CV
Profile

Professor Dr. Liaqat Ali
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Date of Birth: 02 July 1970
Nationality: Pakistani
CNIC: 17301-9388684-5

EDUCATIONAL QUALIFICATIONS:

Doctor of Philosophy (Ph.D) in Mechanical Engineering (CAD-CAM / CNC) **2006**
Loughborough University, United Kingdom
Masters of Science in Mechanical Engineering (Advanced Manufacturing Technology) **2002**
University of Manchester, United Kingdom.
Bachelor of Science in Mechanical Engineering **1994**
University of Engineering and Technology (UET), Peshawar.
HSSC (Pre Engineering) Federal Board of Intermediate and Secondary Education Islamabad **1989**
SSC (Pre Engineering) Federal Board of Intermediate and Secondary Education Islamabad **1986**

Pakistan Engineering Council (PEC):
Professional Member PEC # MECH/1146

PROFESSIONAL JOB EXPERIENCE:
Total: 28 Years, (14 years of industrial experience)

1. Professor (Director ORIC) HITEC University, **(1st Sept 2024 to date)**
2. Professor (Head of Mechanical Engineering Department) HITEC University, **(Oct 2019 to 30 Aug 2024)**
3. Professor (Head of Mechanical Engineering Department) HITEC University, **(Oct 2019 - Aug 2024)**
4. Professor (Head of Mechanical Tech / Acting DEAN) University of Technology, Nowshera **(Jan 2018 to Sept 2019)**
5. Head of Design and Manufacturing Department at National University of Sciences and Technology School of Mechanical and Manufacturing Engineering (NUST SMME) – **(Aug2011 to Jan 2018)**
6. Worked as Astt Manager, Manager and then General Manager (Tech) at National Development Complex (NESCOM) Government of Pakistan – **(Jan 1998 to Dec 2011)**
7. Assistant Manager Heavy Mechanical Complex **(Oct 1995 to Sept 1996)**

PROFESSIONAL POSITIONS HELD:

1. Currently working as Director ORIC at Hitec University Taxila
2. Worked as Head of Mechanical Department at UoT Nowshera
3. Worked as Head of Department (Design and Manufacturing Engineering) and Head of Local Purchase committee at the department of SMME-NUST

4. Worked as Head of Technical Team at NDC-NESCOM Government of Pakistan
5. Worked as Project Manager at NDC-NESCOM Government of Pakistan (Defence related Technical research projects)

RESEARCH / INDUSTRIAL PROJECTS COMPLETED (AT NUST-SMME):

1. Design and development of Canal-based Hydrokinetic Turbine Prototype for DTCE, Islamabad
2. Design and development of Lab-scale Hydraulic Flume system (Abasyn University)
3. Design and Development of Prosthetic Knee joint for amputees, a project of MVRDE-(Pak Army)
4. Consultancy for technical expertise regarding CNC 4-axis milling machine and FDM (Rapid Prototyping) to AARDIC-HIT
5. Design and Development of Autoclave for experiments on various chemicals
6. Design of composite material wind tunnel for DESTO (NESCOM)
7. A number of UG and PG projects

RESEARCH INTERESTS

An active member of Design and Manufacturing Research Group (DMRG) at NUST School of Mechanical and Manufacturing Engineering.
Research interests include:

1. Feature Based machining and measurement of parts based on STEP-NC for milling parts on CNC Machines
2. Mechanical Design and Analysis of Mechanisms (Statics and Dynamics)
3. Computer Aided Design, Manufacture and Mechanical Inspection
4. Reverse Engineering of mechanical products and parts

WORKSHOPS, SEMINARS, CONFERENCES, ETC. CONDUCTED/ ORGANIZED

1. **International Conference on Robotics & Emerging Allied Technologies in Engineering (ICREATE)** held from April 22 – 24, 2014 at National University of Sciences and Technology (NUST), School of Mechanical and Manufacturing Engineering (SMME), Islamabad, Pakistan
2. **Conduction of two day workshop for industry professionals on Geometric Dimensioning and Tolerancing ASMEY14.5** at Professional Development Centre National University of Science and Technology Pakistan 20th Mar-21 Mar 2014
3. **Distinguished Innovations, Collaboration and Entrepreneurship (DICE) Automotive Event** NUST Islamabad 16 Dec 2014
4. **DICE 2016 Mega Innovation & Entrepreneurship Event NUST** Islamabad Dec 2016

PROFESSIONAL / TECHNICAL COURSES:

