Muhammad Usman Bhutta

Assistant Professor

School of Mechanical & Manufacturing Engineering

Email: usmanbhutta@smme.nust.edu.pk
Contact: 512281897
LinkedIn:

About

Dr. Muhammad Usman Bhutta is working as Assistant Professor in the School of Mechanical & Manufacturing Engineering. Dr. Muhammad Usman Bhutta has a PhD in (Surface Coating & Tribology). Dr. Muhammad Usman Bhutta has published 28 research articles & conference papers having a citation count of 206, carried out 4 projects and filed 0 intellectual property.

Qualifications

PhD in (Surface Coating & Tribology) 2016 - 2020
University College London, University of London , United Kingdom

MSc in (Process Automation) 2008 - 2011
Technical University of Dortmund , Germany

BE in (Mechtronics) 2007 - 2007
Air University , Pakistan

Experience

Assistant Professor 2024- Present
School of Mechanical & Manufacturing Engineering

Assistant Professor 2021 - 2021
School of Mechanical & Manufacturing Engineering

Assistant Professor 2014 - 2021
School of Mechanical & Manufacturing Engineering

Lecturer 2012 - 2014
School of Mechanical & Manufacturing Engineering

Assistant Professor 2014 - 2022
NUST , SMME-NUST, Sector H-12, Islamabad

Lecturer 2012 - 2014
NUST , SMME-NUST, Sector H-12, Islamabad

Research Projects

National Projects

Computational Aeroacoustics Analysis of Sound Source on Building and Human Interaction Study 2023
Funding Agency: NESCOM
Amount: PKR 150,000.00
Status: Approved_inprocess

Design & Development of a Smart Ball Based Surveillance System using AI (BKV-1)
Funding Agency: Defence R&D Dte
Amount: PKR 4,960,000.00
Status: Approved_inprocess

Design, development and Implementation of a Data Acquisition System for Measuring the Performance Parameters of an Internal Combustion Engine 2021
Funding Agency: NUST
Amount: PKR 300,000.00
Status: Completed

International Projects

Industry Projects

National Projects

ROBOGEN 2022

Client: US Embassy
Amount: PKR 500,000.00
Status: Completed

International Projects

Research Articles

A novel approach to measure rotational dynamics of valvetrain components in production engines using miniature GMR chip 2025

Sehrish Shahnawaz Riaz Ahmed Mufti Mian Ashfaq Ali Rehan Zahid Jawad Aslam Muhammad Rizwan Siddiqui Muhammad Usman Bhutta
Measurement , Volume 256, Part D, Article Number 118455
Impact Factor: 5.600 | **Quartile:** 1
DOI: https://doi.org/10.1016/j.measurement.2025.118455

Friction and Wear Properties of Phosphonium Based Ionic Liquid Used as Additive in Synthetic and Bio Based Lubricants 2024

Nouman Haider Muhammad moneeb Butt Rehan Zahid Mian Ashfaq Ali Jawad Aslam Riaz Ahmed Mufti Muhammad Usman Bhutta
Tribology in Industry , Volume 46, No. 4, Pages 611-623
Impact Factor: N/A | **Citations:** 1
DOI: 10.24874/ti.1648.03.24.08

A Pareto-optimality based black widow spider algorithm for energy efficient flexible job shop scheduling problem considering new job insertion 2024

Kashif Akram Muhammad Usman Bhutta Shahid Ikramullah Butt Syed Husain Imran Jaffery Mushtaq Khan Alam Zeb Khan Zahid Faraz
Applied Soft Computing , Volume 164, Article Number 111937
Impact Factor: 7.200 | **Quartile:** 1 | **Citations:** 10
DOI: https://doi.org/10.1016/j.asoc.2024.111937

Effect of micro-surface-texturing on the friction between cam/tappet interface of a commercial vehicle engine 2024

Muhammad Rizwan Siddiqui Mian Ashfaq Ali Riaz Ahmed Mufti Jawad Aslam Muhammad Usman Bhutta Rehan Zahid Muhammad Khuram
Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, Pages 1-19
Impact Factor: 1.600 | **Quartile:** 3 | **Citations:** 2
DOI: https://doi.org/10.1177/13506501241266116

Experimental Investigation of Indirect Aqueous Inoculated Diesel Engine Performance in Urban-Area Driving for Mechanical Performance, Fuel Consumption and NOx Emissions 2024

Waqas Khalid Sami Ur Rehman Shah Emad Ud Din Muhammad Usman Bhutta Majid Ali Xavier Tauzia Asad Asghar Janjua
Emission Control Science and Technology , Pages 1-10
Impact Factor: 1.300 | **Quartile:** 3
DOI: https://doi.org/10.1007/s40825-024-00250-7

Experimental Investigation of Engine Valve Train Friction Considering Effects of Operating Conditions and WPC Surface Treatment 2023

Muhammad Usman Bhutta Muhammad Huzaifa Najeeb Muhammad Usman Abdullah Sami Ur Rahman Shah Muhammad Khurram Riaz Ahmed Mufti Kiyotaka Ogawa Jawad Aslam Rehan Zahid Mian Ashfaq Ali Muazzam Arshad
Materials , Volume 16(9), Article Number 3431
Impact Factor: 3.748 | **Quartile:** 1 | **Citations:** 4
DOI: https://doi.org/10.3390/ma16093431

