Muhammad Fahad

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Personal Details

Gender : Male
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Awards and Accomplishments

- **Best Research Publication Award** by NED Alumni Association of Southern California (NEDAASC), 2019
- **Best Production and Manufacturing Engineering Paper** by Cogent Engineering, Taylor and Francis, 2017
- **Best Research Publication Award** by NED Alumni Association of Southern California (NEDAASC), 2017
- **Best Presentation Award** by 6th International Conference on Manufacturing Engineering and Process, University of Lisbon, Portugal, 2017
- **Best Paper Award** by 6th International Mechanical Engineering Congress, Karachi, Pakistan, 2016
- **Excellent Paper Award** by 4th International Conference on Key Engineering Materials, Bali, Indonesia, 2014
- **Best Use of Intellectual Property Award** by Engineering YES, United Kingdom, 2010
- **Scholarship** by NED University to Pursue PhD at Loughborough University (UK), 2008
- **Scholarship** by NED University to Pursue MSc at Loughborough University (UK), 2005
- **Gold Medal** on achieving First Class First Position (87% Marks) in BE Examinations, 2004

Qualification

- **PhD (Mechanical Engineering),** Loughborough University (United Kingdom), 2008-2011
- **MSc (Manufacturing Management),** Loughborough University (United Kingdom), 2005-2006
- **BE (Industrial and Manufacturing),** NED University of Engineering and Technology (Pakistan), 2000-2004

Career & Experience

Department of Industrial and Manufacturing Engineering,

NED University of Engineering and Technology (Pakistan)

• **Associate Professor**	From 26th May 2011 till Date
Responsibilities	– Co-Chairman (Since May 2021) – Director Product Development Centre – Projects Coordinator (2012)
• **Assistant Professor**	From 17th April 2007 - 25th May 2011
Responsibilities	– In-charge of Industrial Automation Lab
• **Lecturer**	From 23rd February 2004 - 16th April 2007
Responsibilities	– Class Advisor

Research and Industrial Projects

PhD

- Topology Optimization for Additive Manufacturing Processes (In Progress)
- Mathematical modelling for strength of 3D printed parts
- To formulate a model for improving automated enterprise architecture development process

Masters

- Implementation of Waste Assessment Model in a Batch Type Industry (2020).
- Implementation of Total productive maintenance (TPM) and equipment failure mode and effect analysis (EQFMEA) for reducing downtime of equipment (2019).
- Process improvement in a firm via implementation of lean manufacturing tools and techniques (2019).
- To design and develop a computerized system for leveling build platform of a 3D printer (2017).
- Evaluation of Geometric Dimensioning and Tolerances (GD&T) of 3D Printed Components (2016).
- Evaluation of Mechanical Properties of 3D printed ABS (2016).
- Evaluation of Impact Properties of Curved Additive Manufacturing Components (2016)
- Sustainable manufacturing in the industries of Pakistan (2016).
- Mathematical Correlation for Solid Free Form Fabrication Process (2015).

Bachelors

- Implementation of SMED at STILE Ltd (2020)
- Implementation of TPM at STILE ltd (2020)
- Productivity improvement in a textile industry using lean tools (International Textiles, 2020)
- Productivity Improvement in a refrigeration plant through lean Manufacturing (2019)
- Productivity improvement at at Textile industry through application of Lean Tools (2019)
- Development of a photopolymer based 3D printing process (2018).
- Implementation of maintenance management framework in an industry (2018)
- Warehouse Operations Improvement in a Manufacturing Industry (Siemens Pakistan, 2017)
- Finite Element Simulation of 3D Printed parts (2017)
- Implementing Lean Manufacturing in a Home Textile Industry (Lucky Textiles, 2017)
- Implementation of Lean Manufacturing in a FMCG (National Foods, 2016)
- Productivity Improvement of a textile industry (Artistic Milleners, 2016)
- Implementing Maintenance Management Framework in a Manufacturing Industry (Siemens Pakistan, 2016)
- Design and fabrication of a 3D printer. (2015)

Teaching and Trainings

Post Graduate (Masters)	– Lean Manufacturing, – Maintenance Management	– Operations Research – Operations Management
Undergraduate (Bachelors)	– Computer Aided Manufacturing – Industrial Safety and Environment – Advance Manufacturing Processes – Operations Research	– Manufacturing Processes – Materials Engineering – Thermofluids – Thermodynamics

Publications

Book Chapters

1. **Muhammad Fahad**: *Additive Manufacturing*. Materials Processing for Engineering Manufacture, Edited by Zainul Huda, 10/2016: chapter 17: pages 357-378; Trans Tech Publications., ISBN: ISBN: 978-3-03835-721-6
2. **Muhammad Fahad**, Zainul Huda: *Computer Integrated Manufacturing*. Materials Processing for Engineering Manufacture, Edited by Zainul Huda, 10/2016: chapter 16: pages 327-353; Trans Tech Publications., ISBN: ISBN: 978-3-03835-721-6
3. S. T. Bukhari, S. Q. Bukhari, **M. Fahad**, "Sustainability Evaluation of Home Appliance Industry in Pakistan", Challenges for Technology Innovation: An Agenda for the Future, Edited by Fernando Moreira da Silva, 4/2017, CRC Press (Taylor and Francis), ISBN 9781138713741

