

Engr. Dr. Tariq Jamil

Associate Professor

Professional Engineer, NED Approved Supervisor, PEC Program Evaluator

NED University of Engineering and Technology, Karachi-Pakistan

Personal Details

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ResearcherID : B-9850-2014
Scopus Author ID : 57195973181
Linkin ID : <https://www.linkedin.com/in/tariq-jamil-38236715/>

Education

- ❖ University of Colorado Boulder, CO, USA
 - Masters leading to PhD in 'Chemical Engineering' 12/2018
Thesis Title: "Understanding the Dynamics of Multiphase Cement and Clay-Based Materials from the Nanoscale" successfully completed under the supervision of Prof. Dr. Hendrik Heinz
 - ❖ NED University of Engineering and Technology, Karachi-Pakistan
 - Masters of Engineering - Mechanical Design 07/2008
(Majors courses: Material Science, Computer-Aided Design, Advance Stress Analysis, Design Engineering etc.)
 - Bachelor in 'Mechanical Engineering' 05/2004
(Final year project related to Finite Element Analysis, Computer-Aided Design, Stress Analysis)
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Selective Honors and Awards

- ❖ **Certificate of Achievement:** Awarded the "Best Researcher Award" for the year 2025 by the Advanced Studies Research Board (ASRB), NED University of Engineering and Technology, Karachi. 2025
- ❖ **Certificate of Achievement:** Awarded the "Best Researcher Award" for the year 2024 by the Advanced Studies Research Board (ASRB), NED University of Engineering and Technology, Karachi. 2024
- ❖ **Best Teacher Award (2023)** in the category of Assistant Professor conferred by the NED Association of Southern California, USA, for outstanding teaching performance. (2023) 2024

- ❖ **Certificate of Achievement:** Recognized with the “Best Researcher Award” for the year 2023 by the Advanced Studies Research Board (ASRB), NED University of Engineering and Technology, Karachi. 2024
 - ❖ **Best Final Year Undergraduate Student Project (2022):** Supervised the project titled “Design and Development of Compact Equipment for the Grading of Material Composed of Dry Micro-Size Particles,” awarded by the UNESCO Chair on Sustainable Urban Regions under the Directorate of University Advancement & Financial Assistance. 2023
 - ❖ **Journal Cover Recognition:** Co-first author article featured on the cover of *ACS Sustainable Chemistry & Engineering* (Impact Factor: 7.632), Volume 9, Issue 25. (2021) ([Link for Journal Cover](#)) 2021
 - ❖ **Best Final Year Undergraduate Student Project (2020):** Supervised the project titled “Design and Fabrication of Impact Testing Machine (ASTM D256),” recognized by the UNESCO Chair on Sustainable Urban Regions under the Directorate of University Advancement & Financial Assistance. 2021
 - ❖ **Journal Cover Recognition:** First-author article and PhD research featured on the cover of *Green Chemistry* (Impact Factor: 9.48), Issue 5. ([Link for Journal Cover](#)) 2020
 - ❖ **Scholarship:** Received funding from École Polytechnique Fédérale de Lausanne (EPFL) to attend the “4th LC3 Doctoral School on Characterization Methods of Blended Cement” at EPFL, Lausanne, Switzerland. 04/2018
 - ❖ **Graduate School Domestic Travel Grant:** University of Colorado Boulder sponsored attendance at the “41st International Conference on Advanced Ceramics and Composites” in Daytona Beach, Florida, USA. 01/2017
 - ❖ **Travel Assistance:** Received *ACerS Travel Assistance* to attend the ElectroCeramic Summer School in Limoges, France. June 23-25, 2016 06/2016
 - ❖ **Best Poster Award:** Recognized at the “5th World Congress on Materials Science & Engineering” in Alicante, Spain. (June 2016) ([News URL](#)) 06/2016
 - ❖ **Student Travel Grant:** Attended the MS&T 2015 conference in Columbus, Ohio, USA, with support from The Minerals, Metals & Materials Society (TMS). ([News URL](#)) 10/2015
 - ❖ **Award of Distinction:** Earned recognition for a poster presentation at the “23rd World Forum on Advanced Materials (PolyChar 23)” in Lincoln, Nebraska, USA. ([News URL](#)) 05/2015
 - ❖ **Fellowship from National Science Foundation (NSF) USA:** Funded participation in the “23rd World Forum on Advanced Materials (PolyChar 23)” in Lincoln, Nebraska, USA. 05/2015
 - ❖ **Scholarship:** Awarded by the Higher Education Commission (HEC) of Pakistan for pursuing PhD in the USA. 2014 - 2017
 - ❖ **First Prize:** Secured top honors in “Cement Grinding Aids Specialist Training” at Sika Corporate Services, Liemen, Germany. 04/2011
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Appointments

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| ❖ Coordinating Lead Author, IPCC (United Nations)
Chapter 12: Buildings and Human Settlements, Working Group III, Seventh Assessment Report (AR7). | 09/2025-
till date |
| ❖ Associate Professor
NED University of Engineering and Technology, Karachi | 10/2025-
till date |
| ❖ Assistant Professor (on study leaves between 01/2014 - 08/2018)
NED University of Engineering and Technology, Karachi | 08/2011-
10/2025 |
| ❖ Research Assistant , Chemical & Biological Engineering Department,
University of Colorado-Boulder, USA | 09/2015-
08/2018 |
| ❖ Graduate Assistant , Polymer Engineering Department
University of Akron, Ohio, USA | 01/2014-
08/2015 |
| ❖ Manager - Sales & Technical Services , Sika Pakistan Private Limited
(Mainly responsible for Sika industrial business across the country, provide technical support and conduct training on industrial adhesives and cement grinding aids) | 04/2010-
07/2011 |
| ❖ Assistant Manager , Honda Atlas Cars Pakistan Private Limited
(Mainly responsible for aftermarket product quality and technical support) | 05/2005-
04/2010 |
| ❖ Lecturer , Mechanical Engineering Department,
NED University of Engineering and Technology, Karachi-Pakistan | 01/2004-
05/2005 |
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Administrative Load/Additional Charges

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| ❖ Member, Board of Review (Examination department)
NED University of Engineering and Technology, Karachi | 12/2023 -
12/2025 |
| ❖ Member, Board of Studies (Department of Mechanical Engineering)
NED University of Engineering and Technology, Karachi | 12/2020 -
till date |
| ❖ Joint Secretary , Advanced Studies and Research Board (ASRB)
NED University of Engineering and Technology, Karachi | 07/2020 -
till date |
| ❖ Member , Steering Committee for Final Year Design Projects
Department of Mechanical Engineering, NED University of Engineering and Technology, Karachi | 06/2023 -
till date |
| ❖ Member, Curriculum Alignment Committee
Contributed to aligning the curriculum of the Mechanical Engineering program with the requirements of the Engineering Curriculum Review and Development Committee (ECRDC) | 09/2024 -
till date |
| ❖ Faculty Advisor, IMechE NED Student Chapter (Since 2018)
Provided guidance to the student chapter of the Institution of Mechanical Engineers (IMechE), overseeing events such as PropellAir, AKDC Design Challenge, SoFE, MECHATHON, and various others. | 10/2018 -
till date |

