



## Amin Shahsavari

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### **EDUCATION**

#### **Doctor of Philosophy in Mechanical Engineering**

Isfahan University of Technology, Isfahan, Iran (2011-2015).

*Dissertation title:* "Experimental and numerical investigation on laminar forced convection heat transfer of water based nanofluid containing carbon nanotube and  $\text{Fe}_3\text{O}_4$  nanoparticles in a tube under the influence of constant and alternating magnetic field"

*Advisor:* Professor M.R. Salimpour, Dr. M. Saghafian

#### **Master of Science in Mechanical Engineering**

Shahid Bahonar University, Kerman, Iran (2009-2011).

*Dissertation title:* "Experimental investigation and modeling of a direct-coupled PV/T air collector"

*Advisor:* Professor M. Ameri

#### **Bachelor of Science in Mechanical Engineering**

Urmia University, Urmia, Iran (2002-2007).

### **RESEARCH INTERESTS**

- Photovoltaics and solar energy
- Nanofluids
- Latent heat storage systems
- Electronics cooling

### **RESEARCH EXPERIENCE**

- "Numerical Investigation of the Impact of Axial Compressor Blades Shortening on the Gas Turbine Performance of GTG Unit of Ilam Gas Refinery", *Ilam Gas Refinery, Ilam, Iran.*

- “Technical, financial and environmental feasibility of improving the efficiency of water bath heaters in city gas stations through the use of elliptic tubes equipped with twisted tape inserts”, *National Iranian Gas Company, Ilam Branch, Iran.*
- “Design of a cooling system for high temperature-high pressure heat treatment furnace”, *Iran Aircraft Manufacturing Industrial Company, Isfahan, Iran.*
- “Preparation and characterization of a magnetic nanofluid with water as base fluid containing MnZn ferrite nanoparticles”, *Kermanshah University of Medical Sciences, Kermanshah, Iran.*
- “Design of an experimental setup to investigate the heat transfer performance of water-magnetite nanofluid in an elliptic pipe with twisted tape turbulator in the presence of a magnetic field produced by permanent magnets”, *Najafabad Branch, Islamic Azad University, Isfahan, Iran.*
- “Production and characterization of phase change materials containing nanoparticles for heat transfer applications”, *Kermanshah University of Technology, Kermanshah, Iran.*
- “Experimental investigation of photovoltaic panel cooling using nanofluid”, *Kermanshah University of Technology, Kermanshah, Iran.*
- “Experimental investigation of the effect of vibration and magnetic field on the cooling performance of ferrofluid flowing inside a heated tube”, *Kermanshah University of Technology, Kermanshah, Iran.*

### **TEACHING EXPERIENCES**

- Thermodynamics I & II
- Fluid mechanics I & II
- Heat Transfer
- Turbomachinery
- Air-Conditioning
- Statics
- Engineering Mathematics

### **PUBLICATIONS**

#### **Journal papers:**

1. **A. Shahsavar**, Experimental study of thermal and electrical performance of a photovoltaic / thermal system with nanofluid cooling equipped with grooved plate-tube collector, *Energy Engineering & Management.*
2. **A. Shahsavar**, M. Jafari, E.B. Askari, F. Selimefendigil, Thermo-hydraulic performance and entropy generation of biologically synthesized silver/water-ethylene glycol nano-fluid flow inside a rifled tube using two-phase mixture model, *Energy Source, Part A*, <https://doi.org/10.1080/15567036.2020.1850932>.

