Profile Description

Name and full correspondence address: Dr. Sundararaj K. 1.

Professor and Head

Department of Aeronautical Engineering Kumaraguru College of Technology

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9488925986, 0422-2661321

Date of Birth 3. : 14.04.1964

4. Gender (M/F/T) : Male

5. **Academic Qualification (Undergraduate Onwards)**

S. No	Degree	Year	Subject	University	Class
1	A.M.Ae.S.I	1993	Aerodynamics	The Aeronautical Society of India,	First
				New Delhi	
2	MTech	1996	Aerospace	Indian Institute of Technology	First
			_	Madras	
3	PhD	2009	Mechanical	Anna University	
			Engineering	Chennai	NA

7. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Ph.D thesis title: Numerical Investigation of on Staged Transverse Injection in a Scramjet Combustor and its Mixing Augmentation Using Expansion Ramp

Guides Name:

Name: Dr. Dhandapani Institute: Coimbatore Institute of Technology, Coimbatore (Government Aided Institutions-Affiliated to Anna University Chennai)

Year of Award: 2009

- 8. Work experience: Twenty one years of Teaching and Research Experience in the AICTE approved institutions
- 9. Area of Interests: Computational and Experimental Aerodynamics, Heat Transfer and Engineering Mechanics
- 10. **PhD Guidance:** Anna University Recognized Supervisor for guiding research scholars of PhD.

Details of PhD Completed: Three (Investigation of Supersonic Combustor- 2 Nos., Investigation of Panel structures with cut-outs- 1 No.)

$11. \ \textbf{Professional Recognition.}$

S.No	Name of Award	Awarding Agency	Year
	Elected as the Committee of		2015
	Aerospace Division of	Institution of Engineers	
1	Institution of Engineers		

12. **Publications**

S.N	Author(s)	Title	Name of Journal	Volume	Page	Year
0.						
1.	Sundararaj K. and Ganesh M	Numerical investigation of composite stiffened panel with various stiffeners under axial compression	AIP Conference Proceedings 2270, 140017 (2020);	https:// doi.org/ 10.106 3/5.001 9625	Online public ation	2020
2.	Aravind S, Sabarinathan G, Ajith S, Amrith M,4 and Sundararaj K, and V. R. Sanal Kumar	Design of PreDiffuser Cones for Dump Diffusers for Aero Gas Turbine Engines	AIAA Propulsion and Energy 2019 Forum	AIAA- 2019- 4258 DOI: 10.251 4/6.201 9-4258	Online public ation	2019
3.	Chithra D., Sundararaj K	Influence off Dual Heat Sources on Natural Convection in a Square Enclosure	International Journal of Mechanical and Production Engineering Research and Development (IJMPERD) ISSN(E): 2249-8001	Vol. 9, Issue 1	280- 290.	2019
4.	Aravind A, Vetrivel M, Abhimanyu P, Akaash Emmanuel Raj C. A, K. Sundararaj and V.R.S.Kumar	Aerodynamic Design Optimization of High-Speed Hatchback Cars for Lucrative Commercial Applications	International Journal of Aerospace and Mechanical Engineering	Vol:13, No:3	236- 243	2019
5.	Arul Prakash R., Senthil Kumar M., Vijayanandh R., Sundararaj, K. and Raj Kumar G	Experimental Investigation of Oxygen Enrichment in Supercharged Diesel Engine	Ecology, Environment and Conservation Paper	Vol 24	5-9	2018
6.	Santhanakrishnan R., and Sundararaj K	Numerical Investigation of a Round Jet Normal to a Crossflow: Application to Pollutant Dispersion	Ecology, Environment and Conservation Paper	Vol 24	164- 168	2018
7.	Sundararaj K., Santhanakrishnan R.	Mechanical Characteristization Studies on Cold Cracking Susceptibility of P92 Steel Weldments	Journal of Advanced Research in Dynamical and Control Systems, ,.	Vol. 9 Sp-14	1210- 1214	2017
8.	Sankaran, A, Sundararaj, K & Santhanakrishnan	Certain Investigations of Numerical Simulation on Supersonic Combustor of Staged Transverse Injection	Asian Journal of Research in Social Sciences and Humanities, ISSN:2249- 7315	Volum e:7, Issue:	603- 614	2017

