

Syed Amir Iqbal *Ph.D.*

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EDUCATION

- Ph.D.(Mechanical Engineering) -- **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) -- **NED University of Engineering & Technology**
Major in Manufacturing Systems
Achieved a CGPA of 3.91 out of 4.0
- B.E.(Mechanical Engineering) -- **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	Pakland 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.

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, & Business Process Reengineering.

Project Supervision:

Supervision of under graduate projects	Thirty Six (36)
Supervision of master's level independent studies	Eleven (11)

- 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 eight years.

Management Responsibilities

- Chairman, Department of Industrial & Manufacturing Engineering (from 2008-till date).
- Deputy Chairman, Admissions Committee 2018, NED University of Engineering & Technology (from 2009 - till date).
- Ex-Officio member Board of Faculty, Academic Council & 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

- Expert member on the Board of Studies of Pak Swiss Training Center (PSTC) & Karachi Tools Dies & Molds Center (KTDMC), Karachi. (Vocational Training Center, Karachi (Institutes affiliated with NED University).
- Expert member (for Mechanical Engineering) in the Selection Board of DHA Suffa University, Karachi.
- Co-Opted 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.

- Ms. Rakhshanda Naveed “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.

RESEARCH CONTRIBUTION

- The research contribution deals with experimental and Finite Element Modelling of High Speed Machining (HSM) process encompassing: Material constitutive behavior, interface contact tribology, contact phenomena and estimation of interface heat transfer coefficient at high cutting speeds. List attached.
- Currently advising four (04) PhD students. The working areas are:
 - Optimization of process parameters in Electric Discharge Machining (EDM) of aerospace alloys.
 - Use electrospinning method for the development of photo-anodes for Dye Sensitized Solar Cells (DSSC) & its optimization.
 - Supply Chain performance evaluation.
 - Quality Engineering.
- Research publications submitted/under preparation on following areas:
 - Electric Discharge Machining (EDM) and Wire Electric Discharge Machining (WEDM) of Engineering & Aerospace alloys (different grades of Steel, Aluminum & Ti6Al4V), in the context of machining parameter optimization using DOE techniques.
 - Tool wear and contact phenomena in the high speed turning of tool & die steel.
 - Parameter / Process optimization of deep hole drilling for three (03) different materials (Mild Steel, Aluminum & Titanium Alloy).
 - An experimental investigation on the effect of process parameters for Wire Electric Discharge Machining (WEDM) of tapered cross section work pieces.
 - An investigative study of Electric Discharge Machining (EDM) of dissimilar metals in parallel (side by side) arrangement.
 - Comparative Study of MRR, Surface Roughness and tool wear rate for SKD11 (tool material) on Die Sinking Electro Discharge Machining (EDM) process using different electrode materials.
 - Optimization of Process Parameters for the Plasma Coating of Aerospace Alloys.

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. 77-83 International 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, **Syed Amir 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, Syed Amir 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 Face Milling 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 **Syed Amir Iqbal**, Experimental Investigation of Cutting Parameters Effects on the Surface Roughness and Tools Wear during the Drilling of Fiber Reinforced Composite Materials, **under review** submitted to Mehran University Research Journal of Engineering & Technology' (HEC – X category Journal) in **2018**.
17. Muhammad Wasif, Hassan Karim, **Syed Amir Iqbal**, Muhammad Tufail, An investigative Study of Spring Back in High Tensile Sheet-Metal during Close Die V-Bending Process – Experimental Analysis, **under review** submitted to Journal of the Brazilian Society of Mechanical Sciences and Engineering published by Springer, in **2018**.

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