

# Curriculum vitae

Ali Behrouzifar

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## Contact Information

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**Date of Birth:** 28 October, 1986

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## Education

- **Sharif University of Technology, Tehran, IRAN**  
PhD. in Aerospace Eng. (Aerodynamic) (2011)  
GPA: 18.22
- **Sharif University of Technology, Tehran, IRAN**  
M.Sc. in Mechanical Eng. (Energy Conversion) (2009-2011)  
GPA: Total: 17.29

- **Sharif University of Technology, Tehran, IRAN**  
B.Sc. in Aerospace Eng. (2005-2009)  
Thesis: Investigation of wind effect on dry cooling tower and solutions to improve it  
GPA: 15.45

## Research interest

- Aerosol Particle Transport & Deposition
- Optical Diagnostic Techniques in Fluid Mechanics
- Simulation of Fluid-Solid Interaction
- Heat Transfer in heat exchanger
- Computational Fluid Dynamics (CFD)
- Effect of Turbulent Flow in wind turbine
- Usability phenomena in wind turbine blade
- Finite Element Method in fluid flow (FEM)

## Academic Projects & Research

- Developing a Matlab code for PIV& LIF optical investigation methods
- Design of a Refrigerant & Cooling System
- Investigation of The effect of humidity on the efficiency of cooling towers in areas with high humidity
- Investigation and Simulation of Cooling ACC and comparison with dry cooling towers
- Study the impact of geographic location on the dry cooling tower efficiency
- Study the effect of wind on dry cooling tower efficiency
- Evaluation of the efficiency of the cooling tower arrangement in high speed wind
- developed MATLAB code for particle tracking with all forces on micro particles

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## Industrial Research

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- Experimental test for the reduced efficiency of dry cooling tower in high speed wind
- Experimental test for Factors of efficiency increase in the cooling tower in high speed wind
- comparison between the experimental tests to increase the efficiency of the cooling tower in high speed wind by computer simulation

## Articles

- Behrouzifar, A., & Darbandi, M. (2019). An improved actuator disc model for the numerical prediction of the far-wake region of a horizontal axis wind turbine and its performance. *Energy Conversion and Management*, 185, 482-495.
- Darbandi, M., Behrouzifar, A., Jalali, R., and Schneider G. E., Megawatt Wind Turbine Far Wake and Performance Predictions Using the Unsteady Actuator Line Model, [AIAA Paper 2016-1519](#), the AIAA Science and Technology Forum and Exposition 2016, SciTech2016, the 34th Wind Energy Symposium, San Diego, California, USA, 11 pages, Jan. 4-8, 2016, (<http://dx.doi.org/10.2514/6.2016-1519>)
- Behrouzifar, A., Darbandi, M., and Schneider, G. E., Numerical Investigation of Actuator Disc Thickness Effect on Predicting the Performance and Far Wake of the Horizontal Axis Wind Turbine, [ASME paper no. IMECE 2015-52074](#), Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition (IMECE2015), November 13-19, 2015, Houston, Texas, USA, (<http://dx.doi.org/10.1115/IMECE2015-52074>).
- Behrouzifar, A., Darbandi, M., and Schneider, G. E., Wind Turbine Performance Prediction Using Actuator Disc Model, CFDS Paper 2015-0538, [The proceedings of the 23<sup>rd</sup> Annual Conference of the CFD Society of Canada](#), (Ottawa, ON, Canada), CFDS, Wilfried Laurier University, Waterloo, Ontario, Canada, June 7-10, 2015.
- Darbandi, M., Behrouzifar, A., Mirhashemi, A., Salemkar, H., and Schneider, G. E., Details Study of Ambient Wind Effect on Heat Dissipation Capacity of Thermal-Powerplant Dry Cooling-Towers, ASME Paper no. FEDSM 2014-21831, [Proceedings of the ASME 2014 4th Joint US-European Fluids Engineering Division Summer Meeting\(FEDSM2014\)](#), Aug. 3-7, 2014, Chicago, Illinois, USA, (<http://dx.doi.org/10.1115/FEDSM2014-21831>).
- Darbandi, M., Mohajer, A., Behrouzifar, A., Jalali, R., and Schneider, G. E., Evaluating the Effect of Blade Surface Roughness in Megawatt Wind Turbine Performance Using Analytical and Numerical Approaches, HEFAT paper no. 2014-1569902783, [Proceedings of the 10th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics \(HEFAT2014\)](#), pp. 800-805, July 14-16, 2014, Orlando, Florida, USA.
- Darbandi, M., Mohajer, A., Behrouzifar, A., Jalali, R., and Schneider, G. E., Investigation of the Surface Roughness Effect on Characteristics of Megawatt Wind Turbine Airfoils, CSME Paper 2014-003, [The proceedings the Canadian Society for Mechanical Engineering International Congress 2014, CSME 2014](#), University of Toronto, Toronto, Ontario, Canada, June 1-4, 2014.
- Darbandi, M., Behrouzifar, A., Salemkar, H., and Schneider G. E., The Study of Air-Cooled Condenser in high Wind Velocity and Environmental Temperature Conditions, [AIAA Paper 2014-0861](#), the 52<sup>nd</sup> AIAA Aerospace Sciences Meeting, National Harbor, Maryland, USA, Jan. 13-17, 2014, (<http://dx.doi.org/10.2514/6.2014-0580>)
- Darbandi, M., Salemkar, H., and Behrouzifar, A., *The Study of Dry Cooling Towers Under Windy Conditions and Improving their Thermal Efficiency using Different Top Aerodynamics Configurations*, Paper No. A-10443-1, [9<sup>th</sup> International Energy Conference](#), Niroo Research Institute, Tehran, Iran, 10 pages, Feb. 20-21, 2013.
- Darbandi, M., Salemkar, H., Behrouzifar, A., and Abrar, B., *The study of Natural Draught Cooling Tower Wind Covering Using CFD*, Paper No. ICMCM 2012-C1063, [The 2012 International](#)