Journal Publications

1. Muhammad Fahad, Syed Asad Ali Naqvi, Muhammad Atir, Muhammad Zubair, Muhammad Musharaf Shehzad: *Energy Management in a Manufacturing Industry through Layout Design*, Procedia Manufacturing, Volume 8, 2017, Pages 168-174, doi.org/10.1016/j.promfg.2017.02.020. (X Category)
2. **Muhammad Fahad**, Mahmood Khalid, Muhammad Nauman & Maqsood Ahmed Khan: Effect of deposition speed on the flatness and cylindricity of parts produced by three dimensional printing process. Journal of Physics: Conference Series.08/2017, 885. 012012. 10.1088/1742-6596/885/1/012012.
3. Shaheryar Atta Khan, Bilal Ahmed Siddiqui, **Muhammad Fahad**, Maqsood Ahmed Khan: *Evaluation of the Effect of Infill Pattern on Mechanical Strength of Additively Manufactured Specimen*. Materials Science Forum 03/2017; 887:128-132., DOI:10.4028/www.scientific.net/MSF.887.128
4. **Muhammad Fahad**, Marianne Gilbert, Phill Dickens: *Microscopy and FTIR investigations of the thermal gelation of methylcellulose in glycols*. Polymer Science Series A 01/2017; 59(1):88-97., DOI:10.1134/S0965545X17010047 (I F = 0.968)
5. Syed Asad Ali Naqvi, **Muhammad Fahad**, Muhammad Atir, Muhammad Zubair, Muhammad Musharaf Shehzad, Wenjun Xu: *Productivity improvement of a manufacturing facility using systematic layout planning*. Cogent Engineering 06/2016; 3(1)., DOI:10.1080/23311916.2016.1207296 (X Category)
6. **Muhammad Fahad**, Neil Hopkinson: *Evaluation and comparison of geometrical accuracy of parts produced by sintering-based additive manufacturing processes*. International Journal of Advanced Manufacturing Technology 06/2016;, DOI:10.1007/s00170-016-9036-z (I F = 2.633)
7. Javeria Younus, **Muhammad Fahad**, Maqsood A.Khan: *Evaluation and Benchmarking of Maintenance Organization and Planning/Scheduling at Automotive Industries of Pakistan*. Procedia CIRP, 09/2015; 40:712-716., DOI:10.1016/j.procir.2016.01.159
8. **Muhammad Fahad**, Maqsood Ahmed Khan, Marianne Gilbert: *Evaluation of Thermal Gelation of F-127 in a Non-Aqueous Solvent and its Suitability as a Support Material for Additive Manufacturing*. Advanced Materials Research, 03/2014; 911:226-231., DOI:10.4028/ www.scientific.net/AMR.911.226
9. **M. Fahad**, P. Dickens, M. Gilbert: *Novel polymeric support materials for jetting based additive manufacturing processes*. Rapid Prototyping Journal 06/2013; 19(4)., DOI:10.1108/13552541311323245 (I F = 3.099)
10. **Muhammad Fahad**, Neil Hopkinson: *Evaluation of Parts Produced by a Novel Additive Manufacturing Process*. Applied Mechanics and Materials 04/2013; 315:63-67., DOI:10.4028/www.scientific.net/AMM.315.63
11. **M Fahad**, M Gilbert, P Dickens: *Thermal gelation of Pluronic F-127 in ethylene glycol as non-aqueous solvent*. Plastics Rubber and Composites 04/2012; 41(3):148-156., DOI:10.1179/1743289811Y.0000000027 (I F = 1.543)

Conference Proceedings

1. Shaheen Perween, **Muhammad Fahad**, & Maqsood Ahmed Khan: A Review of Process Development Strategies in 3D Printing, Conference on Emerging Trends in Automotive Engineering (CETAE-17), Karachi, Pakistan, 12/2017
2. Muhammad Haris Yousuf, **Muhammad Fahad**, & Maqsood Ahmed Khan: Build Plate Levelling of a 3D Printer, Conference on Emerging Trends in Automotive Engineering (CETAE-17), Karachi, Pakistan, 12/2017
3. Shehdev Thahrani, Akash Meghwar, & **Muhammad Fahad**: Waste Assessment in Ball Pen Assembly Shop, Dollar stationary, Karachi, Conference on Intelligent Manufacturing and Sustainable Energy Systems (IMSES), Khairpur Mir's, Pakistan, 12/2017
4. Midhat Ali Siddiqui, Sheheryar Mohsin Qureshi, **Muhammad Fahad**, "Building on Technical

