

Shreyas Chavan

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OBJECTIVE

To obtain an internship position for Summer 2017 in thermal and fluid engineering.

EDUCATION

University of Illinois at Urbana Champaign	May 2018 (expected)
Doctor of Philosophy, Mechanical Science and Engineering	GPA: 3.92/4.00
University of Illinois at Urbana Champaign	May 2016
Master of Science, Mechanical Science and Engineering	GPA 3.92/4.00
Indian Institute of Technology Bombay	May 2014
Bachelors of Technology, Mechanical Engineering Department	GPA 8.34/10.00

PATENTS AND PUBLICATIONS

Rane, M. V., Chavan, S., *Heat and Mass Exchanger*, Indian Patent application # 1349/MUM/2013 (2013)
Chavan, S., *et al.*, *Heat Transfer through a Condensate Droplet on Hydrophobic and Nanostructured Superhydrophobic Surfaces*, Langmuir (2016)

EXPERIENCE

Investigation of Frost Formation and Durability of Scalable Super-hydrophobic Jumping-droplet Surfaces

Graduate Research Assistant, Mechanical Science and Engineering, UIUC (Aug 2014 - present)

- Investigating frost reduction capabilities of *bioinspired lotus-leaf* like surfaces using optical microscopy and ESEM
- Fabricating these surfaces in *cleanroom*, using chemical treatments like oxidation and chemical vapor deposition
- Manufactured an experimental setup to prove *delayed frosting on heat exchangers* coated with these surfaces

Heat Transfer through a Condensate Droplet on Hydrophobic and Super-hydrophobic Surfaces

Graduate Research Assistant, Mechanical Science and Engineering, UIUC (Aug 2014 - May 2016)

- Solved a 30 year old problem to give the most accurate model till date and *experimentally validated* the same
- Modeled *heat transfer during condensation* on super-hydrophobic surfaces using Finite Element Method
- Implemented appropriate *convective boundary conditions*, improving the heat transfer calculations by 300%

Air to Air Heat Recovery System

Undergraduate Research Assistant, Mechanical Engineering Department, IIT Bombay (Jul 2012 - Sep 2013)

- Invented a simple, cost-effective and easy to manufacture heat exchanger with *increased heat transfer coefficient*
- Experimentally investigated the performance of heat exchanger to validate its advantages over prior art
- Filed a *Patent* on this design at Indian Patent Office

Designing of HVAC system of Solar Powered House

Team Leader, HVAC subsystem, IIT Bombay Solar Decathlon Team (Dec 2012 - Dec 2013)

- Led a team of six students to design & fabricate an *air to air heat recovery system* for fresh air supply to the house

Powertrain for Formula Student Electric Racecar

Design Engineer, IIT Bombay Racing Team (Jul 2011 - Dec 2012)

- Led a group of four students to design and model *gearbox* of the racecar with maximum power to weight ratio

Assembly Line Kaizen

R&D Intern, Volkswagen India Private Limited (Jun 2012 - Jul 2012)

- Project aimed at increasing efficiency of manual part selection for different car models on assembly line
- Designed and implemented a microcontroller based "Pick to Light" and "Pick in Sequence" system

TECHNICAL SKILLS

Lab: Cleanroom, ESEM, Optical Microscopy, Micro-goniometer *Programming:* C/C++, MATLAB, & Python
Software: SolidWorks, Pro/ENGINEER, AutoCAD, ANSYS, Simulink, ADAMS, HyperWorks, Mathcad

EXTRA CURRICULAR ACTIVITIES

Jagriti Yatra 2013: Selected for a 15 day international conclave of youth inclined towards research entrepreneurship

Trekking and Mountaineering: Explored Himalayas, Sahyadris (India), and various National Parks in the US