

PERSONAL INFORMATION

AFAQ AHMED ABBASI



[Redacted Contact Information]

WORK EXPERIENCE

- April 2017-October 2019  
**Researcher**  
*Department of Fluid Mechanics, Northwestern Polytechnical University, Xian, China*
  - PIV Measurements using **DANTEC DYNAMIC STUDIO** Software
  - Post Processing of LDV and PIV on **MATLAB** and **Tecplot** Software
  - Oil Flow Visualization
  - taught two courses to undergraduate students (Aerodynamics and Fluid Mechanics)
- December 2016-March 2018  
**Research Assistant**  
*Department of Fluid Mechanics, Northwestern Polytechnical University, Xian, China*
  - Wind Tunnel Testing
  - Pressure Measurements using Pressure Scanners
  - Force Measurements using Aerodynamic Balance
- August 2013-September 2013  
**Internee Engineer**  
*Heavy Mechanical Complex, Taxila Pakistan*
- June 2013-July 2013  
**Internee Engineer**  
*Pakistan Aeronautical Complex, PAC, Kamra, Pakistan*

EDUCATION AND TRAINING

- 2021-Present  
**Doctor of Philosophy**  
*University of Genoa, Genoa, Italy*
- 2015-2018  
**Master of Engineering in Fluid Mechanics**  
*Northwestern Polytechnical University (NPU), Xi'an, China*
- 2010-2014  
**Bachelor of Science in Aerospace Engineering**  
*Institute of Space Technology, Islamabad, Pakistan*

PERSONAL SKILLS

Language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	6.5	6	6.5 IELTS	6.5	7
Chinese	3	3	3 HSK	3	3
Urdu	Native	Native	Native	Native	Native

Computer skills

- **Programming Languages**: C++, Python, Visual Basic, HTML
- **Computer Aided Drawing**: AutoCAD
- **Programming Languages Softwares**: Microsoft Visual Studio, MATLAB, Dev C++
- **3D and Solid Modelling**: CATIA, Pro Engineer, Creo, SolidWorks
- **Graph Plotting and Data Analysis**: Tecplot
- **3D-Simulation and Hardware Interface**: MAPLESIM, Lab View
- **Aircraft Design, Analysis and Simulation**: DATCOM, X-Plane, Flight Gear, RUS
- **Material and Structural Analysis Software**: ANSYS
- **Mathematics Solvers**: MAPLE, Mathematica
- **CFD Meshing and Solvers**: Fluent, Pointwise
- **Word Processing**: Microsoft Word, Microsoft Excel, Microsoft PowerPoint and Microsoft Access
- **Particle Image Velocimetry (PIV)**: Dynamic Studio
- **LDV Measurements**: BSA Processor

ADDITIONAL INFORMATION

Patents

**Virtually Dynamic Leading Edge Tubercles using Dielectric Barrier Discharge Plasma Actuators**

**Inventors:** *Xuanshi Meng, Huaxing Li and Yuexiao Long*  
(Published: CN 107914865 A)

Selected  
Conference Publications

**Laminar Separation Bubble Control using Plasma Tubercles for Low Reynold Number**

**Authors:** *Shiqing Yin, Huaxing Li and Xuanshi Meng*  
(Published in AIAA SciTech Forum 9-13 Jan.2019, San Diego, California, USA) DOI: 10.2514/6.2019-0555

**Effects of Wavelength and Amplitude Variation on the Plasma Leading Edge Tubercles**

**Authors:** *Huaxing Li and Xuanshi Meng*  
(Published in IBCAST 8-12 Jan 2019, Islamabad, Pakistan) DOI: 10.5120/351845

**Effect of Plasma Leading Edge Tubercles on Wing Performance**

**Authors:** *Shiqing Yin, Yuqi Qin, Haiyang Hu, Huaxing Li and Xuanshi Meng*  
(Published in AIAA SciTech Forum 8-12 Jan.2018, Kissimmee Florida, USA) DOI: 10.2514/6.2018-0579

**Static Force, Torque and Structural Analysis of 5R Robotic Arm — Simulation and Practical Implementation**

**Authors:** *Ehtisham Hasan and Amna Khan*  
(Published in ICCAR, April 20-23, 2018, Auckland, New Zealand) DOI: 10.1109/ICCAR.2018.8384646

**An Application of Dielectric Barrier Discharge Plasma Actuators- Plasma Leading Edge Tubercles**

**Authors:**  
(Published in Mech Aero, 07-08 November, 2018, Atlanta, USA) DOI: 10.4011/2168-1750.180029

**Forward and Inverse Kinematic Analysis of 5DOF Serial Manipulator**

**Authors:** *Muqees Ahmad and Zainab Saleem*  
(Published in First Student Research Paper Conference, August 2014 Islamabad, Pakistan)

