

MUBASHIR SIDDIQUI
mubashir@neduet.edu.pk
Mubashir.siddiqui@gmail.com
(92)302-2311833



EDUCATION

- **PhD** Wayne State University, Detroit, Michigan, USA, August 2009,
- **MS** Wayne State University, Detroit, Michigan, USA, December 2003.
- **BE - Mechanical Engineering**, NED University of Engineering & Technology (NED UET), Karachi, 1999.

PROFESSIONAL & RESEARCH EXPERIENCE [20 year experience; over 25 publications]

- **Dec 2010 – date** Professor, Department of Mechanical Engineering, NED University
- **Apr 2010 – February 2018; Dec 2020 till date** Chairman, Department of Mechanical Engineering, NED University
- **November 2017 – date** Secretary, **Advanced Studies and Research Board**, NED University.
- **Oct 2009 – Dec 2010** Associate Professor, Department of Mechanical Engineering, NED UET
- **May 2005 – Oct 2009** Assistant Professor, Department of Industrial & Manufacturing Engineering, NED UET
- Additional charge of **Controller of Examinations** from 2nd November 2013 till 11th July 2014, and 17th – 31st December 2012
- **May 2006 – Aug 2009**: Teaching Assistant at Wayne State University, Detroit, Michigan, USA , for **Ford Motor Company - Engineering Management Masters Program (EMMP)**
- **Aug 1999 – Aug 2001** Lecturer, Department of Mechanical Engineering, NED UET

JOURNAL PUBLICATIONS

- Mubashir Siddiqui, M. A. Azam, S. Iqbal, M. M. Khan, M. U. Khan, Y. Raffat, ‘Current Trends on Extraction of Water From Air – An Alternate Solution to Water Supply’, *International Journal of Environmental Science and Technology*, 2022.
- Munir Ahmed, Muhammad Shakaib, Mubashir Siddiqui, ‘Analysis and Comparison of Flow Velocities and In-Cylinder Temperature Distributions to Quantify Oxides of Nitrogen in a Compression Ignition Engine using Diesel and Biodiesel Fuels’, *Journal of Engineering, Design and Technology*, 2022.
- Mubashir Siddiqui, Muhammad Uzair Yousuf, Muhammad Kashan Rashid, Ahsan Ahmed, ‘On Probabilistic Assessment of Exergy Analysis of a Wind Turbine for Optimum Performance’, *Transactions of the Canadian Society for Mechanical Engineering*, 2021.

- Muhammad Uzair, Mubashir Ali Siddiqui, Usman Allauddin, ‘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*, 2021.
- ur Rehman, N., Uzair, M., Mubashir Siddiqui, ‘Regression Models and Sensitivity Analysis for the Thermal Performance of Solar Flat-Plate Collectors’. *Arab J Sci Eng* 44, 1119–1127 (2019)
- Rehman, N.u., Mubashir Siddiqui, & Uzair, M. ‘Performance Modeling and Experimental Investigation of Parasitic Losses in a Flat-Panel Solar Thermoelectric Generator’. *Arab J Sci Eng* 44, 5589–5602 (2019)
- Mubashir Siddiqui, Hassan Ahmed M Bilal Javed, Umair Shahid, ‘Numerical Analysis and Parametric optimization of Surge Protection Devices in a Long Up-Pumping Water Pipeline’, *Journal of Mechanical Science and Technology*, 2019
- Muhammad Uzair Yousuf, Mubashir Siddiqui, Naveed Ur Rehman, ‘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*, 2018
- ur Rehman, Naveed, and Mubashir Ali Siddiqui. "Theoretical and Field Experimental Investigation of an Arrayed Solar Thermoelectric Flat-Plate Generator." *Journal of Electronic Materials*: (2018) 1-15.
- Naveed ur Rehman, Muhammad Uzair, and Mubashir Ali Siddiqui. "Optical Analysis of a Novel Collector Design for a Solar Concentrated Thermoelectric Generator." *Solar Energy*, 167 (2018): 116-124.
- Naveed Ur Rehman, Mubashir Siddiqui, ‘Performance Model and Sensitivity Analysis for a Solar Thermoelectric Generator’, *Journal of Electronic Materials*, January 2017.
- Muhammad Muzamil, Mubashir Siddiqui, Muhammad Samiuddin, ‘Experimental Investigation and Optimization of Process Parameters for Through Induction Hardening using Factorial Design of Experiments’, *Journal of Engineering Research*, 2017.
- Ahsan Alam, Mubashir Siddiqui, Naveed Ur Rehman, ‘Solar Water Heating Feasibility for a Conventional Steam Power Plant’, *Journal of Mechanical Science & Technology*, 2017.
- Muhammad Muzamil, Mubashir Siddiqui, ‘Numerical and Experimental Investigation of Wind loading on Wind Loadings on Wind Turbine Blade Deflection’, *Journal of Mechanical Science & Technology*, 2016.
- Naveed Ur Rehman, Mubashir Siddiqui, ‘Critical Concentration Ratio for Solar Thermoelectric Generators’, *Journal of Electronic Materials*, June 2016.

