ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

B.E. MECHANICAL ENGINEERING

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES:

Bachelor of Mechanical Engineering curriculum is designed to impart Knowledge, Skill and Attitude on the graduates to

- 1. Have a successful career in Mechanical Engineering and allied industries.
- 2. Have expertise in the areas of Design, Thermal, Materials and Manufacturing.
- 3. Contribute towards technological development through academic research and industrial practices.
- 4. Practice their profession with good communication, leadership, ethics and social responsibility.
- 5. Graduates will adapt to evolving technologies through life-long learning.

PROGRAMME OUTCOMES

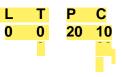
- 1. An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems.
- 2. An ability to identify, formulates, and solve complex engineering problems. with high degree of competence.
- 3. An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.
- 4. An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability.
- 5. An ability to use modern tools, software and equipment to analyze multidisciplinary problems.
- 6. An ability to demonstrate on professional and ethical responsibilities.
- 7. An ability to communicate, write reports and express research findings in a scientific community.
- 8. An ability to adapt quickly to the global changes and contemporary practices.
- 9. An ability to engage in life-long learning.

FEO / FO Mapping									
Programme Educational Objectives	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9
I	\checkmark	\checkmark	\checkmark	\checkmark	~	~	~	~	\checkmark
II	✓	√	~		~			~	
		\checkmark		~	~	~		~	
IV					~	~	~		✓
V		~	✓	~	~				√

PEO / PO Mapping

ME881	1	

PROJECT WORK



TOTAL: 300 PERIODS

OBJECTIVE:

 To develop the ability to solve a specific problem right from its identification and literature review till the successful solution of the same. To train the students in preparing project reports and to face reviews and viva voce examination.

The students in a group of 3 to 4 works on a topic approved by the head of the department under the guidance of a faculty member and prepares a comprehensive project report after completing the work to the satisfaction of the supervisor. The progress of the project is evaluated based on a minimum of three reviews. The review committee may be constituted by the Head of the Department. A project report is required at the end of the semester. The project work is evaluated based on oral presentation and the project report jointly by external and internal examiners constituted by the Head of the Department.

OUTCOME:

 On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.

ME8091	AUTOMOBILE ENGINEERING	L	т	Ρ	С
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OBJECTIVES:

- To understand the construction and working principle of various parts of an automobile.
- To have the practice for assembling and dismantling of engine parts and transmission system

UNIT I VEHICLE STRUCTURE AND ENGINES

Types of automobiles vehicle construction and different layouts, chassis, frame and body, Vehicle aerodynamics (various resistances and moments involved), IC engines –components-functions and materials, variable valve timing (VVT).

UNIT II ENGINE AUXILIARY SYSTEMS

Electronically controlled gasoline iniection system for SI engines, Electronically system, controlled diesel iniection svstem (Unit iniector Rotarv distributor tvpe and common rail direct injection system), Electronic ignition system (Transistorized coil ignition system, capacitive discharge ignition system), Turbo chargers (WGT, VGT), Engine emission control by three way catalytic converter system, Emission norms (Euro and BS).

UNIT III TRANSMISSION SYSTEMS

Clutch-types and construction, gear boxes- manual and automatic, gear shift mechanisms, Over drive, transfer box, fluid flywheel, torque converter, propeller shaft, slip joints, universal joints, Differential and rear axle, Hotchkiss Drive and Torque Tube Drive.

UNIT IV STEERING, BRAKES AND SUSPENSION SYSTEMS

Steering geometry and types of steering gear box-Power Steering, Types of Front Axle, Types of Suspension Systems, Pneumatic and Hydraulic Braking Systems, Antilock Braking System (ABS), electronic brake force distribution (EBD) and Traction Control.

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(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C.Nagar, K.Vellakulam - 625 701, (Near Virudhunagar), Madurai District. DEPARTMENT OF MECHANICAL ENGINEERING ACCREDITED BY NBA, NEW DELHI

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21 17UMEC04 920417114006 ARUNKUMAR.M AN 22 17UMEC06 920417114102 VENKADESH.M AN 23 17UMEC08 920417114031 JASWANTHKUMAR. AR 24 17UMEC06 920417114037 MUTHU.P BALAJI Mr.P.SIVASUBRAMANIYAM 25 17UMEC01 920417114025 GOWTHAM.K P P 26 17UMEC05 920417114018 DHIVAKER.S P Mr.P.SIVASUBRAMANIYAM 28 17UMEC03 920417114018 VENKATESH 9 Mr.P.SIVASUBRAMANIYAM 29 17UMEC03 920417114002 PALANIVEL.S Mr.P.SIVASUBRAMANIYAM 30 17UMEC06 920417114003 SENTHIL RAJ.M Mr.R.SAKTHIVEL 31 17UMEC06 920417114003 JEYA AKASH.P 10 Mr.R.SAKTHIVEL 33 17UMEC09 920417114003 PANDEESWARAMO 11 34 17UMEC09 920417114003 PANDESWARAMO 11 35 17UMEC05 920417114007 ARUNKUMAR.M 11 36 17UMEC05 920417114007 ARUNKUMAR.M </td <td>20</td> <td>17UMEC07</td> <td>920417114071</td> <td>RAGHUL.V</td> <td>7</td> <td>Mr.S.CHIDAMBARAKUMAR</td>	20	17UMEC07	920417114071	RAGHUL.V	7	Mr.S.CHIDAMBARAKUMAR
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31 17UMEC06 920417114040 KARTHIK RAJA.M 10 Mr.R.SAKTHIVEL MURUGAN 32 17UMEC03 920417114035 JEYA AKASH.P 10 Mr.N.SAKTHIVEL MURUGAN 33 17UMEC00 920417114035 JEYA AKASH.P 11 Mr.N.SAKTHIVEL MURUGAN 34 17UMEC09 920417114003 PANDEESWARAMO PANDEESWARAMO 11 Mr.N.R.MADHAN 35 17UMEC05 920417114007 ARUNKUMAR.M 11 Mr.N.R.MADHAN 36 17UMEC02 920417114007 ARUNRAMSUNDAR. ANANDKUMAR.V 12 Mr.B.K.PARRTHIPAN 38 17UMEC00 920417114001 ABINESH.A 12 Mr.B.K.PARRTHIPAN 39 17UMEC06 920417114055 MOHAMMED 40 17UMEC07 920417114055	29	17UMEC03	920417114062	PALANIVEL.S		
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39 17UMEC06 920417114054 MOHAMMED 40 17UMEC07 920417114055 MOHAMMED	37	17UMEC01	920417114004	ANANDKUMAR.V	12	Mr.B.K.PARRTHIPAN
40 17UMEC07 920417114055 MOHAMMED	38	17UMEC00	920417114001	ABINESH.A		
40 17UMEC07 920417114055 MOHAMMED	39	17UMEC06	920417114054	MOHAMMED		
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41			SARAVANAKUMAR.		
42			KALAI SELVAN.K		
43			SAKTHIVEL.R		
44			MANOJ KUMAR.V	14	Mr.T.SURESH
45			SURYA PRAKASH.L		
46	17UMEC07				Mr.A.SANKARANARAYANA
47			SARAVANAN.T	15	MURTHY
48	17UMEC12	920417114311	S.NAVEEN KUMAR		
49	17UMEC12	920417114305	M.DILIP		
50	17UMEC05	920417114015	BHARATHWARAJ.S	16	Mr.A.SANKARANARAYANA
51	17UMEC12	920417114317	R.YOGESH	10	MURTHY
52	17UMEC13	920417114316	B.VIGNESH		
53	17UMEC10	920417114079	RAMACHANDRAN.P		
54	17UMEC03	920417114005	ARUN.S	17	Mr.DAVID BLESSLEY
55	17UMEC02	920417114070	RATHAKRISHNAN.J		
56	17UMEC06	920417114029	HARISANKAR.R		
57	17UMEC01	920417114039	KANAKAVEL.A	18	Mr.DAVID BLESSLEY
58	17UMEC11	920417114076	RAJESHWARAN.A.E		
59	17UMEC01	920417114032	JAYA SAJIN RAJ.J.S		
60	17UMEC11			19	Mr.L.LOGANATHAN
61			TAIN A FRANISH		
62		920417114096			
63			GOWTHAM.M	20	Mr.L.LOGANATHAN
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64	17UMEC03	320711117101			
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64 SI No.	Roll No.	Register No.		Batch	Name of the Guide
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SI No. 1 2 3 4 5	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC08 17UMEC08 17UMEC04	Register No. 920417114106 920417114043 920417114088 920417114085 920417114085 920417114045	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal	1	
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SI No. 1 2 3 4 5 6 7	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC08 17UMEC014	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114046 920417114313	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar	1	Dr.S.S.Saravana Kumar
SI No. 1 2 3 4 5 6 7 8 9	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC08 17UMEC09	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114045 920417114313 920417114041	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan	2	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy
SI No. 1 2 3 4 5 6 7 8 9 9 10	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC09	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114046 920417114041 920417114041 920417114100	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar	2	Dr.S.S.Saravana Kumar
SI No. 1 2 3 4 5 6 7 8 9 10 11	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC08 17UMEC09 17UMEC09 17UMEC07	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114046 920417114046 920417114001 920417114003	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth	2	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy
SI No. 1 2 3 4 5 6 7 8 9 10 11 12	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC09 17UMEC09 17UMEC07	Register No. 920417114106 920417114043 920417114088 920417114085 920417114085 920417114045 920417114045 920417114046 920417114041 920417114003 920417114093	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth M.Srinivasan	2	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC03 17UMEC04 17UMEC09 17UMEC07 17UMEC02	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114046 920417114046 920417114041 920417114003 920417114003 920417114093	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran	1	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC09 17UMEC09 17UMEC07 17UMEC02	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114045 920417114046 920417114041 920417114003 920417114003 920417114048 920417114048	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar	2	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC08 17UMEC09 17UMEC09 17UMEC07 17UMEC02 17UMEC03 17UMEC03 17UMEC03 17UMEC03 17UMEC03 17UMEC04 17UMEC05 17UMEC12	Register No. 920417114106 920417114043 920417114088 920417114022 920417114025 920417114045 920417114045 920417114045 920417114041 920417114003 920417114003 920417114048 920417114049 920417114315	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan	1	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy Mr.T.Ramesh
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC08 17UMEC08 17UMEC04 17UMEC04 17UMEC09 17UMEC09 17UMEC07 17UMEC02 17UMEC03 17UMEC04 17UMEC05 17UMEC05 17UMEC05	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114085 920417114045 920417114046 920417114041 920417114003 920417114003 920417114048 920417114049 92041711403	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan Y.Jeeva rajan	1 2 3 4	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC03 17UMEC08 17UMEC04 17UMEC08 17UMEC08 17UMEC09 17UMEC09 17UMEC09 17UMEC07 17UMEC02 17UMEC05 17UMEC05 17UMEC05 17UMEC05 17UMEC05 17UMEC05	Register No. 920417114106 920417114043 920417114088 920417114022 920417114025 920417114045 920417114045 920417114046 920417114041 920417114003 920417114093 920417114048 920417114049 920417114033 920417114033	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan Y.Jeeva rajan G.Mathavan	1	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy Mr.T.Ramesh
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC03 17UMEC08 17UMEC04 17UMEC04 17UMEC09 17UMEC09 17UMEC07 17UMEC02 17UMEC03 17UMEC04 17UMEC05 17UMEC05 17UMEC00 17UMEC01 17UMEC05 17UMEC00 17UMEC01	Register No. 920417114106 920417114043 920417114088 920417114022 920417114025 920417114045 920417114045 920417114046 920417114003 920417114003 920417114093 920417114048 920417114049 920417114053 920417114053	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan Y.Jeeva rajan G.Mathavan K.Mohamed	1 2 3 4 5	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy Mr.T.Ramesh
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC03 17UMEC08 17UMEC04 17UMEC04 17UMEC09 17UMEC09 17UMEC09 17UMEC02 17UMEC03 17UMEC04 17UMEC05 17UMEC05 17UMEC05 17UMEC05 17UMEC00 17UMEC10 17UMEC10	Register No. 920417114106 920417114043 920417114043 920417114022 920417114085 920417114045 920417114046 920417114046 920417114041 920417114003 920417114003 920417114093 920417114049 920417114053 920417114050 920417114050	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan Y.Jeeva rajan G.Mathavan K.Mohamed V.Muniyasamy	1 2 3 4	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy Mr.T.Ramesh
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC03 17UMEC08 17UMEC04 17UMEC04 17UMEC08 17UMEC09 17UMEC09 17UMEC09 17UMEC09 17UMEC02 17UMEC03 17UMEC05 17UMEC05 17UMEC05 17UMEC00 17UMEC00 17UMEC10 17UMEC10 17UMEC10	Register No. 920417114106 920417114043 920417114088 920417114022 920417114085 920417114045 920417114045 920417114046 920417114041 920417114003 920417114003 920417114048 920417114048 920417114053 920417114050 920417114056 920417114056	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan Y.Jeeva rajan G.Mathavan K.Mohamed V.Muniyasamy M.Nithiesh Kumar	1 2 3 4 5	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy Mr.T.Ramesh
SI No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	Roll No. 17UMEC08 17UMEC10 17UMEC02 17UMEC03 17UMEC08 17UMEC04 17UMEC04 17UMEC08 17UMEC09 17UMEC09 17UMEC09 17UMEC09 17UMEC02 17UMEC03 17UMEC05 17UMEC05 17UMEC05 17UMEC00 17UMEC00 17UMEC10 17UMEC10 17UMEC10	Register No. 920417114106 920417114043 920417114088 920417114022 920417114025 920417114045 920417114045 920417114046 920417114003 920417114003 920417114093 920417114048 920417114049 920417114053 920417114053 920417114056 920417114056 920417114051	B Section Name of the studnt R.Vignesh T.S.Kishore S.Satheesh kumar T.Fazludeen ahamed M.Saravana kumar A.Madhana Gopal K.Madhubala P.Senthil kumar R.Keerthivasan B.Vasanthkumar B.Vasanthkumar M.Ajeeth M.Srinivasan S.Mareeswaran V.Mathankumar S.Srivathsan Y.Jeeva rajan G.Mathavan K.Mohamed V.Muniyasamy M.Nithiesh Kumar	1 2 3 4 5	Dr.S.S.Saravana Kumar Dr.P.Narayanasamy Dr.P.Narayanasamy Mr.T.Ramesh Mr.D.Palanikumar

