



Siamak Hosseinzadeh

About me: Curriculum ai fini della pubblicazione in ottemperanza all'art.15 del D.Lgs. 33/2013

● EDUCATION AND TRAINING

03/2019 - 03/2021 - Pretoria, South Africa
POSTDOCTORAL FELLOWSHIP – University of Pretoria

09/2014 - 08/2017 - West Tehran Branch, Tehran, Iran
PH.D. (TOP GRADUATE OF THE UNIVERSITY) – Azad Tehran University

● WORK EXPERIENCE

03/2019 - 03/2021 - Pretoria, South Africa
RESEARCH ASSISTANT PROFESSOR – UNIVERSITY OF PRETORIA

2019 - 2021 - Pretoria, South Africa
ENGINEER RESEARCHER – ESKOM POWER PLANT ENGINEERING INSTITUTE (EPPEI)

2020 - 2021 - Pretoria, South Africa
HIGHER EDUCATION ASSISTANT RESEARCHER – FUTURE AFRICA AT THE UNIVERSITY OF PRETORIA, UNICEF FUNDED BUILDING PROGRAMME

2011 - 2019 - Tehran, Iran
LECTURER IN MECHANICAL ENGINEERING – AZAD TEHRAN UNIVERSITY

Assistant Professor and Supervisor, 2017 - 2019.
Lecturer & Project Supervisor of University, Level 2/3, 2011 - 2019.

2014 - 2019 - Tehran, Iran
EDUCATIONAL SCHOLAR – RESEARCHER FROM YOUNG RESEARCHERS AND ELITE CLUB

2020 - 2022 - Lausanne, Switzerland
EDITORIAL DIRECTOR – FRONTIERS IN MECHANICAL ENGINEERING

2020 - 2020 - Poland
RESEARCH GRANTS ADMINISTRATOR – THE NATIONAL SCIENCE CENTRE OF POLAND (NARODOWE CENTRUM NAUKI)

2020 - 2020 - Chile



RESEARCH GRANTS ADMINISTRATOR – NATIONAL FUND FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT OF CHILE (FONDECYT)

2015 - 2019 - Sary, Iran

POWER PLANT SUPERVISOR – MECHANICAL TECHNICAL ADVISER FOR INCINERATION PLANT, MUNICIPALITY OF SAY, MAZANDARAN

2014 - 2019 - Sary, Iran

MECHANICAL ENGINEERING CONSULTANT – DESIGNER AND SUPERVISOR OF CONSTRUCTION, ENGINEERING ORGANIZATION OF MAZANDARAN PROVINCE

2016 - 2019 - Sary, Iran

GAS DISTRIBUTION ENGINEERING CONSULTANT – HOME GAS INSPECTION - BUILDING ENGINEERING SYSTEM, ENGINEERING ORGANIZATION OF MAZANDARAN PROVINCE

2008 - 2019 - Tehran, Iran

OFFICE COORDINATOR – HEAD OF ENGINEER, NOGOSTARAN CONSTRUCTION INSTALLATION COMPANY

BOOK EDITOR AND PUBLISHER – ADVANCES IN DESIGN, SIMULATION AND MANUFACTURING I & II & III

MANUSCRIPTS EDITORIAL DIRECTOR – LECTURE NOTES IN MECHANICAL ENGINEERING, SPRINGER

EDITORIAL INTERN – JOURNALS

Smart and Sustainable Built Environment
Journal of Thermal Engineering
Journal of Combustion
Journal of Energy
World Journal of Engineering
SN Applied Sciences
International Journal of Renewable Energy Development
International Journal of Nanoelectronics and Materials
Engineering Reports
Environmental and Earth Sciences Research Journal
Progress in Energy and Environment

● PROJECTS

2020 - 2021

6E Analysis of Thermal Power Plant in South Africa

2019 - 2021

Fluid-Thermal-Structural Modeling of FWH Heat EX

2020 - 2021

Climate Change (UNICEF Building Programme)



2019 - 2020
CFD Development of Coupled 1D/3D Thermal Flow

2018 - 2020
Experimental Airfoil in an Equipped Wind Tunnel

2018 - 2019
Modeling and Optimizing MED Desalination Sys.

