

Muhammad Nauman Qureshi

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PROFESSIONAL PROFILE

- 20+ years of experience of industrial and academic environment
- 20 publications in journals and conference proceedings
- 230+ citations to publications
- Experimental and computational fluid dynamist
- Teaching and research projects/thesis supervision at undergraduate and graduate levels
- High Performance Computing

PROFESSIONAL EXPERIENCE (20 years)

DHA SUFFA University, Karachi
Assistant Professor
Mechanical Engineering Department

Jan 2017 - Present

PUBLIC SECTOR R&D ORGANIZATION, Karachi, Sindh, Pakistan
GM, Computational Fluid Dynamics

Oct 2010 - Jan 2017

- Numerical Modeling and Simulation of Complex Flows; Drag prediction; Turbulence Modeling; Aerothermal analysis; Aero-Acoustics; Flow Separation Modeling; Subsonic, Transonic & Supersonic flow modeling; Aerodynamic design of wind turbine rotors; Spray modeling etc.

PNEC-NUST, Karachi, Sindh, Pakistan
Teaching Visiting Faculty

June 2012 – Dec 2016

- Subjects taught to graduate students of MS Thermo-Fluids: Power Plant Engineering; Instrumentation and Data Acquisition System & Turbulence.

AERODYNAMICS RESEARCH LABORATORY, Poitiers, France
Post-Doctoral Fellow

Oct 2009 - Mar 2010

- Flow separation control over airfoils using dielectric barrier discharge (DBD) plasma actuators for applications in UAVs. Time Resolved PIV experiments in subsonic wind tunnels.

L.E.G.I., JOSEPH FOURIER UNIVERSITY, Grenoble, France
Post-Doctoral Researcher

May 2009 - Oct 2009

- Development of Active Grid and Characterization of turbulence generated by it. Adaption of Acoustics Doppler Velocimetry in SF6 tunnel.

L.E.G.I., JOSEPH FOURIER UNIVERSITY, Grenoble, France
Teaching Assistant

Oct 2006 - Sep 2008

- Conducted laboratory experiments for undergraduate students of ENSHMG and UFR de Mécanique (Final year students) in the area of fluid dynamics, heat transfer and hydraulics.

L.E.G.I., JOSEPH FOURIER UNIVERSITY, Grenoble, France
Doctoral Research

Oct 2005 - May 2009

- Experimental Investigation of Finite-Sized Inertial Particles Dynamics in Wind Tunnel Grid Generated Turbulence.

PUBLIC SECTOR R&D ORGANIZATION, Karachi, Sindh, Pakistan
Assistant Manager Projects

Oct 2000 - June 2003

- Design & development of aerospace components.

INTERNATIONAL INDUSTRIES LTD., Karachi, Sindh, Pakistan
Assistant Manager Maintenance

1999-2000

- Maintenance of overhead cranes; hydraulic components of cold rolling mill and pipe manufacturing plants. Actively participated in the ISO 2000 implementation.

GUL AHMED TEXTILE MILLS LTD., Karachi, Sindh, Pakistan
Trainee Engineer

1998-99

- Maintenance of rotary printing machines and installation of dyeing machine.

EDUCATION

Doctorate (PhD) Oct 05- May 09: Geophysical and Industrial Flows Laboratory (L.E.G.I.), Joseph Fourier University, Grenoble, France. Specialization: Particle Dynamics in Turbulent Flows.

MS by Research 2004-05: ISAE/SUPAERO, Toulouse. Specialization: Energy, combustion, Heat Transfer.

MSc Aeronautical Engineering, 2003-04: ISAE/SUPAERO Toulouse. Specialization: Propulsion, Two-Phase Flows.

BE Mechanical Engineering, 1994-98: N.E.D. University of Engineering & Technology, Karachi, Pakistan.

