

Patent Filed and Published:

- ❖ “A METHOD OF SUPPRESSING THERMO-ACOUSTIC INSTABILITIES BY MEANS OF ACTIVE CLOSED LOOP” Application number 202021026306, dated: 22 June, 2020. The Patent Office Journal No. 52/2021 Dated 24/12/2021.
- ❖ “TOOTHPASTE REFILLER” Application number 2022221009678, dated: 23 February, 2022.

Books/Book Chapter

- ❖ “*Process Equipment Cleaning: An Application of Acoustics*”, published by Lambert publication, 2018. ISBN:978-613-9-81945-4
- ❖ “*Experimental and Simulation Study of Modified Acoustic Horn Design for Sonic Soot Cleaning*”, Chapter No.17 in *Innovative Design and Development Practices in Aerospace and Automotive Engineering*, published by Springer, 2017, pp 117-134.
- ❖ “*Performance and Emission Characteristics of Thermal Barrier Coating on Diesel Engine Fueled with Cottonseed Biodiesel*”, *Advances in Applied Mechanical Engineering. Lecture Notes in Mechanical Engineering*. Springer, 2020 pp 205-213.
- ❖ “*Investigation of Effect of Porous Material on Performance of Helmholtz Resonator*”, *Vibration Engineering: Modeling, Simulation, Experimentation, and Applications*, CRC Press, PP 71, 2024.

Papers Published in Journals

1. “*Experimental Performance Analysis of Single Cylinder Diesel Engine with blends of Food Grain Based and Non-Food Grain based Biodiesel*”, *World Academy of Science, Engineering and Technology*, Volume 60, 2009, pp 442-445.
2. “*Data Acquisition System for I. C. Engine*”, *International Journal of Applied Engineering Research and Development (IJAERD) Engineering Studies* ISSN 0975- 6469 Volume 1, Number 1 (2011), pp. 1 – 20.
3. “*Experimental And Analytical Study For Uncertainty in Strain Measurement*”, *International Journal of Engineering Research and Technology*, Volume 3, Issue 01, January 2015, PP 1-5.

4. *“Theoretical, Simulation and Experimental Analysis of Sound Frequency and Sound Pressure Level of Different Air Horn Amplifier”*, International Journal of Engineering Research and Technology, Volume. 4, Issue. 2, February- 2015, pp.1027-1036.
5. *“Effect of pointed and diffused air injection on premixed flame confined in a Rijke tube”*, Journal of Cogent Engineering, Volume 3, Issue 1, 2016, pp. 1- 12.
6. *“Suppression of thermo-acoustic instability using air injection in horizontal Rijke tube”*, Journal of the Energy Institute, volume 90, Issue 3, 2017 pp. 485-495.
7. *“Experiments on Heat Content inside a Rijke Tube with Suppression of Thermo-acoustics Instability”*, International Journal of Spray and Combustion Dynamics, Volume 9, Issue 2 2017, pp 85- 101.
8. *“Experimental and Simulation Study to Reduce Engine Noise”*, Indian Journal of Science and Technology, Vol 9(34), September, 2016.
9. *“Experimental and Simulation Study of Modified Acoustic Horn Design for Sonic Soot Cleaning”*, Innov. Des. Dev. Pract. Aerosp. Automot. Eng. I-DAD, Feb. 22 - 24, 2016, (Springer Singapore), September, 2016 pp. 117–134.
10. *“Simulation and Experimental Study of Acoustic Waves for Cleaning of Soot in Process Equipments”*, Advances in Intelligent Systems Research (Atlantis Press), Vol. 137, 2017, pp. 242-251.
11. *“Design and Analysis of Lifting Tool Assemblies to Lift different Engine Block”*, American Institute of Physics, Volume 1859, 2017, pp (020056)1-7.
12. *“Effect of Crack on Natural Frequency for Beam Type of Structures”*, American Institute of Physics, Volume 1859, 2017pp(020057) 1-7.
13. *“Design and development of thin wire sensor for transient temperature measurement”*, Measurement, Volume 140, 2019, pp 582–589.
14. *“Coefficient of Rayleigh Index based performance evaluation of radial micro jet injection technique for thermo-acoustic instability control”* Measurement, Volume 151, February 2020.
15. *“Performance and Emission Characteristics of Thermal Barrier Coating on Diesel Engine Fueled with Cottonseed Biodiesel”*, Advances in Applied Mechanical Engineering. Lecture Notes in Mechanical Engineering. Springer,2020 pp 205-213.
16. *“Different Experimental Approaches for Characterization of Thermo-acoustic Instabilities”*, Journal of The Institution of Engineers (India) Series C, Springer, 2021.

