



## Hamidreza Shahbazian

Assistant Professor

College: Faculty of Mechanical Engineering

Department: Mechanical Engineering - Heat and Fluid

Education			
Degree	Graduated in	Major	University
BSc	2004	Mechanical Engineering	Shahid Beheshti University, Faculty of Engineering (SBU)
MSc	2007	Thermal/Fluid Mechanics	Isfahan University of Technology (IUT)
Ph.D	2018	Thermal/Fluid Mechanics	Iran University of Science and Technology (IUST), Visiting Researcher at LTH University of Sweden
Post Doctoral	2020	Thermal Science	Iran University of Science and Technology (IUST)

### Work Experience

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### Subjects Taught

Advanced Mathematical Programming and Optimization

Advanced Mathematic (I) for M.Sc. Students

Process Engineering Design

Heat Exchangers Design

CHP & Thermal Power Plant Technology

Heat Transfer (Cond., Conv., Rad.)

Computational Fluid Dynamic (CFD)

## Design of experiments (DOE) and Adv. Measurements

## Sizing & Hydraulic Calculation for Water Transportation System

## Renewable & Sustainable Energy

### Conferences

1. T. Moradi; **H.R. Shahbazian**; S.M. HosseinaliPoor; B. Sunden, "Effects of wavy ribs on vortex generation and thermal-hydraulic performance in a rotating rectangular channel", *Applied Thermal Engineering*, 2023, Vol. 222, (DOI: 10.1016/j.applthermaleng.2022.119952).
2. **H.R. Shahbazian**; S.M. HosseinaliPoor; Z. Jamshidi, "Thermo-Fluid Investigation on the Effect of Rotation on Film Cooling Performance at Pressure & Suction Side of the Leading-Edge of a Gas Turbine Blade", *Journal of Solid and Fluid mechanics*, 2022, Vol. 11, Iss. 5, PP. 133-148 (DOI:10.22044/jsfm.2021.9787.3204).
3. M. HosseinaliPoor; **H.R. Shahbazian**; B. Sunden, "Coriolis and Buoyancy Effects on Heat Transfer in Viewpoint of Field Synergy Principle and Secondary Flow Intensity for Maximization of Internal Cooling", *Journal of Heat and Mass Transfer*, 2021, (DOI:10.1007/s00231-020-02949-z).
4. S.M. HosseinaliPoor; P. Afkari; **H.R. Shahbazian**; B. Sunden, "A Numerical Framework for Heat Transfer and Pressure Loss Estimation of Matrix Cooling Geometry in Stationary and Rotational States", *Journal of Numerical Heat Transfer. Part A: Applications*, Taylor & Francis, 2019, VOL. 76, NO. 5, 348–368 (DOI:10.1080/10407782.2019.1630236).
5. S.M. HosseinaliPoor; **H.R. Shahbazian**; B. Sunden, "Experimental Investigations and Correlation Development of Convective Heat Transfer in a Rotating Smooth Channel", *Experimental Thermal and Fluid Science*, 94, 2018, PP. 316–328. (DOI: 10.1016/j.expthermflusci.2018.02.020).
6. S.M. HosseinaliPoor; **H.R. Shahbazian**; B. Sunden, "Influences of Secondary Flow Induced by Coriolis Forces and Angled Ribs on Heat Transfer in A Rotating Channel", *International Journal of Numerical Methods for Heat and Fluid Flow*, 2018, Vol. 29 Iss. 1, PP.388-417. (DOI: 10.1108/HFF-02-2018-0081).
7. S.M. HosseinaliPoor; **H.R. Shahbazian**; M. Ghobadi; S. Norouzi, "Aero-Thermal Analysis of Rotation and Rotational Buoyancy Effect on Internal Cooling of Gas Turbine Blade- An Experimental Study", *Journal of Solid and Fluid mechanics*, 2017, Vol. 8, Iss. 3, PP. 277-288. (DOI: 10.22044/JSFM.2018.7234.2664).
8. S.M. HosseinaliPoor; P. Afkari; **H.R. Shahbazian**, "Comparison of Various Arrangement Effects of V-Shape Rib Technologies on Turbulence and Heat Transfer Enhancement in Gas Turbine Blade Cooling", *Modares Mechanical Eng. Journal*, 2016, Vol. 16, No 5, PP 316-326. (DOR: 20.1001.1.10275940.1396.17.5.24.2)
9. M. D.Emami; **H.R. Shahbazian**; B. Sunden, "Effect of Operational Parameters on Combustion and Emissions in an Industrial Gas Turbine Combustor", *ASME Journal of Energy Resources Technology*, 2019, Vol. 141/012202-1. (DOI: 10.1115/1.4040532).
10. M. Ameri; **H.R. Shahbazian**; M. Nabizaded, "Comparison of Evaporative Inlet Air Cooling Systems to Enhance the Gas Turbine Generated Power" *Int. Journal of Energy Research*, 2007, Vol. 31, PP. 1483-1503. (DOI: 10.1002/er.1315).
11. 11. M. Ameri; **H.R. Shahbazian**; H. Hosseinzadeh; M. Nabizaded, "Power Augmentation: A Fars Better Option", *Middle East Energy Journal*, MEE June 2006, PP 12-13, 2006.
12. **Confrance Papars**
13. **H.R Shahbazian**, "Correlation Development of The Internal Heat Transfer Nusselt Number under the Influence of Angular Ribs in Rotational Conditions for A Gas Turbine Blades", *32<sup>nd</sup> Annual (International) Conference on Mechanical Engineering-ISME2024*, 2024, Arak University, Arak,

