

Dr. Anis Fatima

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Google profile: <https://scholar.google.com/citations?user=54pk-z4AAAAJ&hl=en>

Experience

- Jan 2022 –Till date
Associate Professor
Department of Industrial and Manufacturing Engineering
NED University of Engineering and Technology,
Karachi, Pakistan.
- March 2016 –Dec 2021
Assistant Professor
Department of Industrial and Manufacturing Engineering
NED University of Engineering and Technology,
Karachi, Pakistan.
- Sep 2011 -Jan 2016
PhD/Instructor/ Lecturer
University of Manchester/Coventry University
United Kingdom
- Sep 2005 – Aug 2011
Lecturer
Department of Industrial and Manufacturing Engineering
NED University of Engineering and Technology,
Karachi, Pakistan.

Additional Charge

- Jan 2022 -till date
Manager, University advancement and financial assistance (UAFA)
NED University and Technology,
Karachi, Pakistan.
- Feb 2019- Till date
Programme team (PT) member
Masters of Engineering/Engineering Management

- Jan 2009- Aug 2011, - April 2016 – March 2022
Area coordinator
Quality enhancement cell/ Department of Industrial and Manufacturing Engineering
NED University of Engineering and Technology,
Karachi, Pakistan.

- Jan 2006 -Aug 2011
In-charge –Metrology and Gauging laboratory/ Product development center
Department of Industrial and Manufacturing Engineering
NED University of Engineering and Technology,
Karachi, Pakistan.

- Jan 2005 -Aug 2006
Assistant director – Product development center
Department of Industrial and Manufacturing Engineering
NED University of Engineering and Technology,
Karachi, Pakistan.

Qualification

- **Academic qualifications:**

2011-2015	PhD (Mechanical Engineering), The University of Manchester, United Kingdom
2006-2007	Masters of Engineering (Adv. Industrial & Manufacturing), NED University of Engineering and Technology, Karachi.
2000-2004	Bachelors of Engineering (Industrial & Manufacturing Engg.), NED University of Engg. & Technology, Karachi, Pakistan.

- **Professional qualifications:**

Sep 2023	“WASHINGTON ACCORD, Program Evaluator Training” Pakistan Engineering Council, PK
May 2017	“Quality Management System-Lead Auditor Training” Lloyd’s Register, London UK
March 2010	“Health, Safety and Environment Certification Pakistan Institute of Quality Control, Karachi, Pakistan

April 2004

“Productivity Tool 5S & Kaizen Management”

National Productivity Organization, Karachi, Pakistan

- **Higher education commission-Pakistan approved supervisor since June 2019**

Awards and Accomplishments

- 2014 A M Strickland Prize
The Manufacturing Industries Division Board of the Institution of Mechanical Engineers, UK
- International scholarship award for PHD
The University of Manchester, UK
- Higher studies scholarship award
NED University, Pakistan

Research Activities

- Latest research projects:
 1. A systematic ergonomics approach to analyse the technological transition of industrial paradigms.
 2. Modelling and optimization of Wire EDM process parameters using the Artificial Intelligence and sustainability concepts.
 3. On economic impact of Industry 4.0: time driven activity-based costing system.
 4. Correlation Pattern Recognition and Prediction of Paint Surface Quality and Process Parameters using Machine Learning.
 5. Data Recognition using Machine Intelligence for Quality Inspection Applications.
 6. On implementation of health and safety measures in denim manufacturing.

Teaching and Trainings

Taught and teaching following graduate, undergraduate, PhD and corporate level courses;

- Automated Production and Control, Organizational Systems, Operation Research, Health, Safety and Environment, Operation Managements, Manufacturing Processes, Engineering Economy, Advance Statistics, Finite Element Analysis, Tool Design, Smart Manufacturing, Applied Probability and Statistics, Advance Manufacturing Processes, Advance Sustainable Manufacturing, Supply Chain Management, Thermodynamics, Metrology and gaging,

Workshops/Teaching (@ The University of Manchester and Coventry University):

- Teaching in higher education, Laser safety training, Graduate teaching assistant training, Academic writing, Introduction to research essentials, Effect Research proposal writing, Study Skills and Research Methods, Mechanical Science and Mathematics, Outcome based learning, communication in 21st century.

