

Curriculum Vitae

S.M.Hossein Karimian
Professor

Office:

Aerospace Engineering Department, Amirkabir University of Technology, Hafez Ave., #424, Tehran, Iran.

EDUCATION

- 12/94 - 04/95:** Dept. of Mechanical Eng., University of Waterloo, Waterloo, Ontario, Canada
Post Doctoral Research Assistant
- 05/91 - 11/94:** University of Waterloo, Waterloo, Ontario, Canada - Ph.D., Thermal Fluids, Mechanical Engineering.
Thesis title: "Pressure-Based Control-Volume Finite-Element Method for Flow at All Speeds."
- 09/87 - 04/90:** Sharif University of Technology, Tehran, Iran - M.Sc., Thermal Fluids, Mechanical Engineering.
- 09/83 - 08/87:** Amirkabir University of Technology, Tehran, Iran - B.Sc., Thermal Fluids, Mechanical Engineering.

UNIVERSITY EXPERIENCE

Faculty member, Department of Aerospace Engineering, Amirkabir University of Technology;
Promoted to Associate Professor in 2000, and to Full Professor in 2004

- 1992 - 1994:** Teaching Assistant for Thermodynamics, Heat Transfer, and Computational Fluid Dynamics,
Dept. of Mechanical Eng., University of Waterloo, Waterloo, Ontario, Canada
- Since 05/95:** Teaching undergraduate courses of Fluid Mechanics, Heat Transfer Thermodynamics II,
Aerodynamics I, and Aerodynamics II, and graduate courses of Computational Fluid Dynamics I,
and Computational Fluid Dynamics II.
- Since 06/04:** Associate Dean; Research Affairs, Aerospace Eng. Dept., Amirkabir University of Tech.
- 03/04 - 03/06:** Head of Aerodynamic group, Aerospace Eng. Dept., Amirkabir University of Tech.
- 11/99 - 07/01:** Director General, Office of International and Scientific Cooperation, Amirkabir University of Tech.
- 09/98 - 01/00:** Representative of the University Board of Education in the University Board,
Amirkabir University of Tech.
- 09/97 - 01/00:** Associate Head of Dept., Educational Affairs, Aerospace Eng. Dept., Amirkabir University of Tech.
- 11/96 - 09/97:** Head of Aerodynamic group, Aerospace Eng. Dept., Amirkabir University of Tech.
- 04/02 - 11/10:** Director, Faculty Promotion Committee, Aerospace Department, Amirkabir University of Technology
- 03/07 - 03/09:** Head, Center of Excellence in Computational Aerospace Engineering,
Amirkabir University of Technology

Research interests: Computational Fluid Dynamics and Heat Transfer, Solution Algorithms for
Incompressible and compressible Flows, Internal and external flow simulations,
Aerodynamics of Vehicles and Buildings, Thermal Analysis, Wind Renewable Energy,
Molecular Dynamic Simulation.

PROFESSIONAL ACTIVITIES

- 2002 - 2011:** Responsible Director, Journal of Aerospace Science and Technology(JAST)
- Since 2002:** Member, Editorial Board, Journal of Aerospace Science and Technology (JAST)
- 2003- 2007:** Member of the Board of Trustees, Geosciences Research Institute, Tehran, Iran.
- 2005-2011, and since Jan. 2013:** Member, Editorial Board, Amirkabir Journal of Mechanical Engineering

