

**DEPARTMENT OF MECHANICAL ENGINEERING**  
**VELAMMAL ENGINEERING COLLEGE, CHENNAI - 600 066**

**RESEARCH PUBLICATION DETAILS**

1. Susai Mary, J, Dinakaran, D, Sai Balaji, M, A, **Satishkumar, S** & Arockia Selvakumar, A 2021, "Monitoring and Modeling of Cylindricity Error Using Vibration Signals in Drilling", Handbook of Smart Materials, Technologies, and Devices, pp. 1-9.
2. **Pradeep Kumar Seethakaran**, Gopalakrishnan Prabhakaran & Paulraj Jawahar 2021, "Mechanical and Tribological Behaviour of Hybrid Multi Fibre Reinforced Nylon 6-6 Nanocomposites", Materiale Plastice, Vol. 58, 3, pp. 137-147.
3. **Madhan Mohankumar**, Praveen Kumar, S, Guruprasad, B, Sreekanth Manavall, Joshua Stephen Chellakumar Isaac JoshuaRamesh Lalvani, Somasundaram, P, L, Tamilarasu, P & Prakash Singh Tanwar 2021, "XRD Peak Profile Analysis of SiC Reinforced Al<sub>2</sub>O<sub>3</sub> Ceramic Composite Synthesized by Electrical Resistance Heating and Microwave Sintering: A Comparison", Advances in Materials Science and Engineering, Vol. 2021, pp. 1-7.
4. **Madhan Mohankumar**, Shanka, A, N, Karthik, T, S, Saravanakumar, R, Hemakesavulu Oruganti, Venkatesa Prabhu, S & Rakesh, N 2021, "A Comparative Study on Crack-Healing Ability of Al<sub>2</sub>O<sub>3</sub>/SiC Structural Ceramic Composites Synthesized by Microwave Sintering and Conventional Electrical Sintering", Advances in Materials Science and Engineering, Vol 2021, pp 1-8.
5. Paulmar Pushparaj, J, Maridurai, T, **Shankaranarayanan, S, Elvin, R, P** & Giridharan, K 2021, "An overview on rapid prototyping and applications", Journal of Chengdu University of Technology, Vol. 26, 7, pp. 1-8.
6. **Rajkamal Sivakumar**, Prabhakaran Gopalakrishnan & Mohamed Sikkander Abdul Razak 2021, "Comparative analysis of anti-reflection coatings on solar PV cells through TiO<sub>2</sub> and SiO<sub>2</sub> nanoparticles", Pigment & Resin Technology, pp. 1-7.
7. **Deepak Kumar Murugan**, Natarajan Elumalaib & Sekar Subramanic 2021, "Experimental investigation on the effect of basin pressure in a single basin solar still", Desalination and Water Treatment, Vol. 229, pp. 10-16.
8. Kavitha, C & **Frank Gladson**, T, S 2021, "Design and Analysis of Hybrid Composites Using Adaptive Neuro Fuzzy Inference System", Materials Science and Engineering, Vol. 1126, pp. 1-10.
9. Prithiviraj Dhanabal, Chenthil Murugan, Rajkumar Arondoss, Dr & **Arockia Jaswin, M** "Experimental Investigation on NSS test and PDT test for corrosion resistance of Zn-Ni coated steel", Journal of Huazhong University of Science and Technology, Vol. 50, pp. 1-5.