17. “*Effect of Helmholtz resonator shape on suppression of thermo-acoustic instability*”, Materials Science and Engineering (IOP), 2022.
18. “*Effect of position of radial air injection plane on control of thermo-acoustic instability using active closed-loop method*”, Journal of Vibration and Control 2021, Vol. 0(0) 1–9.
19. “*Control of Noise and Temperature Using Radial Air Injection inside Engine Silencer*”, Journal of Thermal Engineering, vol. 9, no. 1, pp. 107-115, Jan. 2023.
20. “*Effect of geometrical parameters and use of porous material in a Helmholtz resonator on suppression of thermo-acoustic instabilities*”, International Journal of Spray and Combustion Dynamics. 2023;0(0).
21. “*Development of Closed-Loop Active Control Method for Suppression of Thermoacoustic Instability Using Radial Air Micro-Jets*”, MethodsX, Volume 10, 102123 2023.
22. “*Experimental method for temperature measurement on lateral planes along a Rijke tube to assess efficacy of control method*,” MethodsX, vol. 10, no. January, p. 102170, 2023.
23. “*Suppression of thermo-acoustic instabilities in horizontal Rijke tube using pulsating radial jets*”, MethodsX, vol. 11, 2023.
24. “*Suppression of Thermo-acoustic Instability inside a Rijke Tube using an Adaptive Passive Helmholtz Resonator*”, Journal of The Institution of Engineers (India): Series C, 1-15, 2024.
25. “*Experimental and Simulation Study to Evaluate Effect of Radial Air Injection on Performance of Motorcycle Silencers*” Journal of Thermal Engineering. (Accepted for publication)
26. “*Dynamic Water Monitoring and Management System Using LabVIEW and Machine Learning*”, Sigma Journal of Engineering and Natural Sciences. (Accepted for publication)

Paper Presented International Conference

1. “*Measurements of Physical Parameters of Two Stroke Internal Combustion Engine Using Microcontroller*” in the International Conference PICA-2006 organized by Priyadarshani College of Engineering Nagpur, 11 July, 2006.
2. “*Virtual Instrument for Measuring Brake Power of I. C. Engine Using NI Lab VIEW*” in International Conference ICAMDIA-2007 organized by College of Engineering Pune in associate with corporate, 10 January, 2007.

3. *“Continuous Temperature Monitoring System In Engineering Application Using NI Lab View”* in the Global Conference CPIE-2007 organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Panjab, 22 March, 2007.
4. *“Evaluation of Non-Food Based Biodiesel for Low Carbon Vehicle”* in International Conference Team Tech -2008 organized by Indian Institute of Science, Bangalore.
5. *“Comparative Study of Hybrid Vehicles”* in proceedings of International Conference on Emerging Research and Advances (ERA–2009) organized by Velammal Engineering College, Chennai, 19-21, March, 2009.
6. *“Experimental Performance Analysis of Single Cylinder Diesel Engine with blends of Food Grain Based and Non-Food Grain based Biodiesel”*, in proceedings of International Conference on Applied Mechanics and Mechanical Engineering (ICAMME 2009), organized by World Academy of Science Engineering and Technology, Bangkok, Thailand, 25-27, December 2009.
7. *“Measurement of Physical parameters of Four Stroke Single cylinder I.C. Engine using DAQ”* in proceedings of International Conference ICAME-2009 organized by Sardar Vallabhbhai National Institute of Technology, Surat, 3 - 5, August, 2009.
8. *“Design and Fabrication of Wind Mill for Small Application”* in International Conference ICEE-2009 organized by Pondicherry Engineering College, Pondicherry, 7 January 2009.
9. *“Design and Fabrication of Speed Controller and Storage System for Wind Mill.”* in International Conference ICEEE-2009 organized by Mulshi Institute of Technology and Research, Pune, 16 February 2009.
10. *“Comparison of Properties and Performance of Jatropha Curcas Oil with Soyabin Oil as Biodiesel Source”*, Proceedings of New Frontiers in Biofuels organized by Delhi Technological University on Jan,18 - 19, 2010.
11. *“Experiments on Premixed Flame Confined in a Tube with Radial Air Injection”*, 10th Euromech Fluid Mechanics Conference organised by Technical University of Denmark (DTU), Copehagen, Denmark from 14 – 18, September, 2014.
12. *“Experimental and Simulation Study of Modified Acoustic Horn Design for Cleaning”*, International Conference on Emerging Research trends In Applied Engineering and Technology (ICERAT-2016) organized by KGCE, Karjat, April 1- 2, 2016.

