

## **Dr. G. Saravanan**

Assistant Professor (S.G.)

**Area:** Space Propulsion Engineering

**Affiliation:** Department of Aerospace Engineering, Kattankulathur Campus, SRM Institute of Science and Technology (formerly known as SRM University).

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### **SUMMARY**

Motivating and talented Aerospace professor driven to inspire students to pursue academic and personal excellence. Consistently strive to create a challenging and engaging learning environment in which students become life-long scholars and learners.

### **EDUCATION**

Doctor of Philosophy (**PhD**), **National Institute of Technology, Thiruchirapalli**, Tamil Nadu

Title	: Combustion Performance Characteristics of Novel Hybrid Rocket Motor Using Wax Fuels in Gaseous Oxygen
Research Area	: Aerospace Engineering
Specialization	: Rocket Propulsion
Period of Study	: July 2017– August 2022

Full time Master of Technology (**M.Tech**) Degree from **Government College of Engineering, Trivandrum, University of Kerala**

Period of Study	: September 1999 – April 2001
Specialization	: Propulsion Engineering
Percentage of Marks	: <b>75.52%</b>
Class obtained	: First class with distinction
Rank	: 2 <sup>nd</sup> Rank Holder (University Level)

Full time **Bachelor of Engineering (B.E)**. Degree from **TIEC, Tirunelveli, Manonmaniam Sundaranar University, Tamil Nadu**.

Period of Study	: September 1994 – April 1998
Specialization	: Mechanical Engineering
Percentage of Marks	: <b>77.83%</b>
Class obtained	: First class
Rank	: 1 <sup>st</sup> Topper (Institutional Level)

**H.S.C (10 +2)** with **86.5%** marks from **S.L.B. Hr. Sec. School, Nagercoil, T.N.**, during the year 1992 – 1993.

**S.S.L.C.** with **87.8%** marks from **S.L.B. Hr. Sec. School, Nagercoil, T.N.**, during the year 1990 – 1991.

## **ACHIEVEMENTS**

- B.E- Institutional level Topper in the year 1998, TIEC, Tirunelveli, Tamil Nadu
- M.Tech – Kerala University 2nd Rank Holder, 2002
- A paper entitled “Iterative scheme for supersonic nozzle design and combustion modeling of H<sub>2</sub>O<sub>2</sub> Rocket motor using AEROANALYSIS”, MIT, Chennai won the first prize.
- A paper entitled “Effect of Swirl Injection on Performance of Hybrid Rocket motor”, MIT, Chennai won the first prize.

## **PROJECTS**

### **M.TECH THESIS WORK**

Academic Project: Combustion Modeling and Performance Evaluation of a Liquid Propellant Rocket Engine.

### **B.E. PROJECT WORK**

Academic Project: Cycle Time Reduction for Heat Exchanger Air and Hydro Testing.

## **SUBJECTS HANDLED**

Air breathing Propulsion, Rocket Propulsion, Aero Engineering Thermodynamics,  
Rockets and Missiles, Rocketry& Space Mechanics, Heat Transfer  
Professional Ethics, Theory of Combustion, Principles of Management

## **RESEARCH INTERESTS**

Air-breathing Propulsion Systems, Rocket Propulsion, Heat Transfer, Fuels and Combustion, Electrical and solar propulsion Fluid flow problems

## WORKING EXPERIENCE

**Academic Experience** : 20 Years

Assistant Professor (Selection Grade) : 12 Years and 4 months

Senior Lecturer : 1 Year

Lecturer : 5 years 8 months

**Industry Experience** : 1.4 Years

Institution /Industry	Designation	Working period
SRM Institute of Science & Technology, Chennai	Assistant Professor (Selection Grade) in Aerospace Engineering Dept.	From July 2012 to till Date 10 Year 6 months
Hindustan Institute of Technology and Science, Chennai	Assistant Professor (Selection Grade) in Aeronautical Dept.	1 Year 10 months
	Assistant Professor	1 Year
	Senior Lecturer	1 Year
	Lecturer	1 Year
PET Engineering College Vallioor, Tirunelveli District	Lecturer	1 year
Government College of Engineering ,Tirunelveli	Lecturer	4 months
S. R. College Of Engineering, Tirunelveli	Lecturer	3 Years 4 months
CADDAM Technologies (P) Ltd, Chennai	Design Engineer	1 year 4 months