- Naveed Ur Rehman, Mubashir Siddiqui, ‘A Novel Methodology for Determining Sky Blocking by Obstacles Viewed Virtually from Any Location on Site’, *Energy and Buildings*, 2016.
- Naveed Rehman, Mubashir Siddiqui, ‘A Novel Method for Determining Sky View Factor for Isotropic Diffuse Radiations for a Collector in Obstacles-free or Urban Site’, *Journal of Renewable and Sustainable Energy*, (7), 2015.
- Shaikh N, Siddiqui M.A. and Allauddin U., ‘Integrated Solar Water Heater and Solar Water Cooler Performance during Winter Time’, *NED University Journal of Research*, pp. 161-72, 2012.
- F. Asim, M. Mahmood, Mubashir Siddiqui, ‘Optimization of Process Parameters for Ssimultaneous Fixation of Reactive Printing and Crease Resistant Finishing using Desirability Function’, *Journal of Textile and Apparel, Technology and Management*, Vol. 7, Issue 3, 2012.
- Mubashir Siddiqui, Kai Yang, ‘Effective Data Analysis Methods for Incomplete Two-Level Factorial Experiments’, *Int. Journal of Experimental Design and Process Optimisation*, Vol. 1, No. 4, pp.348–364, 2010.
- Mubashir Siddiqui, Kai Yang, ‘Adaptive Sequential Experimentation Technique for 3^3 Designs Based on Revised Simplex Search’, *Int. Journal of Experimental Design and Process Optimisation*, Vol. 1, No. 4, pp.296–314, 2010.
- Mubashir Siddiqui, Kai Yang, ‘Split Plot Experiments with Time Trends in Easy-to-Change Factors’, *International Journal of Quality Engineering and Technology*, Vol. 1, No. 3, pp 317-338, 2010.
- Mubashir Siddiqui, Kai Yang, ‘Adaptive Sequential Experimentation based on Revised Simplex Search’, *Int. Journal of Experimental Design and Process Optimisation*, Vol. 1, Nos. 2/3, pp.105–122, 2009.

CONFERENCE PROCEEDINGS

- Ahsan Alam, Mubashir Siddiqui, M. Yaseen, ‘Energy Analysis of a 210 MW Thermal Power Plant’, *Seventh International Mechanical Engineering Congress*, Institution of Engineers Pakistan, 2017.
- Ahsan Alam, Nasiruddin Shaikh, Mubashir Siddiqui, ‘Analysis of Syngas Composition in Wood Gasification Using Downdraft Gasifier’, 7th IMEC 2017.
- Ahsan Alam, Mubashir Siddiqui, Abdullah Faiz, F. Hasani, ‘Effect of Steam Temperature on Powerplant Output and Efficiency’, *Sixth International Mechanical Engineering Congress*, Institution of Engineers Pakistan, 2016.
- Umair Bin Asim, Mubashir Siddiqui, ‘Investigation of Stresses in Coal Gasifier Hearth under Thermal Loading using Finite Element Analysis’, *International Conference on Machine Learning, Electrical and Mechanical Engineering (ICMLEME'2014)*, Dubai, 2014.

- Naveed Ur Rehman, Mubashir Ali Siddiqui, ‘Modelling and Simulation of Thermoelectric Generator Modules Mounted on Receiver Pipe of Solar Parabolic Trough Collector’, *International Conference on Energy and Sustainability*, 2013.
- A. Adeel, Mubashir Siddiqui, Ahmed Raza, ‘Optimization of Wind Turbine Performance using Design of Experiment’, *International Conference on Energy and Sustainability*, 2013.
- Naveed Ur Rehman, Mubashir Siddiqui, ‘Development of Simulation Tool for finding Optimum Tilt Angles for Solar Collectors’, *45th Institution of Engineers Convention*, 21 – 22 December, Karachi, 2012.

Also served as **Reviewer** for research papers in various **journals** including (i) *Renewable Energy*, (ii) *Journal of Cleaner Production*, (iii) *Energy and Buildings*, (iv) *Journal of Mechanical Science and Technology*, (v) *International Journal of Building Pathology and Adaptation* (vi) *Sustainability* (vii) *Technical Journal University of Taxila*, (viii) *2017 International Conference on New Energy and Future Energy System China*, (ix) *Sixth International Conference on Material Science and Engineering China 2017* (x) *International Mechanical Engineering Conferences (5th, 6th and 7th)*, *Institution of Engineers Pakistan*, and (xi) *International Conference on Energy and Sustainability*.

