DR. MUHAMMAD UZAIR, PROFESSIONAL ENGINEER

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HIGHLIGHTS OF CREDENTIALS:

- PEC Program Evaluator (Undergraduate Program evaluator)
- HEC Approved PhD Supervisor
- H-INDEX = 15, I-10-INDEX =20
- Contributed in eight national and international funded research projects
- More than Eighteen years of teaching experience, including more than seven years of Post-PhD experience
- Actively participated in different engineering societies. Also, conducted some international certificate courses as a trainer
- Participated in many administrative duties and reviewer for different research journals

EDUCATIONAL BACKGROUND:

- **Doctor of Philosophy (Ph.D.)**, Auckland University of Technology Auckland, New Zealand
  - Thesis topic: Wind induced heat losses from solar dish receiver systems
  - Experimental and numerical study on the solar parabolic dish system.
  - Building of experimental setup and scaled down testing on the prototype.
  - Used of ANSYS CFX to examine the problem numerically.
  - Used Statistical tools to find mathematical correlation.
- **Master of Engineering (M.E.),** Mechanical Engineering, N.E.D. University of Engineering & Technology, Karachi, Pakistan (CGPA 3.95)
- **Bachelor of Engineering (B.E.),** Mechanical Engineering, N.E.D. University of Engineering & Technology, Karachi, Pakistan

ACADEMIC EXPERIENCE:

1. **Professor, Department of Mechanical Engineering (**https://med.neduet.edu.pk/)
   NED University of Engineering and Technology, Pakistan (Oct 2025 to Till date)
2. **Associate Professor, Department of Mechanical Engineering (**https://med.neduet.edu.pk/)
   NED University of Engineering and Technology, Pakistan (Jan 2022 to Oct 2025)
3. **Assistant Professor, Department of Mechanical Engineering (**https://med.neduet.edu.pk/)
   NED University of Engineering and Technology, Pakistan (Dec 2009 to Jan 2022)
   - Taught the following Courses to under graduate and post-graduate students:
     Thermodynamics, Fluid Mechanics, Heat Transfer, Renewable Energy, Solar Thermal Energy Systems,
   - Mentored and supervised final year students in their Final Year Design Project as a Project Advisor
4. **Lecturer, Department of Mechanical Engineering (**https://med.neduet.edu.pk/)
   NED University of Engineering and Technology, Pakistan (Nov 2006 to Dec 2009)
   - Taught the following Courses and Labs:
     Thermodynamics, Fluid Mechanics, Heat Transfer, Engineering Mechanics,
   - Worked as a Class advisor for the students of 1st Year of Engineering
5. **Teaching Assistant, Department of Design and Creative Technology**
   Auckland University of Technology (AUT), (July 2014 – July 2018**)**
   - Taught the following Courses and Labs: Thermodynamics, Fluid Mechanics, Heat Transfer
   - Trained the students on different computer aided design (CAD) software (SOLIDWORKS and AUTOCAD)
   - Laboratory tutor for a variety of mechanical engineering courses
   - Involved in assessment of student assignments, practical labs, projects and exams

ADMINISTRATIVE AND VOLUNTEER EXPERIENCE:

- **Manager** Research Operation and Development, ORIC, NED University (March 2023 to till date)
- Focal Person of Health Safety Environmental Committee, ORIC, NED University (February 2025 to till date)
- **Industrial Liaison Coordinator**, Department of Mechanical Engineering, NED University (June 2019 – June 2021)
- **Member Senate** NED University (2019 to till date)
- **Member Board of Studies**, Department of Mechanical Engineering, NED University (Jan 2022 till date)
- **Member Board of Studies**, Faculty of Engineering, Indus University (March 2022 to till date)
- **Member Board of Review**, ORIC, NED University (Jan 2024 till date)
- **Member Board of Review**, Department of Student Affairs, NED University (Jan 2023 till Dec 2023)
- **Member Board of Studies**, Nazeer Hussain University, Karachi (December 2021 to till date)
- **External PhD Examiner** at PNEC NUST Campus (02 Times during 2024)
- **Member Board of Governor**, ASHRAE Pakistan Chapter (July 2022 to till date)
- **Regional Lecturer** of ASHRAE Regional At Large (Nov 2021 to till date)
- **Secretary**, ASHRAE Pakistan Chapter (July 2024 to till date)
- **Chair**, Student Activity, ASHRAE Pakistan Chapter (July 2022 to till date)
- **Co-chair** Chapter Technology Transfer Committee (CTTC), ASHRAE Pakistan Chapter (July 2022 to till date)
- **Treasurer**, ASHRAE Pakistan Chapter (July 2022 to June 2024)

