

Sunil Pathak, PhD (Advanced Manufacturing Processes)
Scientist Level-4, HiLase Centre, Prague Czech Republic
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Research and Teaching Interests

My experience, research and teaching interests are in the areas of advanced machining, surface metrology, surface engineering, deposition technologies, nano-finishing, and gear engineering.

Education

- **PhD in Mechanical Engineering**

Indian Institute of Technology Indore (MP) India, **(2016)**

Thesis title: *“Investigations on the Performance Characteristics of Straight Bevel Gears by Pulsed Electrochemical Honing (PECH) Process.”*

Advisors: Prof. Neelesh Kumar Jain and Dr. I A Palani

- **Master of Engineering (ME), Mechanical Engineering** (Design of Mechanical Systems)

Swami Vivekananda College of Engineering Indore (MP) India, **June 2012**

Thesis title: *“Analysis and Comparison of Helical Gear made of Titanium Alloy and Polyethylene with the help of tool ANSYS.”*

Advisor: Prof. Sanjay Purkar

Graduated with Distinction (78.1 %)

- **Bachelor of Engineering (BE), Mechanical Engineering**

Lakshmi Narain College of Technology Indore (MP) India, **June 2009**

Graduated with First Class (74.16 %)

Research and Teaching Experience

Scientist Level-4 , HiLASE Centre, Institute of Physics, Czech Academy of Sciences Prague, Czech Republic	01/2023 - Present
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MSCA International Mobility Fellow

HiLASE Centre, Institute of Physics, Czech Academy of Sciences Prague, Czech Republic	01/2021 - 12/2022
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Senior Lecturer

Faculty of Manufacturing Engineering Technology University Malaysia Pahang (Malaysia)	02/2017 - 02/2020
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Teaching Assistant/ Senior Research Fellow

Discipline of Mechanical Engineering Indian Institute of Technology Indore, (MP) India	01/2013 - 11/2016
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Editorial Board and Reviewer

- **Editorial board** for *Materials and Manufacturing Processes* (SCIE, IF: 4.616), Taylor and Francis, UK, since 2021.
- **Editorial Board** Member for *International Journal of Hydromechatronics*, (ESCI, Scopus) Inderscience Publications, Since Feb 2020
- **Editorial board** Member for *Journal of Micromanufacturing*, Sage Publications, UK, Since 2019
- **Editorial board** Member for *International Journal of Precision Technology*, Inderscience Publications, Since Jan 2020
- **Reviewers** for more than **30 International SCI Indexed Journals** Published in various platforms namely Elsevier, Springer, Taylor and Francis, Inderscience, Sage Publications, Wiley, Emerald, IOP Science etc.

Edited Special Issue in Journals/Committee for International conferences

1. Edited a Special Issue entitled "Micromachining Method for Surface Morphology" for *Micromachines* (MDPI) **IF:2.881**, 2021
2. Edited a Special Issue entitled "micro manufacturing and finishing for micro and meso-shaped engineering components" for *International Journal of Precision Technology*, Inderscience Publisher, 2021.

Publications

Year	Paper in Refereed Journals		Papers in Refereed Conference Proceedings		Book Chapters	Books	Total
	Published	Under Review/In Press	International	Patent			
2023	3	3	-	-	-	2	8
2022	4	-	1	2	1	1	9
2021	3	-	-	-	-	1	4
2020	1	-	1	-	2	2	6
2019	4	-	2	-	1	1	8
2018	4	-	2	-	-	-	6
2017	5	-	1	-	-	-	6
2016	4	-	1	-	2	-	7
2014-2015	5	-	1	-	1	-	7
Total	33	3	11	2	7	6	64

Google Scholar: https://scholar.google.com/citations?user=9i_j3sMAAAAJ&hl=en

Research Gate link: https://www.researchgate.net/profile/Sunil_Pathak4

Google Scholar Citations: 507; h-index: 13, i-10 index: 19, till Jan 2023

Patents:

EU Patent: Status (Submitted): Sunil Pathak, Marek Böhm, Jan Kaufman, Sanin Zulic Jan Brajer, Ondřej Stránský, Danijela Rostohar, Jagdheesh Radhakrishnan. "Method for improving surface integrity of an additive manufactured mesoscopic gear, product thereof and device carrying out the method" (Application number: LU 502626)

Indian Patent: Status (Submitted): Vivek Rana, Neelesh K Jain, Sunil Pathak, "A cathode tool for gear tooth flank modification by electrochemical machining". (Application number: 202221016570).

