

Personal Details

Gender : Female
Nationality : Pakistani
Research Gate :
LinkedIn :
URL :

Career Objective

Established practices combined with the new concepts and developments in manufacturing sector have become the underpinnings of any industry. Among the most significant and far reaching changes in manufacturing sector is the sustainable and green manufacturing of the product. Also, it is no longer acceptable to dispose material and waste the energy linked with their manufacturing. My research vision is oriented towards manufacturing issues and challenges of industrial sustainability through reinstating the importance of manufacturing processes. I am ambitious to explore processes at different length of scale and wide process parameters for optimal performance

Awards and Accomplishments

- 2014 A M Strickland Prize

The Manufacturing Industries Division Board of the Institution of Mechanical Engineers

- International scholarship award for PHD

The University of Manchester

- Higher studies scholarship award

NED University

- Loreal scholarship (Empowering Women)

Career & Experience

I am affiliated with NED University as an Assistant Professor in Department of Industrial and Manufacturing Engineering, where I primarily teach Manufacturing Engineering courses at degree level.

I have obtained my doctorate in Engineering with specialization in Manufacturing from The University of Manchester. My past work as a field engineer was characterised on reverse engineering approaches. This involved geometric modelling of products and their optimal manufacturing process within a system framework. I have also been involved in quality audits and implementation of statistical procedures for ISO activities for manufacturing industries (automobile vendor) and educational institutes with the aim of quality and, health and safety policy.

I have national and international university teaching experience, with emphasis on manufacturing, at level five, six and seven at The University of Manchester, Coventry University and NED University. In my previous roles I have fulfilled the role of in-charge product development centre and computational and metrology laboratories. I also contributed to the participation of women in engineering committees at institutional and industrial levels. I am a member of WISE (women in science and technology) Committee Uk. Moreover, I am certified in “Health, Safety and Environment” and “Productivity Tool 5S & Kaizen Management training.

My research interest includes but not limited to, machining, laser processing, energy, surface structuring, sustainable manufacturing and material processing.

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:

- | | |
|------------|---|
| May 2017 | “Quality Management System-Lead Auditor Training” Lloyd’s Register, London UK |
| March 2010 | “Health, Safety and Environment Certification” |

April 2004 **“Productivity Tool 5S & Kaizen Management”**
National Productivity Organization, Karachi, Pakistan

- Acquired skills on computing software;

Modeling and simulation: Solid works, Solid Edge (v12), AutoCAD,
Pro-E (wildfire – 2), Abaqus, ANSYS, Fast blank.

CNC Machining: CNC coder, DEPO CAM, Mill CAM, Nova Turn &Triac
PC, CNC Simulators (Deckel).

Science and Mathematical: Minitab, MATlab, SPSS, Design expert (v7), Powerlog
Production and Operation Management Software (POM
v2.0).

Information Technology:

Reports & DBMS: MS Office XP (Word, Excel, Access & PowerPoint)
MS Project

Research and Industrial Projects

- Contact phenomenon and cutting tool structuring.
- Direct energy demand and CO2 footprints of CNC machine center for sustainable environment.
- Identifying direct energy demands in Wire-cut EDM
- Cultural policies for startup organization.
- Ergonomics in manufacturing industries.
- Statistical Optimization of processes for sustainability.
- Health and Safety implementation at Dubai port.

Teaching and Trainings

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

- ME 521 Automation and Control
- EM 501 Organizational Systems
- IM 417 Health , safety and Environment
- IM 203 Manufacturing Processes (module leader)
- MS 303 Engineering economy
- TE 505 Advance Statistics
- IM 523 Operation Research
- IM 307 Advance Manufacturing Processes(@NED and Coventry University)

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

| | |
|------------|--------------------------------------|
| 21/11/2014 | Teaching in higher education |
| 05/12/2011 | Laser safety training |
| 02/12/2011 | Graduate teaching assistant training |
| 15/11/2011 | Academic writing |
| 06/10/2011 | Introduction to research essentials |

- 102MAE - Mechanical Science
- M04EKM - Study Skills and Research Methods
- 152MAM - Mechanical Science and Mathematics

Publications

Selected outputs

- **Fatima A.** and Amir I. Identifying direct electrical energy demand in wire-cut EDM, Mehran University research journal (submitted)
- **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
- **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
- **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

- **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
- **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
- **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.
- **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.

Languages

- Fluency in English and Urdu

Memberships and Affiliations

- Member WISE (Women in science and Engineering, UK)
- Member Pakistan Engineering council
- Member UK Engineering Council
- Member 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