10. **Gopinath Dhamodaran, Ganapathy Sundaram Esakkimuthu** & Thennarasu Palani 2021, "Feasibility of adding N-Butanol and di isopropyl ether with gasoline on its physico-chemical properties", *Petroleum Science and Technology*, pp. 1-18.
11. Lokesh, R, Jagadesh, V & **Suresh, S** 2021, "Mechanical and Low Velocity Impact Behavior of Al based Kevlar Fabric Reinforced Epoxy Laminate", *International Journal of Applied Engineering Research*, Vol. 16, pp. 660-669.
12. Sivakumar Vaithilingam, Sakthivel Thirumalai Gopal, Senthil Kumar Srinivasan, Muthu Manokar, A, Ravishankar Sathyamurthy, **Ganapathy Sundaram Esakkimuthu**, Ravinder Kumar & Mohsen Sharifpur 2020, "An extensive review on thermodynamic aspect based solar desalination techniques", *Journal of Thermal Analysis and Calorimetry*, pp. 1-17.
13. **Elumalai, P, C, Ganesh Radhakrishnan** & Shankar Emarose 2020, "Investigation into Physical, Microstructural and Mechanical Behaviour of Titanium dioxide Nanoparticulate Reinforced Magnesium Composite", *Materials Technology Advanced Performance Material*, pp. 1-10.
14. Florence, A, **Arockia Jaswin, M,** & Pal Pandi, A 2020, "Drop-Weight Impact Behaviour of Hybrid Fiber/Epoxy Honeycomb Core Sandwich Composites under Hemi-Spherical Impactor", *Fibers and Polymers*, Vol.21, No.5, pp. 1152-1162.
15. **Chinnasamy Subramanian**, S, Sekar, S, & Sudharsanan, R 2020, "Performance of SSMT heat exchanger with engine waste heat as source for distillation process", *Interciencia Journal*, Vol. 45, 5.
16. **Shankaranarayanan, S & David, D** 2020, "Characterization of groundnut / pomegranate shell particle reinforced composites", *International Research Journal of Modernization in Engineering Technology and Science*, Vol. 2, pp. 1132-1137.
17. **Sureshkumar, A & Sridhar, B, T, N** 2020, "Axial flow development characteristics of circular and triangular supersonic jets in the presence of an annular coflow at large separation distance", *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering*, Vol. 234, 3, pp. 804-817.
18. **Ilangovan, S**, Senthil Kumaran, S & Naresh, K 2020, "Effect of Nanoparticles Loading On Free Vibration Response of Epoxy and Filament Winding Basalt/Epoxy and E-Glass/Epoxy Composite Tubes: Experimental, Analytical and Numerical Investigations", *Materials Research Express*, Vol. 7, pp. 1-37.
19. **Elumalai, P, C & Ganesh, R** 2020, "Synthesis and characterisation of magnesium matrix composite reinforced with titanium dioxide nanoparticulates", *Materials Research Express*, Vol. 7, 1, pp. 1-8.
20. Kavitha, C, **Frank Gladson, T, S,** & Prasanna Jeyanthi, M 2020, "Analysis of Adaptive Neuro-Fuzzy Inference System for The Prediction of Hybrid Composites", *Advances in Mathematics*, Vol. 3, pp. 1303–1314.