13. “*Experimental and Simulation Study of Modified Acoustic Horn Design for Sonic Soot Cleaning*”, 2nd International conference on Innovative Design, Analysis and Development Practices in Aerospace and Automotive Engineering (I- DAD 2016) organized by VEL TECH University, Chennai, February 22 – 24, 2016.
14. “*Stress Measurement of a Helical Coil Spring under Static Load Using Strain Rosette*”, 2nd International conference on Design, Analysis, Manufacturing and Simulation (ICDAMS-2016) organized by Saveetha School of Engineering, Chennai, April 7- 8, 2016.
15. “*Experimental and Simulation Study to Reduce Engine Noise*”, 2nd International conference on Design, Analysis, Manufacturing and Simulation (ICDAMS- 2016) organized by Saveetha School of Engineering, Chennai, April 7- 8, 2016.
16. “*Simulation and Experimental Study of Acoustic Waves for Cleaning of Soot in Process Equipments*” International Conference on Materials, Manufacturing and Design (ICMMD 2016) organized by Dr. Babasaheb Ambedkar Technological University, Maharashtra, Dec. 20-21, 2016
17. “*Experimental and Simulation Study for Optimal Position of Different Horn Length in Acoustic Cleaning*”, International Conference on Nascent Technologies in Engineering (ICNTE-2017) organized by Fr. C. Rodrigues Institute of Technology, Vashi, Jan 27-28, 2017.
18. “*Effect of Excitation Voltage and Lead wire Resistance on Strain Measurement*”, 2nd International Conference for Convergence in Technology (I2CT) Pune, India, April, 7-9,2017, pp747-752.
19. “*Design and Analysis of Lifting Tool Assemblies to Lift different Engine Block*”, International Conference on Functional Materials, Characterization, Solid State Physics, Power, Thermal and Combustion Energy (FCSPTC-2017) organized by Ramachandra College of engineering located at Eluru, Andhra Pradesh, India, April 7-8, 2017.
20. “*Effect of Crack on Natural Frequency for Beam Type of Structures*”, International Conference on Functional Materials, Characterization, Solid State Physics, Power, Thermal and Combustion Energy (FCSPTC-2017) organized by Ramachandra College of engineering located at Eluru, Andhra Pradesh, India, April 7-8, 2017.
21. “*Performance Optimization of Airfoil Blade for Horizontal Axis Wind Turbines*”, International Conference on Emerging Trends in Engineering Innovations & Technology Management

(EITM 2017) organized by National Institute of Technology, Hamirpur, Himachal Pradesh, India, December 16-18, 2017.

22. “*Study of the Effect of Heat Flux Position on Thermo-Acoustic Instability on the boundaries of Rijke tube*”, International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM-2017) organized by Indian Institute of Technology Kharagpur, India, December 28-30, 2017, IIT Kharagpur,
23. “*Identification of Cord wise Location of Shear Web of Wind Turbine Blade*”, Energy System Conference organised by Elsevier and Energy Institute, Westminster, London, UK, June 19-20, 2018.
24. “*Suppression of Thermo-Acoustic Instabilities Using Helmholtz Resonator*”, International Conference on Nascent Technologies in Engineering (ICNTE-2019) organized by Fr. C. Rodrigues Institute of Technology, Vashi, Jan 4-5, 2019.
25. “*Optimization of Acoustic Wave for Process Equipment Cleaning using Design of Experiments*”, International Conference on Nascent Technologies in Engineering (ICNTE-2019) organized by Fr. C. Rodrigues Institute of Technology, Vashi, Jan 4-5, 2019.
26. “*Identification of Cordwise Location of Shear Web of Wind Turbine Blade*” International Conference on Nascent Technologies in Engineering (ICNTE-2019) organized by Fr. C. Rodrigues Institute of Technology, Vashi, Jan 4-5, 2019.
27. “*Performance and Emission Characteristics of Thermal Barrier Coating on Diesel Engine Fueled with Cottonseed Biodiesel*” 1st International Conference on Applied Mechanical Engineering Research (ICAMER - 2019) organized by National Institute of Technology, Warangal, May 2-4, 2019.
28. “*Measurement and Control of Temperature and Speed using LabVIEW*” 1st International Conference on Applied Mechanical Engineering Research (ICAMER - 2019) organized by National Institute of Technology, Warangal, May 2-4, 2019.
29. “*Effects of Volume and Neck Length of Helmholtz Resonator on Thermo-acoustic Instability*” 4th Biennial International Conference on Nascent Technologies in Engineering (ICNTE2021) organized by Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, India, January 15-16, 2021.
30. “*Effect of shape of Helmholtz resonator on suppression of thermo-acoustic instability*” International Conference on Advances in Mechanical Engineering-2022” (ICAME-2022)