3. **A. Shahsavar**, S. Roohani, A. Jahangiri, Evaluation of the effect of rifled inlet on the hydrothermal performance and entropy generation of biological silver/water nanofluid-cooled heatsink, *Journal of Thermal Analysis and Calorimetry*, In Press, <https://doi.org/10.1007/s10973-022-11342-3>.
4. H. Salehipour, D. Shahgholian-Ghahfarokhi, **A. Shahsavar**, O. Civalek, M. Edalati, Static deflection and free vibration analysis of functionally graded and porous cylindrical micro/nano shells based on the three-dimensional elasticity and modified couple stress theories, *Mechanics Based Design of Structures and Machines* 50 (2022) 2184-2205.
5. P. Talebizadehsardari, H. Salehipour, D. Shahgholian-Ghahfarokhi, **A. Shahsavar**, M. Karimi, Free vibration analysis of the macro-micro-nano plates and shells made of a material with functionally graded porosity: A closed-form solution, *Mechanics Based Design of Structures and Machines* 50 (2022) 1054-1080.
6. **A. Shahsavar**, P. Farhadi, C. Yildiz, M. Moradi, M. Arici, Evaluation of entropy generation characteristics of boehmite-alumina nanofluid with different shapes of nanoparticles in a helical heat sink, *International Journal of Mechanical sciences*
7. E.B. Askari, **A. Shahsavar**, M. Jamei, F. Calise, M. Karbasi, A parametric assessing and intelligent forecasting of the energy and exergy performances of a dish concentrating photovoltaic/thermal collector considering six different nanofluids and applying two meticulous soft computing paradigms, *Renewable Energy* 193 (2022) 149-166.
8. A. Jahangiri, M.E.S. Farahani, G. Ahmadi, **A. Shahsavar**, A. Borzouei, H. Gharehbaei, Coupled CFD and 3E (Energy, Exergy and Economical) analysis of using windbreak walls in heller type cooling towers, *Journal of Cleaner Production* 358 (2022) 131550.
9. **A. Shahsavar**, A. Goodarzi, I.B. Askari, M. Jamei, M. Karbasi, M. Afrand, The entropy generation analysis of the influence of using fins with tip clearance on the thermal management of the batteries with phase change material: Application a new gradient-based ensemble machine learning approach *Engineering Analysis with Boundary Elements* 140 (2022) 432-446.
10. **A. Shahsavar**, M.A. Mirzaei, A. Shaham, M. Jamei, M. Karbasi, F. Seifikar, S. Azizian, Experimental exploration of rheological behavior of polyethylene glycol-carbon dot nanofluid: Introducing a robust artificial intelligence paradigm optimized with unscented Kalman filter technique, *Journal of Molecular Liquids* 358 (2022) 119198.
11. **A. Shahsavar**, I.B. Askari, A.R.M. Dovom, Energy saving in buildings by using the exhaust air and phase change material for cooling of photovoltaic panels, *Journal of Building Engineering* 53 (2022) 104520.
12. **A. Shahsavar**, S. Entezari, I.B. Askari, M. Jamei, M. Karbasi, M. Shahmohammadi, Investigation on two-phase fluid mixture flow, heat transfer and entropy generation of a non-Newtonian water-CMC/CuO nanofluid inside a twisted tube with variable twist pitch:

- Numerical and evolutionary machine learning simulation, *Engineering Analysis with Boundary Elements* 140 (2022) 322–337.
13. P. Azimi, **A. Shahsavar**, N. Azimi, Using high-frequency ultrasonic and thermoelectric generators to enhance the performance of a photovoltaic module, *Journal of Cleaner Production* 350 (2022) 131393.
  14. **A. Shahsavar**, M. Arici, Effect of glass cover on the energy and exergy performance of a combined system including a building integrated photovoltaic/thermal system and a sensible rotary heat exchanger, *International Journal of Energy Research* 46 (2022) 5050-5066.
  15. **A. Shahsavar**, A. Shaham, C. Yildiz, M. Arici, Entropy generation characteristics in charging and discharging of PCM in a variable wavy walled triplex tube latent heat storage unit for battery thermal management system, *Journal of Energy Storage* 51(2022) 104374.
  16. S. Rahmanian, H. Rahmanian Koushkaki, **A. Shahsavar**, Numerical assessment on the hydrothermal behaviour and entropy generation characteristics of boehmite alumina nanofluid flow through a concentrating photovoltaic/thermal system considering various shapes for nanoparticle, *Sustainable Energy Technologies and Assessments* 52 (2022) 102143.
  17. **A. Shahsavar**, Numerical investigation of the entropy generation of forced convection flow of a non-Newtonian nanofluid inside a twisted double-pipe heat exchanger, *Journal of Mechanical Engineering* 52 (2022) 129-138.
  18. **A. Shahsavar**, M. Jafari, F. Selimefendigil, Two-phase mixture modeling of turbulent forced convective flow of water–silver nanofluid inside a rifled tube: hydrothermal characteristics and irreversibility behavior, *Journal of Thermal Analysis and Calorimetry* 147 (2022) 957-969.
  19. **A. Shahsavar**, K. Moradi, C. Yildiz, P. Farhadi, M. Arici, Effect of nanoparticle shape on cooling performance of boehmite-alumina nanofluid in a helical heat sink for laminar and turbulent flow regimes, *International Journal of Mechanical Sciences* 217 (2022) 107045.
  20. M. Hasani, I.B. Askari, **A. Shahsavar**, Two-phase mixture simulation of the performance of a grooved helical microchannel heat sink filled with biologically prepared water-silver nanofluid: hydrothermal characteristics and irreversibility behavior, *Applied Thermal Engineering* 202 (2022) 117848.
  21. S. Rasaei, **A. Shahsavar**, K. Niazi, Experimental assessment on convection heat transfer characteristics of aqueous magnetite ferrofluid in a rifled tube under a rotating magnetic field, *International Communications in Heat and Mass Transfer* 129 (2022) 105673.
  22. M.R. Niknejadi, M. Afrand, A. Karimipour, **A. Shahsavar**, A.H.M. Isfahani, An experimental study on the cooling efficiency of magnetite–water nanofluid in a twisted tube exposed to a rotating magnetic field, *Journal of Thermal Analysis and Calorimetry* 146 (2021) 1893-1909.
  23. Y. Ma, **A. Shahsavar**, I. Moradi, S. Rostami, A. Moradikazerouni, H. Yarmand, N.W.B.M. Zulkifli, Using finite volume method for simulating the natural convective heat transfer of

