

Seyed Mohammad Sajadi

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Education

University of Houston, Engineering Department

Master of Science, Mechanical Engineering

GPA: 4.00

Jan 2015-Dec 2016

University of Tehran, Engineering Department

Bachelor of Science, Mechanical Engineering

Last two years **GPA: 3.28**

Sept 2006- Sept 2011

Research Interest

- 3D Printing of functional structures and novel material
- Development of functional Nanostructured material
- Micro and Nano engineering
- Heat transport in Micro-Nano Structure
- Thermal Transport Phenomena
- Heat transfer
- Bio Engineering

Publication

Journal

- **Seyed Mohammad Sajadi**, Peter Samora Owuor, Cristiano F. Woellner, Varlei Rodrigues, Robert Vajtai, Jun Lou, Douglas S. Galvão, Chandra Sekhar Tiwary, Pulickel M. Ajayan, "Multi-scale Geometric Design Principles Applied to #D Printed Schwarzitizes", **Advanced Materials**, (2017)
- **Seyed Mohammad Sajadi**, Nazanin Farokhnia, Peyman Irajizad, Varun Kashyap, and Hadi Ghasemi, "Surfaces for high heat dissipation with Leidenfrost limit", **Appl. Phys. Lett.** **111**, 021605 (2017), (2017)
- Nazanin Farokhnia, **Seyed Mohammad Sajadi**, Peyman Irajizad, and Hadi Ghasemi, "Decoupled Hierarchical Structures for Suppression of Leidenfrost Phenomenon", **Langmuir**, **2017**, **33** (10), pp 2541–2550, (2017)
- Varun Kashyap, Abdullah Al-Bayati, **Seyed Mohammad Sajadi**, Peyman Irajizad, and Hadi Ghasemi, "Flexible Anti-Clogging Carbon Blanket for Scalable Solar Desalination by Heat Localization", **J. Mater. Chem. A**, **2017**, **5**, 15227-15234, (2017)
- **Seyed Mohammad Sajadi**, Nazanin Farokhnia, Peyman Irajizad, Munib Hasnain, and Hadi Ghasemi, "Flexible Artificially Networked Structure for Ambient/High Pressure Solar Steam Generation", **J. Mater. Chem. A**, **2016**, **4**, 4700-4705, (2016)
- Nazanin Farokhnia, Peyman Irajizad, **Seyed Mohammad Sajadi** and Hadi Ghasemi, "Rational micro-nano structuring for thin film evaporation", **J. Phys. Chem. C**, **2016**, **120** (16), pp 8742–8750, (2016)
- Peyman Irajizad, Munib Hasnain, Nazanin Farokhnia, **Seyed Mohammad Sajadi**, and Hadi Ghasemi, "Magnetic extreme icephobic surfaces", **Nature Communications**, **10.1038/ncomms13395**, (2016)

- **Seyed Mohammad Sajadi**, Jose Ordonez-Miranda, James M. Hill, Younes Ezzahri, Karl Jouliau, Jeremie Drevillon, and Hadi Ghasemi, “Invariant of Heat Conduction in One-Dimensional System”, **EPL (Europhysics Letters)**, **Volume 118, Number 3**, (2016)

Submitted

- Chandra Sekhar Tiwary, Peter Samora Owuor, **Seyed Mohammad Sajadi**, ..., Pulickel M. Ajayan,” Selective and non-destructive demineralization of bon” **Under review in Science**, (2017)

Conference Presentation

- “Decoupled Hierarchical Structures for Suppression of Leidenfrost Phenomenon” **Seyed Mohammad Sajadi**, Nazanin Farokhnia, Peyman Irajizad, and Hadi Ghasemi, **ASME IMECE** (2016), Presented, Phoenix, AZ, USA.
- “Magnetic extreme icephobic surfaces”Peyman Irajizad, Munib Hasnain, Nazanin Farokhnia, **Seyed Mohammad Sajadi**, and Hadi Ghasemi, **ASME IMECE** (2016), Presented, Phoenix, AZ, USA.
- “Flexible integrated structure for low/high pressure solar steam generation” **Seyed Mohammad Sajadi**, Nazanin Farokhnia, Peyman Irajizad, and Hadi Ghasemi, **ASME HT/FE/ICNMM** (2016), Presented, Washington DC, USA.
- “Integrated Flexible Structure for Solar Steam Generation”, **Seyed Mohammad Sajadi**, Nazanin Farokhnia, Peyman Irajizad and Hadi Ghasemi, **IEEE ITherm** (2016), Accepted, Las Vegas, USA.
- “Rational micro/Nano structuring for thin-film evaporation”, Nazanin Farokhnia, Peyman Irajizad, **Seyed Mohammad Sajadi** and Hadi Ghasemi **ASME HT/FE/ICNMM** (2016), Presented, Washington DC, USA.