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23	17UMEC06	920417114105	K Vianesh		Mr.B.Prabhu
24		920417114065		7	
25			K.Praveen kumar	'	
26		920417114083			Mr.R.Sakthivel Murugan
27			R.Dinesh kumar	8	
28			KHalid Mohammed	0	
29	17UMEC07		M.Edwin charles		Mr.B.Balavairavan
30	17UMEC07		A.R.Thillainathan	9	Will D. Dala Valla Valla Valla
31			S.Harikrishnan	Ũ	
32			V.Vishnuprabhu		Mr.B.Balavairavan
33			A.Mohamed Ibrahim	10	
34			M.Sundaravelan	10	
35			C.H.D.Graham		Mr.B.K.Parrthipan
36	17UMEC07		M.Regupathiraj	11	
37	17UMEC03		M.Arun kumar		
38		920417114078			Mr.S.Devaraj
39		920417114023	, ,	12	,
40			R.Raguprasath		
41		920417114104	• •	13	
42		920417114109	5		
43	17UMEC12		Senthil Venkatesh		Mr.S.Devaraj
44	17UMEC10	920417114017	R.Dinakaran		
45	17UMEC01	920417114016	J.M.Binu		Mr.M.Prithiviraj
46	17UMEC04	920417114024	S.Gautam	14	
47	17UMEC03	920417114069	P.Praveen raj		
48	17UMEC02	920417114094	C.Subbaiya		Mr.L.Loganathan
49	17UMEC09	920417114058	K.Naga arjun	15	
50	17UMEC11	920417114308	A.Karthikeyan		
51	17UMEC09	920417114074	S.Raja		Mr.T.Suresh
52	17UMEC09	920417114110	A.Vikram	16	
53	17UMEC10		V.Ajaysudharsan		
54	17UMEC05	920417114010	P.Ashokkumar		Mr.P.Senthamarai Kannan
55	17UMEC07	920417114064	G.Periasamy	17	
56	17UMEC13	920417114301	K.V.Ajay ram		
57		920417114701	•		Mr.P.Senthamarai Kannan
58	17UMEC12		R.Divash kannan	18	
59	17UMEC12		R.Harivignesh		
60	17UMEC07		G.Vishnusrikumar		Mr.S.Muthu Natarajan
61	17UMEC12	920417114312	V.Naveenkumar	19	
62	17UMEC04		R.Viswanathan		
63	17UMEC04		_		Mr.S.Muthu Natarajan
64			M.Harish kumar	20	
65	17UMEC10	920417114101	M.Vasanth kumar		

P. Naly.

Senttel

CS Scienced with CamScanner

DEVELOPMENT AND ANALYSIS OF BIODEGRADABLE POLY VINYL ALCOHOL AND PINEAPPLE CONE FILLER COMPOSITE BIO FILMS

A PROJECT REPORT

Submitted by

R.VIGNESH (17UMEC087) T.FAZULDEEN AHMED (17UMEC080) S.SATHESH KUMAR (17UMEC025) T.S.KISHORE (17UMEC101)

In partial fulfillment for the award of the degree of



IN

BACHELOR OF ENGINEERING

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "Development and analysis of biodegradable poly vinyl alcohol and pineapple cone filler composite bio films" is the bonafide of "R.Vignesh (920417114106), T.Fazuldeen Ahmed (920417114022), S.Sathesh Kumar (920417114088), T.S.Kishore (920417114043)" who carried

out the project work under my supervision.

SIGNATURE Dr.S.SENTHIL, M.E.,Ph.D. HEAD OF THE DEPARTMENT Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology, K.Vellakulam, Madurai

D. D. Jumburg.

SIGNATURE

Dr.S.S.SARAVANA KUMAR,M.E.,Ph.D. SUPERVISOR Dept. of Mechanical Engineering, Kamaraj college of Engineering & Technology,

K.Vellakulam, Madurai

P. Nalt.

INTERNAL EXAMINER

9 But 27/4/21

EXTERNAL EXAMINER

Development and analysis of poly vinyl alcohol/ sesame indicum coat powder bio composite films by solution casting method for packaging application

A PROJECT REPORT Submitted by S.MAREESWARAN(920417114048) V.MATHANKUMAR(920417114049) S.SRIVATHSAN (920417114315)

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND



TECHNOLOGY.

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701

(Near Virudhunagar)

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to anna University, Chennai) K.VELLAKULAM-625 701

BONAFIDE CERTIFICATE

Certified that this project report "Development and analysis of poly vinyl alcohol/ sesame indicum powder bio composite films by solution casting method for packaging application " is the bonafide of "S.MAREESWARAN(920417114048), V.MATHANKUMAR(920417114049), S.SRIVATHSAN (920417114315)" who

carried out the project work under my supervision.

Sonth

SIGNATURE Dr.S.SENTHIL, M.E., Ph.D. .

HEAD OF THE DEPARTMENT

Dept.of Mechanical Engineering, Mechanical Engineering, Kamaraj college of Engineering & Technology, Madurai- 625 701.

T. 01 h

SIGNATURE MR.T.Ramesh,M.E,

SUPERVISOR

Dept. of

Kamaraj college of Engineering & Technology, Madurai- 625 701.

Submitted for the viva-voice examination held on <u>26/04/2021</u>

P. Nalt.

INTERNAL EXAMINER

EXTERNAL EXAMINER

EFFECT OF ACACIA NILOTICA FILLER HYBRID ON MECHANICAL PROPERTIES OF CENTURY FIBER REINFORCED EPOXY COMPOSITE

A PROJECT REPORT

Submitted by

(17UMEC105)

(17UMEC030)

(17UMEC033)

(17UMEC017)

V.MUNIYASAMY

S.VISHWAK

M.NITHIESH KUMAR

V.BHARATH KUMAR

In partial fulfilment for the award of the degree

Of



BACHELOR OF ENGINEERING



IN

MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna university, Chennai) K.VELLAKULLAM-625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna university, Chennai) K.VELLAKULLAM-625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project "EFFECT OF ACACIA NILOTICA FILLER HYBRID ON MECHANICAL PROPERTIES OF CENTURY FIBER REINFORCED EPOXY COMPOSITE" is the bona-fide work of V.MUNIYASAMY (17UMEC105), S.VISHWAK (17UMEC030),M.NITHIESH KUMAR (17UMEC033), V.BHARATH KUMAR (17UMEC017) Who carried out the project work under my supervision.