- nano-fluid flow inside an inclined enclosure with conductive walls in the presence of a constant temperature heat source, *Physica A* 580 (2021) 123035,
24. Y. Li, **A. Shahsavar**, P. Talebizadehsardari, Thermal conductivity of ethylene glycol-based nanofluid containing SiO<sub>2</sub> nanoadditives: experimental data and modeling through curve fitting, *Journal of Thermal Analysis and Calorimetry* 146 (2021) 1101-1109.
  25. **A. Shahsavar**, A. Goodarzi, P. Talebizadehsardari, M. Arıcı, Numerical investigation of a double-pipe latent heat thermal energy storage with sinusoidal wavy fins during melting and solidification, *International Journal of Energy Research* 45 (2021) 20934-20948.
  26. W. Cai, D. Toghraie, A. Shahsavar, P. Barnoon, A. Khan, M.H. Beni, J.E. Jam, Eulerian-Lagrangian investigation of nanoparticle migration in the heat sink by considering different block shape effects, *Applied Thermal Engineering* 199 (2021) 117593.
  27. **A. Shahsavar**, M. Jafari, S. Rostami, Numerical investigation of laminar flow of biological nanofluid in a rifled tube using two-phase mixture model: first-law and second-law analyses and geometry optimization, *Journal of Thermal Analysis and Calorimetry* 146 (2021) 955-966.
  28. **A. Shahsavar**, P. Jha, M. Arıcı, S. Nizetic, Z. Ma, Energetic and exergetic performances of a nanofluid-based photovoltaic/thermal system equipped with a sheet-and-grooved serpentine tube collector: Indoor experimental tests, *Solar Energy* 225 (2021) 918-933.
  29. **A. Shahsavar**, M. Shahmohammadi, I.B. Askari, The effect of inlet/outlet number and arrangement on hydrothermal behavior and entropy generation of the laminar water flow in a pin-fin heat sink, *International Communications in Heat and Mass Transfer* 127 (2021) 105500.
  30. **A. Shahsavar**, M. Jamei, M. Karbasi, Experimental evaluation and development of predictive models for rheological behavior of aqueous Fe<sub>3</sub>O<sub>4</sub> ferrofluid in the presence of an external magnetic field by introducing a novel grid optimization based-Kernel ridge regression supported by sensitivity analysis, *Powder Technology* 393 (2021) 1-11.
  31. **A. Shahsavar**, M. Shahmohammadi, E.B. Askari, CFD simulation of the impact of tip clearance on the hydrothermal performance and entropy generation of a water-cooled pin-fin heat sink, *International Communications in Heat and Mass Transfer* 126 (2021) 105400.
  32. **A. Shahsavar**, M. Jafari, P. Talebizadehsardari, D. Toghraie, Hydrothermal and entropy generation specifications of a hybrid ferronanofluid in microchannel heat sink embedded in CPUs, *Chinese Journal of Chemical Engineering* 32 (2021) 27-38.
  33. **A. Shahsavar**, M. Rashidi, C. Yildiz, M. Arıcı, Natural convection and entropy generation of Ag-water nanofluid in a finned horizontal annulus: A particular focus on the impact of fin numbers, *International Communications in Heat and Mass Transfer* 125 (2021) 105349.
  34. **A. Shahsavar**, S. Noori, D. Toghraie, P. Barnoon, Free convection of non-Newtonian nanofluid flow inside an eccentric annulus from the point of view of first-law and second-law of thermodynamics, *Journal of Applied Mathematics and Mechanics* 101 (2021) e202000266.

