Syed Amir Iqbal, Ph.D.

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EDUCATION

- Ph.D.(Mechanical Engineering) (2008) -- **School of MACE, The University of Manchester United Kingdom**
  Thesis title: *Experimental and Finite Element Modelling of High Speed Machining Process: Establishing Integrity of Model Inputs.*
- M.E.(Mechanical Engineering) (2002) -- **NED University of Engineering & Technology**
  Major in Manufacturing Systems
  Achieved a CGPA of 3.91 out of 4.0
- B.E.(Mechanical Engineering) (1995) -- **NED University of Engineering & Technology**
  Achieved 81% marks.

ACADEMIC INTERESTS

- High Speed Machining (HSM) process.
- Non Traditional Machining (NTM) processes.
- Application of Finite Element Modelling and Analysis for Manufacturing Processes.
- Metal Forming Processes.
- Facilities Planning.
- Discrete Event Simulation.

WORK EXPERIENCE

Full time

Professor	**2008 - till date**	**Department of Industrial and Manufacturing Engineering NED University of Engg. & Tech. Karachi, Pakistan**
Associate Professor	**2004 - 2008**	**Department of Industrial and Manufacturing Engineering NED University of Engg. & Tech. Karachi, Pakistan**
Assistant Professor	**2001 - 2004**	**Department of Industrial and Manufacturing Engineering NED University of Engg. & Tech. Karachi, Pakistan**
Lecturer	**1998 - 2001**	**Department of Mechanical Engineering NED University of Engg. & Tech. Karachi, Pakistan**
Maintenance Engineer	**1995 – 1998**	**Pak-land Cement Ltd, Karachi, Pakistan Engaged in maintenance activities of heavy mechanical plant.**

Part Time

Teaching Assistant	**2005 - 2008**	**School of MACE, The University of Manchester.** Engaged in different teaching and related activities (conduct of labs, tutorials and assessment of under- & post-graduate exam scripts, lab reports etc.)
Part Time Faculty	**2008- till date**	**Master's (Evening Programme), NED University of Engineering Technology, Karachi** Engaged in teaching of Master of Engineering & Engineering Management Programmes. Supervising Research based projects.
Visiting Faculty	**2012- till date**	**Institute of Business Management (IoBM), Karachi.** Engaged in teaching at Master of Business Administration Programme.

TEACHING ASSIGNMENTS

Undergraduate Courses	**Graduate Courses**
Engineering Drawing, Engineering Mechanics, Mechanics of Materials, Manufacturing Processes, Metal Forming & Finite Element Analysis.	Reliability & Quality Engineering, Advanced Statistics, Facilities Planning & Layout, Project Management, Production & Operations Management & Business Process Reengineering.

Project Supervision:

Supervision of under graduate projects	Fifty plus (50+)
Supervision of master's level independent research studies	Twenty plus (20+)

- Convener of committee for the development of Bachelors program in Management Science at NED University, commenced from January-2015
- Convener of committee for the development of *Supply Chain Management* specialization stream for Masters of Engineering Management programme at NED University.
- Involved in revision and updating of almost all under- and post-graduate courses taught during past twelve years.

MANAGEMENT RESPONSIBILITIES

- Dean, Faculty of Mechanical & Manufacturing Engineering (from Jan-2020-till date)
- Currently Serving as Acting Dean, Faculty of Chemical & Process Engineering (from -2023-till date)
- Chairperson, Department of Industrial & Manufacturing Engineering (from Aug-2008-Jan-2020).

- Deputy Chairman, Admissions Committee, NED University of Engineering & Technology (from 2009-till date).
- Ex-Officio member Board of Faculty, Academic Council, Advanced Studies Research Board (ASRB), Finance & Planning Committee (FPC) & Senate, NED University of Engineering & Technology.
- Member Advanced Studies Research Board, NED University of Engineering & Technology.(2008-2014)
- Member Finance & Planning Committee, NED University of Engineering & Technology (2008-2014).
- Director Quality Enhancement Cell/Management Representative ISO-9001:2008, NED University of Engineering & Technology (2011-12).
- As department Chairperson, responsible for program accreditation from Pakistan Engineering Council.

