Dr. R. Naren Shankar, ME, Ph.D. (Anna University, Chennai)
Centre for Computational Aerodynamics and Shock Waves
Associate Professor/Department of Aeronautical Engineering

ORCID ID: 0000-0002-3363-4478 | SCOPUS ID: 57189237678

Email: narensankar@veltech.edu.in | Mobile: +91 9940175934

Research Areas

High Speed Jet Flows, Shock waves, Computational analysis of high speed jets.

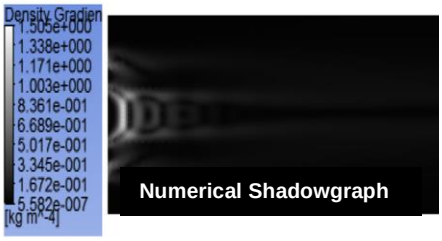
Projects &Publications Summary

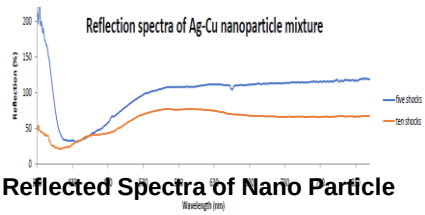
Project		Publication Count		Citation Count			Impact Factor
Completed	01	SCI	011		Google	SCOPUS	0.59
Ongoing	02	SCOPUS	05	Citations	99	80	
Submitted	00	Books	000	h-index	05	06	
		Books chapters	000	i10index	04	04	

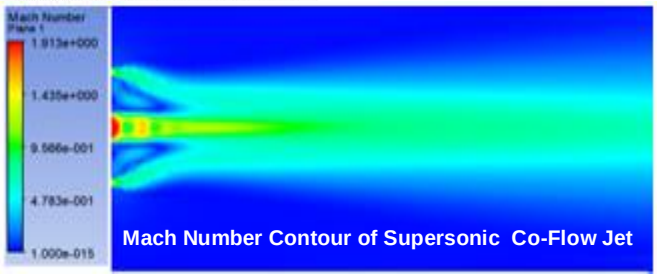
National/International Collaboration

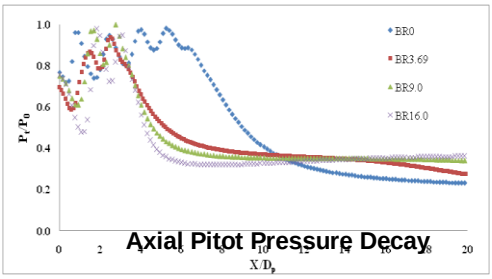
- IIITM, Chennai - Optimizing Supersonic Co-Axial Nozzle design for Mixing Enhancement.
- Preethi Kitchen Appliances Pvt. Ltd. - Thermal efficiency enhancement of domestic LPG stove
- Naval Science & Technological Laboratory, DRDO - Autonomous Underwater Vehicle -
- KCG College of Technology - Subsonic co-flowing jet
- Nehru Institute of Engineering and Technology - Supersonic co-flowing jet

Research snippets









Research facilities

- Hypersonic Shock Tunnel Facility equipped with compressor and vacuum pump

Outline of Research Works

- Computational fluid dynamic approach to analyze the coaxial jet characteristics.
- Optimization of coaxial nozzle by varying nozzle lip thickness.
- Coaxial jet mixing enhancement using passive controls like chevrons.
- Hypersonic shock wave impingement on blunt bodies such as rocket nose cones.
- Applying shock waves for Nano technological and biotechnological applications.

Details of Funded Projects

S.No	Project Title	Funding agency	Amount (Rs.)	Duration	Collaboration
1.	Optimizing Supersonic Co-Axial Nozzle design for Mixing Enhancement.	SERB-TARE	18,30,000/-	2022-24 (Ongoing)	IITM
2.	Hypersonic Shock Tunnel	VEL TECH SEED FUND	1,99,214/-	2022-23 (Ongoing)	-
3.	Autonomous Underwater Vehicle	NSTL-DRDO	8,40,000/-	2019-20 (Completed)	NSTL-DRDO
4	Thermal efficiency enhancement of domestic LPG stove	Preethi Kitchen Appliances Pvt. Ltd.	2,17,129/-	2018-20 (Completed)	PKAL

Recent Best 5 SCI Publications

- *K. Sathish Kumar,* ***R. Naren Shankar****, K. Anu Sindhiya. and B.R. Senthil Kumar*. Numerical analysis of supersonic co-flow jet with varying lip thickness, *Aircraft Engineering and Aerospace Technology*, Vol. 94(2), pp. 198-209., 2022 - IF: 0.975
- ***R. Naren Shankar****, Thanigaiarasu, S., Elangovan, S. and Rathakrishnan, E.* O Co-Flowing Jet Control Using Lip Thickness Variation, *International Journal of Turbo & Jet-Engines*, Vol. 38 (3), 2021, pp. 289-302. https://doi.org/10.1515/tjj-2018-0024 – IF: 1.082
- ***R. Naren Shankar****, V.G. Ganesan, N. Dilip Raja, K. Sathish Kumar, and K. Vijayaraja*. Numerical investigation of critical lip thickness of subsonic co-flowing jet, *Aircraft Engineering and Aerospace Technology*, Vol. 93 (7), April 2021, 107075- IF:0.975
- *N. Dilip Raja,* ***R. Naren Shankar***. Optimization of friction STIR welded AA6061 + SiCp metal matrix composite to increase joint tensile strength and reduce defects, *International Journal for Simulation and Multidisciplinary Design Optimization*, Vol.12 (28) – IF: 0.89.
- *K. Sathish Kumar, C. Senthil Kumar, and* ***R. Naren Shankar***. Semi-circular corrugated tabs to control subsonic and correctly expanded sonic jets, *Aircraft Engineering and Aerospace Technology*, Vol.93(6), pp.1076– 1084, 2021 - IF: 0.975.

Patents

- Indian patent "Turbocharged LPG stove", Ref. no. 201941043839 (Reply Filed. Application in amended examination)
- Indian patent "A Method and Apparatus for Increasing the Efficiency of an Engine.", Ref. no. 201941051958 (Awaiting Request for Examination)
- Indian patent "Parabolic Inverted Trough Flatbed Evaporator with Heat Storage Compartment and Tower Condenser for Solar Desalination", Ref. no. 202041057447 (Reply Filed. Application in amended examination)

PhD Thesis Guidance

Scholar Name	Thesis Title	University	Status	Year
1. S. Kevin Bennet	Investigation of Mixing Characteristics and Jet Noise Reduction in Subsonic Co-Flowing Jets	Vel Tech, Avadi	Thesis submitted	2022
2. V. Kirubakaran	Prediction of Lean Blowout Limit on Can-Type Swirl Stabilised Gas Turbine Combustor	Vel Tech, Avadi	Thesis submitted	2022
3. U. Siva Prasad	Aerodynamic analysis of Serrated Airfoil	Vel Tech, Avadi	Ongoing	2022
4. Vishal kaushik	Aerodynamic analysis of Vertical Axis Wind Turbine	Vel Tech, Avadi	Ongoing	2022
5. V.G. Ganesan	Subsonic and Supersonic coaxial jet with varying lip thickness and bypass ratio	Vel Tech, Avadi	Ongoing	2022
6. Irish Angelin	Optimizing Supersonic Co-Axial Nozzle design for Mixing Enhancement.	Vel Tech, Avadi	Ongoing	2022

Editorial/Review Activities

- Editor, Book Title Aspects and Applications of Incompressible and Compressible Aerodynamics, IGI Global. (SCI, Web of Science, ELSIVIER, SCOPUS)