Attended

1. **Non-Linear Finite Element Analysis and Applications** from Pakistan Institute of Engineering and Applied Sciences (Pakistan Atomic Energy PIEAS Nilore)
2. **CNC Programing for SHOPMILL-SIEMENS 840D CONTROLLER** (BRIDGEPORT United Kingdom)

3. **Advance Geometric Dimensioning and Tolerancing** from National Institute of Design and Analysis Karachi (NIDA)
4. **Diploma in Project Management** from Leadership and Development Associates (LDMA) Islamabad

Conducted

1. **Computer Aided Design (CAD), Computer Aided Manufacturing (CAM) and Computer Numerical Control (CNC) machining** (Five Weeks March 2014 at National University of Science and Technology-NUST School of Mechanical and Manufacturing Engineering)

2. **Computer Aided Design (CAD), Computer Aided Manufacturing (CAM) and Computer Numerical Control (CNC) machining** (Four Weeks June 2015 at National University of Science and Technology-NUST School of Mechanical and Manufacturing Engineering)

3. **Computer Aided Design (CAD), Computer Aided Manufacturing (CAM) and Computer Numerical Control (CNC) machining** (Five Weeks Oct 2015 at National University of Science and Technology-NUST School of Mechanical and Manufacturing Engineering)

4. **Geometric Dimensioning and Tolerancing ASMEY14.5** at National University of Science and Technology-NUST Professional Development Centre

MEMBERSHIPS

1. Professional Member PEC # MECH/1146
2. Member Board of Studies Mechanical CECOS University Peshawar
3. Member Board of Studies Mechanical Department University of Engineering and Tech Peshawar

RESEARCH PUBLICATION RECORD (List attached at the end)

List Of Publications - HEC Recognized "W" Cat with Impact Factor (Listed as below):	
International Journal Publications	33
Conference Publications	18
Book Chapter	01
Total	**52**

List of HEC recognized International Journals (W Category)

Ser	**Topic**	**Field**	**Name of Journal, Vol No.,Year, Published**	**Date of pub**
1	Development of a STEP-compliant inspection framework for discrete components	Manufacturing (Mechanical)	Journal of Engineering Manufacture (Proc IMechE Part B), Vol 219(7) 557–563, 2005	July 1, 2005
2.	Strategic advantages of interoperability for global manufacturing using CNC technology	Manufacturing (Mechanical)	Robotics and Computer-Integrated Manufacturing Vol (24) 699–708, 2008	Decembe r 2008

3.	Turbine Blade Manufacturing through Rapid Tooling (RT) Process and its Quality Inspection	Manufacturing (Mechanical)	Journal of Materials and Manufacturing Processes, Vol 28 (5) 534-538, 2013	03 May 2013
4.	Numerical Simulation of Melt Pool Instability in Selective Laser Melting (SLM) process	Lasers (Mechanical)	Lasers In Engineering, Vol. 28, pp. 319-336, 2013	2014
5.	Reconfigurable fixture locating layout for compliant sheet metal welded assemblies subjected to welding force variations	Manufacturing (Mechanical)	Journal of Engineering Manufacture (Proc IMechE Part B), Vol. 228(5) 740–750, 2014	May 1, 2014
6.	The Potential of Solar Powered Transportation and the case for Solar Powered Railway in Pakistan,	Solar (Mechanical)	Renewable and Sustainable Energy Reviews, Vol. 39, pp. 270-276, 2014	Novembe r 2014
7.	Transformation behavior and shape memory properties of high temperature shape memory alloy (Ti50Ni15Pd25Cu10) at various aging temperatures	Materials (Mechanical)	Journal Materials Science and Engineering-A: Structural Materials: Properties, Microstructure and Processing Vol. 619, pp. 171-179, 2014	1 Dec 2014
8.	Effect of precipitation hardening and thermo-mechanical training on microstructure and shape memory properties of Ti50Ni15Pd25Cu10 high temperature shape memory alloys	Materials (Mechanical)	Journal of Alloys and Compounds Vol. 616, pp. 275-283, 2014	15 Decembe r 2014
9.	Improvement in the Mechanical Properties of High Temperature Shape Memory Alloy (Ti50Ni25Pd25) by Copper (Cu) Addition	Materials (Mechanical)	Advances in Materials Science and Engineering, Vol 2015 pp 1-7, 2015 www.hindawi.com/journals/amse/ 2015/434923/	March 2015
10.	Optimization of Process Parameters for Plasma Arc Welding (PAW) of Austenitic Stainless Steel (304L) with Low Carbon Steel(A-36)	Materials (Mechanical)	Journal of Materials: Design and Applications (Proceedings of IMechE Part L), Vol 230 (2) 640-653, 2016	April 1, 2016
11.	Analysis of Weld Characteristics of Micro- Plasma Arc Welding (MPAW) and Tungsten Inert Gas Welding (TIG) of Thin Stainless Steel (304L) Sheets	Materials (Mechanical)	Journal of Materials: Design and Applications (Proceedings of IMechE Part L), Vol 230(6) 1005–1017, 2016	Dec 1, 2016
12.	Evaluation of eddy current signatures for predicting different heat treatment effects in chromium–vanadium (CrV) spring steel	Materials (Mechanical)	Journal of Materials: Design and Applications (Proceedings of IMechE Part L) Vol 231(3) 259-271, 2017	April 1, 2017
13.	Sheet-metal bend sequence planning subjected to process and material variations	Manufacturing (Mechanical)	International Journal of Advanced Manufacturing Technology (IJAMT), Vol 88(1) 815-826, 2016	30 April 2016
14.	Statistical Analysis of Process Parameters in Micromachining of Ti-6Al-4V Alloy	Machining (Mechanical)	Journal of Engineering Manufacture (Proc IMechE Part B), Vol 230(6) 1017-1034, 2016	June 1, 2016

