

Dr. Thangaraja J.

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Education

Academic degrees	Universities Attended	Date of completion	CGPA
Ph.D. (Biofuel combustion & emission control)	Indian Institute of Technology Madras, Chennai	18 th July 2014	8.00
M.E. (Internal Combustion Engineering)	College of Engineering, Guindy Anna University Chennai	24 th April 2009	8.13
B.E. (Mechanical)	Karunya Institute of Technology, Coimbatore, Anna University	18 th April 2006	8.20

Professional positions

Organization	Designation	Nature of job	Duration
Vellore Institute of Technology, India	Associate Professor	Teaching, Research guidance to P.G and PhD scholars. Lab development and various academic activities.	June 2015 to Till date
Indian Institute of Technology Madras, India	Project Officer	Instrumented a single cylinder diesel engine; Derived correlations to predict oil/biodiesel properties; Evaluated the characteristics of biodiesel of different origin/feedstock, Technical report drafting	Dec 2013 to May 2015

Courses taught to engineering students

Under Graduates	Post Graduates	Other Services
<ul style="list-style-type: none"> ✓ Engineering Thermodynamics, ✓ Thermal Engineering Systems, ✓ Fuels and Combustion, ✓ Alternative Fuels, ✓ Fuel Cells 	<ul style="list-style-type: none"> ✓ Engine Combustion and Emissions, ✓ Thermodynamic Analysis of IC Engines 	<ul style="list-style-type: none"> ✓ Developed “Fuel Testing Laboratory” ✓ Framed a syllabus for the university elective course (Alternative Fuels) ✓ Research guidance, Member of interview panel, purchase committee, Project Coordinator & Reviewer, Question paper setter, Lab in-charge, Course Coordinator.

List of Publications

National and International Journals

1. Nivin Chacko & Thangaraja J., “*Effect of pilot and post fueling on the combustion and emission characteristics of a light-duty diesel engine powered with diesel and waste cooking biodiesel blend*”, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 2020, DOI: 10.1080/15567036.2020.1791285
2. Rohan V, Vishal K, and Thangaraja J., “*Experimental investigation on the filtration characteristics of a commercial diesel filter operated with raw and processed karanja-diesel blends*”, *Sādhanā* 45:153, 2020 <https://doi.org/10.1007/s12046-020-01394-2>
3. Nivin C. and Thangaraja J., “*Comparative evaluation of graphene oxide and graphene nanoplatelets as fuel additives on the combustion and emission characteristics of a diesel engine fuelled with diesel and biodiesel blend*”, *Fuel Processing Technology*, Vol. 204, 106406, July 2020, <https://doi.org/10.1016/j.fuproc.2020.106406>
4. Adith S, Anil kumar B, Jayanth K N, Anil P M, Thangaraja J, “*Investigations on the tribological compatibility of a CI engine fuel injector material with various biodiesel blends*”, *Materials Today: Proceedings* 22, 3018–3026, 2020.
5. Mathew, B.C., Thangaraja, J. & Sivaramakrishna, A. “*Combustion, performance and emission characteristics of blends of methyl esters and modified methyl esters of karanja and waste cooking oil on a turbocharged CRDI engine*”, *Clean Techn Environ Policy*, <https://doi.org/10.1007/s10098-019-01750-9>, Nov. 2019, Volume 21, Issue 9, pp 1791–1807
6. Thangaraja J and Vignesh S., “*Techno-economic assessment of coconut biodiesel as a potential alternative fuel for compression ignition engines*”, *Environmental Science and Pollution Research*, Volume 26, Issue 9, pp. 8650–8664, 2019. <https://doi.org/10.1007/s11356-018-04096-9> ISSN: 0944-1344
7. Rajkumar S and Thangaraja J., “*Effect of biodiesel, biodiesel binary blends, hydrogenated biodiesel and injection parameters on NOx and soot emissions in a turbocharged diesel engine*”, *Fuel*, Vol. 240, 101-118, 2019. <https://doi.org/10.1016/j.fuel.2018.11.141> ISSN 0016-2361
8. Sathish Kumar CR, Ghosh S, Siddharth G, Mishra R, Thangaraja J, Yang H, “*Carbonaceous Particle Scavenging and Thermal Comfort Augmentation with an Extended Green Facade Draped with Vernonia elaeagnifolia*”, *EnvironmentAsia* 12(3), 62-74, 2019 DOI 10.14456/ea.2019.46
9. Durga Prasad, Akash R Reddy, Balan A S S, Joel J and Thangaraja J, “*Evaluation of Material Characteristics of Fuel Tank Material Utilized For Agricultural Applications with Biofuels*”, *Materials Today: Proceedings* Vol. 5, 13682–13686, 2018.
10. Bineesh C Mathew, Thangaraja J, “*Material Compatibility of Fatty Acid Methyl Esters on Fuel Supply System of CI Engines*” *Materials Today: Proceedings* Vol. 5, 11678–11685, 2018.

