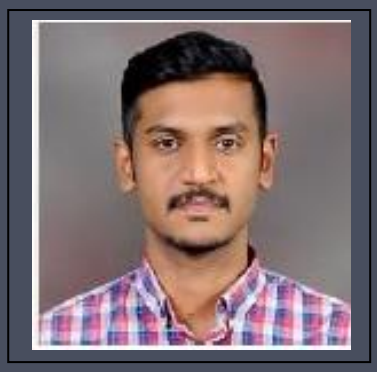

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Professional Experiences:

Teaching: 7 yrs

Research: 5 yrs

Courses Taught:

1.Tribology & Bearing Design
2. Dynamics of Machinery
3. Hybrid Vehicles
4. Mechanics of Composites
5. Finite Element Methods
6. Operations Research

ABOUT ME

I have worked as an Assistant Professor and taught subjects at both UG and PG levels in colleges namely, Sarabhai Institute of Science and Tech, Trivandrum, College of Engineering, Trivandrum, Sree Buddha College of Engineering, Alappuzha and NIT- Pondicherry.

I have done my research on the different gas generants which can be used in automobile airbags. I have published these works in reputed international journals. I have also 2 patents granted to my name. I have also hands on experience on thermal analysis equipment like Differential Scanning Calorimetry and Thermogravimetric analyser.

Post Ph.D, I have started research on improving the material properties (Mechanical & Thermal) of composite materials and have published journals and bookchapters on the same.

RESEARCH INTERESTS:

- Thermo-Kinetics of Materials
- Automotive Safety
- Thermal Analysis of Hazardous Materials
- Composite Materials

EDUCATION

- Ph.D in Automobile Engineering & Safety
  NIT - Tiruchirapalli
  Year of Graduation : 2021
- M.Tech. in Machine Design
  Saintgits College of Engineering, Kottayam
  Year of Graduation : 2011
- B.Tech in Mechanical Engineering
  Sarabhai Institute of Science & Tech, Trivandrum
  Year of Graduation : 2009

PUBLICATIONS

1. **Aravind, S. L**., Paramashivan, S. S., & Mahadevan, S. Thermo-kinetic studies of NaN_3/KNO_3 air bag gas generant mixture. *Journal of Thermal Analysis and Calorimetry*, *136*(5), 2183- 2193 (2019). **(SCI Indexed IF 2.1) (Q1 Journal)**
2. **Aravind, S. L**., Paramashivan, S. S., Ramasamy, B. K., & Mahadevan, S. Impact of fuel/oxidizer ratio of NaN_3 and KNO_3 airbag gas generants on toxic emission and performance. *Process Safety and Environmental Protection*, *133*, 348-357 (2020). **(SCI Indexed IF 4.3) (Q1 Journal)**
3. **Aravind, S. L**., Paramashivan, S. S., Ramasamy, B. K., & Mahadevan, S. Thermo-kinetic studies of Azodicarbonamide/Potassium periodate airbag gas generants . *Process Safety and Environmental Protection*, (Accepted, In Press) (2020). **(SCI Indexed IF 4.3) (Q1 Journal)**
4. Jeyabalaganesh, G., S. P. Sivapirakasam, K. R. Balasubramanian, and **S. L. Aravind**. "Evaluation on substitution of conventional azide based fuel materials with an alternate one in an airbag system–A review." *Materials Today: Proceedings* (2020).
5. S P Sivapirakasam, Harisivasri Phanindra, Rohin Jose, **Aravind, S. L.** Impact sensitivity of pyrotechnics: a model based on activation energy. Combustion, Explosion and Shockwaves (Accepted, In Press) 2020. **(SCI Indexed IF 0.39)**
6. S.P.Sivapirakasam, Venu, Jeyabalaganesh, **S L Aravind**, Aravind G. Simple method to evaluate the ballistic properties of gas generant compositions. **.** Combustion, Explosion and Shockwaves (Accepted, In Press) 2021. **(SCI Indexed IF 0.39)**
7. M.Rahul, S.P.Sivapirakasam, B.R.Vishnu, **S L Aravind**, SreejithMohan. Experimental investigation on gripper force of electrically activated non-contact swirl vane gripper**.** *Materials Today: Proceedings* (2020).
8. Ravikiran, K R Prakash, Prashanth, H Poornananda, V M Akhil, **S L Aravind**, Viscosity and Tribological characteristics of Sunflower Oil with Zno as Additive, International Journal of Mechanical Engineering, 9,9,1-7, 2022
9. Ravikiran, ,Srikara Kundargi, **S L Aravind,** V M Akhil, R Madhusudhana, Rheological and Tribological characterization of completely biogenic grease, Recent Trends in Materials, Springer Proceedings, 2022.
10. V.M. Akhil , **S.L. Aravind** , Ravi Kiran , Sivapirakasam S P , Sreejith Mohan, Experimental investigations on the effect of infill patterns on PLA for structural applications, *Materials Today: Proceedings* (2022).
11. Jeyabalaganesh G, Sivapirakasam S P, Sreejith Mohan, **Aravind S L**, Harisivasri Phanindra K, "A Methodological Approach to select a suitable Azodicarbonamide based Airbag gas generant" , Combustion Science & Technology, (2023), **(SCI-Indexed, IF 2.1).**
12. Ravikiran, Adarsh Sawant, Darshan Patil, **Aravind S L**, Akhil V M, Madhusudan R, "Design and development of helium assisted quadcopter with object recognition", AIP Conference proceedings 2766, 020014, 2023.
13. Akhil, V.M., **Aravind, S.L.**, Nayak, R. (2023). Comparison of Fault Detection Data from Defective Ball Bearings Using Artificial Neural