GRANTS:

- Recipient of grant of **National Research Program for Universities (NRPU) by Higher Education of Pakistan** for a project of "Performance Optimization of Energy storage using Phase change materials" in 2022
- Recipient of grant of Rs. 2.65 million from the **Ministry of Science and Technology (MoST) Endowment Fund** for a project of "Performance Enhancement of Concentrated Parabolic Trough Collector System" in 2022
- Recipient **of ASHRAE USA** grant of USD 5000/- for a project "Demonstration unit of solar driven thermo-acoustic refrigeration system for HVACR Laboratory" in 2022-23
- Recipient **of ASHRAE USA** grant of USD 5000/- for a project "Demonstration unit of solar air-conditioning system for HVACR Laboratory" in 2022-23
- Recipient of **ASHRAE USA** grant of USD 5000/- for a project "Small scale solar based vapor absorption cycle system" in 2021-22
- Recipient of **ASHRAE USA** grant of USD 5000/- for a project "Geo-thermal air-conditioning system " in 2020-21
- Recipient of Seed funding of PKR 0.89 million from **NED University of Engineering and Technology** in 2020-21
- Recipient of **ASHRAE USA** grant of USD 5000/- for a project "Small-Sized Parabolic Trough Collector System for Solar De-humidification Application: Design, Development, and Potential Assessment" in 2019-20

PUBLICATIONS (H-INDEX = 13, I-10-INDEX =16)

JOURNAL PAPERS:

JOURNAL CITATION REPORT INDEXED (JCR)

43 Shazad, A., **Uzair, M.,** & Tufail, M. (2025). Thermal performance enhancement of latent heat energy storage unit. Journal of Thermal Analysis and Calorimetry, 1-11. https://doi.org/10.1007/s10973-025-14186-9

42 Rehman, N. U., & **Uzair, M.** (2025). Hybrid ray-tracing model for solar energy assessment and its open-source implementation as a service. Transactions of the Canadian Society for Mechanical Engineering, 49(2), 289-300. https://doi.org/10.1139/tcsme-2024-0044

41 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, 1-13. https://doi.org/10.1080/10407782.2025.2520809

40 Ali, H., Anas, Y., Raza, S. A., & **Uzair, M.** (2025). Performance analysis of solar-based multi-generation system with hydrogen production. Energy Systems, 1-27. https://doi.org/10.1007/s12667-025-00748-1

39 Shazad, A., & **Uzair, M.** (2025). Impact of Quenching Medium on Tensile Properties and Hardness of 15CDV6 TIG Welded Joints. Metal Science and Heat Treatment, 1-7. https://doi.org/10.1007/s11041-025-01106-9

38 Khan, S. Y., & **Uzair, M.** (2024). Optical performance enhancement of solar flux distribution uniformity of solar parabolic dish cavity system. Transactions of the Canadian Society for Mechanical Engineering. https://doi.org/10.1139/tcsme-2024-0074

37 Shazad, A., **Uzair, M.** & Tufail, M. (2024). Influence of Multiple Post Weld Repairs on Mechanical and Microstructural Properties of Butt Weld Joint Utilized in Structural Members. International Journal of Precision Engineering and Manufacturing, https://doi.org/10.1007/s12541-024-01104-6

36 Shazad, A., **Uzair, M.,** & Tufail, M. (2024). Impact of blending of phase change material for performance enhancement of solar energy storage. Renewable Energy, 227, 120530. https://doi.org/10.1016/j.renene.2024.120530

35 Shaikh, M., **Uzair, M**. (2024). Performance comparison of solid-state and fluid-driven thermal storage system. Journal of Thermal Analysis and Calorimetry, 149, 3247–3257. https://doi.org/10.1007/s10973-024-12952-9

34 **Uzair, M.,** Ali, H. & Khan, S.Y. (2024). A numerical study to investigate the flow pattern around parabolic dish receiver system. Journal of Thermal Analysis and Calorimetry, 149, 3259–3266. https://doi.org/10.1007/s10973-024-12920-3

33 Shazad, A., Tufail, M., & **Uzair, M.** (2024). Trends in research on latent heat storage using PCM, a bibliometric analysis. Transactions of the Canadian Society for Mechanical Engineering, 48(1), 1-14. https://doi.org/10.1139/tcsme-2023-0093

32 Ali Rizvi, S.A., **Uzair, M.** & Siddiqui, M.A. (2023). The effects of using different thermal storage materials and their mixtures on the performance of a solar cooker. Forsch Ingenieurwes, 87, 1285-1295, https://doi.org/10.1007/s10010-023-00714-2