21. Munuswamy Karthick, Senthil Kumar Karuppiah & **Varatharajan Kanthan** 2020, "Performance Investigation and Exergy Analysis of Vapor Compression Refrigeration System Operated Using R600a Refrigerant and Nanoadditive Compressor Oil", Society of Thermal Engineers of Serbia, Vol. 24, 5A, pp. 2977-2989.
22. **Pradeepkumar, S**, Prabhakaran, G & Jawahar, P 2020, "Experimental Investigation of Nylon66 Based Composites for Engineering Applications", Interciencia Journal, Vol. 45, pp. 252-262.
23. **Loganathan, D, Satish Kumar, S** & Ramadoss, R 2020, "Grey Relational Analysis-Based Optimisation of Input Parameters of Incremental Forming Process Applied to the AA6061 Alloy", Vol. 44, 1, pp. 93-104.
24. **Frank Gladson, T, S**, Ramesh, R & Kavitha, C 2019, "Experimental investigation of mechanical, tribological and dielectric properties of alumina nano wire-reinforced PEEK/PTFE composites", Materials Research Express, Vol. 6, pp. 1-10.
25. **Sureshkumar, A** & Sridhar, B, T, N 2019, "Experimental Studies on Decay and Spread Characteristics of an Overexpanded Triangular Supersonic Jet", Fluid Dynamics, Vol. 54, 5, pp. 629–639.
26. **Ganesh Radhakrishnan**, Anirudh P, V, & Anujan Kumar, S 2019, "Mechanical behavior of nanoparticulate TiO<sub>2</sub> reinforced magnesium matrix composite", International conference on Materials Engineering and characterization, Vol. 574, pp. 1-12.
27. Naresh Kumar, T, **David, D & Shankaranarayanan, S** 2019, "Experimental Research on Abaca/Agave/Fly ash Nano Powder Reinforced Hybrid Composites", International Journal of Innovative Technology and Exploring Engineering, Vol. 8, pp. 4370-4374.
28. Sreenivasan, K, S, **Satish Kumar, S** & Jeeva Katiravan 2019, "Genetic algorithm based optimization of friction welding process parameters on AA7075-SiC composite", Engineering Science and Technology, an International Journal, Vol. 22, pp. 1136-1148.
29. Vignesh, K, Natarajan, U, **Arockia Jaswin, M**, & Antony Arul Prakash, M, D 2019, "Influence of Coir Fiber Diameter and Length on Mechanical Behavior of Coconut Shell Powder-Based Polyester Resin Composites", Journal of Testing and Evaluation, Vol.49, pp. 1-10.
30. Florence, A, **Arockia Jaswin, M**, Antony Arul Prakash M, D & Jayaram R, S 2019, "Effect of energy-absorbing materials on the mechanical behaviour of hybrid FRP honeycomb core sandwich composites", Materials Research Innovations, Vol. 24, 4, pp. 244-255.
31. Florence, A & **Arockia Jaswin, M** 2019, "Vibration and flexural characterization of hybrid honeycomb core sandwich panels filled with different energy absorbing materials", Materials Research Express, Vol. 6, 7, pp. 1-32
32. Balasubramanian, M & **Jawahar, P** 2019, "Rubber – CNT Nanocomposites (Advances in Nanostructured Composites Volume 1: Carbon Nanotube and Graphene Composites)", CRC Press Taylor & Francis, Vol. 1, pp. 295-314.

33. **Gopinath Dhamodaran & Ganapathy Sundaram Esakkimuthu** 2019, " A Comparison Study on Emission Characteristics of Using Higher Alcohol Oxygenates with Gasoline in a Multipoint Fuel Injection Spark-Ignition Engine ", *Journal of Testing and Evaluation*, Vol. 48, pp. 260-272.
34. Kavitha, C & **Frank Gladson, T, S** 2019, "Evaluation of Best Supplier Using Multi Criteria Decision Making Methods", *International Journal of Civil Engineering and Technology*, Vol. 10, pp. 2176-2183.
35. Shanjeevi, C, Velu, S, Thamilarasan, J & **Satish Kumar, S** 2018, "Parametric Optimization of Friction Welding Parameter of Ferritic Stainless Steel and Copper Material Using Taguchi Approach", *Lecture Notes in Mechanical Engineering (Innovative Design, Analysis and Development Practices in Aerospace and Automotive Engineering (I-DAD 2018))*, Vol. 2, pp. 349-355.
36. **Sugumar Suresh** & Velukkudi Santhanam Senthil Kumar 2018, "Investigation on influence of stamp forming parameters on formability of Thermoplastic Composite", *Polimeros*, Vol. 28, pp. 422-432.
37. **Gopinath Dhamodaran & Ganapathy Sundaram Esakkimuthu** 2018, " Experimental measurement of physico-chemical properties of oxygenate (DIPE) blended gasoline ", *Measurement*, Vol. 134, pp. 280-285.
38. **Sugumar Suresh** & Velukkudi Santhanam Senthil Kumar 2018, "Investigation on static, dynamic and thermal behavior of novel glass fabric reinforced polymer composites", *International Journal of Polymer Analysis and Characterization*, Vol. 23, pp. 633-645.
39. **Deepak Kumar Murugan** & Natarajan Elumalai 2018, " Experimental Investigation on the Time Dependent Behaviour of Productivity of a Stacked Solar Still ", *Desalination and Water Treatment*, Vol. 125, pp. 1-7.
40. Maridurai, T & **Arockia Jaswin, M** 2018, "Characterization and synthesis of silver nanoparticles embedded in P Ani-PMo 12 Nanocomposites", *IOP Conf Series: Materials Science and Engineering*, Vol. 402, 1, pp. 1-10.
41. **Sharmila, B**, Prabhakaran, G, **Karthikeyan, M & Madhan, M** 2018, "The Effect of Hot Forging on Mechanical Characteristics of AL356 Hybrid Metal Matrix Composites", *International Journal of Mechanical and Production Engineering Research and Development*, Vol. 8, 8, pp. 192-196.
42. **Silambarasan, S** & Prabhakaran, G 2018, "Optimization of Process Parameters of Wire EDM Using Genetic Algorithm", *International Journal of Mechanical and Production Engineering Research and Development*, Vol. 8, 8, pp. 426-430.
43. **Mohankumar Madhan** & Gopalakrishnan Prabhakaran 2018, " Microwave versus conventional sintering: Microstructure and Mechanical Properties of AL<sub>2</sub>O<sub>3</sub>-SiC Ceramic