Iran (in Farsi).

14. A.H. Izadi; M. Nazififard; **H.R. Shahbazian**, "Experimental and numerical study of the energy performance for CCHP of Kashan University, *31<sup>st</sup> Annual (International) Conference on Mechanical Engineering-ISME2023*, 2023, Shahid Beheshti University, Tehran, Iran (in Farsi).
15. **H.R. Shahbazian**; S.M. HosseinaliPoor, "Synergy analysis of the effect of 45, 60, 75 & 90 deg. ribs in increasing the heat transfer of gas turbine blades", *21st International Conference of Iranian Aerospace*, 2023, Iran University of Science & Technology, Iran (in Farsi)
16. T. Moradi; **H.R. Shahbazian**; M. Ghobadi; S.M. HosseinaliPoor, "Experimental study of the effects of various channel orientations on the heat transfer of a smooth rectangular rotating channel", *7<sup>th</sup> National Gas Turbine Conference*, 2022, Iran University of Science & Technology, Iran (in Farsi).
17. Z Jamshidi; S.M. HosseinaliPoor; **H.R. Shahbazian**, "Influence of Reynolds number on the cooling efficiency of the film on the gas turbine blade film Cooling in rotation mode", *7<sup>th</sup> National Gas Turbine Conference*, 2022, Iran University of Science & Technology, Tehran, Iran (in Farsi).
18. R. Khoshkhoo; **H.R. Shahbazian**; H. behroozi, "Feasibility study of using a compressor to prevent methane emissions in the Tie-in process and repairs (in point of view of economic & sustainable development)", *Proceeding of PSC 2018, 33<sup>d</sup> International Power System Conference*, 2018, Tehran, Iran (in Farsi)
19. S. M. HosseinaliPoor; **H.R. Shahbazian**; P. Afkari, "Conceptual and Computational Analysis of Rotating Effect on Fluid Mechanics in Gas Turbine Blade Internal Cooling", *7<sup>th</sup> Conference on Rotating Equipment in Oil & Power Industries*, 2016, Tehran, Iran (in Farsi).
20. S.M. HosseinaliPoor; P. Afkari; **H.R. Shahbazian**, "Thermal Performance Comparison of Pin-Fin, Extended Fin & Rib Technologies with the Equivalent Surface on Internal Cooling", *5<sup>th</sup> National Gas Turbine Conference*, 2016, Iran University of Science & Technology, Tehran, Iran (in Farsi).
21. S.M. HosseinaliPoor; **H.R. Shahbazian**; E. Saadati, "Thermodynamic Simulation and Energy/Exergy Analysis of Repowering of Besat Thermal Power Plant", *Proceeding of 1<sup>st</sup> conference of sustainable development in energy, Water and Environment*, 2015, Iran University of science & Technology, Thern, Iran (in Farsi).
22. M.R. Hosseini; **H.R. Shahbazian**; M. Najmi, "Design of a Test rig for a 25 MW Gas Turbine in order to mechanical & performance test, submission of Experimental Results and Uncertainty Analysis", *Proceeding of IPG5, 5th conference of Thermal Power Plant (Mapna)*, June 2014, Shahid Beheshti University, Tehran, Iran (in Farsi).
23. S. Amini; R. Khoshkhoo; **H.R. Shahbazian**, "Technical-Economical study on emitted methane collection during pipeline repairs on Boshehr province", *Proceeding of IPG5, 5th conference of Thermal Power Plant (Mapna)*, June 2014, Shahid Beheshti University, Tehran, Iran (in Farsi).
24. M. D.Emami; **H.R. Shahbazian**, "Numerical Simulation of Combustion and NOx Formation/Emission in a 3D Combustor of Industrial Gas Turbine" ,*Proceedings of The U.S.-Iran Symposium On Air Pollution In Megacities*, The Beckman Center of the National Academy of Sciences and Engineering Irvine, California, September 3-5, 2013, California, USA.
25. **H.R. Shahbazian**; H. PahlavanZadeh; H.R. Razavi, "Energy and Exergy analysis of a Combined Cold, Heat & power system for a typical residential complex", proceeding of CCHP2013, Iranian conference on power generation and hybrid system, Energy Research Institute, University of Kashan, August 2013, Kashan, Iran (in Farsi).
26. **H.R. Shahbazian**, "Comparison of air flow swirly angle effect on an engine combustion product" *Proceeding of EPGC4 2012, 4<sup>th</sup> Electric Power Generation Conference*, January 2012, Tehran, Iran (in Farsi).
27. M. D.Emami; **H.R. Shahbazian**, "Comparison Between the Performance of Different Thermal-Nox Mechanisms in a turbulent jet", *Proceeding of ICC2008, 2nd Combustion Conference of Iran*, 2008, Mashhad, Iran (in Farsi) .