organized by G H Raison College of Engineering, Nagpur, Maharashtra, India, May 27-28, 2022.

31. *“Investigation of Effect of Porous Material on Performance of Helmholtz Resonator”*, International Conference on Vibration Engineering, Science, and Technology (INVEST 22) organized by Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, India, December 09-10, 2022.
32. *“Design & Development of Semi-Automated Multipurpose Electric Farming Bot”*, International Conference on Nascent Technologies in Engineering (ICNTE 2023), organized by Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, India, January 20-21, 2023.
33. *“Vibration Based Damage Detection in Plates Using Mode Shapes”*, 4 th International Conference on Recent Advancements in Mechanical Engineering organized by National Institute of Technology, Silchar, Assam India, Feb. 3-5, 2023.
34. *“Fault Diagnosis in Rotating Machines Using Vibration Analysis”*, 4 th International Conference on Recent Advancements in Mechanical Engineering organized by National Institute of Technology, Silchar, Assam India, Feb. 3-5, 2023.

Paper Presented National Conference

1. *“Investigation on feasibility of LPG as a fuel for Motorcycle”* in the National Conference AAQMENT-2006 organized by Erode Sengunthar Engineering College, Thudupathi, Erode.
2. *“Power Generation from Wind Turbine”* in proceedings of National Conference on Renewable Energy For Youth Empowerment in Rural Area (NCORE – 2008) at S.N.Arts, D. J. Malpani Commerce and B. N. Sarda Science College, Sangamner, on 23 – 25, March, 2008.
3. *“Review of Vegetable Oil as Alternative Fuel For Internal Combustion Engine (CI Engine)”*, National Conference on Emerging Trends in Engineering and Technology, SLRTCE, Mira road on March 11, 2011.
4. *“Study of Combustion Instability with Pre-mixed Flame Confined in a Tube”*, Fortieth National Conference on Fluid Mechanics and Fluid Power organized by NIT Hamirpur, Himachal Pradesh, India December 12-14, 2013.
5. *“Development of Sensor for Unsteady Heat Release Measurement”*, Symposium on Nascent Technologies in Aerospace Engineering and Aviation Systems (AAKASH 2018) organized by

The Aeronautical Society of India (Mumbai Branch), Fr. C. Rodrigues Institute of Technology, and Indian Institute of Technology, Bombay, India, March 24, 2018.

6. *“Suppression of Thermo-acoustic Instability by Passive Approach”*, Symposium on Nascent Technologies in Aerospace Engineering and Aviation Systems (AAKASH 2019) organized by The Aeronautical Society of India (Mumbai Branch), Fr. C. Rodrigues Institute of Technology, and Thakur Institute of Aviation Technology India, March 30, 2019.

Research Funding:

- ❖ *“Experimental and Simulation Study of different Horns for Cleaning”*, Minor research grant from University of Mumbai 2013-14 of Rs. 45000/-.
- ❖ *“Optimization of Wind Mill Design with Experimental and Simulation Study”*, Minor research grant from University 2015-2016 of Mumbai of Rs. 35000/-.
- ❖ *“Experimental and Simulation study of Characterization and suppression of thermo-acoustic instability”* Minor research grant from University of Mumbai 2016-17of Rs. 25000/-.
- ❖ *“Suppression of Thermo-acoustic Instability using Helmholtz Resonator”* Minor research grant from University of Mumbai 2019-20 of Rs. 40000/-.