Books

1. **Editors:** Şenol Bayraktar and **Sunil Pathak (Tentative. June 2023)**, **Title:** **Environmentally Benign Machining**, CRC Press, Taylor & Francis Group, USA.
2. **Editors:** Kumar, Hussain, Jain, and **Sunil Pathak**, **Lasers in Manufacturing (Tentative. June 2023)**, CRC Press, Taylor & Francis Group, USA.
3. **Editor:** Jagdheshh Radhakrishnan and **Sunil Pathak**, **Title:** **Advanced Engineering of Materials through Lasers (June 2022)**, **Publisher:** Springer Nature Publishing, Germany. (ISBN: 978-3-031-03829-7)
4. **Editor:** **Sunil Pathak**, **Title:** **Intelligent Manufacturing (July 2020)**, **Publisher:** Springer Nature Publishing, Germany. ISBN: 978-3-030-50312-3, (DOI: [10.1007/978-3-030-50312-3](https://doi.org/10.1007/978-3-030-50312-3)).
5. **Editors:** **Sunil Pathak** and Gobinda Saha (**June 2020**), **Title:** Cold Spray in Realm of Additive Manufacturing, **Publisher:** Springer Nature Publishing, Germany. ISBN 978-3-030-42756-6, (DOI: [10.1007/978-3-030-42756-6](https://doi.org/10.1007/978-3-030-42756-6)).
6. **Authors:** **Sunil Pathak**, Neelesh K Jain, I A Palani, **Title:** Finishing of Conical Gears by Pulsed Electrochemical Honing (**July 2019**), **Publisher:** Cambridge Scholar Publishers, UK. ISBN (10): 1-5275-3366-2, ISBN (13): 978-1-5275-3366-0.

Journal Articles

1. V Rana, N K Jain and **Sunil Pathak (2023)**. Design and development of cathodic gear tools for non-contact flank modification of spur gears, Submitted to The International Journal of Advanced Manufacturing Technology, (JAMT-D-22-03167.R1) Oct 2022. **(Impact Factor: 3.22)**
2. V Rana, N K Jain and **Sunil Pathak (2023)**. Analytical modelling for spur gear flank modifications by non-contact advanced finishing process, Revised Version Submitted to *CIRP Journal of Manufacturing Science and Technology*, (CIRPJ-D-22-00598.R1) Nov 2022. **(Impact Factor: 3.56)**.
3. V Rana, N K Jain and **Sunil Pathak (2023)**. Investigations on tip relieving of spur gears by non-contact process, Accepted for Publication in *Materials and Manufacturing Processes*. **(Impact Factor: 4.78)**.
4. **Sunil Pathak**, Marek Böhm, Jan Kaufman, Jaromír Kopeček, Sanin Zulić, Ondřej Stránský, Ashish Shukla, Jan Brajer, Libor Beránek, Danijela Rostohar, J. Radhakrishnan, Tomáš Mocek (**2023**), Surface Integrity of SLM Manufactured Meso-Size Gears in Laser Shock Peening without Coating. *Journal of Manufacturing Processes*, 85: 764-773. (DOI: [10.1016/j.jmapro.2022.12.011](https://doi.org/10.1016/j.jmapro.2022.12.011)) **(Impact Factor: 5.6)**.
5. V Rana, N K Jain and **Sunil Pathak (2023)**. Improving functional performance characteristics of spur gears through flank modifications by non-contact advanced finishing process, *The International Journal of Advanced Manufacturing Technology*, Accepted for Publication, Nov 2022. (DOI: [10.1007/s00170-022-10566-9](https://doi.org/10.1007/s00170-022-10566-9)) **(Impact Factor: 3.22)**.
6. **Sunil Pathak**, Sanin Zulić, Jan Kaufman, Jaromír Kopeček, Ondřej Stránský, Marek Böhm, Jan Brajer, Libor Beránek, Ashish Shukla, Michal Ackermann, Filip Vélé, Tomáš Mocek, Post-processing of selective laser melting manufactured SS-304L by laser shock peening (**2022**), *Journal of Materials Research and Technology*, 19: 4787-4792. (DOI: [10.1016/j.jmrt.2022.07.014](https://doi.org/10.1016/j.jmrt.2022.07.014)) **(Impact Factor: 6.26)**.
7. Khilji, Irshad Ahamad, Siti Nadiyah Binti Mohd Safee, **Sunil Pathak**, Chaitanya Reddy Chilakamarry, Amiril Sahab Bin Abdul Sani, and Venugopal Jayarama Reddy (**2022**). "Facile