UNIVERSITY PROJECTS SUPERVISED

2010-11, N.E.D. University, Bio Medical Engineering, Final Year Project (UG): “Numerical Simulations of Aerosol Drug Delivery into Human Extra Thoracic Airway (ETA) Through Inhalers”.

2011-12, N.E.D. University, Bio Medical Engineering, Final Year Project (UG): “Prediction of dynamic derivatives of supersonic slender body through CFD”.

2014, PNEC-NUST, MS Thermo-Fluids: “CFD and Heat Transfer Analysis on Dimpled Plate Heat Exchangers”.

2016, PNEC-NUST, MS Thermo-Fluids: “Study the effects of working fluids on the performance prediction of MEMS-based Micro-Resistojet Thruster through CFD”.

2016, PNEC-NUST, MS Thermo-Fluids: “Performance Prediction of MEMS-based Micro-Resistojet Thruster through CFD”.

PUBLICATIONS

1. Nauman M. Qureshi, Mickael Bourgoïn, Christophe Baudet, Alain Cartellier, Yves Gagne, "Turbulent Transport of Material Particles: An Experimental Study of Finite Size Effects", **Phys.Rev.Lett.****99,184502(2007)**.
2. Nauman M. Qureshi, Unaiarrieta, Christophe Baudet, Alain Cartellier, Yves Gagne, Mickael Bourgoïn "Acceleration statistics of inertial particles in turbulent flow", **European Physical Journal B** **66, 531-536(2008)**.
3. Nauman M. Qureshi, Unaiarrieta, Christophe Baudet, Christophe Baudet, Yves Gagne, "Turbulent Transport of Finite- Sized Material Particle", **Journal of Physics: Conference Series, Vol 318, 012005 (2011)**.
4. Abdul Majid, Muhammad Naeem Owais, Muhammad Nauman Qureshi, "Aerodynamic Drag Computation of Lower Earth Orbit (LEO) Satellites", *Journal of Space Technology*, Vol. 8, No. 1, July 2018.
5. Mukkarum Husain, M. Nauman Qureshi, "Prediction of Transient Skin Temperature of High Speed Vehicles through CFD", **Journal of Space Technology, 2012**.
6. Sheikh Arsalan, Mukkarum Husain, M. Nauman Qureshi, "Effect of Nose-Bluntness Ratio on Aerodynamics Performance of Re-entry Vehicle", **Journal of Space Technology, 2012**.
7. Maryam Ozair; M. Nauman Qureshi, S. Zia-ur-Rehman, and Qaiser Sultan, "Numerical Investigation of a Supersonic Exhaust Diffuser for High Altitude Simulation", **Proceedings of 5th CSA-IAA Conference on Advanced Space Technology, 339-344, 2013**.
8. Maryam Ozair; M. Nauman Qureshi, "Numerical Simulation of Pressure Oscillation and Instabilities in a Solid Propellant Subscale Motor", **Proceedings of 10th IBCAST, 2013**.
9. Mukkarum Husain, M. Nauman Qureshi, "Prediction of Transient Skin Temperature of High Speed Vehicles through CFD", **International Conference Series: 6th International Conference on Recent Advances in Space Technologies-RAST, 2013**.
10. Syed Sheraz Ali, Nauman Qureshi, Shafiq ur Rehman "Performance Prediction of MEMS based Resistojet Thruster through CFD", **Journal of Space Technology, 2017**.
11. Qureshi M. Nauman; Bourgoïn Mickael; Baudet Christophe; Cartellier Alain; Gagne Yves. Two-Time Statistics of Inertial Particles Dynamics in Wind Tunnel Grid Generated Turbulence. **Proceedings of 9th IBCAST, 2012**.
12. Mukkarum Husain, Shamoïn Jamshed, M. Nauman Qureshi, "Transient Aero-thermal Analysis of High Speed Vehicles using CFD". **Proceedings of 9th ICASE 2011**.
13. Mukkarum Hussain, M. Nauman Qureshi, "Numerical Analysis of Shock Tube Problem using TVD and ACM Schemes", **2nd ICASE 2011**.
14. Maryam Ozair, Sadiq Sarfaraz, Mukkarum Husain, M. Nauman Qureshi, Aerodynamics Design and Analysis of Horizontal Axis Wind Turbine". **2nd ICASE 2011**.
15. **ADVANCES IN TURBULENCE XII, Springer Proceedings in Physics, 2009**, Vol 132, Part 1, 31-34, DOI: 10.1007/978-3-642-03085-7_7. "Lagrangian statistics of inertial particles in turbulent flow", Mickaël Bourgoïn, Nauman M. Qureshi, Christophe Baudet, Alain Cartellier and Yves Gagne.
16. **ADVANCES IN TURBULENCE XI, Springer Proceedings in Physics, 2007**, Vol 117, 424-426, "Experimental investigation of turbulent transport of material particles". Nauman M. Qureshi, Mickaël Bourgoïn, Christophe Baudet, Alain Cartellier and Yves Gagne.
17. Nauman M. Qureshi, Mickael Bourgoïn, Christophe Baudet, Unai Arrieta, Alain Cartellier and Yves Gagne. : Turbulent Transport of Material Particles: Finite Size and Density Effects". **GDR Turbulence, Lyon, 2008**.
18. Nauman M. Qureshi, Mickael Bourgoïn, Christophe Baudet, Alain Cartellier and Yves Gagne, "Turbulent Transport of Material Particles: Finite Size and Density Effects", **International Conference on Multiphase Flow, Leipzig Germany, 2007**.
19. Nauman M. Qureshi, Mickaël Bourgoïn, Christophe Baudet, Alain Cartellier and Yves Gagne, Experimental Investigation of Turbulent Transport of Material Particles, **18eme Congres Francais de Mecanique, Grenoble, France, 2007**.