❖ LC3 Resource Person in Pakistan Appointed by the Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland	01/2020 - till date
❖ Resource Person, Higher Performance Computing (HPC) Project (USD > 2m) Collaborated on the need analysis and design for a High-Performance Computing (HPC) system. This World Bank-funded project, awarded to the Higher Education Commission of Pakistan (HEC), will be installed at the NED University of Engineering and Technology. (<i>Project ongoing</i>)	10/2022- 06/2023
❖ Class Advisor, Final Year Students Department of Mechanical Engineering, NED University of Engineering and Technology	12/2013- 08/2011
❖ Class Advisor, First Year Students Department of Mechanical Engineering, NED University of Engineering and Technology	03/2004- 05/2005

List of Research and Capacity Building Grants

- ❖ Principal Investigator (PI), National Centre for Sustainable Construction Material acronym (NC4SCM) worth **USD 400,000 (PKR 112m)**
- ❖ Faculty Advisor of Final Year Project (FYP) 2024-25 titled “Aeroelastic Analysis of 3D Printed Complex Infill Wing Geometries” secured funding of **PKR 0.102m** from NED Alumni Association of Southern California (NEDAASC) USA in a ceremony held on February 10, 2025 in the Senate Hall at NED University of Engineering and Technology, Karachi.
- ❖ Did fundraising for the renovation of mechanical classrooms (Room No. 59, 60 and 02 extension) (**PKR ~4.5m**) in 2021, 2022 and 2024 (project successfully completed)
- ❖ Principal Investigator (PI), Optimization of Lubricant Bottles from Pakistan state Oil worth **PKR 0.95m** (project successfully completed).
- ❖ Principal Investigator (PI), Erasmus+ Capacity Building 2022 grant titled “Implementation of Digital Transformation Practices through the Capacity Building of Occupational and Industrial Stakeholders in Pakistan and Malaysia” (www.GetInnovative4impact.com) worth **Euro 0.78 m (PKR 260m)**.
- ❖ Co-Principal Investigator (Co- PI), Center of Automation and Industry 4.0 Technologies grant from Planning Commission of Pakistan worth **PKR 438m (USD 1.55m)**.
- ❖ Principal Investigator (PI), Independent Research Project Grant 2020 worth **PKR 1.0m** from NED University of Engineering and Technology Karachi (project successfully completed).
- ❖ Principal Investigator (PI), “Development of Cost-Effective Structural Concrete Formulation using Limestone Calcined Clay-Based LC3 Cement Blend with Domestic Resources and its Application in a Pilot Project”, Higher Education Commission of Pakistan (National Research Program for Universities - NRP Project No. 14074 worth **PKR 17.25m** (project successfully completed).
- ❖ Consultant, “Modeling and Performance Evaluation of Sustainable Atmospheric Water Generation Using Water-Selective Metal-Organic Frameworks”, MoST Endowment Funds, NED University of Engineering and Technology awarded to Dr. Mubashir Ali Siddiqui, Dr. Haider Ali, Dr. Tariq Jamil grant worth **PKR 2.875m** awarded in October 2023.

- ❖ PhD Supervisor, “Development and Performance Evaluation of All Atom Multipoint Virtual Models of Metals”, MoST Endowment Funds, NED University of Engineering and Technology grant worth **PKR 2.73m** awarded in October 2023.
- ❖ Co-Principal Investigator (Co- PI), “Establishment of AVIAN in NEDUET (Aero Vehicle Innovation and Advancement Nexus)”, MoST Endowment Funds, NED University of Engineering and Technology grant worth **PKR 2.987m** awarded to Dr. Haider Ali, Dr. Tariq Jamil in October 2023.
- ❖ PhD Co-supervisor, “Framework Development through Investigation and Assessment of Wire Arc Additive Manufacturing for Magnesium Alloy”, MoST Endowment Funds, NED University of Engineering and Technology research grant worth **PKR 2.99 m** awarded to PhD Scholar Engr. Nabeel Ahmed Siddiqui, Dr. Muhamad Muzamil, Dr Tariq Jamil in March 2024.
- ❖ PhD Supervisor, “Evaluation and Optimization of Complex Infill Structures using Aeroelastic Approach” research grant from NED University of Engineering and Technology worth **PKR 1m** awarded to PhD Scholar Engr. Asaad Iqbal and Dr. Tariq Jamil in December 2023.

Selective Industrial Consultancy Services and Projects

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| ❖ Consultancy Projects with Agri Autos and Thal Engineering | Fall 2025 |
| ❖ Consultancy Project with Cherat Cement Company Limited on the “Feasibility Study on the Production of LC3 Cement” | Fall 2024 |
| ❖ Consultancy Project with Pakistan State Oil titled “Activity based Training for Design Optimization of Lubricant Cans” | Fall 2024 |
| ❖ Consultancy Project for the “Finite Element Analysis of Cargo Dolly” for Pakistan Airforce | Fall 2019 |
| ❖ “Modeling Gellan-Clay Interactions and Structure-Property Relationships” using atomistic simulation for Procter & Gamble USA with Prof. Dr. Hendrik Heinz research group | Summer
2015 |
| ❖ “Modeling and Finite Element Analysis of Fuel Supply System of Islamabad International Airport” in coordination with Siemens Pakistan Private Limited | Fall 2004 |
| ❖ “Modeling and Finite Element Analysis of Trailer Mounted Refueler” for Pakistan Air Force in coordination with Metal Engineering Works (Final Year Undergraduate Project) | 2003 |

Selective Internships and Industrial Exposure

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| ❖ As a consultant for Occupational Health and Safety (OHSAS 18000) certification at Hino Pak Motors Ltd., Karachi-Pakistan | Summer
2004 |
| ❖ Internship at Bin-Qasim Thermal Power Station, Karachi-Pakistan | End of Fall
2002 |

❖ Internship at National Refinery Limited, Karachi-Pakistan	Summer 2002
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Selective List of Professional Training Received