15.	Hybridization of simulated annealing with genetic algorithm for cell formation problem	Manufacturing (Mechanical)	International Journal of Advanced Manufacturing Technology, Vol 286(5) 2243-2254, 2016	22 January 2016
16.	Development of a STEP- compliant design and manufacturing framework for discrete sheet-metal bend parts	Manufacturing (Mechanical)	Journal of Engineering Manufacture (Proc IMechE Part B), Volume: 232 issue: 6, page(s): 1090-1104	May 1, 2018
17	Development of energy consumption map for orthogonal machining of Al 6061-T6 alloy	Manufacturing (Mechanical)	Journal of Engineering Manufacture (Proc IMechE Part B), Volume: 232 issue: 14, page(s): 2510-2522	December 1, 2018
18.	Influence of Cu addition on transformation temperatures and thermal stability of TiNiPd high temperature shape memory alloys	Materials (Mechanical)	Journal of Materials: Design and Applications (Proceedings of IMechE Part L (Article in Press), 2017	April 14, 2017
19	Development and analysis of energy consumption map for high-speed machining of Al 6061-T6 alloy	Manufacturing Technology (Mechanical)	International Journal of Advanced Manufacturing Technology (2018) Volume 96, Issue 1–4, pp 91–102	18 Jan 2018
20	Numerical and experimental investigation of Johnson–Cook material models for aluminum (Al 6061-T6) alloy using orthogonal machining approach	Machining (Mechanical)	Advances in Mechanical Engineering 2018, Vol. 10(9) 1–14	September 14, 2018
21	Analysis of Burr Formation in Low Speed Micro-milling of Titanium Alloy (Ti-6Al-4V)	Machining (Mechanical)	Mech. Sci., Volume 9, issue 2 , 231-243, 2018	20 Jul 2018
22	Multi-objective optimization for sustainable turning Ti6Al4V alloy using grey relational analysis (GRA) based on analytic hierarchy process (AHP)	Machining (Mechanical)	International Journal of Advanced Manufacturing Technology (IJAMT), Vol 105(8), 2019	27 Aug 2019
23	Tool Wear Progression and its Effect on Energy Consumption in Turning of Titanium Alloy (Ti-6Al-4V)	Machining (Mechanical)	Mech. Sci., Volume 10, issue 2 373–382, 2019	July 2019
24	Parametric analysis of wax printing technique for fabricating microfluidic paper-based analytic devices (μPAD) for milk adulteration analysis	3 D Printing (Mechanical)	Microfluidics and Nanofluidics (2019) 23:38	18 Feb 2019
25	Mechanical Properties of Aged-TiNiPdCu High Temperature Shape Memory Alloys	Manufacturing (Mechanical)	Key Engineering Materials Submitted: 2019-09-16ISSN: 1662-9795, Vol. 875, pp 15-22	02 April 2021
26	Numerical analysis of stress & strain and thickness variation in single point incremental forming of tailor welded steel blanks	Manufacturing (Mechanical)	International Journal of Advanced Manufacturing Technology	Accepted 10 March 2024
27	Quaternary alloying of copper with Ti50Ni25Pd25 high temperature shape memory alloys	Materials (Mechanical)	Materials Science and Engineering: A Volume 763, 19 August 2019, 138148	August 2019