2018 - 2019
Thermal Analysis of Porous Fins Enclosure

2017 - 2018
Analyze of Thermal Energy Storage in Multiple PCM

2017 - 2018
Sensitivity Analysis of Combined Solar Power Plant

2016 - 2019
Manufacturing Smart Window (Elechthrochromic)

2017 - 2019
Simulation of Solar Water Heater for an Aviculture

2017 - 2019
Designing-Modeling Solar System for ZEBs in Iran

2017 - 2018
Analysis Non-Fourier Heat Transfer in Solid Cylinder

2014 - 2015
Designing and Manufacturing a Diver Helper

2013 - 2014
Designing and Manufacturing of a Gas Water Heater

2012 - 2013
Manufacturing Gas Refueling System (LPG)

2009 - 2011
Designing Thermal Laser to Destroy Tumor Tissue

2008 - 2010
Analysis Non-Fourier Temp. Field in Hollow Sphere

2008 - 2009
Analysis of Greenhouses with Solar Roof



2007 - 2008

Designing Respiratory System with Portable Heaters

2006 - 2007

Design of a Water Supply Plant for Amol City, Iran

● LANGUAGE SKILLS

Mother tongue(s): PERSIAN

Other language(s): ENGLISH

● DIGITAL SKILLS

CFD | Heat transfer | Thermal Engineering | Solar Energy | Renewable Energy | Energy | Smart Composite materials | Nanotechnology | Fluent (Ansys CFD) | ANSYS Mechanical | MATLAB&Simulink | Matalb | Phytoon | Comsol Multiphysics | Splara software capability software | HOMER Energy | Fluid Mechanics | Thermodynamics | XRD, VSM, RF Heating Responce Unit, SEM, FTIR, | Nano | Smart Devices | Electrochemical Analysis

● HONOURS AND AWARDS

03/2019

Postdoctoral Fellowship – University of Pretoria

<https://www.up.ac.za/mechanical-and-aeronautical-engineering/article/48434/staff>

2020

Top and Excellent reviewer

<https://publons.com/researcher/1719575/siamak-hoseinzadeh/>

2017

Top graduate (Ph.D.) of the University – Azad Tehran University

<https://www.ana.press/news/214629>

● NETWORKS AND MEMBERSHIPS

Member of ISME (Iranian Society of Mechanical Engineers)

Iran

Member of Iranian Organization for Engineering Order of Building

Mazandaran, Sary, Iran

Member of Young Researchers and Elite Club

Tehran, Iran



Iran

● PUBLICATIONS

S. Hoseinzadeh and P. S. Heyns, Advanced Energy, Exergy and Environmental (3E) Analyses and Optimization of a Coal-Fired 400 MW Thermal Power Plant. *Journal of Energy Resources Technology*.

<https://doi.org/10.1115/1.4048982>

H. Azad Gilani, S. Hoseinzadeh, Techno-economic comparison of compound parabolic collector and flat plate collector in solar water heating systems in the northern hemisphere, *Applied Thermal Engineering*. 116756 (2021).

<https://doi.org/10.1016/j.applthermaleng.2021.116756>

A. Sohani, S. Hoseinzadeh, K. Berenjkari, Experimental analysis of innovative designs for solar still desalination technologies; An in-depth technical and economic assessment. *Journal of Energy Storage*. 33, 101862 (2021).

<https://doi.org/10.1016/j.est.2020.101862>

S. Hoseinzadeh, P. S. Heyns, A. Sohani, Comprehensive analysis of the effect of air injection on the wake development of an airfoil, *Ocean Engineering*. 220, (2021).

<https://doi.org/10.1016/j.oceaneng.2020.108455>

H. Jordaan, P.S. Heyns, S. Hoseinzadeh. Numerical Development of a Coupled 1D/3D CFD Method for Thermal Analysis with Flow Maldistribution, *Journal of Thermal Science and Engineering Applications*. 13(4), 041017 (2021).

<https://doi.org/10.1115/1.4049040>

T. Ghanbari Ashrafi, S. Hoseinzadeh, A. Sohani, M. H. Shahverdi, Applying homotopy perturbation method to provide an analytical solution for Newtonian fluid flow on a porous flat plate. *Math Meth Appl Sci*. (2021).

<https://doi.org/10.1002/mma.7238>

S. Hoseinzadeh, P. S. Heyns, Thermo-structural fatigue and lifetime analysis of a heat exchanger as a feedwater heater in power plant. *Engineering Failure Analysis*. 113, 104548 (2020).

<https://doi.org/10.1016/j.engfailanal.2020.104548>

S. Hoseinzadeh, M. H. Ghasemi and P. S. Heyns, Application of hybrid systems in solution of low power generation at hot seasons for micro hydro systems. *Renewable Energy*. 160, 323-332 (2020).

