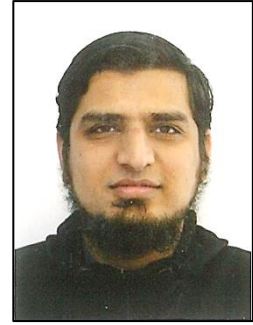


Muhammad Uzair Yousuf

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SUMMARY

Creative researcher passionate about energy systems, renewable energy, and interdisciplinary collaboration. Expertise in resource modelling, assessment, and optimization. Excellent analytical skills that support both theoretical and applied energy research.

EDUCATION

- **Doctor of Philosophy (Ph.D.)**
Department of Mechanical & Electrical Engineering, Massey University, Palmerston North, New Zealand, 2022
Thesis: Enhancing statistical wind speed forecasting models
- **Master of Engineering (M.E.)**
Department of Mechanical Engineering, NED University of Engineering & Technology, Karachi, Pakistan, 2016
Thesis: Solar Energy Potential Estimation for Open Plains and Roof top areas using Irradiance Probability Distribution
CGPA: 4.00/4.00
- **Bachelor of Engineering (B.E.)**
Department of Mechanical Engineering, NED University of Engineering & Technology, Karachi, Pakistan, 2013

ACADEMIC EXPERIENCE

- **Assistant Professor** (Aug. 2022 – Present)
Department of Mechanical Engineering, NED University of Engineering & Technology, Karachi, Pakistan
- **Lecturer** (Oct. 2015 – Jul. 2022)
Department of Mechanical Engineering, NED University of Engineering & Technology, Karachi, Pakistan
- **Lab Engineer** (Dec. 2014 – Oct. 2015)
Department of Mechanical Engineering, NED University of Engineering & Technology, Karachi, Pakistan
- **Part Time Teacher** (Jul. 2014 – Dec. 2014)
Department of Mechanical Engineering, NED University of Engineering & Technology, Karachi, Pakistan

Peer-reviewed Journal Articles

Cumulative Impact Factor: 50+

1. **Yousuf, M. U.**, Abbasi, M. A., Kashif, M., & Umair, M. (2022). Energy, exergy, economic, environmental, energoeconomic, exergoeconomic, and enviroeconomic (7E) analyses of wind farms: a case study of Pakistan. *Environmental Science and Pollution Research*, 1-24. DOI: [10.1007/s11356-022-20576-5](https://doi.org/10.1007/s11356-022-20576-5)
2. **Yousuf, M. U.**, Al-Bahadly, I., & Avci, E. (2022). Statistical wind speed forecasting models for small sample datasets: Problems, Improvements, and prospects. *Energy Conversion and Management*, 261, 115658. DOI: [10.1016/j.enconman.2022.115658](https://doi.org/10.1016/j.enconman.2022.115658)
3. Uzair, M., Naqvi, A. A., & **Yousuf, M. U.** (2022). Numerical investigation to determine the optimal tilt angle of single slope solar still during summer season. *TECCIENCIA*, 17(32), 29-39. DOI: [10.18180/tecciencia.2022.32.3](https://doi.org/10.18180/tecciencia.2022.32.3)
4. Uzair, M., Kazmi, S. U. H., **Yousuf, M. U.**, & Zaidi, S. 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. DOI: [10.1139/tcsme-2021-0134](https://doi.org/10.1139/tcsme-2021-0134)
5. Siddiqui, M., **Yousuf, M. U.**, Rashid, M. K., & Ahmed, A. (2022). Probabilistic Assessment of Exergy Analysis of a Wind Turbine for Optimum Performance. *Transactions of the Canadian Society for Mechanical Engineering*, 46 (2), 285–294. DOI: [10.1139/tcsme-2021-0122](https://doi.org/10.1139/tcsme-2021-0122)
6. 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. DOI: [10.1016/j.renene.2022.01.003](https://doi.org/10.1016/j.renene.2022.01.003)
7. **Yousuf, M. U.**, Al-Bahadly, I., & Avci, E. (2022). Wind Speed Prediction for Small Sample Dataset Using Hybrid First-Order Accumulated Generating Operation Based Double Exponential Smoothing Model. *Energy Science and Engineering*, 10(3), 726-739. DOI: [10.1002/ese3.1047](https://doi.org/10.1002/ese3.1047)
8. **Yousuf, M. U.**, Umair, M., & Uzair, M. (2022). 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. DOI: [10.1080/01430750.2020.1712244](https://doi.org/10.1080/01430750.2020.1712244)
9. **Yousuf, M. U.**, & Hussain, S. M. R. (2021). Performance evaluation of independent global solar radiation estimation models for different climatic zones: A case study. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 1-17. DOI: [10.1080/15567036.2021.1958955](https://doi.org/10.1080/15567036.2021.1958955)
10. **Yousuf, M. U.**, Al-Bahadly, I., & Avci, E. (2021). Short-term wind speed forecasting based on hybrid MODWT-ARIMA-Markov model. *IEEE Access*, doi:[10.1109/ACCESS.2021.3084536](https://doi.org/10.1109/ACCESS.2021.3084536)
11. **Yousuf, M. U.**, Al-Bahadly, I., & Avci, E. (2021). A modified GM (1, 1) model to accurately predict wind speed. *Sustainable Energy Technologies and Assessments*, 43, 100905. DOI: [10.1016/j.seta.2020.100905](https://doi.org/10.1016/j.seta.2020.100905)

