

Samira Payan

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OBJECTIVES

I am interested to work broadly in the topics related to *Radiation Heat Transfer, Free Convection Heat Transfer, Mixed Convection Heat Transfer, Optimization in Heat Transfer Problems, Inverse Heat Transfer Problems, and Heat and Fluid flow in Heat Exchangers.*

ACADEMIC EXPERIENCES

Department of Mechanical Engineering, University of Sistan and Baluchestan, Zahedan, Iran

- Sep. 2018-Present. **Associate Professor in Mechanical Engineering**
- Sep. 2013-Sep. 2018. **Assistant Professor in Mechanical Engineering**

EDUCATION

2008-2013. **Ph.D., Mechanical Engineering**

University of Sistan and Baluchestan, Department of Mechanical Engineering, Zahedan, Iran

- Ph.D Dissertation Title: “Solution of Inverse Radiation Heat Transfer Problems in Non-Gray Media” – CGPA : 4/4

2005-2008. **M.Sc., Mechanical Engineering**

University of Sistan and Baluchestan, Department of Mechanical Engineering, Zahedan, Iran



- Graduate Thesis Title: “Inverse Boundary Design of a Square Enclosure with Combined Convection and Radiative Heat Transfer in Absorbing-Emitting Media” – CGPA : 4/4

2001-2005. **B.Sc., Mechanical Engineering**

University of Sistan and Baluchestan, Department of Mechanical Engineering, Zahedan, Iran

- Undergraduate Project Title: “Structural and Operational Investigations of the Boiler of Zahedan Gas Power Plant” – CGPA : 3.64/4

TEACHING EXPERIENCE:

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- Instructor - Heat Transfer 1 and 2 -4years-Sep. & Jan. 2013, 2014, 2015, 2016
 - Instructor - Radiative Heat Transfer-6 terms-Jan. 2014, 2015, 2016, 2017, 2018, 2019
 - Instructor -Transport Phenomena-2 terms-Jan. 2018, 2019
 - Instructor - Heat Transfer Laboratory-3 terms-Sep. 2017, 2018, Jan. 2018
 - Instructor - Heat Exchangers Design-1 term-Sep. 2013
 - Instructor - Advanced Heat Exchanger Design-1 term-Sep. 2015
 - Instructor - Fuel and Combustion-4 terms-Sep. 2013, 2014, Jan. 2016, 2017.

JOURNAL PUBLICATIONS ([Google Scholar Citation Profile](#))

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1. S. Parsaei, **S. Payan***, A. Payan, Semi-transient thermal analysis from MHD-Participating fluid into a square cavity with variable optical thickness, INTERNATIONAL JOURNAL OF THERMAL SCIENCES. (2021) 169 107072-1-107072-19. .(* Corresponding Author)
 2. M. Pakdaman, **S. Payan***, S. M. Hosseini Sarvari, S. Mohammadpour, Simultaneous reconstruction of nonlinear temperature-dependent properties in a 1D radiation-conduction medium, INTERNATIONAL COMMUNICATIONS IN HEAT AND MASS TRANSFER. (2020) 119 104983- 1-104983 -33
 3. **S. Payan***, S. A. Nada and A. M. Sarhaddi, Simultaneous optimization of the inclination angle of the cavity, length and position of the attached very conductive fin



- on the heat transfer from a rectangular enclosure, *Journal of Engineering Research*, Accepted, 10 Feb. 2020
4. I. Sarani , **S. Payan***, S. A. Nada and A. Payan, Numerical investigation of an innovative discontinuous distribution of fins for solidification rate enhancement in PCM with and without nanoparticles, *Journal of Applied Thermal Engineering*, Accepted, 27 Jan. 2020.
 5. M. Hosseini , A. Hatami and **S. Payan***, Comparison of the effect of laminar and turbulent flow regimes on thermal stresses and strains in an annular fin, *Journal of Mechanical Science and Technology*, vol. 34(1), pp. 413-424, 2020.
 6. M. Rafie Dindarloo, **S. Payan***, Effect of fin thickness, grooves depth, and fin attachment angle to the hot wall on maximum heat transfer reduction in a square enclosure, *International Journal of Thermal Sciences*, vol. 136, pp. 473-490, 2019.
 7. A. Nikoozadeh, A. Behzadmehr, **S. Payan**, Numerical investigation of turbulent heat transfer enhancement using combined propeller-type turbulator and nanofluid in a circular tube, *Journal of Thermal Analysis and Calorimetry*, <https://doi.org/10.1007/s10973-019-08578-x>, 11 July 2019.
 8. A. Payan, M. Fattahi, S. Jorfi, B. Roozbehani, **S. Payan***, Synthesis and characterization of titanate nanotube/single-walled carbon nanotube (TNT/SWCNT) porous nanocomposite and its photocatalytic activity on 4-chlorophenol degradation under UV and solar irradiation, *Applied Surface Science*, vol. 434, pp. 336-350, 2018.
 9. A. Azimifar, **S. Payan***, Optimization of characteristics of an array of thin fins using PSO algorithm in confined cavities heated from a side with free convection , vol. 110, pp. 1371-1388, 2017.
 10. A. Azimifar, **S. Payan***, Enhancement of heat transfer of confined enclosures with free convection using blocks with PSO algorithm, *Applied Thermal Engineering*, vol. 101, pp.79-91, 2016.
 11. **S. Payan***, A. Farahmand, SM. Hosseini Sarvari, Inverse boundary design radiation problem with radiative equilibrium in combustion enclosures with PSO algorithm, *International Communications in Heat and Mass Transfer*, vol. 68, pp.150-157, 2015.



