

PERSONAL INFORMATION

Reza Maddahian



Faculty of Mechanical Engineering, Tarbiat Modares University, Tehran, Iran

+98 21 8288 4986 +98 912 699 8429

maddahian@modares.ac.ir, reza.maddahian@gmail.com

<https://www.modares.ac.ir/~maddahian>

[Google Scholar](#), [Research Gate](#)

Sex Male Date of birth 25/08/1982

EDUCATION

PhD (Doctor of Philosophy) in
Mechanical Engineering

2012

MSc

Mechanical Engineering

2007

BSc

Mechanical Engineering

2005

Sharif University of Technology (SUT), Energy Conversion, GPA 18.94 / 20

Dissertation Title: Numerical Investigation of Two-Fluid Flow inside Deoiling Hydrocyclones

Sharif University of Technology (SUT), Energy Conversion, GPA 18.33 / 20

Dissertation Title: Numerical Investigation of Thermo Fluid Dynamics of Self-Induced Flow in Rotating Tubes

Isfahan University of Technology (IUT), Thermo Fluids, GPA 17.13 / 20

Dissertation Title: Developing New Software to Predict Thermo Physical Properties of Gases Mixture

ACADEMIC PROFESSIONAL EXPERIENCES

Assistant Professor

2015-Now

Faculty of Mechanical Engineering, Tarbiat Modares University (TMU), Tehran, Iran

Head of Energy Conversion
Department

2020-Now

Faculty of Mechanical Engineering, Tarbiat Modares University (TMU), Tehran, Iran

Assistant Professor

2013-2015

Faculty of Mechanical Engineering, University of Kashan, Kashan, Iran

PhD Researcher

2007-2012

Sharif University of Technology, 2007-2012

RESEARCH INTERESTS

Computational Multiphase Fluid Dynamics

Particulate Flows

Crude oil processes (separation of water and oil, desalination of crude oil, Crude oil fouling)

Renewable Energies (Hydraulic Turbines, Ground Source Heat Pumps, Solar Energy)

Industrial Ventilation

PUBLICATIONS

Journal Papers

O. Alaie, R. Maddahian, and G. Heidarinejad, "Investigation of thermal interaction between shallow boreholes in a GSHE using the FLS-STRCM model," *Renewable Energy*, vol. 175, pp. 1137-1150, 2021

<https://doi.org/10.1016/j.renene.2021.05.073>

H. J. Juposhti, R. Maddahian, and M. J. Cervantes, "Optimization of axial water injection to mitigate the Rotating Vortex Rope in a Francis turbine," *Renewable Energy*, vol. 175, pp. 214-231, 2021

<https://doi.org/10.1016/j.renene.2021.05.038>

R. Jazmi, K. Mohammadzadeh, H. Khaleghi, and R. Maddahian, "Numerical investigation of water droplet behavior in anode channel of a PEM fuel cell with partial blockage," *Archive of Applied Mechanics*, vol. 91, pp. 1391-1406, 2021

<https://doi.org/10.1007/s00419-020-01828-7>

A. A. A. Tondro, R. Maddahian, and A. Arefmanesh, "Effect of heated surface inclination on the growth dynamics and detachment of a vapor bubble, a numerical study," *Heat and Mass Transfer*, vol. 57, pp. 205-222, 2021

<https://doi.org/10.1007/s00231-020-02937-3>

S. A. Mousavian, M. Maerefat, R. Maddahian, and B. Mohammadkari, "Tips on Application of Natural Ventilation in Prevalent Buildings in Iran," *Amirkabir Journal of Mechanical Engineering*, vol. 53, pp. 16-16, 2021 (in Persian)

<https://dx.doi.org/10.22060/mej.2019.15459.6133>

M. Ghorbani and R. Maddahian, "Investigation of asphaltene particles size and distribution on fouling rate in the crude oil preheat train,"

Journal of Petroleum Science and Engineering, vol. 196, p. 107665, 2021

<https://doi.org/10.1016/j.petrol.2020.107665>

H. Ahmadvakht, R. Maddahian, and M. Maerefat, "Effect of Swirl on Thermal and Hydraulic Properties of Ice Slurry Flow," *Heat Transfer Engineering*, vol. 42, pp. 764-786, 2021

