



Dr. Abdul Mateen

Chairman & Associate Professor

Department of Mineral Resources Engineering
Pak-Austria Fachhochschule Institute of
Applied Sciences & Technology

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Google Scholar : <https://scholar.google.com/citations?user=lcUtgjAAAAAJ>

Education

PhD: Materials Engineering

FMSE, GIK Institute of Engineering, Pakistan

Department of Mechanical and Manufacturing Engineering,

University of Calgary, Canada

Thesis Title: Tribological Analysis and Characterization of HVOF
Sprayed Tungsten Carbide-Cobalt Coatings.

Supervisor: Prof. Dr. Fazal A. Khalid, SI, GIKI

Co-supervisor: Prof. Dr. Tahir I. Khan, University of Calgary

MS: Materials Science and Engineering

FMSE, GIK Institute of Engineering, Pakistan

Thesis Title: Synthesis, Characterization and properties study of
Cuprous Oxide, Carbon nano tube reinforced nanocomposite

Supervisor: Prof. Dr. Fazal A. Khalid, SI

BSc: Metallurgical Engineering and Materials Science

Department of Metallurgical Engineering and Materials Science, UET,
Lahore

FYP Title: Corrosion Rate Measurement

Supervisor: Prof. Dr. Akhlaq A. Malik

Awards and honours

1. Signed Agreement with Minerals Development Department for Six Pilot Plants at MTL Peshawar on 25th Nov. 2022. We will functionalize, operate, modify & size up these plants for creation of minerals & metallurgical clusters.
2. Signed MoU with MDD, KP on 24th March 2022.
3. Founder Center for Surface Engineering and Tribology at IST
4. Principal Investigator “HVOF spray coatings for aerospace components” National Research Program for Universities (NRPU)-Higher Education Commission of Pakistan
5. Team Leader, “Power shearing Machine for PAC”
6. Principal Investigator “Cuprous oxide band gap tuning” Startup Research Grant Program (SRGP), HEC
7. Co-Principal Investigator, “Development and Characterization of NiTi based shape memory alloys” Startup Research Grant Program (SRGP), HEC
8. Canadian Commonwealth Exchange Program (Asia-Pacific, DFAIT) research grant 2009-2010
9. International Research Support Initiative Program (IRSIP), HEC, Pakistan 2009
10. HEC Pakistan Indigenous PhD fellowship 2007-2011
11. HEC Pakistan Indigenous MS fellowship 2005-2007

Academic & Administrative Experience:

1. Chairman Department of Minerals Resources Engineering June 9th, 2022, till date.
2. Chairman Department of Materials Science and Engineering, PAF-IAST, March 25th, 2021, to June 9th, 2022.
3. Manager Office of Research Innovation & Commercialization (ORIC) Nov. 24th, 2020, till date
4. Member Executive Council of the Institute from Jan. 27th, 2021, till date
5. Member Selection Board of the Institute, Feb. 16th, 2023, till date

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6. Member Tenure & Promotion Committee, Faculty of Chemical, Mechanical, Materials & Minerals Engineering, Aug. 5th, 2022 till date.
 7. Member Innovation Technology Park Committee of the Institute May 7th, 2023, till date.
 8. Member Research & Conferences committee of the Institute, Aug. 31st, 2022 till date.
 9. Member Institute Disciplinary Committee June 18th, 2021, till date.
 10. Associate Professor, Pak-Austria Fachhochschule Institute of Applied Sciences & Technology, Nov. 13th, 2020, till date
 11. Tenured Associate Professor, Institute of Space Technology, Islamabad, June 13th, 2018 to Nov. 12th 2020.
 12. Assistant Professor, Institute of Space Technology, Islamabad, June 13th, to June 12th, 2018
 13. Visiting Faculty Member at Institute of Space Technology, March 13th, 2012 to June 12th 2012
 14. Graduate Assistant/ Course Instructor, GIK Institute of Engineering Sciences and Technology, Aug. 2010 to May 2011
 15. Associate, University of Calgary, Aug 2009 to June 2010