20. Participation in summer school on “Small-scale turbulence: Theory, Phenomenology and Applications”, Cargese, Corsica, 13-25 August 2007. Poster presentation entitled “Turbulent Transport of Inertial Particles”.
21. Numerical Investigation of the Effect of Various Propellant Gases on the Performance of Micro Electric Thruster”, 7th International Mechanical Engineering Congress, 24-25 March, 2017, IEP Karachi.

MISC SCIENTIFIC ACTIVITIES

Invited Talks:

Max Planck Institute for Dynamics & Self-Organization, Gottingen, Germany. “Transport Finite-Sized Neutrally Buoyant and Heavy Particles in Grid Generated Turbulent Flow”, 13th February, 2009.

NED University of Engineering and Technology, Karachi. Particle Dynamics in Turbulent Flows”, 2011.

Reviewer:

International Journal of Thermal Sciences-Elsevier, IBCAST, Pakistan Academy of Sciences.

Expert Panel:

International Conference on Space 2014, Islamabad, Pakistan.

Session Chair:

“Recent Developments in Design, Energy & Alternate Fuels” 7th International Mechanical Engineering Conference.

COMPUTER PROFICIENCY

CAD/CAE: CFD FASTRAN, ANSYS & FLUENT, STAR CCM+, ICEM CFD, GridGen, Pro-Engineer, CATIA, AutoCAD

Programming: Matlab (signal processing; statistics toolboxes specifically)

Miscellaneous: High Performance Computing (HPC), MS Windows, and Linux, LabVIEW

AWARDS & SCHOLARSHIPS

- Team Performance Award (2014-2015)
- Chairman Commendation Award (2015)
- My PhD research work earned EUROMECH Young Scientist Prize Paper Award in 12th European Turbulence Conference (2009)
- French National Ministry of Education, Research & Technology Scholarship for PhD (2005-2009)
- Pakistani Higher Education Scholarship for MSc. in France (2003-2005)
- Three years All Karachi Primary School Scholarship Award (1987-89)

SOFT SKILLS

- Good presentation, communication, analytical and team working skills