

MUHAMMAD SAMIUDDIN (PhD)

ASSISTANT PROFESSOR

Department of Metallurgical Engineering,
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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 development, and mineral processing
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.
2018 to date	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: <ul style="list-style-type: none">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: <ul style="list-style-type: none">Quality control DepartmentWelding sectionVehicle Assembly unit
2009	Intern at Pakistan Cables Ltd. and worked the following departments: <ul style="list-style-type: none">Cathode Plant for copper meltingPVC compounding for cable insulationAluminum Extrusion and anodizing department
2009	Intern at Pakistan International Airline (PIA, Engineering division). and worked following departments: <ul style="list-style-type: none">Engine Overhaul ShopUltrasonic Inspection LabComposite 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**)
- Simulation software's (**Python programing, 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/metal/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 Microstru,cture 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 TiO", *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

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 COLLABORATIONS:

- 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