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Faculty of Mechanical Engineering K.
N. Toosi University of Technology No.
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Academic Positions

- 1992-Present **Professor** – K. N. Toosi University of Technology
Faculty of Mechanical Engineering
Principal dissertation supervisor for 10 **Ph.D.**, 50 **M.S.**, 80 **B.S.** students
Research Interests: Turbomachinery, Internal combustion engine, Fuel Cell, Thermal power plant, Transport phenomenon in porous media, Renewable energy
Teaching: Boundary layer Theory, Thermal Power Plant Design, Advanced Thermodynamics, Advanced Gas Dynamics, Thermodynamics 1-2, Fluid Mechanics, Gas Turbine, Turbomachinery, Thermal Power Plant
- 2013-2021 Vice chancellor K. N. Toosi University of Technology
- 2005-Present Director, Turbomachinery Laboratory
- 2006-2011 Dean, Faculty of Mechanical Engineering, K. N. Toosi University of Technology
- 2005-present Director, Transport phenomenon in porous media Laboratory
- 2005-2006 Head, Department of Heat and Fluid, K. N. Toosi University of Technology
- 2000-2002
- 1995-1999 Vice Chancellor for Finance and Administration, K. N. Toosi University of Technology
- 1993-1995 Dean, Faculty of Mechanical Engineering, K. N. Toosi University of Technology

Education

- 1989-1992 **Ph.D.** in Mechanical Engineering, Cranfield University, Bedford, UK
- 1987-1988 **M.S.** in Mechanical Engineering, Birmingham University, Birmingham, UK
- 1976-1984 **B.S.** in Mechanical Engineering, K. N. Toosi University of Technology, Tehran, Iran
(Ex. University of Engineering and Technology)

Industrial Experiences

- 2004-2005 Member of the Board, Khorasan Axial Parts Co.
- 2002-2004 Chairman of the Board, Electric Khodro Shargh Co.
- 1985-1987 Director, Gas Turbine Section, Besat Power Plant
- 1984-1985 Member of Technical Staff, Mechanical Division, Jahad
Daneshgahi, Iran Science and Technology University
Branch

Consulting Experiences

Supplying Automotive Parts Co. (SAPCO)
Besat Power Plant,

Gas to Liquid Co.
(GTL) Gas
Transfer Co.

Professional Societies and Activities

Executive Committee, 10th Annual International Conference in Mechanical Engineering,
2002

Member, Scientific Board, Annual International Conference on Mechanical Engineering,
2000, 2002,
2004, 2007

Member, Scientific Board, Conference of Iranian Aerospace Society, 2006-Present

Chairman, Executive Committee, the 11th Fluid Dynamics Conference, 2008

Member, Iranian Society of Mechanical Engineers, 1996-Present

Awards and Honors

Second Winner in Applied Research, 14th Khwarizmi International Award, 2001

Best Teaching Award, Faculty of Mechanical Engineering, K. N. Toosi University of
technology,
1997

Publications

Books

1. M. Ziabasharhagh, M. R. Shahnazari, A. Vahabi kashi, B. Rajablu, "Fundamental Calculation and Conceptual Design in Combined Cycle ", K. N. Toosi University of Technology, 2009(in Persian)
2. M Ziabasharhagh, A Mohammadi" Numerical Simulation of Combustion in Porous Media , In Tech. com, 2012.