<https://doi.org/10.1080/01457632.2020.1735796>

S. Abbasian, R. Maddahian, and F. Kosari, "Reconstruction of Electrical Tomography Images based on Parameter Estimation Method in Inverse Heat Transfer," *Amirkabir Journal of Mechanical Engineering*, vol. 53, pp. 11-11, 2021 (in Persian)

<https://dx.doi.org/10.22060/mej.2019.15516.6144>

N. Sotoudeh, R. Maddahian, and M. J. Cervantes, "Investigation of Rotating Vortex Rope formation during load variation in a Francis turbine draft tube," *Renewable energy*, vol. 151, pp. 238-254, 2020

<https://doi.org/10.1016/j.renene.2019.11.014>

M. Rashidinejad, R. Maddahian, and A. Abbasian Arani, "Experimental and Numerical Study of Closed Circuit Wet Cooling Tower and Heat Transfer Coefficients Calculation on the Outer Surface of Hot Water Tubes," *Modares Mechanical Engineering*, vol. 20, pp. 901-913, 2020 (in Persian)

K. Mohammadzadeh, H. Khaleghi, R. Maddahian, and E. Shirani, "Numerical investigation of anode channel clogging of a PEMFC with a realistic droplet size distribution," *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, vol. 42, pp. 1-13, 2020

<https://doi.org/10.1007/s40430-020-02283-9>

R. Maddahian, A. T. Farsani, and M. Ghorbani, "Numerical investigation of asphaltene fouling growth in crude oil preheat trains using multi-fluid approach," *Journal of Petroleum Science and Engineering*, vol. 188, p. 106879, 2020

<https://doi.org/10.1016/j.petrol.2019.106879>

R. Maddahian, M. J. Cervantes, and D. M. Bucur, "Numerical investigation of entrapped air pockets on pressure surges and flow structure in a pipe," *Journal of Hydraulic Research*, vol. 58, pp. 218-230, 2020

<https://doi.org/10.1080/00221686.2019.1579112>

R. Maddahian, A. A. Abbasian Arani, and M. Rashidinejad, "Numerical Simulation of Natural Draft Dry Cooling Tower of Yazd Combined Cycle Power Plant: Evaluation of the Louvre Angle Effect," *Modares Mechanical Engineering*, vol. 20, pp. 2653-2670, 2020 (in Persian)

M. Amini, R. Maddahian, and S. Saemi, "Numerical investigation of a new method to control the condensation problem in ceiling radiant cooling panels," *Journal of Building Engineering*, vol. 32, p. 101707, 2020

<https://doi.org/10.1016/j.jobbe.2020.101707>

A. A. A. Tondro, R. Maddahian, and A. Arefmanesh, "Assessment of the inclination surface on the microlayer behavior during nucleate boiling, a numerical study," *Heat and Mass Transfer*, vol. 55, pp. 2103-2116, 2019

<https://doi.org/10.1007/s00231-019-02566-5>

G. A. Sheikhzadeh, M. Nazifard, R. Maddahian, and K. Kazemi, "Numerical Simulation of Nanofluid Heat Transfer in a Tube Equipped with Twisted Tape Using the Eulerian-Lagrangian Two-Phase Model," *Modares Mechanical Engineering*, vol. 19, pp. 53-62, 2019 (in Persian)

K. Mohammadzadeh, B. J. Kaldehi, R. Jazmi, H. Khaleghi, R. Maddahian, and E. Shirani, "A numerical model for estimation of water droplet size in the anode channel of a proton exchange membrane fuel cell," *Journal of Energy Storage*, vol. 26, p. 101021, 2019

<https://doi.org/10.1016/j.est.2019.101021>

S. Jafari, H. Khaleghi, and R. Maddahian, "Comparative Analysis of a Single Fuel Droplet Evaporation," *Journal of Chemical and Petroleum engineering*, vol. 53, pp. 81-90, 2019

<https://dx.doi.org/10.22059/jchpe.2019.273934.1264>

S. Abbasian and R. Maddahian, "Image reconstruction of electrical capacitance tomography using the dynamic mesh and changing physical properties methods," *Measurement Science and Technology*, vol. 31, p. 015402, 2019

<https://doi.org/10.1088/1361-6501/ab3dc4>

F. A. TORABI, R. Maddahian, A. Nazari, and M. M. Heyhat, "CFD modeling of Asphaltene deposition in turbulent flow inside heat exchanger pipe," *Modares Mechanical Engineering*, vol. 18, 2018 (in Persian).