- Manufacture of Oxide-Free Cu Particles Coated with Oleic Acid by Electrical Discharge Machining" *Micromachines* 13, no. 6: 969. (DOI:10.3390/mi13060969) (Impact Factor: 3.5).
8. S Zulić, D Rostohar, J Kaufman, **Sunil Pathak**, M Böhm, J Brajer, T Mocek (2022). Fatigue Life Enhancement of Additive Manufactured 316L Stainless Steel by LSP using a DPSS Laser System, *Surface Engineering*, (DOI: 10.1080/02670844.2022.2060463) (Impact Factor: 3.169)
 9. I A Khilji, S N B M Saffe, **Sunil Pathak**, Ş Țălu, S Kulesza, M Bramowicz (2022). Titanium Alloy Particles Formation in Electrical Discharge Machining and Fractal Analysis, *JOM, Springer*. 74, 448–455. (DOI:10.1007/s11837-021-05090-2) (Impact Factor: 2.474).
 10. S Marimuthu, **Sunil Pathak**, J Radhakrishnan, A M.Kamara (2021) "In-process Monitoring of Laser Surface Modification Process, *Coatings MDPI*, 11(8), 886. (DOI: 10.3390/coatings11080886) (Impact Factor: 2.881).
 11. NA Zolpakar; N.A. Mohd Fuad, **Sunil Pathak** (2021) " A review: use of evolutionary algorithm for optimisation of machining parameters" *The International Journal of Advanced Manufacturing Technology*, 115:31–47. (DOI: 10.1007/s00170-021-07155-7) (Impact Factor: 3.226).
 12. **Sunil Pathak**, G.C. Saha, M.B.A. Hadi, N.K. Jain (2021) "Engineered nanomaterials for aviation industry in COVID-19 context: a time-sensitive review" *Coatings, MDPI*, 11 (4), 382. (DOI: 10.3390/coatings11040382) (Impact Factor: 2.881).
 13. A Khan, K Gupta, **Sunil Pathak** (2020) "Surface Morphology Investigation of Miniature Gears Manufactured by Abrasive Water Jet Machining" *Int. Journal of Surface Science and Engineering*, 14(2), 158-173. (DOI: 10.1504/IJSURFSE.2020.108227) (Impact Factor: 1.178)
 14. Ş Țălu, S Kulesza, M Bramowicz, **Sunil Pathak**, N K Jain (2019) "Multiscale Surface Texture and Fractal Analysis of Straight Bevel Gears Finished by PECH and PECF Process" *Materials and Manufacturing Processes*, 34 (16), 1882-1887. DOI:10.1080/10426914.2019.1683578) (Impact Factor: 4.616).
 15. P Rai, N K Jain and **Sunil Pathak** (2019) "Experimental Investigations on Surface Finish and Micro-Geometry of Helical Gear in PECH Process" *Proceedings of the IMECH Part C: Journal of Mechanical Engineering Science*, 230 (10), 3364-3375. (DOI: 10.1177/0954406218822095) (Impact Factor: 1.762).
 16. N K Jain, **Sunil Pathak**, and M Alam (2019) "Synthesis of Copper Nano-Particles by Pulsed Electrochemical Dissolution (PECD) Process" *Industrial & Engineering Chemistry Research*, 58(2),602-608. (DOI: 10.1021/acs.iecr.8b03146) (Impact Factor: 3.720).
 17. J Chaudhary, N K Jain, **Sunil Pathak** and S C Koria (2019) "Investigations on Autogenous Joining of Thin Stainless-Steel Sheets by Pulsed Micro-Plasma Transferred Arc Process" *Journal of Micromanufacturing*, 2(1) 15-24. (DOI: 10.1177/2516598418820470).
 18. **Sunil Pathak** and N K Jain (2018) "Performance of pulsed-electrochemical honing and pulsed-electrochemical finishing in improving quality of bevel gears" *Manufacturing Review*, 5(14) 1-9. (DOI: 10.1051/mfreview/2018012).
 19. I.S.N.V.R.Prasanth, D.V.Ravishankar, M. Manzoor Hussain, CM Badiganti, VK Sharma and **Sunil Pathak** (2018) "Investigations on Performance characteristics of GFRP Composites in Milling" *The International Journal of Advanced Manufacturing Technology*, 99 (5-8), 1351-1360 (DOI: 10.1007/s00170-018-2544-2) (Impact Factor: 3.226).
 20. S Dwibedi, N K Jain, **Sunil Pathak** (2018) "Investigations on joining of stainless steel tailored blanks by μ -PTA Process" *Materials and Manufacturing Processes*, 33 (16), 1851-1863 (DOI:10.1080/10426914.2018.1476766) (Impact Factor: 4.616).

