

Coordinator: Dr. Beemkumar N

Members: Dr.Venkadeshwaran K, Mr. Deepak J

In addition to traditional areas of research in thermodynamics, fluid dynamics, heat transfer, multi-phase flows, turbulence and combustion, this team is interested in a wide range of research activities in experimental fluid dynamics, solar thermal energy storage systems, computational fluid dynamics and heat transfer, porous media flow, turbomachinery, electrochemical energy conversion, IC engines, alternative fuels.

Research Publications

1. Yuvarajan Devarajan, **Beemkumar Nagappan**, Ganesan Subbiah & Elangovan Kariappan, Experimental investigation on solar-powered ejector refrigeration system integrated with different concentrators, *Environmental Science and Pollution Research*, ISSN: 0944-1344, Springer, Available at: <https://doi.org/10.1007/s11356-020-12248-z>, Jan, 2021, Impact factor: 3.056.
2. Sahadev M. Jadhav, M. Arulprakasajothi, **N. Beemkumar**, K. Elangovan, Experimental analysis on diffusion absorption refrigeration cycle with the magnetic field "International Journal of Ambient Energy, ISSN: 0143-0750, Taylor & Francis, <https://doi.org/10.1080/01430750.2021.1873855>, Jan, 2021
3. Yuvarajan Devarajan, DineshBabu Munuswamy, **Beemkumar Nagappan**, Gautam Choubey, Study on the effect on combining long-chain additive with neat bio-diesel fueled engine to examine its ignition characteristics, *Fuel*, ISSN:0016-2361, Elsevier, Available at: <https://doi.org/10.1016/j.fuel.2020.118400>, July 2020, Impact factor:5.128.
4. Yuvarajan Devarajan, **Beemkumar Nagappan**, G. Mageshwaran, M. Sunil Kumar, R.B. Durairaj, Feasibility study of employing diverse antioxidants as an additive in research diesel engine running with diesel-biodiesel blends, *Fuel*, ISSN:0016-2361, Elsevier, Available at: <https://doi.org/10.1016/j.fuel.2020.118161>, May 2020, Impact factor:5.128.
5. Rameez Shaik, **N. Beemkumar**, H. Adharsha, K. Venkadeshwaran, A.D. Dhass, Efficiency enhancement in a PV operated solar pump by effective design of VFD and

tracking system, *Materials Today: Proceedings*, ISSN:2214-7853, Elsevier, Available at: <https://doi.org/10.1016/j.matpr.2020.05.035>, June 2020.

6. S. Ganesan, S. P. Venkatesan, N. Beemkumar, M. Purushothaman, Taguchi based optimization of diesel engine parameters with blends of lemon grass oil with ZnO, *AIP Conference Proceedings*, ISSN: 0094-243X, AIP Publishing LLC, <https://doi.org/10.1063/5.0034021>, December, 2020.
7. S. Ganesan, J. K. S. Sridhar Raja, N. **Beemkumar**, J. Hemanandth, Influence of nano catalyst on performance of DI diesel engine with blends of Citronella oil using Taguchi approach, *AIP Conference Proceedings*, ISSN: 0094-243X, AIP Publishing LLC, <https://doi.org/10.1063/5.0034011>, December, 2020
8. **Beemkumar Nagappan**, Yuvarajan Devarajan, Elangovan Kariappan, Shone Biju Philip, Shivam Gautam, Influence of antioxidant additives on performance and emission characteristics of beef tallow biodiesel-fuelled C.I engine, *Environmental Science and Pollution Research*, ISSN: 0944-1344, Springer, Available at: <https://doi.org/10.1007/s11356-020-09065-9>, May 2020, Impact factor: 2.914.
9. Yuvarajan Devarajan, Dineshbabu Munuswamy, **Beemkumar Nagappan**, S. Ganesan, "Detailed study on the effect of different ignition enhancers in the binary blends of diesel/biodiesel as a possible substitute for unaltered compression ignition engine", *Petroleum Science*, 1672-5107, Springer, Available at: <https://doi.org/10.1007/s12182-020-00463-9>, May 2020. Impact factor:1.846.
10. Yuvarajan Devarajan, **Nagappan Beemkumar**, S.Ganesan, T. Arunkumar, "An experimental study on the influence of an oxygenated additive in diesel engine fuelled with neat papaya seed biodiesel/diesel blends", *Fuel*, ISSN:0016-2361, Elsevier, Available at: <https://doi.org/10.1016/j.fuel.2020.117254>, Feb, 2020, Impact factor: 5.128.
11. **Beemkumar, N.**, Yuvarajan, D., Arulprakasajothi, M., Elangovan, K., Arunkumar, T., "Control of room temperature fluctuations in the building by incorporating PCM in the roof", *Journal of Thermal Analysis and Calorimetry*, ISSN 1388-6150, Springer, Available at: <https://doi.org/10.1007/s10973-019-09226-0>, Jan, 2020, Impact Factor: 2.471.
12. V. Saikrishnan, A. Karthikeyan, N. **Beemkumar**, S. Ganesan & D. Yuvarajan, The thermal performance analyses of the solar energy-powered thermal energy storage system with MgCl₂·6H₂O as PCM, *Journal of the Brazilian Society of Mechanical Sciences and*