Minerals/ Metallurgical related Professional Experience

1. Establishing Sino-Pak Center for Mineral Resources Engineering (in Process). Fund is approved by China International Development Co-operation Authority (CIDCA)
2. Worked as Director and 50% share holder at Khyber Mine Rocks Marketing Services, in the meantime worked on the following projects:
 - a. Up gradation of chromite through magnetic separation using Nepheline Syenite Pilot Plant facility at MTL, Peshawar
 - b. Chrome based chemicals preparation at MTL Peshawar
 - c. Chromite mining in Muhammad Agha Olaswali, Logar, Afghanistan &
 - d. Mohmand Agency and Kohistan, Pakistan

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3. Teaching Extraction of Materials at the Institute of Space Technology, Islamabad
 4. Teaching Mineral Processing, Extractive Metallurgy, Design & Feasibility of Mineral Processing Plant, Sustainability in Mineral Processing courses at PAF-IAST
 5. Extraction of Directly Reduced Iron(DRI) from Besham Iron ore on lab scale at IST
 6. Hydrometallurgical extraction of copper on lab. Scale at IST
 7. Developed & characterized HVOF Sprayed/Plasma Sprayed Chromite Powder coatings

Courses Taught**PhD level**

1. Advanced Coatings
2. Advanced Aerospace Materials
3. Advanced Metals and alloys

MS level

1. Mineral Processing
2. Extractive Metallurgy
3. Design & Feasibility of Mineral Processing Plants
4. Sustainability in Mineral Processing Industries
5. Coatings and Tribology
6. Research Methodology

BS Level

1. Surface Engineering
2. Electronic, Magnetic and Optical Materials
3. Extraction of materials
4. Thermodynamics of Materials
5. Heat Treatment
6. Powder Metallurgy
7. Engineering Ceramics
8. Welding and joining processes

Areas of Interest

- Extractive Metallurgy
- Mineral Processing
- Surface Engineering and Tribology
- Thermal Spray Coatings
- Energy Conversion Materials
- Nanocomposites

Journals Publications

1. Tauseef Ahmed, Abdul Mateen & Soonil Lee, “Improved tribological performance and enhanced tensile adhesive strength of micro- to near-nanocrystalline WC-17 wt. %Co coatings sprayed using HVOF”, *Ceramics International (W)*, 5th Jan. 2024.
2. Zeeshan Abbasi, Abdul Mateen, Muhammad Attiq ur Rahman, & Abdul Wadood, “Improved tribological behaviour of concentrated chromite coatings developed by HVOF and Plasma spray techniques” *Journal of Materials Research & Technology (W)*, 21 Sep. 2023
3. Guanghui A. Zhu , K.A. Chee, Tauseef Ahmed, Muhammad Shahoor, Abdul Mateen, Tribological performance and corrosion resistance of HVOF WC-17 wt. % Co coatings: influence of micro-to-nanoscale morphology”, *International Journal of Advanced Manufacturing Technology (W)*, August 26th, 2023, <https://doi.org/10.1007/s00170-023-11943-8>
4. Faiza Khan, Talha Mubashir, Kainat Ahmed, Muhammad Shahoor, Abdul Mateen, Soonil Lee, Tauseef Ahmed, “Fabrication and Characterization of Carbon Nanotubes-Based Pressure Nanosensors: A Study on Piezoresistive Behaviour”, *Transactions on Electrical and Electronic Materials (X)*, Accepted: 20 August 2023
<https://doi.org/10.1007/s42341-023-00472-6>
5. Zeeshan Abbasi, **Abdul Mateen**, Akbar Niaz, Muhammad Atiq Ur Rehman, Abdul Wadood, "Development and characterization of natural Chromite coating on metal substrate using plasma spray process" *ACS Omega (W)* vol.8, pp. 15193-15202, 18 April 2023.