21. D Shinde, K N Mistry, S Jhavar and **Sunil Pathak (2018)** "Studies on Non-Asbestos Friction Materials in Brake Applications" *Advanced Materials Research*, 1150, 22-42. (DOI: [10.4028/www.scientific.net/AMR.1150.22](https://doi.org/10.4028/www.scientific.net/AMR.1150.22)).
22. **Sunil Pathak** and Gobinda Saha (2017) "Development of sustainable cold spray coatings and 3D additive manufacturing components for repair/manufacturing applications: a critical review" *Coatings*, 7(8) 122-149. (DOI: [10.3390/coatings7080122](https://doi.org/10.3390/coatings7080122)) (**Impact Factor: 2.881**).
23. **Sunil Pathak** and N K Jain (2017) "Modeling and Experimental Validation of Volumetric Material Removal Rate and Surface Roughness Depth of Straight Bevel Gears in Pulsed-ECH Process" *International Journal of Mechanical Sciences*, 124-125: 132-144. (DOI: [10.1016/j.ijmecsci.2017.03.011](https://doi.org/10.1016/j.ijmecsci.2017.03.011)) (**Impact Factor: 5.329**).
24. **Sunil Pathak** and N K Jain (2017) "Critical review of electrochemical honing: sustainable and alternative gear finishing process. Part 2: effects of various process parameters on surface characteristics and material removal rate" *Transaction the Institute of Metal Finishing: The International Journal of Surface Engineering and Coating*, 95(5), 241-254 (DOI:[10.1080/00202967.2017.1338401](https://doi.org/10.1080/00202967.2017.1338401)) (**Impact Factor: 1.224**).
25. **Sunil Pathak** and N K Jain (2017) "Critical review of Electrochemical Honing (ECH): sustainable and alternative gear finishing process. Part 1: conventional processes and introduction to ECH" *Transaction the Institute of Metal Finishing: The International Journal of Surface Engineering and Coating*, 95(3):147-157. (DOI: [10.1080/00202967.2017.1306378](https://doi.org/10.1080/00202967.2017.1306378)) (**Impact Factor: 1.224**).
26. **Sunil Pathak**, N K Jain, I A Palani (2017) "Effect of applied voltage and electrolyte parameters on pitch, runout, flank topology, and finishing productivity of the straight bevel gears in PECH process" *Materials and Manufacturing Processes*, 32(3): 339-347. (DOI: [10.1080/10426914.2016.1198022](https://doi.org/10.1080/10426914.2016.1198022)) (**Impact Factor: 4.616**).
27. **Sunil Pathak**, N Jain, I A Palani (2016) "Investigations on Surface Quality, Surface Integrity and Specific Energy Consumption in Finishing of Straight Bevel Gears by PECH Process", *The International Journal of Advanced Manufacturing*, 85(9), 2207-2222 (DOI: [10.1007/s00170-016-8876-x](https://doi.org/10.1007/s00170-016-8876-x)) (**Impact Factor: 3.226**).
28. **Sunil Pathak**, N K Jain, I A Palani (2016), "Effect of honing gear hardness on surface quality and micro-geometry improvement of straight bevel gears in PECH process" *The International Journal of Advanced Manufacturing Technology*, 85(9), 2197-2205, (DOI: [10.1007/s00170-015-7596-y](https://doi.org/10.1007/s00170-015-7596-y)) (**Impact factor: 3.226**).
29. **Sunil Pathak**, N K Jain, I A Palani (2016) "Experimental investigations on redefining the surface quality of bevel gears by pulsed-ECH" *Transaction of Institute of Metal Finishing*, 94(2) 64-69, (DOI: [10.1080/00202967.2016.1148245](https://doi.org/10.1080/00202967.2016.1148245)) (**Impact factor: 1.224**).
30. N K Jain, A Potpelwar, **Sunil Pathak**, N K Mehta (2016) "Investigations on Geometry and Productivity of Micro-holes in Incoloy 800 by Pulsed Electrolytic Jet Drilling" *The International Journal of Advanced Manufacturing Technology*, 85(9), 2083-2095 (DOI:[10.1007/s00170-016-8342-9](https://doi.org/10.1007/s00170-016-8342-9)) (**Impact Factor: 3.226**).
31. **Sunil Pathak**, N K Jain, I A Palani (2015), "On Surface Quality and Wear Resistance of Straight Bevel Gears Finished by Pulsed Electrochemical Honing Process" *International Journal of Electrochemical Science*, 10(11), 8869-8885, Nov. 2015 (**Impact factor: 1.765**).
32. **Sunil Pathak**, N K Jain, I A Palani (2015), "Process Performance Comparison of ECH and PECH for Quality Enhancement of Bevel Gears" *Materials and Manufacturing Processes*, 30(7), 836-841, July 2015, (DOI: [10.1080/10426914.2014.994764](https://doi.org/10.1080/10426914.2014.994764)) (**Impact factor: 4.616**).