PUBLICATIONS UNDER PROGRESS

- Parametric Evaluation of Condensate Water Yield from Plain Finned Tube Heat Exchangers in Atmospheric Water Generation – Submitted
- Real Time Data Based Performance Analysis of a 425 kWp Building Applied PV System – Submitted
- Effect of Prepaid Metering to Curb Energy Losses in Pakistan
- Energy Security of Pakistan

RESEARCH PROJECTS

- Water Condensation from Tropospheric Humidity for Water Insecurity via Hydro-Solar Nexus (as PI) (April 2021 till date) Sindh HEC Project
- EV System Development Project (as Co-PI) (September 2021 till date) AI Mobility & Green Energy (AIM-GE) LLC, USA
- Solar biomass dryer to enhance calorific value of agricultural crop residue (as Co-PI) (Mar 2019 – Dec 2020) (HEC NRPU Project)
- Heat Transfer and Transient Rectilinear Flows Analyses of Dissipative Fluids (as PI) (May 2021 till date)
- Analysis and Evaluation of Project Complexity for Improved Project Management (as PI) (Apr 2019 till date)
- Energy Consumption Optimization for Large Industrial Processes (as PI) (Dec 2017 till date)
- Computational and Experimental Investigations of In-Cylinder Fluid Flows and Performance of Internal Combustion Engines (as Co-PI) (Sep 2017 till date)
- Modelling and Optimization of Solar Energy Based Thermoelectric Power Generation System (as PI) (2011-2017)

MASTERS THESES SUPERVISION

- Performance of Plain Finned Tube Heat Exchangers Under Dehumidification using Design of Experiments and Sensitivity Analysis (2021 – 2022)
- Assessment of Net Energy Contribution to Buildings Via Rooftop Photovoltaic Systems in Karachi (2021-2022)
- Short Term Forecasting of PM 2.5 in Different Cities of Pakistan using Hybrid Algorithm (2020 – 2021)
- Design, Development and Optimization of a Continuously Variable Transmission Using Statistical Techniques (2020 – 2021)
- Production Planning Modelling and Forecasting using Statistical Techniques (2020 – 2021)
- Design and Performance Analysis of a Household PVT System for Domestic Water Heating (2020 – 2021)
- Probabilistic Assessment of Exergy analysis for Wind Turbines (2019 – 2020)
- Forecasting Energy Demand Using Statistical Methods for Energy Policy of Pakistan (2019 – 2020)
- Auto Regressive Integrated Moving Average (ARIMA) Modeling for Wind Energy Potential of Pakistan (2019 – 2020)
- Solar Energy Potential Estimation for Open Plains and Roof top areas using Irradiance Probability Distribution – 2016
- Solar Air Conditioning through Absorption Chillers for Industrial / Commercial Consumers - 2016
- Feasibility of Solar Heating in a Conventional Steam Turbine Power Plant - 2015
- Parabolic Trough Collectors – Technical and Economic Feasibility for Industrial Process Heat - 2015
- Numerical and Experimental Investigation of Wind Loading on Wind Turbine Blades - 2014
- Stress Analysis of Small Coal Gasifier Based on Thermal Loading - 2013
- Development of Tilt and Orientation Factor Contours Compensated for Site Specific Requirements - 2013

PHD EXAMINATION

- Examiner on PhD thesis final examination titled “Technical Competency Framework Development and Validation”. The thesis involved extensive use of Statistical techniques in framework development.
- Examiner on PhD thesis final examination titled “Investigation to Improve the Piling Resistance of Bamboo / Cotton Woven fabrics”. The thesis involved extensive use of Statistical techniques and Design of Experiments.
- Examiner on PhD seminar defense of thesis titled “Application of Radiant Cooling as a Viable Alternative to Conventional Air Conditioning System in Pakistan”

BOOK CONTRIBUTION

- *Design for Six Sigma* by Kai Yang & Basim El-Haik, Chapter 12, Fundamentals of Experimental Design, Sec. 12.6 Incomplete Factorial Experiments, McGraw-Hill Companies Inc 2009.