## **Selected Publications Journal article/Conference publications**

G Saravanan, S Shanmugam, AR Veerappan, “Analysis of thermal stability and characterization of paraffin-blended hybrid fuels”,2022,Aircraft Engineering and Aerospace Technology

G Saravanan, S Shanmugam, AR Veerappan, ”Regression rate performance of paraffin wax and bees wax–Gox with varied grain configuration in a hybrid rocket motor”,2021, Aircraft Engineering and Aerospace Technology

G Saravanan, VK Annamalai, N Bharath, A Kevin, GR Teja, NS Anto, ”Design fabrication and performance analysis of length morphing rotor blade”, International Journal of Engineering & Technology ,2-18, 139-144

G.Saravanan, “Experimental studies on combustion performance of Beeswax-Paraffin Blended Solid Fuels in a Hybrid Rocket”, Indian Journal of Chemical Technology, 2022 (submitted)

G. Saravanan , Shawon Saha, Aditya Shah, “Numerical Simulation on Effect of Gaseous Oxygen Swirl Injection in a Hybrid Rocket Engine”, Indian Journal of Chemical Technology, 2022 (submitted)

G. Saravanan, Rishabh Sekar, Sriram Balaji, Prathik Kumar Devalla, “Design Fabrication and Testing of a Solar Thermal Thruster of Sun Synchronous Satellites”, Proceedings of the iMech Part C: Journal of Mechanical Engineering Science (submitted)

G Saravanan, C Suresh, Numerical simulation of mixing enhancement in scramjet using micro vortex generator, 2012,Procedia engineering 38, 3969-3976

G Saravanan, Ravichandra Kumar, A Vinoth Kumar, “Performance Analysis of a Two-Dimensional Supersonic Diffuser” Journal of Advances in Mechanical Engineering and Science,2016 vol. 2 Issue 2, pg 42-53

G Saravanan, A Vinoth Kumar, KB Ravichandrakumar, “Numerical analysis of subsonic coaxial jet on effect of potential core length”, Journal of Advances in Mechanical Engineering and Science,2016 vol. 2 Issue 1 pg 26-32

G.Saravanan. Ravichandrakumar, Vinothkumar.A, Antonio Kevin, Manikanda Prabu.P, “Performance Analysis of A Two Dimensional Supersonic Diffuser” Indo- Brazil Bilateral International Conference on Advanced Materials and Manufacturing, ICAMM, 2015, Cape Institute Of Technology, Tirunelveli

G.Saravanan.G, Vinothkumar.A Ravichandrakumar, Ajay, Rahul Teja, “Numerical Analysis of Subsonic Coaxial Jet on Effect of Potential Core Length”, Indo- Brazil Bilateral International Conference on Advanced Materials and Manufacturing, ICAMM, 2015, Cape Institute Of Technology, Tirunelveli

Vinoth Kumar Annamalai, Sanal Kumar V.R,Srinivasan K , Saravanan.G, “Experimental Studies On Thermal Protective Coating (Ysz Material) For Low Pressure Gas Turbine Blades”, Indo-

Brazil Bilateral International Conference On Advanced Materials And Manufacturing, ICAMM,2015, Cape Institute Of Technology, Tirunelveli

G.Saravanan, Dakoju Nikhil, Ankita Singh Baghel, “ Aerodynamic Study Of A Missile Using Doublet Method”, National Conference On Emerging Technologies In Aeronautical Applications, ETAA- 2015, Sathyabama University, Chennai

G.Saravanan, Karthik R, Manoj Kumar T, Pallavi Gupta “Design And Analysis Of Cascade Of Axial Compressor Blades”, National Conference On Emerging Technologies In Aeronautical Applications ,ETAA- 2015, Sathyabama University, Chennai

G.Saravanan,C.Suresh,“Mixing Enhancement In SCRAMJET Using Mechanical Vortex Generator”, International Conference ,2012, Kocaeli University, Turkey.