11. Thangaraja J and Pramod S Mehta, "*Correlating engine NO_x emission with biodiesel composition*", Journal of the Institution of Engineers (India): Series C, Vol. 98, Issue 3, 253–260, 2017. <https://doi.org/10.1007/s40032-016-0247-8> ISSN: 2250-0545
12. Anant Parashar and Thangaraja J, "*Experimental Analysis of Surface Morphology of Commercial Fuel Filter with Oxygenated Fuels*", SAE Technical Paper 2017-28-1957, 2017 <https://doi.org/10.4271/2017-28-1957>
13. Thangaraja J, Anand K and Pramod S Mehta, "*Predicting surface tension for vegetable oil and biodiesel fuels*" RSC Advances, Vol.6, 84645–84657, 2016.
14. Thangaraja J and Kannan C, "*Effect of exhaust gas recirculation on advanced diesel combustion and alternate fuels - A review*", Applied Energy, Vol.180, 169–184, 2016 <https://doi.org/10.1016/j.apenergy.2016.07.096>
15. Thangaraja J, Anand K and Pramod S Mehta, "*Biodiesel NO_x Penalty and Control Measures - A Review*", Renewable & Sustainable Energy Reviews, Vol.61, 1-24, 2016. <https://doi.org/10.1016/j.rser.2016.03.017>
16. Rajkumar S and Thangaraja* J, "*Multi-zone Phenomenological Combustion Modeling of Biodiesel fuelled Compression Ignition Engine*" International Journal of Engine Research, Volume: 17 issue: 9, page(s): 934-956, Doi: 10.1177/1468087415627244, 2016. <https://doi.org/10.1177/1468087415627244>
17. Thangaraja J and Pramod S Mehta, "*Effect of Biodiesel on Thermal NO Formation*" Journal of the Institution of Engineers (India): Series C, Vol. 96(2), 135-143, 2015 <https://doi.org/10.1007/s40032-014-0117-1>
18. Thangaraja J and Pramod S Mehta, "*Reducing NO in a Biodiesel Fueled Compression Ignition Engine - An Experimental Study*", SAE Technical Paper 2015-24-2483, 2015
19. Pramod S Mehta and Thangaraja* J, "*Controlling Nitric Oxide in CI Engine - Bio-Mix Approach*" SAE Technical Paper 2014-01-2724, 2014
20. Thangaraja J, Anand K and Pramod S Mehta, "*Experimental Investigations on Increase in Biodiesel-NO Emission and its Mitigation*" IMechE, Part D: Journal of Automobile Engineering, Vol. 228 (11), 1274–1284, 2014 <https://doi.org/10.1177/0954407014530894>