35. S. Rahmanian, H. Rahmanian-Koushkaki, P. Omidvar, **A. Shahsavari**, Nanofluid-PCM heat sink for building integrated concentrated photovoltaic with thermal energy storage and recovery capability, *Sustainable Energy Technologies and Assessments* 46 (2021) 101223.
36. S. Khanmohammadi, **A. Shahsavari**, Comparison of the performance of different designs of a combined system consisting of a photovoltaic thermal unit and a sensible rotary heat exchange, *Sustainable Energy Technologies and Assessments* 45 (2021) 101203.
37. M. Arici, C. Yildiz, S. Nizetic, **A. Shahsavari**, A. Campo, Implications of boundary conditions on natural convective heat transfer of molten phase change material inside enclosures, *International Journal of Energy Research* 45 (2021) 7631-7650.
38. **A. Shahsavari**, M.A. Bakhshizadeh, M. Arici, M. Afrand, S. Rostami, Numerical study of the possibility of improving the hydrothermal performance of an elliptical double-pipe heat exchanger through the simultaneous use of twisted tubes and non-Newtonian nanofluid, *Journal of Thermal Analysis and Calorimetry* 143 (2021) 2825-2840.
39. M.S. Nazir, **A. Shahsavari**, M. Afrand, M. Arici, S. Nizetic, Z. Ma, H.F. Oztop, A comprehensive review of parabolic trough solar collectors equipped with turbulators and numerical evaluation of hydrothermal performance of a novel model, *Sustainable Energy Technologies and Assessments* 45 (2021) 101103.
40. **A. Shahsavari**, S. Entezari, E.B. Askari, H.M. Ali, The effect of using connecting holes on heat transfer and entropy generation behaviors in a micro channels heat sink cooled with biological silver/water Nanofluid, *International Communications in Heat and Mass Transfer* 123 (2021) 104929.
41. **A. Shahsavari**, S.A. Bagherzadeh, M. Afrand, Application of artificial intelligence techniques in prediction of energetic performance of a hybrid system consisting of an earth-air heat exchanger and a building integrated photovoltaic/thermal system, *ASME Journal of Solar Energy Engineering* 143 (2021) 051002.
42. **A. Shahsavari**, P. Jha, M. Arici, P. Estelle, Experimental investigation of the usability of the rifled serpentine tube to improve energy and exergy performances of a nanofluid-based photovoltaic/thermal system, *Renewable Energy* 170 (2021) 410-425.
43. C. Yildiz, A.E. Yildiz, M. Arici, N.A. Azmi, **A. Shahsavari**, Influence of dome shape on flow structure, natural convection and entropy generation in enclosures at different inclinations: A comparative study, *International Journal of Mechanical Sciences* 197 (2021) 106321.
44. **A. Shahsavari**, O. Yari, E.B. Askari, The entropy generation analysis of forward and backward laminar water flow in a plate-pin-fin heatsink considering three different splitters, *International Communications in Heat and Mass Transfer* 120 (2021) 105026.
45. **A. Shahsavari**, Experimental evaluation of energy and exergy performance of a nanofluid-based photovoltaic/thermal system equipped with a sheet-and-sinusoidal serpentine tube collector, *Journal of Cleaner Production* 287 (2021) 125064.