Friction and Wear Performance Evaluation of Bio-Lubricants and DLC Coatings on Cam/Tappet Interface of Internal Combustion Engines 2021

Rehan Zahid Muhammad Usman Bhutta Riaz Ahmad Mufti Muhammad Usman Abdullah Haji Hassan Masjuki Mahendra Varman Muhammad Abul Kalam Mian Ashfaq Ali Jawad Aslam Khalid Akhtar
Materials , Volume 14(23), Article Number 7206
Impact Factor: 3.623 | **Quartile:** 1 | **Citations:** 7
DOI: https://doi.org/10.3390/ ma14237206

A Review of Friction Performance of Lubricants with Nano Additives 2021

Muhammad Waqas Rehan Zahid Muhammad Usman Bhutta Zulfiqar Ahmad Khan Adil Saeed

Materials , Volume 14(21), Article Number 6310

Impact Factor: 3.623 | **Quartile:** 1 | **Citations:** 77

DOI: https://doi.org/10.3390/ma14216310

Roller sliding in engine valve train: Effect of oil film thickness considering lubricant composition 2020

Muhammad Khurram Riaz Ahmad Mufti Muhammad Usman Bhutta Hafiz Malik Naqash Afzal Muhammad Usman Abdullah Sami Ur Rahman Shah Saif ur Rehman Rehan Zahid Khalid Mahmood Mian Ashfaq Muhammad Umar

Tribology International , Volume 149, Article Number 105829

Impact Factor: 4.872 | **Quartile:** 1 | **Citations:** 11

DOI: 10.1016/j.triboint.2019.06.022

Wear and friction performance evaluation of nickel based nanocomposite coatings under refrigerant lubrication 2020

Muhammad Usman Bhutta Zulfiqar Ahmad Khan

Tribology International , Volume 148, Article Number 106312

Impact Factor: 4.872 | **Quartile:** 1 | **Citations:** 13

DOI: https://doi.org/10.1016/j.triboint.2020.106312

Corrosion Performance of Nanocomposite Coatings in Moist SO2 Environment 2020

Ashish K. Kasar Muhammad Usman Bhutta Zulfiqar A. Khan Pradeep L. Menezes

International Journal of Advanced Manufacturing Technology, Volume 106, Pages 4769–4776

Impact Factor: 3.226 | **Quartile:** 2 | **Citations:** 7

DOI: https://doi.org/10.1007/s00170-020-04949-z

Friction and wear performance analysis of hydrofluoroether-7000 refrigerant 2019

Muhammad Usman Bhutta Zulfiqar Ahmad Khan

Tribology International , Volume: 139, Pages: 36-54

Impact Factor: 4.271 | **Quartile:** 1 | **Citations:** 4

DOI: 10.1016/j.triboint.2019.06.028

Novel experimental setup to assess surfaces in tribo-contact lubricated by the next generation of environmentally friendly thermofluids 2019

Muhammad Usman Bhutta Zulfiqar Ahmad Khan Nigel Garland

International Journal of Computational Methods and Experimental Measurements, Volume 7, Issue 3, Pages 226-235

Impact Factor: - | **Citations:** 2

DOI: DOI:10.2495/CMEM-V7-N3-226-235

Wear Performance Analysis of Ni–Al2O3 Nanocomposite Coatings under Nonconventional Lubrication 2019

Muhammad Usman Bhutta Zulfiqar Ahmad Khan Nigel Garland

Materials , Volume 12, Issue 1, Article Number 36

Impact Factor: 3.057 | **Quartile:** 2 | **Citations:** 14

DOI: https://doi.org/10.3390/ma12010036

A Historical Review on the Tribological Performance of Refrigerants used in Compressors 2018

Muhammad Usman Bhutta Z.A. Khan N. Garland Abdul Ghafoor

Tribology in Industry , Vol. 40, No.1, Pages 19-51

Impact Factor: - | **Citations:** 14

DOI: DOI:10.24874/ti.2018.40.01.03

Benefits of wonder process craft on engine valve train performance 2018

Muhammad Usman Abdullah Samiur Rahman Shah M. Usman Bhutta Riaz Ahmad Mufti Muhammad Khurram M. Huzaifa Najeeb Waseem Arshad Kiyo Ogawa

Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, online published on 12 March 2018

Impact Factor: 1.275 | **Quartile:** 3 | **Citations:** 8

DOI: 10.1177/0954407018760935

Technique developed to study camshaft and tappet wear on real production engine 2017

Waseem Arshad Muhammad Adnan Hanif Muhammad Usman Bhutta Riaz Ahmad Mufti Samiur Rahman Shah Muhammad Usman Abdullah Muhammad Huzaifa Najeeb

Industrial Lubrication and Tribology , Volume: 69 Issue: 2 Pages: 174-181

Impact Factor: 0.763 | **Quartile:** 4 | **Citations:** 11

DOI: 10.1108/ILT-06-2016-0135

Effect of lubricant chemistry on the performance of end pivoted roller follower valve train 2016