Selected Journal Papers

- 31) Noori, S., Mahdavi, F., and **Karimian, S.M.H.**, "Two dimensional simulation of laminar flow around a couple of bodies in relative motion", *International Journal of Advanced Design and Manufacturing Technologies*, Vol.5, No. 3, June 2012.
- 30) **Karimian, S.M.H.**, and Namvar, S., "Implementation of SMC averaging method in a channeled molecular flow of liquids and gases", *Journal of Physics: Conference Series*, Vol. 362, Conference 1, 2012, ISSN: 1742-6596, DOI: 10.1088/1742-6596/362/1/012029.
- 29) Namvar, S., and **Karimian, S.M.H.**, "Detailed investigation on the effect of wall spring stiffness on velocity profile in molecular dynamics simulation", *Journal of Physics: Conference Series*, Vol. 362, Conference 1, 2012, ISSN: 1742-6596, DOI: 10.1088/1742-6596/362/1/012039
- 28) **Karimian, S.M.H.**, and Izadi, S., "Bin size determination for the measurement of mean flow velocity in molecular dynamics simulation", *International Journal for Numerical Methods in Fluids*, Article first published online: 20 June 2012, DOI: 10.1002/flid.3696.
- 27) **Karimin, S.M.H.**, and Ardekani, M., "Immersed boundary method for the solution of 2D inviscid compressible flow using finite volume on moving Cartesian grid", *Journal of Applied Fluid Dynamics*, Vol.4, No.3, pp. 27-36, 2011, ISSN 1735-3572.
- 26) Alisadeghi, H., and **Karimian, S.M.H.**, "Comparison of different solution algorithms for collocated method of MCIM to calculate steady and unsteady incompressible flows on unstructured grids", *Computer & Fluids*, Online Publication, 5/01/2011, 10.1016/j.compfluid.2010.12.
- 25) **Karimian, S.M.H.**, Izadi, S., and Barati-Farimani, A., "A study on the measurement of mean velocity and its convergence in molecular dynamics simulations", *International Journal for Numerical Methods in Fluids*, Vol. 64, No. 10, 2010, DOI: 10.1002/flid.2487.
- 24) Sadeghi, H., Mani, M., and **Karimian, S.M.H.**, "Unsteady wake measurements behind an airfoil and prediction of dynamic stall from the wake", *Aircraft Engineering and Aerospace Technology*, Vol.82, No.4, pp. 225-236, 2010.
- 23) Alisadeghi, H., and **Karimian, S.M.H.**, "Different Modelings of Cell-face Velocities and Their Effects on the Pressure-Velocity Coupling", *Accuracy and Convergence of Solution*", *International Journal for Numerical Methods in Fluids*, Online publication, 12, Jan. 2010, DOI: 10.1002/flid.2224.
- 22) Parhizkar, H., and **Karimian, S.M.H.**, "Application of Axisymmetric Analog to Unstructured Grid for Aeroheating Prediction of Hypersonic Vehicles", *IJNM Heat and Fluid Flow*, Vol.19, No. 3/4, pp. 501-520, 2009.
- 21) Parhizkar, H., and **Karimian, S.M.H.**, "Calculation of the Viscous Interaction Effects in the Euler/Boundary Layer Methods", *Proceedings of the Institution of Mechanical Engineers, Part G, Journal of Aerospace Engineering*, Vol. 222, pp. 297-305, 2008.
- 20) Noori, S., and **Karimian, S.M.H.**, "Using Axisymmetric Analog along the Streamlines for the Solution of Three-Dimensional Viscous Shock Layer Equations of Hypersonic Equilibrium Flow", *International Journal of Computational Fluid Dynamics*, Vol. 22, No. 6, pp. 429-436, 2008.
- 19) Noori, S., **Karimian, S.M.H.**, and Malekzadeh-Dirin, M., "Numerical Solution of Three-Dimensional Viscous Shock Layer Using Axisymmetric analogy Along the Streamlines", *International Journal of Numerical Methods for Heat & Fluid Flow*, Vol. 18, No.1, 2008.
- 18) Mirsajedi, S.M., and **Karimian, S.M.H.**, "Evaluation of a Two-Dimensional-Moving Mesh Method for Rigid Body Motion", *The Aeronautical Journal*, Vol. 110, Number 1109, July 2006, pp. 429-438.
- 17) Parhizkar, H., **Karimian, S.M.H.**, and Mani, M., "Numerical Simulation of Flow Past Oscillating Airfoil Using Oscillation of Flow Boundary Condition", *Iranian Aerospace Society, Journal of Aerospace Sciences and Technology (JAST)*, Vol. 3, No.1, Winter 2006, pp. 17-22.
- 16) Mirsajedi, M., **Karimian, S.M.H.**, and Mani, M., "A Multi-Zone Moving Mesh Algorithm for Simulation of Flow Around a Rigid Body With Arbitrary Motion", *Journal of Fluids Engineering, ASME Transaction*, Vol. 128, No. 2, March 2006, pp.297-304.
- 15) Shojaei, A., Trochu, F., Ghaffarian, S.R., **Karimian, S.M.H.**, and Lessard, L., "An Experimental Study of Saturated and Unsaturated Permeabilities in Resin Transfer Molding Based on Unidirectional and Flow Measurements", *Journal of Reinforced Plastics and Composites*, Vol. 23, No.14, pp. 1515, 2004
- 14) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Three-Dimensional Process Cycle Simulation of Composite Parts Manufactured by Resin Transfer Molding", *Composite Structures*, 65, 2004, pp. 381-390.
- 13) Khaleghi, H., Mirzaei, M., and **Karimian, S.M.H.**, "Development of an Upwind Algorithm at Subsonic Regions in the Solution of PNS Equations", *Esteghlal Journal of Engineering*, (in Persian) Vol.22, No.1, Summer, 2003, pp. 155-166.
- 12) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Numerical Analysis of Controlled Injection Strategies in Resin Transfer Molding", *Journal of Composite Materials*, Vol.37, No.11, pp. 1011-1035, 2003.
- 11) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Simulation of the Three-Dimensional Non-isothermal Mold Filling Process in Resin Transfer Molding", *Journal of Composite Science and Technology*, 63 (2003) 1931-1948.