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6. Sultan Mehmood, Amjad Iqbal, Rafi-ud-din, Abdul Wadood, **Abdul Mateen**, Muhammad Amin, Ibrahim Yahya & HibaY. Zahran "Influence of Homogenizing Methodology on Mechanical and Tribological Performance of Powder Metallurgy Processed Titanium Composites Reinforced by Graphene Nanoplatelets" *Molecules* (W) vol. 27, 2666, 21 April 2022.
 7. Sultan Mehmood, Amjad Iqbal, Rafi ud din, Abdul Wadood, **Abdul Mateen**, Muhammad Amin, Qazi Ibrahim, S. Yahya, Hiba Y. Zahran "Microstructure, Consolidation, Electrochemical, and Mechanical Performance of Titanium (Ti) composites reinforced by Graphene Nanoplatelets (GNPs) Via Mechanical Alloying" *Materials Chemistry & Physics* (W) V.285, 126142, 1st June 2022
 8. Mazullah Khan, Muhammad Sadiq, **Abdul Mateen**, Muhammad Shahzad, Kareem Akhtar, Jawad Khan, Thermal aging impact on microstructure, creep and corrosion behavior of lead-free-solder alloy (SAC387) use in electronics, *Microelectronics Reliability* (W) V. 122, 114180, 28th May 2021
 9. Salman Waqar, Abdul Wadood, **Abdul Mateen**, Muhammad Atiq Ur Rahman, "Effect of Ni and Cr addition on wear performance of NiTi alloy" *The International Journal of Advanced Manufacturing Technology* (W) Vol. 108, pp. 625-634, 18th May 2020
 10. Irfan Mahmood Khan, Muhammad Suleman Chattha, Zeeshan Mehmood Khan, **Abdul Mateen**, Optimization of thin film thicknesses in tandem solar cells, *Journal of Nanoelectronics and Optoelectronics* (Y) Vol. 13, pp. 104-410, 1st Jan. 2018
 11. Neelam Rashid, Muhammad Zafar, Mushtaq Ahmad, Khifsa Malik, Ihsan ul Haq, Syed Nasar Shah, **Abdul Mateen**, Tauseef Ahmad, "Intraspecific variation in seed morphology of tribe vicieae (papilionoidae) using Scanning Electron Microscopy Technique", *Microscopy Research Techniques* (W), Vol. 81 pp. 298-307, 27th Dec. 2017
 12. **Abdul Mateen**, Ihsan ul Haq, Muhammad Sajjad, Tauseef Ahmed, "Synthesis and characterization of MWCNTs reinforced cuprous oxide nanocomposite", *Optoelectronics and Advanced Materials – Rapid Communications* (Y) Vol. 10, No. 5-6, p. 453 – 456, 2016