Papers

1. MS Mojarrad, A Keshavarz, M Ziabasharhagh, MM Raznahan
Experimental Thermal and Fluid Science 53, 111-118
Experimental investigation on heat transfer enhancement of alumina/water and alumina/water–ethylene glycol nanofluids in thermally developing laminar flow- Feb - 2014
2. B Ghorbani, M Ziabasharhagh, M Amidpour
A hybrid artificial neural network and genetic algorithm for predicting viscosity of Iranian crude oils
Journal of Natural Gas Science and Engineering 18, 312-323- May 2014
3. AA Boroujerdi, M Ziabasharhagh
Investigation of a high frequency pulse tube cryocooler driven by a standing wave thermoacoustic engine
Energy Conversion and Management 86, 194-203- Oct 2014
4. M Ziabasharhagh, M Mahmoodi
Numerical solution of beta-type Stirling engine by optimizing heat regenerator for increasing output power and efficiency
Journal of Basic and Applied Scientific Research- 2012
5. T Sennott, C Gotianun, R Serres, M Ziabasharhagh, JH Mack, R Dibble
Artificial neural network for predicting cetane number of biofuel candidates based on molecular structure
ASME 2013 Internal Combustion Engine Division Fall Technical Conference ...
6. A Mohammadi, A Jazayeri, M Ziabasharhagh
Numerical simulation of direct injection engine with using porous medium
ASME 2012 Internal Combustion Engine Division Spring Technical Conference ...
7. B Nikkhahi, M Shams, M Ziabasharhagh
A numerical study of two-phase transonic steam flow through convergence-divergence nozzles with different rates of expansion
Korean Journal of Chemical Engineering 27 (6), 1646-1653-- Nov 2010
8. AA Boroujerdi, M Ziabasharhagh
Analytical determination of oscillating frequencies and onset temperatures of standing wave thermoacoustic heat engines
International Journal of Heat and Mass Transfer 98, 401-414- July 2016

9. H Sanavandi, M Ziabasharhagh
Design and comprehensive optimization of C3MR liquefaction natural gas cycle by considering operational constraints
Journal of Natural Gas Science and Engineering 29, 176-187- Feb 2016
10. PT Malek, Vali Keshavarz, M Ziabasharhagh, B Soleimani
Experimental Investigation of nanofluid concentration and material type effect on pool boiling- Modares Mecanical Engineering 15 (10), 165-172- Jun 2016
11. I Erfan, I Chitsaz, M Ziabasharhagh, A Hajialimohammadi
Injection characteristics of gaseous jet injected by a single-hole nozzle direct injector , B Fleck ,Fuel 160, 24-34- Nov 2015
12. M Maboudi, M Ziabasharhagh
Applicability of fundamental equations of state in simulation of cryogenic systems; case study: reverse brayton cryocooler for HTS cable
Modares Mecanical Engineering 14 (15), 103-110- Jun 2015
13. AA Rezaei, M Ziabasharhagh
An experimental investigation on the effect of a perforated fin on free convection heat transfer from a confined horizontal cylinder
Heat Transfer—Asian Research 42 (3), 197-211- May 2013
14. E Mohammadpour, M Ziabasharhagh
Transient thermal modeling of heatrecovery steam generator in Island mode operation
Aerospace Mechanics Journal 9 (131), 15-24- Jun 2013
15. M Mohammadi, M Ziabasharhagh, M Nademi, M Mohammadi
Collaborative numerical simulation of hot gas flow over turbine blade using C-Denton method and comparison with Delaval nozzle
International Journal of Engineering Systems Modelling and Simulation 5 - Jun 2013
16. M Vatani, M Ziabasharhagh, S Amiri
Effects of Various Types of Binary Cycles on Thermal and Exergy Efficiency of Combined Flash-Binary Power Plants
ASME 2012 International Mechanical Engineering Congress and Exposition, 1093 -
Nov 2012
17. A Mohammadi, AJM Ziabasharhagh
Numerical Simulation of Combustion with Porous Medium in IC Engine
International Journal of Automotive Engineering 2 (4), 228-241- Jun 2012
18. M. R. Shahnazari, M. Ziabasharhagh, H. Talsaz.
“Comparison of Thermal Dispersion Effects for Single and Two Phase Analysis of Heat Transfer in Porous Media” IJE Transactions B: Applications, Vol. 24, No. 1, pp 81-91, Feb 2011.
19. Mohammadi, M. Ziabasharhagh, H. Hashemi, M. Ahmadi.
“ Two Phase Flow Simulation for Boiling Heat Transfer Calculation in Water-jacket of Diesel Engine, to appear on ASME-JSME-KSME –AJK2011-FED, Japan, Shizuoka, 24-29 July 2011