**Experimental Investigation of Thermal Properties of Dielectric Barrier Discharge Plasma Actuator for Steady and Unsteady Actuation**

**Authors:** *Huaxing Li and Xuanshi Meng*  
(Published in FLUCOME, May 27-30, 2019, Naples, Italy)

**Thermal Characteristics of Plasma Actuators in Turbulent Boundary Layer**

**Authors:** *Huaxing Li, Weiwei Hui, Yin Shiqing and Xuanshi Meng*  
(Published in AIAA Aviation Forum 2020, 15 – 19 June, USA)

Journal Publications

**Experimental Study of Coupled Aerodynamic and Thermal Effects for Steady and Unsteady Plasma Actuation**

**Authors:** *Huaxing Li and Xuanshi Meng*  
(Published in AIAA Journal, Vol. 58 No. 1 (2020))  
DOI: 10.2514/6.2018-0579

Journal Publications:

**Bioinspired Experimental Study of Leading-Edge Plasma Tubercles on Wing**

**Authors:** Xuanshi Meng, Huaxing Li, Shiqing Yao and Yaqi Qiu  
(Published in AIAA Journal, Vol. 57, No. 1 (2019), pp. 462-466, January 2019)  
DOI: 10.2514/6.2019-351

**Design Methodology using Characteristic Parameters Control for Low Reynolds Number Airfoils**

**Authors:** Sen Zhang, Huaxing Li and  
(Published in Aerospace Science and Technology, Vol. 86, March 2019)  
DOI: 10.1016/j.ast.2019.03.003

**Mechanism Study of Coupled Aerodynamic and Thermal Effects using Plasma Actuation for Anti-Icing**

**Authors:** Xuanshi Meng, Haiyang Hu, Chang Li, Jinsheng Cai and Hui Hu  
(Published in PHYSICS OF FLUIDS, Vol. 31 (3):037103, March 2019)  
DOI: 10.1063/1.5086884

**Analytical Approach for Solution of Kinematics of Serial Manipulator; Simulation and Practical Implementation**

**Authors:** Mugeet Ahmad, Hayat Muhammad Khan, Ehtisham ul Hasan and Amna Khan  
(Submitted to Journal of Mechanical Science and Technology, Submission ID: MEST-D-19-00170)

Master's Thesis:

**Bio-Inspired Experimental Study of Plasma Leading Edge Tubercles**

Selected Semester Projects  
(Undergraduate)

- **Water Level Sensor:** A project designed to sense and control the liquid level in any given tank. Interfaced with LABVIEW (Instrumentation)
- **Ball-Beam Control:** A controls project designed to balance a ball over a beam using microcontroller (Controls System)
- **Aircraft Design Project:** A conceptual designed project, i.e. design of aircraft with given requirements (Aircraft Vehicle Design)
- **Programmed Engineering Calculator:** Program a calculator in C++ which could perform matrix, vector, complex operations as well as containing features of a scientific calculator (Programming)
- **Controller Design:** Lateral and Longitudinal Autopilots for aircraft were designed using SIMULINK and SISOTOOL of MATLAB. (Flight Controls System)

Selected Presentations

- Flight Stability of an Aircraft
- Effect of Plasma Leading Edge Tubercles on Wing Performance
- Design of Narrow Body Jet Transport Aircraft
- Performance Analysis of Boeing 737
- Vibrational Analysis of 5DOF Robotic Arm
- Comparison of LQR, LQI and PID Controlling Technique
- Alloys in Human Body

Honours and Awards

- **Masters:** Awarded as "Outstanding Graduate Student" on graduation for outstanding academics (95.72%) and excellent research work (several publications)
- **Masters:** Chinese Government Scholarship (Fulbright Chinese Scholarship)
- **Bachelors:** 1<sup>st</sup> and 7<sup>th</sup> semester, Merit Based Scholarship of 50% fee waiver
- **Bachelors:** 3<sup>rd</sup>, 4<sup>th</sup> and 8<sup>th</sup> Semester, Merit Based Scholarship of 25% fee waiver
- **Intermediate:** 100% fee waiver scholarship on achieving A1 in matriculation
- Stood 2<sup>nd</sup> and 3<sup>rd</sup> in Intra-University Marathon Competition in 2010 and 2011, respectively

References

Prof. Li Huaxing (Email: hxli@nwpu.edu.cn)  
Dr. Hayat Muhammad Khan (Email: hayat.khan@ist.edu.pk)