Composites ", Boletin De La Sociedad Espanola De Ceramica Y Vidrio Elsevier Science, Vol. 58, pp. 14-22.

44. **Sugumar Suresh** & Velukkudi Santhanam Senthil Kumar 2018, "Effects of Fabric structure on the Formability characteristics of Thermoplastic Composites under various process conditions", Transactions of the Canadian Society for Mechanical Engineering, Vol. 42, pp. 298-308.

45. **Shankaranarayanan, S** & Lokesh Kumar 2018, "Optimization of Machining Parameters in End-Milling Using Fuzzy Logic in MATLAB", EPRA International Journal of Multidisciplinary Research (IJMR), Vol. 4, pp. 148-154.

46. **Umanath, K** & Devika, D 2018, "Optimization of electric discharge machining parameters on titanium alloy (ti-6al-4v) using Taguchi parametric design and genetic algorithm", MATEC Web of Conferences, Vol. 172, pp. 1-9.

47. **Shankaranarayanan, S, David, D** & Naresh Kumar, T 2018, "Single Piece flow in Dressing Line by Providing MPT Checking Fixture", International Journal of Research and Innovation in Applied Science, Vol. 3, pp. 39-44.

48. Sreenivasan Konganapuram Sundararajan & **Satish Kumar Shanmugam** 2018, "Multi-objective Optimization of Friction Welding Process Parameters using Grey Relational Analysis for Joining Aluminium Metal Matrix Composite", Materials Science, Vol. 24, pp. 222-229.

49. Valarmathi, T, N, **Sekar, S**, Purusothaman, M, Saravanan, J, Balan, K, N, Sekar, S, D & Mothilal, T 2018, "Design and thermal analysis of coated and uncoated exhaust manifold", International Journal of Ambient Energy, Vol. 41, pp. 157-160.

50. Prabu, A, Isaac Premkumar, I, J & **Pradeep, A** 2018, "An investigation on the performance, combustion and emission characteristics of CI engine on the addition of antioxidants, oxygenates and nanoparticles as additives in Jatropha biodiesel", International Journal of Ambient Energy, Vol. 41, pp. 121-128.

51. **Geetha Rajamani & Jawahar Paulraj** 2018, "Abrasive wear analysis on graphene oxide-based Hybrid Nano polymer composites", Surface Review and Letters, Vol. 26, pp. 1-7.