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13. Sajid Ullah Khan, **Abdul Mateen**, Ibrahim Qazi, “Sol-Gel Derived Lead Zirconate Titanate: Processing, Micrometer and Nanometer Scale Patterning and Characterization” *Ceramics International* (W) Volume 42, Issue 1, Part A, J, Pages 185–193, 2016.
 14. Ghuzanfar Saeed, Fazal Ahmad Khalid , Muhammad Umer Farooq , Tariq Saeed Chani , **Abdul Mateen** , Irfan H Abidi and Tahir Sattar, “Investigating the Effects of Synthesis Parameter on the Yield and Structural Health of In-Situ Grown Carbon Nanotubes” *Journal of Nanomaterials & Molecular Nanotechnology*, 4 pages doi: 10.4172/2324-8777.1000203, 2016
 15. Tauseef Ahmed, **Abdul Mateen**, “Validation of wear volume for HVOF coated WC-17%Co cermets coatings measured by Tribometer through ASTM standards G133” *Journal of Space Technology*-Vol. 4, No.1, Pages 90-93, 2016
 16. Asim Shehzad, **Abdul Mateen** and Abdul Wadood, “Role of CNT in Alumina matrix Nanocomposites humidity sensors” *Journal of Space Technology* (Y), Vol.4, No.1, Pages 94-98, 2016
 17. S. Shah, H. Nasir, **A. Mateen**, F.A. Chishti, F. Khattak, I. Yousaf, Sajid Ullah, A. Q. Malik, “Synthesis of Composites by Doping of CNTs with Nano Fe Particles and Its Ignition through Photo Flashing” *Journal of Optoelectronics and Advanced Materials* (Y), vol. 9, iss. 1-2/2015
 18. I. M. Khan, M. S. Chattha, **A. Mateen**, I. Qazi, K. Alamgir, S. Wilayat Hussain, “Tuning Band gap in tandem solar cells”, *Optoelectronics and Advanced Materials- Rapid Communication* (Y), vol. 9, iss. 1-2/2015
 19. Kh. S. Karimov, Noshin Fatima, Khaulah Sulaiman, M. Mahroof Tahir; Zubair Ahmad, and **A. Mateen**, “Sensitivity enhancement of OD- and OD-CNT-based humidity sensors by high gravity thin film deposition technique” Vol. 36, No. 3 *Journal of Semiconductors* (X) March 2015
 20. Kh.S.Karimov ,Khaulah Sulaiman, Zubair Ahmad, Kh.M.Akhmedov, **A. Mateen**, “Novel pressure and displacement sensors based on carbon nanotubes”, *Chinese Physics B* (X), Vol. 24, No. 1 (2015) 018801

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21. **A. Mateen** and T.I. Khan, "Abrasive wear mechanism in near-nano and microstructured WC-Cobalt coatings", Applied Mechanics and Materials, Vol. 229-231 (2012) pp. 678-683
 22. **A. Mateen**, G.C. Saha, T.I. Khan and F.A. Khalid, "Tribological behaviour of HVOF sprayed 'duplex' near-nanocrystalline and microcrystalline WC-17wt. %Co coatings", Surface and Coatings Technology (W) Vol. 206 (2011) pp.1077-1084
 23. **A. Mateen**, F.A. Khalid, T.I. Khan and G.C. Saha, "A comparative study of the wear behaviour of micro and near-nanocrystalline WC-Cobalt coatings", J. Adv. Mater. Res., Vol.326 (2011) pp.144-150
 24. Kh.S. Karimov, F.A. Khalid, M.T.S. Chani, **A. Mateen**, M.A. Husain, A. Maqbool, "Carbon nanotube based flexible sensors", Optoelectronics and Advanced Materials-Rapid Communications (Y), Vol. 6, No. 1-2 (2012) pp. 212-214
 25. Kh.S. Karimov, M. Saleem, Z.M. Karieva, **A. Mateen**, M. Tariq Saeed Chani and Qayyum Zafar "Humidity Sensing Properties of Cu₂O-PEPC Nanocomposite Films" Journal of Semicondors (X) Vol. 33, No. 7 (2012) 5 pages
 26. Kh. S. Karimov, M.M. Ahmad, Z.M. Karieva, M. Saleem, **A. Mateen** and A. Moiz, "Humidity Sensing Properties of Carbon Nano-Tube Thin Films", Sensor Letters (X), Vol. 9 (2011) pp. 1-5
 27. Kh. S. Karimov, M. Saleem, Z. M. Karieva, Adam Khan, T. A. Qasuari and **A. Mateen** "A carbon nanotube-based pressure sensor" Physica Scripta (X) **83** (2011) 065703 (4pp) doi:10.1088/0031-8949/83/06/065703
 28. Kh.S. Karimov, Kh.M. Akhmedov, Z.M. Rahmatova, I. Khomidov, **A. Mateen**, Adam Khan, "Displacement transducer on the base of poly-N-epoxypropylcarbazole and Cu₂O composite", Journal of Academy of Sciences of Tajikistan, Vol. 53, No.11 (2011), pp.852-855.
 29. Kh. S. Karimov, M. Saleem, Z. M. Karieva, Adam Khan, **A. Mateen**, "CNT Based Displacement Sensor" International Journal of Materials Research (X) Vol. 103 (2012) pp.897-900

