

Dr. Taghavi, Reza

Assistant Professor



University Degrees

- Ph.D., University of Manchester, UK
- M.Sc., Sharif University of Technology, Iran
- B.Sc., Iran University of Science and Technology, Iran

Current Research

- Experimental and Numerical Prediction of Transitional Flows
- Aerodynamic Optimization of Tall Buildings
- Gas Turbine Optimization
- Gas Turbine Testing

Experiences

- Aerodynamic Design of Axial Compressors
- Aerodynamic Optimization of Tall Buildings
- Gas Turbine Testing
- Fluid Dynamics Testing
- Wind Tunnel Testing

Fields of Interest

- Experimental and Theoretical Aerodynamics
- Gas Turbine Design
- Axial Compressor Design and Analysis
- Flow Instabilities and Transition
- Turbomachinery Design
- Computational Fluid Dynamics

Funded Research Projects

- Aerodynamics of Tall Buildings
- Drag Reduction of Passenger Trains
- Design of Axial Compressor
- Design and Manufacturing of a Closed-Circuit Subsonic Wind Tunnel
- Aerodynamics Optimization of Axial Compressors
- Performance Tests of Gas Turbine Engines

Graduate Theses Supervised

- Drag Reduction of Passenger Trains (M. Sc.)
- Optimization of Axial Compressor Blading, (M. Sc.)
- Numerical Prediction of Axial Compressor Performance Map, (M. Sc.)
- Numerical Optimization of Axial Compressor Design, (M. Sc.)
- Experimental Investigation on the Aerodynamics of Passenger Trains, (M. Sc.)
- Design, Manufacturing and Calibration of Test Equipments for Gas Turbine Engines (M. Sc.)
- Prediction of Boundary Layer Transition Using Three-Equation Model (M. Sc.)
- Experimental Investigation on Gas Turbine Engine Performance (M. Sc.)
- Axial Compressor Design Based on Streamline Curvature Method, (M. Sc.)

Publications - Journal Papers

- Salari M., Ardakani M. A., Taghavi-Zenouz R., Experimental Studies on Temperature Effects of Freestream and Hot Wire Sensors on the Calibration Curves and Velocity Measurements, *Mechanical and Aerospace Engineering Journal*, Vol. 1, No. 3, March 2006.
- Taghavi-Zenouz R., Ghorbani R., Aerodynamic Profiling of Transonic Axial Compressors, *International Journal of Engineering Sciences*, Vol. 16, No. 3, 2006.
- Taghavi-Zenouz R., Salari M., Prediction of Commencement of Transition from Laminar to Turbulent Flows Using Turbulence Potential Model, *International Journal of Engineering Sciences*, Vol.16, No. 4, 2006.
- Farshi B., Taghavi-Zenouz R., Preliminary Design Optimization of Axial Compressors, *Iranian Journal of Mechanical Engineering Transactions of the ISME*, Vol. 5, No.1, Aug. 2004.