52. **Arockia jaswin, M** & Mohan Lal, D 2018, "Comprehensive analysis on the effect of deep cryogenic treatment on the mechanical behaviour of Martensitic valve steel", Iranian Journal of Materials Science and Engineering, Vol. 15, 1, pp. 9-16.

53. **Karthick, M**, Kumar, M, Deepak & Vigneshwaran, C 2018, "Experimental Investigation on In-Cylinder Reduction of Nitrous Oxide Using Biofuel and Anti-Oxidants", Advanced Science, Engineering and Medicine, Vol. 10, 3-5, pp. 429-433.

54. Suraj C, V, Santhosh Raj, R, Shanmuga Prabu, M & **Prem Kumar, D** 2018, "Analysis of Performance and Emission Characteristics of a Compression Ignition Engine by using Cerium Oxide Nano Additive on Diesel Ethanol Blend", International Journal of Innovative Research Explorer, Vol. 5, 5, pp. 18-23.

55. **Shankarnarayanan, S & David, D** 2018, "Automatic Lubrication System for Wire Roope in Level Luffing Crane", International Journal of Recent Trends in Engineering and Research.
56. Parthiban, R, **Sakthivel, R** & Srikanth Jetti 2018, "Fabrication and study of hardness behaviour on gamma irradiated ultra-high molecular weight polyethylene (UHMWPE) plate", International Journal of Mechanical and Production Engineering Research and Development, Vol. 8, 2, pp. 45-52.
57. **Suresh, S** & Senthil Kumar, V, S 2018, "Effects of Process Parameters on the Mechanical Properties of Glass Fabric Reinforced Polypropylene Composites", Polymer Korea, Vol. 42, pp. 594-602.
58. **Varatharajan, K** & Pushparani, D, S 2018, "Screening Of Antioxidant Additives For Biodiesel Fuels ", Renewable And Sustainable Energy Reviews, Vol. 82, pp. 2017-2028.
59. Lionus Leo, G, M, **Sekar, S** & Arivazhagan, S 2018, "Experimental investigation, optimization and ANN model prediction of a gasoline premixed waste cooking oil fueled HCCI–DI engine", Journal of the Brazilian Society of Mechanical Sciences and Engineering, Vol. 40, pp. 1-14.
60. Kavitha, C, **Frank Gladson, T, S,** & Arun Kumar, C, M 2018, "Analysis of fuzzy soft set compositions for allocating jobs to machines in fuzzy environment", International Journal of Mechanical and Production Engineering Research and Development, Vol. 8, 1, pp. 229-242.
61. **Varatharajan, K** 2018, "Mechanical and Wear Behaviour Of Al Hybrid Composites Reinforced With Zircon Sand And Rice Husk Ash", Journal of the Balkan Tribological Association, Vol. 24, 4, pp. 849-857.
62. Ganapathy Srinivasan, **Sridhar, B,** Selvam, M, Harish, K, A & Palani, S 2017, "Design and Analysis of Three Axis Trailer Based On Pneumatic Operation", International Journal of Pure and Applied Mathematics, Vol. 116, 23, pp. 223-229.
63. Ramesh, B, Elayaperumal, A, **Satishkumar, S** & Anish Kumar 2018, "Drilling of pultruded and liquid composite moulded glass/epoxy thick composites: Experimental and statistical investigation", Measurement, Vol. 114, pp. 109-121.
64. Sekar, S, D, **Sekar, S,** Dr & Valarmathi, T N 2018, "Performance Improvement of a Passive Greenhouse Dryer for Drying Turkey Berry", Taga Journal, Vol. 4, pp. 1932-1939.