EXTERNAL ROLES

- Programme Evaluator Outcome Based Education (OBE), Pakistan Engineering Council (PEC).
- Member, Academic Council of Dawood University of Engineering & Technology, Karachi, as nominee of Chief Minister of Sind.
- Co-opted Expert Member for Mechanical Engineering and Allied Programmes, Chartered Inspection and Evaluation Committee (CIEC), Sindh Higher Education Commission (SHEC).
- Expert member on the Board of Studies of Pak Swiss Training Center (PSTC) (Vocational Training Center, Karachi (Institute affiliated with NED University).
- Expert member (for Mechanical Engineering) in the Selection Board of DHA Suffa University, Karachi.
- Member Board of Faculty, DHA Suffa University.
- Member Curriculum Review Committee (CRC) for MBA Industrial Management Programme, Institute of Business Management (IoBM), Karachi.
- Member of NED University Affiliation Committee.
- Actively involved in a training and development project on Productivity Enhancement at Pakistan Petroleum Limited (PPL), using the theme of Cost of Quality.

HONOURS

- Recipient of scholarship for pursuing PhD studies at The University of Manchester, England under “Faculty Development Programme” awarded by NED University of Engineering & Technology, 2005-2008.
- Recipient of prestigious “The University Best Teacher Award” - 2009, conferred by Higher Education Commission (HEC) Pakistan.

- Member National Curriculum Revision Committee, Higher Education Commission (HEC), Pakistan, for Industrial Engineering curriculum -2011 & 2017.
- Recipient of ERAMUS MUNDUS MOBILITY ASIA (EMMA) staff mobility for one month period at The Lucian Blaga University at Sibiu (ULBS), Romania, during the month of April-2012.

JOURNAL REVIEWER

Reviewer for

- International Journal of Advance Manufacturing Technology, Published by Springer.
- Total Quality Management Journal, Published by Emerald Group Publishing.

EXAMINER IN PhD DEFENSE

PhD external examiner for PhD theses titled:

- Shah, A. "Investigations of variables effecting kerf width, surface roughness and material removal rate in Wire Electrical Discharge Machining", advisor Dr. Mufti, N. A., Department of Industrial & Manufacturing Engineering, University of Engineering & Technology, Lahore.
- Amin, K. M. "Optimizing effects of Superheat and cooling rate on properties of squeeze cast Aluminum Alloys for High Performance Structural Applications", advisor Dr. Mufti, N. A., Department of Industrial & Manufacturing Engineering, University of Engineering & Technology, Lahore.
- Naveed, R. "Optimization of Process Parameters for Electric Discharge Machining of Tungsten Carbide Tooling", advisor Dr. Mufti, N. A., Department of Industrial & Manufacturing Engineering, University of Engineering & Technology, Lahore.
- Warsi, S. S. "Analysis of Specific Cutting Energy Consumption during Machining of Al 6061-T6 alloy, using the Energy Map Approach", advisors Dr. Riaz Ahmed & Dr. H. I. Jaffery, School of Mechanical & Manufacturing Engineering (SMME), National University of Science & Technology, Islamabad.
- Akhtar, S. "Improvement in Magnetic Properties of Samarium-Cobalt (1:5) Alloy through Controlled Material Processing". advisors Dr. Mushtaq Khan & Dr. H. I. Jaffery, School of Mechanical & Manufacturing Engineering (SMME), National University of Science & Technology, Islamabad.

FUNDED RESEARCH PROJECTS

- "Investigation of the Distortion and Surface Integrity of Aluminium Aerospace Grade Alloys during High Speed CNC Milling Machining Operations" PI: Dr. Syed Amir Iqbal, Programme: National Research Program for Universities (NRPU)-2021-23, Sponsored by Higher Education Commission (HEC), Pakistan, amounting PKR 19 million.
- "Optimization of Tooling and Machining Parameters for Enhanced Quality of Holes in Composite Laminates" as Co-PI: Dr. Syed Amir Iqbal, Programme: National Research

Program for Universities (NRPU)-2022-23, Sponsored by Higher Education Commission (HEC), Pakistan, amounting PKR 4.732 million.

