

## Dr. S. AROCKIA SUTHAN

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Date of Birth/Age: 06.09.1993 / 31

Languages: Tamil, English



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### CAREER OBJECTIVE

Seeks a full-time position in the academic and research environment to teach and apply my experience and skills in mechanical, analytical modeling and simulations, system level designs, problem-solving and interdisciplinary work.

### EDUCATION

- **Ph.D., Mechanical Engineering**, April 2023.  
Anna University (MIT Campus), Chromepet, Chennai.
- **M.E. Automobile Engineering**, CGPA: **9/10 (Distinction)**, May, 2017.  
Anna University (MIT Campus), Chromepet, Chennai.
- **B.E. Mechanical Engineering**, CGPA: **8.76/10 (Distinction, AU Rank holder (50<sup>th</sup> Rank))**, April, 2015.  
Panimalar Institute of Technology, Chennai.
- **HSC**, Percentage: **93.17%**, April, 2011.  
**SSLC**, Percentage: **91%**, April, 2009.  
John Paul Higher Secondary School, Dindigul.

### ACADEMIC EXPERIENCE

- Serving as an *Assistant Professor* in the Department of Automobile Engineering at *University College of Engineering (UCE), Anna University (BIT Campus), Trichy* from **08.12.2025 to till date**.
- Serving as an *Assistant Professor* in the Department of Automobile Engineering at *Sathyabama Institute of Science and Technology* from **04.10.2021 to 05.12.2025**.
- While serving as an Assistant Professor, I have supported in the accreditation process for NAAC, NBA and ABET.
- During this tenure, I got expertise in handling CAD/CAM, Automobile Engineering, Mechanical Vibrations, Vehicle Dynamics, Hybrid and Electric Vehicles, Automotive Engine Component Design courses.

### RESEARCH AREA

- Vehicle Dynamics, Vibration, Suspension System.
- EV Vehicle Optimization
- Mechanical Vibrations

### RESEARCH EXPERIENCE

- Completed research in the title of “Design, Simulation and Validation of Controller for semi-Active suspension system”.
- Designed and developed a 3 DOF quarter car test rig for testing and studying the different damper mechanisms.
- mRheo S Active Magnetorheological (MR) damper was tested in the developed 3 DOF QC test rig for its enhancement in attenuating the vibration.
- 3 DOF QC system was modelled using MATLAB/Simulink Software and the performance analysis was carried out.
- Designed and developed a Solid-SCR controlled after treatment device for controlling NOx emission in a diesel engine.

### AWARDS AND HONORS

- Doctoral research was supported by *Anna Centenary Research Fellowship (ACRF)* for a period of three years (*From Jan-2018 to Dec-2020*).

## PUBLICATIONS

1. **Arockia Suthan Soosairaj**, and Arunachalam Kandavel. "Ride comfort analysis of driver seat using super twisting sliding mode controlled magnetorheological suspension system." Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering (2021): 09544070211008763. (**I.F – 1.484, Scopus and SCI indexed**)
2. **Arockia Suthan Soosairaj**, and K. Arunachalam. *Second-Order Sliding Mode Controller for Performance Analysis of Quarter Car Magnetorheological Suspension System*. No. 2020-01-1005. **SAE Technical Paper**, 2020.
3. Kumar, A. L. Jino, **S. Arockia Suthan**, and A. Jayaganthan. "Thermal management of battery cell module using a hybrid nanofluid filled inverted right-angled porous triangular cavity through natural convection." Journal of Thermal Analysis and Calorimetry 149, no. 17 (2024): 9639-9661. (**I.F – 3, Scopus and SCI indexed**)
4. Arivazhagan Anandan, Arunachalam Kandavel, and **Arockia Suthan Soosairaj**, 2019, 'Comparison of Quarter Car Suspension Model Using Two Different Controllers', Lecture Notes in Mechanical Engineering, **Springer**, Singapore, doi:10.1007/978-981-13-2697-4\_22.
5. Jacob, Ashwin, Bragadeshwaran Ashok, Jino Lawrence, **Arockia Suthan Soosairaj**, Jayaganthan Anandan, and Manoj Elango. "Exploring the potential of third-generation microalgae bio-alcohol and biodiesel in arresting particulate smoke emissions and greenhouse gases using CART." Environmental Science and Pollution Research 30, no. 10 (2023): 27650-27669. (**I.F – 5.2, Scopus and SCI indexed**)
6. Jino, L., V. Dev Prasad, M. Ajay Esvar, **S. Arockia Suthan**, E. Manoj, Ashwin Jacob, A. Jayaganthan, and A. Anderson. "Review on natural fibre composites reinforced with nanoparticles." Materials Today: Proceedings (2023). (**Scopus indexed**)
7. Manoj, E., R. Antony Marshall, K. Muthupandi, **S. Arockia Suthan**, R. Balaji Natarajan, Ashwin Jacob, L. Jino and A. Jayaganthan. "Investigation on the mechanical and tribological properties of silicon in an automotive brake pad." Materials Today: Proceedings (2023). (**Scopus indexed**)