12. **Yousuf, M. U., & Shere, S. M.** (2020). A novel computational methodology to estimate solar energy on building rooftops. *Environmental Progress & Sustainable Energy*, 39(4), e13385. DOI: [10.1002/ep.13385](https://doi.org/10.1002/ep.13385)
13. **Yousuf, M. U., Al-Bahadly, I., & Avci, E.** (2019). Current perspective on the accuracy of deterministic wind speed and power forecasting. *IEEE Access*, 7, 159547-159564. DOI: [10.1109/ACCESS.2019.2951153](https://doi.org/10.1109/ACCESS.2019.2951153)
14. **Yousuf, M. U., & Umair, M.** (2018). Development of diffuse solar radiation models using measured data. *International Journal of Green Energy*, 15(11), 651-662. DOI: [10.1080/15435075.2018.1525738](https://doi.org/10.1080/15435075.2018.1525738)
15. **Yousuf, M. U., Siddiqui, M., & Rehman, N. U.** (2018). Solar energy potential estimation by calculating sun illumination hours and sky view factor on building rooftops using digital elevation model. *Journal of Renewable and Sustainable Energy*, 10(1), 013703. DOI: [10.1063/1.4997888](https://doi.org/10.1063/1.4997888)

Conference Proceedings/Symposiums/Seminars

1. **Yousuf, M. U.** (2022, January). Why do we need improved wind speed forecasting models for small sample datasets? In 11th International Mechanical Engineering Conference. Karachi.
2. **Yousuf, M. U.** (2019, August). Deterministic models for wind energy forecasting. In IEEE Postgraduate Symposium. Massey University, Palmerston North, New Zealand.
3. **Yousuf, M. U., Umair, M., & Khan, S. T.** (2018, December). Optimum Tilt Angles for Energy Policy Making of a City - Case Study of Karachi. In Proceedings of 1st International Conference on Carbon Neutral Built Environment. Karachi.
4. **Yousuf, M. U., Uddin, M., Azhar, M. A. B., Hashmi, Y., & Ibtihaj, M.** (2017, March). Statistical Analysis of Empirical Sky Models for Energy Policy Making of Karachi. In Proceedings of 7th International Mechanical Engineering Conference (pp. 33-38). Karachi.