Competencies", International Conference on Applied Mechanics and Industrial Systems, Oman 12/2016

5. Muhammad Midhat Ali, **Muhammad Fahad**, Sheheryar Mohsin Qureshi: *Technical Competency Framework: Development and Implementation*. 6th International Mechanical Engineering Congress on Green Systems and Innovation, IEP, Karachi, Pakistan; 07/2016
6. **Muhammad Fahad**, Syed Tahir Bukhari, Jorrit Leijting: *Assessment and Comparison of Sustainability of Household Products Manufactured in Pakistan using LCA*. 6th International Mechanical Engineering Congress on Green Systems and Innovation, IEP, Karachi, Pakistan; 07/2016
7. Syed Asad Ali Naqvi, **Muhammad Fahad**, Muhammad Atir, Muhammad Zubair, Muhammad Musharaf Shehzad: *Design and Evaluation of Layout for an Energy Efficient Facility*. 6th International Mechanical Engineering Congress on Green Systems and Innovation, IEP, Karachi, Pakistan; 07/2016
8. Shaheryar Atta Khan, **Muhammad Fahad**, Maqsood Ahmed Khan: *Green Additive Manufacturing*. 6th International Mechanical Engineering Congress on Green Systems and Innovation, IEP, Karachi, Pakistan; 07/2016
9. Shaheen Perween, **Muhammad Fahad**, Maqsood Ahmed Khan: *Trends and Future Perspectives in Additive Manufacturing*. Proceedings of First International Conference on Advanced Materials and Process Engineering, Karachi, Pakistan; 12/2015
10. Jasim Arif Ali, Syed Zohaib Ali Naqvi, Rehan Afzal, Tufail Ahmed Memon, **Dr. Muhammad Fahad**, Dr. Maqsood Ahmed Khan: *Design and fabrication of a three dimensional printing machine*. First International Symposium on Automotive and Manufacturing Engineering (SAME), Islamabad, Pakistan; 11/2015
11. Shaheryar Atta Khan, Bilal A. Siddiqui, **Muhammad Fahad**: *Evaluation of Additive Manufacturing Techniques for Fabrication of Propellers for SUAVs*. Fourth International Conference on Aerospace Science & Engineering (ICASE-2015), Islamabad; 09/2015, DOI:10.13140/RG.2.1.4263.3441
12. Shaheryar A. Khan, Bilal A. Siddiqui, **Muhammad Fahad**: *Evaluation of additive manufacturing techniques for fabrication of propellers for SUAVs*. 2015 Fourth International Conference on Aerospace Science and Engineering (ICASE); 09/2015, DOI:10.1109/ICASE.2015.7489510
13. Javeria Younus, **Dr. Muhammad Fahad**, Dr. Maqsood A.Khan: *Evaluation of maintenance management practices in automotive industries of Pakistan*. 5th International Mechanical Engineering Congress (5th IMEC), Karachi; 05/2015
14. Basit Ali, Sarah Jaweed, **Muhammad Fahad**: *Implementation of Waste Assessment Matrix and Line Balancing For Productivity Improvement in a High Variety/High Volume Manufacturing Plant*. 5th INTERNATIONAL MECHANICAL ENGINEERING CONGRESS (FIMEC-2015), Karachi, Pakistan; 05/2015
15. **Muhammad Fahad**, Marianne Gilbert, Phill Dickens: *Gel formation of Methylcellulose in Binary Solvent (water and glycol) and its evaluation as support material for jetting based Additive Manufacturing (AM) processes*. International Conference on Materials Processing and Technology (MAPT), Hawaii, Hawaii (USA); 06/2012
16. **Muhammad Fahad**, Neil Hopkinson: *A new benchmarking part for evaluating the accuracy and repeatability of Additive Manufacturing (AM) processes.*. 2nd International Conference on Mechanical, Production and Automobile Engineering (ICMPAE 2012), Apr. 2012., Singapore; 04/2012
17. **Muhammad Fahad**, Marianne Gilbert, Phill Dickens: Novel polymeric gels and their use for jetting based additive manufacturing (AM) processes. International Conference on Materials Processing and Technology (MAPT), Phuket, 2011, Phuket (Thailand); 06/2011
18. **Fahad, M**., M. Gilbert, and P. Dickens. "Research into a novel support material for jetting based RM process" Proceeding of 21st Annual International Solid Freeform Fabrication Symposium, Texas (USA), 2010, 159-167.

Memberships and Affiliations

- Member Pakistan Engineering Council
- Member Institute of Engineers Pakistan
- Fellow Pakistan Academy of Engineering
- Technical Program Committee Member, International Conference on Manufacturing Engineering and Process, University Lisbon, Portugal
- Member International Mechanical Engineering Congress, IEP and NED University
- Member Conference on Emerging Trends in Automotive Engineering
- Member Board of Review Audit Department, NED University
- Expert Member Board of Studies, Karachi Tools, Dies and Molds Center