- 10) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Numerical Simulation of Three-Dimensional Mold Filling in Resin Transfer Molding", *Journal of Reinforced Plastics And Composites*, Vol. 22, No. 16, pp. 1497, 2003.
- 9) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Molding and Simulation Approaches in Resin Transfer Molding Process - A Review" *Polymer Composites Journal*, August 2003, Vol. 24, No.4, pp. 525-544.
- 8) Mazaheri, K., Shahbazi, M.R., and **Karimian, S.M.H.**, "Numerical Analysis of 2D High-Speed Real flow on an Adaptive Unstructured Grid", *Iranian Journal of Science and Technology, Transaction B*, Vol.26, No.B3, pp.487-496, 2002.
- 7) **Karimian, S.M.H.**, Amoli, A., and Mazaheri, K., "Control-Volume Finite-Element Method for the Solution of 2D Euler Equations On Unstructured Moving Grids", *Iranian Journal of Science and Technology, Transaction B*, Vol.26, No.B3, pp. 465-476, 2002.
- 6) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Numerical Simulation of Three-Dimensional Mold Filling Process in Resin Transfer Molding Using Quasi-Steady State and Partial Saturation Formulations", *Composites Science and Technology* (Elsevier Science, U.K.), 62, 2002, pp. 861-879.
- 5) Mirzaei, M., Khaleghi, H., and **Karimian, S.M.H.**, "A New Approach for the Solution of Supersonic Flows with Embedded Separated Regions Using PNS Equations", *Amirkabir Journal of Science & Technology*, Vol.11, No.43, Spring & Summer, 2000, pp. 98-113.
- 4) **Karimian, S.M.H.**, and Schneider, G.E., "Pressure-based control-volume finite-element method for flow at all speeds", *AIAA Journal*, Vol.33, No.11, 1995, pp. 1611-1618.
- 3) **Karimian, S.M.H.**, and Schneider, G.E., "Application of a Control-Volume-Based Finite-Element Formulation to the Shock Tube Problem", *AIAA Journal*, Vol.33, No.1, 1995, pp.165-167.
- 2) **Karimian, S.M.H.**, and Schneider, G.E., "Pressure-Based Computational Method for Compressible and Incompressible Flows", *Journal of Thermophysics and Heat Transfer*, Vol.8, No.2, 1994, pp. 267-274.
- 1) Schneider, G.E. and **Karimian, S.M.H.**, "Advances in Control-Volume Based Finite-Element Methods for Compressible Flows", *Computational Mechanics* 14, pp. 1-16, 1994.