- "Development of Thermal Assisted Friction Stir Welding Machine for Solid State Joining of Space Grade Aluminum Alloys used for Cryogenic Tanks" as Co-PI: Dr. Syed Amir Iqbal. Programme: National Research Program for Universities (NRPU)-2022-25, Sponsored by Higher Education Commission (HEC), Pakistan, amounting PKR 18.684 million.
- Independent Research Project "Development of weld surfacing technique with addition of nanomaterials for Aluminum alloys substrate" as Co-PI: Dr. Syed Amir Iqbal, Sponsored by NED UET 2021-22, amounting PKR 1 Million.
- Co-PI in capacity building research grant titled "GetInnovative4Impact - 101083121 - GAP-101083121" funded by European Union-2022.

ON GOING PhD PROJECTS

- Currently advising four (04) PhD students. The research areas/topics are:
    - Optimization of Tooling and Machining Parameters for Enhanced Quality of Holes in Composite Laminates.
    - Energy Consumption Optimization for a Large Scale Industrial (Steel Hot Rolling) Process.(PhD completed-2022)
    - Development of a Framework for assessing Quality Engineering Performance in the Automobile Sector.
    - Optimization of Process Parameters for Distortion and Surface Integrity of Thin-Walled Aerospace Grade Aluminum Alloy Components during Machining Process.

LIST OF PUBLICATIONS

1. **S. A. Iqbal**, P. T. Mativenga, M. A. Sheikh, "An evaluation of flow stress material models of AISI1045 for high speed machining", 331-336, in proc. 4th International Conference on Manufacturing Research 2006, Liverpool, UK.

2. **S. A. Iqbal**, P. T. Mativenga, M. A. Sheikh, "Characterization of the Machining of AISI 1045 steel over a wide range of cutting speeds-Part 1: Investigation of contact phenomena", 909-916, 221(5), Proceedings of IMechE Part B: Journal of Engineering Manufacture. 2007

3. **S. A. Iqbal**, P. T. Mativenga, M. A. Sheikh, "Characterization of the Machining of AISI 1045 steel over a wide range of cutting speeds-Part 2: Evaluation of flow stress models and interface friction distribution schemes", 917-926, 221(5), Proceedings of IMechE Part B: Journal of Engineering Manufacture, 2007

4. **S. A. Iqbal**, P. T. Mativenga, M. A. Sheikh, "Contact length prediction: mathematical models and effect of friction schemes on FEM simulation for conventional to HSM of AISI 1045 steel", 3(1/2), 18-33, Int. J. Machining and Machinability of Materials, 2008.

5. **S. A. Iqbal,** P. T. Mativenga, M. A. Sheikh, "A comparative study of tool chip contact length of two engineering alloys for a wide range of cutting speeds", Intl. J. Advanced Manufacturing Technology, 05/2008; 42(1):30-40.

6. **S. A. Iqbal**, P. T. Mativenga, M. A. Sheikh, "A sensitivity study of the effects of interface heat transfer coefficient on FE modelling of machining process for a wide range of cutting speeds", 6th International Conference on Manufacturing Research – ICMR-2008, 9-11 September 2008, Brunel University, Middlesex, UK.

7. **S. A. Iqbal**, P. T. Mativenga, M. A. Sheikh, "An investigative study of interface heat transfer coefficient for the FE modelling of High Speed Machining process", 1405-1416, 222, Proc. IMechE Part B: Journal of Engineering Manufacture, 2008

8. M. Salman, **S. A. Iqbal** and R. Khalid Implementing Supply Chain Operation Reference (SCOR) Model in Manufacturing Firm of a Developing Country, 1045-1055, in proc. The 19th International Conference on Industrial Engineering and Engineering Management, October 27-28, 2012, Beijing, China, Springer.