❖ Workshop on “ Academic Staff Training Programme ” organized by Dublin City University, Ireland under Erasmus+ Programme held from 2 nd to 6 th September 2024	09/2024
❖ Summer School on "Metal Additive Manufacturing" - Bertinoro FC (Italy), June 30, 2024 - July 3, 2024.	07/2024
❖ Training on “ A Workshop on Leadership and Team Management ” arranged by NED University Quality Enhancement Cell held on May 16, 2024.	05/2024
❖ Training for PEC Program Evaluators (PEVs) on Outcome Based assessment (OBA) conducted with Pakistan Engineering Council on September 19-22, 2023, at NED University of Engineering and Technology Karachi.	09/2023
❖ “British Council - Higher Education of Pakistan training on “ PI Workshop on Research Capacity Building ” held at Avari Tower Hotel Karachi (23 rd -27 th May 2022)	05/2022
❖ “ Higher Education Teacher’s Training ” arranged by NED University of Engineering and Technology	Spring 2019
❖ “ 4th LC³ Doctoral School on Characterization Methods of Blended Cement” at EPFL, Lausanne, Switzerland	04/2018
❖ Cement Chemistry and Sustainable Cementitious Materials , online course initiative of EPFL, Switzerland through edX	11/2017
❖ “ ElectroCeramics Summer School ” arranged by European Ceramic Society (ECerS) at Limoges, France	06/2016
❖ Short courses on “ Characterization of Materials ” at 23 rd Word Forum on Advance Materials” Lincoln, NE, USA	05/2015
❖ Training on “ Sales Competence Training Sika Industry ” mainly focused on Bonding and Sealing Systems at Sika Cooperate Services, Widen, Switzerland	06/2011
❖ “ Cement Grinding Aids Specialist Course ” at Sika Cooperate Services, Lieman, Germany	04/2011
❖ New Model Training (City’09) at Honda Asia Oceana Training Center, Bangkok, Thailand	09/2008
❖ Instructor training for Customer Handling (H-SMART) , Maintenance Technician (MT) and Repair Technician (RT) at Honda Atlas Cars (Pakistan) Ltd, Lahore-Pakistan	2005 - 2010
❖ Noise and Vibration Training at Honda Seil Cars Ltd, Greater Noida, India	04/2007
❖ Electrical Diagnostic Training at Honda Motor Cooperation Ltd., Wako-Shi, Japan	02/2007
❖ New Model Training (Civic’09) at Honda Asia Oceana Training Center, Bangkok, Thailand	01/2006

- ❖ Attended “**Training on Pro/E**” CAD modeling software held at NED University of Engineering and Technology Karachi from 5th June 2004 to 14th June 2004. 04/2005
 - ❖ Attended Course on “**Effective Teaching Practices**” as a part of the “Annual Training Programme for 2005” held at NED University of Engineering and Technology Karachi on March 14-16, 2005. 04/2005
 - ❖ Attended Course on “**Effective Teaching Practice**” held at NED University of Engineering & Technology, Karachi on September 9, 15 and 16, 2004 09/2004
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Invited Talks / Guest Speaker / Panelist

12. As an invited speaker & panelist at ASHRAE Pakistan Annual Conference “HVACR Trends 5.0” held at Marriott Hotel Karachi on December 12 & 13, 2025. The title of the talk was “Strengthening Innovation and Sustainability Through Academic Research and Capacity Development” & Panel discussion topic was “How AI and Innovation Can Enable Smart Decarbonization in Pakistan”.
11. As an invited speaker at “The Future of Construction in Africa” meeting held at Swiss Federal Institute of Technology Lausanne (EPFL) on 15-16 September 2025. The title of the talk delivered on the second day of the meeting was “The Past, Present, & Future of LC3 in Pakistan”.
10. As a participant from Pakistan in the “2025 World Digital Education Conference” held in the Wuhan International Expo Center, Wuhan China on May 14-16, 2025. During the visit, an invited talk was also delivered on “From Atoms to Systems: Multiscale Approaches in Computational Modelling and Simulation + Updates of the Calcined Clay Cement in Pakistan” on May 17, 2025, at Wuhan University of Technology, hosted by Prof. Dr. Chuanlin Hu, Professor, State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology.
9. As a panelist in the Seminar titled “Industry 4.0 and Process Automation” organized by the Engineering Development Board of Pakistan at the NUST Business School Islamabad on February 11, 2025.
8. “The Missing Entrepreneurs: Exploring Societal Barriers to Innovation” at ICAP - Institute of Chartered Accountants (Clifton) for the Power Talk in the Grand Slam Event arranged by the Toastmasters District 122 Pakistan on February 22, 2025. The talk was related to Erasmus+ Capacity Building Project - Getinnovative4impact.
7. “LC3 Cement – Green Construction Material” at The Institution of Engineers, Pakistan Headquarters in Karachi in the International Conference on Civil Engineering (ICEC) on November 16, 2024.
6. “From Atoms to Systems: Multiscale Approaches in Computational Modelling and Simulation” at Ruhr University Bochum, Germany - Monday, July 8, 2024.
5. “Calcined Clay and Fly Ash as a Supplementary Cementitious Materials for Low Carbon Cement” in the National Seminar/Workshop Fly Ash for Civil Infrastructure at NED University of Engineering and Technology Karachi on April 2, 2022.
4. “Introduction about Pakistan and Potential for the Production of Calcined Clay-based Materials” + “Insights from the Multiscale Modeling of Construction Materials” at Wuhan University of Technology, Wuhan, China – October 21, 2019

3. “Understanding the Dynamics of Multiphase Cement and Clay-Based Materials from the Nanoscale” at Swiss Federal Institute of Technology Lausanne, Switzerland - August 8, 2019
 2. “PCE Superplasticizer and Hydrated Cement Phases” at Institute of Building Materials, ETH Zurich, Switzerland - June 20, 2016
 1. “Concrete, Superplasticizer, and Energy” at Energy Frontiers 2016 (SWITCHCU), Boulder, CO, USA - March 10, 2016
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Selective List of Publications in Peer-Reviewed Journals

for an updated list of publications, please visit

<https://scholar.google.com/citations?user=I3BqB2AAAAAJ&hl=en&oi=ao>

Total impact > 114 (sum of impact factor of all journals)