Signature of the HOD

Dr.S.Senthil, M.E., Ph.D., Head of the Department, Department of Mechanical Engineering, Kamaraj College of Engineering And Technology, K.VELLAKULLAM– 625701.

P. Naly.

Internal Examiner

D. Pal K (D. PALANI KUMAR) AP/Meda: 9204-KCET

Signature of the Guide

Mr.D.Palanikumar, M.E.,

Supervisor, Department of Mechanical Engineering, Kamaraj College of Engineering And Technology, K.VELLAKULLAM – 625701

9 Bu 27/4/21

External Examiner

Dean (Academic courses) Dean (Examination) Principal

PRODUCTIVITY IMPROVEMENT BY REDUCTION OF CYCLE TIME AND REDUCTION OF LABOUR

PROJECT REPORT

Submitted by

PRAKASH D

VIGNESH K

PRAVEENKUMAR K

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING





KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution to Anna University, Chennai) K.VELLAKULAM – 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "PRODUCTIVITY IMPROVEMENT BY REDUCTION OF CYCLE TIME AND REDUCTION OF LABOUR " is the bonafide work of "PRAKASH D (920417114065), VIGNESH K (920417114105),PRAVEENKUMAR K (920417114068)" who carried out the project work under my supervision.

SIGNATURE Dr.S.Senthil, M.E., Ph.D

HEAD OF THE DEPARTMENT

Department of Mechanical Engineering Kamaraj college of Engineering Technology, Madurai – 625106.

SIGNATURE Dr .B.Prabhu, M.E.,Ph.D

SUPERVISOR

Department of Mechanical Engineering Kamaraj college of Engineering Technology, Madurai – 625106.

Submitted for the viva-voce examination held on 26/04/2021

P. Naly.

INTERNAL EXAMINER

EXTERNAL EXAMINER



22/04/2021

The Head of the Department, Kamaraj College of Engineering and Technology, Madurai.

To Whomsoever It may Concern

This is to certify that Mr. K.Vignesh (920417114105) BE (Mech) Final Year Student of your college has undergone Project on "Productivity Improvement of Reduction of Cycle Time and Reduction of Labour" in our organization from 08.04.2021 to 22.04.2021.

Thanking You,

For Bhargave Rubber Pvt Ltd

(L.Aravind)

Director

CIN U25190TN2011PTC079484	IEC No: 3511001285	GSTIN :33AAECB4728K1ZC
Regd. Office : TARA GARDE	NS, 342-Melakkal Main Road, Kochada	i, Madurai - 625 016, S.India.
	Tel.No.:+91-452-2384541, 2384542	
Website : www.bhargaveindustr	ies.in E- mail : bhargave95@yahoo.co	n, bhargave06@yahoo.co.in
IATF	16949 : 2016 certified Company	CONTRACTOR DUPPE, 1919



22/04/2021

The Head of the Department, Kamaraj College of Engineering and Technology, Madurai.

To Whomsoever It may Concern

This is to certify that Mr. D.Prakash (920417114065) BE (Mech) Final Year Student of your college has undergone Project on "Productivity Improvement of Reduction of Cycle Time and Reduction of Labour" in our organization from 08.04.2021 to 22.04.2021.

Thanking You,

For Bhargave Rubber Pvt Ltd

(L.Aravind Director

CIN. U25190TN2011PTC079484	IEC No: 3511001285	GSTIN :33AAEC84728K1ZC
	NS, 342-Melakkal Main Road, Kochada	ai, Madurai - 625 016, S.India.
	Tel.No.:+91-452-2384541, 2384542 ies.in E- mail : bhargave95@yahoo.co	m, bhargave06@yahoo.co.in
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BHARGAVE RUBBER PRIVATE LTD., Manufacturers : 'SPARK' Oil Seals 'O' Rings and MRP's



22/04/2021

The Head of the Department, Kamaraj College of Engineering and Technology, Madurai.

To Whomsoever It may Concern

This is to certify that Mr. K.Praveenkumar (920417114068) BE (Mech) Final Year Student of your college has undergone Project on "Productivity Improvement of Reduction of Cycle Time and Reduction of Labour" in our organization from 08.04.2021 to 22.04.2021.

Thanking You,

For Bhargave Rubber Pvt Ltd

(L.Aravind

Director

CIN U25190TN2011PTC079484	IEC No: 3511001285	GSTIN :33AAECB4728K1ZC
Regd. Office : TARA GARD	ENS, 342-Melakkal Main Road, Kochada	i, Madurai - 625 016, S.India.
Website : www.bhargaveindust	Tel.No.:+91-452-2384541, 2384542 ries.in E- mail : bhargave95@yahoo.co	m. bharoave06@vaboo.co.in
	16949 : 2016 certified Company	

ANALYSIS OF REDUCTION HEAT IN RAILWAY AXLE BEARING

A PROJECT REPORT

Submitted by

SANTHOSH G (920417114083)

DINESH KUMAR R (920417114014)

KHALID MOHAMMED SHEIKH (920417114042)

In partial fulfillment for the award of the degree Of

BACHELOR OF ENGINEERING



In

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "ANALYSIS OF REDUCTION HEAT IN RAILWAY AXLES BEARING" is the bonafide work of "SANTHOSH G (920417114083) DINESH KUMAR R (920417114014) & KHALID MOHAMMED SHEIKH (920417114042)" who carried out the project work under my supervision

Who carried out the project work under my supervision.

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. of Mechanical Engineering Kamaraj College of Engg& Tech,

K.Vellakulam, Madurai.

P. Naly-

R. datting.

Mr.R.SAKTHIVEL MURUGAN M.E., (Ph.D) SUPERVISOR,

SIGNATURE

Assistant Professor, Dept. of Mechanical Engineering Kamaraj College ofEngg&Tech, K.Vellakulam, Madurai

9 But 27/4/21



RAIL NET SOFTWARE SOLUTIONS

(Recognised by DOE, Government of India)

PROJECT COMPLETION CERTIFICATE

This is to certify that R.DINESH KUMAR (Reg.No:920417114019), G.SANTHOSH (Reg.No:920417114083), KHALID MOHAMMED SHEIKH (Reg.No:920417114042) doing final year B.E (MECHANICAL) from KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY have successfully completed the project entitled "ANALYSIS OF REDUCTION HEAT IN RAILWAY AXLE BEARING " for Southern Railway, Madurai Division .

Their project period is from MARCH 06, 2021 to APRIL 15, 2021. During this period, their candidate's conduct was good.

cretary Administrator (ABINAYASUDHAGARAN) (Ashok.S) SECRETARY Administrator RAILNET / S RWWO RAILWAY COLONY RAILNET SRWWO MADURAI onthern Railway/Madural Division Desktop Web Web Software Application Services Design Development E-mail : railnet@srwwo.com Phone: 0452 - 2308785, Railway: 72785 Railway Mixed Hr. Sec. School Campus, Railway Colony, E-mail : railnetmdu@gmail.com & Web : www.railnet.srwwo.com



RAIL NET SOFTWARE SOLUTIONS

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PROJECT COMPLETION CERTIFICATE

This is to certify that R.DINESH KUMAR (Reg.No:920417114019), G.SANTHOSH (Reg.No:920417114083), KHALID MOHAMMED SHEIKH (Reg.No:920417114042) doing final year B.E (MECHANICAL) from KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY have successfully completed the project entitled "ANALYSIS OF REDUCTION HEAT IN RAILWAY AXLE BEARING " for Southern Railway, Madurai Division .

Their project period is from MARCH 06, 2021 to APRIL 15, 2021. During this period, their candidate's conduct was good.

cretary Administrator (ABINAYASUDHAGARAN) (Ashok.S) SECRETARY Administrator RAILNET / S RWWO RAILWAY COLONY RAILNET SRWWO MADURAI onthern Railway/Madural Division Desktop Web Web Software Application Services Design Development E-mail : railnet@srwwo.com Phone: 0452 - 2308785, Railway: 72785 Railway Mixed Hr. Sec. School Campus, Railway Colony, E-mail : railnetmdu@gmail.com & Web : www.railnet.srwwo.com

INVESTIGATION ON PHYSIO-MECHANICAL PROPERTIES OF POLY VINYL ALCOHOL / MUSA ACUMINATA COLLA HUSK POWDER BIOFILMS

PROJECT REPORT Submitted by

EDWIN CHARLES M (920417114021)

THILLAINATHAN A.R (920417114099)

HARIKRISHNAN S (920417114028)

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING



IN MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "STUDIES ON INVESTIGATION ON PHYSIO-MECHANICAL PROPERTIES OF POLY VINYL ALCOHOL / MUSA ACUMINATA COLLA HUSK POWDER BIOFILMS" is the bonafide work of "EDWIN CHARLES M (920417114021), THILLAINATHAN A.R (920417114099) & HARIKRISHNAN S (920417114028) who carried out the project work under my supervision.

Sonth

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. of Mechanical Engineering Kamaraj College of Engg & Tech, K.Vellakulam, Madurai.

SIGNATURE Mr.B.BALAVAIRAVAN M.E.,Ph.d., SUPERVISOR , Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voice examination held on 26.04.2021

P. Nalt.

INTERNAL EXAMINER

9 But 27/4/21

EXTERNAL EXAMINER

INVESTIGATION ON PHYSIO-MECHANICAL PROPERTIES OF POLY VINYL ALCOHOL / CITRUS PEEL POWDER BIOFILMS

PROJECT REPORT Submitted by

VISHNU PRABHU V (920417114111)

MOHAMED IBRAHIM SATHICK A

(920417114052)

SUNDARA VELAN M (920417114095)

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021



BONAFIDE CERTIFICATE

Certified that the project report "STUDIES ON INVESTIGATION ON PHYSIO-MECHANICAL, WATER AFFINITY AND BIO DEGRADATION PROPERTIES OF POLY VINYL ALCOHOL / CITRUS PEEL POWDER BIOFILMS" is the bonafide work of "VISHNU PRABHU V (920417114111), MOHAMED IBRAHIM SATHICK A (920417114052) & SUNDARAVELAN M

(920417114095) who carried out the project work under my supervision

Contra

SIGNATURE
Dr. S. SENTHIL M.E., Ph.D.,
Head of the Department,
Professor,
Dept. of Mechanical Engineering
Kamaraj College of Engg & Tech,
K.Vellakulam, Madurai.