9. A. Zulqarnain, **S. A. Iqbal** and R. Khalid, Implementing Six Sigma methodology in a developing country, International Journal of Process Management and Benchmarking, Vol. 3, No. 3, 314–333. (2013).

10. S. M. Hasan, M. Wasif, and **S. A. Iqbal**. A Collaborative Framework for Product Development in Extended Enterprise, 71-76 International Conference on Emerging Trends in Engineering and Technology (ICETET'2013) Dec. 7-8, 2013 Patong Beach, Phuket (Thailand)

11. M. Wasif, Z. C. Chen, S. M. Hasan and **S. A. Iqbal**. An Accurate Cutter-head Geometry for the CNC Face-milling of Hypoid Gears. 77-83International Conference on Emerging Trends in Engineering and Technology (ICETET'2013) Dec. 7-8, 2013 Patong Beach, Phuket (Thailand)

12. S. M. Hasan, J. Gao, M. Wasif and **S. A. Iqbal**. An Integrated Decision Making Framework for Automotive Product Development with the Supply Chain, The 8th International Conference on Digital Enterprise Technology - DET 2014 held in March 25th –28th, 2014 in Stuttgart, Germany. Paper appeared in Procedia CIRP 25 (2014) 10 - 18

13. Tahir Mumtaz Malik, Rameez Khalid, Ali Zulqarnain, **S. A. Iqbal,** (2016) "Cost of quality: findings of a wood products ' manufacturer", The TQM Journal, Vol. 28 Issue: 1, pp.2-20, https://doi.org/10.1108/TQM-01-2014-0014

14. Aqeel Ahmed, Liming Wang, **S. A. Iqbal**, "An Efficient Method of Collision Detection For 5-axis CNC Milling", 5th International Mechanical Engineering Congress, 9-10th May, 2015, Karachi, Pakistan.

15. M. Rababah, M. Wasif, A. Ahmed, **S. A. Iqbal**, (2017) "Accurate Machine-Settings for the FaceMilling of Hypoid Gears", International Review of Mechanical Engineering, Vol. 11, No. 12, page 1-12, Praise Worthy Prize, 2018. (DOI 10.15866/ireme.v11i12.14194)