Muhammad Khurram Riaz Ahmad Mufti Rehan Zahid Hafiz Malik Naqash Afzal Muhammad Usman Bhutta Mushtaq Khan

Tribology International , Volume: 93, Special Issue:SI, Pages:717-722, Part:B

Impact Factor: 2.903 | **Quartile:** 1

DOI: 10.1016/j.triboint.2014.10.021

Experimental measurement of roller slip in end-pivoted roller follower valve train 2015

Muhammad Khurram Riaz Ahmad Mufti Rehan Zahid Hafiz Malik Naqash Afzal Muhammad Usman Bhutta

Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, Volume 229, Issue 9, Pages 1047-1055

Impact Factor: 0.907 | **Quartile:** 3 | **Citations:** 16

DOI: 10.1177/1350650115572198

A Numerical Approach to Calculate Creep in Roller Follower Valve Train Basing on Friction and Lubrication Modeling 2015

Muhammad Khurram Riaz Ahmad Mufti Muhammad Usman Bhutta Yousaf Habib Arslan Ahmed Naqash Afzal

Transactions of the Canadian Society for Mechanical Engineering, Volume 39, No. 4, Pages 805-818

Impact Factor: 0.333 | **Quartile:** 4

DOI: -

Measuring the tribological performance of all the tappets in a production engine using magnetometer sensors and the effect of lubricant rheology 2015

Riaz Ahmad Mufti Rehan Zahid Farrukh Qureshi Jawad Aslam Hafiz Malik Naqash Afzal Muhammad Usman Bhutta

Lubrication Science , Volume 27, Issue 4, Pages 251-263

Impact Factor: 1.384 | **Quartile:** 2 | **Citations:** 5

DOI: 10.1002/ls.1276

Conference Proceedings

Measurement of frictional torque of a directacting valvetrain using a shaft-to-shaft torque transducer to study the effect of Laser Surface Texturing on friction reductionMeasurement of frictional torque of a directacting valvetrain using a shaft-to-shaft torque transducer to study the effect of Laser Surface Texturing on friction reductionMeasurement of frictional torque of a directacting valvetrain using a shaft-to-shaft torque transducer to study the effect of Laser Surface Texturing on friction reductionMeasurement of frictional torque of a directacting valvetrain using a shaft-to-shaft torque transducer to study the effect of Laser Surface Texturing on friction reduction 2024

Muhammad Rizwan Siddiqui Mian Ashfaq Ali Riaz Ahmed Mufti Jawad Aslam Muhammad Usman Bhutta Rehan Zahid Muhammad Khurram

2nd International Conference on Modern Technologies in Mechanical & Material Engineering, MTME 2024, GIKI, Pakistan (Best paper award), res.country(177,)

Citations: N/A

DOI: https://doi.org/10.1051/matecconf/202439801002

Recent Trends & the Progressive Developments in the Field of Tribologywith Focus on IC Engines 2023

Dr Muhammad Usman Bhutta

The International Conference on Green Maritime Technology & Education 2023 (ICGMTE2023) , res.country(48,)

Citations: N/A

DOI: Invited as a Guest Speaker

Effect of Roller Sliding and Lubricant Composition on Engine Valve Train Friction 2023

Muhammad Khurram Dr Riaz Ahmad Mufti Dr Muhammad Usman Bhutta Dr Naqash Afzal Muhammad Usman Abdullah Tayyab Ul Islam Ali Raza Dr Rehan Zahid Irfan Gondal

Leeds-Lyon Symposium on Tribology , res.country(231,)

Citations: N/A

DOI: Available after Publishing of Article

Experimental Study of Lubrication Conditions in Roller Follower Valve Train 2023

Muhammad Khurram Riaz Ahmad Mufti Muhammad Usman Bhutta Muhammad Usman Abdullah Naqash Afzal Ali Raza Tayyab Ul Islam Irfan Gondal Rehan Zahid Sami Ur Rehman

Leeds-Lyon Symposium on Tribology , res.country(231,)

Citations: N/A

DOI: Available after Publishing of Article

Effect of WPC Surface Treatment on the Performance of an Engine Valve Train 2023

Dr Muhammad Usman Bhutta Shahbaz Ahmad Samiur Rahman Shah Muhammad Khurram Riaz Ahmad Mufti Dr Muhammad Usman Abdullah Kiyo Ogawa Rehan Zahid Dr Jawad Aslam Mian Ashfaq Ali Tayyab Ul Islam

Leeds-Lyon Symposium on Tribology , res.country(231,)

Citations: N/A

DOI: Available after Publishing of Article

Novel Experimental Setup to Assess Surfaces in Tribo-Contact Lubricated By the Next Generation of Environmentally Friendly Thermo-Fluids 2019

Muhammad Usman Bhutta Zulfiqar Ahmad Khan Nigel Garland

9th International Conference on Computational Methods and Experiments in Material and Contact Characterisation, res.country(183,)

Citations: N/A

DOI: 10.2495/CMEM-V7-N3-226-235