Selected Conference Papers

- 48) Khoshlesan, M., **Karimian, S.M.H.**, and Daemi, N., "Evaluation of a Control-Volume Based Finite-Element Collocated Scheme for the Solution of External Steady and Unsteady Incompressible Flows at Low Reynolds Numbers", *American Institute of Physics, ICNAAM 2013, Symposium on finite volume formulation and its applications*, Rhodes, Greece, 21-27 September 2013.
- 47) Daemi, N., **Karimian, S.M.H.**, Alisadeghi, H., and Khoshlesan, M., "Comparison of Different Schemes for Convection Modeling of Incompressible Flow Equations on Unstructured Grids", *American Institute of Physics, ICNAAM 2013, Symposium on finite volume formulation and its applications*, Rhodes, Greece, 21-27 September 2013.
- 46) **Karimian, S.M.H.**, and Amani, A., "A Proposal for the Implementation of Symmetry Boundary Condition in Molecular Dynamics Simulation", *The 3rd European Conference on Microfluidics – Microfluidics 2012*, Heidelberg, Germany, December 3-5, 2012, Paper μ FLU12-246.
- 45) Seyednia, M., **Karimian, S.M.H.**, and Hasheminasab, S.M., "Observations on Energy Balance in Molecular Dynamics Simulation of Nanochannel", *The 3rd European Conference on Microfluidics – Microfluidics 2012*, Heidelberg, Germany, December 3-5, 2012, Paper μ FLU12-161.
- 44) **Karimian, S.M.H.**, and Namvar, S., "Implementation of SMC averaging method in a channeled molecular flow of liquids and gases", *1st European Conference on Gas Micro Flows (GASMEMS1)*, Skiathos Island, Greece, June 6-8, 2012.
- 43) Namvar, S., and **Karimian, S.M.H.**, "Detailed investigation on the effect of wall spring stiffness on velocity profile in molecular dynamics simulation", *1st European Conference on Gas Micro Flows (GASMEMS1)*, Skiathos Island, Greece, June 6-8, 2012.
- 42) **Karimian, S.M.H.**, Izadi, S., and Barati-Farimani, A., "Measurement of Mean Velocity and its Convergence in Molecular Dynamics Simulations", *The 2nd European Conference on Microfluidics – Microfluidics 2010*, Toulouse, France, December 8-10, 2010, Paper μ FLU10-254.
- 41) **Karimian, S.M.H.**, and Izadi, S., "Bin Size Determination for the Measurement of Mean Flow Velocity in Molecular Dynamics Simulations", *The 2nd European Conference on Microfluidics – Microfluidics 2010*, Toulouse, France, December 8-10, 2010, Paper μ FLU10-262.
- 40) **Karimin, S.M.H.**, Izadi, S., and Ramezani-Najafi, H., "Improved solution of the system of equations resulted from thermal analysis of a micro satellite", *2nd International Conference on Energy Conversion and Conservation*, Tunasia, Hammamet, 22-24 April, 2010.