G. A. Sheikhzadeh, M. Pourjafargholi, and R. Maddahian, "Numerical study of the effect of the Hall phenomenon on Supersonic 2D flow in a MHD generator," *Amirkabir Journal of Mechanical Engineering*, vol. 52, pp. 1037-1054, 2018 (in Persian).

A. H. Nazari, A. Torabi Farsani, and R. Maddahian, "Investigating the Effecting Phenomena on the Asphaltene Particle Deposition in Crude Oil Preheaters Using the Eulerian-Lagrangian approach," *Modares Mechanical Engineering*, vol. 18, pp. 208-218, 2018 (in Persian).

H. Ahmadvakht, R. Maddahian, and M. Maerefat, "3 D simulation of heat and mass transfer in turbulent flow of ice slurry in horizontal pipes," *Modares Mechanical Engineering*, vol. 18, pp. 383-391, 2018 (in Persian).

A. Soleimani, G. Sheikhzadeh, and R. Maddahian, "Improving the performance of the physical influence scheme (PIS) for cell-centred finite volume method," *Modares Mechanical Engineering*, vol. 16, pp. 571-582, 2017 (in Persian).

M. Pourjafargholi, G. Sheikhzadeh, and R. Maddahian, "Numerical simulation of the effect of the geometry and boundary conditions on Supersonic flow in 2D MHD channel," *Modares Mechanical Engineering*, vol. 17, pp. 301-312, 2017 (in Persian).

M. B. Haddadi and R. Maddahian, "A new algorithm for image reconstruction of electrical capacitance tomography based on inverse heat conduction problems," *IEEE Sensors Journal*, vol. 16, pp. 1786-1794, 2015

<https://doi.org/10.1109/jsen.2015.2506409>

A. Salari, M. Karmozdi, R. Maddahian, and B. Firoozabadi, "Analytical study of single particle tracking in both free and forced vortices," *Scientia Iranica*, vol. 20, pp. 351-358, 2013

<https://doi.org/10.1016/j.scient.2013.02.011>

M. Saidi, R. Maddahian, and B. Farhanieh, "Numerical investigation of cone angle effect on the flow field and separation efficiency of deoiling hydrocyclones," *Heat and Mass Transfer*, vol. 49, pp. 247-260, 2013

<https://doi.org/10.1007/s00231-012-1085-8>

M. Saidi, R. Maddahian, B. Farhanieh, and H. Afshin, "Modeling of flow field and separation efficiency of a deoiling hydrocyclone using

large eddy simulation," *International Journal of Mineral Processing*, vol. 112, pp. 84-93, 2012
<https://doi.org/10.1016/j.minpro.2012.06.002>

M. Saidi, R. Maddahian, and B. Farhanieh, "A parametric Study on Deoiling Hydrocyclones Flow Field," *International Journal of Mechanical and Mechatronics Engineering*, vol. 6, pp. 1824-1828, 2012

R. Maddahian, M. Asadi, and B. Farhanieh, "Numerical investigation of the velocity field and separation efficiency of deoiling hydrocyclones," *Petroleum Science*, vol. 9, pp. 511-520, 2012
<https://doi.org/10.1007/s12182-012-0236-3>

R. Maddahian, A. Kebriaee, B. Farhanieh, and B. Firoozabadi, "Analytical investigation of boundary layer growth and swirl intensity decay rate in a pipe," *Archive of Applied Mechanics*, vol. 81, pp. 489-501, 2011
<https://doi.org/10.1007/s00419-010-0424-9>