28. M. D.Emami; **H.R. Shahbazian**, "Numerical Simulation of NO<sub>x</sub> Formation and Emission in A Turbulent Non-Premixed CH<sub>4</sub>/N<sub>2</sub>/H<sub>2</sub> Diffusion Flame", *5th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, HEFAT2007*, Sun City, South Africa.
29. M. D.Emami; **H.R. Shahbazian**; N. Farahmand, "Prediction of Thermochemical Quantities in Laminar Flamelet Models", *Proceeding of ISME 2007, 15<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2007*, May 2007, Amirkabir University of Technology, Tehran, Iran (in Farsi).
30. M. D.Emami; **H.R. Shahbazian**, "Investigation on Excess Air effect in NO<sub>x</sub> Generation inside a Gas Turbine Combustor" *Proceeding of PSC 2007, 22<sup>nd</sup> International Power System Conference*, 2007, Tehran, Iran (in Farsi).
31. M. D.Emami; **H.R. Shahbazian**; H. Afshin, "Nitrogen Dioxide Simulation in a simple combustion chamber", *Proceeding of ICHECLL11 2006*, 11th Congress of Iranian Chemical Engineering, 2006, Tarbiat Modares University, Iran, Tehran, Iran (in Farsi).
32. A. Sedaghat; **H.R. Shahbazian**, "CFD Simulation of baffle effect on instability combustion", *Proceeding of FD2006, 10th Fluid dynamic Conference*, 2006, Yazd university, Iran, (in Farsi).
33. M. Ameri; **H.R. Shahbazian**; H. HoseinZadeh, "The Study of Media Evaporating Coolers for Fars Combined Cycle Power Plant and Presentation of Performance Test Results", *Proceedings of the International Conference on Recent Advances in Mechanical & Materials Engineering*, May 2005, Kuala Lumpur, Malaysia.
34. M. Ameri; H. Nabati; A. Keshtgar; M. Nabizadeh, **H.R. Shahbazian**, "The Installation & Testing of The Fog Inlet Air Cooling System for the Shahid Rajaei Combined Cycle Power Plant", *Proceedings of Thermo2005*, 2005, Hungary.
35. M. Ameri; **H.R. Shahbazian**; H. HoseinZadeh; M. Nabizaded, "Thermodynamic simulation, Technical and Economic Analysis of Evaporating Coolers for Fars CCGT" *Proceeding of PSC 2004, 19<sup>nd</sup> International Power System Conference*, 2004, Tehran, Iran (in Farsi).
36. M. Ameri; **H.R. Shahbazian**; H. HoseinZadeh, "The Study of Effect of Gas Turbine Inlet Air Cooling on the Heat Recovery Boiler Performance" *Proceedings of ESDA04, 7th Biennial Conference on Engineering Systems Design and Analysis*, July 2004, Manchester, UK.
37. M. Ameri; **H.R. Shahbazian**; M. Nabizaded; H. HoseinZadeh, "Application of the Advanced Tubes for Steam Power Heaters & Condensers", *Proceedings of IMEC2004, International Mechanical Engineering Conference*, December 2004, Kuwait.
38. M. Ameri; M.R. Taghipour; Y. Yusefi; **H.R. Shahbazian**; S.R. Shamshegari, "The Study of Effective Factors on the Critical States in Steam Power Plant Boilers", *Proceedings of International Mechanical Engineering Conference (imece2004)*, Dec. 2004, Kuwait

## Papers in Conferences

1. حمیدرضا شهبازیان، توسعه یک رابطه برای عدد ناسلت برای انتقال حرارت داخلی پره‌های توربین‌گاز تحت تاثیر ریبهای زاویه دار در شرایط دوران، سی و دومین همایش سالانه بین المللی انجمن مهندسان مکانیک ایران، ۱۰ - اراک، ۲۰۲۴، ۰۷ ۰۵
2. حمیدرضا شهبازیان، توسعه یک رابطه برای عدد ناسلت برای انتقال حرارت داخلی پره‌های توربین‌گاز تحت تاثیر ریبهای زاویه دار در شرایط دوران، سی و دومین همایش سالانه بین المللی انجمن مهندسان مکانیک ایران، ۱۰ - اراک، ۲۰۲۴، ۰۷ ۰۵