G.Saravanan, Anand.P, “Design and Analysis of Micro Gas Turbine Combustion Chamber”, International conference on modeling optimization and computing, ICMOAC, 2012 NIU, Kanyakumari.

G.Saravanan,“Infrared Heat Flux Simulation On Anodized Aluminium” , National Conference ,NCAME,2011 Arni

G.Saravanan,“Numerical Simulation of Mixing Enhancement in Scramjet Using Micro Vortex Generator”, Proceedings of the International conference on modeling optimization and computing,ICMOAC, 2012,Noorul Islam University , Kumarakoil, K.K.Dist.

G.Saravanan, R.Saravanan, “Design and Analysis of SCRAMJET nozzle”, International conference on modeling optimization and computing, ICMOAC, 2012 NIU, Kanyakumari

G.Saravanan, “Fuel-Air Mixing Enhancement in Scramjet Using Cavity and Vortex Generator Methods”, National Conference, 2011, MCE, Kanyakumari District

G.Saravanan, “Design and analysis of hypersonic inlet in SCRAMJET”, National conference, 2010, SRM Eswari Engineering college, Chennai

G.Saravanan, “Effect of Swirl Injection on Performance of Hybrid Rocket Motor”, National Level Symposia, MIT, Chennai

G.Saravanan, Kailash, “Iterative Scheme for Supersonic Nozzle Design and Combustion Modeling Of H<sub>2</sub>O<sub>2</sub> Rocket Motor Using Aeroanalysis”, National Level Symposia, 2009, MIT, Chennai

G.Saravanan, “Combustion Modeling and Performance Evaluation of a Liquid Propellant Rocket Engine”, National Conference, 2001, “Technological Developments for Engineers –3rd Millennium”, College Of Engineering, Trivandrum

### **Workshops/ Seminars/ Symposia Attended/Organized:**

Organized Short Term Training Program on “Challenges in Space Technology”, SRM University, 2014

Organized “One Credit Course on System Design & Integration in Aero Engineering”, SRMIST, Chennai, 2016

Faculty Development program on “Data Acquisition using LABVIEW in Aerospace Applications”, SRM University, 2017

Attended National workshop on “Launch Vehicle Aerodynamics “, Sathyabama University, 2017

Faculty Development Programme on “Flight Vehicle Structure and Materials”, Tagore Engg College, 2016

Faculty Development Programme on “Industrial Safety - Concepts and Techniques”, Noorul Islam Centre for Higher Education, 2020

Faculty Development Programme on “Applied Thermal Engineering”, Kalasalingam Academy of Research & Education, 2020

Faculty Development Programme on “Enhancing Educational Practices to Meet Industrial Challenges”, Noorul Islam Centre for Higher Education, 2020

Faculty Development Programme on “Emerging Areas in Manufacturing”, Vimal Jyothi Engineering College, Kannur, 2020

Faculty Development Programme on “Current Challenges and opportunities for Mechanical Engineers”, P.S.R Engineering College Sivakasi

Faculty Development Programme on “Finite Element methods in Aerospace Engineering”, SRMIST, Chennai, 2021

Organized & attended Faculty Development Program on “An insight into Futuristic Aerospace Propulsion”, SRMIST, Chennai, 2021

Attended and Event coordinated, SAEINDIA Aero Design Challenge, SRMIST, Chennai, 2022

Attended Professional Development Program on “Electronic cooling using ANSYS ICEPAK”, SRMIST, Chennai, 2022

Attended Faculty Development Program on “Sustainability and Intelligent Industry for Aerospace”, SRMIST, Chennai, 2022

Attended Faculty Development Program on "Emerging Technologies in Aerospace Engineering", SRMIST, Chennai, 2022

Attended Two day Workshop on "Space Propulsion", 2010, MIT, Chennai

One-day Seminar on "REEF 06, Renewable energy" sponsored by TEDA /MNES, 2006, PETEC, Tirunelveli.