R. Maddahian, B. Farhanieh, and B. Firoozabadi, "Turbulent flow in converging nozzles, part one: boundary layer solution," *Applied Mathematics and Mechanics*, vol. 32, pp. 645-662, 2011
<https://doi.org/10.1007/s10483-011-1446-6>

E. Faghani, S. D. Saemi, R. Maddahian, and B. Farhanieh, "On the effect of inflow conditions in simulation of a turbulent round jet," *Archive of Applied Mechanics*, vol. 81, pp. 1439-1453, 2011
<https://doi.org/10.1007/s00419-010-0494-8>

R. Maddahian and B. Farhanieh, "Numerical investigation of thermo fluid mechanics of differentially heated rotating tubes," *Heat transfer engineering*, vol. 31, pp. 201-211, 2010
<https://doi.org/10.1080/01457630903304376>

E. Faghani, R. Maddahian, P. Faghani, and B. Farhanieh, "Numerical investigation of turbulent free jet flows issuing from rectangular nozzles: the influence of small aspect ratio," *Archive of applied mechanics*, vol. 80, pp. 727-745, 2010
<https://doi.org/10.1007/s00419-009-0340-z>

E. Faghani, S. Saemi, R. Maddahian, and B. Farhanieh, "Numerical investigation of corner angle and wing number effects on fluid flow characteristics of a turbulent stellar jet," *Heat and mass transfer*, vol. 46, pp. 25-37, 2009
<https://doi.org/10.1007/s00231-009-0541-6>

CONFERENCE PROCEEDINGS (selected papers)

R. Maddahian, F. Shaygan, and D. Bucur, "Developing a 1D-3D model to investigate the effect of entrapped air on pressure surge during the rapid filling of a pipe," in *IOP Conference Series: Earth and Environmental Science*, 2021, p. 012069
<https://doi.org/10.1088/1755-1315/774/1/012069>

M.H. Ramezani, R. Maddahian, M.R. Ansari, "Experimental investigation of co-current two-phase flow in a vertical pipe," 29th annual international conference of Iran society of mechanical engineers and 8th conference on thermal power plants, 2021 (in Persian)

H. Khaleghi, A. Rabiei, R. Jazmi, R. Maddahian, "Numerical study of rising bubble condensation using VOF method with phase change modeling", 4th international conference on Mechanical engineering, Materials and Metallurgy, 2020

M.A. Modaresi, G. Heidarinejad, R. Maddahian, "Inspection of flow Inside Constant and sudden expansion cross-sections using new calibrated transitional SST model", 28th annual international conference of Iran society of mechanical engineers, 2020

M.A. Modaresi, G. Heidarinejad, R. Maddahian, "Assessment of transitional flow inside a simplified nasal cavity using a calibrated transitional model", 28th annual international conference of Iran society of mechanical engineers, 2020

M. Maerefat, R. Maddahian, A. Mohammadi, "Numerical investigation of stone movement in the ureter", 28th annual international conference of Iran society of mechanical engineers, 2020 (in Persian)

G. Heidarinejad, R. Maddahian, O. Alaie, "Investigation of boreholes spacing on the outlet fluid temperature of a ground source heat exchanger", 28th annual international conference of Iran society of mechanical engineers, 2020 (in Persian)

S. Jafari, H. Khaleghi, R. Maddahian, "Simulation of the skim-milk drying process using the interface tracking of dry crust and wet core", 28th annual international conference of Iran society of mechanical engineers, 2020 (in Persian)

M.A. Modaresi, G. Heidarinejad, R. Maddahian, "Calibration of transitional SST model for simulation of different internal flow regimes", 18th Fluid Dynamic Conference, 2019

N. Sotoudeh, R. Maddahian, and M. Cervantes, "Formation of Rotating Vortex Rope in the Francis-99 Draft Tube," in *IOP Conference Series: Earth and Environmental Science*, 2019, p. 022017
<https://doi.org/10.1088/1755-1315/240/2/022017>

S. Abbasian, R. Maddahian, "Investigation of effective parameters on the shape estimation in the electrical tomography using the dynamic mesh", 27th annual international conference of Iran society of mechanical engineers, 2019 (in Persian)