29. **Jamil, T.**, Uzair, M., Khan, N., Ghouri, I. U. K., & Ali, S. (2026). Molecular dynamics simulation of a convergent–divergent nozzle – a nanoscale perspective. *Molecular Simulation*, 52(2), 146–157.
<https://doi.org/10.1080/08927022.2026.2616303>
28. Ali Shaikh, S., & **Jamil, T.*** (2025). Molecular simulation and performance analysis of two-point polarisable model of silver. *Molecular Physics*.
<https://doi.org/10.1080/00268976.2025.2603618>
27. **Jamil T.**, Uzair M., 2025. New Insights on Gaseous Flow and Effect of Eddies on Heat Flux Removal - A Molecular Dynamics Study on Free-Convective Heat Transfer at Sub Micro-Scale. *Numerical Heat Transfer, Part A: Applications*, pp16:1-3.
<https://doi.org/10.1080/10407782.2025.2520809>
26. Hussain, S.M.F., Ayub, T., **Jamil, T.** and Khan, A.U.R., 2025. Durability Performance of OPC and LC3-50 Concrete Containing Lightweight Aggregates. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, pp.1-16.
<https://doi.org/10.1007/s40996-025-01784-8>
25. Bilal, M., **Jamil, T.***, Wasif, M. and Ul Ahad, I., 2025. Impact of Fiber Orientation and Stacking Sequence on the Severity of Drilling Induced Delamination in Carbon Fiber Reinforced Polymer (CFRP) Laminates. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, pp.1-9. *Corresponding Author
<https://doi.org/10.1007/s12008-025-02234-5>
24. Khan, S.T., Mehdi, M., **Jamil, T.** and Qadir, A., 2025. Dynamic Electromechanical Characterizations of Poly (Vinylidene Fluoride) Based Nanocomposite Films on Ultra-Low Modulus Polymer Substrate. *Journal of Applied Polymer Science*, 142(1), p.e56314.
DOI: <https://doi.org/10.1002/app.56314>
23. Siddiqui, N.A., Muzamil, M., **Jamil, T.** and Hussain, G., 2025. Heat Sources in Wire Arc Additive Manufacturing and Their Impact on Macro-Microstructural Characteristics and Mechanical Properties—An Overview. *Smart Materials in Manufacturing*, 3, p.100059.
DOI: <https://doi.org/10.1016/j.smmf.2024.100059>
22. Abbas, W., Khan, B.I., **Jamil, T.***, Nisar, S.A. and Chandio, A.D., 2024. Failure Analysis of Y-Anchors of Hot Cyclone Refractory of Circulating Fluidized Bed Boilers. *Journal of Failure Analysis and Prevention*, pp.1-12. *Corresponding Author

DOI: <https://doi.org/10.1007/s11668-024-02037-y>

21. **Jamil, T.***, Iqbal, A., Allauddin, U., Ahmad, E., Hashmi, S.A., Saleem, S. and Ikhtlaq, M., 2024. Fluid Coupled Structural Analysis and Optimization of Expanded Polystyrene-Fiber-Reinforced Composite Wing of an Unmanned Aerial Vehicle. *Mechanics of Composite Materials*, 60(2), pp.211-226. *Corresponding Author
DOI: <https://doi.org/10.1007/s11029-024-10185-3>
20. Saqib, N., **Jamil, T.*** and Zai, B.A., 2024. Investigating the Crumpling Effect in Honeycomb Sandwich Panels under Bending Loads Using FEA Technique *The Aeronautical Journal*, 128(1322), pp.725-738. *Corresponding Author
DOI: <https://doi.org/10.1017/aer.2023.81>
19. Ayub, T., **Jamil, T.**, Ayub, A., Khan, A.U.R., Mehmood, E. and Sheikh, M.D., 2024. Effect of Glass Powder on the Compressive Strength and Drying Shrinkage Behavior of OPC-and LC3-50-Based Cementitious Composites of Various Strengths. *Advances in Materials Science and Engineering*, 2024(1), p.8860083.
DOI: <https://doi.org/10.1155/2024/8860083>
18. Anas Nisar, S. and **Jamil, T.***, 2023. Effect of Fiber Angle on Mechanical Properties of Natural Fiber Reinforced Polymer through Numerical Analysis. *Memoria Investigaciones en Ingeniería*, (25), pp. 53–71 *Corresponding Author
DOI: <https://doi.org/10.36561/ING.25.5>
17. Ayub, A., Ayub, T., **Jamil, T.** and Khan, A.U.R., 2023. Mechanical and Durability Properties of High-Strength Limestone Calcined Clay Cement (LC3) Concrete Containing Waste Glass Powder. *Iranian Journal of Science and Technology, Transactions of Civil Engineering*, 47(5), pp.2911-2930.
DOI: <https://doi.org/10.1007/s40996-023-01102-0>
16. Khan, S.T., Mehdi, M. and **Jamil, T.**, 2023. Electromechanical Characterizations Of PEDOT: PSS And Its Nanocomposite Thin Films on A Cost-Effective Polymer Substrate For Microelectromechanical Systems (MEMS) Applications *Express Polymereer Letters*, 17(8).
DOI: [10.3144/expresspolymlett.2023.60](https://doi.org/10.3144/expresspolymlett.2023.60)
15. Hussain, S.M.F., Sheikh, M.D., **Jamil, T.***, Khan, A.U.R., Ayub, T., & Hu, C. (2023). Initial Search for Low Grade Clay in Pakistan for Producing LC3 Ecofriendly Cement. *Low-Carbon Materials and Green Construction*, 1(1), p.15. *Corresponding Author
DOI: <https://doi.org/10.1007/s44242-023-00016-4>
14. Qian, X., Ruan, Y., **Jamil, T.**, Hu, C., Wang, F., Hu, S., & Liu, Y. (2023). Sustainable Cementitious Material with Ultra-High Content Partially Calcined Limestone- Calcined Clay. *Construction and Building Materials*, 373, p.130891.
DOI: <https://doi.org/10.1016/j.conbuildmat.2023.130891>
13. Hu, C.; Tao, Y.; **Jamil, T.**; Bishnu, G.; Wang, F., “Reactivity of the Calcined Clay and its Influencing Mechanism”, *Journal of Building Materials*, 2023, 26(2), pp.179-185.
<http://jxcb.cnjournals.cn/jzclxb/article/abstract/20218758>.
12. Iqbal, S., **Jamil, T.***, & Mehdi, S.M. (2023). Numerical Simulation and Validation of MWCNT-CFRP Hybrid Composite Structure in Lightweight Satellite Design. *Composite Structures*, 303, p.116323 *Corresponding Author