20. Mohammadi, M. Ziabasharhagh, A.Jazayeri "Numerical Simulation of Porous Medium Internal Combustion Engine" ASME-JSME –AJK2011-FED, 24-29 July 2011,Hamamatsu, Shizuoka, Japan.
21. M. Baghestani, M.Ziabasharhagh, M. Khoshgoftarmanesh."Evaluation of Repowering in a Gas Fired Steam Power Plant Based on Exergy and Exergoeconomic Analysis" Word Renewable Energy Congress 2011,8-13 May 2011,Linkoping Sweden,
22. M. Baghestani, M.Ziabasharhagh, M. Khoshgoftarmanesh "Comparison of Repowering by STIG Combined Cycle and Full Repowering Based on Exergy and Exergoeconomic analysis" to appear on Word Renewable Energy Congress 2011, 8-13 May 2011,Linkoping Sweden.
23. H. Azadi, M. Ziabasharhagh, R. Ebrahimi." Numerical Simulation of V94.2 Gas Turbine Combustor" 2nd Conference on Thermal Power Plants, Gas, Combined Cycle, Steam, 26-27 Nov 2010 Tehran Iran.
24. Nikkhahi, M. Shams, M. Ziabasharhagh, "A Numerical Study of Two-phase Transonic Steam Flow Through Convergence- Divergence Nozzles with Different Rates of Expansion" Korean J. Chem. Eng. Vol. 27. No. 26. Pp. 1646-1653. July 2010.
25. M. S. Parvandad Asodolahi, M. Amidpour, M. Ziabasharhagh."Improved Combined Methods Through Exergy Analysis in Gas Turbine Cycle to Produce Potable Water in Multi Stage Flash Desalination Compare with RO Desalination" 19th CHISA 2010 ECCCE-7.
26. M. H. Khoshgoftar Manesh, M. Ziabasharhagh, M. Amidpour, "Optimization of Combined Cycle Power Plant with Considering Different Gas Turbine Inlet Air Cooling Systems", to appear on ASME International Mechanical Engineering Congress & Exposition, Nov. 2010, Vancouver, British Columbia, Canada
27. S. Amiri, M. R. Raveshi, M. Ziabasharhagh, "Thermodynamic Evaluation of The Separator Pressure to Increase The Thermal and Exergy Efficiency in Parallel Cycle Geothermal Power Plants", to appear on ASME International Mechanical Engineering Congress & Exposition, Nov. 2010, Vancouver, British Columbia, Canada
28. Rezaei, M. Ziabasharhagh, T. Yousefi, M. Ahmadi, "Experimental Study of Free Convection Heat Transfer From A Fin Attached Cylinder Confined Between Tilt and Low Conductive plates", ASME 10th Biennial Conference on Engineering System Design and Analysis, Jul. 2010, Istanbul, Turkey
29. M. Hosseini, M. Ziabasharhagh, "Energy and Exergy Analysis of a Residential SOFC-GT/Absorption Chiller Systems", 23rd International conference on Efficiency, Cost, Optimization, Simulation & Environmental Impact of Energy Systems, Jun. 2010, Lausanne, Switzerland
30. Rezaei, M. Ziabasharhagh, T. Yousefi, M. Ahmadi, "Experimental Investigation of Free Convection Heat Transfer Flow form A Limited and Fin Attached Cylinder Sited between Two Nearly Adiabatic Plates", 5th International Conference on Thermal Engineering

