

ACADEMIC QUALIFICATIONS:

2018-2023	Doctor of Philosophy (Ph.D.) in Materials Processing Engineering from Northwestern Polytechnical University, China Specialty: Materials processing engineering, Solid state welding, Entropy alloy
2011 to 2013	Master of Engineering (M.Engg.) in Materials from NED University of Engineering & Technology, Pakistan
2007 to 2010	Bachelors of Engineering (B.E) in Materials from NED University of Engineering & Technology, Pakistan

PROFESSIONAL EXPERIENCE & INDUSTRIAL TRAININGS:

2024 to date	Deputy Director QEC , NED University of Engineering & Technology, Karachi.
2025 to date	Associate Professor , (Metallurgical Engineering Department), NED University of Engineering & Technology, Karachi.
2018 to 2025	Assistant Professor , (Metallurgical Engineering Department), NED University of Engineering & Technology, Karachi.
2011 to 2017	Lecturer, (Metallurgical Engineering Department), NED University of Engineering & Technology, Karachi. Career summary: - Engage in teaching different engineering courses (i.e. Mineral processing, welding metallurgy, mechanical behavior of materials, Design and Characterization of materials etc.) - Actively involved in commercial testing and industrial projects (consultancy). - Also served as Class Advisor, Faculty Advisor, Internship coordinator, and Project Coordinator. - In-charge of Microscopy, Metallography and Mineral Processing Laboratory. - Actively involved in undergraduate curriculum revision for materials and metallurgical engineering departments.
2010	Working experience with Pak Suzuki Company Ltd, as Management Trainee under the following departments: - Quality control Department - Welding section - Vehicle Assembly unit
2009	Intern at Pakistan Cables Ltd, and worked under the following departments: - Cathode Plant for copper melting - PVC compounding for cable insulation - Aluminum Extrusion and anodizing department
2009	Intern at Pakistan International Airline (PIA, Engineering division), and worked under the following departments: - Engine Overhaul Shop - Ultrasonic Inspection Lab - Composite Testing Lab

TECHNICAL SKILLS & COMPETENCIES:

- Research design and methodology (**MINITAB**)
- Data visualization and Statistical analysis (**Power BI, SPSS**)
- Expertise on Mineral Processing Software (**MODSIM**)
- Simulation Software for metal casting (**Solid-Cast**)
- Programing and Simulation software's (**Python, MATLAB, ABAQUS, and COMSOL**)
- Software for selection of materials in engineering designs (**CES grant a design**)
- Hands on experience with SEM, TEM, EBSD, XPS, DSC-TGA, and XRD analysis

JOURNAL PUBLICATIONS:

- [1] **Samiuddin Muhammad; Jinglong Li; Muhammad Muzamil; Sumair Uddin; Jiangtao Xiong; “Mechanical and Microstructural Characterization of the Bond Interface Formed in Diffusion Welding of CoCrNi Medium Entropy Alloy (MEA) and AISI 304 Stainless Steel Under Various Processing Parameters”, *Metals and Materials International* (2022). <https://doi.org/10.1007/s12540-022-01309-2> Springer Nature.**
- [2] **Samiuddin, Muhammad; Jinglong Li; Muhammad Muzamil; Saqib Khan; Jiangtao Xiong; “Parametric Optimization of Diffusion Welding Process in Joining of CoCrNi Medium-Entropy Alloys (MEA) and SUS 304 Stainless Steel Using Full Factorial Design” *Journal of The Minerals, Metals & Materials Society (JOM)* 74, 4280–4293 (2022). <https://doi.org/10.1007/s11837-022-05500-z> Springer Nature.**
- [3] **Samiuddin, Muhammad; Li, Jinglong; Xianjun, Sun; Xiong, Jiangtao; “Diffusion welding of CoCrNi Medium-entropy alloy (MEA) and SUS 304 stainless steel using different interlayers”, *Metallurgical Research and Technology*, 119, 312, 2022, <https://doi.org/10.1051/metall/2022019> EDP Sciences.**
- [4] **Samiuddin, Muhammad; Li, Jinglong; Chandio, Ali Dad; Muzamil, Muhammad; “Diffusion welding of CoCrNi medium entropy alloy (MEA) and SUS 304 stainless steel at different bonding temperatures”, *Welding in the World*, 65, 11, 2193-2206, 2021, <https://doi.org/10.1007/s40194-021-01165-5> Springer Berlin Heidelberg.**
- [5] **Samiuddin, Muhammad; Li, Jinglong; Xiong, Jiangtao; Ren, Ling; “Electrochemical Corrosion Behavior of CoCrNi Medium Entropy Alloy and SUS-304 Stainless Steel Diffusion Welded Joints at Various Bonding Temperatures”, *Physics of Metals and Metallography*, 122, 14, 1561–1571, 2021, <https://doi.org/10.1134/S0031918X21140234> Springer Nature.**
- [6] **Samiuddin, Muhammad; Li, Jinglong; Muzamil, Muhammad; “A Study of Induction Hardening Parameters for the DIN 42CrMo4 Alloy through Its Microhardness, Corrosion Resistance, and Microstructure Examination”, *Physics of Metals and Metallography*, 122, 11, 1121-1131, 2021, <https://doi.org/10.1134/S0031918X21110132> Springer Nature.**
- [7] **Samiuddin, Muhammad; Li, Jinglong; Taimoor, Muhammad; Siddiqui, Mohammad Nouman; Siddiqui, Sumair Uddin; Xiong, Jiang-tao; “Investigation on the process parameters of TIG-welded aluminum alloy through mechanical and microstructural characterization”, *Defence Technology*, 17, 4, 1234-1248, 2021, <https://doi.org/10.1016/j.dt.2020.06.012> Elsevier.**
- [8] **Samiuddin, Muhammad; Younus, Hira; Anwer, Zubia; Li, Jinglong; Siddiqui, Sumair Uddin; Siddiqui, Mohammad Nouman; “Mechanical & microstructural evaluation of reversible and irreversible embrittlement in ultra-high strength steel”, *International Journal of Lightweight Materials and Manufacture*, 3, 3, 250-257, 2020, <https://doi.org/10.1016/j.ijlmm.2020.02.003> Elsevier.**
- [9] **Samiuddin, Muhammad; Jinglong Li; Mudassir Farooq; Jiangtao Xiong; “Nano-indentation and corrosion behavior of diffusion welded CoCrNi Medium-entropy alloy (MEA) and SUS 304 stainless steel joints”, *Revista de Metalurgia*, 9(3), e244, 2023 <https://doi.org/10.3989/revmetalm.244>**
- [10] **Jin Feng; Muhammad Samiuddin; “Quasi-in-situ observation of fatigue crack growth behavior of friction stir welded 2A12-T4 joint” *Materials research express*, 2024, IOPscience, <https://doi.org/10.1088/2053-1591/ad5140>**
- [11] **Riaz, Fahad; Samiuddin, Muhammad; Farooq, M; “Analysis of Tafel polarization scans of Magnesium-Steel galvanic couple under different corrosive environments at various temperatures”, *Revista de Metalurgia*, 58, 2, e220, 2022, <https://doi.org/10.3989/revmetalm.220>**