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13. Mahalingam Arulprakasajothi, **Nagappan Beemkumar**, Jayaram Parthipan & Nagalingeswara raju Battu, Investigating the Physio-chemical Properties of Densified Biomass Pellet Fuels from Fruit and Vegetable Market Waste, *Arabian Journal for Science and Engineering*, ISSN: 2193-567X (Print) 2191-4281 (Online), Springer, Available at: <https://doi.org/10.1007/s13369-019-04294-8>, December, 2019, Impact factor: 1.518.
14. Nivin Joy, K. N. Balan, **Beemkumar Nagappan** & Sajin Justin Abraham baby, "Emission analysis of diesel and butanol blends in research diesel engine", *Petroleum Science and Technology*, 1091-6466, Taylor & Francis, Available at: <https://doi.org/10.1080/10916466.2019.1702680>, December, 2019, Impact factor: 1.070
15. V Saikrishnan, A Karthikeyan, S Laksmisankar, **N Beemkumar** "Thermophysical Characteristic Analysis of Edible Erythritol and Xylitol for their use as Phase Change Materials", *International Journal of Scientific & Technology Research*, ISSN 2277-8616, IJSTR, volume 8, issue 11, November 2019.
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19. Yuvarajan Devarajan, DineshbabuMunuswamy, **Beemkumar Nagappan**, Ganesan Subbiah, Experimental assessment of performance and exhaust emission characteristics of

- a diesel engine fuelled with Punnai biodiesel/butanol fuel blends, *Petroleum Science*, Springer, Available at: <https://doi.org/10.1007/s12182-019-00361-9>, Aug 2019.
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 25. K Rama Narasimha, **G V Pradeep**, T Paramesh, Experimental and Numerical Evaluation of Thermal Performance of Closed Loop Pulsating Heat Pipe, *International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)*, Vol. 5, Special Issue 3, January 2018.
 26. A Kumar, **G Sreenivaslu**, P.S. R Rao, Arun D.T, Vinod, A. Pattanaik, Experimental Investigation on Performance of Solar Air Heaters with Thermal Storage, *International Journal of Renewable Energy and Its Commercialization Journals*, Vol. 5: Issue 1/37-46, Jul 2019.
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34. **Manjunath I B**, Venkatesh M Kulkarni, Mallik prasad N S, Pradeep G V, Studies on Thick Aerofoils at Subsonic speeds for a civil Transport wing, *Recent Trends in Fluid Mechanics, STM Journals*, Vol.4, Issue 1, pp.28-37, Apr 2017.
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