Conference Proceedings

1. Nivin C., Thangaraja J., Vijay Anirudh P, "*An experimental study on the effects of intake charge and pilot injection on premixed burn fraction and nox emission characteristics of a crdi turbocharged diesel engine*", ICEF2019-7243, Proceedings of the ASME 2019, Internal Combustion Engine Division Fall Technical Conference, ICEF2019, October 20-23, 2019, Chicago, IL, USA, ISBN: 978-0-7918-5934-6, <https://doi.org/10.1115/ICEF2019-7243>
 2. Suvam Bhadra, Arnab Das and Thangaraja J., "*Comparative Evaluation of Energy and GHG Emissions of Diesel and Biodiesels from Jatropa Oil and Waste Cooking Oil*", Proceedings of the Third International Conference on Sustainable Energy and Environmental Challenges (SEEC-2018), 18-21st December, 2018, IIT Roorkee, India
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3. Bineesh C Mathew, Thangaraja J., "*Tailoring the compositional characteristics of biodiesel fuels through biomix and partial hydrogenation*" First International Conference on Energy and Environment: Global Challenges ICEE 2018 March 9-10, Department of Chemical Engineering, NIT Calicut, Kerala, India
 4. Vignesh.S , Mahesh.M , Thangaraja J, "*Life Cycle Sustainability Analysis of Jatropha Biodiesel*", Proceedings of the Second International Conference on Sustainable Energy and Environmental Challenges (SEEC-2018), 01 Jan – 03, January, 2018, IISc, India
 5. Himanshu Sharma and Thangaraja J., "*Comparative Evaluation of Energy and GHG Analysis of Diesel and Biodiesel Fuels*" presented in International Conference on Trends and Advanced Research in Green Energy Technologies, March 30 - 31, 2017, Vellore, India
 6. Thangaraja J and Jayachandran S "*Evaluation of Thermal Conductivity of Karanja Methyl Esters*" to be published in proceedings of the First International Conference on Sustainable Energy and Environmental Challenges, February 26 – 28, 2017, Center of Innovative and Applied Bioprocessing Mohali, India
 7. Santhosh S, Thangaraja* J, Anand K, Pramod S Mehta, "*Effects of compositional variations on biodiesel properties*", Indo German Conference on Sustainability 5-6 December 2015, IIT Madras, India.
 8. Thangaraja J., Purnachandra rao CH, Madivala G. Basavaraj and Pramod S Mehta, "*Formation, Stability and Performance Characteristics of Water-in-Diesel Emulsions*" published in E-proceedings of the third International Conference on Petroleum Science and Technology, ISBN: 978-93-80689-21-0, 5th November 2014.
 9. Karan A, Thangaraja* J and Pramod S Mehta "*Effect of Biodiesel Physicochemical Properties on Injection Timing*" presented in the 23rd National Conference on IC Engines and Combustion, held on Dec.13-16, 2013 at SVNIT-Surat, India
 10. Thangaraja J and Pramod S Mehta "*Influence of Injection Compensation on Biodiesel Combustion*" published in proceedings of ASPACC 2013, P.074 Gyeongju, Korea
 11. Thangaraja J and Pramod S Mehta "*Experimental Investigations on Combustion, Performance and Emission Characteristics of Neat Jatropha Biodiesel and its Methanol Blend in a Diesel Engine*" published in proceedings of American Society of Mechanical Engineers ICEF2012-92041 pp. 91-99; DOI: 10.1115/ICEF2012-92041, September 23–26, 2012 ISBN: 978-0-7918-5509-6 ISBN: 978-0-7918-5509-6
 12. Thangaraja J and Pramod S Mehta "*Accurate Estimation of Indicated Mean Effective Pressure in a Diesel Engine using Performance Test*" presented in the 22nd National Conference on IC Engines and Combustion, held on Dec. 10-13, 2011 at NIT-Calicut, Kerala, India
 13. Nivin C., Thangaraja J., "*Experimental study of multiple injection scheduling for Smoke - NOx tradeoff in a twin cylinder turbo charged CRDI engine*", AIP Conference Proceedings 2161, 020009, 2019, <https://doi.org/10.1063/1.5127600>
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Book Chapters

