

MOSTAFA MOBLI, PhD

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Research Interest

Interested in numerical solutions to problems involving reactive flows and heat transfer. Focused on developing new numerical methods and applying previously developed methods to analyze a wide range of fluid flow and heat transfer conditions. Specially focused on continuous methods to simulate phase change on a micro/nano scale used in various cooling industries, and thermal analysis of glow discharge to show the importance of an accurate temperature on analysis in discharge behavior simulation.

EDUCATION AND ACADEMIC POSITIONS

PhD: Mechanical Engineering , University of South Carolina	2018
Dissertation: Evaporation/Condensation During Pool Boiling and Flow Boiling Characteristics, (Dr. Chen Li),	Columbia, SC, USA
Master of Science: Mechanical Engineering , University of South Carolina	2014
Thesis: Thermal Analysis of High Pressure Micro Plasma Discharge, (Dr. Tanvir Farouk),	Columbia, SC, USA
Bachelor of Science: Mechanical Engineering, University of Tehran	2012
Thesis: Droplet Formation in Collision of Two Water Jet Flows in a Cavity. (Dr. M. Rahimian).	Tehran, Iran

Professional EXPERIENCES

Instructor, Department of Mechanical Engineering, University of South Carolina	08/2018 to ongoing
<ol style="list-style-type: none"><i>Aerodynamics and Flight Mechanics (EMCH 744)</i><i>Introduction to Aerodynamics (EMCH 578)</i><i>Advanced heat transfer (EMCH 751)</i><i>Heat transfer (EMCH 354)</i><i>Aerospace lab I and II (AESP 361, AESP 362)</i><i>Flight and Orbital Mechanics (AESP 420)</i><i>Aerospace systems (AESP 350)</i>	
Research Assistant, Department of Mechanical Engineering, University of South Carolina	01/2015 to 07/2018
As a member of Micro/Nano scale transport lab I was in charge of developing a numerical model to study pool and flow boiling as well as condensation. This code was developed using OpenFOAM which is an open source library based on C++, with the purpose of measuring the significance of interfacial heat transfer coefficient during boiling phenomena.	Columbia, SC
Research Assistant, Department of Computer Science and Engineering, University of South Carolina	08/2014 to 12/2014
During my tenure at the bioinformatics lab, I was assigned to develop an optimization algorithm aimed at folding proteins. This was written in Octave which is the open source equivalent of MATLAB.	Columbia, SC
Research Assistant, University of South Carolina	01/2013 to 08/2014

<p>Performed research on the effect of conjugate heat transfer in plasma discharge, biomedical application of DBD and the effect of pressure on high-pressure micro plasma discharge.</p> <p>Research Assistant, SUNY Stony Brook</p>	<p>Columbia, SC</p> <p>08/2012 to 12/2012</p>
<p>Worked on optimization of cooling systems, evaporative coolers. The evaporative chillers are limited in the efficiency with so many factors like humidity and dew point, our goal was to decrease the final temperature as much as possible to reach the dew point temperature limit. At the small time I have on the project, we could propose new way for increasing efficiency.</p>	<p>Stony Brook, NY</p>
<p>Lab Instructor, Department of Mechanical Engineering, University of South Carolina</p>	<p>01/2018 to 05/2018</p>
<p>Lab instructor for <i>Mechanical Engineering Lab course</i>, taught uncertainty analysis lab, held office hours for student and graded the projects.</p>	<p>Columbia, SC</p>
<p>Lab Instructor, Department of Computer Science and Engineering, University of South Carolina</p>	<p>08/2014 to 12/2014</p>
<p>Lab instructor for <i>Introduction to Algorithmic Design II</i>, this course was designed to improve student's knowledge on algorithms in JAVA programming language. Lab instructor was supposed to teach the lab course where students learnt how to implement different algorithms using Java language, other responsibilities included grading the lab and holding office hours.</p>	<p>Columbia, SC</p>
<p>Teaching Assistant, Department of Mechanical Engineering, University of South Carolina</p>	<p>01/2015 to 08/2018</p>
<p>Undergraduate heat transfer filled in for the instructor (Dr. Chen Li) whenever needed, graded homework and exams, designed some of the home works and exam, held office hours for students.</p>	<p>Columbia, SC</p>
<p>Teaching Assistant, Department of Mechanical Engineering, University of South Carolina</p>	<p>01/2014 to 05/2014</p>
<p>Undergraduate heat transfer filled in for the instructor (Dr. Jamil Khan) whenever needed, graded homework and exams, designed some of the home works and exam, held office hours for students.</p>	<p>Columbia, SC</p>
<p>Research Assistant, University of Tehran</p>	<p>09/2006 to 05/2010</p>
<p>1) Persian Ghazal Solar Car Team, Member of the design team and head of manufacturing team, the one-passenger Solar Car was participated in International Competitions, Australia, 2012.</p> <p>2) Diesel Engines Lab, Head of the maintenance and assembly team.</p> <p>Gained Experiences: Car Manufacturing Process Skills, Carbon Nano Fibers, Team Works skills, Solid Work Software, C++ Programing, Leader Ship Skills, ICE engines, Electrical Powered Engines, CFD.</p>	<p>Tehran, Iran</p>