M. Shokri, M. Maerefat, and R. Maddahian, "EVALUATION OF ENERGY SAVING AND ENVIRONMENTAL POLLUTION REDUCTION BY A CCHP SYSTEM FOR RESIDENTIAL BUILDINGS," in *Grand Renewable Energy proceedings Japan council for Renewable Energy (2018)*, 2018, p. 326

S. Jafari, H. Khaleghi, R. Maddahian, "Comparative analysis of a single fuel droplet evaporation", *The 9th National Conference on CFD Applications in Chemical & Petroleum Industries*, 2018

B. Jahani, K. Mohammadzadeh, R. Jazmi, H. Khaleghi, R. Maddahian, "Parametric study of a PEMFC using numerical simulations", *The 9th National Conference on CFD Applications in Chemical & Petroleum Industries*, 2018 (in Persian)

A.H. Nazari, M.M. Heyhat, R. Maddahian, "The effect of Brownian force on the deposition of Asphaltene particles near a wall", 26th annual international conference of Iranian Society of Mechanical Engineers, 2018 (in Persian)

K. Mohammadzadeh, R. Jazmi, H. Khaleghi, R. Maddahian, E. Shirani, "Numerical simulation of a rising bubble using volume of fluid method (VOF)", 26th annual international conference of Iranian Society of Mechanical Engineers, 2018

R. Maddahian, M. Cervantes, and N. Sotoudeh, "Numerical investigation of the flow structure in a Kaplan draft tube at part load," in *IOP Conference Series: Earth and Environmental Science*, 2016, p. 022008
<https://doi.org/10.1088/1755-1315/49/2/022008>

G. Sheikhzadeh, R. Maddahian, H. Masoudirad, "Numerical Investigation of Ventilation Performance for Pollutants in a Large Welding Workshop during the Seasonal Conditions", 7th International Conference on Heating Ventilating and Air Conditioning, 2016 (in Persian)

E. Faghani, B. Farhanieh, R. Maddahian, and P. Faghani, "Numerical investigation of effect of aspect ratio of rectangular nozzles," in 2008 Second International Conference on Thermal Issues in Emerging Technologies, 2008, pp. 391-398
<https://doi.org/10.1109/theta.2008.5167188>

S. Zakani, M. Mahdinia, R. Maddahian, and B. Farhanieh, "Verification of ventilation air flux and pressure drops in underground subway systems using CFD simulation: applied for Ferdousi station, Tehran subway."



PATENTS

IRAN PATENT

2021

Ceiling Radiant Cooling Panel (CRCP) with condensing coils
 Mohsen Amini, Reza Maddahian



RESEARCH PROJECTS

2021

Numerical and experimental investigation of crystal-particle fouling phenomena to model stone formation in kidney and urinary tract (Experimental microfluidic setup + OpenFOAM)
 Analysis, modelling and optimization of wave and current energy converter utilizing NES
 Coil arrangement of cooling radiant ceiling panel for reducing risk of condensation (Fluent)
 Numerical investigation of runner blade load variations in different sequences of hydraulic turbine start-stop (CFX)
 Numerical simulation of the dynamics of growth and collapse of the acoustic bubble near the rigid wall (OpenFOAM + in-house code)

2020

Thermodynamic analysis of the open and close circuit hybrid cooling tower to reduce water consumption (C++ MATLAB)
 Numerical and experimental investigation of formation dynamics and interaction of bubbles on inclined surfaces (Experimental setup + Fluent)
 Design and manufacture of a test-rig to investigate the two phase flow dynamics using electrical impedance tomography method (Experimental setup)
 Numerical development of a generalized multi-scale multiphase model based on break-up and coalescence mechanism (OpenFOAM)
 Numerical Investigation of erosion wear in hydraulic turbines using Eulerian-Lagrangian approach (Fluent + in-house code)
 Developing the moving immersed boundary method to investigate the effect of kidney stone movement on ureter function (OpenFOAM)