- 39) Mahdavi-Zafarghandi, F., **Karimin, S.M.H.**, and Noori, S., "Laminar Flow Around Two Bodies in Relative Motion", 2nd International Conference on Energy Conversion and Conservation, Tunasia, Hammamet, 22-24 April, 2010.
- 38) **Karimin, S.M.H.**, and Ardekani, M., "Immersed boundary method for the solution of 2D inviscid compressible flow using finite volume on moving Cartesian grid", 2nd International Conference on Energy Conversion and Conservation, Tunasia, Hammamet, 22-24 April, 2010.
- 37) Alisadeghi, H., and **Karimin, S.M.H.**, "Development of a Segregated Scheme for Pressure-Velocity Coupling on Collocated Unstructured Grids", 2nd International Conference on Energy Conversion and Conservation, Tunasia, Hammamet, 22-24 April, 2010.
- 36) **Karimian, S.M.H.**, and Ardekani, M., "Numerical Solution of Inviscid 2D Flow using Finite Volume – Immersed Boundary Method", (in Persian) Aero2010, The 9th Conference of the Iranian Aerospace Society, Azad University, Science & Research Branch, Tehran, Iran, 8-10 Feb., 2010.
- 35) Mahdavi-Zafarghandi, F., **Karimian, S.M.H.**, and Noori, S., "Numerical Solution of Viscous Flow around Two Bodies in Relative Motion", (in Persian) Aero2010, The 9th Conference of the Iranian Aerospace Society, Azad University, Science & Research Branch, Tehran, Iran, 8-10 Feb., 2010.
- 34) Alisadeghi, H., and **Karimian, S.M.H.**, "Comparison of Accuracy and Performance of Two Collocated Pressure-Coupling Methods for the Solution of Incompressible Flow", Proceedings (in Persian), 18th Annual (International) Conference of Iranian Society of Mechanical Engineers, 11-13 May 2010, Sharif University of Technology, Tehran, Iran.
- 33) Mahdavi-Zafarghandi, F., **Karimian, S.M.H.**, and Noori, S., "Viscous Flow Around Two Bodies in Relative Motion", 5th European Conference on Computational Fluid Dynamics, ECCOMAS CFD 2010, Lisbon, Portugal, 14–17 June 2010.
- 32) Alisadeghi, H., and **Karimian, S.M.H.**, "An Improved Scheme for Pressure-Velocity Coupling on Collocated Unstructured Grids", ICFD 2010, Conference on Numerical Methods for Fluid Dynamics, 12-15 April 2010, University of Reading, Reading, UK.
- 31) **Karimian, S.M.H.**, Salehi, F., and Alisadeghi, H., "A Hybrid Overset Algorithm For Aerodynamic Problems with Moving Objects", ICFD 2010, Conference on Numerical Methods for Fluid Dynamics, 12-15 April 2010, University of Reading, Reading, UK.
- 30) **Karimian, S.M.H.**, and Ardekani, M., "Immersed Boundary Method for the Solution of 2D Inviscid Compressible Flow Using Control Volume Approach", ICFD 2010, Conference on Numerical Methods for Fluid Dynamics, 12-15 April 2010, University of Reading, Reading, UK.
- 29) Parhizkar, H., and **Karimian, S. M. H.**, "Aeroheating Prediction of Hypersonic vehicles Using Inviscid Properties Calculated on Unstructured Grids", 5th. European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008), June 30 – July 5, Venice, Italy, 2008.
- 28) Mani, N., Goodarzi, F., and **Karimian, S.M.H.**, "Wake Analysis of a Plunging Airfoil", 6th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Pretoria, South Africa, 30 June – 2 July 2008.
- 27) Salehi, F., and **Karimian, S.M.H.**, "A New Moving Mesh Algorithm for Relative motion of Two Bodies.", AERO 2008, The 7th Conference of the Iranian Aerospace Society, Sharif University of Technology, Tehran, Iran, , 19-21, Feb. , 2008.
- 26) Noori, S., and **Karimian, S.M.H.**, "A Discussion about the Difficulty of the Numerical Solution of 3DVSL Equations in the Leeward Region", AERO 2008, The 7th Conference of the Iranian Aerospace Society, Sharif University of Technology, Tehran, Iran, , 19-21, Feb. , 2008.
- 25) Noori, S., **Karimian, S.M.H.**, and Ghasemloo, S. "Three-Dimensional Viscous Shock Layer Computation Using Axisymmetric Analogy Along the Streamlines", The 2nd European Conference For Aerospace Sciences (eucass), Brussels, Belgium, July 1-6, 2007.
- 24) Noori, S., and **Karimian, S.M.H.**, "Three-dimensional viscous shock layer calculation of hypersonic equilibrium flow using axisymmetric analog along the streamlines", Conference on Numerical Methods For Fluid Dynamics, The Institute for Computational Fluid Dynamics (ICFD), University of Reading, Reading, UK, 26-29, March, 2007.
- 23) Alisadeghi, H., and **Karimian, S.M.H.**, "An Implicit Dual Time-Stepping Algorithm For Hybrid Dynamic Meshes", Proceedings of CFD2006, 14th Annual Conference of the CFD Society of Canada, 16-18 July 2006, Kingston, Ontario, Canada.
- 22) Mirsajedi, S.M., and **Karimian, S.M.H.**, "Unsteady Flow Calculations with a New Moving Mesh Algorithm", AIAA Paper 2006-1153, Presented at the 44th Aerospace Sciences Meeting and Exhibit, Reno, NV., January, 2006.
- 21) Beheshti-Boroumand, B., and **Karimian, S.M.H.**, "Analysis of Different Methods to Improve Vehicle Aerodynamics", Proceedings (in Persian), Iranian Society of Physics, Ninth Conference of Fluid Dynamics, Shiraz University, Shiraz, Iran, March 7-9, 2005.
- 20) Afsharikia, S., and **Karimian, S.M.H.**, "Aerodynamic Analysis of Mazda Pickup", Proceedings (in Persian), Iranian Society of Physics, Ninth Conference of Fluid Dynamics, Shiraz University, Shiraz, Iran, March 7-9, 2005.