28	Design and Manufacturing of Testing Fixture for Prosthetic Knee Joints	Mechanical	Journal of Multidisciplinary Approaches in Science (JMAS) Issue 1 (2019) 43-64	Jan 2019
29	Effect of aging on Phase Transition Behavior of Ti50Ni15Pd25Cu10 High Temperature Shape Memory Alloys,	Materials (Mechanical)	Advanced Materials Research, Vol. 1101, pp 177-180	2015
30	A numerical investigation of effect of cutting velocity and feed rate on residual stresses in Aluminium Alloy Al-6061	Machining Mechanical	International Journal of Materials, Mechanics and Manufacturing, Vol. 3, Issue. 1, pp 26-30	2015
31	Effect of Cu addition on microstructure and transformation temperatures of Ti25Ni25Pd25 high temperature shape memory alloys,	Materials (Mechanical)	International Journal of Mechanical and Production Engineering (IJMPE)Volume-3, Issue-6	2015
32	Effect of aging on Phase Transition Behavior of Ti50Ni15Pd25Cu10 High Temperature Shape Memory Alloys,	Materials	Advanced Materials Research, Vol. 1101, pp 177-180	2015
33	Use of wear map approach in optimization of drilling parameters for petroleum exploration,	(Mechanical)	International Journal of Mechanical and Production Engineering (IJMPE)Volume-3, Issue-6	2016

List of international Conference Publications:

1 Syed Husain Imran Jaffery, **Liaqat Ali**, Mushtaq Khan, Hamza Musaddiq Qureshi, Misbahullah Khan, Zeeshan Ahsan (2015), Development and Testing of a Solar Cell Test Chamber for Performance Evaluation of Solar Cells, 50th International Universities Power Engineering Conference (UPEC 2015), At Stoke on Trent, UK, 1-4 September.

2 Alam Zeb, Mushtaq Khan, Adnan Tariq, Nawar Khan, **Liaqat Ali**, Farooque Azam, Syed Husain Imran Jaffery (2015), A Comparison of Genetic Algorithm with Simulated Annealing for Cell Formation Problem, International Conference on Science, Technology and Management(ICSTM), London, United Kingdom August 30th 2015.

3 Zahidfaraz, **Liaqat Ali**, Syed Waheedulhaq, Mushtaq Khan, Syed Husain Imran Jaffery (2015), STEP-NC Enabled Manufacturing Process Planning of Sheet Metal Bend Parts, International conference on Engineering and Natural Science (ICENS) London, United Kingdom August 30th, 2015.

4 Syed Husain Imran Jaffery, Shahid Sadiq, Mushtaq Khan, **Liaqat Ali**, M Nabeel Anwar, Aamir Mubashar (2015), Use of wear map approach in optimization of drilling parameters for petroleum exploration, International Conference on Engineering and Natural Science (ICENS) London, UK 18th April.

5 **Liaqat Ali**, Muhammad Asim Zahir, Aiman Rashid, Mushtaq Khan, Syed Husain Imran Jaffery, Aamir Mubashar, M Nabeel Anwar (2015), Finite Element Analysis of Knee Implant for Orthopaedic Applications, International Conference on Medical, Biological and Pharmaceutical Sciences (ICMBPS) London, United Kingdom 18th April.

6 Saifur Rehman, Mushtaq Khan, **Liaqat Ali** Syed Husain Imran Jaffery, Aamir Mubashar (2015), Effect of Cu addition on microstructure and transformation temperatures of Ti25Ni25Pd25 high temperature shape memory alloys, International Conference on Mechanical, Aeronautics and Production Engineering (ICMAPE) London, United Kingdom 20th April.

7 Saif ur Rehman, Mushtaq Khan, Syed Husain Imran Jaffery, **Liaqat Ali**, (2015), Effect of aging on Phase Transition Behavior of Ti50Ni15Pd25Cu10 High Temperature Shape Memory Alloys, Proceedings of the 3rd International Conference on Nano and Materials Science, Jan 24-26, Zhuhai, China.

8 Saif ur Rehman, Mushtaq Khan, Aamer Nusair Khan, **Liaqat Ali**, Syed Husain Imran Jaffery, (2014), Two-step martensitic transformation in an aged Ti50Ni15Pd25Cu10 High Temperature Shape Memory Alloys, Proceedings of the International Conference on Computational and Experimental Science and Engineering (ICCESEN-2014), Oct 25-29, Antalya, Turkey.