31 **Uzair, M.**, Rehman, N., (2023). Optical-irradiance performance investigation to optimize a solar still with internal reflectors and double external boosters. Forschung im Ingenieurwesen, https://doi.org/10.1007/s10010-023-00666-7

30 Rizvi, S. A. A., & **Uzair, M.** (2023). Numerical Investigation of Solar Flux Homogeneity and Intensity of a Parabolic Trough Receiver with Various Secondary Reflectors. Arabian Journal for Science and Engineering, 48, 4081–4094. https://doi.org/10.1007/s13369-022-07372-6

29 **Uzair, M.,** Rehman, N., (2022). Optical concentration ratio of a parabolic trough collector with flat receiver and concentrator with surface irregularities. Forschung im Ingenieurwesen, 86, 903–911. https://doi.org/10.1007/s10010-022-00603-0

28 **Uzair, M.,** Kazmi, S. U. H., Yousuf, M. U., Zaidi, A. A., (2022). Optimized performance of PV panels and site selection for a solar park in Pakistan. Transactions of the Canadian Society for Mechanical Engineering, 46(2), 412-426, https://doi.org/10.1139/tcsme-2021-0134

27 **Uzair, M**., Rehman, N., Yousuf, M. U., (2022). Sensitivity Analysis of Capital and Energy Production Cost for Off-Grid Building Integrated Photovoltaic Systems. Renewable Energy, 186, 195-206. https://doi.org/10.1016/j.renene.2022.01.003

26 **Uzair, M.**, Siddiqui, M.A., Allauddin, U., (2022). Numerical study of Flow patterns and performance of a coupled cavity-dish system under different focal lengths. Transactions of the Canadian Society for Mechanical Engineering, 46 (2), 225-235, https://doi.org/10.1139/tcsme-2021-0110

25 Shaikh, M., **Uzair, M.** and Raza, S.A., (2022). Optimization of thermal storage using different materials for cooking with solar power. Transactions of the Canadian Society for Mechanical Engineering, 46 (2), 490-502, http://dx.doi.org/10.1139/tcsme-2021-0160

24 Rasheed, A., Allauddin, U., Ali, H. M., Uzair, M., Verdin, P. G., & Siddiqui, Y. H. (2022). Heat transfer and fluid flow characteristics investigation using detached ribs in an axisymmetric impinging jet flow. Journal of Thermal Analysis and Calorimetry, 147, 14517–14537, https://doi.org/10.1007/s10973-022-11640-w

23 Shahzad, A., Jadoon, J., **Uzair, M.**, Akhtar, M., Abdul, S., Muzamil, M., & Sattar, M. (2022). Effect of composition and microstructure on the rusting of MS rebars and ultimately their impact on mechanical behavior. Transactions of the Canadian Society for Mechanical Engineering. 46(4): 685-696, https://doi.org/10.1139/tcsme-2021-0207

22 **Uzair M.**, Rehman, N., Asif, M., (2022). Effect of receiver misalignment on the intercept factor of parabolic trough collectors. Journal of Solar Energy Engineering, 144 (2), 024502-1, https://doi.org/10.1115/1.4052866

21 Rehman, N., **Uzair M.**, (2022). Comparison of North-South and East-West facing solar collector pairs with and without reflectors. Journal of Solar Energy Engineering, 144 (2), 024501-11, https://doi.org/10.1115/1.4052490

20 Naseer, M.N., Zaidi, A.A., Khan, H., Kumar, S., Owais, M.T.B., Wahab, Y.A., Dutta, K., Jaafar, J., **Uzair, M.,** Johan, M.R. and Badruddin, I.A., 2022. Desalination technology for energy-efficient and low-cost water production: A bibliometric analysis. Green Processing and Synthesis, 11(1), 306-315, https://doi.org/10.1515/gps-2022-0027

19 Shaikh, M., **Uzair, M.**, Allauddin, U., (2021). Effect of geometric configurations on charging time of latent heat storage of solar applications. Renewable Energy, 179, 262-271. https://doi.org/10.1016/j.renene.2021.07.062

18 Naseer, M. N., Zaidi, A. A., Khan, H., Kumar, S., bin Owais, M. T., Jaafar, J., Nuor, S. S., Yasmin, A., Kingshuk D., Muhammad, A.,S.F. Wan Muhamad Hatta, **Uzair, M.** (2021). Mapping the field of microbial fuel cell: A quantitative literature review (1970–2020). Energy Reports, 7, 4126-4138. https://doi.org/10.1016/j.egyr.2021.06.082