SIGNATURE Mr.B.BALAVAIRAVAN M.E.,(Ph.d)., SUPERVISOR , Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voice examination held on <u>26.04.2.21</u>

P. Nal **INTERNAL EXAMINER**

3- 27/4/21

EXTERNAL EXAMINER

IMPLEMENTATION OF WATER COOLING CHILLER PLANT AT CONFERENCE HALL

PROJECT REPORT

Submitted by

VIGNESH.B (920417114104) DHINAKARAN.R (920417114017) VIJAYASEGAR.K (920417114109) SENTHIL VENKATESH (920417114314)

In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING



IN



MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM – 625701 (Near Virudhunagar)

April 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An autonomous institution affiliated to Anna university, Chennai)

K.VELLAKULAM – 625 701 (Near virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "IMPLEMENTATION OF WATER COOLING CHILLER PLANT AT CONFERENCE HALL" is the bonafide work of "SENTHIL VENKATESH (920417114314), VIGNESH.B (920417114104), VIJAYASEGAR.K(920417114109), DHINAKARAN.R (920417114017)"who carried out the project work under my supervision.

Gitte

SIGNATURE Dr.S.SENTHIL M.E.,Ph.D.,

HEAD OF THE DEPARTMENT

Mechanical Engineering,

Kamaraj College of

Engineering & Technology,

Madurai.

P. Naly.

INTERNAL EXAMINER

S.Def

SIGNATURE Mr.S.DEVARAJ M.E., SUPERVISOR Mechanical Engineering, Kamaraj College of

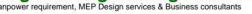
Engineering & Technology,

Madurai.

13 27/4/21

EXTERNAL EXAMINER

MMgreen Engineering Solutions Manpower requirement, MEP Design services & Business consultants





#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338

TO WHOM IT MAY CONCERN

This is to certify that Mr. R.Dhinakaran , studied in Kamaraj College of Engineering & Technology has completed his ACADEMIC PROJECT successfully in our organization for a period starting from February 14, 2021 to February 28, 2021.

During this period, he had done project on "Implementation of water Cooling Chiller Plant at Conference hall" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date : 20 April 2021 Place : Bangalore

MMgreen Engineering Solutions Manpower requirement, MEP Design services & Business consultants



#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338

TO WHOM IT MAY CONCERN

This is to certify that **Mr. K.Vijaya Sekar**, studied in **Kamaraj College of Engineering** & **Technology** has completed his **ACADEMIC PROJECT** successfully in our organization for a period starting from February 14, 2021 to February 28, 2021.

During this period, he had done project on "Implementation of water Cooling Chiller Plant at Conference hall" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date : 20 April 2021 Place : Bangalore

DESIGN AND FABRICATION OF ELECTRIC BIKE WITH NUMERIC ANTI-THEFT SYSTEM

PROJECT REPORT

Submitted by

BINU JM (920417114016)

PRAVEEN RAJ P (920417114069)

GAUTAM S (920417114024)

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING





DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING ANDTECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF ELECTRIC BIKE WITH NUMERIC ANTI-THEFT SYSTEM" is the bonafide work of "J.M.BINU (920417114016) P.PRAVEEN RAJ (920417114069) & S.GAUTAM (920417114024)" who carried out the project work under my supervision

SIGNATURE Dr. S. SENTHILM.E.,Ph.D., M.E., Head of theDepartment, Professor, Dept. ofMechanicalEngineering Kamaraj College of Engg&Tech, K.Vellakulam,Madurai. opento.

SIGNATURE Mr. PRITHIVIRAJ SUPERVISOR, Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg&Tech, K.Vellakulam,Madurai

P. Nal **INTERNALEXAMINER**

13~ 27/4/21 EXTERNAL EXAMINER

DESIGN AND ANALYSIS OF VRF SYSTEM FOR FOUR WAY CASSETTE UNIT

A PROJECT REPORT

Submitted by

SUBBAIYA.C.C (920417114094)

KARTHIKEYAN.A (920417114308)

NAGA ARJUN.K(920417114058)

In partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING



IN MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

April 2021

DESIGN AND ANALYSIS OF VRF SYSTEM FOR FOUR WAY CASSETTE UNIT

A PROJECT REPORT

Submitted by

SUBBAIYA.C.C (920417114094)

KARTHIKEYAN.A (920417114308)

NAGA ARJUN.K (920417114058)

In partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING



IN



MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

April 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND ANALYSIS OF VRF SYSTEM FOR FOUR WAY CASSETTE UNIT" is the bonafide work of "SUBBAIYA.C.C (920417114094), KARTHIKEYAN.A (920417114308), NAGA ARJUN.K (920417114058)" who carried out the project work under my supervision.

Senttel

SIGNATURE Dr.S.Senthil, M.E., Ph.D HEAD OF THE DEPARTMENT Department of Mechanical Engineering Kamaraj College of Engineering & Technology Madurai-625 701 SIGNATURE Mr.L.LOGANATHAN, M.E., SUPERVISOR Department of Mechanical Engineering Kamaraj College of Engineering & Technology Madurai-625 701

Submitted for the viva-voce examination held on

INTERNAL EXAMINER

3- 27/4/21

EXTERNAL EXAMINER

MMgreen Engineering Solutions

Manpower requirement, MEP Design services & Business consultants

#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338



TO WHOM IT MAY CONCERN

This is to certify that **Mr. C.C.Subbaiya**, studied in **Kamaraj College of Engineering & Technology** has completed his **ACADEMIC PROJECT** successfully in our organization for a period starting from February 28, 2021 to March 14, 2021.

During this period, he had done project on "Design and Analysis of Variable Refrigerent Flow for Four way Cassette Unit" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date: 20 April 2021 Place: Bangalore **MMgreen Engineering Solutions**

Manpower requirement, MEP Design services & Business consultants

#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338



TO WHOM IT MAY CONCERN

This is to certify that **Mr. A.Karthikeyan**, studied in **Kamaraj College of Engineering & Technology** has completed his **ACADEMIC PROJECT** successfully in our organization for a period starting from February 28, 2021 to March 14, 2021.

During this period, he had done project on "Design and Analysis of Variable Refrigerent Flow for Four way Cassette Unit" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date: 20 April 2021 Place: Bangalore **MMgreen Engineering Solutions**

Manpower requirement, MEP Design services & Business consultants

#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338



TO WHOM IT MAY CONCERN

This is to certify that **Mr. K.Naga Arjun**, studied in **Kamaraj College of Engineering & Technology** has completed his **ACADEMIC PROJECT** successfully in our organization for a period starting from February 28, 2021 to March 14, 2021.

During this period, he had done project on "Design and Analysis of Variable Refrigerent Flow for Four way Cassette Unit" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date: 20 April 2021 Place: Bangalore

PERFORMANCE ANALYSIS OF VARIABLE REFRIGERANT VOLUME FOR ONE WAY DUCTABLE CASSETTE UNIT

PROJECT REPORT

Submitted by

RAJA S

VIKRAM A

AJAY SUDHARSHAN V

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING





KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution to Anna University, Chennai) K.VELLAKULAM – 625 701 (Near Virudhunagar)

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "PERFORMANCE ANALYSIS OF VARIABLE REFRIGERANT VOLUME FOR ONE WAY DUCTABLE CASSETTE UNIT" is the bonafide work of "RAJA S (920417114074), VIKRAM A (920417114110), AJAY SUDHASHAN (920417114002)" who carried out the project work under my supervision.



SIGNATURE Dr.S.Senthil, M.E., Ph.D

HEAD OF THE DEPARTMENT

Department of Mechanical Engineering Kamaraj college of Engineering Technology, Madurai – 625106. **SIGNATURE** Mr.T.SURESH M.E.,

SUPERVISOR

Department of Mechanical Engineering Kamaraj college of Engineering Technology, Madurai – 625106.

Submitted for the viva-voce examination held on <u>26/04/2021</u>

P. Nal

INTERNAL EXAMINER

EXTERNAL EXAMINER

MMgreen Engineering Solutions

Manpower requirement, MEP Design services & Business consultants

#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338



TO WHOM IT MAY CONCERN

This is to certify that Mr. S.Raja, studied in Kamaraj College of Engineering & Technology has completed his ACADEMIC PROJECT successfully in our organization for a period starting from February 28, 2021 to March 14, 2021.

During this period, he had done project on "Performance Analysis of Variable Refrigerant Volume for One-way Ductable Cassette Unit" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date : 20 April 2021 Place : Bangalore

MMgreen Engineering Solutions Manpower requirement, MEP Design services & Business consultants

#486/1-3A, 3rd Floor, Flower Garden 4th Cross, Babusab Palya, Kalyan Nagar, Bangalore-560043 Mobile: +91 98804 91338



TO WHOM IT MAY CONCERN

This is to certify that Mr. A.Vikram , studied in Kamaraj College of Engineering & Technology has completed his ACADEMIC PROJECT successfully in our organization for a period starting from February 28, 2021 to March 14, 2021.

During this period, he had done project on "Performance Analysis of Variable Refrigerant Volume for One-way Ductable Cassette Unit" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date : 20 April 2021 Place : Bangalore

MMgreen Engineering Solutions Manpower requirement, MEP Design services & Business consultants

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TO WHOM IT MAY CONCERN

This is to certify that Mr. V.Ajay Sudharshan , studied in Kamaraj College of Engineering & Technology has completed his ACADEMIC PROJECT successfully in our organization for a period starting from February 28, 2021 to March 14, 2021.

During this period, he had done project on "Performance Analysis of Variable Refrigerant Volume for One-way Ductable Cassette Unit" and had shown an exemplary attitude and approach.

MMgreen Engineering Solutions



Soumya SB Managing Director Date : 20 April 2021 Place : Bangalore

FABRICATION AND CHARACTERIZATION OF

ACACIA NILOTICA / EPOXY COMPOSITE

A PROJECT REPORT

Submitted by

K.V.AJAYRAM (920417114301) P.ASHOK KUMAR (920417114010) G.PERIYASAMI (920417114064)

In partial fulfillment for the award of the degree Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to an Anna University, Chennai)

K.VELLAKULAM – 625701 (Near Virudhunagar)





KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to an Anna University, Chennai)

K.VELLAKULAM – 625701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this Project "FABRICATION AND CHARACTERIZATION OF ACACIA NILOTICA / EPOXY COMPOSITE" is the Bona-fide work of K.V.AJAY RAM (920417114301), P.ASHOK KUMAR (920417114010), G.PERIYASAMI (920417114064) who carried out the project work under my Supervision.