46. **A. Shahsavar**, S.S. Alimohammadi, I.B. Askari, H.M. Ali, Numerical investigation of the effect of corrugation profile on the hydrothermal characteristics and entropy generation behavior of laminar forced convection of non-Newtonian water/CMC-CuO nanofluid flow inside a wavy channel, *International Communications in Heat and Mass Transfer* 121 (2020) 105117.
47. M.R. Niknejadi, M. Afrand, A. Karimipour, **A. Shahsavar**, A.H. Meghdadi Isfahani, Experimental investigation of the hydrothermal aspects of water-Fe<sub>3</sub>O<sub>4</sub> nanofluid inside a twisted tube, *Journal of Thermal Analysis and Calorimetry* 143 (2021) 801-810.
48. **A. Shahsavar**, P. Jha, M. Arici, G. Kefayati, A comparative experimental investigation of energetic and exergetic performances of Water/Magnetite nanofluid-based photovoltaic/thermal system equipped with finned and unfinned collectors, *Energy* 220 (2021) 119714.
49. K. Varmira, M.M. Baseri, S. Khanmohammadi, M. Hamelian, **A. Shahsavar**, Experimental study of the effect of sheet-and-sinusoidal tube collector on the energetic and exergetic performance of a photovoltaic-thermal unit filled with biologically synthesized water/glycerol-silver nanofluid, *Applied Thermal Engineering* 186 (2021) 116518.
50. S. Khanmohammadi, **A. Shahsavar**, Thermodynamic assessment and proposal of new configurations of an indirect water bath heater for a City Gate Station (a case study), *Energy Equipment and Systems* 8 (2020) 349-365.
51. Z. Tian, **A. Shahsavar**, A.A.A.A. Al-Rashed, S. Rostami, Numerical simulation of nanofluid convective heat transfer in an oblique cavity with conductive edges equipped with a constant temperature heat source: Entropy production analysis, *Computers & Mathematics with Applications* 81 (2021) 725-736.
52. **A. Shahsavar**, A.H. Majidzadeh, R.B. Mahani, P. Talebizadehsardari, Entropy and thermal performance analysis of PCM melting and solidification mechanisms in a wavy channel triplex-tube heat exchanger, *Renewable Energy* 165 (2021) 52-72.
53. **A. Shahsavar**, S. Entezari, D. Toghraie, P. Barnoon, Effects of the porous medium and water-silver biological nanofluid on the performance of a newly designed heat sink by using first and second laws of thermodynamics, *Chinese Journal of Chemical Engineering* 28 (2020) 2928-2937.
54. **A. Shahsavar**, H.M. Ali, R.B. Mahani, P. Talebizadehsardari, Numerical study of melting and solidification in a wavy double-pipe latent heat thermal energy storage system, *Journal of Thermal Analysis and Calorimetry* 141 (2020) 1785-1799.
55. S. Rostami, M. Afrand, **A. Shahsavar**, M. Sheikholeslami, R. Kalbasi, S. Aghakhani, M.S. Shadloo, H.F. Oztop, A review of melting and freezing processes of PCM/Nano-PCM and their application in energy storage, *Energy* 211 (2020) 118698.