17 **Uzair, M.,** & Rehman, N. U. (2021). Intercept Factor for a Beam-Down Parabolic Trough Collector. Journal of Solar Energy Engineering, 143(6), 061002. https://doi.org/10.1115/1.4050804

16 Rehman, N.U., **Uzair, M.** & Asif, M. (2021). Optical Design of a Novel Polygonal Trough Collector for Solar Concentrating Photovoltaic Applications. Arabian Journal of Science and Engineering. 46. 2963–2973. https://doi.org/10.1007/s13369-020-05163-5

15 Allauddin, U., Salahuddin, S., & **Uzair, M.** (2021) Performance enhancement of an impinging jet system using different working fluids-A numerical study. Heat Transfer Research, 52(1), 17-30. https://doi.org/10.1615/HeatTransRes.2020036923

14 Rehman, N. U., & **Uzair, M.** (2021). Hybrid Ray Tracing Model and Particle Swarm Optimization for the Performance of an Internally Reflecting Solar Still with a Booster Reflector. Arabian Journal for Science and Engineering, 46(3), 2021-2032. https://doi.org/10.1007/s13369-020-04963-z

13 **Uzair, M.,** Sohail, S. S., Shaikh, N. U., & Shan, A. (2020). Agricultural residue as an alternate energy source: A case study of Punjab province, Pakistan. Renewable Energy, 162, 2066-2074. https://doi.org/10.1016/j.renene.2020.10.041

12 ur Rehman, N., & **Uzair, M.** (2020). Optimizing the inclined field for solar photovoltaic arrays. Renewable Energy, 153, 280-289. https://doi.org/10.1016/j.renene.2020.02.028

11 ur Rehman, N., **Uzair, M.**, & Asif, M. (2020). Evaluating the solar flux distribution uniformity factor for parabolic trough collectors. Renewable Energy, 157, 888-896. https://doi.org/10.1016/j.renene.2020.05.058

10 ur Rehman, N., Hijazi, M., & **Uzair, M.** (2020). Solar potential assessment of public bus routes for solar buses. Renewable Energy, 156, 193-200. https://doi.org/10.1016/j.renene.2020.04.081

9 ur Rehman, N., **Uzair, M.**, & Allauddin, U. (2020). An optical-energy model for optimizing the geometrical layout of solar photovoltaic arrays in a constrained field. Renewable Energy, 149, 55-65. https://doi.org/10.1016/j.renene.2019.12.040

8 **Uzair, M.**, Anderson, T., & Nates, R. (2020). Effect of Insertion of the Dish on the Behaviour of the Convective Heat Loss. Arabian Journal for Science and Engineering, 45(2), 989-1000. https://doi.org/10.1007/s13369-019-04208-8

7 ur Rehman, N., Siddiqui, M. A., & **Uzair, M.** (2019). Performance Modeling and Experimental Investigation of Parasitic Losses in a Flat-Panel Solar Thermoelectric Generator. Arabian Journal for Science and Engineering, 44(6), 5589-5602. https://doi.org/10.1007/s13369-018-3640-1

6 ur Rehman, N., **Uzair, M.**, Siddiqui, M. A., & Khamooshi, M. (2019). Regression models and sensitivity analysis for the thermal performance of solar flat-plate collectors. Arabian Journal for Science and Engineering, 44(2), 1119-1127. https://doi.org/10.1007/s13369-018-3432-7

5 **Uzair, M.,** Anderson, T. N., & Nates, R. J. (2018). Modeling of convective heat loss from a cavity receiver coupled to a dish concentrator. Solar Energy, 176, 496-505. https://doi.org/10.1016/j.solener.2018.10.060

4 ur Rehman, N., **Uzair, M.,** & Siddiqui, M. A. (2018). Optical analysis of a novel collector design for a solar concentrated thermoelectric generator. Solar Energy, 167, 116-124. https://doi.org/10.1016/j.solener.2018.03.087

3 **Uzair, M**., ur Rehman, N., & Raza, S. A. (2018). Probabilistic approach for estimating heat fluid exit temperature correlation in a linear parabolic trough solar collector. Journal of Mechanical Science and Technology, 32(1), 447-453. https://doi.org/10.1007/s12206-017-1245-3

2 Rehman, N. U., & **Uzair, M.** (2017). The proper interpretation of analytical sky view factors for isotropic diffuse solar irradiance on tilted planes. Journal of Renewable and Sustainable Energy, 9(5), 053702. https://doi.org/10.1063/1.4993069

1 **Uzair, M.**, Anderson, T. N., & Nates, R. J. (2017). The impact of the parabolic dish concentrator on the wind induced heat loss from its receiver. Solar Energy, 151, 95-101. https://doi.org/10.1016/j.solener.2017.05.022

