

Khalid Mahmood

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Profile

An experienced Academic Professional with a PhD from the University of Manchester, UK. With rich demonstrated teaching and research experience, have a proven track record of advancing manufacturing technologies and mentoring the next generation of engineers. To my credit are many international collaborations mainly with the UK universities. Worked as Head of Research and Engineering Department over 4 years at NUST College of EME and Director ORIC at HITEC University during 2022-2024. Besides many international research collaborations, have published a significant number of papers in impact factor journals/ international conferences of high repute. Passionate about innovation and sustainability, dedicated to driving impactful solutions in engineering/sciences and fostering collaboration across academia and industry.

Education

PhD (Mechanical Engineering), The University of Manchester, UK

MSc (Mechanical Engineering), University of Engineering & Technology, Peshawar

BSc (Mechanical Engineering), University of Engineering & Technology, Lahore

Short Courses

2025 **Generative AI Application Developer** – PEC Cohort-2 Course

2022 Training on **Research, Innovation and Commercialization**, PHEC, Pakistan

2019 **Management Skills & Curriculum Design**, NUST, Pakistan

2014 **Outcome Based Education**, NUST, Pakistan

2011 **Networking**, The University of Manchester, UK

2011 **Tools for Time Management**, The University of Manchester, UK

2010 **Teaching in Higher Education**, The University of Manchester, UK

2010 **Graduate Teaching Assistant Training**, The University of Manchester, UK

2010 **Building a successful international research career**” by The British Council at Windsor, UK

International Research Collaborations & Grants

- Recipient of HEC travel grant of **PKR 0.360 million** to present paper in ASME 19th International Manufacturing Science and Engineering Conference MSEC 2024 held at Knoxville, TN, **USA**, Jun 17-21, 2024.
- Recipient of HEC grant of **PKR 0.15 million** to organize IEEE International Conference at HITEC University Jan 24-25, 2023.
- Worked at the Department of Engineering, Lancaster University, **UK** on joint collaborative project during Sep-Oct 2019.
- Worked under British Council funded project on outreach program at Lancaster University, **UK**, during Aug 2015.
- **Principal Investigator** of the Research Project titled “Sustainable Energy Solution for Rural Communities through Community Participation” from **The British Council** with grant amount of **£1800**, 2012-2015
- Nominated and worked as researcher in British Council funded project RC PK 35 ‘Efficient recycling of machine waste by laser deposition’ – A joint project of the National University of Sciences & Technology, Pakistan and The University of Manchester, **UK** worth **£55k**. 2008-2011

Experience

➤ **Academic Experience**

2022-2024 Director ORIC, HITEC University, Taxila

2021-2024 Associate Professor, HITEC University, Pakistan

2012-2020 Associate Professor/ Professor, NUST College of E&ME

2014-2019 Actively involved in accreditation of engineering programs under Outcome Based Education (OBE)

2014-2018 Head Department of Mechanical Engineering, NUST College of E&ME

2014 Head of Research, NUST College of E&ME

2009-2012 Teaching Assistant, The University of Manchester, UK

2007-2008 Instructor, NUST College of E&ME, Pakistan

➤ **Industrial Experience (1990-2007)**

- Worked on engineering appointments in vehicle/equipment maintenance, repair, and overhauling setups.
- Worked as inspection and technical development officer for quality assurance in defence production

Teaching and Research Assignments

- Besides developing new courses, taught many courses both at undergraduate and postgraduate level
- Supervised research of 10 PhD and MS students

Publications (<https://scholar.google.com/citations?user=CMDU9NsAAAAJ&hl=en>)

➤ **Journal**

- Farhan Ahmed, Mazhar Iqbal and **Khalid Mahmood**, Convective heat transfer of electrically conducting MHD power law fluid through annular sector duct, *Proceedings of the Institution of Mechanical Engineers - Part C: Journal of Mechanical Engineering Science*, 2024, Vol. 238(11) 5344–5358 09544062231209152
- Muhammad Zeeshan, **Khalid Mahmood**, et.al, Performance Analysis of Double Effect Solar Absorption Cooling System with Different Schemes of Hot/Cold Auxiliary Integration and Parallel-Serial Arrangement of Solar Field, *Energy (Elsevier)*, 2022. Volume 245, 123299.
- Muhammad Zeeshan, **Khalid Mahmood**, et.al, Analytical Modeling and Performance Analysis of a Solar Cooker cum Dryer Unit, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (Taylor and Francis)*, 2022. DOI: 10.1080/15567036.2022.2025955.
- K. Bashir, **K. Mahmood**, et al, Effect of Cr³⁺ substitution on magnetic and electrical properties of (Ni_{0.3}Cu_{0.7}) Fe₂O₄ spinel ferrites, *Revista Mexicana de Física*, 2020. 66(5), 573-579.
- Khurram M, **Mahmood K**, et.al, Roller sliding in engine valve train: Effect of oil film thickness considering lubricant composition, *Tribology International*, 2020. 149: 105829.
- Sajjad, R., Butt, S.U., **Mahmood, K.**, Saeed, H.A. Investigating the Impacts of Heterogeneous Infills on Structural Strength of 3D Printed Parts. *Key Engineering Materials*, 2019. 799, 276–281.
- M Gulzar, **Khalid Mahmood**, et.al, The effect of particle size on the dispersion and wear protection ability of MoS₂ particles in polyalphaolefin and trimethylolpropane ester, *Proceedings of the Institution of Mechanical Engineers Part J Journal of Engineering Tribology*, 2018. 232(8): 987-998
- Rehan Waheed, **Khalid Mahmood** et.al, Reliability of dissimilar metal soldered joint in fabrication of electromagnetic interference shielded door frame, *International Journal of Materials and Metallurgical Engineering*, 2018. 12(9): 491-494
- Zahid Faraz, **Khalid Mahmood** et.al, Development of a STEP-compliant design and manufacturing framework for discreet sheet metal bend parts, *Proceedings of the Institution of Mechanical Engineers - Part B: Journal of Engineering Manufacture*, 2018. 232(6): 1090-1104
- Zahid Faraz, **Khalid Mahmood** et.al, Sheet-metal bend sequence planning subjected to process and material variations, *The International Journal of Advanced Manufacturing Technology*, 2017. 88: 815-826