2019

Development of a multiphase Eulerian-Lagrangian method with the capability of capturing interphase to investigate the fouling phenomena (OpenFOAM + DEM + Immersed Boundary)
 Investigating of the turbulent flow effect near the wall on the transport, deposition and removal of asphaltene particles (OpenFOAM)
 Investigation of droplet interaction on the efficiency of de-oiling hydrocyclone using Lagrangian-Eulerian approach (OpenFOAM)
 Numerical investigation of water jet injection on formation of rotating vortex rope in the hydraulic turbines (CFX)
 Numerical study of the effects of pipe layout and soil properties on the overall performance of a ground source heat exchanger (MATLAB + TRNSYS)

2018

Numerical and experimental investigation of hydraulic characteristic of anaerobic baffled reactor (ABR)
 Developing a new turbulence model for simulating the flow field inside desalinating hydrocyclones (Fluent)
 Numerical investigation of pressure surge during the expulsion of entrapped air (OpenFOAM + in-house code)
 Numerical investigation of deoiling hydrocyclones performance using air injection (Fluent)
 Numerical modeling of crude oil fouling in preheaters using Eulerian-Eulerian using population balance approach (Fluent + in-house code)
 Development of a 3-D image reconstruction algorithm based on inverse heat transfer problem (Fluent + in-house code)

2017

Effect of combining radiant ceiling panels and passive chilled beams on the condensation risk (Fluent)
 Experimental investigation of bubble growth dynamic on the inclined surfaces (Experimental setup)
 Numerical modeling of crude oil fouling in preheaters using two-fluid approach (Fluent)

2016

Numerical simulation of transient rotating vortex rope (RVR) formation in the draft tube of Francis-99 turbine (CFX)
 Numerical investigation of flow and heat transfer in rotating tubes (Fluent)
 Numerical investigation of crude oil desalination using hydrocyclones (Fluent)



INDUSTRIAL PROJECTS

- 2021** Numerical simulation and vibration analysis of Air Cooled Condenser (ACC) fans
Developing technological knowledge, Computational Fluid Dynamic (CFD) analysis and optimization of flotation cells
- 2020** Design the normal and emergency ventilation system of the MegaPars Mall parking
Development of a software to design the hybrid cooling towers considering the weather conditions
Numerical simulation and optimization of HVAC system of the MegaPars Mall
Technical and economic feasibility study of energy recovery from the groundwater of Sistan plain
- 2019** Building energy analysis and numerical simulation of the Anformatic building HVAC system
Design the HVAC system and air distribution of a holy shrine
Design and simulation of the ventilation system for Line-4 Tehran metro parking
Development of a software to design the Air Cooled Condenser for the hot and humid conditions
- 2018** Develop several HPC systems for CFD application in TMU Labs
- 2010-2017** Redesign the ventilation system of Line-1 Shiraz metro
Numerical simulation of boilers for the Montazer Ghaem power plant
Feasibility study of using Pumps As Turbine (PAT) system in the gas regulating stations
Design the cooling piping system of the Kahnoj power plant
Design and fabricate the test-rig for the performance and mechanical testing of centrifugal compressors
Numerical analysis of intake and exhaust of V94.2 gas turbines
Design the normal and emergency ventilation system of Line-4 Tehran metro
Design the normal and emergency ventilation system of Niayesh urban tunnel
Redesign the normal and emergency ventilation system of Tohid urban tunnel
Design and fabricate a clean room
Design the normal and emergency ventilation system of Kahrizak station in Line-1 Tehran metro



PROFESSIONAL EXPERIENCES

- Head of Energy Conversion Department** Faculty of Mechanical Engineering, Tarbiat Modares University (TMU), Tehran, Iran
2020-Now
- CEO** A knowledge based company in the field of HVAC systems and equipment (Assan Danesh)
2019-NOW
- Director of Research and Development office** [Aria Beniz](#) holding, Tehran, Iran
2015-2017
- Director of CFD Department** [Monenco](#) Consulting Engineers, Research and Development Office, Tehran, Iran
2009-2016
- Scientific Project Manager** [Monenco](#) Consulting Engineers, Research and Development Office, Design a Test rig for centrifugal compressors based on ASME
2010-2015
- Reviewer** Renewable Energy
2010-Now Refrigeration Journal
International Journal of Heat and Mass Transfer
Building and Environment
Building and Engineering
Journal of Sensors
Canadian Journal of Chemical Engineering
Journal of Applied Fluid Mechanics
Journal of Modares Mechanical Engineering, (in Persian)
Journal of Amir Kabir Mechanical Engineering, (in Persian)
Journal of Energy Management, Kashan (in Persian)