Courses developed

- Sustainable Manufacturing Technology, Health, Safety and Environment, Mechanics of Manufacturing Processes, Smart Manufacturing, Metrology and Gauging, Mechanical Science, Circular Manufacturing, Advance manufacturing system, Machine learning and big data analytics, Advance topics in smart manufacturing and Application of AI in Manufacturing

Publications

Selected outputs

1. **Anis Fatima**, Muhammad Wasif, Aqeel Ahmed and Saima Yaqoob, Effect of rake face surface of cutting tool on tool crater wear, Manufacturing Review, DOI:10.1051/mfreview/2023013.
2. **Fatima, Anis**, and Syed Sajjad Ali. On Economic Impact of Industry 4.0: Time-Driven Activity-Based Costing System. No. 2023-01-5065. SAE Technical Paper, 2023.
3. Wasif, M. Rababah, **A. Fatima**, H. Karim, "Prediction of Spring back using the Machine Learning Technique in high-tensile strength sheet metal during the V-Bending Process", accepted in Jordon Journal of Mechanical and Industrial Engineering (JJMIE), will appear in Vol. 17 (4).
4. Muhammad Wasif, **Anis Fatima**, Aqeel Ahmed and Syed Amir Iqbal Investigation and Optimization of Parameters for the Reduced Spring back in JSC-590 sheet metals occurred during the V-bending Process, Transactions of the Indian Institute of Metals. DOI:10.1007/s12666-021-02357-9
5. Asim Zaheer, **Anis Fatima**, Jennifer Rowson, Effective Evaluation and Management of the Risks in Domestic Tasks: Living skills outcome measures has been accepted for publication in the Journal of Engineering Research (JER). The DOI number for this paper will be: 10.36909/jer.11843
6. **Anis Fatima**, Muhammad Wasif and Muhammad Omer Mumtaz, Optimization of process parameters in turning of nuclear graded steel alloy (AISI-410) for sustainable manufacture " has been accepted for publication in the Journal of Engineering Research (JER). The DOI number for this paper will be: 10.36909/10.36909/jer.11239
7. Muhammad Wasif, **Anis Fatima**, Syed Amir Iqbal, Muhammad Tufail, Hassan Karim, Analysis and Optimization of Spring back during the V-bending of Hot-Rolled High Strength Steels (JSH440)" has

been accepted for publication in the Journal of Engineering Research (JER). The DOI number for this paper will be 10.36909/jer.11027

8. **Fatima A** and Tufail M. Improving Efficiency of Apparel Manufacturing Through the Principles of Resource Management. Clothing and Textiles Research Journal DOI: 10.1177/0887302x211005432.
9. Ahmed, Aqeel, Wasif, Muhammad, **Fatima, Anis**, Wang, Liming, Iqbal, Syed Amir. Determination of the feasible setup parameters of a workpiece to maximize the utilization of a five-axis milling machine. Frontiers of Mechanical Engineering. 2021/03/18, 10.1007/s11465-020-0621-3
10. **Fatima A**, M Tufail Improving Productivity through Linear Programming: A Case of Oil Refinery Industry, SAE Technical Paper, 2020-01-5128, doi:10.4271/2020-01-5128.
11. Wasif M, Iqbal S, **A, Fatima A**, Yaqoob S and Tufail M. Experimental investigation for the effects of wire EDM process parameters over the tapered cross-sectional workpieces of titanium alloys (Ti6Al-4V). Mech Sci. 2020; 11: 221-32.
12. **Fatima, A.**, Ahmed, A., Yaqoob, S., & Fahad, M. (2020). Wear comparison of unstructured and structured tungsten carbide. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 234(10), 1658–1668. <https://doi.org/10.1177/1350650120923533>
13. **Fatima, A.**, Zaheer, A., & Fahad, M. (2019). Comparative performance analysis of micro-structured carbide inserts in machining of EN19 alloy steel. Journal of The Brazilian Society of Mechanical Sciences and Engineering, 41, 405.
14. **Fatima A.** and Amir I. Identifying direct electrical energy demand in wire-cut EDM Mehran University research journal <https://doi.org/10.22581/muet1982.2001.16>
15. **Fatima A.** and Mativenga P. Experimental study on cutting performance comparison of structured cutting tools in machining of AISI/SAE 4140. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, DOI: 10.1177/0954405417731464
16. **Fatima A.** and Mativenga P. On the comparative cutting performance of nature inspired structured cutting tool in dry cutting of AISI/SAE 4140. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, doi: 10.1177/0954405415617930
17. **Fatima A.** and Mativenga P. A comparative study on cutting performance of rake- flank face structured cutting tool in orthogonal cutting of AISI/SAE 4140. The International Journal of Advanced Manufacturing Technology, 2015, vol. 78 (9):2097-2106.
18. **Fatima A.** and Mativenga P. T. Performance of flank face structured cutting tools in machining of AISI/SAE 4140 over a range of cutting speeds. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2016 vol. 230 (1): 3-18
19. **Fatima A.**, Whitehead D. J. and Mativenga P. T. Femtosecond laser surface structuring of carbide tooling for modifying contact phenomena. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2014; 228(11): 1325-1337
20. **Fatima A.** and Mativenga P. Assessment of tool rake surface structure geometry for enhanced contact phenomena. The International Journal of Advanced Manufacturing Technology, 2013: 1-6.