33. J H Shaikh, N K Jain, **Sunil Pathak** (2015), "Investigations on Surface Quality Improvement of Straight Bevel Gears by Electrochemical Honing Process" *Proceedings IMechE, Part B: Journal of Engineering Manufacture*, 230 (7), 1242-1253. (DOI: [10.1177/0954405415584899](https://doi.org/10.1177/0954405415584899)) (**Impact Factor: 2.610**).
34. J H Shaikh, N K Jain, **Sunil Pathak** (2015), "Performance Enhancement of Electrochemical Honing Process Using ANN Approach for Bevel Gear Finishing" *International Journal of Precision Technology*, 5(2), 157-169. (DOI: [10.1504/IJPTECH.2015.070640](https://doi.org/10.1504/IJPTECH.2015.070640)).
35. **Sunil Pathak**, N K Jain, I A Palani (2014), "On Use of Pulsed Electrochemical Honing to Improve Micro-geometry of Bevel Gears" *Materials and Manufacturing Processes*, 29(11-12) 1461-1469, (DOI: [10.1080/10426914.2014.952032](https://doi.org/10.1080/10426914.2014.952032)) (**Impact factor: 4.616**).

Book Chapters

1. Zhehao Jiang, **Sunil Pathak**, S.Subramani, J. Radhakrishnan, Sundar Marimuthu (2022), "Surface Morphology of Nimonic Alloy 263™ in Nanosecond Pulsed Laser Ablation" In Book: **Advanced Engineering of Materials through Lasers** (Editors: Sunil Pathak and Jagdheesh Radhakrishnan), Springer Int Publihsing.
2. **Sunil Pathak** and G. Saha (2020), "Cold Spray: Its Prominence as an Additive Manufacturing Technology" Published in Book **Cold Spray in the Realm of Additive Manufacturing, PP 1-17** (Editor: Dr. Sunil Pathak and Dr. Gobinda Saha), Springer Int Publishing.
3. Vinod Kumar Sharma, **Sunil Pathak**, I.S.N.V.R. Prasanth, D.V. Ravishankar, M.M. Hussain, C. M. Badiganti, (2020), "Influence of Milling Process Parameters on Surface quality of GFRP Composites" Published in a research book entitled "Glass Fiber-Reinforced Polymer Composites Materials, Manufacturing and Engineering" Edited by J.Babu & J. P. Davim , De Gruyter Publisher Germany. PP 69-84. (DOI: [10.1515/9783110610147-005](https://doi.org/10.1515/9783110610147-005))
4. Nor Atiqah Zolpakar, Swati Pathak, **Sunil Pathak** and Mohita Anand (2020), "Application of Multi-Objective Genetic Algorithm (MOGA) Optimization in Manufacturing Processes" Published in Book Entitled as "**Optimization of Manufacturing Processes**" (Editor: Dr. Kapil Gupta), Springer Int Publishing. Pp 185-199.
5. Neelesh Kumar Jain, **Sunil Pathak** (2016), "Chapter 30028: "Electrochemical Processing and Surface Finish" in **Comprehensive Materials Finishing** Vol. 3 (Volume Editor: Bakir Sami Yilbas; Editor-in-Chief: S. Hashmi) Elsevier Inc. Oxford (UK). (DOI: [10.1016/B978-0-12-803581-8.09182-7](https://doi.org/10.1016/B978-0-12-803581-8.09182-7); online since 29 April 2016). (ISBN: 978-0-12-803581-8).
6. Neelesh Kumar Jain, **Sunil Pathak** (2016), "Fine Finishing of Gears by Electrochemical Honing Process" in **Nanofinishing Science and Technology: Basic and Advanced Finishing and Polishing Processes** (Editor: V K Jain), CRC Press, Taylor and Francis, New York (USA).
7. **Sunil Pathak**, (2014), "Improving Surface Quality of Bevel Gears by Pulsed ECH Process" Chapter 19 in **DAAAM International Scientific Book 2014**, pp. 221-238, B. Katalinic (Ed.), Published by DAAAM International Vienna, Austria, ISBN 978-3-901509-94-0, ISSN 1726-9687. (DOI: [10.2507/daaam.scibook.2014.19](https://doi.org/10.2507/daaam.scibook.2014.19)).