Networks. Advances in Manufacturing, Automation, Design and Energy Technologies. ICoFT 2020. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-99-1288-9_61

14. **Aravind S L**, S P Sivapirakasam, Sreejith Mohan, Surianarayanan M,. "Thermokinetic and Ballistic Property Studies of Azide-Based Airbag Gas Generants with Dual Oxidizers ($Sr(NO_3)_2$ and KNO_3)", Energy Technology (2023), SCI Indexed IF 4.1) (Q2 Journal) https://doi.org/10.1002/ente.202300023
15. B Suresha, S M Darshan, **Aravind S L** & B Harshavardhan, "Thermomechanical and Viscoelastic properties of biodegradable and biocompatible polymer nanocomposites" In: Biodegradable and Biocompatible Polymer Nano Composites: Processing, Characterisation and Applications, Elsevier Book Chapter 2023.

16. **Aravind, S.L. *et al.* (2023).** Experimental Investigations on the Effect of Carbon Nanotubes and Nanoclay Additives on Thermo-Kinetics and Mechanical Characteristics of Acrylonitrile Butadiene Styrene (ABS). In: Mavinkere Rangappa, S., Siengchin, S. (eds) Proceedings of the International Symposium on Lightweight and Sustainable Polymeric Materials (LSPM23). LSPM 2023. Springer Proceedings in Materials, vol 32. Springer, Singapore. https://doi.org/10.1007/978-981-99-5567-1_22

17. B. Suresha Vikas Hanamasagar, Imran M. Jamadar ,**S.L.Aravind** and H. M. Somashekar Mechanical Properties and Abrasion Resistance of 3D Printed Lightweight CF-Reinforced PLA/ABS Composites Using Design of Experiments In: Mavinkere Rangappa, S., Siengchin, S. (eds) Proceedings of the International Symposium on Lightweight and Sustainable Polymeric Materials (LSPM23). LSPM 2023. Springer Proceedings in Materials, vol 32. Springer, Singapore. https://doi.org/10.1007/978-981-99-5567-1_22

