

SYAM S.

Research Assistant, Indian Institute of Technology Kharagpur

@ syam007sasidharan@gmail.com syam007sasidharan +91 7872683619
✉ Department of Aerospace Engineering, Indian Institute of Technology Kharagpur, West Bengal, India-721302
🏠 Nambarayyathu Sapthagiri, (S. W.) Thazhava P. O., Kollam, Kerala, India - 690523
🌐 <https://syam-s.github.io> www.linkedin.com/in/amsyam



OBJECTIVE

I am looking for a career in teaching and research where I can share my knowledge and experience to create value for the seeker and fulfill the mission and vision of the institute/lab.

EDUCATION

🎓 Ph. D. in Aerospace Engineering

Indian Institute of Technology Kharagpur

📅 2013 - 2021 📍 Kharagpur, West Bengal, India

📄 **Thesis Title: An Experimental Investigation on Combustion Characteristics of Jet A-1/Ethanol Droplets and Numerical Simulation of Droplet Evaporation Using Two-Fluid Model**

Thesis supervisors: Dr. Srinibas Karmakar & Dr. Ratan Joarder, Department of Aerospace Engineering, Indian Institute of Technology Kharagpur, Kharagpur, India

🎓 Masters in Turbomachines

S. V. National Institute of Technology

📅 2011 - 2013 📍 Surat, Gujarat, India

📄 **Project: Design and Optimization of High-Pressure Ratio Airfoils for Axial Flow Compressors**

Project Supervisors: Dr. S. A. Channiwala, S. V. National Institute of Technology, Surat, India

➡ Bachelors in Aeronautical Engineering

The Aeronautical Society of India

📅 2005 - 2011 📍 New Delhi, India

📄 **Project: A Review on Shock Wave Boundary Layer Interaction**

IMPORTANT PUBLICATION

- D. Chaitanya Kumar Rao, S. Syam, Srinibas Karmakar, and Ratan Joarder, "Experimental investigations on nucleation, bubble growth, and micro-explosion characteristics during the combustion of ethanol/Jet A-1 fuel droplets", Experimental Thermal and Fluid Science, 89, 284-294, 2017.

SKILLS

Fortran ●●●●●●
Matlab ●●●●●●
OpenMP ●●●●●●
LabView ●●●●●●
ANSYS Gambit and Fluent ●●●●●●
SolidWorks ●●●●●●
LaTeX ●●●●●●
OpenFOAM ●●●●●●
Python ●●●●●●
AxSTREAM ●●●●●●
HTML ●●●●●●

Operating Systems

Windows

Linux

ACHIEVEMENTS

🏆 **All India Rank - 58**
Secured all india rank 58 in Graduate Aptitude Test in Engineering (GATE) - 2011 (Aerospace Engineering) with a score of 555 (Percentile: 98.02)

🏆 **MHRD Fellowship**
Recipient of Ministry of Human Resource Development (MHRD), India Fellowship during masters [M. Tech (2011-2013)] and doctoral studies (2013-present)

TEACHING ASSISTANCE

Propulsion Lab (AE39004)

📅 Spring 2013-14, 2014-15

Thermodynamics and Aerospace Propulsion System (AE31001)

📅 Autumn 2014-15, 2015-16

Combustion Processes in Jet Engines (AE51007)