SIGNATURE

Dr.S.Senthil, M.E., Ph.D., HEAD OF THE DEPARTMENT,

Dept. of Mechanical Engineering, Kamaraj College of Engineering And Technology, Madurai – 625701

P. Southworker. SIGNATURE

Mr.P.Senthamaraikannan,M.E., SUPERVISOR,

Dept. of Mechanical Engineering, Kamaraj College of Engineering And Technology, Madurai – 625701

P. Naly INTERNAL EXAMINER

9 1 1 27/4/21

EXTERNAL EXAMINER

INCREASING PRODUCTIVITY USING

REGENERATION MACHINE PROCESS

PROJECT REPORT

Submitted by

DIVASH KANNAN R (920417114306)

HARIVIGNESH R (920417114307)

SUGITHA SRI S (920417114701)

In partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to an Anna University, Chennai) K.VELLAKULAM – 625701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report"STUDIES ON INCREASING PRODUCTIVITY USING REGENERATION MACHINE PROCESS " is the bonafidework of HARIVIGNESH R (920417114307) DIVASH KANNAN R (920417114306) & SUGITHA SRI S (920417114701)"who carried out the project work under my supervision

Sonth

SIGNATURE Dr.S.Senthil, M.E., Ph.D., HEAD OF THE DEPARTMENT, Professor, Dept. ofMechanical Engineering Kamaraj College of Engg& Tech, K.Vellakulam, Madurai.

P. Naly.

INTERNAL EXAMINER

P. Senterorlen.

SIGNATURE Mr.P.Senthamaraikannan,M.E., SUPERVISOR , Assistant Professor, Dept. of Mechanical Engineering Kamaraj College ofEngg& Tech, K.Vellakulam, Madurai

9 13 - 27/4/21

EXTERNAL EXAMINER



A.1301. The Madurai District Cooperative Milk Producers' Union Limited, Sivagangai Main Road, Sathamangalam, Madurai 625 020.

Date: 23.02.2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Thiru.R.Harivignesh(RegisterNo.17UMEC126), pursuing IV year B.E.(Mech) at Kamaraj College Of Engineering & Technology, Viruthunagar, has undergone project work for the Eight semester from 08 February 2021 to 22 February 2021.

During the above period, her involvement in the subject & conduct was good.

Manager (Admin)





A.1301. The Madurai District Cooperative Milk Producers' Union Limited, Sivagangai Main Road, Sathamangalam, Madurai 625 020.

Date: 23.02.2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Selvi.S.Sugitha Sri(RegisterNo.17UMEC133), pursuing IV year B.E.(Mech) at Kamaraj College Of Engineering & Technology, Viruthunagar, has undergone project work for the Eight semester from 08 February 2021 to 22 February 2021.

During the above period, her involvement in the subject & conduct was good.

Manager (Admin)





A.1301. The Madurai District Cooperative Milk Producers' Union Limited, Sivagangai Main Road, Sathamangalam, Madurai 625 020.

Date: 23.02.2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Thiru.R.Divash Kannan(RegisterNo.17UMEC129), pursuing IV year B.E.(Mech) at Kamaraj College Of Engineering & Technology, Viruthunagar, has undergone project work for the Eight semester from 08 February 2021 to 22 February 2021.

During the above period, her involvement in the subject & conduct was good.

(Admin) Manager



MECHANICAL CHARACTERIZATION OF PLA/BAMBOO FILLER FOR 3D PRINTING APPLICTIONS

PROJECT REPORT Submitted by

VISHNU SRI KUMAR G (920417114112)

VISWANATHAN R (920417114114)

NAVEENKUMAR V (920417114312)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING





DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project **"MECHANICAL CHARACTERZATION OF PLA** / **BAMBOO FILLER FOR 3D PRINTING APLLLICATION"** is the bonafide work of **G.VISHNU SRI KUMAR** (920417114112), **V.NAVEENKUMAR** (920417114312), **R.VISWANATHAN** (920417114114) Who carried out the project work under my supervision.



SIGNATURE

Dr. S. SENTHIL M.E., Ph.D., Head of the Department Assistant Professor Dept. of Mechanical Engineering Kamaraj College of Engg. & Tech., K.Vellakulam, Madurai

S. Leven Noris.

SIGNATURE Mr. S. MUTHU NATRAJAN M.E., (Ph.D)., Supervisor Assistant Professor Dept. of Mechanical Engineering Kamaraj College of Engg. & Tech., K.Vellakulam. Madurai

Submitted for the viva-voce examination held on 26.04.2021

P. Nalt

Internal Examiner

13- 27/4/21

External Examiner

MECHANICAL CHARACTERIZATION OF PLA/ BANANA FILLER FOR 3D PRINTING APPLICATIONS

A PROJECT REPORT

Submitted by

HARISH KUMAR .M (920417114030) LOGESH .L (920417114044) VASANTHA KUMAR.M (920417114101)

in partialfulfilled for the award of degreeof

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING





DEPARTMENT OF MECHANICAL ENGG.

(An Autonomous Institution to Anna University, Chennai)

K.VELLAKULAM – 625 701 (Near Virudhunagar)

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution to Anna University, Chennai)

K.VELLAKULAM – 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "MECHANICAL CHARACTERIZATION OF PLA/ BANANA FILLER FOR 3D PRINTERS" is the bonafide work of "M.HARISH KUMAR (920417114030), L.LOGESH (920417114044), M.VASANTHA KUMAR (920417114101)" who carried out the project work under my supervision.

SIGNATURE

Dr. S. SENTHIL M.E., Ph.D., Head of the Department Assistant Professor Dept. of Mechanical Engineering Kamaraj College of Engg. & Tech., K.Vellakulam, Madurai

S. Leven Nohi

SIGNATURE Mr. S. MUTHU NATRAJAN M.E., (Ph.D)., Supervisor Assistant Professor Dept. of Mechanical Engineering Kamaraj College of Engg. & Tech., K.Vellakulam, Madurai

P. Nalt. INTERNAL EXAMINAR

27/4/2 EXTERNAL EXAMINAR

DESIGN OF E-CART

PROJECT REPORT

Submitted by

JEFREN JOSHUA R	(920417114034)
RAJKUMAR C	(920417114077)
SARAVANAN T M	(920417114087)

In partial fulfilment for the award of the degree

0f

BACHELOR OF ENGINEERING



in

MECHANICAL ENGINEERING



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM -625 701 (Near Virudhunagar)

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

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SIGNATURE Dr. S.SENTHIL, M.E.,Ph.D., HEAD OF THE DEPARTMENT Dept. of Mechanical Engineering Kamaraj college of Engineering &Technology Madurai-625 701

SIGNATURE Dr. S.SENTHIL, M.E.,Ph.D., SUPERVISOR Dept. of Mechanical Engineering Kamaraj college of Engineering &Technology Madurai-625 701

Submitted for viva-voce examination held on

P. Naly.

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN & ANALYSIS OF FLOWER POT CONE MAKING MACHINE – A CASE STUDY IN FIREWORKS INDUSTRY

A PROJECT REPORT

Submitted by

BALAJI.N (920417114303)

MATHANKUMAR.K (920417114310)

BALAJI.N (920417114304)

in partial fulfillment for the award of the degree of

BALCHELOR OF ENGINEERING



IN



MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM – 625 701 (Near Virudhunagar)

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM – 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND ANALYSIS OF FLOWER POT CONE MAKING MACHINE –A CASE STUDY IN FIREWORKS INDUSTRY" is the bonafide work of "N. BALAJI (920417114303) N. BALAJI (920417114304) K. MATHANKUMAR (920417114310)" who carried out the project work under my supervision.

SIGNATURE Dr. S. SENTHIL, M.E., Ph.D. HEAD OF THE DEPARTMENT Department of Mechanical Kamaraj College of Engineering & Technology Madurai-625 701

SIGNATURE Dr. S. SENTHIL, M.E., Ph.D. SUPERVISOR Department of Mechanical Kamaraj College of Engineering & Technology Madurai-625 701

P. Nalt **INTERNAL EXAMINER**

9 13 - 27/4/21

EXTERNAL EXAMINER

ME8682

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TOTAL: 60 PERIODS

OBJECTIVE:

 The main objective is to give an opportunity to the student to get hands on training in the fabrication of one or more components of a complete working model, which is designed by them.

GUIDELINE FOR REVIEW AND EVALUATION

The students may be grouped into 2 to 4 and work under a project supervisor. The device/ system/component(s) to be fabricated may be decided in consultation with the supervisor and if possible with an industry. A project report to be submitted by the group and the fabricated model, which will be reviewed and evaluated for internal assessment by a Committee constituted by the Head of the Department. At the end of the semester examination the project work is evaluated based on oral presentation and the project report jointly by external and internal examiners constituted by the Head of the Department.

OUTCOMES:

Upon the completion of this course the students will be able to

CO1 design and Fabricate the machine element or the mechanical product.

CO2 demonstrate the working model of the machine element or the mechanical product.

HS8581	PROFESSIONAL COMMUNICATION	L	Т	Ρ	С
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OBJECTIVES: The course aims to:

- Enhance the Employability and Career Skills of students
- Orient the students towards grooming as a professional
- Make them Employable Graduates
- Develop their confidence and help them attend interviews successfully.