56. J. Alsarraf, **A. Shahsavar**, R.B. Mahani, P.T. Sardari, Turbulent forced convection and entropy production of a nanofluid in a solar collector considering various shapes for nanoparticles, *International Communications in Heat and Mass Transfer* 117 (2020) 104804.
57. **A. Shahsavar**, M. Eisapour, P. Talebizadehsardari, Experimental evaluation of novel photovoltaic/thermal systems using serpentine cooling tubes with different cross-sections of circular, triangular and rectangular, *Energy* 208 (2020) 118409.
58. C. Yildiz, M. Arici, S. Nizetic, **A. Shahsavar**, Numerical investigation of natural convection behavior of molten PCM in an enclosure having rectangular and tree-like branching fins, *Energy* 207 (2020) 118223.
59. F.H. Ali, H.K. Hamzah, K. Egab, M. Arici, **A. Shahsavar**, Non-Newtonian nanofluid natural convection in a U-shaped cavity under magnetic field, *International Journal of Mechanical Sciences* 186 (2020) 105887.
60. **A. Shahsavar**, M. Rashidi, M. Monfared Mosghani, D. Toghraie, P. Talebizadehsardari, A numerical investigation on the influence of nanoadditive shape on the natural convection and entropy generation inside a rectangle-shaped finned concentric annulus filled with boehmite alumina nanofluid using two-phase mixture model, *Journal of Thermal Analysis and Calorimetry* 141 (2020) 915-930.
61. H. Salehipour, M. Jamshidi, **A. Shahsavar**, Considering bending and vibration of homogeneous nanobeam coated by a FG layer, *Journal of Solid Mechanics* 12 (2020) 411-437.
62. S. Rostami, **A. Shahsavar**, G.R. Kefayati, A. Shahsavar Goldanlou, Energy and exergy analysis of using turbulator in a parabolic trough solar collector filled with mesoporous silica modified with copper nanoparticles hybrid nanofluid, *Energies* 13 (2020) 2946.
63. A. Shahsavar, S. Khanmohammadi, M. Afrand, A. Shahsavar, S. Rostami, On evaluation of magnetic field effect on the formation of nanoparticles clusters inside aqueous magnetite nanofluid: An experimental study and comprehensive modeling, *Journal of Molecular Liquids* 312 (2020) 113378.
64. **A. Shahsavar**, H. Moayedi, A.H.A. Al-Waeli, K. Sopian, P. Chelvanathan, Machine learning predictive models for optimal design of building-integrated photovoltaic-thermal collectors, *International Journal of Energy Research* 44 (2020) 5675-5695.
65. Z. Li, **A. Shahsavar**, K. Niazi, A.A.A.A. Al-Rashed, S. Rostami, Numerical assessment on the hydrothermal behavior and irreversibility of MgO-Ag/water hybrid nanofluid flow through a sinusoidal hairpin heat-exchanger, *International Communications in Heat and Mass Transfer* 115 (2020) 104628.
66. Y. Zheng, **A. Shahsavar**, M. Afrand, Sonication time efficacy on Fe<sub>3</sub>O<sub>4</sub>-liquid paraffin magnetic nanofluid thermal conductivity: an experimental evaluation, *Ultrasonics Sonochemistry* 64 (2020) 105004.



67. Y. Zheng, X. Zhang, **A. Shahsavar**, Q. Nguyen, S. Rostami, Experimental evaluating the rheological behavior of ethylene glycol under graphene nanosheets loading, *Powder Technology* 367 (2020) 788-795.
68. Z. Li, **A. Shahsavar**, K. Niazi, A.A.A.A. Al-Rashed, P. Talebizadehsardari, The effects of vertical and horizontal sources on heat transfer and entropy generation in an inclined triangular enclosure filled with non-Newtonian fluid and subjected to magnetic field, *Powder Technology* 364 (2020) 924-942.
69. Y. Ma, **A. Shahsavar**, P. Talebizadehsardari, Two-phase mixture simulation of the effect of fin arrangement on first and second law performance of a bifurcation microchannels heatsink operated with biologically prepared water-Ag nanofluid, *International Communications in Heat and Mass Transfer* 114 (2020) 104554.
70. J. Alsarraf, H. Moayedi, A.S.A. Rashid, M.A. Muazu, **A. Shahsavar**, Application of PSO-ANN modelling for predicting the exergetic performance of a building integrated photovoltaic/thermal system, *Engineering with Computers* 36 (2020) 633-646.
71. **A. Shahsavar**, S. Khanmohammadi, Energy and economic evaluation and multicriteria optimization of different arrangements of integrated photovoltaic thermal and heat recovery wheel system, *International Journal of Energy Research* 44 (2020) 1488-1505.
72. R. Kalbasi, **A. Shahsavar**, M. Afrand, Reducing AHU energy consumption by a new layout of using heat recovery units, *Journal of Thermal Analysis and Calorimetry* 139 (2020) 2811-2820.
73. R. Kalbasi, **A. Shahsavar**, M. Afrand, Incorporating novel heat recovery units into an AHU for energy demand reduction-exergy analysis, *Journal of Thermal Analysis and Calorimetry* 139 (2020) 2821-2830.
74. J. Alsarraf, **A. Shahsavar**, M. Khaki, R. Ranjbarzadeh, A. Karimipour, M. Afrand, Numerical investigation on the effect of four constant temperature pipes on natural cooling of electronic heat sink by nanofluids: A multifunctional optimization, *Advanced Powder Technology* 31 (2020) 416-432.
75. R. Zhang, S. Aghakhani, A.H. Pordanjani, S.M. Vahedi, **A. Shahsavar**, M. Afrand, Investigation of the entropy generation during natural convection of Newtonian and non-Newtonian fluids inside the L-shaped cavity subjected to magnetic field: application of lattice Boltzmann method, *The European Physical Journal Plus* 135 (2020) 184.
76. F. Pourfattah, D. Toghraie, O.A. Akbari, M. Ahmadpour, **A. Shahsavar**, Investigation of mixing process of two different gases in a micromixer: Effect of process medium and Knudsen number, *Journal of Porous Media* 23 (2020) 81-99.
77. Y. Geng, A.A.A.A. Al-Rashed, B. Mahmoudi, A.S. Alsagri, **A. Shahsavar**, P. Talebizadeh, Characterization of the nanoparticles, the stability analysis and the evaluation of a new hybrid nano-oil thermal conductivity, *Journal of Thermal Analysis and Calorimetry* 139 (2020) 1553-1564.