Publications - Conference Proceedings

- R. Taghavi-Zenouz, Rafiei Y., Beheshti S. M., Design and Manufacturing of a Combined Pressure and Temperature Rake for Gas Turbine Engine Testing, 14th Annual (International) Conference of Mechanical Engineering, Isfahan, 16-18 May 2006.
- R. Taghavi-Zenouz, Kolaei A., Salari M., Modeling and Analysis of Transition Phenomenon on Flat Plates and Wind Turbine Blades Based on 3-Equation Model, 14 Annual (International) Conference of Mechanical Engineering, Isfahan, 16-18 May 2006.
- Taghavi-Zenouz R., Shahriari M., Boundary Layer characteristics on Rotor Blades of Transonic Axial Compressors, 14th Annual (International) Conference of Mechanical Engineering, Isfahan, 16-18 May 2006.
- Salari M., Taghavi-Zenouz R., Prediction of Transition in Boundary Layers Based on Modeling of Velocity Fluctuations in Laminar Flows, 14th Annual (International) Conference of Mechanical Engineering, Isfahan, 16-18 May 2006.
- Taghavi-Zenouz R., Salari M., Prediction of Bypass Transition in Boundary Layers Using a Physical Model, 13th Annual (International) Conference of Mechanical Engineering, Isfahan, 2005.
- Ardakani M. A., salari M., Taghavi-Zenouz R., Experimental Investigation on Performances of Hot Wire and Hot Film Anemometries, 13th Annual (International) Conference of Mechanical Engineering, Isfahan, 2005.
- Taghavi-Zenouz R., Ghorbani R., Aerodynamic Blading and Performance Map Prediction of Axial Compressors, AIAA-2005-1012, 17th International Symposium on Air Breathing Engines (ISABE), Munich, Germany, Sep. 4-9, 2005
- Taghavi-Zenouz R., Ghorbani R., A Theoretical Investigation on Aerodynamic Loading Effects on Geometry of Axial Compressor Blades, ISME 2003, 13-15 May 2003.
- Taghavi-Zenouz R., Ghorbani R., Loss Calculation in a Transonic Axial Compressor Using Through Flow Analysis at Design Point, 5th National and 2nd International Conference of Iranian Aerospace Society, 18-20 Feb. 2003.
- Taghavi-Zenouz R., Khorsand M., Numerical Flow Visualization in a Transonic Axial Compressor, 7th Triennial International Symposium on Fluid Control, Measurement and Visualization, Sorrento, Italy, Aug 25-28, 2003.
- Taghavi-Zenouz R., Babaei H., Drag Reduction of Passenger Trains, 8th Iranian Fluid Dynamics Conference, Tabriz, Iran, Sep. 8-10, 2003.
- Taghavi-Zenouz R., Ghorbani R., Design of Supersonic Axial Compressor Blades Using Streamline Curvature Method, 4th Conference of Iranian Aerospace Society, 25-27 Jan. 2002.
- Taghavi-Zenouz R., Ghorbani R., Design of Supersonic Axial Compressor Blades Using Streamline Curvature Method, 4th Conference of Iranian Aerospace Society, 25-27 Jan. 2002.
- Taghavi-Zenouz R., Babaei H., A Wind Tunnel Investigation on Raja Passenger Trains, International Conference on Fluid Mechanics, Mashhad, Iran, 2002.
- Taghavi-Zenouz R., Numerical Analysis of Flow in a Transonic Axial Compressor Cascade, 9th Asian Congress on Fluid Mechanics, Isfahan, Iran, May 27-31, 2002.
- Taghavi-Zenouz R. Growth and Bursting of a Separation Bubble on an Elliptic Cylinder, 9th Asian Congress on Fluid Mechanics (9ACFM), Isfahan, Iran, May 27-31, 2002.
- Taghavi-Zenouz R., Visualization of Surface and Wake Flow Patterns around 2-D and 3-D Elliptic Bodies, 10th International Symposium on Flow Visualization, Kyoto, Japan, Aug 26-29, 2002.

- Lamont P.J., Taghavi-Zenouz R., Poll D.I.A., Reynolds Number Effects on the Flow around 2-D Elliptic Cylinders, 33rd AIAA Meeting and Exhibition, Reno-Nev, USA, 1993

Research Laboratory

- Aerodynamics

Courses Taught

- Advanced Aerodynamics (M.Sc.)
- Advanced Fluid Dynamics (M. Sc.)
- Aerodynamic Design of Turbomachines (M. Sc.)
- Aerodynamics of Road Vehicles (M. Sc.)
- Air Intake Aerodynamics (M. Sc.)
- Boundary Layer Theory (M. Sc.)
- Subsonic Aerodynamics (M. Sc.)
- Supersonic Aerodynamics (M. Sc.)
- Fluid Mechanics I (B. Sc.)
- Fluid Mechanics II (B. Sc.)
- Thermodynamics (B. Sc.)