Theory and Applications, May 2010, Marrakesh, Morocco

31. M. Ziabasharhagh, S. Amiri, S. Amiri, "Effect of Number of Flashing Units on Thermal and Exergy Efficiencies in Flash Geothermal Power Plant", Renewable Energy World Congress & Exposition, Feb. 2010, USA
32. Rezaei, M. Ziabasharhagh, T. Yousefi, "Free Convection Heat Transfer from a Horizontal Fin Attached Cylinder Between Confined Nearly Adiabatic Walls", Experimental Thermal and Fluid Science, Vol. 34, No. 2, pp 177-182, Feb. 2010
33. M. Ziabasharhagh, R. Ebrahimi, M. R. Rajaei, "An Investigation of Pollutants Methane Air Combustion in Porous Burners (PBs) from The Viewpoint of Numerical Modeling", Amirkabir Journal of Mechanical Engineering , Vol. 41, No. 2, Winter (Originally in Persian)
34. Nikkhahi, M. Shams, M. Ziabasharhagh, "A Numerical Investigation of TWV- Phase Steam Flow Around A 2-D Turbines Rotor Tip", International Communications in Heat and Mass Transfer, Vol. 36, No. 6, pp 632-639, Jul. 2009
35. S. Sanaye, M. Ziabasharhagh, M. Ghazinejad, "Optimal Design of Gas Turbine CHP Plant With Preheater and HRSG", International Journal of Energy Research, Vol. 33, No. 8, pp 766-777, Jun. 2009
36. B. Nikkhahi, M. Shams, M. Ziabasharhagh, "A Numerical Study of Two Phase Transonic Steam Flow Through Convergence-Divergence Nozzles with Different Rates of Expansion", The 8th International Conference of Iranian Aerospace Society, Feb. 2009, Isfahan, Iran
37. M. Ghassemi, A. Ghassemi, M. Ziabasharhagh, "Thermal Stress Analysis of The Rails and The Armature of an Electromagnetic Launcher", IEEE Transactions on Magnetics, Vol. 45, No. 1, Jan. 2009
38. M. Ziabasharhagh, M. Nademi, M. Mohammadi, E. M. Molaee Kermani, "Numerical Investigation of Droplet Evaporation under Hot Temperature Condition", ICNPAA, pp 858-866, 2009
39. M. Ziabasharhagh, F. Mosallat, M. R. Shahnazari, "Experimental Investigation of the Permeability and Inertial Effect on Fluid Flow through Homogenous Porous Media", Iranian Journal of Chemistry and Chemical Engineering, Vol. 27, No. 2, Summer 2008
40. Mohammadi, S. A. Jazayeri, M. Ziabasharhagh, "Numerical simulation of Convective Heat Transfer in A Spark Ignition Engine", ASME Internal Combustion Engine Division Technical Conference, Apr. 2008, Chicago, Illinois, USA
41. J. Zamani, A. Darvizeh, M. Ziabasharhagh, M. Soleimani, "Experimental Analysis of The Folding Force in Thin Wall Extruded Cells under Quasi-Static in Plane Loading", Modares Technical and Engineering Scientific Research Journal, No. 33, Spring 2008 (Originally in Persian)
42. M. Ziabasharhagh, M. Mohammadi, M. Madandar "Experimental Investigation of Work Ability Variation of Fuel Rich Gas Generator and Optimization by Genetic Algorithm", 7th Iranian Aerospace Society Conference, Feb. 2008, Tehran, Iran