MASTER LIST (WOS)/JCR (ESCI)

10 Shazad, A., **Uzair, M.,** Jadoon, J., & Khan, M. S. (2025). Mechanical Characterization of Post weld quenched Al 6082-T6 TIG welded Joints. Memoria Investigaciones en Ingeniería, (28), 58-70. https://doi.org/10.36561/ING.28.6

9 Shazad, A., & **Uzair, M.** (2025). Post Weld Quenching Impact on Microstructure and Mechanical Properties (Tensile, Impact, Hardness) of High Strength Low Alloy Steel. Memoria Investigaciones en Ingeniería, (28), 45-57. https://doi.org/10.36561/ING.28.5

8 M. Asif Ali and **M. Uzair**, (2023) "A simulation-based study on the effect of metallic and non-metallic nanoparticles on the performance of parabolic trough concentrator," Investigative Report. eng. (Eng. Faculty, Univ. Montev.), (25), pp. 172–196. https://doi.org/10.36561/ING.25.10

7 **M. Uzair**, I. Yawar, SA Jawad, B. Fatima, and M. Furqan, (2023) "Solar-powered Stirling engine for domestic and rural areas in Karachi, Pakistan," Investigative Memoir. eng. (Eng. Faculty, Univ. Montev.) , no. 25, pp. 266–283. https://doi.org/10.36561/ING.25.15

6 **Uzair, M.,** Naqvi, A. A., & Kazmi, S. U. H. (2023). Estimation of the Diffused Solar Irradiation on the Tilted Plane of Photovoltaic Solar Panels. Memoria Investigaciones en Ingeniería, (24), 37-52. https://doi.org/10.36561/ING.24.4

5 Shazad, A., & **Uzair, M**. (2023). Utilization of Solar Energy for Cooling Applications. Memoria Investigaciones en Ingeniería, (24), 69-91. https://doi.org/10.36561/ING.24.6

4 Shazad, A., Jadoon, J., **Uzair, M**., & Muzammil, M. (2023). Material Modelling and Failure Study of Different Fiber Reinforced Composites for Pressure Vessel. Memoria Investigaciones en Ingeniería, (24), 92-104. https://doi.org/10.36561/ING.24.7

3 **Uzair, M.,** Naqvi, A.A., Akhtar, M., Zaidi, A. A., (2022). Statistical Approach to select the best suitable solar model for Global Radiation: Case study of Karachi, Pakistan. TECCIENCIA 17(32), 17-28, http://dx.doi.org/10.18180/tecciencia.2022.32.2

2 **Uzair, M**., Naqvi, A.A., Yousuf, U., (2022). Numerical investigation to determine the optimal tilt angle of single slope solar still during summer season. TECCIENCIA, 17 (32), 29-40, https://doi.org/10.18180/tecciencia.2022.32.3

1 Asad A. Naqvi, Talha Bin Nadeem, Ahsan Ahmed, **Muhammad Uzair** and S. Asad Ali Zaidi, (2021) Techno-economic design of a grid-tied Photovoltaic system for a residential building. Advances in Energy Research, 8(1), 59-71 http://doi.org/10.12989/eri.2021.8.1.059

SCOPUS

5 **Muhammad Uzair**, Naveed Rehman, Mubashir Siddique, Syed Umair Hassan Kazmi (2022). Improved Methodology for Determining Seasonal and Fixed Optimum Tilt Angles for Solar Collectors, GMSARN International Journal, 16 (2), 325-330

4 **Muhammad Uzair**, Ghulam Qadir Chaudhary, Naveed ur Rehman, Zeeshan Anwar, Syed Hamza Hassan, Hamza Siddiqui, Muhammad Shahbaz Hussain, (2022). Numerical investigation to determine the optimized solar parabolic cavity shape. GMSARN International Journal, 16(1), 55-65

3 Khan, S. Y., **Uzair, M**., Allaudin, U., & Masri, A. R. (2021). Experimental Investigation of Spray Characteristics of Electro-Hydro-Dynamic Atomization. GMSARN International Journal, 15, 250-258

2 Ahmed, A., Naqvi, A.A., Nadeem, T.B. and **Uzair, M.,** (2021). Experimental Investigation of Dust Accumulation on the Performance of the Photovoltaic Modules: a Case Study of Karachi, Pakistan. Applied Solar Energy, 57(5), pp.370-376, https://doi.org/10.3103/S0003701X21050029

1 Yousuf, M. U., Umair, M., & **Uzair, M**. (2020). Estimating the average diffuse solar radiation based on multiple parameters: A case study of arid climate zone of Pakistan. International Journal of Ambient Energy, 43(1) 1615-

1625, https://doi.org/10.1080/01430750.2020.1712244

CONFERENCE PAPERS:

12 Atif Shazad, **Muhammad Uzair**, Tariq Jamil, Noorhafiza Muhammad, 2024,"A Comparative Study on the Joint Hardness and Tensile Properties of Dissimilar Aluminium Alloy Using Tungsten Inert Gas (TIG) Welding", 4th International Conference on Key Enabling Technologies (KEYTECH 2024), Dublin, Ireland.