MASTERS THESES

Supervision

1. Energy, Exergy, Economic and Environmental (4E) Analysis of Wind Farms in Pakistan (2021 – 2022)
2. Life Cycle Assessment of a Coal Fired Power Plant (2021 – 2022)
3. Investigation of Energy Management Practices in Steel Industry (2021 – 2022)
4. Fine Particulate Matter Forecasting Models: A Case Study for Major Cities of Pakistan (2021 – 2022)

Co-Supervision

1. Short Term Forecasting of PM 2.5 in Different Cities of Pakistan using Hybrid Algorithm (2020 – 2021)
2. Production Planning Modelling and Forecasting using Statistical Techniques (2020 – 2021)
3. Probabilistic Assessment of Exergy analysis for Wind Turbines (2019 – 2020)
4. Auto Regressive Integrated Moving Average (ARIMA) Modeling for Wind Energy Potential of Pakistan (2019 – 2020)

AWARDS AND HONORS

- Chairman IEP Medal for **Best Paper** in 11th International Mechanical Engineering Conference (2022)
- Tilt Renewables Tararua Wind Farm **Research Bursary** worth NZ\$4,120 (2021)
- Tilt Renewables Tararua Wind Farm **Research Bursary** worth NZ\$4,100 (2020)
- HEC **Scholarship** to pursue Ph.D. under the program “HRD Initiative-MS Leading to Ph.D. Program of Faculty Development for UESTPs/UETs Phase-I” (2019 – 2022)
- **Best Teacher Award** under lecturer category from NED Alumni Association of South California (2018)
- **Best Published Research Award** from NED Alumni Association of South California (2018)
- Cumulative GPA of **4.00/4.00** throughout the Master of Engineering at Mechanical Engineering Department (2014 – 2016)
- **Very Good and Excellent** Student Feedback Ratings in all undergraduate and postgraduate courses (2014 – till present)

TEACHING

Undergraduate Courses

- ME-105 Applied Thermodynamics
- ME-112 Thermodynamics
- ME-108 Fundamentals of Thermal Fluid Engineering
- ME-214 Computer Programming and Applications
- ME-224 Internal Combustion Engines
- ME-406 Heat Transfer (co-taught with 2 others)

Postgraduate Courses

- ME-558 Energy Modeling & Forecasting
- ME-563 Wind Energy: Design and Integration
- ME-564 Design of Wind Turbines

OTHER OFFICIAL ASSIGNMENTS

- **OBE Coordinator**, Department of Mechanical Engineering (2018)
- **Lab In-charge**, Internal Combustion Engines Laboratory (2015-2018)
- **Co-operative Member**, Vehicle Inspection Team, Sindh Police (2017)

REVIEWING/ ORGANIZING ACTIVITIES

Organizing Committee

- **Member** of organizing committee in 8th International Mechanical Engineering Congress (2018) under the theme “Emerging Technologies & Industrial Applications” held on 26th-27th Jan. 2018
- **Member** of organizing committee in 7th International Mechanical Engineering Congress (2017) under the theme “Recent Developments in Design, Energy and Alternate Fuels” held on 24th-25th Mar. 2017
- **Member** of organizing committee in 6th International Mechanical Engineering Congress (2016) under the theme “Green Systems and Innovations” held on 15th-16th Jul. 2016

Journal Reviewer

- Sustainable Energy Technologies and Assessments (Elsevier)
- Journal of Cleaner Production (Elsevier)
- IEEE Access (IEEE)
- Environmental Progress and Sustainable Energy (Wiley)
- Energy & Environment (SAGE)
- Applied Solar Energy (Springer)
- International Journal of Sustainable Energy (Taylor and Francis)
- Sustainability (MDPI)
- Jordan Journal of Physics
- GMSARN International

PROFESSIONAL MEMBERSHIPS

- Pakistan Engineering Council (PEC)
- Institute of Engineers Pakistan (IEP)

ACTIVITIES CO- AND EXTRA-CURRICULAR

- Stories and articles published in local magazines
- Secured positions in extracurricular activities (quiz, debates, speeches, essay writings and science exhibitions) organized by different institutions including NED University, Pakistan Quiz Society (PQS), Hum TV (Special Ramadan Transmission), Board of Secondary and Intermediate Education, NCR CET, KASBIT and CDGK