DOI: <https://doi.org/10.1016/j.compstruct.2022.116323>

11. Sheikh, M.D., **Jamil, T.***, Ayub, T., Khan, A.U.R., Bilal, S.M., & Hu, C. (2023). Comparative Study on LC3-50 with OPC Concrete Using Raw Materials from Pakistan. *Advances in Materials Science and Engineering*, 2023(1), p.5503670. *Corresponding Author
[DOI: 10.1155/2023/5503670](https://doi.org/10.1155/2023/5503670)
10. Allauddin, U., Ikhlaq, M., **Jamil, T.**, Alvi, F., Hussain, H.A., Mustafa, H., & Azeem, M.H. (2023). Heat-Transfer Enhancement of a Solar Parabolic Trough Collector Using Turbulators and Nanoparticles: A Numerical Study. *Journal of Enhanced Heat Transfer*, 30(3)
<http://dx.doi.org/10.2139/ssrn.4110725>
9. Ruan, Y., **Jamil, T.**, Hu, C., Gautam, B.P. and Yu, J., 2022. Microstructure and Mechanical Properties of Sustainable Cementitious Materials with Ultra-high Substitution Level of Calcined Clay and Limestone Powder. *Construction and Building Materials*, 314, p.125416.
[DOI: https://doi.org/10.1016/j.conbuildmat.2021.125416](https://doi.org/10.1016/j.conbuildmat.2021.125416)
8. **Jamil, T.***, Azher, K., Tahir, M.A., Ali, Z., Hameed, W. and Javed, H.H., 2022. Experimental and Numerical Dynamic Analysis of Plexiglass Acrylic for Impact Energy Using Indigenously Developed Testing Equipment. *UPB Sci. Bull. Ser. D*, 84, pp.191-206. *Corresponding Author
7. Javadi, A., **Jamil, T.***, Abouzari-Lotf, E., Soucek, M.D. and Heinz, H., 2021. Working Mechanisms and Design Principles of Comb-Like Polycarboxylate Ether Superplasticizers in Cement Hydration: Quantitative Insights for a Series of Well-Defined Copolymers. *ACS Sustainable Chemistry & Engineering*, 9(25), pp.8354-8371. *Co-First Author
[DOI.org/10.1021/acssuschemeng.0c08566](https://doi.org/10.1021/acssuschemeng.0c08566) (Journal Cover)
6. **Jamil, T.**, Javadi, A. and Heinz, H., 2020. Mechanism of Molecular Interaction of Acrylate-Polyethylene Glycol Acrylate Copolymers with Calcium Silicate Hydrate Surfaces. *Green Chemistry*, 22(5), pp.1577-1593.
[DOI: 10.1039/C9GC03287H](https://doi.org/10.1039/C9GC03287H) (Journal Cover)
5. Allauddin, U., **Jamil, T.**, Shakaib, M., Khan, H.U., Mohiuddin, R., Saeed, M.S., Ahsan, H. and Uddin, N., 2020. Heat Transfer Enhancement Caused by Impinging Jets of Al₂O₃-Water Nanofluid on A Micro-Pin Fin Roughened Surface Under Crossflow Conditions– A Numerical Study. *Journal of Enhanced Heat Transfer*, 27(4).
[DOI: 10.1615/JEnhHeatTransf.2020033413](https://doi.org/10.1615/JEnhHeatTransf.2020033413)
4. Pramanik, C., **Jamil, T.***, Gissinger, J.R., Guittet, D., Arias-Monje, P.J., Kumar, S. and Heinz, H., 2019. Polyacrylonitrile Interactions with Carbon Nanotubes in Solution: Conformations and Binding as a Function of Solvent, Temperature, and Concentration. *Advanced Functional Materials*, 29(50), p.1905247. *Co-First Author
[DOI: 10.1002/adfm.201905247](https://doi.org/10.1002/adfm.201905247),
3. **Jamil, T.**, Gissinger, J.R., Garley, A., Saikia, N., Upadhyay, A.K. and Heinz, H., 2019. Dynamics of Carbohydrate Strands in Water and Interactions with Clay Minerals: Influence of Ph, Surface Chemistry, and Electrolytes. *Nanoscale*, 11(23), pp.11183-11194.
[DOI:10.1039/C9NR01867K](https://doi.org/10.1039/C9NR01867K)
2. Geada, I.L., Ramezani-Dakhel, H., **Jamil, T.**, Sulpizi, M. and Heinz, H., 2018. Insight into Induced Charges at Metal Surfaces and Biointerfaces Using a Polarizable Lennard–Jones Potential. *Nature communications*, 9(1), p.716.
[DOI:10.1038/s41467-018-03137-8](https://doi.org/10.1038/s41467-018-03137-8)

1. Mishra, R.K., Mohamed, A.K., Geissbühler, D., Manzano, H., **Jamil, T.**, Shahsavari, R., Kalinichev, A.G., Galmarini, S., Tao, L., Heinz, H. and Pellenq, R., 2017. Cemff: A Force Field Database for Cementitious Materials Including Validations, Applications and Opportunities. *Cement and Concrete Research*, 102, pp.68-89
[DOI:10.1016/j.cemconres.2017.09.003](https://doi.org/10.1016/j.cemconres.2017.09.003)
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Conference Contributions (Talks, Posters incl. coworkers)

- 34.T “Influence of Rhyolite Pozzolana Content and Activation Methods on Compressive Strength of Cement” by Syed Fakhar Abbas, Muhammad Danyal Sheikh, Tariq Jamil, & Saqib Nawaz Khan at 5th International Conference on Calcined Clay for Sustainable Concrete (ICCCSC) held from 4th to 6th February, 2026 in Cape Town, South Africa
(Presented by Muhammad Danyal Sheikh, National Center for Sustainable Construction Materials, NED University of Engineering & Technology)
- 33.T “Weight Optimization of Tractor PTO Shaft Using Composite Material” by Muhammad Hateem Arif, Tariq Jamil at 14th International Mechanical Engineering Conference 2025 held on 25th & 26th March 2025 at NED University of Engineering & Technology & IEP, Karachi Centre.
- 32.T “Analysis of Time-Dependent Deflection & Flexural Performance of LC3 and OPC Concrete Beams” by Wajeeha Mahamood, Tariq Jamil, Muhammad Ahmed, Muhammad Danyal Sheikh, Syed Muhammad Shah, Asad-ur-Rehman Khan, Chuanlin Hu at 4th International Conference of Sustainable Building Materials (ICSBM 2025) held from August 10 to August 13, 2025 in Eindhoven, Netherland
- 31.T “Collobrative Study on Weight Optimization of Lubricant Bottle under Stacking Condition using Finite Element Analysis and Machine Learning” by Muhammad Hateem Arif, Muhammad Wasif, and Traiq Jamil at International Conference on Digital Manufacturing held on June 16, 2025 at UMPSA, Pekan, Pahang, Malaysia
- 30.T “Pakistan’s First Structural Application of Limestone Calcined Clay Cement (LC3)” by Tariq Jamil, Muhammad Danyal Sheikh, Tehmina Ayub, Asad-ur-Rehman Khan, and Chuanlin Hu at Global Conference for Green Construction Materials & Practices 2025 (GCGC2025) held on February 5th & 6th, 2025 in Karachi, Pakistan
- 29.T “Investigation of Heat of Hydration of Superplasticized Calcined Clay-Based Cement” by Talha Raza, Muhammad Danyal Sheikh, Tariq Jamil, Tehmina Ayub, and Asad-ur-Rehman Khan at Global Conference for Green Construction Materials & Practices 2025 (GCGC2025) held on February 5th & 6th, 2025 in Karachi, Pakistan
(Presented by Talha Raza, NED University of Engineering & Technology)
- 28.T “Investigating the Effect of Aggregate Size on the Heat of Hydration in Conventional and Low Carbon Concrete” by Abdul Ahad Hashmi, Usman Allah Buksh, Nashmiyah Shaikh, Muhammad Danyal Sheikh, and Tariq Jamil at Global Conference for Green Construction Materials & Practices 2025 (GCGC2025) held on February 5th & 6th, 2025 in Karachi, Pakistan
(Presented by Abdul Ahad Hashmi, NED University of Engineering & Technology)
- 27.T “Impact of Kaolin and Alumina-Silica Ratio on Cement Strength” by Saqib Nawaz Khan, Tariq Jamil, Muhammad Danyal Sheikh, Ali Faruque, Syed Fakhar Abbas, and Abdur Rehman at