- 19) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Simulation of the Three-Dimensional Filling Process in Resin Transfer Molding Using an Iterative Method", The 3th Asian-Australasian Conference on Composites Materials; ACCM-3, Auckland, New Zealand, July, 2002.
- 18) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Numerical Analysis of Filling Process in Resin Transfer Molding With Controlled Injection Strategies", The 6th International Conference on Flow Processes in Composite Materials, FPCM-6, Auckland, New Zealand, 15-16, July, 2002.
- 17) Mirzaei, M., Khaleghi, H., and **Karimian, S.M.H.**, "Simulation of Supersonic Flows With Embedded Separated Regions Using Iterative PNS Equations", Proceedings of CFD2002, 10th Annual Conference of the CFD Society of Canada, June, 9-11, 2002, Windsor, Canada.
- 16) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Three-Dimensional Resin Flow Simulation During Filling Process in Resin Transfer Molding", Proceedings of the PPS-2001 Regional Conference, Antalya - Turkey, October 22-24, 2001.
- 15) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Analysis of Mixed Initiators Effect on Curing Step in Resin Transfer Molding Using Numerical Simulation", Proceedings of the PPS-2001 Regional Conference, Antalya - Turkey, October 22-24, 2001.
- 14) Mazaheri, K., Shahbazi, M.R., and **Karimian, S.M.H.**, "Numerical Analysis of 2D High-Speed Flow of Real Gases on an Adaptive Unstructured Grid", Proceedings of CFD2001, 9th Annual Conference of the CFD Society of Canada, May, 27-29, 2001, Waterloo, Canada.
- 13) **Karimian, S.M.H.**, Jahangirian, A., and Nejat, A., "Unsteady Flow Analysis Around the Section of Towers", Proceedings (in Persian), First International and Third Biennial Conference of the Iranian Aerospace Society, 31 Dec. 2000 - 1 Jan. 2001, Sharif University of Technology & Iran Aircraft Industries, Tehran Iran.
- 12) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Simulation of Three-Dimensional Isothermal Mold Filling in Resin Transfer Molding Process", Proceedings of the Fifth Iranian Seminar on Polymer Science and Technology, ISPST-5, 12-14, September 2000, Amirkabir University of Technology, pp. 564-567.
- 11) Shojaei, A., Ghaffarian, S.R., and **Karimian, S.M.H.**, "Effect of Boundary Condition Type on Mold Filling in RTM Process", Proceedings, ACCM-2000, Second ASIAN-AUSTRALASIAN Conferences on Composite Materials, Kyongju, Korea, 18-20 August, 2000.
- 10) Abshang, G., **Karimian, S.M.H.** and Jahangirian, A., "Aerodynamic Analysis of the Heating Problem of Heavy Trains in Iran Tunnels", Proceedings (in Persian), 5th Annual Railway Transportation Conference, Railway Research Center, University of Science and Technology, Tehran, Iran, Feb. 22-23, 2000.
- 9) Shahbazi M.R., Jahangirian, A., and **Karimian, S.M.H.**, "Investigation on the Effect of Barriers Against Sand-Storm Using Numerical Simulation", Proceedings (in Persian), 5th Annual Railway Transportation Conference, Railway Research Center, University of Science and Technology, Tehran, Iran, Feb. 22-23, 2000.
- 8) Jahangirian, A., **Karimian, S.M.H.**, and Shahbazi, M., "Aerodynamic Design of Barriers Against Sand-Storm Near Railway Routes", Proceedings, 9th Symposium of Arab Union of Railways, Khartoum, Sudan, Sept. 28 - Oct. 1, 1999.
- 7) **Karimian, S.M.H.**, Amoli, A., and Mazaheri, A., "Numerical Solution of 2D/Axisymmetric Euler Equations on Unstructured Moving Grids", Proceedings (in Persian), Iranian Society of Physics, Fifth Conference of Fluid Dynamics, Aug. 25-27, 1998, Mashad University, Mashad, Iran.
- 6) Mirzaei, M., Khaleghi, H., and **Karimian, S.M.H.**, "Using Upwind Method for the Solution of PNS Equations", Proceedings (in Persian), Iranian Society of Physics, Fifth Conference of Fluid Dynamics, Aug. 25-27, 1998, Mashad University, Mashad, Iran.
- 5) **Karimian, S.M.H.** and Schneider, G.E., "Numerical Solution of Two-Dimensional Incompressible Navier-Stokes Equations: Treatment of Velocity-Pressure Coupling", AIAA Paper 94-2359, presented at the AIAA 25th Fluid Dynamics Conference, Colorado Spring, CO/June 20-23, 1994.
- 4) **Karimian, S.M.H.** and Schneider, G.E., "Pressure-based control-volume finite-element method for flow at all speeds", AIAA Paper 94-1960, presented at the AIAA/ASME 6th joint Thermophysics and Heat Transfer Conference, June 20-23, 1994, Colorado Spring/CO.
- 3) **Karimian, S.M.H.** and Schneider, G.E., "Application of a New Control-Volume-Based Finite-Element Formulation to the Shock Tube Problem", AIAA Paper 94-0131, presented at the 32nd Aerospace Sciences Meeting and Exhibit, Reno, NV., January 10-13, 1994.
- 2) **Karimian, S.M.H.**, and Schneider, G.E., "A Computational Method for Calculation of Compressible and Incompressible Flows", AIAA Paper 93-2768, presented at the AIAA 28th Thermophysics Conference, Orlando, FL., July 6-9, 1993.
- 1) Schneider, G.E. and **Karimian, S.M.H.**, "Advances in Control-Volume Based Finite-Element Methods for Compressible Flows", presented at the International Conference on Computational Engineering Science, Hong Kong, Dec. 17-22, 1992.