## CONFERENCES

1. Arivazhagan Anandan, Arunachalam Kandavel, and **Arockia Suthan Soosairaj**, 2018, 'Influence of vehicle speed and suspension damping on human body in passenger car', FISITA World Automotive Congress 2018, 2<sup>nd</sup> to 5<sup>th</sup> of October 2018, Chennai Trade Centre, Tamil Nadu.
2. Presented a research paper entitled "Study and analysis of quarter car suspension model" in an international conference (ICCMCT-2018) organized by SVS college of engineering, Coimbatore on 23<sup>rd</sup> February 2018.
3. Presented a research paper entitled "PID controller for 3 DOF quarter car active suspension model" in an international conference (ICCMCT-2018) organized by SVS college of engineering, Coimbatore on 24<sup>th</sup> February 2018.
4. Presented a research paper entitled "Mathematical modelling and simulation of semi-active suspension system using sliding mode controller" in national conference on Advancements in Mechanical Engineering held on 15.03.2019, organized by MKCE, Karur.

## SELECTED WORKSHOPS & TRAINING PROGRAMS ATTENDED

1. Completed NPTEL 8 week Course on "EV - Vehicle Dynamics and Electric Motor Drives" from 21.01.2024 to 12.03.2024.
2. Completed NPTEL 4 week Course on "Principles of Vibration Control" from 14.07.2024 to 09.08.2024.
3. Participated in the two-day international conference on Advances in Manufacturing Technology organized by Chennai Institute of Technology on 25<sup>th</sup> and 26<sup>th</sup> march, 2022.
4. Participated in the DST-SERP sponsored National conference on "Integrative-Omics in the Ocean Climate Change" organized by Sathyabama Institute of Science and Technology on 9<sup>th</sup> and 10<sup>th</sup> February, 2023.
5. Participated in the two-day international conference on "International Conference on Contemporary Research Advancements in Mechanical Engineering" organized by Ramco Institute of Technology on 24<sup>th</sup> & 5<sup>th</sup> March 2023.

6. Participated and successfully completed the 5-day online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 22<sup>nd</sup> November, 2021 to 26<sup>th</sup> November, 2021.
7. Participated and successfully completed the 5-day FDP on the theme “Integration of Automotives and Smart Mechatronics System for Sustainable Mobility” organized by KCG college of Engineering Chennai from 31.01.2024 to 04.02.2024.
8. Successfully completed the Faculty Upskilling Programme on “Mathematical Computation using MATLAB” organized by the Department of Electronics and Communication Engineering & Faculty of Mathematics, Rajalakshmi Engineering College, in association with Institution’s Innovation Council, from 06.07.2022 to 12.07.2022

### **SELECTED WORKSHOPS & SEMINARS ORGANIZED**

1. Organized a “7 Days Virtual Workshop on Advancements in Automotive Industries” from 18.10.2021 to 25.10.2021 at Sathyabama Institute of Science and Technology, Chennai.
2. Organized a workshop entitled “Achieving Carbon Neutrality using Green Vehicles” from 28.02.2022 to 04.03.2022 at Sathyabama Institute of Science and Technology, Chennai.
3. Organized a guest lecture entitled “Robots in Automobile Industry” on 23.02.2022 at Sathyabama Institute of Science and Technology, Chennai.
4. Organized a “Five-Day Workshop on Deeper Dive into E-Baja” from 25.07.2022 to 29.07.2022 at Sathyabama Institute of Science and Technology, Chennai.
5. Organized an “One-Day Workshop on Automotive Design – The Future” on 05.12.2022 at Sathyabama Institute of Science and Technology, Chennai.
6. Organized a One-Day “Welding Workshop” on 11.02.2023 at Sathyabama Institute of Science and Technology, Chennai.
7. Organized a guest lecture entitled “FE Simulation and Optimization Using Altair Hyperworks” on 15.02.2023 at Sathyabama Institute of Science and Technology, Chennai.
8. Organized a guest lecture entitled “Introduction to electric vehicle: Market demand and opportunities” on 22.02.2023 at Sathyabama Institute of Science and Technology, Chennai.
9. Organized a guest lecture entitled “3D Printing in Automobile Components” on 10.03.2023 at Sathyabama Institute of Science and Technology, Chennai.
10. Organized a Value-Added Course on “MATLAB and Simulink essentials for Mechanical Engineers” from 04.09.2023 to 11.09.2023 at Sathyabama Institute of Science and Technology, Chennai.
11. Organized a Value-Added Course on “SOLIDWORKS” from 05.02.2025 to 07.03.2025 at Sathyabama Institute of Science and Technology, Chennai.