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30. Kh.S. Karimov, Z.M.Karieva, M. Saleem, **A. Mateen** “Humidity Sensing Properties of CNT/OD/VETP Nanocomposite Films” *Physica E (W)*, **43** (2010) pp. 28-32
 31. **A. Mateen** “Some methodologies used for the synthesis of cuprous oxide- A review” *J. Pak Mater Soc* 2008; 2(1), pp 40-43

Conference Publications

32. Sidra Younas Khan and **Abdul Mateen**, “A Study of Tribological Behavior and Lubrication mechanism of Graphene Nanoplatelets under Different Lubrications on HVOF sprayed WC-Co-Cr” *Nanotech ME 2017 international conference Dubai, United Arab Emirates on 04-06 Dec, 2017*
33. Yumna Javed and **Abdul Mateen**, “To study the comparative mechanical properties of WC-Co-Cr and triballoy T400 cermet coatings using HVOF Spray method” *15th International Symposium on Advance Materials, 16-20 October 2017, NCP, Islamabad*
34. Sara Hashmi, Tauseef Ahmad and **Abdul Mateen**, “The study of adhesive strength of Diamalloy 3002NS coatings using high velocity oxy fuel (HVOF) thermal spray method” *15th International Symposium on Advance Materials, 16-20 October 2017, NCP, Islamabad*
35. Waseem Akram, **Abdul Mateen**, Ibrahim Qazi, Ali Hussain, “Development and characterization of cost effective wear and corrosion resistant HVOF sprayed chromite coatings and hard chrome plating”, pages 66-73, *16th International Bhurban Conference on Applied Sciences and Technology (IBCAST), Islamabad 2019*
36. **A. Mateen**, F.A. Khalid, T.I. Khan and G.C. Saha, “A comparative study of the wear behaviour of micro and near-nanocrystalline WC-Cobalt coatings”, *IBCAST, Islamabad, 10 Jan. 2011*
37. G.C. Saha, **A. Mateen**, T.I. Khan, “Tribological studies of conventional microcrystalline and engineered near-nanocrystalline WC-17Co HVOF coatings” *Nanotech 2010 Vol. 1*, pp. 592-595
38. G.C. Saha, **A. Mateen**, T.I. Khan, “Tribological performance study of HVOF-sprayed microcrystalline and nanocrystalline WC-17wt.%Co coatings”. *ASME*

- 2010 International Mechanical Engineering Congress & Exposition (IMECE2010), Vancouver, BC, 12-18 November, 2010, pp. 153-162 Vol. 12-18. <http://dx.doi.org/10.1115/IMECE2010-40086>
39. G.C. Saha, **A. Mateen**, T.I. Khan, “Erosion-corrosion properties analysis of novel nanostructured and conventional microstructured WC-17wt %Co HVOF-sprayed coatings for oil sands application”, 22nd Canadian Materials Science Conference (CMSC2010), University of Waterloo, ON, 8-11 June2010
40. **A. Mateen**, F.A. Khalid, T.I. Khan, G.C. Saha, oral presentation in the Conference on Materials Processing, Characterization, Properties and their Economic Potential (December 1-3, 2010) at The University of Peshawar, Pakistan, organized by the Pakistan Materials Society, Materials Connection Centre and Materials Research Laboratory, University of Peshawar.
41. **A. Mateen**, F. Ahmad Khalid, Poster Presentation under the Title “Fabrication of Nanostructured Composite Coatings by High Velocity Oxy Fuel Process” in the industrial open house held at GIKI on April 9-10, 2009
42. Kh.S. Karimov, Z.M.Karieva, M. Saleem, **A. Mateen** “Humidity Sensing Properties of CNT/OD/VETP Nanocomposite Films” Paper accepted in the 3rd International meeting on Developments in Materials Processes and Applications of Emerging Technologies, Manchester, United Kingdom, 21-23 July 2009
43. **A. Mateen** “Clean Energy” Conference proceedings on Renewable Energy, Organized by World Summit on Sustainable Energy and MoE, Pakistan, 1-2 February 2005, pp. 24-28
1. Training on Office of Research Innovation & Commercialization (ORIC), Capacity Building Program on Innovation, Commercialization & Technology Transfer “From Lab to Market-Mastering Research Commercialization & Innovation” held on 18-20th July 2023. Sponsored by World Bank Group & Organized by HEC.
2. Conference Chair, “International Conference on Minerals & Ores Processing in Pakistan” in collaboration with SEGMITE & PSF, March 15-17th, 2023.