Global Conference for Green Construction Materials & Practices 2025 (GCGC2025) held on February 5th & 6th, 2025 in Karachi, Pakistan
(Presented by Saqib Nawaz Khan, Cherat Cement Company Limited)

- 26.T “A Comparative Study on the Joint Hardness and tensile properties of Dissimilar Aluminum Alloy using Tungsten Inert Gas (TIG) Welding” by Atif Shazad, Muhammad Uzair, Tariq Jamil, Noorhafiza Muhammad at 4th International Conference on Key Enabling Technologies (KEYTECH 2024) held on 1st and 2nd September 2024, Dublin City University, Ireland
- 25.T “Fabrication and Characterizations of a Low-Cost Thermal Actuator for Micro-Electro-Mechanical Systems (Mems) Applications” by Shehroze Tahir Khan, Murtuza Mehdi, Tariq Jamil, Abdul Qadir at “13th International Mechanical Engineering Conference – IMEC’24 held on March 6th and 7th, 2024 at NED University of Engineering and Technology Karachi.
- 24.P “Multi-scale Modeling and Simulation of Sub Micro Channel Flow for the Cooling of Microprocessors Containing Nanoparticle Induced Refrigerants” by M. Huzaiifa, Ghulam Fareed, Hamiz Salahuddin, M Hateem Arif at “12th International Mechanical Engineering Conference – IMEC’23 held on May 10th and 11th, 2023 at NED University of Engineering and Technology Karachi. The poster received the best poster award at the conference. (Final Year Undergrad Project of Batch 2022-2023)
- 23.T “Design and Development of Compact Equipment for the Grading of Material Composed of Dry Micro Size Particles”, Tariq Jamil, Ghufuran Ullah, M. Saad Jamali, M. Ahmed, Sheikh Fahad Ahmed at “12th International Mechanical Engineering Conference – IMEC’23 at NED University of Engineering and Technology Karachi on May 11th, 2023.
- 22.P “Economic and Environmental Impacts of Cement Industry in Pakistan and Use of SCMs” at “Calcined Clays for Sustainable Concrete 2022” conference held at Lausanne Switzerland on July 5th -7th, 2022
- 21.P “Exploration and Characterization of Various Types of Kaolinite Rich Clays, First-Ever Industrial Lab Trials, and Demonstration of LC3 in Pakistan” at “Calcined Clays for Sustainable Concrete 2022” conference held at Lausanne Switzerland on July 5th -7th, 2022
- 20.P “Two Way Fluid Structure Interactions of NACA 0012 Foil Made of Composite Material” by Anas Nisar, Tariq Jamil at “11th International Mechanical Engineering Conference – IMEC’22 held on January 14th and 15th, 2022 at NED University of Engineering and Technology Karachi.
- 19.P “Peptide Adsorption on Hydroxyapatite Surfaces and Implications on Shape and Mineralization: Impact of Sequence and Electrolyte pH” at AIChE Annual Meeting at David L. Lawrence Convention Center, Pittsburgh, Pennsylvania. USA - October 29, 2018 (Presented by Juan Liu, University of Colorado Boulder)
- 18.P “All-Atom Models of Tobermorite 11 Å and 14 Å – Benchmarks for Realistic Modelling of C-S-H” at Swiss Chemical Society Fall Meeting at University of Bern, Switzerland – August 21, 2017
(Presented by Ratan Mishra, Institute for Building Materials, ETH Zurich)
- 17.T “All-Atom Models of Tobermorite 11 Å and 14 Å – Benchmarks for Realistic Modelling of C-S-H” at 8th Advances in Cement-Based Materials (Cement 2017), Georgia Tech., Atlanta, USA – June 27, 2017
- 16.P “A Calcium Silicate Hydrate Model Builder and Accurate Force Field Parameters for Atomistic Simulations of C-S-H Polymorphs Using INTERFACE-MD” at 8th Advances in Cement-Based Materials (Cement 2017), Georgia Tech., Atlanta, USA – June 26, 2017

- 15.P “All-Atom Models of Tobermorite 11 Å and 14 Å – Benchmarks for Realistic Modelling of C-S-H” at Competence Center for Materials and Processes (MaP) Graduate Symposium, ETH Zürich, Switzerland June 22, 2017
(Presented by Ratan Mishra, Institute for Building Materials, ETH Zurich)
- 14.P “A Calcium Silicate Hydrate Model Builder and Accurate Force Field Parameters for Atomistic Simulations of C-S-H Polymorphs Using INTERFACE-MD” at 8th Advances in Cement-Based Materials (Cement 2017), Georgia Tech., Atlanta, USA – June 26, 2017
- 13.P “All-Atom Models of Tobermorite 11 Å and 14 Å – Benchmarks for Realistic Modelling of C-S-H” at “International Workshop on Atomistic Simulations for Cementitious Materials,” Les Diablerets, Switzerland - May 17, 2017
(Presented by Ratan Mishra, Institute for Building Materials, ETH Zurich)
- 12.P “All-atoms Models of Tobermorite 11 Å and 14 Å - The First Step towards the Development of Realistic Models of C-S-H” at 41st International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, USA – January 24, 2017
- 11.T “Mechanism of Molecular Interaction of Superplasticizer Oligomers with Hydrated Cement Phases” at 5th World Congress on Materials Science & Engineering”, Alicante, Spain – June 15, 2016
- 10.P “Refined Parameters for Cations and Anions in Aqueous Solution for Atomistic Force Fields” at 5th World Congress on Materials Science & Engineering”, Alicante, Spain – June 14, 2016
- 9.T “Development of Atomistic Force Field and Interfacial Study of Cementitious Minerals” at 4th International workshop on mechanisms and modeling of waste/cement interactions, Murten, Switzerland - April 1, 2016
(Presented by Ratan Mishra, Institute for Building Materials, ETH Zurich)
- 8.T “Prediction of Surface and pH-Specific Binding of Peptides to Metal and Oxide Nanoparticles” at MS&T 2015, Columbus, OH, USA - October 7, 2015
(Presented research of Prof. Dr. Hendrik Heinz, ChBE CU Boulder, USA)
- 7.T “Mechanism Of Molecular Interaction Of Superplasticizer Oligomers With Hydrated Cement Phases Using Molecular Dynamics” at MS&T 2015, Columbus, OH, USA - October 6, 2015
- 6.T “Refined Parameters for Cations and Anions in Aqueous Solution for Atomistic Force Fields” at MS&T 2015, Columbus, OH, USA - October 5, 2015
- 5.P “Mechanism of Molecular Interaction of Superplasticizer Oligomers with Hydrated Cement Phases” at 23rd World Forum on Advance Materials (PolyChar 23), Lincoln, NE, USA – May 13, 2015
- 4.T “Nano-coatings on Clay and Cement: Understanding the Action of Surfactants and Grinding Aids” at MS&T 2014, Pittsburgh, PA, USA - October 15, 2014. (Presented research of Prof. Dr. Hendrik Heinz, ChBE CU Boulder, USA)
- 3.P “Understanding the Interaction of Oligomers with Hydrated Cement Phase” at The Akron Polymer Conference, Akron, OH, USA - October 2, 2014
- 2.P “Understanding the Interaction of Tobermorite with PolyAcrylate Oligomers having PEO Branches” at 6th International Symposium on Polymer Materials Science, Akron, OH, USA- July 28, 2014
- 1.T “Accurate Atomistic Force Fields and Models for Cement Minerals and Aqueous Organic Interfaces” at 5th Advances in Cement-based Materials, Cookeville, Tennessee - July 11, 2014
(Presented research of Prof. Dr. Hendrik Heinz, ChBE CU Boulder, USA)