78. J. Ma, **A. Shahsavari**, A.A.A.A. Al-Rashed, A. Karimipour, H. Yarmand, S. Rostami, Viscosity, cloud point, freezing point and flash point of zinc oxide/SAE50 nanolubricant, *Journal of Molecular Liquids* 298 (2020) 112045.
79. A.A.A.A. Al-Rashed, G.A. Sheikhzadeh, A. Aghaei, F. Monfared, **A. Shahsavari**, M. Afrand, Effect of a porous medium on flow and mixed convection heat transfer of nanofluids with variable properties in a trapezoidal enclosure, *Journal of Thermal Analysis and Calorimetry* 139 (2020) 741-754.
80. **A. Shahsavari**, A. Goodarzi, H.I. Mohammed, A. Shirnesan, P. Talebizadehsardari, Thermal performance evaluation of non-uniform fin array in a finned double-pipe latent heat storage system, *Energy* 193 (2020) 116800.
81. Z. Li, **A. Shahsavari**, A.A.A.A. Al-Rashed, P. Talebizadehsardari, Effect of porous medium and nanoparticles presences in a counter-current triple-tube composite porous/nano-PCM system, *Applied Thermal Engineering* 167 (2020) 114777.
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83. X. Liu, H.I. Mohammed, A.Z. Ashkezari, **A. Shahsavari**, A.K. Hussein, S. Rostami, An experimental investigation on the rheological behavior of nanofluids made by suspending multi-walled carbon nanotubes in liquid paraffin, *Journal of Molecular Liquids* 300 (2020) 112269.
84. **A. Shahsavari**, J. Khosravi, H.I. Mohammad, P. Talebizadehsardari, Performance evaluation of melting/solidification mechanism in a variable wave-length wavy channel double-tube latent heat storage system, *Journal of Energy Storage* 27 (2020) 101063.
85. W. He, A.A. Barzinjy, S. Khanmohammadi, **A. Shahsavari**, M.A. Moghimi, M. Afrand, Multi-objective optimization of a photovoltaic thermal-compound sensible rotary heat exchanger system using exergo-economic and enviro-economic approaches, *Journal of Environmental Management* 254 (2020) 109767.
86. W. Liu, **A. Shahsavari**, A. Barzinjy, A.A.A.A. Al-Rashed, M. Afrand, Natural convection and entropy generation of a nanofluid in two connected inclined triangular enclosures under magnetic field effects, *International Communications in Heat and Mass Transfer* 108 (2019) 104309.
87. H. Wu, A.A.A.A. Al-Rashed, A.A. Barzinjy, **A. Shahsavari**, A. Karimi, P.T. Sardari, Curve-fitting on experimental thermal conductivity of motor oil under influence of hybrid nano additives containing multi-walled carbon nanotubes and zinc oxide, *Physica A* 535 (2019) 122128.

