Alireza SARMADIAN

DATE OF BIRTH: 7^{th} OF MAY, 1991

Department of Engineering and Design, University of Sussex, Brighton BN1 9QT, UK
MOBILE: (+44) 7862-753830
GMAIL: alireza.sarmadian1991@gmail.com
EMAIL: a.sarmadian@sussex.ac.uk

EDUCATION

SEP. 2018- PRESENT — **PhD Research Scholar** in ENGINEERING AND DESIGN
School of Engineering and Informatics, **University of Sussex**, Brighton, UK
Thesis: "Thermal management of an evaprative spray cooling system for ICEs and automotive electrical and electronic powertrain components"
| Supervisor: Prof Julian DUNNE

AUG. 2016 — **M.Sc.** in AEROSPACE ENGINEERING, DISTINCTION
Faculty of New Sciences and Technologies, **University of Tehran**, Tehran, Iran
Thesis: "Condensation Heat Transfer, Pressure Drop, and Flow visualization Characteristics of R-600a in Horizontal Smooth and Helically Dimpled Tubes"
| Supervisor: Dr Maziyar SHAFAEE, GPA: 3.72/4

AUG. 2014 — **B.Sc.** in MECHANICAL ENGINEERING, FIRST
School of Mechanical Engineering, **Shahid Bahonar University of Kerman**, Iran
Thesis: "Design and Optimization of Desalination Systems" (Grade: 19/20)
| Supervisor: Prof Mehran AMERI

WORK EXPERIENCE

FEB. 2019- PRESENT — Doctoral Tutor
DEPARTMENT OF ENGINEERING AND DESIGN, UNIVERSITY OF SUSSEX

- Modules: Engineering Thermodynamics, Programming for Engineers, Engine Technology, Control Engineering, Engineering Maths, Thermal power cycles, Computer Aided Design and Modelling, and Finite Elements Analysis.
- Provided students with the support required for carrying out simulations and calculations. Responsible for marking assignments and providing students with necessary feedback.

NOV. 2016- MAR. 2018 — Research Assistant
FACULTY OF NEW SCIENCES AND TECHNOLOGIES, UNIVERSITY OF TEHRAN

- Designed research projects involving heat and mass transfer for three graduates' dissertations; **modelling**, **simulation** and **experiments**.
- Developed research schedules and provided guidance throughout projects.
- Supported mentees through presentations, group and individual tutorials including **CAD CAM**, **ANSYS FLUENT** and **Test rig** demonstrations.

APR. 2016- OCT. 2016 — Research and Development Engineer at PISHRAN NOVIN ASEMAN, Tehran
HYDRAULIC VALVE DESIGN AND MANUFACTURING

- Conceptual design of industrial solenoid valves and became familiar with valve selection based on standards such as API and ASTM, and test procedures.
- Analysis of flow and thermodynamics by means of analytical calculations as well as FEA and CFD simulations.
- Liaising regularly with clients, sub-contractors, vendors and project stakeholders.

SUMMER 2014 — Summer Internship at NATIONAL IRANIAN GAS COMPANY, Fars, Shiraz
SUMMER 2013 — Summer Internship at IRAN KHODRO DIESEL COMPANY, Fars, Shiraz

Publications

May 2021	"An experimentally-verified temperature control simulation model for spray evaporative cooling of vibrating powertrain parts. J. Thalackottore-Jose, **A Sarmadian**, J. F. Dunne, C. A. Long, J-P Pirault, Cedric Rouaud **Int. J. Heat Mass Transf, 170: 121041**
Dec. 2020	"Flow boiling heat transfer and pressure drop characteristics of Isobutane in horizontal channels with twisted tapes." **A Sarmadian**, HA Moghaddam, A Asnaashari, HAN Joushani, M Moosavi, MS Islam, SC Saha, M Shafaee **Int. J. Heat Mass Transf, 162: 120345**
Oct. 2020	"Heat flux correlation models for spray evaporative cooling of vibrating surfaces in the nucleate boiling region." **A Sarmadian**, J. F. Dunne, C. A. Long, J. Thalackottore-Jose, J-P Pirault, Cedric Rouaud **Int. J. Heat Mass Transf, 160: 120159**
Aug. 2020	"The effect of surface vibration on spray evaporative cooling." **A Sarmadian**, J. F. Dunne, C. A. Long, J-P Pirault, J. Thalackottore-Jose, Cedric Rouaud **Proceedings of the 7th International Conference on Fluid Flow, Heat and Mass Transfer**
Jun. 2020	"Condensation heat transfer and pressure drop characteristics of Isobutane in horizontal channels with twisted tape inserts." HA Moghaddam, **A Sarmadian**, A Asnaashari, HAN Joushani, MS Islam, SC Saha, G Ghasemi, M Shafaee **International Journal of Refrigeration, 107: 20-30**
Feb. 2020	"Flow pattern maps, pressure drop and performance assessment of horizontal tubes with coiled wire inserts during condensation of R-600a." HA Moghaddam, **A Sarmadian**, M Shafaee, H Enayatollahi, **Int. J. Heat Mass Transf, 148: 119062**
Nov. 2019	"Pressure loss and performance assessment of horizontal spiral coil inserted pipes during forced convective evaporation of R-600a." F Alimardani, HA Moghaddam, **A Sarmadian**, M Shafaee, **International Journal of Refrigeration, 107: 20-30**
Aug. 2019	"An experimental study on condensation heat transfer characteristics of R-600a in tubes with coiled wire inserts." HA Moghaddam, **A Sarmadian**, M Shafaee **Applied Thermal Engineering, 159: 113889**
Sep. 2017	"Condensation Heat Transfer and Pressure Drop Characteristics of R600a in Horizontal Smooth and Helically Dimpled Tubes." **A Sarmadian**, M Shafaee, H Mashouf, SG Mohseni **Experimental Thermal and Fluid Science, 86: 54-62.**
Sep. 2017	"Visual study of flow patterns during evaporation and condensation of R-600a inside horizontal smooth and helically dimpled tubes." H Mashouf, M Shafaee, **A Sarmadian**, SG Mohseni, **Applied Thermal Engineering, 124: 1392-1400**
Jul. 2017	"Discovering an empirically new relation and obtaining the flow pattern map for dimpled tubes in two-phase flow for refrigerant R600-a." A Vahabi, M. Shafaee, **A Sarmadian**, H Mashouf, **Modares Mechanical Engineering, 17: 39-48.** (in Farsi)
Aug. 2016	"Evaporation heat transfer and pressure drop characteristics of R-600a in horizontal smooth and helically dimpled tubes." M Shafaee, H Mashouf, **A Sarmadian**, SG Mohseni, **Applied Thermal Engineering, 107: 28-36.**