TEACHING EXPERIENCES

- 2015-Now** Computational Fluid Dynamics (CFD)
- 2015-Now** Advanced Fluid Mechanics
- 2015-Now** Computational Multiphase Fluid Dynamics (CMFD)
- 2015-Now** Advanced Heating, Ventilation and Air Conditioning (HVAC)

- 2012-2015 Multiphase Flows
- 2012-2015 Viscous Flows
- 2012-2015 Fluid Mechanics I and II
- 2012-2015 Heat Transfer



WORKSHOPS

- 2021 Car park ventilation - New standards and design procedure, Aria Omran Pars Co., Tehran, Iran
- 2020 Application of CFD simulation to design advanced HVAC systems, Astan Co., Tehran, Iran
- Flow, Energy and Contaminants Analysis in Buildings (HAP + CONTAM), Tarbiat Modares University
- 2019 CFD with OpenFOAM, Tarbiat Modares University
- Flow, Energy and Contaminants Analysis in Buildings (HAP + CONTAM), Tarbiat Modares University
- 2018 Applied Psychrometric Charts, Aria Beniz Co., Tehran, Iran
- 2016 Design, Calculation and Simulation of subway ventilation systems, 5th international conference on heating, ventilation and air conditioning (ICHVAC-5), Tehran, Iran
- Car park ventilation, Design, Calculations and Simulation, Assan Assay Co., Tehran, Iran
- Hybrid (Wet/Dry) Cooling Towers, Design and Applications, Esfahan oil refinery



HONORS, AWARDS, AND MEMBERSHIPS

- Since 2015 Member of Iranian Society of Heating, Refrigerating and Air-Conditioning Engineers (ISHRAE)
- 2019 Distinguished Manager Appreciation Plaque, Strategic development plan of Tarbiat Modares University (TMU)
- 2018 Appreciation Plaque, 26th annual international conference of Iranian Society of Mechanical Engineers, 2018
- 2016 Distinguished paper, 7th International Conference on Heating Ventilating and Air Conditioning, 2016
- 2015 Outstanding University Lecturer, University of Kashan
- 2012 Member of National Elites Foundation, IR
- 2007-2012 2nd Rank among Mechanical Engineering (Energy Conversion) PhD students Based on Overall GPA, Sharif University of Technology
- 2005 3rd Rank among Mechanical Engineering (Energy Conversion) MSc students Based on Overall GPA, Isfahan University of Technology



INTERNATIONAL COLLABORATION

- Since 2016 Professor, Michel J. Cervantes
Lulea University of Technology, Sweden: Unsteady swirling flow in draft tube of hydraulic turbines
- Since 2017 Associate Professor, Diana M. Bucur
University Politehnica of Bucharest, Romania: pressure surge and unsteady phenomena during rapid filling of water pipes



SKILLS

General Skills

Management	<div style="width: 100%;"></div>
Leadership	<div style="width: 100%;"></div>
Organization	<div style="width: 95%;"></div>
Strategy	<div style="width: 95%;"></div>
Presentation	<div style="width: 100%;"></div>
Team Working	<div style="width: 100%;"></div>
English	<div style="width: 80%;"></div>
Computer	<div style="width: 100%;"></div>

Professional Skills

Ansys-Fluent	<div style="width: 100%;"></div>
OpenFOAM	<div style="width: 100%;"></div>
CFX	<div style="width: 95%;"></div>
Linux, Parallel Programming	<div style="width: 90%;"></div>
Industrial Ventilation	<div style="width: 100%;"></div>
FORTRAN	<div style="width: 100%;"></div>
C++	<div style="width: 85%;"></div>
EnergyPlus	<div style="width: 75%;"></div>