📅 Spring 2015-16

CONFERENCE PRESENTATIONS

- D. Chaitanya Kumar Rao, S. Syam, Srinibas Karmakar. "Droplet Combustion Characteristics of Butyl Butyrate, Limonene, and their Blends with Jet A-1", 54th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, 4-8 January 2016, San Diego, California, USA (AIAA 2016-1682).
- S. Syam, D. Chaitanya Kumar Rao, Srinibas Karmakar, and Ratan Joarder. "Puffing and Micro-explosion behaviour of Ethanol/Jet A-1 Fuel Droplets", 54th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum, 4-8 January 2016, San Diego, California, USA (AIAA 2016-1683).
- S. Syam, Srinibas Karmakar, Ratan Joarder, "An experimental study on droplet combustion of different fuels and biofuel blends in open atmosphere", ICTACEM 2014, December 29-31, 2014, IIT Kharagpur, India, No. 335.
- S. Syam, Nilesh S., Vilash R. S., and Channiwalla S. A., "Optimization of CDA Cascade using Parameterization and Genetic Algorithm coupled with CFD", 2nd International Conference on Mechanical, Automotive and Aerospace Engineering (ICMAAE 2013), Kuala Lumpur, 2013, Aerospace propulsion 1- 5

PROJECTS

Ph. D. Thesis

An Experimental Investigation on Combustion Characteristics of Jet A-1/Ethanol Droplets and Numerical Simulation of Droplet Evaporation Using Two-Fluid Model

- Developed a numerical code (Fortran and OpenMP) for multiphase flow analysis (Two-Fluid Model) of droplet evaporation using finite volume formulation (AUSM+-up scheme).
- Developed an image processing tool (MATLAB) for analyzing high-speed photographic images.
- Developed a high magnification and high-resolution micro-imaging technique for Jet A-1/ethanol droplet combustion.
- Developed an experimental setup for the single droplet combustion studies.

Masters Thesis

Design and Optimization of High-Pressure Ratio Airfoils for Axial Flow Compressors

- Performed parameterization of high-speed axial flow compressor airfoils (CDA) using the Bezier curve method.
- Developed a MATLAB code for coupling the Ansys Gambit and Fluent softwares with the Genetic Algorithm toolbox (MATLAB) to optimize the CDA airfoils.
- Conducted low-speed wind tunnel experiments on the optimized CDA airfoil cascade model.

Engineering Drawing and Computer Graphics (CE13001)

 Autumn 2016-17, 2017-18, 2018-19

Theory of Jet Propulsion (AE31001)

 Spring 2016-17, 2017-18

AREAS OF INTEREST

Droplet and spray combustion

Bio-fuels

Renewable fuels

Experimental studies in fluid mechanics

Aerodynamics

Airfoils

Cascades

Numerical study of multiphase flows

Two-fluid model

Mass transfer

Computational Fluid Dynamics

Aerodynamics

Combustion

High performance computing

OpenMP

MPI

GPUs

Propulsion systems

Gas turbine engines

Design of compressor and turbine

ROLES

Member

Research Council Scholars' Representative

 2017 - 18

 IIT Kharagpur

Research Scholars' Representative

Department of Aerospace Engineering

 2014 - 15

 IIT Kharagpur

Volunteer

Sixth International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM)

 December 2014

 IIT Kharagpur

REFEREES

Prof. Srinibas Karmakar

✉ Associate Professor, Department of Aerospace Engineering,
Indian Institute of Technology Kharagpur, West Bengal, India -
721302

@ skarmakar@aero.iitkgp.ac.in

☎ +91 (3222) 283012

Prof. Ratan Joarder

✉ Associate Professor, Department of Aerospace Engineering,
Indian Institute of Technology Kharagpur, West Bengal, India -
721302

@ jratan@aero.iitkgp.ac.in /jratan@gmail.com

☎ +91 (3222) 283000

DECLARATION

I hereby declare that all the information provided above is correct and true to the best of my knowledge. If I have given a chance to work at your esteemed institute, I assure you that I will discharge my duties with utmost satisfaction and growth of the institution.

SYAM S.

MEMBER

The Aeronautical Society of India

PERSONAL PROFILE

- Ready to learn and apply new concepts and technologies
- Good verbal and written communication skills
- Self-motivated and passionate to achieve the goals
- Good team player and ability to work independently also

Nationality: Indian

Date of birth: 25 - May - 1988

Marital Status: Married

Languages (Read, Write, & Speak):

English

Hindi

Malayalam

Tamil (Speak)