1. Thangaraja J., Akella Sivaramakrishna, Rajagopal Desikan, “Biofuels from Renewable Biomass Resources: An Overview of Technologies for Production, Environmental and Economic Impacts: In: A Pratap Singh, Y. C. Sharma, Nirendra N. Mustafi, Agarwal A. (eds) Alternative Fuels and Their Utilization Strategies in Internal Combustion Engines. Springer, Singapore, <https://link.springer.com/book/10.1007/978-981-15-0418-1> pp. 25-47, 2019, Print ISBN 978-981-15-0417-4
2. Thangaraja J, Vijaykumar M and Yatharth Gupta, "Multi-Criterion Decision Making Analysis for Sustainable Bio-fuel Supply Chain", in Ch. 12: Emerging Applications in Supply Chains for Sustainable Business Development., Handbook of research on supply chains for sustainable business development, IGI Global Publishers, Pages: 23, 2019, DOI: [10.4018/978-1-5225-5424-0.ch011](https://doi.org/10.4018/978-1-5225-5424-0.ch011)
3. Thangaraja J., Rajkumar S., “Modelling and Experimental Studies of NO_x and Soot Emissions in Common Rail Direct Injection Diesel Engines” In: Agarwal A., Gupta J., Sharma N., Singh A. (eds) Advanced Engine Diagnostics. Energy, Environment, and Sustainability. Springer, Singapore, https://doi.org/10.1007/978-981-13-3275-3_5, pp 75-103, 2018 Print ISBN 978-981-13-3274-6

Professional activities

Workshops Organized	Invited Lectures	Consultations
<ul style="list-style-type: none"> • Three day International Workshop on E-Mobility Development for Green India, co-funded by Royal Academy of Engineering, UK, organized in VIT (31.01.20 to 02.02.2020) • Workshop on Automotive Technology, organized in VIT (31.03.18) • Value added program on Electric Mobility Vehicles, organized (30.3.18) • Value added program on Engine Combustion, organized in VIT (27 to 28.10.2018) • Value added program on Phenomenological Combustion Modeling, organized in VIT (28.10.17) 	<ul style="list-style-type: none"> • National Level Workshop (CIPAT-'16), Automobile Engineering, SAE INDIA KLU Chapter Kalasalingam University, (6.2.2016) • Innovation cell of Mechanical Engineering Dpt. - PSR Engineering College (8.3.2017) • Short term training programme on biofuels and fuel cell-fundamentals and applications, Annamalai University (4.12. 2018) • Advances in Green Energy Technologies, Department of Mechanical Engineering Government Engineering College Trissur, (18.12.19) 	<ul style="list-style-type: none"> • Government of India Funded: “Sustainability and Composition Based Evaluation of Biofuel Energy Resources”, 2016-2019 (20 lakh Rs.) by Science and Engineering Research Board and was awarded “very good” for execution of the project. • Carrying out a project for Greaves Cotton Ltd. (Ranipet, Tamilnadu) on light duty diesel engine (Received an automotive engine as gratis)

Membership and activities in professional associations

- Member of The Institution of Engineers and Combustion Institute (Indian Section)
- Reviewer to Journal of Automobile Engineering, Fuel, Frontiers of Environmental Science, Environmental Science and Pollution Research, Sadhana Academy Proceedings in Engineering Sciences

Professional honours, awards and fellowships

- Recipient of Half-Time Research Assistantship funded by MHRD, Government of India
- Recipient of Early Career Research Award from SERB, Department of Science and Technology, India.
- The research paper entitled, “Effect of Biodiesel on Thermal NO Formation” has been awarded Sir Rajendra Nath Mookerjee Memorial Prize by The Institution of Engineers (India).
- The paper co-authored with P S Mehta et al. on Biodiesel Compositional Characteristics, won the “Best Paper” award in the Indo German Conference on Sustainability held at IIT Madras India, 2016.
- Recipient of Dr. A.P.J. Abdul Kalam Advisor award from VIT, 2016 and 2018.

Community services

- Regularly visit orphanages, donate blood and plant tree samplings
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