Dr. Ali Jafarian

Ali Jafarian, PhD

Associate Professor,
Research Manager,
School of Mechanical Engineering,
Tarbiat Modares University,
P.O.BOX: 14115-143
Tehran, Iran
Telefax (+98-21) 82884918
jafarian@modares.ac.ir

Education:

Ph.D., Mechanical Engineering 2003 - 2008
Sharif University of Technology, Tehran, Iran.

M.Sc., Mechanical Engineering 2000 - 2002
Sharif University of Technology, Tehran, Iran.

B.Sc., Mechanical Engineering 1996 - 2000
Sharif University of Technology, Tehran, Iran.

Research Interests:

- Cryogenics and Pulse Tube Cryocoolers
- Energy and Exergy Modeling
- Clean Room Technology
- HVAC Systems
- Water Treatment and Desalination Technology

Research Papers:

Journals:

- Jafarian, M .H. Saidi, S. K. Hannani, Second law Based Analysis of Fluid Flow in the regenerator of pulse tube refrigerators, IJE Transactions A: Basics (2008) 181-194.
- Jafarian, M.H. Saidi, N. Sarikhani, S.K. Hannani, Numerical Simulation and Performance Optimization of a High Capacity Pulse Tube Cryocooler, International Journal of Communications in Heat and Mass Transfer 35 (2008) 1204–1210.
- Jafarian, M.H. Saidi, S. K. Hannani, Modeling to Optimum Design of High Capacity Pulse Tube Refrigerators, International Journal of Refrigeration 32 (2009) 58 – 69.
- Jafarian, L. Abkar, M. Bonakdar and M. Saffari, Ultra-Nano Filtration: A Promising Practice to Supply Potable Water from Surface Resources, Journal of Water Practice & Technology © IWA Publishing (2010).
- Jafarian, F. Roshanghalb, M.H. Saidi, F. Imanimehr, Comparative Investigation of Low and High Frequency Pulse Tube Regenerators, Scientia Iranica B 2011 18(2) 205-212.
- Reza Gheisari, Ali Jafarian, Mohammad Reza Ansari, Analytical Investigation of Compressible Oscillating Flow in a Porous Media: A Second-order Successive Approximation Technique, International Journal of Refrigeration 32 (2012) 1789 – 1799.
- M. Arablu, A. Jafarian, Investigation of synchronous effects of multi-mesh regenerator and double-inlet on performance of a Stirling pulse tube cryocooler, Cryogenics 54 (2013) 1-9.

- M. Arablu, A. Jafarian, Numerical simulation of a Stirling-type double inlet pulse tube refrigerator, Modares Mechanical Eng. (2012).
- Mohsen Azadi, Ali Jafarian, Mehdi Timaji,Analytical Investigation of Oscillating Flow Heat Transfer in Pulse Tubes, Scientia Iranica (2012).
- M. Arablu, A. Jafarian, , P. Deylami, Numerical simulation of a two-stage pulse tube cryocooler considering influence of abrupt expansion/contraction joints, Cryogenics 57 (2013) 150–157.
- M. Arablu, A. Jafarian, A modified two-stage pulse tube cryocooler utilizing double-inlet and multi-mesh regenerator, Cryogenics 58 (2013) 26–32.
- Morteza Sagharichiha, ,Ali Jafarian, Mehrdad Asgari, Ramin Kouhikamali, Simulation of a forward feed multiple effect desalination plant with vertical tube evaporators, Chemical Engineering and Processing 75 (2014) 110–118.
- Jafarian, A., Azizi, M., Forghani, P. Experimental and numerical investigation of transient phenomena in vacuum ejectors (2016) Energy, 102, pp. 528-536.
- Kardgar, A., Jafarian, A. Numerical investigation of oscillating conjugate heat transfer in pulse tubes (2015) Applied Thermal Engineering, . Article in Press. Mousavi, B., Alemrajabi, A.A., Jafarian, A., Arablu, M., Behjatian, A. CFD simulation of a multi-mesh pulse tube regenerator (2015) International Journal of Engineering, Transactions A: Basics, 28 (1), pp. 124-132.
- Giahi, M.H., Jafarian Dehkordi, A. Investigating the influence of dimensional scaling on aerodynamic characteristics of wind turbine using CFD simulation (2016) Renewable Energy, 97, pp. 162-168.
- Azimibavil, S., Jafarian Dehkordi, A. Dynamic simulation of a Multi-Effect Distillation (MED) process (2016) Desalination, 392, pp. 91-101.
- Khalili, S., Jafarian Dehkordi, A., Giahi, M.H. Investigating the effect of channel angle of a subsonic MHD (Magneto-Hydro-Dynamic) generator on optimum efficiency of a triple combined cycle (2015) Energy, 85, pp. 543-555.