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*Conference on Mechatronics and Computational Mechanics (ICMCM 2012)*, Dubai, UAE, 8 pages, Dec. 20-21, 2012.

## Teaching Experience

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- Teaching Assistant (TA) for CFD I (3 times)
- Teaching Assistant (TA) for viscous flow

## Industrial Experience

- Position: Project expert (2008)
  - Client: SABA-IEEO (Iran Energy Efficiency Organization)
  - Sub-Client: Shazand Power Generation Management Company
  - Contract Scope: Recovery of the Heller dry cooling tower deficiencies in critical peak energy consumption hours (summer)
- Position: Project manager (2011)
  - Client: IPDC (Iran Powerplant Development Company)
  - Sub-Client: Ramin and Tabas Power Generation Management Company
  - Power Plant Location: Iran-Ahwaz and Tabas
  - Contract Scope: Re-design of both ACC and Heller dry cooling Systems to have minimum cooling system deficiencies in critical peak energy consumption hours
- Position: Project manager (2011)
  - Client: IPDC (Iran Powerplant Development Company)
  - Contract Scope: Design of new construction at the top of Heller dry cooling System to minimize its imperfections in critical peak energy consumption hours
- Position: Project manager (2012)
  - Client: IPDC (Iran Powerplant Development Company)
  - Power Plant Location: Iran-Tabas
  - Contract Scope: Re-design of Heller dry cooling system base positions and mounting configurations to reduce its deficiency in critical energy consumption hours
- Position: Project manager (2013)
  - Client: IPDC (Iran Powerplant Development Company)
  - Power Plant Location: Iran-Shazand
  - Contract Scope: Re-design of Heller water recirculation system to reduce its deficiency in high ambient wind velocities occurring at critical peak energy consumption hours
- Position: Project manager (2014)
  - Client: TPPH (Iran Thermal Power Plant Holding)
  - Sub-Client: Ramin Power Generation Management Company (Developing)
  - Power Plant Location: Iran-Ahwaz
  - Contract Scope: Design of once-through cooling OTC system as an auxiliary cooling system to reduce the deficiency of main Heller cooling system during critical peak power consumption hours
- Position: Project manager (2014)
  - Client: Saba Power and Electricity Industries Company
  - Sub-Client: Qom Electric Power Generation Management Company
  - Contract Scope: Detail Design of Auxiliary Equipment to improve the ACC cooling

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system performance in critical peak power consumption hours

- Position: Project manager (2015)
  - Client: TPPH (Iran Thermal Power Plant Holding Company)
  - Power Plant Location: Iran-Tabas
  - Contract Scope: Design of auxiliary dry cooling system to reduce the main Heller cooling system deficiency in critical power consumption hours
  
- Position: Project manager (2015)
  - Client: TPPH (Iran Thermal Power Plant Holding Company)
  - Sub-Client: Power Generation Management Kerman Company
  - Contract Scope: Detail Design of Auxiliary Equipment to improve the ACC cooling system performance in critical peak power consumption hours with high temperature and wind velocities
  
- Position: Project manager (2016)
  - Client: TPPH (Iran Thermal Power Plant Holding Company)
  - Contract Scope: Evaluation and selection of the power plant design point and selecting type and sizing of main cooling for 5000MW F class
  
- Position: Project manager (2016)
  - Client: Persian Holding
  - Sub-Client: Shahid Montazeri Power Plant
  - Contract Scope: Feasibility studies on reducing water consumption in the wet cooling system with using Heller Towers of the development plan in the hybrid mechanism and prepare tender document for The Bisotun Power Plants
  
- Position: Project manager (2017)
  - Client: Bandar Abbas Thermal Power plant Bandar Abbas Company
  - Contract Scope: The High pressure heater power plant analysis and providing advice to solve the problem created in the field of corrosion and heat transfer

## Computer Skills

- Programming: C++, Fortran, Matlab
- FLUENT, Gambit, SolidWork, Tecplot, HTRI, Aspen-Fran, Electronic corrosion engineering
- General: Office 2013

## Reference

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