		behind a backward facing step with Cavity		2		
9.	Ganesh M., Sundararaj K.	Buckling Analysis of Stiffened Curved Panel with Straight and Z-Shaped Stiffener	Asian Journal of Research in Social Sciences and Humanities	Vol. 7, No. 3	1109- 1121	2017
10.	Santhanakrishnan, R, Sundararaj, K., Balasubramani, T & Karthick Ram, S	Numerical Simulation and Investigation on Cavity formation between the Staged Transverse Injection in a Scramjet Combustor	Journal of the Balkan Tribological Association	vol.22, no.4		2016
11.	A.Sankaran, K.Sundararaj , M.Harish	Investigation of Turbulent Compressible Flow over Payload Fairing Configurations at Zero Incidence	International Journal of Engineering Trends and Technology (IJETT),	V41(3	149- 152	2016
12.	Sundararaj, K. and Kalidas, K	Application of Analytic Hierarchy Process as a software module for the Hierarchial Selection of raw material suppliers in Foundry	International Journal of Printing, Packaging and Allied Sciences	Vol 4, No. 3	2122 - 2126	2016
13.	Sankaran, A, Sundararaj, K & Moses Deva Prasanna	A CFD based numerical analysis of scramjet combustor'	International Journal of Engineering Research and Technology	Vol.5, No.12	1-4	2016
14.	Chithra, D, Eswaramurthi, M & Sundararaj, K	Numerical Investigation of Laminar Natural Convection in Inclined Square Enclosure with the Influence of Discrete Heat Source	Journal of Applied Mathematics, ISSN 1687- 0042	2015	1-9	2015
15.	Chithra, D, Eswaramurthi, M & Sundararaj, K	Numerical Investigation of Natural Convection Heat Transfer In A Square Cavity With The Influence of Prandtl Number'	Internationa Journal of Applied Engineering Research, ISSN 0973-4562	vol. 10, no. 11	30019- 30028	2015
16.	Chithra, D, Eswaramurthi, M & Sundararaj, K	Numerical Investigation of Natural Convection Heat Transfer in a Square Cavity	International Journal of Engineering Research & Technology, ISSN: 2278- 0181	vol. 4, Issue 07	241- 247	2015
17.	Kalidas, K, and Sundararaj, K.	Investigations on raw material supplier selection methodology using Fuzzy Logic	Journal of Applied Sciences Research	Vol 11, No. 23	117 - 121	2015
18.	Sundararaj, K. and Dhandapani, S.	Numerical Simulation on Effect of Expansion Ramp on staged Transverse Injection Fuel in a Supersonic Combustor	International Journal of Mechanical and Production Engineering Research and Development	Vol. 2, No. 3	19-27	2012
19.		Numerical Investigation on Influence of Injection Angle on Mixing in a Staged Transverse Injection of Fuel into Supersonic Airstream	International Journal of Applied Engineering Research	Vol 2, No. 3	467- 481	2007
20.	Sundararaj, K. and Dhandapani, S.	Numerical Simulation of Staged Transverse Injection of H_2 Fuel in a Ducted Supersonic Airstream with SST K- ω Turbulence Model	International Journal of Dynamics of Fluid	Vol. 2, No. 2,	245- 262	2006

11. Additional Information:

Teaching and Learning:

I, Dr. K. Sundararaj has been in the teaching career since 1997 in the reputed engineering institutions and involved in supporting young engineers to become good professionals contributing to our nation. The area of specializations include Fluid Dynamics, Heat Transfer, High speed flows, Application of Shock Waves and Aerodynamics and I am passionate to teach these courses.

Consultancy Services:

Coordinated the consultancy services taken by our department along with KC.IRI (Industry, Research and Innovation Centre of Kumaraguru College of Technology) on "Design of Settling Chamber of Trisonic Wind Tunnel" approved by DRDL, worth 9.5 Lakhs.

Pursuing research work motivating budding engineers establishing the following Research facilities in the Department

- a. Shock Tube (Overall 7m length and 50 mm ID) with High Speed Data Acquisition System
- b. High speed supersonic flow facilities with Shadowgraph flow visualization and data logger

Membership in Professional Bodies

- Life Member of Society for Shock Wave Research
- Life Member of the Indian Society for Technical Education,
- Fellow of Institution of Engineers
- Life Member of the Aeronautical Society of India

Contribution to other Institutions

- Presently acting as supervisor for two faculty working in Hindhusthan College of Engineering and Technology, Coimbatore and Hindusthan Institute of Technology, Coimbatore
- Expert Committee Member of Board of Studies of Hindustahan College of Engineering and Technology.
- Supporting as Doctoral Committee member for the faculty doing PhD in the Institutions such as
 Coimbatore Institute of Technology, Anna University Tirunelveli, Sri Ramakrishna Engineering College,
 Coimbatore and SNS College of Technology, Coimbatore

Dr. Sundararaj K.