Publication of Book Chapter

1. “Simulations of Clay Minerals with IFF All Atom Models: Concepts, Validation, and Applications”, Jamil, T. H., Hendrik, In Computational Modeling in Clay Mineralogy, Sainz-Diaz, I., Ed.; AIPEA (International Association for the Study of Clays), Digilabs: Italy 2021; pp 53-74 (**Book Chapter**)

Acknowledged in Peer-Reviewed Journal Publication

1. “Carbon Nanotube Dispersion in Solvents and Polymer Solutions: Mechanisms, Assembly, and Preferences”, C. Pramanik, J. R. Gissinger, S. Kumar, H. Heinz, ACS Nano 11, 12805-12816 (2017). DOI: [10.1021/acsnano.7b07684](https://doi.org/10.1021/acsnano.7b07684) (IF > 16)

Selective Trainings Conducted, Outreach and Voluntary Services

❖ National Curriculum Revision Committee Member

- Participated in the National Technology Council (NITC) meetings for revising the curriculum for Aircraft Maintenance Engineering Technology (BS) at NUTECH Islamabad. (*Feb 16–18, 2022, and May 18–20, 2022*)

❖ Local Council Member

- Serving as a Local Council Member for the Institution of Engineers, Pakistan (IEP), Karachi Center. (*Tenure: 2023–2025*)
- Serving as a Local Council Member for the Institution of Engineers, Pakistan (IEP), Karachi Center. (*Tenure: 2026–2028*)

❖ Expert Member, Technical Committee

- Member of the Technical Committee on “Cement and Lime (BDC-05)” at Pakistan Standard & Quality Control Authority (PSQCA). (*Since July 2021*)

❖ Internal Programme Auditor

- Conducted self-reviews for MS/M.Phil/Ph.D programs at NED University on *June 6–7, 2024* and *May 2–3, 2023*.

❖ Training Sessions Conducted

- Delivered a session on “Managing Human Resources on Projects” under NED University QEC Training Programme on Research Development. (*June 11, 2024*)
- Conducted a session on “Technical Writing & Research Manuscript” for NED University faculty. (*February 6, 2023*)
- Led the Course on 5 days Effective PhD Supervision Course held at NED University and also conducted session on “*Ethical Consideration in Research*”.

❖ Conference Secretary/Member of Organizing Committees

- Served as Conference Secretary for the 15th International Mechanical Engineering Conference (IMEC'26) at NED University of Engineering & Technology, Karachi, Pakistan. *(January 30–31, 2026)*
- Served as Conference Secretary for the 14th International Mechanical Engineering Conference (IMEC'25) at NED University of Engineering & Technology, Karachi, Pakistan. *(April 25–26, 2025)*
- Served as Conference Secretary for the Global Conference for Green Construction Materials & Practices 2025 (GCGC2025) at NED University of Engineering & Technology, Karachi, Pakistan. *(February 5-6, 2025)*
- Served as Conference Secretary for the 13th International Mechanical Engineering Conference (IMEC'24) at NED University of Engineering & Technology, Karachi, Pakistan. *(March 6–7, 2024)*
- Served as Conference Secretary for the 12th International Mechanical Engineering Conference (IMEC'23) at NED University of Engineering & Technology, Karachi, Pakistan. *(May 10–11, 2023)*
- ❖ **Programme Reviewer**
 - Performed as Lead Reviewer for the Postgraduate Program Review of IBA Karachi, covering 13 Master's and 2 PhD programs. *(June 13, 2023)*
 - Led the program review for the Master's in Automotive Engineering at NED University. *(February 14, 2021)*
- ❖ **Panellist and Speaker Engagements**
 - Panellist for the 7th Students Conciliatory Seminar & Appreciation Award Ceremony at IBA Auditorium, University of Karachi. *(March 4, 2023)*
 - Delivered a motivational speech at the Jamiat Hakimaan Delhi Welfare Organization event at NED University. *(January 20, 2019)*
- ❖ **Community Initiatives**
 - Led a gardening drive at NED University in open areas adjacent to the Department of Mechanical Engineering. *(February 2021)*
 - Fundraised and managed the International Conference on Energy and Sustainability at NED University. *(April 27, 2013)*
- ❖ **Volunteer Contributions**
 - Participated in "Space Habitat Human Factors Testing," an Aerospace Graduate Project at the University of Colorado Boulder funded by Orbital ATK. *(November 15, 2016)*
 - Volunteered for Creekside Elementary School in the Boulder Valley School District, Boulder, CO, USA. *(Academic Year 2016–2017)*

Engagement in International Mobilities

- ❖ Attended the first authors' meeting of the IPCC (United Nations), held in Saint-Denis, France, from 1st to 5th December 2025.
- ❖ Hosted Dr. Karen Louise Scrivener (Head of the Laboratory of Construction Materials and Professor at EPFL, Switzerland) and Mr. Laurent Dominique Grimmeissen (Managing Director, Cementis, Switzerland) at NED University of Engineering and Technology Karachi from February 4th to February 6th, 2025.