## DEPARTMENT OF MECHANICAL ENGINEERING

### MoU SIGNED

| <b>Sl.No.</b> | <b>Name of the Industry with Details</b>                               | <b>Date on which MoU signed</b> | <b>Scope of the MoU</b>   | <b>Validity Period</b> |
|---------------|--|---------------------------------|---|------------------------|
| 1             | i3 DESIGN TECHNOLOGIES, Avadi, Chennai                                 | 27.08.2018                      | To conduct regular workshops/training programs, Sponsor technical events,   | 3 Years                |
| 2             | Tamil Nadu Dr.J.Jayalalithaa Fisheries University                      | 24.12.2018                      | Exploring opportunities for creating visiting faculties, Exchange of students for short duration ,To carry joint research projects, To explore joint academic activities.             | 5 Years                |
| 3             | M/s Preethi Kitchen Appliances Pvt.Ltd, Chennai.                       | 09.01.2019                      | Projects, Internships, Open innovation Workshops & Training Programmes, Collaborative Research  | 3 Years                |
| 4             | CADD SCHOOL PRIVATE LTD, Chennai                                       | 28.08.2019                      | Software Training, Internship, Industrial Visits, In-plant trainings, Event sponsorships & Placement assistance.  | 3 Years                |
| 5             | VETRI PRESSINGS PRIVATE LIMITED, Ambattur Industrial Estate, Ambattur. | 31.03.2021                      | Inputs to curriculum design, Industrial Training & Visits, Guest Lectures, Placement assistance   | 3 Years                |
| 6             | KATWORKS ENGINEERING TECH, Chennai.                                    | 28.07.2021                      | Inputs to curriculum design, Industrial Training & Visits, Guest Lectures, Placement  | 3 Years                |
| 7             | TEAM ENGINEERS. AmbatturIndustrail Estate, Ambattur.                   | 22.09.2021                      | Inputs to curriculum design, Industrial Training & Visits, Guest Lectures, Placement assistance ,Research& consultancy  | 3 Years                |
| 8             | GARUDA AEROSPACE PRIVATE LIMITED, Chennai                              | 31.12.2021                      | Inputs to curriculum design, Industrial Training for 30 hrs & Visits, Guest Lectures, Placement assistance& to setup Lab and centre of Excellence where students can learn about UAV. | 3 years                |

## DEPARTMENT OF MECHANICAL ENGINEERING

### PATENT DETAILS

| <b>S.NO</b> | <b>Title of the Patent</b>   | <b>Application Number</b> | <b>Filing Date</b> | <b>Status</b> |
|-------------|--|---------------------------|--------------------|---------------|
| 1           | Design for Parabolic Solar Panel Control System with Wiper                               | 2020103825                | 01.12.2020         | Granted       |
| 2           | Balanced high-speed composite flywheel   | 202111012413 A            | 23.03.2021         | Granted       |
| 3           | Autonomous water surface cleaning machine and methods of removing floatable solid waste. | 202141010783              | 15.03.2021         | Applied       |
| 4           | Artificial intelligence embodied drone and methods of spraying relevant chemical.        | 202141034869              | 3.08.2021          | Applied       |
| 5           | Sustainable package container and methods of improving shelf-time of food items thereof  | 202141055321              | 30/11/ 2021        | Applied       |