PUBLICATIONS

Mostafa Mobli, Chen Li, Interfacial heat transfer coefficient simulation at subcooled flow boiling condition with high subcooling. (in final preparation for submission)

Mostafa Mobli, Chen Li, A comprehensive numerical study on bubble nucleation, growth and departure in a saturated liquid pool. (in final preparation for submission).

Mostafa Mobli, Chen Li, On the Heat Transfer Characteristics of a Single Bubble Growth and Departure During Pool Boiling, ASME 2016, Washington, DC.

Mostafa Mobli, Tanvir Farouk, Effects of boundary temperature on high pressure “abnormal” glow discharge in helium, (in final preparation for submission).

Mostafa Mobli, Tanvir Farouk, Thermal analysis of high-pressure glow discharge, (GEC 2014, November).

Rajib Mahamud, **Mostafa Mobli**, Tanvir Farouk, Modes of oscillation in DC Driven High Pressure Micro Plasma Discharges. (May 2014, IEEE ICOPS Conference, Presentation Session)

Mostafa Mobli, Rajib Mahamud, Tanvir Farouk, High Pressure Micro Plasma Discharge: Effects of Conjugate Heat Transfer (June 2013, IEEE PPS Conference, Poster Presentation)

Mostafa Mobli, Rajib Mahamud, Tanvir Farouk, High Pressure Micro Plasma Discharge: Effects of Conjugate Heat Transfer (IEEE proceeding journal)

COMPUTER SKILLS

Language: C++(professional), Python, Java. **Mathematical Computation:** MATLAB, Octave. **Mechanical Engineering:** ANSYS (Professional), COMSOL (Professional), OpenFOAM (Professional), Working Model, CF turbo. **CAD:** Solid Works, CATIA. **General Software:** Microsoft Office (Word, Excel, PowerPoint, Publisher), Tecplot, Photoshop, Origin Lab. **Operating System:** DOS, Windows, Linux, Mac OS.

AWARDS AND HONORS

Travel grant for IEEE 2013 for the amount 1000 dollars, by the committee of the conference (2013).

Full Scholarship for PhD period at University of South Carolina (2015).

Full Scholarship for MS period at University of South Carolina (2013).

Finalist in exam of Iranian Computers and Mathematics Olympiad, Tehran, Iran, (2004).

Ranked 230th (among 0.5 %) in University Entrance Exam among more than 450000 participants (2006).

AFFILIATIONS AND ACTIVITIES

Golden Key International Honors Society Membership. (2014) IEEE membership (2013, 2014), ASME Membership (2014-2018).

President of Iranian Student Association at University of South Carolina, 2013 and 2017.

President of Student Organization at College of Engineering at University of Tehran, 2010 – 2011.

President of Aftab organization, a charity that helped students in northwestern Iran. 2009 - 2011.

Member of “Society for Working and Street Children”, a charity that was working against child labor in Iran, 2011.