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3. Coordinator workshop on Surfaces, Coatings, Corrosion and Applications, 7-8 March 2018
 4. Effective Teaching and Assessment July 31-Aug 1, 2013, Institute of Space Technology
 5. 2012 International Conference on Nanomaterials and Electronics Engineering ICNEE 2012, July24-26, 2012, Kuala Lumpur, Malaysia, Organized by Singapore Institute of Electronics
 6. The 8th International Bhurban Conference on Applied Sciences & Technology (IBCAST) held from 10 to 13 January, 2011 at National Centre for Physics (NCP), Islamabad organized by Centres of Excellence in Science & Applied Technologies (CESAT), Islamabad.
 7. Three day, 1st National Conference on Material Processing, Characterization, Properties and their Economic Potential held from December 1-3, 2010 at conference hall in, Sir Sahibzada Abdul Qayyum Hall, University of Peshawar
 8. International Symposium on Vacuum Science and Technology, at the National Center for Physics, Quaid-e- Azam University, Islamabad,02-06 Nov. 2010.
 9. “Materials Design and Processing” held at GIK Institute in collaboration with North Western Polytechnic Institute University China under Asia-Link FASTAHEAD Project from June 16-20th , 2008
 10. “Non-Linear Finite Element Methods” held at GIK Institute in collaboration with the University of Illinois, Urbana- Champaign, USA, from June 04-08, 2007
 11. First All Pakistan Conference on Materials Technology held at GIK Institute from January 25-27th, 2008
 12. One day work shop on “Where Government and Academia meet” held at the Directorate of Science and Technology, Peshawar on April 29th, 2008
 13. Workshop on Renewable Energy organized by the Ministry of Environment in collaboration with the World Summit on Sustainable Development held in Islamabad on February 1-2nd, 2005
 14. High Temperature Oxidation, Metallography and Electrochemical Corrosion Rate measurement at Pakistan Atomic Energy Commission from June 13th to August 5th, 1993.

Professional Affiliations

Pakistan Engineering Council Regn. No. METAL/3792

Interdisciplinary Research Training Center (IRTC) Approved supervisor for Gems &

Advanced Materials No. 012GE22

HEC Approved Supervisor

Thesis Supervised

Student	Level	Status
1. Rana Sultan Mahmood	PhD	Completed
2. Zeeshan Abbasi		In progress
3. Ms. Yumna Javed		

4. Ms. Sidra Yunus	MS	Completed		
5. Ms. Sara Hashni				
6. Mr. Tauseef Ahmad				
7. Mr. Waseem Akram				
8. Mr. Asim Shehzad				
9. Mr. Saleem Shah				
10. Mr. Ihsan				
11. Mr. Suleman				
12. Mr. Ahmad Zahid				
13. Mr. Noor Alam				
14. Mr. Hameed Gul		In progress		
15. Mr. Ibrahim				
Many students from different universities including IST, NUST, PRESTON & KUST			Bachelor	Completed

Collaborations

National	International
1. Minerals Development Department, KP	1. CUMT, China

2. SGS	2. USM, Malaysia
3. SEGMITE	3. U of C, Canada
4. NUST	4. Micro Test, Spain
5. AUST	
6. KUST	
7. Preston University	
8. UET Peshawar	