- [12] Maaz Akhtar; **Muhammad Samiuddin**; Muhammad Muzamil; Mahad Ali Khan; Naser A. Alsaleh; Rashid Khan; Joy Djuansjah; Ali Khursheed Siddiqui; Arfan Majeed; “**Mechanical behavior of Selective Laser Melting (SLM) parts with varying thicknesses in a saline environment under different exposure times**”, *Materials*, 17(9), 2024, <https://doi.org/10.3390/ma17091959>
- [13] Xiong, Jiangtao; Peng, Yu; **Samiuddin, Muhammad**; Yuan, Lin; Li, Jinglong; “**Common mechanical properties of diffusion bonded joints and their corresponding microstructure features**”, *Journal of Materials Engineering and Performance*, 29, 5, 3277-3286, 2021, <https://doi.org/10.1007/s11665-020-04819-5> Springer.
- [14] M Taimoor; L Aijun; **Muhammad Samiuddin**; “**Sliding mode learning algorithm based adaptive neural observer strategy for fault estimation, detection and neural controller of an aircraft**”, *Journal of Ambient Intelligence and Humanized*, 12, 2, 2021, <https://doi.org/10.1007/s12652-020-02390-4> Springer Berlin Heidelberg.
- [15] Muhammad Muzamil; Mahad Ali Khan; Naser A. Alsaleh; Rashid Khan; Joy Djuansjah; Ali Khursheed Siddiqui; **Muhammad Samiuddin**; Arfan Majeed; “**Post-wear surface morphology assessment of laser surface melting (SLM) AlSi10Mg specimens after exposure to different gas welding flames**”, *Coating*, 14(3), 2024, <https://doi.org/10.3390/coatings14030252>
- [16] Muhammad Muzamil; Syed Amir Iqbal; Muhammad Naveed Anwar; **Muhammad Samiuddin**; Junzhou Yang; Muhammad Ahmed Raza; “**Wear Behavior Assessment of Wire-Arc Additively Prepared New Surfaces on AA6061 And AA5086 Alloys through MWCNTs and Ni Particle Inducements**”, *Coatings*, 14(4), 2024, <https://doi.org/10.3390/coatings14040429>
- [17] A. W. Aldeen; Z. W. Chen; I. A. Disher; **Muhammad Samiuddin**; and K. Yan; “**Second Phase Particles in Zr–Sn–Nb–Fe Alloys: A Review**” *Physics of Metals & Metallography*, 124, 362–379 (2023), <https://doi.org/10.1134/S0031918X22601470>
- [18] Muzamil, Muhammad; Wu, J; **Samiuddin, Muhammad**; Majeed, A; Uddin Siddiqui, S; Mudassir, M; “**Macro-Mechanical behavior of unique surface welded joints (AA5083) utilizing tungsten inert gas welding against single-stage homogenization annealing**”, *Revista de Metalurgia*, 56, 3, e173, 2021, <https://doi.org/10.3989/revmetalm.173>
- [19] Muzamil, Muhammad; Wu, Jianjun; **Samiuddin, Muhammad**; Majeed, Arfan; Waqas, Ali; “**Effect of age hardening to reclaim mechanical properties at different levels of temperature with prolong holding time on GTAW weldments**”, *16th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, 20-25, 2019, IEEE.
- [20] Muzamil, Muhammad; Wu, Jianjun; **Samiuddin, Muhammad**; Majeed, Arfan; Zhang, Zengkun; “**The response of heat-treatable filler on non-heat-treatable aluminum alloy substrate against age hardening cycle for intelligent development of surface welded joints using TIG welding process**”, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 41, 5, 01-Dec 2020, <https://doi.org/10.1007/s40430-019-1731-x> Springer.
- [21] Muzamil, Muhammad; Wu, Jianjun; **Samiuddin, Muhammad**; “**Modified utilization of semi-sectioned tubes as filler coated with MWCNTs–TiO₂ in TIG arc welding to recover fusion lost mechanical properties of the weldment**”, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 41, 1, Jan-13, 2019, <https://doi.org/10.1007/s40430-018-1504-y> Springer Berlin Heidelberg.
- [22] M Taimoor; X Lu; W Shabbir; C Sheng; **Muhammad Samiuddin**; “**Novel Neural Observer Based Fault Estimation, Reconstruction and Fault-tolerant Control Scheme for Nonlinear Systems**”. *Journal of Intelligent & Fuzzy Systems* 41 (1), 355-386, 1 Jan. 2021, <https://doi.org/10.3233/jifs-201830>
- [23] Maaz Akhtar; Muhammad Imran Lashari; Muhammad Muzamil; Mohsin Sattar; Muhammad Imran Shabir; Sumiya Mohsin; **Muhammad Samiuddin**; “**Comparative investigation of corrosion rate on A-36 steel with different coatings include ZnO and TiO₂**”, *Revista de Metalurgia*, 57, 2, e193, 2021, <https://doi.org/10.3989/revmetalm.193>
- [24] S. Siyal; Asad A. Zaidi; **Muhammad Samiuddin**; S. A. Jogi; I. Samo; A. Shah; “**Effect of vacuum heat treatment process on toughness and wear of H13 tool steel material**” *European Journal of Advances in Engineering and Technology*, 2019, 6(5):42-49