6th, 2025 in the Global Conference on Green Construction Materials and Practices (www.gcgc2025.com)

- ❖ Hosted Prof. Dr. Hendrik from the University of Colorado Boulder USA at NED University of Engineering and Technology Karachi from October 13th to 16th, 2024. During his visit, he conducted a seminar on ‘Grant Writing’ in the ‘Effective PhD Supervision Course’ arranged for the faculty members who recently obtained their PhD degrees.
- ❖ Mobilities supported by European Commission’s European Education and Culture Executive Agency (EACEA) under the Erasmus+ Capacity Building Project “**GetInnovative4Impact**”
 - Visited Universiti Malaysia Perlis (Arau) as part of a five-member delegation from NED University to participate in the conference and capacity-building workshops/trainings under the project “GetInnovative4Impact,” held from January 17–24, 2026. During the visit, a Letter of Intent (LoI) was signed between UniMAP and NEDUET, and a Memorandum of Understanding (MoU) was signed between UMPSA and NEDUET for research and mobility collaboration.
 - Visited Universiti Malaysia Pahang Al-Sultan Abdullah, Pahang with a team of three officials from NED University to participate in the conference, capacity building workshops/trainings and consortium meeting of the project “GetInnovative4Impact” held from June 16th to June 20th, 2025.
 - Visited Dublin City Univeristy, Ireland with a team of six officials from NED University to participate in the conference, capacity building workshops/trainings and consortium meeting of the project “GetInnovative4Impact” held from August 31st to September 7th, 2024.
 - Visited Centro Residenziale Universitario di Bertinoro and University of Brescia in Italy along with the team of six officials to participate in a training week and consortium meeting of project GetInnovative4Impact held from June 30th to July 5th, 2024.
 - Hosted officials from Universiti Malaysia Perlis and Universiti Malaysia Pahang Al-Sutlan Abdullah in Karachi from March 4th to 8th, 2024. The officials visited NED University to attend the International Mechanical Conference, Consortium Meeting and various other activities.
 - Visited Universiti Malaysia Perlis (UNIMAP), Malaysia along with a team of three officials to participate in the Knowledge Transfer Meeting of the project “GetInnovative4Impact” held from November 8th to 10th, 2023
 - Visited University of Brescia, Italy along with the team of four officials to participate in the kick-off meeting of the capacity building project GetInnovative4Impact held from August 2nd to 4th, 2023
- ❖ Participated in the Academic Exchange and Cooperation on China National Key R&D Program “Research on the application and demonstration of the green construction materials for the post-disaster reconstruction in Pakistan and Nepal” from Oct 12th to 19th, 2019
- ❖ Participated in a Meeting at the Swiss Federal Institute of Technology, Lausanne, Switzerland from August 05th to 9th, 2019 funded by the Swiss Agency for Development and Cooperation. The meeting was part of the collaborative Project on “Low Carbon Cement”

PhD Thesis Supervised/Under-Supervision

Scholar Details	Thesis Title	Status
Dr Shehroze Tahir Khan (PhD)	Mechanical Characterizations of Thin Film Materials for Micro-Electro-Mechanical Systems Applications (co-supervised with Dr Murtuza Medhi)	Fall 2023 (completed)
Mr. Shaukat Ali Shaikh	Development and Performance Evaluation of All Atom Multipoint Virtual Models of Metals	Spring 2021 (in progress)
Mr. Muhammad Bilal	Hybrid Atomistic Continuum Modelling of Compressible Gaseous Flow in Sub-Microscale Channels with Varying Geometric Features	Fall 2024 (in progress)
Mr. Asaad Iqbal	Evaluation and Optimization of Complex Infill Structures using Aeroelastic Approach	Fall 2022 (in progress)
Ms. Bushra Fatima	Modeling and Storage of Energy Storage Materials for Low temperature Solar Applications (under co-supervision with Dr Muhammad Uzair)	Spring 2024 (in progress)
Mr. Nabeel Ahmed Siddiqui	Framework Development through Investigation and Assessment of Wire Arc Additive Manufacturing for Magnesium Alloy (under co-supervision with Dr Muhammad Muzamil)	Fall 2022 (in progress)

Masters Thesis Supervised and Successfully Completed

Scholar Details	Thesis Title	Completed
Asaad Iqbal (M Engg)	Structural Analysis of Medium-Altitude Long Endurance (MALE) UAV Composite Wing Fabricated Through Polystyrene Reinforced Glass Fiber	Spring 2021
Najam us Saqib (M Engg)	Investigating The Crumpling Effect in Honeycomb Sandwich Panels under Bending Loads Using FEA Technique	Fall 2021
Hasan Raza (M Engg)	Nano-Indentation and Nano-Scratching of Gold by Molecular Dynamics Simulation	Fall 2021
Ehsan Ahmad (M Engg)	Static Aero-Elastic Analysis of Expanded Reinforced Polystyrene Composite UAV Wing	Spring 2022
Shoaib Iqbal (M Engg)	Optimization and Mass Reduction of Electronic Housing Enclosure for Aerospace Applications Using Lightweight Composite Material(s) – A Numerical Study	Spring 2022
Abdulraheem Ba Wazir (M Engg)	Design of a Low Temperature Rotary Kiln Suitable for the Production of Calcined Clay	Fall 2022
Muhammad Fahad Hussain (M Engg)	Mechanical & Durability Properties of OPC and LC3 Concrete Containing Lightweight Aggregates	Spring 2023

Azfar Mustafa (M Engg)	Behavior Of Polymer Seals in Mechanical Grooves	Fall 2023
Muhammad Baseeruddin (M Engg)	Effect of Raster Width, Orientation and Layer Thickness on Mechanical Properties on PETG Parts	Spring 2024
Muhammad Bilal (M Engg)	Experimental & Numerical Investigation of delamination in Carbon Fiber Reinforced Polymer	Spring 2024
Sara Saleem (M Engg)	Damage Tolerance of 3D Infill Lattice Geometries	Fall 2025 (In progress)
Hassan Ali Hashmi (M Engg)	Designing a National Policy Framework for the Transition to Green Cement in Pakistan: A Case Study of Power Cement	Fall 2025 (In progress)
Azam Shaikh (M Engg)	Two-Way FSI Analysis of an O-Ring Seal for Leakage/Seepage Prediction under Varying Combined Contact and Fluid Pressure	Spring 2026 (In progress)

Courses Taught

❖ Undergrad

- Material Science and Metallurgy
- Finite Element Analysis
- Stress Analysis
- Computer-Aided Design and Manufacturing
- Engineering Drawing

❖ M. Engg.

- Materials Science
- Finite Element Analysis
- Design Engineering
- Strategic Planning and Decision Making
- Organizational Systems
- Computer Aided Design
- Advanced Statistical Mechanics

❖ PhD Level

- ME-627 Statistical Thermodynamics and Molecular Simulation
- MT-603 Advanced Materials Science
- ME-625 Advanced Finite Element Analysis
- MM-612 Fracture Mechanics and Failure Analysis

Professional Affiliation

- ❖ Institute of Engineers Pakistan (IEP)
 - ❖ Pakistan Engineering Council (PEC)
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Extracurricular Activities

- ❖ Swimming
- ❖ Cycling
- ❖ “National Association of Underwater Instructors” (NAUI – USA) certified scuba diver