Papers in the Refereed Conference Proceedings

1. Zulić, Sanin, Michael Fitzmire, Ebrahim Asadi, Danijela Rostohar, Sunil Pathak, Jan Brajer, Jan Kaufman, Marek Boehm, and Ondrej Stransky. "Improvements of metal additive manufactured AISI 304L and Ti6Al4V parts by using laser shock peening as a post-process technique." In *Laser 3D Manufacturing IX*, vol. 11992, pp. 83-87. SPIE, 2022.
2. Irshad Ahamad Khilji, **Sunil Pathak**, Siti Nadiyah (2020) Opportunities and Challenges in

Nanoparticles Formation by Electrical Discharge Machining” International Conference on Recent Developments in Mechanical Engineering (ICRAME 2020) to be held in NIT Silchar, India during Feb 6-7, 2020.

3. Siti Nadiah Binti Mohd Saifee, **Sunil Pathak**, and Irshad Ahamad (2019), “Investigations on Macro-drilling by Indigenously Developed ECM Apparatus”, In **Proceeding of MERD 2019**, 31st July 2019, University Teknikal Malaysia Melaka, Malaysia.
4. **Sunil Pathak** and Balmukund Dhakar (2019), “Characterization of Al₂O₃ Ceramics” In **Proceeding of MERD 2019**, 31st July 2019, University Teknikal Malaysia Melaka, Malaysia. PP.322-324.
5. **Sunil Pathak**, Muneer Alam and N. K. Jain (2018), “Investigations on Copper Nano-Particles Synthesis by Pulsed Electrochemical Dissolution (PECD) Process” **4th International Conference of Chemical Engineering & Industrial Biotechnology**, 1-2 Aug 2018, Kuala Lumpur, Malaysia.
6. Nur Amani Bt Rozi, Norsyafikah Bt Azizan, Nur Fadilah Bt Abu Bakar, **Sunil Pathak** (2018), “On Design and Development of Electrochemical Machining Setup for C-Shaped Component” **International Conference on Advances Design, Materials Manufacturing and Energy System**, 15 Sep 2018, Malla Reddy Engineering College, Hyderabad, India.
7. **Sunil Pathak** and N. K. Jain (2017), “Effects of Various Parameters of Micro-Geometry on Performance Characteristics of Gears” 3rd. International Conference and Exhibition on Automobile Engineering, September 28-29, 2017 Berlin, Germany
8. **Sunil Pathak**, N. K. Jain and I. A. Palani (2016), “Study on Surface Imperfections of Gears: Sources, Effects, and Techniques for Concerned Improvements” **Proceedings of 30th International Conference on Surface Modification Technologies (SMT30)**, June 29th to July 1st 2016, Politecnico Di Milano, Milan, Italy, (Editors: Dr. T. S. Sudarshan and Prof. M. Gugliano).
9. **Sunil Pathak**, N. K. Jain, I. A. Palani (2015), “Influence of Electrolyte Flow Rate and Rotary Speed on Surface Modification of Bevel Gear Finished by PECH” **Proceedings of 29th International Conference on Surface Modification Technologies (SMT29)**, June 10-12, 2015, Technical University of Denmark, Copenhagen, pp 112-118, Valardocs India, ISBN: 978-81-926196-2-0 (Editors: Dr. T. S. Sudarshan and Prof. M.A.J. Somers).
10. **Sunil Pathak**, N. K. Jain, I. A. Palani (2013), "Methodology for precision finishing of conical gears using automated field controlled Electrochemical Honing process", **Proceedings of 2nd International Conference on Intelligent Robotics, Automation and Manufacturing**, 16-18 Dec. 2013, IIT Indore, pp 440-449, Emerald Book Publishing Pvt. Ltd, New Delhi, ISBN: 978 099 268 0015 (Editors: N. K. Jain, I A Palani, B K Lad, M S Kumar and A Parey).
11. **Sunil Pathak**, Rahul Sharma, Amit Chandak (2012), “Turbochargers in Two Wheelers”, In Proceedings of National Multi-Conference on Contemporary Global Trends in Technology and Management, 18-20 Aug. 2012, held at Lakshmi Narain College of Technology Indore (MP) India.