11 Shehzaib Yousuf Khan, **Muhammad Uzair**, 2024, A CFD analysis for thermal performance enhancement of solar parabolic dish cavity system using spherical and elliptical cavities, 13th International Mechanical Engineering Conference, Karachi, Pakistan

10 Asad Ali Ziadi, Abdul Hameed Memon, Rahool Rai, **Muhammad Uzair**, 2023, "Development and performance study of lab scale continuously stirred tank reactor for Biogas production", 12th International Mechanical Engineering Conference, Karachi, Pakistan

9 Rahool Rai, Asad Ali Ziadi, Kashif Ahmed, **Muhammad Uzair**, Ali Mustafa Shah, 2023, "Performance evaluation of multi-nozzle pesticide sprayer with chain and sprocket mechanism", 12th International Mechanical Engineering Conference, Karachi, Pakistan

8 Muhammad Wajahat Rasool Arain, Asad A. Zaidi, Muhammad Asif, **Muhammad Uzair**, 2022, "Design and fabrication of catalytic converter with new material", 11th International Mechanical Engineering Conference, Karachi, Pakistan

7 Muhammad Farhan, Asad A. Naqvi, **Muhammad Uzair**, 2022, "Increasing photovoltaic performance through temperature regulation by Soy wax as phase change material" 11th International Mechanical Engineering Conference, Karachi, Pakistan

6 Ghulam Qadar Chaudhary, Allah Ditta , Dr. Muzaffar Ali, **Muhammad Uzair**, Naveed Akram, Amar Gulnawaz, 2022, "Experimental study to analyse the effect of critical parameters on the performance of integrated solid desiccant using cross flow m-cycle" 11th International Mechanical Engineering Conference, Karachi, Pakistan

5 **Muhammad Uzair**, M. Zeeshan Anwar, Hamza Siddiqui, S. Hamza Hasan, M. Shahbaz Hussain, 2021, "Convective heat losses in a parabolic dish cavity receiver", 10th International Mechanical Engineering Conference, Karachi, Pakistan

4 **Uzair, M**., Anderson, T., and Nates, R., 2017, "Convective heat loss investigation from a couple parabolic dish receiver system", Proceeding of the 10th Australasian Natural Convection workshop (10ANCW), Auckland, New Zealand.

3 **Uzair, M.,** Anderson, T., and Nates, R., 2016, "Impact of dish structure on the convective heat loss from a parabolic dish solar cavity receiver", Proceedings of the Asia-Pacific Solar Research Conference, Canberra, Australia.

2 **Uzair, M.,** Anderson, T., Nates, R., and Etienne, J., 2015, "A validated simulation of wind flow around a parabolic dish", Proceedings of the Asia-Pacific Solar Research Conference, Brisbane, Australia.

1 **Uzair, M.,** Anderson, T., and Nates, R., 2014, "Wind Flow around a Parabolic Dish Solar Concentrator", Proceedings of the Asia-Pacific Solar Research Conference, Sydney, Australia.

PROJECTS PUBLISHED IN THE FORM OF BOOKS:

1. **Book chapter:** Azhar, M., Zaidi, A.A., Naseer, M.N., Noorollahi, Y. and **Uzair, M**., 2022. Historical overview of geothermal energy. In Utilization of Thermal Potential of Abandoned Wells (pp. 3-10). Academic Press.
2. **Project** on "To design and study a Centrifugal Compressor for Gas Compression Station", Published by Lambert Academic Publishing's Foundation (ISBN: 978-3-659-18581-6)
3. **Project** on "Design of Solar Thermal powered Air Conditioner", Published by Lambert Academic Publishing's Foundation (ISBN: 978-3-659-11449-6)

HONORS AND AWARDS:

- **Very Good and Excellent Student Feedback Ratings** in all Undergraduate and Postgraduate Courses taught at NED University during past several years
- **Best Researcher Award** for year 2024 from NED University of Engineering and Technology
- **Best Researcher Award** for year 2023 from NED University of Engineering and Technology
- **Student Activities Achievement Award (Life Time) by ASHRAE Global** in 2022.
- **Student Body Advisor Award** for the year 2022 from ASHRAE Pakistan Chapter.