43. M. Ziabasharhagh, M. R. Shahnazari, "A Novel Numerical Modeling for Resin Transfer Molding", 7th International Conference on Composite Science and Technology, Jan. 2008, Sharjah, UAE
44. M. Shahnazari, M. Ziabasharhagh, "Free Surface Enhancement Investigation in VARTM Process", 7th International Conference on Composite Science and Technology, Jan. 2008, Sharjah, UAE
45. S. A. Jazayeri, M. Ziabasharhagh, M. Babandpoor, A. Keshavarz, "Analysis of Air Fuel Mixture Formation in Gasoline Direct Injection SI Engines", The Journal of Engine Research, Vol. 13, Winter 2008
46. H. Shamdani, A. H. Shamekhi, M. Ziabasharhagh, "Air Intake Modeling with Fuzzy AFR Control of A Turbocharged Diesel Engine", International Journal of Vehicle Systems Modeling and Testing, Vol. 3, Nos. 1/2, pp 114-138, 2008
47. F. Mosallat, M. Ziabasharhagh, M. Shahnazari, "Numerical and Experimental Investigation of Porous Media Permeability", The 3rd International Energy, Exergy and Environment Symposium, Jul. 2007, Evora, Portugal
48. H. Mirgolbabaee, H. Taherian, C. Aghanajafi, M. Ziabasharhagh, "Numerical Modeling of Thermal Performance of Helical Coiled Tube Heat Exchangers", 15th Annual (International) Mechanical Engineering Conference, May 2007, Tehran, Iran
49. M. Ziabasharhagh, A. H. Shamekhi, N. Khatibzadeh "A New Computer Simulation of A Direct Injection Diesel Engine to Predict Performance parameters and Engine out Emissions" 15th Annual (International) Mechanical Engineering Conference, May 2007, Tehran, Iran
50. N. Khatibzadeh, M. Ziabasharhagh, A. H. Shamekhi, "Development of a Comprehensive Two Zone Model for Combustion and Emission Prediction in A Direct Injection(DI) Diesel Engine ", 15th Annual (International) Mechanical Engineering Conference, May 2007, Tehran, Iran
51. J. Pirkandi, A. Keshavarz, M. Ziabasharhagh, "A Numerical Analysis of The Phase Change Process in a Thermal Storage System Using Enthalpy Method", Mechanical & Aerospace Engineering Journal, Vol. 2, No. 2, Dec. 2006 (Originally in Persian)
52. H. Shamdani, A. R. Shamekhi, M. Ziabasharhagh, C. Aghanajafi, "Air-to-Fuel Ratio Control of A Turbocharged Diesel Engine Equipped with EGR Using Fuzzy Logic Controller", ASME Internal Combustion Engine Division Technical Conference, Nov. 2006, Sacramento, California, USA
53. M. Mostofi, A. H. Shamekhi, M. Ziabasharhagh, "Developing an Algorithm for SI Engine Diagnosis Using Parity Relations", ASME International Mechanical Engineering Congress and Exposition, Nov. 2006, Chicago, Illinois, USA
54. H. Shamdani, A. H. Shamekhi, M. Ziabasharhagh, S. Aghanajafi, "Modeling and simulation of A Diesel Engine Common Rail Injector in Matlab/Simulink", 14th Annual (International) Mechanical Engineering Conference, May 2006, Isfahan, Iran

55. S. Aghanajafi, M. Ziabasharhagh, A. Dehghani, "Radiative Absorptivity Calculations of Spherical Cavity", Research Institute of Petroleum Industry, Research on Science and Engineering of Petroleum, Vol. 16, No. 53, Spring-Summer 2006 (Originally in Persian)
56. F. Mosallat, M. R. Shahnazari, M. Ziabasharhagh, "Evaluation of Design parameters for HRSG Cost Optimization", 20th International Power System Conference, Nov. 2005, Tehran, Iran
57. Ghaffari, A. Aliabadi, M. Ziabsharhagh, "Design of a Control Power System Based on Temperature, Mean Effective Cycle Pressure, and Piston Speed for a Speed Response Improvement of Stirling Engines", Mechanical & Aerospace Engineering Journal, Vol. 1, No. 2, Nov. 2005 (Originally in Persian)
58. M. Ziabasharhagh, A. Aliabadi, M. Shahverdi "Development of a Gamma Semi-Free Piston Stirling Engineering International", Durham, UK, Oct. 2005
59. M. R. Shahnazari, M. Ziabasharhagh, "Theoretical and Experimental Investigation of The Channeling Effect in Fluid Flow through Porous Media", Journal of Porous Media, Vol. 8, No. 2, pp 115-124, 2005
60. M. Shahnazari, M. Ziabasharhagh, A. Abbasi, "Investigation of Stokes Flow on Multi-Particles for Prediction of One Non-Homogenous Porous Media Permeability", Computational Fluid Dynamics Conference, May 2003, Vancouver, British Columbia, Canada
61. Abbasi, M. R. Shahnazari, M. Ziabasharhagh, "Condensation Analysis of Moving Drop for Modeling of Spray Zone of Power Plant Dearators", 3rd International Conference on Computational Heat and Mass Transfer, May 2003, Banff , Canada
62. M. Ziabasharhagh, A. Aliabadi, A. Ghaffari, "Designing a Power Control System Based on The Cycles Mean Pressure, Temperature and Displacer's Speed to Improve the Response Time of the Stirling Engineering", Kuwait, 2003
63. M. Ziabasharhagh, A. B. Mckenzie, R. L. Elder " Recess Vane Passive stall control", Presentation on ASME International Gas Turbine and Aeroengine Congress and Exposition, 1992, Germany ASME Paper 92-GT-36

And over 55 conference papers in English and Persian.