16. Irshad Ullah, Muhammad Wasif, Muhammad Tufail, Muhammad Adnan Khan, and **S. A. Iqbal,** Experimental Investigation of Cutting Parameters Effects on the Surface Roughness and Tools Wear during the Drilling of Fibre Reinforced Composite Materials, Vol. 38 no. 3717-728, Mehran University Research Journal of Engineering & Technology' (HEC – X category Journal) in **2018**
17. A. Fatima and **S. A. Iqbal,** Identifying direct electrical energy demand in wire-cut EDM. **Accepted for Publication** in Mehran University Research Journal of Engineering & Technology' (HEC – X category Journal) in **2018**
18. M. Wasif, **S. A. Iqbal**, A. Ahmed, M. Tufail, M. Rababah, "Optimization of simplified grinding wheel geometry for the accurate generation of end-mill cutters using the five-axis CNC grinding process", International Journal of Advanced Manufacturing Technology, 105, page pages 4325–4344, 2019.
19. M. Rababah, M. Wasif, A. Ahmed, **S. A. Iqbal**, "Accurate Machine-Settings for the Face-Milling of Hypoid Gears", International Review of Mechanical Engineering (IREME), Vol. 11, No. 12, page 931-944, 2018. (Scopus)
20. M. Wasif, **S.A. Iqbal,** M. Tufail, H. Karim, "Experimental Analysis and Prediction of Springback in V-bending Process of High-Tensile Strength Steels", Transactions of the Indian Institute of Metals, Vol. 73, pages 285-300, 2020.
21. M. Rababah, M. Wasif, & **S.A. Iqbal,** "Parametric relationship between hypoid gear teeth and accurate face-milling cutter", Advances in Manufacturing, Vol. 8, pages 537-555, 2020. https://doi.org/10.1007/s40436-019-00286-x
22. M. Wasif, **S.A. Iqbal,** A. Fatima, S. Yaqoob, M. Tufail, "Experimental Investigation for the Effects of Wire EDM Process Parameters over the Tapered Cross-Sectional Workpieces of Titanium Alloys (Ti6Al-4V)", Mechanical Sciences, Vol. 11, issue 1, page 221-232, 2020. https://doi.org/10.5194/ms-11-221-2020
23. M.A. Khan, M. Wasif, M. Tufail, **S.A. Iqbal,** Irshadullah, "Impact of Process Parameters on the Surface Integrity of Fiber Reinforced Composites (FRC) during the Milling Process," Journal of Space Technology, Vol. 10, issue 1, pages 64-74, 2021. https://ist.edu.pk/jst-previous-issues-july-2020
24. A. Ahmed, M. Wasif, A. Fatima, L. Wang, **S. A. Iqbal,** "*Determination of the feasible setup parameters of a workpiece to maximize the utilization of a five-axis milling machine*", Frontiers of Mechanical Engineering, Vol. 16, pages 298–314, 2021. https://doi.org/10.1007/s11465-020-0621-3
25. M. Wasif, A. Fatima, **S. A. Iqbal,** M. Tufail, H. Karim, "Analysis and Optimization of Spring back during the V-bending of Hot-Rolled High Strength Steels (JSH440)", Journal of Engineering Research, online available on 27-10-2021. https://doi.org/10.36909/jer.11027
26. M. Wasif, **S. A. Iqbal,** Y. A. Khan, M. Tufail, "Analysis and Multi-Objective Optimization of Wire Cut Process Parameters for Efficient Cutting of Tapered Carbon Steels Using Wire EDM", Journal of Engineering Research, online available on 03-11-2021. https://doi.org/10.36909/jer.11965

27. M. Wasif, A. Fatima, A. Ahmed, **S. A. Iqbal,** "Investigation and Optimization of Parameters for the Reduced Springback in JSC-590 sheet metals occurred during the V-bending Process", Transaction of Indian Institute of Metals, Vol 74, page 2751–2760 . https://doi.org/10.1007/s12666-021-02357-9

28. H. Rehman, F. Boor, M. Wasif, **S. A. Iqbal**, "A Novel Method for Process Planning of Die and Mould Manufacturing using Expert System Approach", Transactions of Famena, accepted on 13-09-21.

29. M. Wasif, Y. A. Khan, A. Zulqarnain, **S. A. Iqbal,** "Analysis and Optimization of Wire Electro-Discharge Machining Process Parameters for the Efficient Cutting of Aluminum 5454 Alloy", Alexandria Engineering Journal, available online, 2021. https://doi.org/10.1016/j.aej.2021.11.048

30. Noor, K., Siddiqui, M.A. & **Iqbal, S.A.** Multi-objective Optimization of Parameters in CNC Turning of a Hardened Alloy Steel Roll by Using Response Surface Methodology. Arab J Sci Eng (2022). https://doi.org/10.1007/s13369-022-07117-5

31. A. Zulqarnain, M. Wasif, **S. A. Iqbal,** "Developing a Quality 4.0 Implementation Framework and Evaluating the Maturity Levels of Industries in Developing Countries", Sustainability 2022, 14(18), 11298; https://doi.org/10.3390/su141811298 - 08 Sep 2022

32. M. Kashif, M. Wasif, **Syed Amir Iqbal** "Optimizations of Drilling Parameters for S-glass, Tygasil & Carbon Fiber Laminates for the improved surface finish of holes" Journal of Mechanical Science and Technology- **Under review**

33. I. Ahad, M. Kashif; M. Wasif; T. Jamil; **S. A. Iqbal**, B. A. Zia, "Enhancing Drilling Performance in Composite Laminates: A Comprehensive Review of Damage Mitigation Techniques" Journal of Materials Research and Technology, **Under review**