Teaching Experience

Semester-1 2020/21	**Doctoral Tutor**, Design for Manufacture for Product Design, **Labs**, Dr Giovanni Contreras Garcia Control Engineering, **Labs and practicals**, Dr Alaa Hussein Programming for Engineers (Graduates), **Workshop**, Dr Dmitrijs Dmitrenko Programming for Engineers (Undergrads), **Lab and Workshop**, Dr Kun Liang
Semester-2 2019/20	**Doctoral Tutor**, Systems Analysis and Control, **Workshop**, Dr Bao Kha Nguyen Computer Aided Design and Modelling, **Labs**, Dr Kun Liang (CAD), and Dr Yevgen Petrov (FEA) Engineering Thermodynamics, **Workshop and lab**, Dr Esra Sorguven Thermal power cycles, **Jet Engine Lab**, Mr Harri Koivisto
Semester-1 2019/20	**Associate Tutor**, Engineering Maths, **Workshop**, Dr Carole Becker Control Engineering, **Lab and practicals**, Dr Alaa Hussein Engine Technology, **Lab**, Dr Arash Dizqah, Prof Peter Fussey Programming for Engineers (Graduates), **Workshop**, Dr Ronald Grau Programming for Engineers (Undergrads), **Lab**, Dr Kun Liang
Semester-2 2018/19	Engineering Thermodynamics, **Lab**, Dr William Wang School of Engineering and Informatics, University of Sussex
Spring 2015	**Teaching Assistant**, Advanced Maths, **Workshop**, Dr Roham Rafiee Faculty of New Sciences and Technologies, University of Tehran

Awards and Patents

Chancellor's International Research Scholarship (CIRS) 2018; Doctoral School, University of Sussex, Falmer House, Brighton BN1 9QF, United Kingdom

Sarmadian, Alireza; Mashouf, Hooman; Shafaee, Maziyar. 2017. Helically Dimpled Enhanced Heat Transfer Tube. Iran Intellectual Property Office, Patent 91320, filed June 5, 2016, and issued February 18, 2017.

Membership and Service

Nov. 2019- Present	Reviewer International Journal of Heat and Mass Transfer, Elsevier

Skills

Courses:	Starting to Teach | Associate Fellow of the Higher Education Academy (**AFHEA**) Piping (PDMS) and Welding (MIG, TIG, and STICK) CFD (Finite Difference and Finite Volume) Working Safely | Institution of Occupational Safety and Health (Crawley College) Emergency First Aid At Work (RFQ) | QA Level 3 (Posturite Ltd) - Including Management of Catastrophic Bleeding Risk Assessment Training | Univerisy of Sussex LabVIEW Core 1 | NI customer Education
Software:	LabVIEW, EES (Engineering Equation Solver), REFPROP | NIST, Ansys (APDL, Fluent and ICEM), COMSOL, SimScale and STAR-CCM+
Programming:	Expert in MATLAB, **LabVIEW (FPGA)**, familiar with Fortran, C and C++

Languages

English:	Advanced
Farsi:	Native

Academic Interests

Thermal Management and control, Heat transfer augmentation, Two-phase flow, Flow visualization, Micro-channels, Heat sinks, Heat pipes Microfluidics, Lab-on-a-chip devices, and MEMS

Activities

Physical Fitness, Basketball, Swimming, Travelling

References

Prof Julian Dunne (J.F.Dunne@sussex.ac.uk), Tel:+44-1273-872570
Dr Christopher Long (C.A.Long@sussex.ac.uk), Tel:+44-1273-678967
Department of Engineering and Design, School of Engineering and Informatics,
University of Sussex, Brighton, UK
Dr Soheil Jafari (S.Jafari@cranfield.ac.uk), Tel:+44-1234-750111 x5106
Centre for Propulsion Engineering, School of Aerospace Transport and Manufacturing
Cranfield University, Bedfordshire MK43 0AL, UK
Dr Ro. Rafiee (roham.rafiee@ut.ac.ir) Tel: +98-21-8609-3046, Fax: +98-21-8977-41-88
Dr M. Shafaee (mshafaee@ut.ac.ir), Tel: +98-919-0110200, Fax: +98-21-88497324
Faculty of New Sciences and Technologies, University of Tehran, Tehran
Dr S.G. Mohseni (smohseni@alumni.ut.ac.ir)
School of Mechanical Engineering, College of Engineering, University of Tehran, Tehran