One-day Faculty Development Programme organized by Hindustan college of Engg, 2010, Chennai

Organized Three Days International Seminar on "Composites for Aerospace Applications", Hindustan University, 2010, Chennai

One Day Seminar on Advancement in Aerospace Technologies, 2011 Hindustan University, Chennai

Organized Technical Symposia "ALBEDO", 2011, 2012, Hindustan University, Chennai

National Level SAEINDIA (Southern Section) Student Convention Tier-II Student Contests (East Tamil Nadu Zone) at Hindustan University on 3<sup>rd</sup> September, 2010.

### **Administrative Experience**

#### **Responsibilities Held at SRMIST**

Faculty advisor & Academic Advisor, Department of Aerospace Engineering, SRMIST, Chennai

Lab Head, Aerospace Computational Lab, Department of Aerospace Engineering, SRMIST, Chennai

Department placement coordinator, SRMIST, Chennai, 2013-2018

Aerospace Department Academic Curriculum Development Committee member, Department of Aerospace Engineering, SRMIST, Chennai

Board of studies member, Department of Aerospace Engineering, SRMIST, Chennai

Internship/ Industrial Coordinator, Department of Aerospace Engineering, SRMIST, Chennai

NBA accreditation member, Department of Aerospace Engineering, SRMIST, Chennai

Course coordinator- Air breathing propulsion, Rocket propulsion and Cryogenic Engineering, SRMIST, Chennai

Event Coordinator- Aerospace Events, AARUSH, SRM University 2017 & 2018

Anti-Ragging committee member, SRMIST, 2017 & 2019

University Convocation - Registration sub Committee

### **Responsibilities Held at other Institutions**

Overall Lab -Workshop superintendent, Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

Assisting HOD in all aspects as an Assistant HoD, Hindustan University, 2012

Project coordinator (UG & PG), Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

Academic coordinator/ Time Table Coordinator, Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

SAEINDIA Aerospace collegiate club Faculty advisor, Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

Symposia coordinator, Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

NBA, ISO Coordinator, Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

Department placement Coordinator, Department of Aeronautical Engineering, Hindustan Institute of Technology and Science, Chennai

Project coordinator, Department of Mechanical Engineering, SRCE, Tirunelveli.

Class in charge/Faculty advisor, Department of Mechanical Engineering, SRCE, Tirunelveli.

Time Table Coordinator, Department of Mechanical Engineering, SRCE, Tirunelveli.

### **Other Professional Experience**

Member in the Board of studies of SRM Institute of Science and Technology, Chennai

Faculty Advisor for HITS SAEINDIA- Aerospace Collegiate Club, Chennai, 2009-2012

Member in the Board of studies of Hindustan Institute of Technology and Science, Chennai

Reviewer & Editorial board member in reputed International Journals:

Journal of Applied Fluid Mechanics (JAFM)

International Journal of Advanced Engineering

International Journal of Analysis of Basic and Applied Science

International Journal of Technology, Science and Engineering

International Journal of Engineering Trends and Technology (IJETT)

Reviewer for ICAME 2022 conference, SRMIST



Editorial Board Member / Review member of International Association of Academic plus Corporate Society (IAAC) Journals

Students Projects Guided : 30 (UG: 28, PG: 3)

### **Memberships**

Member of Society for Automotive Engineers (SAE)-India

Indian Science Congress Association

American Institute of Aeronautics and Astronautics (AIAA)

International Association of Engineers (IAENG)

International Association of Academic plus Corporate Society (IAAC)

International Society for Development and Sustainability (ISDS).

### **PERSONAL DETAILS**

Name : Saravanan .G.  
Father's Name : Mr.A.Ganesan, M.A.B.Ed. (Late)  
Date of Birth & Age : July 5th 1976, 46 years.  
Language Known : Tamil, English & Malayalam.  
Sex / Marital Status : Male / Single  
Nationality : Indian

Declaration: I declare that the above information is true to the best of my knowledge.

Yours Sincerely

G.Saravanan