UNIT I

Introduction to Soft Skills-- Hard skills & soft skills - employability and career Skills—Grooming as a professional with values—Time Management—General awareness of Current Affairs

Self-Introduction-organizing the material - Introducing oneself to the audience - introducing the topic – answering questions – individual presentation practice— presenting the visuals effectively – 5 minute presentations

UNIT III

Introduction to Group Discussion— Participating in group discussions – understanding group dynamics - brainstorming the topic -- questioning and clarifying -GD strategies- activities to improve GD skills

UNIT IV

Interview etiquette – dress code – body language – attending job interviews– telephone/skype interview -one to one interview &panel interview - FAQs related to job interviews



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.Chidambara Nadar - C.Nagammal Campus

	Subject Code & NAME : ME 8682 : Design and Fabrication Project Year / SEM / Class : III / VI / 'B'					
Sl. No	Roll No	Reg. No.	Name of the student	Batch No.	Title of the Project	Guide Name with Designation
1	18UMEC039	920418114002	ABISON GURUGEE.M	Daten 110.		Guide Maine with Designation
2	18UMEC087	920418114301	BALAVINOTH B	1	Design and Fabrication of Ayurvedic formulation drier	Dr. S. Thanga Kasi Rajan, AP/ Mech
3	18UMEC085	920418114026	HARI VIGNESH.A			
4	18UMEC007	920418114056	PRAVIN KUMAR .S		DESIGN AND FABRICATION OF	
5	18UMEC022	920418114017	BALAMURUGAN.S	2	DIMENSIONAL ANALYSER	Dr. S. Thanga Kasi Rajan, AP/ Mech
6	18UMEC027 18UMEC057	920418114064 920418114046	ROBERT MANICKAM.D.J NALLA PERUMAL.T			
8	18UMEC060	920418114040	SANTHOSH.G	3	DESIGN AND FABRICATION OF	Er. T. Suresh, AP/ Mech
9	18UMEC052	920418114019	BALASHIVAM.S	2	FITNESS ENHANCEMENT MACHINE	
10	18UMEC016	920418114021	BALA VIGNESH.J			
11	18UMEC091	920418114305	Navaneetha Krishnan	4	Design and Fabrication of Solar Operated	Er. T. Suresh, AP/ Mech
12	18UMEC002	920418114070	SATHEESH KUMAR.S		Litter Raking Machine for Poultry farm	
13	18UMEC078	920418114082	VIJAYARAGAVAN.G	_	Design and Fabrication of Portable 3 in 1 car	
14	18UMEC051	920418114047	NANTHAKUMAR.G ABELPRIYAN.S	5	washer using wiper	Er. M. Prithiviraj, AP/Mech
15	18UMEC084 18UMEC042	920418114001 920418114079	VETRIVEL.M			
17	18UMEC075	920418114079	RAHUL KRISHNAN.K	6	Design and Fabrication of Streeing control	Er. R. Sakthivel Murugan, AP/ Mech
18	16UMEC112	920418114501	Karthikeyan. S	-	using IoT	
19	18UMEC021	920418114016	BALAMURUGAN.R			
20	18UMEC053	920418114008	ARUL RAJ.D.R	7	Design and fabrication of Ice Bonded Abrasive Polishing Machine	Er. S. Chidambarakumaran, AP/Mech
21	18UMEC010	920418114086	YOGESSWAR.R		Addaster Folishing Machine	
22	18UMEC049	920418114081	VIGNESH.S		Design and Fabrication of Semiautomatic	
23	18UMEC062	920418114018	BALASANKAR.K	8	floor cleaning machine	Er. S. Muthu Natarajan, AP/Mech
24 25	18UMEC074 18UMEC063	920418114023 920418114032	GOWSIC.T KARTHIKEYAN.R(20/07/2001)		<u> </u>	
25	18UMEC063 18UMEC029	920418114032 920418114031	KARTHIKEYAN.R(20/07/2001) KARTHIKEYAN.R(26/07/2000)	9	Performance monitoring and controlling of	Er. T. Ramesh, AP/Mech
20	18UMEC023	920418114031	MELWIN.M		Shell and tube heat exchanger using IOT	
28	18UMEC044	920418114029	JERRY ROBINSON.J		DESIGN AND FABRICATION OF	
29	18UMEC092	920418114303	MOHAMED IRFAN KHAN J	10	POWER GENERATION USING	Er. M. Prithiviraj, AP/Mech
30	18UMEC032	920418114055	PRATHIYUNNAN.M		MAGNETIC WHEEL	
31	18UMEC020	920418114007	ARAVINTHAN.C.S			
32	18UMEC090	920418114304	MOHAN RAJ C	11	Development of Magnetic Pulse Forming	Er. S. Chidambarakumaran, AP/Mech
33 34	18UMEC005 18UMEC012	920418114041 920418114038	MARIYA ARUN POTHAGARA			
34	18UMEC012 18UMEC003	920418114038	MANOJ.M MANIVEL.M	12	Design and fabrication of multipurpose foldable	Er. S. Muthu Natarajan, AP/Mech
36	18UMEC040	920418114072	SIVA GANESH.N		vessel cleaner	En Bi Madia Palangan, Physicon
37	18UMEC048	920418114040	MARI KANNAN.A		DESIGN AND FABRICATION OF IOT	
38	18UMEC037	920418114063	RITHEESH BABU.S.G	13	BASED STRENUOUS EXERCISER FOR	Er. D. Palanikumar, AP/ Mech
39	18UMEC077	920418114035	MADESHWARA MITHRAN.B		INJURED PATIENT	
40	18UMEC080	920418114083	VINOTH KUMAR.S		DESIGN AND FABRICATION OF 3D	
41	18UMEC065	920418114061	RAM PRASATH.S	14		Dr. S. Senthil, Prof & Head/ Mech
42	18UMEC064 18UMEC023	920418114011 920418114077	ARUNPRAKASH.P VASANTH.R		NATURE	
43	18UMEC023 18UMEC089	920418114077 920418114302	JAWAHAR PANDI P	15	Design and Fabrication of LPG Refrigeration	Er. L. Loganathan, AP/ Mech
45			SARAVANA PANDI.S	15	system	Er. E. Eoganathan, Pri / Ween
46	18UMEC034					
	18UMEC034 18UMEC070	920418114068 920418114003				
47		920418114068	AJAY KRISHNA.S TAMILSELVAN.A	16	Design and Fabrication of Vertical Axis wind	Er. L. Loganathan, AP/ Mech
47 48	18UMEC070 18UMEC031 18UMEC067	920418114068 920418114003 920418114074 920418114050	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R	16	Design and Fabrication of Vertical Axis wind turbine for E-vehicles.	
47 48	18UMEC070 18UMEC031 18UMEC067	920418114068 920418114003 920418114074 920418114074 920418114050 NAME : ME 8682 : De	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project	16	Design and Fabrication of Vertical Axis wind turbine for E-vehicles. Batch - 2018-2	
47 48 Su	18UMEC070 18UMEC031 18UMEC067 ibject Code & 1	920418114068 920418114003 920418114074 920418114074 920418114050 NAME : ME 8682 : De: Year / SEM / Class : I	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A'		turbine for E-vehicles. Batch - 2018-2	022
47 48	18UMEC070 18UMEC031 18UMEC067 abject Code & 1 Roll No	920418114068 920418114003 920418114074 920418114050 NAME: ME 8682: Der Year / SEM / Class: I Register No	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students	16 Batch No	turbine for E-vehicles. Batch - 2018-2	
47 48 Sl.No	18UMEC070 18UMEC031 18UMEC067 ibject Code & 1	920418114068 920418114003 920418114074 920418114074 920418114050 NAME : ME 8682 : De: Year / SEM / Class : I	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A'		turbine for E-vehicles. Batch - 2018-2	022
47 48 SLNo 1	18UMEC070 18UMEC031 18UMEC067 1abject Code & 1 Roll No 18UMEC041	920418114068 920418114003 920418114074 920418114074 920418114075 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R ign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V	Batch No	turbine for E-vehicles. Batch - 2018-2 Project Title	022 Guide Name
47 48 SLNo 1 2 3 4	18UMEC070 18UMEC031 18UMEC067 1bject Code & 1 18UMEC041 18UMEC079 18UMEC072 18UMEC072	920418114068 920418114003 920418114074 920418114070 NAME : ME 8682 : Der Year / SEM / Class : I Register No 920418114012 920418114014 920418114043	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S	Batch No 1	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan	022 Guide Name Er.S.Devaraj AP/Mech
47 48 SLNo 1 2 3 4 5	18UMEC070 18UMEC031 18UMEC067 1bject Code & 1 18UMEC041 18UMEC072 18UMEC072 18UMEC072 18UMEC017 18UMEC015	920418114068 920418114003 920418114074 920418114074 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 92041811403 92041811403	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / YI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M	Batch No	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser	022 Guide Name
47 48 SLNo 1 2 3 4	18UMEC070 18UMEC031 18UMEC067 abject Code & 1 Roll No 18UMEC041 18UMEC079 18UMEC079 18UMEC075 18UMEC014	920418114068 920418114003 920418114074 920418114070 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 920418114024 920418114024 920418114025	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S	Batch No 1	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan	022 Guide Name Er.S.Devaraj AP/Mech
47 48 SLNo 1 2 3 4 5 6 7	18UMEC070 18UMEC031 18UMEC067 hject Code & 1 Roll No 18UMEC041 18UMEC079 18UMEC079 18UMEC077 18UMEC071 18UMEC017 18UMEC014 18UMEC014	920418114068 920418114003 920418114074 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 920418114043 920418114043 92041811405 920418114078	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R ign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V	Batch No 1 2	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech
47 48 SLNo 1 2 3 4 5 6 7 8	18UMEC070 18UMEC031 18UMEC067 18UMEC042 18UMEC041 18UMEC072 18UMEC072 18UMEC075 18UMEC015 18UMEC033 18UMEC031	920418114068 920418114003 920418114070 920418114070 920418114050 NAME : ME 8682 : Der Year / SEM / Class : I Register No 920418114012 920418114014 920418114043 92041811405 920418114076 920418114078	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G.	Batch No 1	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing	022 Guide Name Er.S.Devaraj AP/Mech
47 48 SuNo 1 2 3 4 5 6 7 8 9	18UMEC070 18UMEC031 18UMEC067 18UMEC064 18UMEC041 18UMEC079 18UMEC072 18UMEC072 18UMEC015 18UMEC014 18UMEC014 18UMEC081 18UMEC081 18UMEC081	920418114068 920418114003 920418114074 920418114074 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 920418114043 92041811405 92041811405 920418114078 920418114078	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G. ANAND HARIHARAN.R	Batch No 1 2	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing Design and Fabrication of snake repellent Stick with grass cuting machine	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech
47 48 SLNo 1 2 3 4 5 6 7 8	18UMEC070 18UMEC031 18UMEC067 18UMEC047 18UMEC047 18UMEC079 18UMEC079 18UMEC079 18UMEC015 18UMEC014 18UMEC013 18UMEC088 18UMEC088 18UMEC085	920418114068 920418114003 920418114070 920418114070 920418114050 NAME : ME 8682 : Der Year / SEM / Class : I Register No 920418114012 920418114014 920418114043 92041811405 920418114076 920418114078	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G.	Batch No 1 2	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing Design and Fabrication of snake repellent Stick with grass cuting machine Design and Fabrication of automatic Flow	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech
47 48 SuNo 1 2 3 4 5 6 7 8 9 10	18UMEC070 18UMEC031 18UMEC067 18UMEC064 18UMEC041 18UMEC079 18UMEC072 18UMEC072 18UMEC015 18UMEC014 18UMEC014 18UMEC081 18UMEC081 18UMEC081	920418114068 920418114003 920418114074 920418114070 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 920418114014 920418114025 920418114025 920418114076 920418114076 920418114076	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R ign and Fabrication Project II / YI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G. ANAND HARIHARAN.R NAVEEN KARRTHIK.D KISHORE.R AKASH.V	Batch No 1 2 3	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing Design and Fabrication of snake repellent Stick with grass cuting machine	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech Er.A.Sankaranarayanamurthy AP/Mech
47 48 SLNo 1 2 3 4 5 6 7 8 9 10 11 12 13	18UMEC070 18UMEC031 18UMEC067 18UMEC047 18UMEC047 18UMEC079 18UMEC072 18UMEC072 18UMEC015 18UMEC014 18UMEC013 18UMEC008 18UMEC025 18UMEC025 18UMEC024 18UMEC030	920418114068 920418114003 920418114074 920418114070 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114014 920418114014 920418114013 92041811403 920418114078 920418114075 920418114075 920418114075 920418114075 920418114033 920418114003	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G. ANAND HARIHARAN.R NAVEEN KARRTHIK.D KISHORE.R AKASH.V SRINIVASAN.C	Batch No 1 2 3 4	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing Design and Fabrication of snake repellent Stick with grass cuting machine Design and Fabrication of automatic Flow control using smart App.	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech Er.A.Sankaranarayanamurthy AP/Mech Er.N.R.Madhan AP/Mech
47 48 SLNo 1 2 3 4 5 6 7 8 9 10 11 12 13 14	18UMEC070 18UMEC031 18UMEC067 18UMEC041 18UMEC079 18UMEC079 18UMEC079 18UMEC079 18UMEC079 18UMEC079 18UMEC073 18UMEC033 18UMEC088 18UMEC025 18UMEC024 18UMEC030 18UMEC030 18UMEC030	920418114068 920418114003 920418114074 920418114070 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 920418114013 920418114025 920418114025 920418114076 920418114076 920418114075 920418114073 920418114033 920418114033 920418114033 92041811403	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / VI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G. ANAND HARIHARAN.R NAVEEN KARRTHIK.D KISHORE.R AKASH.V SRINIVASAN.C KARTHICK.J	Batch No 1 2 3	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing Design and Fabrication of snake repellent Stick with grass cuting machine Design and Fabrication of automatic Flow	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech Er.A.Sankaranarayanamurthy AP/Mech
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47 48 St.No 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16 16 17 18 19 20 21 22 23 24	18UMEC070 18UMEC031 18UMEC031 18UMEC061 18UMEC041 18UMEC072 18UMEC073 18UMEC074 18UMEC075 18UMEC016 18UMEC018 18UMEC018 18UMEC018 18UMEC030 18UMEC031 18UMEC030 18UMEC031 18UMEC030 18UMEC045 18UMEC046 18UMEC046 18UMEC047 18UMEC046 18UMEC047 18UMEC048 18UMEC047 18UMEC047 18UMEC045 18UMEC045 18UMEC045 18UMEC059 18UMEC058	920418114068 920418114003 920418114074 920418114070 920418114050 NAME : ME 8682 : De Year / SEM / Class : I Register No 920418114012 920418114014 920418114014 92041811403 92041811403 92041811403 92041811405 920418114075 920418114075 920418114075 920418114073 92041811403 92041811403 92041811403 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405 92041811405	AJAY KRISHNA.S TAMILSELVAN.A PAUL JACOB.R sign and Fabrication Project II / YI / 'A' Name of the Students ARUNRIYAS.V BALAGANESH.N MOHAMEDRABITHEEN.M MOHAMEDRABITHEEN.M MOHAMEDRABITHEEN.M MOHAMEDRABITHEEN.M MOHAMEDRABITHEEN.M MOHAMEDRABITHEEN.M MAHESWARAN.S HARIHARAGURU.M ROHITKANNA.S VENGATESAPERUMAL.V VAITHEESWARAN V.G. ANAND HARIHARAN.R NAVEEN KARRTHIK.D KISHORE.R AKASH.V SRINIVASAN.C KARTHICK.J THARAKALINGAM.M PAVITHRAN.M DEEPAK HARIHARAN.D JEBARSON .N YOGESHRAJ.S KRISHNA RAJ.B SATHEESH.P ROHITH KHAN.S ARUN.R SIVA.M NADARAJAN.R RAMANUJAM P	Batch No 1 2 3 4 5 6 7	turbine for E-vehicles. Batch - 2018-2 Project Title Design and Fabrication of bladeless fan Design and Fabrication of water dispenser using 3D Printing Design and Fabrication of snake repellent Stick with grass cuting machine Design and Fabrication of automatic Flow control using smart App. Design and Fabrication of IoT quadeopter Design and Fabrication of IoT quadeopter Design and Fabrication of Exo-arm for paralytic Design and Fabrication of gas sensing and control system in automobiles	022 Guide Name Er.S.Devaraj AP/Mech Er.R.Sakthivelmurugan AP/Mech Er.A.Sankaranarayanamurthy AP/Mech Er.N.R.Madhan AP/Mech Er.B.K.Parrthipan AP/Mech Er.B.K.Parrthipan AP/Mech Er.B.Balavairavan AP/Mech
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_					narvesting machine		
30	18UMEC068	920418114080	VIGNSEH.P		5		
31	18UMEC036	920418114044	MUTHUVENKATESAN.P		Design and Fabrication of natural composite		
32	18UMEC055	920418114015	BALAMURUGAN.P	11	reinforced helmet for various applications	Er.B.Balavairavan AP/Mech	
33	18UMEC038	920418114039	MANOJ KUMAR. R				
34	18UMEC086	920418114308	VISHNU SHANKAR		Design and Fabrication of smary poultry	Er.A.Sankaranarayanamurthy AP/Mech	
35	18UMEC082	920418114059	RAMANA.S	12	farm		
36	18UMEC093	920418114307	SURYA PRAKASH. B		Tarini	1	
37	18UMEC043	920418114058	M.RAJADURAI	13		Design and Fabrication of speed breaker	
38	18UMEC028	920418114084	VISHNU PRIYAN.K		incorprated with manual road blocking	Dr.B.Prabu AP/Mech	
39	18UMEC018	920418114010	ARUN KARTHIK.M		system		
40	18UMEC035	920418114052	PRABHU.N.S		Design and Fabrication of automatic water		
41	18UMEC050	920418114020	BALASURIYA.K	14	level sensor and controlling system	Er.N.R.Madhan AP/Mech	
42	18UMEC069	920418114027	JASWANTH RAJ.S		level sensor and controlling system		
43	18UMEC019	920418114006	ARAVIND. V				
44	18UMEC054	920418114025	HARIROSHAN. K.S	15	Design and fabrication of gripper	Dr.S.S.Sarayanakumar ASP/Mech	
45	18UMEC009	920418114048	NARASINGAMOORTHY.S	15		DI.S.S.Saravanakulliar ASF/Weell	
46	18UMEC076	920418114013	ASHOK KUMAR.G				