Courses Offered

Year/Semester	Subject	UG/ PG	Number of students
19201/IJA	BTM4723- Advanced Manufacturing Process	UG	37
19201/IJA	BTM3343-Computer Integrated Manufacturing	UG	10
19201/IJA	BTM2133-Metrology	UG	30

19201/IJA	BTM4783- Safety And Ergonomics	UG	47
18192/IJA	BTM2133-Metrology	UG	47
18192/IJA	BTM3343-Computer Integrated Manufacturing	UG	43
18192/IJA	BTP3353-Automation Systems	UG	33
18191/IJA	BTM4723- Advanced Manufacturing Process	UG	44
18191/IJA	BTM3343-Computer Integrated Manufacturing	UG	43
18191/IJA	BTM2234-Fluid Power Technology	UG	38
17182/IJA	BTP3353-Automation Systems	UG	48
17182/IJA	BTM3343-Computer Integrated Manufacturing	UG	49
17181/IJA	BTM4723- Advanced Manufacturing Process	UG	13
17181/IJA	BTM3343- Computer Integrated Manufacturing	UG	49
17181/IJA	BTM4713- Lean Manufacturing System	UG	26
16172/IJA	BTP3353- Automation Systems	UG	18
16172/IJA	BTM3364- Numerical Control Systems	UG	18

Research Grants and Consultancy

S.no	Project Title	Grant Details	Amount	Tenure	Role
1.	Experimental Investigations on Debris Formation in Electrical Discharge Machining	Internal Grant, UMP (RDU1903137)	RM 29,000/-	Dec 2019- Dec 2021	Project Leader
2.	Investigation on Performance of Different Vegetable Based Nano-Fluid used In Minimum Quantity Lubricant (MQL) System For Machining Ti-6Al-4v Titanium Alloys	UMP GRANT (RDU1803145)	RM 30,700/-	Sep 2018- Sep 2020	Project Member
3.	Optimization of Machining Parameters on Temperature Rise In CNC Turning of Al 6063 using Genetic Algorithm	UMP GRANT (RDU1803144)	RM 27,400	Sep 2018- Sep 2020	Project Member
4.	Development of Pulsed Electrolytic Dissolution Process for the Generation of Fine Nano-Particles	UMP GRANT (RDU1703113)	RM 24,500	June 2017- June 2019	Project Leader
5.	Engineering, design and development of waste management equipment.	Collaborated Project	1.5 Lac DKK (Danish Kroners)	Aug 2016- Aug 2017	Project Leader

PhD Supervision/Graduate Research Internship/Project Guidance

S.no	Name of Student	Institute	Title of Project	Duration
1.	Irshad Ahamad Khilji, (PhD)	University Malaysia Pahang, Malaysia (Supervisor: Dr. Siti Nadiyah, Co-Supervisor: Dr. Sunil Pathak)	Synthesis and Characterization of Nanoparticles by EDM.	Feb 2019- Oct 2022
2	Vivek Rana (PhD)	Indian Institute of Technology Indore (MP) India	Investigations on Crowning of	June 2018- On-going

		(Supervisor: Prof. Neelesh Kumar Jain, Co-Supervisor: Dr. Sunil Pathak)	Cylindrical Gears by Electrochemical finishing.
3.	(i) Ravind Pandian (ii) Anis Syafiqah Binti Azhari (iii) Muhammad Ilman Raziq Bin Rahimi	Bachelor of Engineering Technology (manufacturing) University Malaysia Pahang (B.Tech, FYP Project 2019)	Development and Optimization of a Low Cost Abrasive Jet Machining (AJM) Apparatus. Jan 2019-Jan 2020
4.	(i) Muhammad Zahiruddin (ii) Muhammad Fais (iii) Nursakinah Binti Mohd Ridzuan (iv) Muhammad Nornazmie Bin Zamri	Bachelor of Engineering Technology (manufacturing) University Malaysia Pahang (B.Tech, FYP Project 2019)	Development Of Nerve Sensor Based Composite Material 3d Printed Human Arm. Jan 2019-Jan 2020
5.	(i) Nor Syafikah Binti Azizan (ii) Nur Amani Binti Rozi (iii) Nur Fadilah Binti Abu Bakar	Bachelor of Engineering Technology (manufacturing) University Malaysia Pahang (B.Tech, FYP Project 2018)	Development and Optimization of a Low Cost Electrochemical Machining (ECM) Apparatus. Jan 2018-Jan 2019
6..	(i) Mimi Muzlina Mukri (ii) Nor Izati Binti Sahari	Bachelor of Engineering Technology (manufacturing) University Malaysia Pahang (B.Tech, FYP Project 2018)	Characterization of Alumina Oxide Coatings. Jan 2018-Jan 2019
7.	Bobby Chowdhury	Bachelor of Engineering (Mechanical) (a) IES IPS Academy, Indore (MP) India	Design, Modelling and Optimization of Biomass Processing Reactor & Plant. Aug 2016-Aug 2017