<https://doi.org/10.1016/j.renene.2020.06.149>

S. Hoseinzadeh, R. Yargholi, H. Kariman, P. S. Heyns, Exergoeconomic analysis and optimization of reverse osmosis desalination integrated with geothermal energy. *Environmental Progress & Sustainable Energy*. 39(5), e13405 (2020).

<https://doi.org/10.1002/ep.13405>



S. Hoseinzadeh, R. Ghasemiasl, M. A. Javadi, P. S. Heyns, Performance evaluation and economic assessment of a gas power plant with solar and desalination integrated systems. *Desalination and Water Treatment*. 174, 11–25 (2020).

<https://doi.org/10.5004/dwt.2020.24850>

H. Kariman, S. Hoseinzadeh, P. S. Heyns, A. Sohani, Modeling and Exergy Analysis of Domestic MED Desalination with Brine Tank. *Desalination and Water Treatment*. 197, 1-13 (2020).

<https://doi.org/10.5004/dwt.2020.26105>

R. Yargholi, H. Kariman, S. Hoseinzadeh, M. Bidi, A. Naseri, Modeling and advanced exergy analysis of integrated reverse osmosis desalination with geothermal energy. *Water Supply*. 20, 984-996 (2020).

<https://doi.org/10.2166/ws.2020.021>

A. Javadi, S. Hoseinzadeh, R. Ghasemiasl, P. S. Heyns, A. J. Chamkha, Sensitivity Analysis of Combined Cycle Parameters on Exergy, Economic, and Environmental of a Power Plant, *Journal of Thermal Analysis and Calorimetry*. 139, 519–525 (2020).

<https://doi.org/10.1007/s10973-019-08399-y>

H. Ramezani, S. Hoseinzadeh, Zh. Ebrahimejad M.R. Hantehzadeh, M. Shafiee, Investigation the effect of Nitrogen ion-implantation on mechanical and statistical properties of Tantalum bulk, *Optik*, 225, 165628 (2021).

<https://doi.org/10.1016/j.ijleo.2020.165628>

. SA. Rozati, F. Montazerifar, O. Ali Akbari, S. Hoseinzadeh. et al. Natural convection heat transfer of water/Ag nanofluid inside an elliptical enclosure with different attack angles. *Math Meth Appl Sci*. (2020).

<https://doi.org/10.1002/mma.7036>

S. Hoseinzadeh, A. Bahrami, S. M. Mirhosseini, A. Sohani, S. Heyns, A detailed experimental airfoil performance investigation using an equipped wind tunnel. *Flow Measurement and Instrumentation*. 72, 101717 (2020).

<https://doi.org/10.1016/j.flowmeasinst.2020.101717>

S. Hoseinzadeh, A. Sohani, Samiezadeh, M. H. Ghasemi, H. Kariman, Using computational fluid dynamics for different alternatives water flow path in a thermal photovoltaic (PVT) system, *International Journal of Numerical Methods for Heat and Fluid Flow* (2020).

<https://doi.org/10.1108/HFF-02-2020-0085>

M. H. Ghasemi, S. Hoseinzadeh, P. S. Heyns, D. N. Wilke, Numerical analysis of non-fourier heat transfer in a solid cylinder with dual-phaselag phenomenon. *CMES - Computer Modeling in Engineering and Sciences*. 122, 399–414 (2020).

<https://doi.org/10.32604/cmes.2020.07827>

Salehi, M., Pourmahmoud, N., Hassanzadeh, A., Hoseinzadeh, S and Heyns, P.S. Computational fluid dynamics analysis of the effect of throat diameter on the fluid flow and performance of ejector. *International Journal of Numerical Methods for Heat & Fluid Flow*. 31(3), 733-752 (2020).

<https://doi.org/10.1108/HFF-12-2019-0871>



H. Ramezani, S. Hoseinzadeh, Zh. Ebrahimejad, Statistical and fractal analysis of nitrogen ion implanted tantalum thin films. *Applied Physics A*. 126 (2020).

<https://doi.org/10.1007/s00339-020-03671-7>

H. Ramezani, S. Hoseinzadeh, Zh. Ebrahimejad, S. F. Masoudi, A. Hashemizadeh, Spin-Polarized Electron Transfer in Multilayers with Different Types of Rough Interfaces. *Journal of Superconductivity and Novel Magnetism*. 33, 1513–1519 (2020).

<https://doi.org/10.1007/s10948-019-05335-x>

H. Ramezani, S. Hoseinzadeh, Zh. Ebrahimejad, Structural and mechanical properties of tantalum thin films etched by nitrogen ion implantation. *Modern Physics Letters B*. 34(15), 2050163 (2020).