**DEPARTMENT OF MECHANICAL ENGINEERING - ONGOING AND COMPLETED RESEARCH PROJECTS**

| Sl. No | Title of the Project   | File Number                    | Investigators         | Sanctioned on | Funding Agency   | Amount Sanctioned Rs | Project period |
|--------|--|--------------------------------|-----------------------|---------------|--|----------------------|----------------|
| 1      | Pesticide spraying agro drone.   | VEC/IEDC/MECH/09               | Dr. M. Arockia Jaswin | 28.02.2020    | Innovation and Entrepreneurship Development Centre (IEDC)  | 2,50,000             | 1 Year         |
| 2      | Green waves  | VEC/IEDC/MECH/08               | Dr. M. Deepak Kumar   | 28.02.2020    | Innovation and Entrepreneurship Development Centre (IEDC)  | 2,50,000             | 1 Year         |
| 3      | ARDUNIO based emergency ventilator for COVID -19 patients  | VEC/IEDC/MECH/07               | Mr. D. Dinesh babu    | 28.02.2020    | Innovation and Entrepreneurship Development Centre (IEDC)  | 2,50,000             | 1 Year         |
| 4      | Performance Investigation of R-290 in vapour compression refrigeration system using hybrid nano additive compressor oil mixture.       | -                              | Dr. M. Karthick       | 27.02.2020    | M/S. The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), New Delhi - 110048, | 10,000               | 1 Year         |
| 5      | Eco-friendly paper bag from water hyacinth to replace polythene bag.   | TNSCST/SPS/AR2019-2020/LME-007 | Dr. M. Arockia Jaswin | 15.03.2019    | Tamil Nadu State Council for Science and Technology, DOTE, Chennai - 600025                                    | 7,500                | 6 Months       |
| 6      | Performance Investigation On Water Dispenser Operated Using Bypass Condenser and R600 as a Refrigerant – An Energy Conservation Aspect | -                              | Dr. M. Karthick       | 19.02.2019    | M/S. The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), New Delhi - 110048, | 10,000               | 1 Year         |
| 7      | Low cost commercial CNC router   | VEC/IEDC/MECH/06               | Dr. S. Satish Kumar   | 22.01.2019    | Innovation and Entrepreneurship Development Centre (IEDC)  | 2,50,000             | 1 Year         |
| 8      | Smart blower units for car   | VEC/IEDC/MECH/05               | Dr. R. Ganesh         | 22.01.2019    | Innovation and Entrepreneurship Development Centre (IEDC)  | 2,50,000             | 1 Year         |

|    |   |                           |                           |            |   |           |         |
|----|---|---------------------------|---------------------------|------------|---|-----------|---------|
| 9  | Exterior wall painting system assisted with wall climbing Robot.                                      | VEC/IEDC/MECH/04          | Dr. R. Geetha             | 22.01.2019 | Innovation and Entrepreneurship Development Centre (IEDC)   | 2,50,000  | 1 Year  |
| 10 | LPG stove 2   | VEC/IEDC/MECH/03          | Dr. S. Baskara Sethupathy | 22.01.2019 | Innovation and Entrepreneurship Development Centre (IEDC)   | 2,50,000  | 1 Year  |
| 11 | Flower garland making machine   | VEC/IEDC/MECH/02          | Dr. S. Baskara Sethupathy | 20.07.2018 | Innovation and Entrepreneurship Development Centre (IEDC)   | 2,50,000  | 1 Year  |
| 12 | Development of hybrid flexible loop heat pipe for satellite cooling applications.                     | VEC/IEDC/MECH/01          | Dr. K. Varatharajan       | 20.07.2018 | Innovation and Entrepreneurship Development Centre (IEDC)   | 2,50,000  | 1 Year  |
| 13 | Mapping and Optimizing COP of a VCRS for Eco-Friendly Blend   | -                         | Mr. M. Karthick           | 25.01.2018 | M/S. The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), New Delhi - 110048,  | 20,000    | 1 Year  |
| 14 | Development of high wear resistive natural rubber composites for aircraft and automotive applications | SR/FTP/ETA-201/2013       | Dr. Jawahar Paulraj       | 28.10.2014 | Science and Engineering Research Board, DST   | 20,85,000 | 4 Years |
| 15 | Design and Fabrication of Portable Seed Planter   | TNSCST/SPS/AR2016-17AS-02 | Mr. M. Karthikeyan        | 10.04.2017 | Tamil Nadu State Council for Science and Technology, DOTE, Chennai - 600025                                     | 30,000    | 1 Year  |
| 16 | Performance and Energy Analysis of a Domestic Refrigerator using compressor oil with nano Additives   | -                         | Mr. M. Karthick           | 27.01.2017 | M/S. The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), New Delhi - 110048," | 30,000    | 1 Year  |
| 17 | Mini Solar Powered Cold Storage   | -                         | Mr. M. Karthick           | 27.01.2017 | M/S. The Indian Society of Heating, Refrigerating and   | 30,000    | 1 Year  |