INTERNATIONAL CONFERENCES

1. **Aravind S L**, Bharath H P, Suresha B, Harshavardhan B, Imran M Jamadar, P. K. Samal, Anand A "**Evaluation of damping characteristics of 3D printed CF-reinforced PLA/ABS composite sandwich panels"** International Symposium on Lightweight and Sustainable Polymeric Materials - LSPM'23 (Virtual mode), Bangkok, Thailand, 17th February 2023.
1. B. Suresha, Vikas Hanamasagar, Imran M Jamadar, **S. L. Aravind**, H., M. Somashekar, **"Mechanical properties and abrasion resistance of 3D printed lightweight CF-reinforced PLA/ABS composites using design of experiments"**, International Symposium on Lightweight and Sustainable Polymeric Materials - LSPM'23 (Virtual mode), Bangkok, Thailand, 17th February 2023.
2. **Aravind S L,** Akhil V M, Ravikiran, Sreejith Mohan, S P Sivapirakasam, **Experimental investigations on the effect of infill patterns on PLA for structural applications,** International conference on Additive Manufacturing and Allied Technologies, June 2022, National Institute of Technology, Tiruchirapalli, Tamilnadu
3. Chetan, **Aravind S L,** Harshavardhan B**, Effect of change in volume fraction on Thermo-kinetics of Ramie-Glass Hybrid Composites,**

International Conference on Sustainable Materials, Manufacturing and Industrial Engineering, July 2022, SIT, Tumkur, Karnataka

4. Chetan, **Aravind S L,** Harshavardhan B**, A review on Mechanical and Thermal characteristics of Ramie reinforced composite and its fabrication technique,** International Conference on Sustainable Materials, Manufacturing and Industrial Engineering, July 2022, SIT, Tumkur, Karnataka
5. Bharath H P**, Aravind S L,** Suresh B**, Mechanical properties and Thermal Properties of ABS with fibers and fillers – A Review,** International Conference on Sustainable Materials, Manufacturing and Industrial Engineering, July 2022, SIT, Tumkur, Karnataka
6. Shailesh M V, **Aravind S L**, **Experimental investigations on Corrosion Inhibition of Aluminium Alloy 5052 by TiO_2 coating**, International Conference on Sustainable Materials, Manufacturing and Industrial Engineering, July 2022, SIT, Tumkur, Karnataka
7. Akhil V M, **Aravind S L, Comparison of fault detection data from defective ball bearings using artificial neural networks, 2nd International Conference on Future Technologies,** December 2021**,** National Institute of Technology, Karaikkal-Puducherry,
8. **Aravind S L**, Sivapirakasam SP, M Surianarayanan, **Thermal analysis of Azodicarbonamide/potassium periodate airbag gas generant mixtures**, *2nd Journal of Thermal Analysis and Calorimetry Conference,* June 2019, Budapest, Hungary.
9. **Aravind S L** and T J Paulson, **Vibration Analysis of a test rig for misalignment and bearing defects**, *National Conference on Advances in Mechanical Engineering*, March, 2013, C Abdul Hakeem College of Engineering and Technology, Vellore.
10. **Aravind S L** and T J Paulson, **Vibration Analysis of a test rig for misalignment and bearing defects using LABView**, *International Conference on Recent Advances in Mechanical Engineering*, Apr, 2012, Dr. MGR University, Chennai.
11. Arun C Dixit, Harshavardhan B, Ashok B C, **Aravind S L, "Properties, Selection, "Processing, Characterization and applications of Aluminium-Boron cabide metal matrix composites",** International conference on Advanced Materials and Computational Methods in Mechanical Engineering, Nov, 2022, Vasavi College of Engineering, Hyderabad
12. Arun C Dixit, Harshavardhan B, Ashok B C, **Aravind S L**, **Essential Changes for teaching-learning process in Engineering education**, Tenth International Conference on Transformations in Engineering Design. Jan,2023, Vidyavardhaka College of Engineering, Mysuru

OTHER INFORMATION:
(Patents Filed/ /Research Guidance/Key Roles/Invited Talks Delivered, etc)

Patents

Sl. No.	Provisional Filing Number	Patent Name	Status	Remarks
1.	201741038676	Airbag gas generants comprising layered copper hydroxy nitrate nanosheets	Granted	A well-designed airbag gas generant composition for automobiles which can reduce the toxic emissions from azide based airbag gas generants.
2.	201741041005	Variable volume mini tank testing equipment and method of an airbag chemical performance test	Granted	A novel small-scale ballistic tank testing equipment for airbag chemical test screening.

Research Guidance

- **Recognized Guide for VTU in Mechanical Engineering Sciences**

Key Roles

- **Recognized Reviewer for Elsevier and Springer Nature Journals**