Selected Academic Projects

- “Increasing Leidenfrost point with Dual-Scale Structure”, University of Houston, Texas, Adviser: Dr. Hadi Ghasemi “
- “Design and make Flexible Artificially Networked Structure for Ambient/High Pressure Solar Steam Generation”, University of Houston, Texas, Adviser: Dr. Hadi Ghasemi (2015)
- “Design of Experiments and the Optimization of an Electronic Enclosure” University of Houston, Texas, 2016
- “CFD Analysis of Electronic Enclosure with STAR-CCM+”, University of Houston, Texas, Adviser: Dr. Moratta, 2016
- “FEA of Threaded Pipe Connector with ANSYS”, University of Houston, Texas, Adviser: Dr. Moratta, 2016
- “Mixed Formulation for Darcy Equation”, University of Houston, Texas, Adviser: Dr. B.Knakshatrala. 2015
- “A Solver for Steady-State Diffusion Equation”, University of Houston, Texas, Adviser: Dr. B.Knakshatrala. 2015
- “A Solver for Linear Elasticity Equation”, University of Houston, Texas, Adviser: Dr. B.Knakshatrala. 2015
- “Optimal Design of Meat Refrigerating System”, University of Tehran, Tehran, Advisor: Dr. Sharifi. 2010
- **Thesis**: Investigation of Optimal Design of a 3D Heating Operation Furnace (19.5/20), Spring 2011
- “Using Finite-Elements Method to Generate Arbitrary (triangular-rectangular) Grids for stress and strain Analysis of a Thin Sheet through MATLAB Software”, University of Tehran, Tehran, Advisor: Dr. A. Daneshmehr. 2010
- “Optimization of Dynamic and Control System Using Genetic Algorithm Method”, University of Tehran, Tehran, Advisor: Dr. M. Shariat Panahi. 2009

- “Optimization of Structural Components of Truss in order to Reach Minimum Weight Using Genetic Algorithm Method”, University of Tehran, Tehran, Advisor: Dr. M. Shariat Panahi. 2009
- “Finding the Optimal path of a Robot Using Complex Method”, University of Tehran, Tehran, Advisor: Dr. M. Shariat Panahi. 2009
- “Design of a gearbox structure for an electrical engine”, University of Tehran, Tehran, Advisor: Dr. A. Daneshmehr, 2008
- “Calculating Stress And strain Analysis of Crane Hook by finite Elements Method”, University of Tehran, Tehran, Advisor: Dr. A. Daneshmehr 2008.

Professional Experience

Visiting Scholar –Ajayan Research Group, Rice University

April 2017- Present

- Design and development of new structures with different mechanical properties by 3D printer.
- Development of meta material
- Development of new method for 3D printing of new structures and new material

Research Assistant –NanoTherm Group, University of Houston

Jan 2015- Dec 2016

- Development of dual-scale surfaces for suppression Leidenfrost phenomena (see publication section)- Submitted as a patent
- Development of magnetic icephobic surface (see publication section)- Submitted as a patent
- Development of a flexible artificially networked material structure highly efficient for ambient and high-pressure steam generation (see publication section)
- Design, develop and manufacture of different accurate setups for various experiments
- Involvement in AFM (Atomic force microscopic) and LabVIEW software

Mechanical Engineer- Taha Production and Support Industrial Company, Tehran- Iran

Nov 2013- Oct 2014

- Preparation and development of Auto parts’ technical documents specially Power Steering System (CP, FMEA, OPC, FPC, OPS).
- Modeling and drawing of Power Steering system parts with SolidWorks
- Audit drawings, test plans, manufacture procedures and production line of suppliers.

Quality Control Engineer- Falat Energy Company , Bandar-Abbas port- Iran

Jan 2013-Oct 2013

- Confirmation of the imported raw material
- Inspection and controls of welding process (pipes and reservoirs)
- Audit drawings and welding procedures of suppliers

Machine Shop Supervisor- Valafan, Tehran- Iran

Jan 2012- Dec 2012

- Quality control of molding and casting design and developed machining procedure
- Design, development and manufacture of fixture and gages
- Lathe and milling machine production.

Project Manager- Design and Manufacturing of a Two-Passenger Electric Car, University of Tehran

Oct 2008-Nov 2009

- Team management- planning (conceptual design, detail design, and production)
- Sponsor Negotiation
- Design different parts with **SolidWorks**.
- Manufacture electrical differential, power transition, chassis and body with variety methods like **electric arc welding**, Working with **machine shop equipment**, **prototyping with plaster** and **body manufacturing with fiber glass**.

Educational Honors & Awards

- **Dean's scholarship**, University of Houston, Department of Mechanical Engineering, Houston, Texas (2015, 2016)
- **Awarded full scholarship for undergraduate program**, University of Tehran, Department of Mechanical Engineering Tehran (2006-2011)
- Top 10 in conceptual design of green vehicles in national competition in Iran. This competition was held among more than 96 teams, (2009)
- Top 5 in detail design of green vehicles in national competition in Iran, (2009)

Skills

- **Mathematical Computation:** MATLAB
- **Mechanical Engineering:** Gambit and Fluent, Ansys, Comsol
- **CAD:** SolidWorks.
- **General Software:** LabVIEW, Microsoft Office (Word, Excel, PowerPoint).
- **Mechanical and Manufacturing Skills:** 3D Printing, Electric arc welding, Working with machine shop equipment, Prototyping with plaster and body manufacturing with fiber glass.

Reference

Dr. Pulickel Ajayan

Rice University
Material Science and NanoEngineering Department
Bill D Benjamin M. and Mary Greenwood Anderson Professor of Engineering, Department Chair
Email: ajayan@rice.edu

Dr. Hadi Ghasemi

University of Houston
Mechanical Engineering Department
Bill D. Cook Assistant Professor
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Dr. Yashashree Kulkarni

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Mechanical Engineering Department
Associate Professor of Mechanical Engineering
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Civil Engineering and Environmental Department
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