Conferences:

- A. Jafarian, M .H. Saidi, S. K. Hannani, Optimization Analysis of Alternate Tube Section for Pulse Tube Refrigerators, Proceedings of ESDA Congress, Turin, Italy, 2006.
- A. Jafarian, M .H. Saidi, S. K. Hannani, S. D. Kenarsari, A One Dimensional Model for Compressible Oscillatory Flow in the Regenerator of Pulse Tube Refrigerators, Proceedings of International Conference of Refrigeration, Beijing, China, 2007.
- M .H. Saidi, S. K. Hannani, A. Jafarian, Sectoral Energy and Exergy Modeling of Iran, Proceedings of the National Energy Congress, Iran, June 2003.
- K. Zaker, A. Jafarian, M .H. Saidi, S. K. Hannani, Two Dimensional Analysis of The Tube Section of a Typical Pulse Tube Refrigerator, Proceedings of International Conference of Refrigeration, Beijing, China, 2007.
- M.H. Saidi, N. Sarikhani, A. Jafarian, S.K. Hannani, Effect of Alternate tube Characteristics on High Capacity Pulse Tube Cryocoolers Performance, Cryogenics Conference, Praha, Czech Republic, 2008.
- A. Jafarian, M.H. Saidi, N. Sarikhani, S.K. Hannani, Effect of Pressure Wave generator Characteristics on Pulse Tube Cryocooler Performance, IMECE 2008.
- B. Mousavi, A.A. Alemrajabi, A.Jafarian, A. Behjatian, Numerical Study of an Inertance Tube Pulse Tube with Multiple Meshes in the Regenerator, ICEC 23, 2010, Poland.
- F. Roshanghalb, M.H. Saidi, A. Jafarian, Investigation on Operating Parameters of a Pulse Tube using Real Gas Equation of State for Temperatures below 20 K, ICEC 23, 2010, Poland.
- M .H. Saidi, A.A. Mozaffari, H.D. Rezaei and A. Jafarian, Optimization of MHD Based Combined Cycle Efficiency, Proceedings of ASME POWER Congress, Illinois, Chicago, 2005.
- P. Ghanbari, A. Jafarian, M. Saffari, Sea Water Desalination Using Renewable Energies: Modeling of a Photovoltaic- Reverse Osmosis System, Proceedings of the National Energy Congress, 2007.
- A. Jafarian, J. Pakdaman, Economic Analysis to Propose the Optimum Capacity and Working Schedule of a Gas Engine Based Cogeneration Plant for an Industrial Sample Factory, ICHVAC 2009.
- E. Nimvari, A. Hadidi, A. Jafarian, N. Garshasbi, Analysis of a Triple Combined Cycle with MHD Generator as a Topping Cycle, Thermal Power Plants Conference , 2011.

- A. Jafarian, P. Adibi, M.S. Ebrahimi, Thermo-Economic Evaluation of a Cogeneretion Process Integrating a Combined Cycle with Intake Air Cooling and Hybrid Thermal/ Membrane Desalination, Desalination of Brackish Water, Salt Water and Waste Water Treatment Conference, 2012.
- M. Saghari, A. Jafarian, R.K. Kamali, M. Asgari, Simulation of Multi Effect Brine Concentrator with Vertical Falling Film Evaporator, Desalination of Brackish Water, Salt Water and Waste Water Treatment Conference, 2012.
- A.JAFARIAN, M. TATAR, P. ADIBI, THERMO- ECONOMIC EVALUATION OF A COGENERATION PROCESS INTEGRATING A GAS TURBINE AND HYBRID DESALINATION, IDA World Congress 2013,Tianjin China.

Courses:

- Advanced Energy Conversion (Msc. Course)
- Advanced Fluid Mechanics (Msc. Course)
- Advanced Engineering Mathematics (Msc. Course)
- Boundary Layer Theory (Msc. Course)
- Fluid Mechanics I and II (Bsc. Course)
- Heat Transfer (Bsc. Course)
- Thermodynamics (Bsc. Course)
- Combined Heat and Power (Short Course)
- Desalination and Water Purification (Short Course)