12. AA. Shokouhi, **S. Payan**, A. Shokouhi, SM. Hosseini Sarvari, Inverse boundary design problem of turbulent forced convection between parallel plates with surface radiation exchange, *Heat Transfer Engineering*, vol. 36, pp. 488-497, 2015.
13. **S. Payan**, SM. Hosseini Sarvari, A. Behzadmehr, Reconstruction of temperature distribution in the combustion region of a non-gray medium, *Numerical Heat Transfer, Part A: Applications*, vol. 68, pp. 908-924, 2015.
14. **S. Payan**, SM. Hosseini Sarvari, A. Behzadmehr, Inverse boundary design radiation problem within combustion enclosures with absorbing-emitting non-gray media, *Numerical Heat Transfer, Part A: Applications*, vol. 65, pp. 1114-1137, 2014.
15. **S. Payan**, SM Hosseini Sarvari, A Behzadmehr, Inverse estimation of temperature profile in a non-gray medium with soot particles between two parallel plates, *Numerical Heat Transfer, Part A: Applications*, vol. 63, pp.31-45, 2013.
16. A. Farahmand, **S. Payan**, SM. Hosseini Sarvari, Geometric optimization of radiative enclosures using PSO algorithm, *International Journal of Thermal Sciences*, vol. 60, pp. 61-69, 2012.
17. **S. Payan**, S.M. Hosseini Sarvari, H. Ajam, Inverse Boundary Design of Square Enclosures with Natural Convection, *International Journal of Thermal Sciences*, , vol. 48, pp. 682–690, 2009.

OTHER RELEVANT PUBLICATIONS:

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1. **S. Payan***, F.Imani, M. Hosseini, The increase of efficiency of bundle of circular finned-tubes with change of shape and geometrical parameters in turbulent flow, *Journal of Fluid Mechanics and Aerodynamics*, vol. 8, pp. 95-111, 2019. .(* Corresponding Author)
 2. M. Pakdaman, **S. Payan***, SM. Hosseini Sarvari, S. Mohammadpour, Simultaneously reconstruction of radiation-conduction properties of nanomaterial thermal insulators with particle swarm optimization algorithm, *Amirkabir journal of mechanical*



engineering, Accepted, DOI:10.22060/MEJ.2019.14880.5966 , 2019.

3. S. Mohammadpour , **S. Payan***, The solution of the transient diffusion-radiation binary gas mixture problem in low pressure values between two flat plates at a gray medium DOI: 10.22060/MEJ.2018.14525.5875, 2019.
4. SA. Talebi , A. Behzadmehr, **S. Payan**, Numerical Analysis of Thermal Multilayer Insulations with carbon nanofiber spacers, *Journal of Mechanical Engineering*, Vol. 49, pp.145-154, 2019.
5. **S. Payan***, AR. Afshinian, Effect of insulated up and down lid motion on the heat transfer of a lid-driven cavity with an attached fin, *Iranian Journal of Mechanical Engineering Transactions of the ISME*, vol. 19, pp. 99-126, 2018.
6. M. Hosseini, A. Hatami, **S. Payan***, Impact of flow around annular fins on their thermal stresses and strains, *Amirkabir Journal of Mechanical Engineering*, Accepted Manuscript, 2018.
7. **S. Payan***, A. Azimifar, Minimization of Rate of Heat Transfer from Rectangular Cavities with Free Convection in Various Aspect Ratios for Finding Characteristics of an Array of Adiabatic Thin Fins by PSO Algorithm, *Amirkabir Journal of Mechanical Engineering*, vol. 50, pp. 97-98, 2017
8. N. Mehrjoy, **S. Payan***, Investigating the effect of radiation scattering and surface emission on combined convection heat transfer in an enclosure with moving insulation surface, *Amirkabir Journal of Mechanical Engineering*, Accepted Manuscript, 2017.
9. **S. Payan***, F. Imani, Enhancement of efficiency of circle tube banks using change of shape of tubes in a special row with turbulent flow, *Journal of Fluid Mechanics and Aerodynamic*, vol. 4, pp. 11-18, 2016.