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89. **A. Shahsavar**, M.H. Baseri, A.A.A.A. Al-Rashed, M. Afrand, Numerical investigation of forced convection heat transfer and flow irreversibility in a novel heatsink with helical microchannels working with biologically synthesized water-silver nano-fluid, *International Communications in Heat and Mass Transfer* 108 (2019) 104324.
90. S. Du, A.A.A.A. Al-Rashed, M. Barzegar Gerdroodbary, R. Moradi, **A. Shahsavar**, P. Talebizadehsardari, Effect of fuel jet arrangement on the mixing rate inside trapezoidal cavity flame holder at supersonic flow, *International Journal of Hydrogen Energy* 44 (2019). 2231-2239.
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### **Conference papers:**

1. **A. Shahsavar**, P. Talebizadeh, H. Tabaei, PV/T air collectors with natural air flow operation: optimization using genetic algorithm and a case study, 10th International Conference on Sustainable Energy Technologies (SET2011), Istanbul, Turkey, 2011.
2. M. Gholampour, M., Ameri, **A. Shahsavar**, A theoretical study to investigate the effect of channel depth and collector length on the thermal performance of a direct-coupled PV/T air collector, The 16th Annual International Conference on Mechanical Engineering (ISME2011), Birjand, Iran, 2011.
3. **A. Shahsavar**, M. Salmanzadeh, M., Ameri, P. Talebizadeh, Evaluation of a combined heat and power generation system with PV solar panels for a building, The 2nd International Conference on Heating, Ventilating and Air Conditioning, Tehran, Iran, 2010.
4. **A. Shahsavar**, M. Ameri, M. Gholampour, Energy and exergy analysis of a photovoltaic-thermal (PV/T) collector with natural air flow, The 1st National Conference of Energy and Environment, Kerman, Iran, 2010.
5. **A. Shahsavar**, M. Ameri, Modeling of a direct-coupled PV/T air system, The 15th Annual International Conference on Mechanical Engineering (ISME2010), Tehran, Iran, 2010.
6. M. Ameri, M.M. Mahmoudabadi, **A. Shahsavar**, An experimental study on a PV/T air collector with direct coupling of fans and panels, The 7th National Energy Congress, Tehran, Iran, 2009.
7. **A. Shahsavar**, M. Ameri, M.M. Mahmoudabadi, Simulation of a photovoltaic-thermal (PV/T) collector with natural air flow, The 7th National Energy Congress, Tehran, Iran, 2009.
8. **A. Shahsavar**, M. Ameri, M.M. Mahmoudabadi, Simulation of the photovoltaic-thermal (PV/T) systems, The 14th Annual International Conference on Mechanical Engineering (ISME2009), Tehran, Iran, 2009.

### **Books:**

- [1] D. Toghraie, **A. Shahsavar**, M. Hekmatifar, Principles of writing scientific articles and scientometrics (advanced research method) - In Persian, Publisher: Pooyesh Andishe, 2021.
- [2] A.Z. Hamadani, **A. Shahsavar**, A., T. Rezvan, Design of Experiments (in Persian), Publisher: Isfahan University of Technology, 2018.

### **Awards and Honors:**

1. Ranked among the top 1 percent of most cited researchers in the world
2. Ranked among the 100,000 most-cited scientists in the world in 2020 and the top 2 percent of engineering sub-field.



3. Kermanshah University of Technology, Best Researcher Award For the year 2021.
4. Kermanshah University of Technology, Best Researcher Award For the year 2020.
5. Kermanshah University of Technology, Best Researcher Award For the year 2019.

#### **EDITORIAL BOARD MEMBERSHIPS**

1. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (SCI-Expanded), Taylor&Francis, Editorial Board Member, 2020-
2. Sigma Journal of Engineering and Natural Sciences (Emerging Sources Citation Index, ESCI), Yildiz Technical University, Editorial Board Member, 2021-
3. Journal of Advanced Thermal Science Research, Avanti Publishers, Editorial Board Member, 2021-
4. Energy Storage, Wiley, Guest Editor for the Special Issue on “Thermal management by phase change materials”, 2021-2022.
5. Applied Thermal Engineering, Elsevier, Guest Editor for the Special Issue on “Recent Advances in Liquid-cooled Heat Sinks”, 2021-2022.

#### **PROFESSIONAL EXPERIENCE**

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#### **TECHNICAL SKILLS**

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#### **LANGUAGES**

English: Proficient

Turkish: Fluent

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