Proceedings of the 18th International DESIGN Conference, Cavtat, Dubrovnik, Croatia, 20-23 May 2024, Volume 4, pp. 2585 – 2594, DOI: https://doi.org/10.1017/pds.2024.261
3. B. A. Rogers, N. Campbell, **M. Dhanda**, A. J G. Lunt, E. C. Pegg, V. Dhokia, Ellies, A Bayesian expert system for additive manufacturing design assessment, Proceedings of the 18th International DESIGN Conference, Cavtat, Dubrovnik, Croatia, 20-23 May 2024, Volume 4, pp. 1809 – 1818, DOI: https://doi.org/10.1017/pds.2024.183.
4. E. Pietras; N. Krauger; A. Kramberger; S. Hall; V. Dhokia; J. Langaa; **M. Dhanda**; B. Kiefer; L. Bodenhagen, "Toward Adaptive Robot Behavior for Interdependent Human-Robot Teams", IEEE International Conference on Robotics and Automation in PACIFICO Yokohama, Japan, May 13th to 17th, 20245. M. Dhanda, A. Kukreja, and S.S. Pande, "Spiral Toolpath Generation for CNC Machining using Cloud of Points," ASME, 40th International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, St. Louis, USA, vol. 9, pp.1-10, August 17-19, 2020 ISBN: 978-0-7918-8398-3. https://doi.org/10.1115/DETC2020-22032
5. **M. Dhanda** and S.S. Pande, "Efficient CNC Machining of Freeform Surfaces from Point Cloud," ASME, 38th International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, Quebec, Canada, vol. 1A, pp.1-10, August 26-29, 2018, ISBN: 978-0-7918-5172-2. https://doi.org/10.1115/DETC2018-85072

6. **M. Dhanda** and S.S. Pande, “Tool Path Planning Strategies for CNC Machining of Free Form Surfaces using Surface Properties,” 6th International and 27th All India Manufacturing Technology, Design, and Research Conference, COE, Pune, India, pp.1-6, Dec 2016.

Poster Presentation

1. **M. Dhanda, “**3D-Simulation of Physical Movements of Bio-Inspired Robots” a poster presentation in the seminar "Recent Developments in Automation and Robotics" organized by CoE Siemens & PEC Chandigarh, India, March 24, 2021.
2. **M. Dhanda and Jyoti Jha “**Coating in Diesel Engine Cylinder Liner: Ex-situ Formation of CNTs and Ni(hBN) in Ni- Al matix on Al Alloy Substrate by Laser Clading” a poster presentation in the Idea poster challenge organized by IIT Bombay, India, April 10–11, 2015