Krithika Narayanaswamy

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Education

Stanford University **2008 – present**

- *Doctor of Philosophy*, Mechanical Engineering
- *Doctor of Philosophy Minor*, Aerospace Engineering
- *Master of Science*, Mechanical Engineering

Indian Institute of Technology Madras **2004 – 2008**

- *Bachelor of Technology*, Mechanical Engineering

Research Interests

Combustion, Chemical kinetics, Fluid mechanics

Research Experience

Cornell University **2014 – present**
Post-doctoral associate, Sibley school of Mechanical and Aerospace Engineering
Working with Dr. Perrine Pepiot, on

- Analyzing multi-component fuel effects in flames using simulations

Stanford University **2008 – 2013**
Research Assistant, Flow Physics and Computational Engineering
Worked with Dr. Heinz Pitsch, on

- Proposing surrogates for jet fuels
- Formulating a consistent mechanism for the oxidation of surrogate components
  - Substituted aromatics, *n*-dodecane, and methylcyclohexane

Indian Institute of Technology Madras **2007**
Bachelor's Project
Worked with Prof. N. R. Panchapakesan, Department of Aerospace Engineering, on
Aerodynamics of flow around rectangular cylinders.

TVS Motors, Hosur, India **2006**
Summer Internship
An analytical model for a mono-tube hydraulic shock absorber damper

Indian Institute of Science, Bangalore **2005**
Summer Research Fellowship program
Worked with Prof. Jaywant H. Arakeri, Department of Mechanical Engineering,
Experiments to study natural convection in a tall vertical pipe

Indian Institute of Technology Madras **2005**
Junior Year Project
Worked with Prof. Venkatarathnam, Department of Mechanical Engineering,
Enabled virtual instrumentation using LabVIEW as a software tool

Teaching Experience

Stanford University **2012**
Teaching Assistant for "ME351A: Fluid Mechanics", Course instructor: Dr. Lester Su
Responsibilities:

- Held office hours and graded assignment sheets
- Assigned problems for the assignments and exams

Publications

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Jet Fuels and Fischer-Tropsch fuels - Surrogate definition and chemical kinetic modeling"

Combustion and Flame, in preparation.

Krithika Narayanaswamy, Heinz Pitsch, and Perrine Pepiot
"A chemical mechanism for low to high temperature oxidation of methylcyclohexane as a component of transportation fuel surrogates", under review in *Combustion and Flame*.

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"A chemical mechanism for low to high temperature oxidation of *n*-dodecane as a component of transportation fuel surrogates", *Combustion and Flame*, 2014.

Krithika Narayanaswamy, Guillaume Blanquart, and Heinz Pitsch,
"A consistent chemical mechanism for oxidation of substituted aromatic species"
Combustion and Flame, 157 (10) (2010) 1879–1898.

Conference

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Jet Fuels and Fischer-Tropsch fuels - Surrogate definition and chemical kinetic modeling"
8^{th} *U.S. National Combustion Meeting*, University of Utah, Salt Lake City, May 22^{nd}, 2013

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Chemical mechanism for *n*-dodecane and methylcyclohexane as components of transportation fuel surrogates",
Thermal and Fluid Sciences Affiliates and Sponsors Conference, Stanford University, 2012

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Progress in surrogate formulations for jet fuels"
Thermal and Fluid Sciences Affiliates and Sponsors Conference, Stanford University, 2011

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Towards Surrogate formulation for jet fuels"
Thermal and Fluid Sciences Affiliates and Sponsors Conference, Stanford University, 2010

Krithika Narayanaswamy, Guillaume Blanquart, and Heinz Pitsch,
"A consistent chemical mechanism for oxidation of substituted aromatic species"
6^{th} *U.S. National Combustion Meeting*, University of Michigan, Ann Arbor, 2009

Krithika Narayanaswamy, Guillaume Blanquart, and Heinz Pitsch,
"A consistent chemical mechanism for oxidation of substituted aromatic species"
Thermal and Fluid Sciences Affiliates and Sponsors Conference, Stanford University, 2009

Posters

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Jet Fuels and Fischer-Tropsch fuels - Surrogate definition and chemical kinetic modeling"
Thermal and Fluid Sciences Affiliates and Sponsors Conference, Stanford University, 2013.

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Development of kinetic model for jet fuels and Fischer-Tropsch fuels"
34^{th} *Proceedings of Combustion Institute*, Warsaw University of Technology, Poland, August 4^{th}, 2012.

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Kinetic models for surrogate fuels"
7^{th} *U.S. National Combustion Meeting*, Georgia Institute of Technology, Atlanta, March 22^{nd}, 2011.

Invited Talks

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"A chemical kinetic model for jet fuel surrogates"
Cornell Fluid Dynamics Seminar, Cornell University, April 29^{th}, 2014.

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Development towards a chemical kinetic model for transportation fuel surrogates"
Chemical Engineering Seminar, Indian Institute of Technology Madras, September 6^{th}, 2012.

Krithika Narayanaswamy, Perrine Pepiot, and Heinz Pitsch,
"Development towards a chemical kinetic model for transportation fuel surrogates"
High Temperature Gas Dynamics Seminar, Stanford University, May 9^{th}, 2012.

Honors and Awards

- Merit certificate awarded by the Central Board of Secondary Education (CBSE) for class XII examination for Chemistry and Mathematics, 2004.
- Selected among top 10% in the National Standard Examination in Physics conducted by the Indian Association of Physics Teachers, 2003
- One among 750 students from a pool of about $350,000$ students to be awarded National Talent Search Examination Scholarship by the Central Government of India, 2000

Other Activities

- Sanskrit language
- Carnatic Music