<https://doi.org/10.1142/S0217984920501638>

S. Hoseinzadeh, M. H. Zakeri, A. Shirkhani, A. J. Chamkha, Analysis of energy consumption improvements of a zero-energy building in a humid mountainous area. *Journal of Renewable Sustainable Energy*. 11, 015103 (2019).

<https://doi.org/10.1063/1.5046512>

H. Kariman, S. Hoseinzadeh, P. S. Heyns, Energetic and exergetic analysis of evaporation desalination system integrated with mechanical vapor recompression circulation. *Case Studies in Thermal Engineering*. 16, 100548 (2019).

<https://doi.org/10.1016/j.csite.2019.100548>

S. Hoseinzadeh, Thermal Performance of Electrochromic Smart Window with Nanocomposite Structure under Different Climates in Iran. *Micro and Nanosystems*. 11, 154–164 (2019).

<https://doi.org/10.2174/1876402911666190218145433>

S. Hoseinzadeh, P. S. Heyns, A. J. Chamkha, A. Shirkhani, Thermal analysis of porous fins enclosure with the comparison of analytical and numerical methods. *Journal of Thermal Analysis and Calorimetry*. 138, 727–735 (2019).

<https://doi.org/10.1007/s10973-019-08203-x>

S. Hoseinzadeh, H. Kariman, P. S. Heyns, Numerical investigation of heat transfer of laminar and turbulent pulsating Al₂O₃/water nanofluid flow. *International Journal of Numerical Methods for Heat and Fluid Flow*. 30(3), 1149-1166 (2019).

<https://doi.org/10.1108/HFF-06-2019-0485>

S. Hoseinzadeh, A. Moafi, A. Shirkhani, A. J. Chamkha, Numerical Validation Heat Transfer of Rectangular Cross-Section Porous Fins. *Journal of Thermophysics and Heat Transfer*. 33 (2019).

<https://doi.org/10.2514/1.T5583>

S. Hoseinzadeh, S. M. T. Otaghsara, M. H. Z. Khatir, P. S. Heyns, Numerical investigation of thermal pulsating alumina/water nanofluid flow over three different cross-sectional channel. *International Journal of Numerical Methods for Heat and Fluid Flow*. 30(7), 3721-3735 (2019)

<https://doi.org/10.1108/HFF-09-2019-0671>



Bahrami, S. Hoseinzadeh, P. S. Heyns, S. M. Mirhosseini, Experimental investigation of co-flow jet's airfoil flow control by hot wire anemometer. *Review of Scientific Instruments*. 90 (2019).

<https://doi.org/10.1063/1.5113592>

Sohani, M. Zamani Pedram, S. Hoseinzadeh, Determination of Hildebrand solubility parameter of pure 1-alkanols up to high pressures. *Journal of Molecular Liquids*. 297 (2019).

<https://doi.org/10.1016/j.molliq.2019.111847>

T. Barbaryan, S. Hoseinzadeh, P. S. Heyns, M. S. Barbaryan, Developing a low-fluid pressure safety valve design through a numerical analysis approach. *International Journal of Numerical Methods for Heat and Fluid Flow*. 30, 1427–1440 (2019).

<https://doi.org/10.1108/HFF-06-2019-0508>

S. Hoseinzadeh, A. H. Ramezani, Investigation of Ta/NiI-WO₃/FTO Structures as a Semiconductor for the Future of Nanodevices, *Journal of Nanoelectronics and Optoelectronics*. 14, 1413-1419 (2019).

<https://doi.org/10.1166/jno.2019.2564>

S. Hoseinzadeh, A. H. Ramezani, Tantalum/ Nitrogen and n-type WO₃ Semiconductor/FTO Structures as a Cathode for the Future of Nanodevices. *Journal of Nanostructures*. 9, 276-286 (2019).

<https://doi.org/10.22052/JNS.2019.02.010>

S. Hoseinzadeh, R. Ghasemiasl, A. Bahari, A.H. Ramezani, Effect of Postannealing on the Electrochromic Properties of Layer-by-Layer Arrangement FTO-WO₃-Ag-WO₃-Ag, *Journal of Electronic Material*. 47, 3552–3559 (2018).

<https://doi.org/10.1007/s11664-018-6199-4>

S. Hoseinzadeh, R. Ghasemiasl, D. Havaei, A.J. Chamkha, Numerical investigation of rectangular thermal energy storage units with multiple phase change materials, *Journal of Molecular Liquids*. 271, 655-660 (2018).