Academic Administrative Responsibilities

<u>S.no</u>	<u>Task</u>	<u>Agency/Institute</u>
1	Head Research Cluster (Advanced Manufacturing and Materials) Aug 2018-Feb 2020	Faculty of Engineering Technology, University Malaysia Pahang
2	Co-ordinator for Development of Railway Engineering Program , since Jan Oct 2017-Oct 2018	University Malaysia Pahang
3	Co-ordinator of "Teaching Factory" Since Jan 2018-till date.	University Malaysia Pahang
4	Reviewer for evaluation of funding projects/grants	University Malaysia Pahang

5	Member of curriculum structure modification team for a manufacturing engineering program	University Malaysia Pahang
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Awards and Honours

<i>S.no</i>	<i>Award/Honour</i>	<i>Awardee Agency/Institute</i>
1.	<i>Marie Curie Individual Fellowship-Seal of Excellence</i>	<i>MSCA European Union</i>
2.	Top Peer Reviewer in Materials Sciences	Publons (web of Science)
3.	Top Peer Reviewer in Interdisciplinary Sciences	Publons (web of Science)
4.	Teaching Excellence: Semester II 2018/2019 for Excellent Teaching of: (a) BTM2133- Metrology (b) BTM3343-Computer Integrated Manufacturing (c) BTP3353-Automation Systems	University Malaysia Pahang
5.	Cendekia Bitara award for best quality publication in the year 2018	University Malaysia Pahang
6.	Gold award for quality research and publication in the year 2018	University Malaysia Pahang
7.	Silver Medal in CITREX 2018 for development of electromechanical robotic arm for need-based applications.	University Malaysia Pahang
8.	Teaching Excellence Award Semester I 2018/2019 for Excellent Teaching of: (a) BTM4723- Advanced Manufacturing Process (b) BTM3343-Computer Integrated Manufacturing	University Malaysia Pahang
9.	Cendekia Bitara award for best quality publication in the year 2017	University Malaysia Pahang
10.	Gold award for quality research and publication in the year 2017	University Malaysia Pahang
11.	Teaching Excellence for Autumn Semester II 2017/2018 for Excellent Teaching: (a) BTM4723- Advanced Manufacturing Process (b) BTM3343-Computer Integrated Manufacturing (c) BTP3353-Automation Systems	University Malaysia Pahang
12.	Teaching Excellence for Semester I 2017/2018 for Excellent Teaching: (a) BTM4723- Advanced Manufacturing Process (b) BTM3343-Computer Integrated Manufacturing (c) BTM4713- Lean Manufacturing System	University Malaysia Pahang
13.	Teaching Assistant Fellowship from MHRD Govt. of India from Jan 2013 to Aug 2016.	MHRD Govt. of India
14.	International Travel Grant from SERB Govt. of India in June 2015.	SERB, Govt. of India

Invited Talks/Guest Speakers

1. Keynote Talk on *“Laser Shock Peening: Improving Quality of Metallic Parts”* in an

International Conference on Sustainable materials, Manufacturing and Renewable Technologies (i-SMaRT-2022) held at Federal Institute of Science and Technology (FISAT) Kerala, India held during 25-27th May 2022.

2. **Keynote Talk** on *“Laser-Based Processing of Smart Materials”* in SERB Sponsored Karyashala under Accelerated Vigyan Scheme on Computational Techniques for Smart Materials Modelling and Bio-medical Applications held at Indian Institute of Technology Mandi, India during 24 Jan 2022 to 30 Jan 2022.
3. **Keynote talk** on *“Laser Shock Peening and Its benefit for the Real World”* on 22nd April, 2021 in an International Conference on Sustainable materials, Manufacturing and Renewable Technologies (i-SMaRT-2021) held at Federal Institute of Science And Technology (FISAT) Kerala, India.
4. **Guest Speaker** *“Introduction to Advanced Machining and ECH of Gears”* in a Faculty Development program held at Federal Institute of Science and Technology, Kerala, India on 12th Aug 2020.
5. **Guest Speaker** on *“Advances in machining technologies”* in a Faculty Development program held at karapagam college of Engineering, Coimbatore India on 30th June 2020.
6. **Expert Lecture** on *“Journal Publication Do’s and Don’ts”* at Prestige Institute of Engineering and Management Research, Indore (MP) India on 4th July 2018.
7. **Invited Speaker** *“Effects of Various Parameters of Micro-Geometry on Performance Characteristics of Gears”* at 3rd. International Conference on Automobile Engineering, Berlin, Germany, Sep 2017.
8. **Keynote Speaker** on *“Alternative Gear Finishing processes”* at Manufacturing Today Conclave: Reinventing the Future, held by Aditya Birla Group, Indore (MP) India, Sep 2015.

Declaration: I hereby declare that all the information presented here are correct and authentic as per best of my knowledge.

(Sunil Pathak)