Selected Supervised M.Sc. Thesis

- 16) Khoshlesan, M., "Investigation of unsteady flow over gurney flapped airfoil with plunging oscillation", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 12, February, 2013.
- 15) Seyednia, M. "Nanochannel flow analysis by molecular dynamics simulation and using parallel processing", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 7, February, 2013.
- 14) Daemi, N., "The Effect of Different Modeling of Convection Term on MCIM and Rhie-Chow Methods in Two Dimensional Incompressible Flow", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 5, February, 2013.
- 13) Namvar, S., "Implementation of wall boundary condition in molecular dynamic simulation", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 30, January, 2012.
- 12) Izadi, S., "Extraction of macroscopic properties in molecular dynamics simulation", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 22, January, 2011.
- 11) Tahmasebi, V., "3D Flow simulation around a single body in general motion", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 13, June, 2010.
- 10) Ardekani, M., "Solution of 2D inviscid flow on moving mesh using IBM", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 1, June, 2010.
- 9) Mahdavi-Zafarghandy, F., "Numerical Solution of Viscous Flow Around Two Bodies in General Motion with Respect to Each Other", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 29, November, 2009.
- 8) Ramezani-Najafi, H., "Control-Volume Based Thermal Analysis of Micro Satellites", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 14, January, 2009.
- 7) Salehi, F., "A Moving Mesh Method For Relative Motion of Two Bodies", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, 6, February, 2008.
- 6) Alisadeghi, H., "Numerical Solution of Two-Dimensional Viscous Flow on a Moving Hybrid Mesh", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, Oct. 2005.
- 5) Afsharikia, S., "Aerodynamic Analysis of Mazda Pickup", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, Dec. 2004.
- 4) Beheshti-Broomand, B., "Study of Important Parameters to Optimize Vehicle Aerodynamics", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, Feb. 2004.
- 3) Noori, S., "Numerical Solution of Viscous Flow on Moving Grids", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, Jan. 2002.
- 2) Karimian, S.A.M., "Numerical Solution of Euler Eqs. Within Flowfields with Moving Boundaries", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, Mar. 2001.
- 1) Amoli, A., "Numerical Solution of 2D/Axisymmetric Euler Flow on Unstructured Grid with Moving Boundary", M.Sc. Thesis, Aerospace Eng. Dept., Amirkabir University of Technology, Aug. 1998.

Selected Supervised Ph.D. Thesis

- 1) Alisadeghi, H. "Modification and Improvement of a Pressure-Velocity Coupling Algorithm For the Numerical Solution of Incompressible Flow", Ph.D. Thesis, Dept. of Aerospace Eng., Amirkabir University of Technology, Winter 2011
- 2) Noori, S., "Numerical Solution of Three-Dimensional Viscous Shock Layer Equations along Streamlines", Ph.D. Thesis, Dept. of Aerospace Eng., Amirkabir University of Technology, Fall 2007.
- 3) Mirsajedi, M., "A Moving Grid Scheme for General Motion of A Single Body", Ph.D. Thesis, Dept. of Aerospace Eng., Amirkabir University of Technology, Winter 2006.
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