9 Sohail Akram, Syed Husain Imran Jaffery, Mushtaq Khan Aamir Mubashar and **Liaqat Ali** (2014) A numerical investigation of effect of cutting velocity and feed rate on residual stresses in Aluminium Alloy Al-6061, Proceedings of 3rd International Conference on Advances in Soft Computing (ICASC 2014), May 29-30, Sydney Australia

10 Muhammad Jamshaid, Husain Imran Syed Jaffery**, Liaqat Ali**, Mushtaq Khan, Khurshid Alam, Riaz Ahmed and Masood Ur Rehman (2013), Statistical Analysis of the Efect of Machining Parameters on Fatigue Life of Aerospace Grade Aluminum Alloy (AL 6082T6), Proceedings of the 11th International Conference on Manufacturing Research (ICMR2013), 19-20 Sept, Cranfield, UK

11 Waseem Tahir, Syed Husain Imran Jaffery, **Liaqat Ali**, Mushtaq Khan (2013), Optimization And Analysis Of Cutting Parameters Using Cryogenic Media In Machining Of Alloy Steel (D406a), Proceedings of the 11th International Conference on Manufacturing Research (ICMR2013), 19-20 Sept, 2013, Cranfield, UK

12 Hassan A. Khan, Syed H. I. Jaffery, Mushtaq Khan and **Liaqat Ali** (2012), Design of an Environmental Chamber for Testing of Photovoltaic Devices, Proceeding of World Renewable Energy Conference (WREC), Denver, Colodaro, USA, May 13-17, ISBN: 978-1-622760-92-3.

13 **Liaqat Ali**, Mushtaq Khan, Syed H. I. Jaffery, Khurshid Alam, Mohammad Nabeel Anwar (2012), A Generalized Featured-Based inspection framework for dimensional inspection of individual machined Parts, 37th MATADOR Conference, 25-27th July, The University of Manchester, Manchester, UK, ISBN: 978-1447144793.

14 Nadeem A Sheikh, Mushtaq Khan, Khurshid Alam, Syed H. I. Jaffery, Ashfaq Khan, **Liaqat Ali** (2012), Balling Phenomena in Selective Laser Melting (SLM) of Pure Gold (Au), 37th MATADOR Conference, 25-27th July, The University of Manchester, Manchester, UK, ISBN: 978-1447144793.

15 **Liaqat Ali**, S.T.Newman and J. N. Petzing,"Development and application of STEP-compliant inspection for CNC and CMM machine systems", Proceedings of LAMDAMAP: Laser Metrology and machine Performance VII,166-172, Cranfield University,UK,30th June 2005,ISBN 1-861941-18-8

16 Newman, S.T., Nassehi, A., Xu, W. X., Roberto S. U. R. Jr, Wang, L., Yusof, Y., **Ali, L**., Liu, R., Zheng, L., Kumar, S., Vichare, P., Dhokia, V. "Interoperable CNC for Global Manufacturing" Proceedings of the17th International Conference on Flexible Automation and Intelligent Manufacturing, Philadelphia, USA, June 2007, pp 1-13, ISBN 978-1-427620927

17 S.T.Newman, **L. Ali**, A. Brail, C. Brecher, P. Klemm, R. Liu, A. Nassehi, V.K. Nguyen, F. Proctor, R.S.U. Rosso Jr., I.Stroud, S-H. Suh, M. Vitr, L. Wang, X.W. Xu Professor, "The Evolution of CNC Technology from Automated Manufacture to Global Interoperable Manufacturing", CARV 20072ndInternational Conference on Changeable, Agile, Reconfigurable and Virtual Production / Canada

18 Mushtaq Khan, Saifur Rehman, **Liaqat Ali**, Syed Husain Imran Jaffery, Aamir Mubashar, "Effect of Cu addition on microstructure and transformation temperatures of Ti25Ni25Pd25 high temperature shape memory alloys" International Conference on Mechanical, Aeronautics and Production Engineering (ICMAPE) London, United Kingdom 20th April 2015

EXPERIENCE/SKILLS

1. **CREO** (Modeling, Drafting, Design Analysis, Motion Analysis-(Pro Mechanica)
2. Worked on **ANSYS** (Static and Dynamic Analysis of Mechanical structures)
3. **CNC programing** (Milling and Turning)