- Ayaz M. Khan, **Khalid Mahmood** et.al, Root cause failure analysis of a tracked vehicle balance arm, *Case Studies in Engineering Failure Analysis*, 2017. 9: 112-117
- M.Asif Iqbal, **Khalid Mahmood** et.al, Study of physical, magnetic, and electrical properties of rare-earth substituted Li-Mg ferrites, *Journal of Alloys and Compounds*, 2017. 692: 322-331
- **Mahmood K**, and Pinkerton A.J, Direct laser deposition with different types of 316L steel particle - a comparative study of final part properties, *Proceedings of the Institution of Mechanical Engineers - Part B: Journal of Engineering Manufacture*, 2013. 227(4): 520-531
- **Mahmood K**, Stevens N and Pinkerton A.J, Laser clad Inconel 617 for corrosion protection in mild and harsh environments, *Surface Engineering*, 2012. 28(8): 576-584
- **Mahmood K**, Stevens N and Pinkerton A.J, Laser surface modification using Inconel 617 machining swarf as coating material, *Journal of Materials Processing Technology*, 2012. 212(6): 1271-1280
- **Mahmood K**, Syed W.U.H and Pinkerton A.J, Innovative reconsolidation of carbon steel machining swarf by laser metal deposition, *Journal of Optics and Lasers in Engineering*, 2010. 49(2): 240-247
- **Khalid Mahmood**, Hamza Ali, Simulation of Selected Laser Melted Implant Designs and Effects of Variable Porosity on Mechanical Properties, *Edelweiss Applied Science and Technology Journal*, 2024. Accepted.

➤ **Conference**

- **Mahmood K**, Parametric Investigation of Abrasive Water Jet Cutting of Titanium Alloy. In *International Manufacturing Science and Engineering Conference* (Vol. 88117, p. V002T06A002). June 17-21, 2024. American Society of Mechanical Engineers, Knoxville, TN, **USA**
- **Mahmood K**, Stevens N, Syed W.U.H and Pinkerton A.J, Material-efficient laser cladding for corrosion resistance, *30th International Congress on Applications of Lasers and Electro-Optics* (ICALEO 2011), October 23-27, 2011, Orlando, FL, **USA**
- **Mahmood K**, Syed W.U.H and Pinkerton A.J, Laser surface cladding of Inconel 617 chips on mild steel, *25th International Conference on Surface Modification Technologies* (SMT-25), June 20-22, 2011, Trollhättan, **Sweden**
- **Mahmood K**, Khan A and Pinkerton A.J, Laser metal deposition of steel components using machining waste as build material, *Conference on Laser and Electro Optics* (CLEO:2011), May 1-6, 2011, Baltimore, **USA**

- **Mahmood K**, Syed W.U.H and Pinkerton A.J, Energy conservation by efficiently utilizing machining waste, *International Conference on Energy Systems Engineering* (ICESE-2010), October 25-27, 2010, Islamabad, **Pakistan**
- **Mahmood K**, Syed W.U.H and Pinkerton A.J, Laser direct deposition of carbon steel machining waste, *29th International Congress on Applications of Lasers and Electro- Optics (ICALEO 2010)*, September 27-30, 2010, Anaheim, CA, **USA**

➤ **Conference / Workshops / Seminars (Presented)**

- **“Parametric investigation of abrasive water jet cutting of titanium alloy”**, ASME 2024, 19th International Manufacturing Science and Engineering Conference MSEC2024, June 17–21, 2024, Knoxville, Tennessee, **USA**
- **“Recycling of machining waste by laser metal deposition”**, *6th International Conference on Recycling : Reduce, Reuse, Recycle*, November 6-8, 2017, Las Vegas, Nevada, **USA**
- Seminar to postgraduate taught and PhD students within the university and possible university students outside it to continue their careers into academia beyond student level, even if planning to work outside the UK under British Council funded project on outreach program at Lancaster University, **UK**, Aug 2015.
- “Internationalization of Research Dimension” **British Council Panelist** in Distinguished Innovations, Collaboration & Entrepreneurship (DICE) at University of Engineering & Technology, Taxila **Pakistan**, 19-20 Dec 2012.

Awards/Honours

- HEC Approved PhD Supervisor
- External examiner of postgraduate programs of various universities
- Research proposal evaluator of public and private sector projects
- Reviewer of American Society of Mechanical Engineers (ASME) research publications
- Member Technical Program Committee, IEEE International Conference on Mechanical and Aerospace Engineering (ICMAE) 2019-2024 held in Europe.
- Recipient of Higher Education Commission (HEC), Pakistan award “Partial Support for PhD Studies Abroad” worth US \$7200.00, 2011-2012
- Chair 2023 IEEE International Conference on Frontiers of Engineering and Applied Sciences (ICFEAS), HITEC University, Taxila
- Member Regional CPD Committee, Pakistan Engineering Council, 2017
- Member National Curriculum Review Committee for BS Mechanical Technology Program, 2015
- Lead Specialist Officer (LSO) for Materials, Manufacture & Automation Group in Defence Organization, 2015-2018

List of References

1. Prof. Dr. Muhammad Younus Javed, SI(M)
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3. Andrew Pinkerton, PhD
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