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DESIGN AND FABRICATION OF

AYURVEDIC FORMULATION DRIER

PROJECT REPORT Submitted by

ABISON GURUGEE .M (920418114002)

BALA VINOTH .B (920418114301)

HARI VIGNESH .A (920418114026)

in partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING ANDTECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF AYURVEDIC FORMULATION DRIER" is the bonafide of "ABISON GURUGEE.M(920418114002), BALAVINOTH.B (920418114301), HARI VIGNESH.A(920418114026)" who carried out the project work under my supervision.

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SIGNATURE Dr. S. SENTHIL, M.E., Ph.D.

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SIGNATURE_{06.06.2021} Dr. S. THANGA KASI RAJAN, M.E., Ph.D. SUPERVISOR Dept. of Mechanical Engineering Kamaraj college of Engineering & Technology. K.Vellakulam , Madurai.

Submitted for the viva-voce examination held on 09.06.2021

EXTERNALEXAMINER

5. 54 11 09/06/21

INTERNALEXAMINER

K.Vellakulam, Madurai.



DESIGN AND FABRICATION OF BLADELESS FAN



PROJECT REPORT Submitted by

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BALA GANESH N (920418114014)

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BONAFIDE CERTIFICATE

Certified that the project report "FABRICATION OF BLADELESSFAN" is

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BALA GANESH N (920418114014), MOHAMED RABIUTHEEN.M

(920418114043)" who carried out the project work under my supervision



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SIGNATUR **Mr.S.DEVARAJ**

SUPERVISOR,

Assistant Professor, Dept. of Mechanical

Kamaraj College of Engg&æh K.Vellakulam, Madurai.

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08.06.2021

EXTERNAL EXAMINER

INTERNAL EXAMINER

FABRICATION OF PRE-SIGNAL ANALYSER

A PROJECT REPORT

Submitted by

PRAVIN KUMAR S (920418114056) BALAMURUGAN S (920418114017) ROBERT MANICKAM DJ (920418114064)

In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING





KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

I

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **DESIGN AND FABRICATION OF TABLE TOP SINGLE SCREW EXTRUDER MACHINE** is the bonafide work of **PRAVIN KUMAR S (920418114056), BALAMURUGAN S (920418114017), ROBERT MANICKAM DJ (920418114064)** who carried out the project work under my supervision.



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SIGNATURE Dr. S. THANGA KASI RAJAN M.E., Ph.D. ASSISTANT PROFESSOR Dept. of Mechanical Engineering, Kamaraj College of Engineering & Technology, Madurai – 625701.

Submitted for the viva-voce examination held on ____09.06.2021____

S. Thy . 24 - 29/06/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF WATER DISPENSER USING 3D PRINTING

PROJECT REPORT

Submitted by

ROHITH KANNA.S

HARIHARA GURU.M

(920418114065)

(920418114024)

MAHESWARAN.S

(920418114036)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN



MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING

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K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF WATER DISPENSER USING 3D PRINTING" is the bonafide of "ROHITH KANNA.S (920418114065), HARIHARA GURU.M (920418114024), MAHESWARAN.S (920418114036)" who carried out the project work under My supervision.

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R_Sakthivel Murugan 2021-06-07 22:44:57

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Kamaraj college of Engineering&

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Madurai- 625 701.

Submitted for the viva-voce examination held on 08.06.2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF FITNESS ENHANCEMENT MACHINE

PROJECT REPORT

Submitted by

BALASHIVAM.S (920418114019)

NALLAPERUMAL.T (920418114046)

SANTHOSH.G (920418114067)

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IN

MECHANICAL ENGINEERING



PROGRESS THROUGH KINOWLEDGE

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BONAFIDE CERTIFICATE

Certified that the project report "FABRICATION OF FITTNESS ENHANCEMENT MACHINE" is the bonafide work of "BALASHIVAM S (920418114016), NALLAPERUMAL T(920418114046), SANTHOSH G (920418114067)" who carried out the project work under my supervision

Contre

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor. Dept. of Mechanical Engineering, Kamaraj College of Engg & Tech, K.Vellakulam, Madurai.