OTHER ACTIVITIES

- *Co-Convener*, Eleventh and Tenth International Mechanical Engineering Conference, 2022 and 2021
- *Secretary*, Ninth International Mechanical Engineering Conference, 2019
- *Co-Convener*, Eighth International Mechanical Engineering Conference, 2018

- **Co-Convener**, Seventh International Mechanical Engineering Conference on Recent Development in Design, Energy Systems & Alternate Fuels, March 2017
- **Co-Convener**, Sixth International Mechanical Engineering Congress on Green Systems and Innovations, July 2016
- **Member**, Technical Committee, Fifth International Congress on Energy, Sustainability and Mechanical Design, May 2015
- **Secretary**, International Conference on Energy and Sustainability, April 2013
- **Reviewed** various research projects for Higher Education Commission, Pakistan
- Served as **Subject Expert** (Mechanical Engineering) for Federal Public Service Commission, Pakistan, several times
- Appointed as **Subject Expert** by Higher Education Commission Pakistan for **Mechanical Engineering Curriculum Revision** across Pakistan (NCRC: National Curriculum Revision Committee)
- **Member** – Board of Faculty, Academic Council, Senate, and Selection Board, NED University, Karachi
- **Member** – Board of Faculty of Engineering, Science and Technology, Hamdard University, Karachi
- **Expert Member** – Selection Board, DHA Suffa University, Karachi

COURSES TAUGHT

Undergraduate

- Heat Transfer
- Power Plant Engineering
- Thermodynamics

Masters

- Renewable Energy
- Energy Management
- Energy Economics, Policy & Assessment
- Advanced Statistics
- Design and Analysis of Experiments (DOE)
- Six Sigma Methodologies
- Finite Element Analysis

PhD

- Wind Resource Assessment
- Design of Solar (Thermal) Energy Systems
- Probability & Statistics
- Advanced Experimental Designs

CURRENT TRAININGS / CONFERENCES

- **ISO 50001 Energy Management System Lead Auditor Certification** Training, August 2019
- **4th Karachi International Water Conference - Water Energy Food Nexus** 26th – 27th November 2019
- **Stakeholder Workshop on Biogas Plant for Karachi BRT Red Line**, June 2019
- **PEC (Pakistan Engineering Council) Program Evaluators Training**, March 2019
- **PhD Supervisors Capacity Building Program** by **Higher Education Commission**, February 2019
- 17th **WVEC (World Wind Energy Conference)**, November 2018
- Training on **Web of Science – Clarivate Analytics**, October 2018
- Training on **PhD Supervision**, Tertiary Education Support Program, HEC (Higher Education Commission), 28th April 2017

- Training on “**Procurement Procedures**” organized by Sind Public Procurement Authority, Pakistan, 31st May – 2nd June 2016
- Attended Training on **Leadership and Change Management** organized by IBA (Institute of Business Administration) and HEC (Higher Education Commission), 4th - 7th May, 2015
- Attended Indigenous On-Campus Training on **Knowledge Management, Presentation Skills, Audit**, Social Media and Finance for Non-Finance Managers, organized by IBA (Institute of Business Administration) and HEC (Higher Education Commission), November 10-14, 2014
- Attended Workshop on **Wind Energy** by World Bank Group, AEDB (Alternate Energy Development Board Pakistan), ESMAP (Energy Sector Management Assistance Program), DTU (Technical University of Denmark), and SSSI (Sustainable Energy Services International), conducted by Mr. Rory Donnelly and Mr. Luc DeWilde, 21st October, 2014
- Attended Workshop on **Coal Clean Combustion** organized by PIEAS (Pakistan Institute of Engineering & Applied Sciences), 7th and 8th March, 2012
- Conducted various trainings on **Six Sigma** through CCEE (Center for Continuing Engineering Education) platform (2011 – date), NED University and also to Hinopak Motors Ltd (2015).

HONORS & AWARDS

- **Very Good** and **Excellent** Student Feedback Ratings in all Undergraduate and Postgraduate Courses taught at NED University during past several years
- **Member (Energy)**, Pakistan Vision 2025 and Fifth Five Year Plan 2013-18, Ministry of Planning & Development, Planning Commission, Government of Pakistan
- **Outstanding Teaching Assistant Award** for the year of 2008, Industrial & Manufacturing Engineering Department, Wayne State University, Detroit, Michigan, USA
- **Best Presentation Award**, Graduate Research Symposium, 2007, Industrial & Manufacturing Engineering Department, Wayne State University, Detroit, Michigan, USA
- **Graduate Teaching Assistant Scholarship**, Sept 2007 – August 2009, Industrial & Manufacturing Engineering Department, Wayne State University, Detroit, Michigan, USA
- **Graduate Research Assistant Scholarship**, May 2006 – August 2007, Industrial & Manufacturing Engineering Department, Wayne State University, Detroit, Michigan, USA
- **Meritorious Scholarship**, 1993 to 1994, for securing 22nd position in SSC Examinations in Karachi Board