|     |  |  |                           |            |  |           |         |
|-----|--|--|---------------------------|------------|--|-----------|---------|
|     |  |  |                           |            | Air Conditioning Engineers (ISHRAE), New Delhi - 110048, |           |         |
| 18  | Fabrication and testing of Roselle / Sisal fibre reinforced Polyester composite as a wood substitute material                              | UG2016029  | Dr. M. Thiru Chitrambalam | 09.05.2016 | M/S. The Institution of Engineers, Kolkata - 700 020     | 40,000    | 1 Year  |
| 19  | Non Destructive Testing Laboratory   | SR/FST/ College - 126/2012                               | Dr. S. Sathish Kumar      | 31.10.2014 | Department of Science and Technology                     | 2,59,179  | 5 Years |
| 20  | "Single cylinder 4 stroke multi fuel variable compression ratio for both Petrol and Diesel Research Engine Set up"                         | SR/FST/ College - 126/2012                               | Dr. S. Sathish Kumar      | 31.10.2014 | Department of Science and Technology                     | 10,08,000 | 5 Years |
| 21  | Investigation on Crack-Healing Behaviours of Microwave Sintered Al <sub>2</sub> O <sub>3</sub>   | 20/AICTE/Rfid/RPS (Policy -III) 123/2012-13 & 11.03.2013 | Dr.G.Prabhakaran          | 11.03.2013 | AICTE-RPS  | 13,90,000 | 2 years |
| 22  | Replacement of obsolete Thermal Equipments   | 8024/RIFD/MoD-362 (pvt) Policy III/2011-12               | Dr.M.Balasubramainaiian   | 01.04.2021 | AICTE MODROB   | 5,50,000  | 1 year  |
| 23. | The effect of Adding oxygenates to gasoline on SI engine performance and exhaust emissions: An experimental Investigation                  | 8023/RID/RPS-47//2011-12                                 | Dr.E.Ganapathy Sundaram   | 01.03.2012 | AICTE-RPS  | 9,81,000  | 2 years |
| 24  | Studies on diffusion bonding of Titanium alloy Ti - 6 Al - 4V and austenitic stainless steel AISI 304, using silver as intermediate layer. | 8023/RID/RPS-76//2010-11                                 | Dr.M.Balasubramainaiian   | 01.03.2011 | AICTE-RPS  | 6,50,000  | 2 years |

**DEPARTMENT OF MECHANICAL ENGINEERING - CONSULTANCY WORK DETAILS**

| <b>Sl. No</b> | <b>Name of the Company/Institute</b>  | <b>Work Title</b>   | <b>Sanctioned on</b> | <b>Amount Received Rs</b> | <b>Project period</b> |
|---------------|---|---|----------------------|---------------------------|-----------------------|
| 1             | Ashok Leyland, Ennore Plant,<br>Chennai   | Heat recovery from heat treatment plant   | 16.07.2019           | -                         | 1 year                |
| 2             | Preethi Kitchen appliances  | Cost effective green packaging for mixture grinder and gas stoves                     | 18.10.2019           | 14,215                    | 1 year                |
| 3             | Preethi Kitchen appliances  | Replacement of polycover by suitable alternate materials for packing.                 | 18.10.2019           | -                         | 1 year                |
| 4             | College of Fish Nutrition and Food<br>Technology, Chennai<br>Tamil Nadu Dr. J. Jayalalithaa<br>Fisheries University | Utilization of Manufacturing Technology lab Facilities                                | 14.11.2019           | 5,760                     | 3 months              |
| 5             | Sai Kayra Refrigeration   | Design of an effective shell and tube heat exchanger for a 800 kW refrigeration plant | 20.10.2021           | -                         | 2 months              |