- **Best Researcher Award** for year 2022 from NED University of Engineering and Technology
- **Best Researcher Award** for year 2021 from NED University of Engineering and Technology
- **Best Researcher Award** for year 2020 from NED University of Engineering and Technology
- **Best Published Research Award** for year 2022 from NED Alumni Association of Southern California (NEDAASC)
- **Best Published Research Award** for year 2021 from NED Alumni Association of Southern California (NEDAASC)
- **Best Published Research Award** for year 2020 from NED Alumni Association of Southern California (NEDAASC)
- **Best Published Research Award** for year 2018 from NED Alumni Association of Southern California (NEDAASC)
- **Best Published Research Award** for year 2017 from NED Alumni Association of Southern California (NEDAASC)
- **Grant** from Auckland University of Technology to participate in Asia-Pacific Solar Research Conference, Canberra, Australia in 2016
- **Grant** from Auckland University of Technology to participate in Asia-Pacific Solar Research Conference, Brisbane, Australia in 2015
- **Grant** from Auckland University of Technology to participate in Asia-Pacific Solar Research Conference, Sydney, Australia in 2014
- **Scholarship** to pursue PhD under Faculty development Program from NED University in 2014.

RESEARCH SUPERVISION:

PhD Topics:

- Performance Enhancement of Concentrated Parabolic Trough Collector System (Mr. Aun Ali Rizvi, **Completed**)
- Thermal and Optical performance enhancement of solar dish-cavity receiver system (Shehzaib Yousuf Khan, **Completed**)
- Development and optimization of Thermal Energy Storage system by utilizing Phase Change Materials (PCMs) (Atif Shezad, **Completed**)
- Modeling and Storage of Energy Storage Materials for Low temperature Solar Applications (Bushra Fatima, In Progress)
- Design and development of Solar based Sand Battery for the Vapor Absorption Cycle (Abdul Samad, In Progress)

Master Level Topics:

- Crygenic Carbon Capture and solar thermal integration: amulti-dimensional analysis of energy efficiency, exergy, and economic viability (Muhammad Numair Khan, In Progress)
- Numerical Modeling and Simulation of Thermal Energy Storage System (Mahad Shaikh, **Completed**)
- Optimization of the Tilt and Azimuth Angle to produce maximum power in Karachi (Syed Umair Hasan Kazmi, **Completed**)
- Energy Harness using animal waste: a case study of Karachi (Syed Talha Ahmed Qasmi, **Completed**)
- Frequency Domain micromechanical finite element analysis of viscoelastic particulate composites (Wajahat Hussain, **Completed**)
- Design of air-conditioning system using solar energy (Agha Raza Ali, **Completed**)
- Small sized flat plate collector system for solar dehumidification applications (Atif Shazad, **Completed**)
- Evaluation of wind energy potential alongside of highway of Baluchistan (Fahad Hussain, **Completed**)
- Numerical study to improve performance of PV panels (Usama Sardar, **Completed**)
- Effect of heat transfer characteristics on the mechanical properties and microstructure of Steel material with different quenching medias (Syed Ashraf Ali Rizvi, **Completed**)
- Techno-Economic analysis of solar based multi-generation with hydrogen production (Yasir Anas , **Completed**, Co-supervised)
- Experimental Investigation of solar panel cooling with phase change material (Muhammad Farhan, **Completed**)
- Modeling and performance analysis of geothermal energy based air conditioning (Dua Sami, **Completed**)