21. **Fatima A.** and Mativenga P. T. A review of tool–chip contact length models in machining and future direction for improvement. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2013; 227(3):345-356. Manufacture, 2013; 227(3): 345-356.

Conferences

1. Anis Fatima, Muhammad Danish Saleem and Muhammad Wasif, On Optimization of Process Parameters of Inconel-718 Machining for Green Production, 3rd International Conference On Key Enabling Technologies, 8th - 30th Aug 2023, Crowne Plaza Istanbul - Harbiye, Istanbul, Turkey.
2. Irshad Ullah, M. Wasif, A. Fatima, M. Tufail, “Accurate additively manufactured PETG molds for the composite manufacturing”, Proceeding of 1299th International Conference on Science, Engineering & Technology - ICSET 2023, Istanbul, Turkey, 20th – 21st March 2023.
3. M. Kashif, M. Wasif, A. Fatima, S. A. Iqbal, “Effect of water content on process parameter optimization for enhanced surface finish of Kevlar composite”, Proceeding of 1299th International Conference on Science, Engineering & Technology - ICSET 2023, Istanbul, Turkey, 20th – 21st March 2023.
4. Use of Taguchi experimental design in an offline optimization estimation of surface finish in machining, 6th International Conference on "Energy, Environment & Sustainable Development (EESD2022)" to be held from January 17th – 19th, 2022 at Mehran University of Engineering and Technology, Jamshoro, Pakistan.

Patent

- Fatima A, Wasif M, Tufail M, Nature-inspired Structured Cutting Tool, Intellectual Property Organization of Pakistan (IPO-Pakistan), submitted, Application No. 3832022

Funding

- Higher Education Commission- National Research Program for Universities 2021 Grant of PKR. 4.73 million.
- Higher Education Commission- National Research Program for Universities 2021 Grant of PKR 6 million.
- Erasmus Mundus GetInnovative4Impact 2022 of Euro € 7.86 million.
- Government of Pakistan, Ministry of Planning, PC -1 grant PKR 490 million.
- NED – PhD/Master Research Grant of Rs. 1 million

Memberships and Affiliations

- Member WISE (Women in science and Engineering, UK)
- Member Women Tech
- Member Organization for women in science in developing world
- Member Pakistan Engineering council
- Member Quality enhancement cell (QEC) for Industrial and Manufacturing Department
- Member D-OBE committee
- Reviewer Journal of Mechanical Science and Technology (JMST) – Springer
- Reviewer Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture
- Reviewer Advance Manufacturing Technology - springer
- Member syndicate - NED University 2010-2014
- Board Member QEC 2017
- Board Member Medical department 2021 -till date