CONFERENCE PAPERS:

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1. H. Altaf, A. Hossein Nezhad, **S. Payan**, Design of a vacuum furnace with a
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temperature of 2000 ° C using numerical methods, Thirds conference of torch and industrial furnaces, 2013.

2. A. Payan, **S. Payan**, A. Payan, The Suggestion of the use of acoustic pollution at industrial region in order to the remove of the Separation of bacterial spores from flowing water (a new Idea), the third national conference of energy and environment management, 2013
3. SA. Talebi, **S. Payan**, A. Behzadmehr, The numerical investigation of satellite multi layers insulators , the third international conference of new approach in conservation of energy (ETEC), 2013
4. A. Payan, **S. Payan**, A. Payan, The suggestion of the use of acoustic pollution in benefit applications, 22th annual international of Iran mechanical engineering, university of shahid chamran ahvaz, ahvaz, 2014
5. A. Pormir, **S. Payan**, The effect of oil pollutions on the sea creatures in Persian Golf and feasibility study summation of Sedimentation high oil concluded from deposited oil in Golf Persian, 10th national conference scientific research Persian Golf , 2014.
6. A. Badakhsh, **S. Payan**, M. Haj Hassan Arez, The investigation of the increase of annual CO₂ at the environment from the cars productions in Iran, the 1th international conference and online of green economic, 2014.
7. A. Badakhsh, **S. Payan** ,Investigation of enhancement of Uf/DP ratio in a shell and tube heat exchanger by change of effective parameters in the optimal space of baffles, 2th national conference of heat and mass transfer, October, 2014.
8. S. Nakhaei, **S. Payan**, Investigation of lift and drag coefficients on the hexagonal cross sections in two states exposed to the laminar water flow with various attack angles, 14th Iran hydraulic conference, shahid nikbakht faculty of engineering, Zahedan, 2015
9. F. Imani, **S. Payan**, Enhancement of heat transfer coefficient to friction coefficient ratio for tubular tubes bank with shape change of a row used in constructed heat exchangers with turbulent flow, 24th annual international mechanical engineering



conference, Iran, Yazd, 2016.

10. Y. Gorgig, **S. Payan**, Enhancement of heat transfer coefficient to pressure drop ratio for tubular tubes bank with shape change of a row used in constructed heat exchangers with laminar flow, 24th annual international mechanical engineering conference, Iran, Yazd, 2016.
11. A. Azimifar, **S. Payan**, optimization characteristics of thin fins array in closed cavities with natural convection in various aspect ratios using Particle Swarm Optimization algorithm, 1th international conference of research new achievements in mechanic, mechatronic, biomechanics, Tehran, Iran, 2016.
12. AH. Sarhaddi, **S. Payan**, Using of Improved particle swarm algorithm in inverse boundary design of radiative cavities, 1th international conference of research new achievements in mechanic, mechatronic, biomechanics, Tehran, Iran, 2016
13. S. Akhavanfar, **S. Payan**, investigation of the effect of roll resistance coefficient of tire on the stability of cars and fuel consumption, 1th international conference of research new achievements in mechanic, mechatronic, biomechanics, Tehran, Iran, 2016.

RESEARCH LAYOUT:

National research plan:

- Effect of radiative equilibrium on inverse boundary design problems in regular and irregular geometries contains non-gray gases

AWARDS & HONORS:

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- Invited reviewer for the Journal of Applied Thermal Engineering, Journal of heat transfer engineering, Applied Mathematics, Energy Conversion and Management and Asian Journal of Heat Transfer.



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- Top student of B.Sc., M. Sc., and Ph.D. at the University of Sistan and Baluchestan in department of mechanical engineering.
 - Top researcher in department of mechanical engineering at University of Sistan and Baluchestan at Dec. 2019.

COMPUTER SKILLS:

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- Fortran 90, Aspen Plus, Ansys Fluent, Open foam, Microsoft Office