PROFESSIONAL TRAININGS

- Attended **Workshop** on "Winning Research Grant: Proposal writing Excellence" organized by Sindh HEC on 19th December 2024
- Attended **Workshop** on "Mastering Research Grant Proposal Writing" organized by Sindh HEC on 6th November 2024
- Attended ASHRAE Chapters Regional Conference (CRC-2024) held from 4th to 7th October 2024 at Karachi
- Attended the **Workshop** on "Academic Staff Training Programme" organized by Dublin City University, Ireland under Erasmus+ programme held from 2nd to 6th September 2024
- Attended **training** on the "fire safety" organized by Pakistan Society for Plumbing Professional (PSPP) during 3rd – 7th July 2024 at Expo Centre, Karachi
- Completed the **course** of "General course on Intellectual Property" offered by WIPO Academy from April 18 to June 2, 2024
- Attended "C40 Climate Action Plan for Karachi City: Stakeholder Consultation Meeting" on 27th February 2024
- Attended ASHRAE Chapter Regional Conference (CRC-2023) held from 5th to 8th October 2023 at Colombo, Sri Lanka
- Attended **Training** on "HEC NATIONAL UNIVERSITY RANKING-2023" organized by HEC in August 2023.
- Attended ASHRAE Chapter Regional Conference (CRC-2022) held from 9th to 14th October 2022 at Istanbul, Turkiye.
- Attended "Pls Research Capacity Program" organized by HEC from 23rd to 27th May 2022 at Karachi.
- Attended 17th World Wind Energy **Conference** and Expo 2018 in November 2018.
- Attended **Workshop** on "Statistical Testing", organized by Academic Consultant at AUT in 2016.
- Attended **Conference** on "Energy Conference - Roadmap for the Future!" organized by ASHRAE Pakistan Chapter in May 2012.
- Attended **Conference** on "Developing Energy Codes leading towards high performance buildings in Pakistan", organized by ASHRAE Pakistan Chapter in June 2011.
- Attended **Conference** on "5th International Conference on Alternative Energy & Power" in 2011.
- Attended **Training** on "Training of Dealer management System", in 2011.
- Attended a **course** on "Occupational Health and safety" in 2011.
- Attended **Workshop** on ASHRAE Learning Course tilted "Fundamental of Thermodynamics and Psychrometrics" with collaboration of ASHRAE Pakistan Chapter in April 2007
- Attended **workshop** on ASHRAE Learning Course tilted "Fundamental of electrical systems and buildings energy use" with collaboration of ASHRAE Pakistan Chapter in April 2007
- Attended **workshop** on ASHRAE Learning Course tilted "Fundamental of HVAC control systems" with collaboration of ASHRAE Pakistan Chapter in April 2007
- Attended **workshop** on ASHRAE Learning Course tilted "Fundamental of ANSI/ASHRAE/IESNA Standard 90.1-2004" with collaboration of ASHRAE Pakistan Chapter in April 2007
- 40 days **Internship** at Karachi Electric Supply Corporation (KESC) in 2004.

CONFERENCE/WORKSHOPS/SEMINARS:

CONFERENCES CONDUCTED

- **Member Organizing Committee** of **4th Sindh Research & Technology Showcase 2025** organized by Sindh Higher Education Commission, Government of Sindh on 22nd and 23rd of January 2025.
- **Member Organizing Committee** of **4th HVACR Trends Expo & Conference** organized on 4th-6th October 2024.
- **Member Organizing Committee** of **3rd HVACR Trends Expo & Conference** organized on 9th and 10th December 2023
- **Conference Secretory** of 12th International Mechanical Engineering Conference (IMEC-23) under the theme "Role of Mechanical Engineering in Economic Uplift and Sustainability" held on 11th and 12th of May 2023.
- **Member Organizing Committee** of **2nd HVACR Trends Expo & Conference** organized on 3rd and 4th December 2022

- **Conference Secretory** of 11th International Mechanical Engineering Conference (IMEC-22) under the theme "Sustainable Smart Advancements in Mechanical Engineering", held on 14th and 15th of January 2022
- **Member Organizing Committee** of **Pakistan Water Summit** organized on 22nd March 2022
- **Conference Secretory** of 10th International Mechanical Engineering Conference (IMEC-2020-21) under the theme "Green Practices in Mechanical Engineering", held on 12th February 2021.
- **Focal Person** of 9th International Mechanical Engineering Conference (IMEC-2019) under the theme "Futuristic trends in Mechanical Engineering", held on 15th and 19th of March 2019.

WORKSHOPS CONDUCTED

- Conducted 3-Days workshop on ASHRAE Learning Course tilted "Fundamental of thermodynamics and Psychrometry" with collaboration of ASHRAE Pakistan Chapter in March 2011 as **Master Trainer**.
- Conducted 3-Days workshop on ASHRAE Learning Course tilted "Fundamental of Heating and Cooling Loads" with collaboration of ASHRAE Pakistan Chapter in April 2011 as **Master Trainer**.
- Participated in a workshop as **Training of Trainer** on ""Design and Installation of Off- Grid and On- Grid Solar PV System", organized by REAP with collaboration of GIZ in November 2012.
- Participated in a workshop as **Training of Trainer** on "ASHRAE's Variable Refrigerant Flow Systems Design and Applications" organized by Pakistan HVACR Society with collaboration with Global Training Center for Building Excellence – Dubai in 2019.

PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

1. Member of Pakistan Engineering Council (PEC) (Professional Engineer, Life Time Member)
2. Member American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE)
3. Member American Society of Mechanical Engineers (ASME)
4. Member Pakistan HVACR Society (Life Time Member)
5. Member of Institution of Engineers Pakistan (IEP) (Life Time Member M-21495/KAR-3830)