- [25] Shakeel Ahmad; Bing Zhu; **Muhammad Samiuddin**; Muhammad Tariq; Umar Farooq “**Magnetic Properties of Different Phases Iron Oxide Nanoparticles Prepared by Micro Emulsion-Hydrothermal Method**”, 2024, (under review)
- [26] Mortadha Kareem A. Razzaq; Affaan Uthman Moosa; Mohammed sabeeh Mohamed; Hussein Kareem Abdul Zahra; **Muhammad Samiuddin**; “**Investigation of the Impact of Varying Welding Current on the Microstructure, Texture, and Mechanical Properties of Gas Metal Arc Welded AISI 304 Austenitic Stainless Steel**”, *Welding International*, 2024, Taylor & Francis (under review)

CONFERENCE PUBLICATIONS:

- [1] **Samiuddin, Muhammad**; Mazahir, Muhammad Asjad; Mahfooz, Talha; “**Modeling of Bainitic Phase Transformation in Fe-Mn-Si-C Alloy**”, Professor Dr. Muhammad Tufail Convener, 253, 253, 2016
- [2] **Samiuddin, Muhammad**; “**Modeling of bainitic phase transformation in Fe-Mn-Si-C alloy**” (*Proceedings of Advanced Materials and Process Engineering, AMPE*).
- [3] **Samiuddin, Muhammad**; “**Design and Fabrication of Laboratory Scale Cupola Furnace**” (*accepted for Proceedings of Advanced Materials and Process Engineering, AMPE*).
- [4] **Samiuddin, Muhammad**; “**To Develop a Laboratory Scale Vacuum Furnace for the Production of Magnesium Particles**” (*Proceedings of Advanced Materials and Process Engineering, AMPE*).
- [5] Rizwan, M; Ali, M; **Samiuddin, Muhammad**; “**Effect Of Heat Treatment on The Corrosion Rate Of Aisi 1045 Steel, When Subjected To Various Environments**”, (*Proceedings of 5th International Mechanical engineering congress*).

AWARDS & HONORS:

2024	Received “ Best Researcher Award ” for the year of 2024 By NED (ASRB)
2023	Received “ Outstanding graduate award ” for the year of 2023 by Northwestern Polytechnical university, China
2020-2022	Received “ Best Researcher Award in three consecutive years 2020, 2021, and 2022 ” by the NED Alumni Association of Southern California, USA.
2016	Received “ Excellency in Teaching Award in 2015 & 2016 ” by the Alumni Association of Southern California, USA.
2014	Secured 9th position worldwide in 7th Virtual Steel Making Challenge by producing Steel grade for yellow goods Application in EAF, at a total cost of \$295.58.

RESEARCH INTEREST:

- Welding and joining of Materials
- Alloy designing, High to Medium Entropy Alloys
- Modeling and Simulation of Materials
- Mineral Processing and Extraction processes

TRAINING & CERTIFICATIONS:

- Certified Training on **Mechanical Testing Machines** by Wance Technology, China
- Certificate on **Technical Computation with MATLAB**
- Certificate on **Technical writing with LATEX**
- HEC indigenous Workshop on “ **Project Management**” , 2015

NATIONAL & INTERNATIONAL PROJECTS:

- Co-Researcher of a research project on “**Crack growth behavior of friction stir welded 2A12-T4 joint**” funded by National Natural Science Foundations of China (Grant No. 52205416).
- Co-Investigator on the project "**Selective Laser Melting of AlSi10Mg alloy**" with Imam Mohammad Ibn Saud Islamic University (Grant No. IMSIU-RG23104).
- Committee member for a research project on the "**Beneficiation of Taconite based iron ore**" in collaboration with **Pakistan Petroleum Ltd** and **Bolan Mining Enterprises**. Also established laboratory setups for **Mineral Processing** and **Wet Chemistry** in the Department.

OTHER OFFICIAL ASSIGNMENTS:

- As Reviewer in various international peer reviewed journals.
- Organized training workshops for **International Industries Ltd.** and **International Steels Ltd.** on Metallography and Microscopic Techniques.
- Conducted a workshop on “**Design, Selection & Corrosion of Engg. Materials**” for the Extended Internship Programme (EIP) by Pakistan Petroleum Limited (PPL) and NED University of Engineering & Technology, with 30+ attendees including Mechanical, Chemical, and Petroleum Graduates.

PROFESSIONAL MEMBERSHIPS:

- Life time member of Pakistan Engineering Council
- Member of American Society of Mechanical Engineers (ASME)
- Member of American Welding Society (AWS)
- Member of Ana mileage club, Japan