<https://doi.org/10.1016/j.molliq.2018.08.128>

R. Ghasemiasl, S. Hoseinzadeh, M. A. Javadi, Numerical Analysis of Energy Storage Systems Using Two Phase-Change Materials with Nanoparticles. *Journal of Thermophysics and Heat Transfer*. 32, 440–448 (2018).

<https://doi.org/10.2514/1.T5252>

H. Najafi-Ashtiani, A. Bahari, S. Gholipour, S. Hoseinzadeh, Structural, optical and electrical properties of WO₃-Ag nanocomposites for the electro-optical devices, *Applied Physics A*. 124(24), (2018).

<https://doi.org/10.1007/s00339-017-1412-5>

H. Kohzadi, A. Shadaram, S. Hoseinzadeh, Improvement of the Centrifugal Pump Performance by Restricting the Cavitation Phenomenon, *CHEMICAL ENGINEERING TRANSACTIONS*. 71 (2018).

<https://doi.org/10.3303/CET1871229>

M. E. Yousef Nezhad, S. Hoseinzadeh, Mathematical Simulation and Optimization of a Solar Water Heater for an Aviculture Unit Using MATLAB/SIMULINK, *Journal of Renewable Sustainable Energy*. 9, 063702 (2017).

<https://doi.org/10.1063/1.5010828>



S. Hoseinzadeh, R. Azadi, Simulation and optimization of a solarassisted heating and cooling system for a house in Northern of Iran. *Journal of Renewable Sustainable Energy*. 9, 045101 (2017).

<https://doi.org/10.1063/1.5000288>

S. Hoseinzadeh, S. A. R. Sahebi, R. Ghasemiasl, A. R. Majidian, Experimental analysis to improving thermosyphon (TPCT) thermal efficiency using nanoparticles/based fluids (water). *European Physical Journal Plus*. 132(197), (2017).

<https://doi.org/10.1140/epjp/i2017-11455-3>

S. Hoseinzadeh, R. Ghasemiasl, A. Bahari, A. H. Ramezani, The injection of Ag nanoparticles on surface of WO₃ thin film: Enhanced electrochromic coloration efficiency and switching response, *Journal of Materials Science: Materials in Electronics*. 28, 14855–14863 (2017).

<https://doi.org/10.1007/s10854-017-7306-7>

S. Hoseinzadeh, R. Ghasemiasl, A. Bahari, A. H. Ramezani, n-type WO₃ semiconductor as a cathode electrochromic material for ECD devices, *Journal of Materials Science: Materials in Electronics*. 28, 14446– 14452 (2017).

<https://doi.org/10.1007/s10854-017-7357-9>

Bahrami, S. Hosseinzadeh, R. Ghasemiasl, M. Radmanesh, Solution of Non-Fourier Temperature Field in a Hollow Sphere under Harmonic Boundary Condition. *Applied Mechanics and Materials*. 772, 197–203 (2016).

<https://doi.org/10.4028/www.scientific.net/AMM.772.197>

S. Hosseinzadeh, A. Yari, E. Abbasi, F. Absalan. The Numerical Study of Channel Flow in Turbulent Free Convection with Radiation and Blowing. *International Journal of Recent advances in Mechanical Engineering*. 3, 11-26 (2014).

<https://doi.org/10.14810/ijmech.2014.3202>

● CONFERENCES AND SEMINARS

2015 - ASME. AJKFluids2015

Yari, S. Hosseinzadeh, A. A. Golneshan, R. Ghasemiasl, Numerical simulation for thermal design of a gas water heater with turbulent combined convection, ASME. AJKFluids2015-3305, V001T03A007 (2015).

<https://doi.org/10.1115/AJKFluids2015-3305>



● VOLUNTEERING

REVIEWER

- Renewable and Sustainable Energy Reviews
- Energy Conversion and Management
- International Journal of Heat and Mass Transfer
- Sustainable Cities and Society
- Fuel Processing Technology
- Journal of Molecular Liquids
- International Communications in Heat and Mass Transfer
- Journal of Physics and Chemistry of Solids
- Journal of Thermal Analysis and Calorimetry
- Applied Nanoscience
- Clean Technologies and Environmental Policy
- Journal of Materials Science: Materials in Electronics
- International Journal of Thermophysics
- Applied Solar Energy
- International Journal of Energy Research
- Mathematical Methods in the Applied Sciences
- Environmental Progress and Sustainable Energy
- Engineering Reports
- Journal of Thermal Science and Engineering Applications
- International Journal of Numerical Methods for Heat & Fluid
- Smart and Sustainable Built Environment
- Heat Transfer Engineering
- Modern Physics Letters B
- Journal of Building Physics