T. Swjeth

SIGNATURE Mr.T.SURESH M.E SUPERVISOR, Assistant Professor, Dept. of Mechanical Engineering, Kamaraj College of Engg & Tech, K.Vellakulam, Madurai.

Submitted for the viva-voce examination held on _____ 09.06.2021

S. Thy 12 34 06/21

INTERNAL EXAMINER

EXTERNAL EXAMINAR

DESIGN AND FABRICATION OF GRASS CUTTING MACHINE WITH SNAKE REPELLENT STICK

PROJECT REPORT Submitted by

VENGATESHAPERUMAL V (920418114078)

VAITHEESWARAN V G (920418114076)

ANAND HARIHARAN R. (920418114005)

in partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING



IN

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "FABRICATION OF GRASS CUTTING MACHINE 66 WITH **SNAKE** REPELLENT STICK • • the bonafide is work of VENGATESHAPERUMAL V (920418114078), VAITHEESWARAN V G (920418114076), ANAND HARIHARAN R(920418114005)" who carried out the project work under my supervision

SIGNATURESIGNATUREDr. S. SENTHIL M.E., Ph.D., Mr.A.SANKARA NARAYANA MURTHY, M.E.,Ph. DHead of the Department,Professor,Professor,Oept. of Mechanical EngineeringKamaraj College of Engg & Tech,SIGNATURESIG

K.Vellakulam, Madurai.

K.Vellakulam, Madurai

Submitted for the viva-voce examination held on 8.6.2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

A.S.L.

DESIGN AND FABRICATION OF SOLAR OPERATED LITTER RAKING MACHINE FOR POULTRY FARM

A PROJECT REPORT

Submitted by

BALA VIGNESH.J (920418114021) SATHEESH KUMAR.S (920418114070) NAVANEETHA KRISHNAN.T (920418114305)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING



IN

MECHANICAL ENGINEERING



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KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) L. VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF SOLAR **OPERATED LITTER RAKING MACHINE FOR POULTRY FARM**" is the bonafide of "BALA VIGNESH.J (920418114021), SATHEESH KUMAR.S (920418114070), NAVANEETHA KRISHNAN.T (920418114305)" who carried out the project work under my supervision.



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T. Swjeth

SIGNATURE Mr.T.SURESH M.E, SUPERVISOR, Assistant professor, Dept. of Mechanical Engineering, Kamaraj college of Engg & Tech, K.Vellakulam, Madurai.

Submitted for the viva-voce examination held on 09.06.2021

5. 04 12 09/06/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF AUTOMATIC FLOW CONTROL USING SMART APP

A PROJECT REPORT

Submitted by

NAVEEN KARRTHIK.D (920418114049)

KISHORE.R (920418114033)

AKASK.V (920418114004)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING



IN



MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APIRL 2021

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BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF AUTOMATIC FLOW CONTROL USING SMART APP is the bonafide work of " NAVEEN KARRTHIK.D (920418114049), **KISHORE.R** (920418114033), V.AKASH (920418114004)" who carried out the project work under my supervision.

SIGNATURE

Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor. Dept. of Mechanical Engineering Kamaraj College of Engg & Tech, K.Vellakulam, Madurai.

N- NO6.06.2021

SIGNATURE

Mr.N.R.MADHAN, M.E. (Ph.D),

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Kamaraj College of Engg & Tech,

K.Vellakulam, Madurai.

08.06.2021 Submitted for the viva-voce examination held on

INTER NAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF ADVANCEMENT IN LPG SECTOR

PROJECT REPORT

Submitted by

THARAKALINGAM . M (920418114075)

SRINIVASAN. C (920418114073)

KARTHICK. J (920418114030)

in partial fulfillment for the award of the degree of BACHELOR OF ENGINEERING

IN



MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING

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K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

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BONAFIDE CERTIFICATE

Certified that this project report ' DESIGN AND FABRICATION OF ADVANCEMENT IN LPG SECTOR' is the bonafide of 'THARAKALINGAM. (920418114075), SRINIVASAN.C (92048114073), KARTHICK.J (920418114030)' who carried out the project under my supervision.

Scatte	B. K. Partlips SIGNATURE
Dr.S.SENTHIL M.E., Ph.D	Mr. B. K. PARRTHIPAN.,
	ME.,(Ph.D),
HEAD OF THE DEPARTMENT	SUPERVISOR
Dept of Mechanical Engineering,	Dept of Mechanical Engineering,
Kamaraj college of Engineering &	Kamaraj College of Engineering &
Technology,	Technology,
Madurai-625701	Madurai – 625 701

Submitted for the Viva – Voce Examination held on _____08.06.2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF PORTABLE 3 IN 1 CAR WASHER

A PROJECT REPORT

Submitted by

G. NANTHA KUMAR

G. VIJAYARAGAVAN

S. ABEL PRIYAN

(920418114047)

(920418114082)

(920418114001)



in partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF PORTABLE 3

IN 1 CAR WASHER" is the bonafide work of "NANTHA KUMAR G

(920418114047), VIJAYARAGAVAN G(920418114078), ABEL PRIYAN S

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SIGNATURE

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Submitted for the viva-voce examination held on_____

Madurai- 625 701.

09.06.2021

5. 14 11 09/06/21

INTERNAL EXAMINE R

EXTERNAL EXAMINER

SIGNATURE

Mr.M.PRIITHVIRAJ, M.E,

SUPERVISOR

Dept.of Mechanical Engineering, Kamaraj college of Engineering&Tech

DESING AND FABRICATION OF STEERING CONTROL SYSTEM USING IOT

PROJECT REPORT Submitted by

VETRIVEL . M (920418114079) RAHULKRISHNAN . K (920418114057) KARTHIKEYAN . S (920418114501)

in partial fulfillment for the award of the degree of

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IN

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APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND

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BONAFIDE CERTIFICATE

Certificate that the project report "DESING & FABRICATION OF STEERING CONTROL SYSTEM USING IOT" is the bonafide work of "VETRIVEL M (920418114079), RAHULKRISHNAN . K (920418114057), KARTHIKEYAN . S (920418114501)" who carried out the project work under my supervision

Com

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. Of Mechanical Engineering Kamaraj College Of Engg & Tech, K.Vellakulam, Madurai.

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SIGNATURE R.SAKTHIVEL MURUGAN M.E.,(Ph.D)., SUPERVISOR, Assistant Professor, Dept. Of Mechanical Engineering Kamaraj College Of Engg & Tech, K.Vellakulam, Madurai.

Submitted for the viva-voce examination held on 09.06.2021

5. 5 1 39/06/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF IoT QUAD-COPTER

PROJECT REPORT Submitted by

PAVITHRAN M (920418114051)

DEEPAK HARIHARAN D (920418114022)

JEBARSON N (920418114028)

In partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING



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APRIL 2021

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BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF IoT QUAD-COPTER" is the bonafide work of "PAVITHRAN.M (920418114051),

DEEPAK HARIHARAN.D (920416114022) and JEBARSON.N (920416114028)"

who carried out the project work under my supervision

B.K. Pariflips **SIGNATURE SIGNATURE** Dr.S.SENTHIL M.E., Ph.D., Mr.B.K.PARRTHIPAN., M.E., M.B.A., (**Ph.D.**) HEAD OF THE DEPARTMENT, SUPERVISOR, Assistant Professor, Professor. Dept. of Mechanical Engineering Dept. of Mechanical Engineering Kamaraj College of Engg & Tech, Kamaraj College of Engg & Tech, K.Vellakulam, Madurai. K.Vellakulam, Madurai

Submitted for the viva-voce examination held on

08.06.2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESING AND FABRICATION OF ICE BONDED ABRASIVE POLISHING MACHINE

PROJECT REPORT

Submitted by

BALA MURUGAN R (920418114016)

ARUL RAJ D R (920418114008)

YOGESSWAR R (920418114086)

in partial fulfillment for the award of the degree

of



BACHELOR OF ENGINEERING



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APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESING AND FABRICATION OF ICE BONDED ABRASIVE POLISHING MACHINE" is the bonafide work of BALA MURUGAN R (920418114016), ARUL RAJ D R (920418114008), YOGESSWAR R (920418114086)" who carried out the project work under my supervision

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. of Mechanical Engineering Kamaraj college of Engg & Tech, K.Vellakulam, Madurai.

T. Sugeth For

SIGNATURE S.CHIDAMBARA KUMARAN M.E Supervisor, Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voce examination held on 09/06/2021

S. J. 12 04/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF EXO-ARM FOR PARALYZED PATIENT

PROJECT REPORT SUBMITTED BY:-

KRISHNA RAJ B (920418114034)

YOGESHRAJ S (920418114085)

SATHEESH P (920418114306)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING IN

MECHANICAL ENGINEERING





DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar).

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF EXOARM FOR PARALYZED PATIENT" is the bonafide of "KRISHNA RAJ B (920418114034) YOGESHRAJ S (920418114085) SATHESH P (920418114306)" carried out the project work under my supervision.

SIGNATURE

Dr.S.SENTHIL M.E.,Ph.D. HEAD OF THE DEPARTMENT Dept.of Mechanical Engineering,

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SIGNATURE

Mr.B.BALAVAIRAVANM.E.,(Ph.D.) SUPERVISOR Dept.of MechanicalEngineering,

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Submitted for the viva-voce examination held on

08.06.2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

FABRICATION OF SEMI AUTOMATED FLOOR CLEANING MACHINE

PROJECT REPORT

Submitted by

VIGNESH.S (920418114081) GOWSIC.T (920418114023) BALA SANKAR.K (920418114018)

A STATE OF ENDINE CONFORMATION

In partial fulfilment for the award of the degree



of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

JUNE 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report"Fabrication of Semi-Automated Floor Cleaning Machine"is the bonafide work of "S.Vignesh (920418114081), **T.Gowsic** (920418114023), K.Bala Sankar (920418114018)" who carried out the project work under my supervision

SIGNATURE Dr.S.Senthil M.E., Ph.D., Professor & Head Department of Mechanical Engineering Kamaraj College of Engineering and Kamaraj College of Engineering and Technology, Madurai - 625701

S. Leven Noly.

SIGNATURE Mr.S.Muthu Natarajan M.E., (Ph.D)., Professor & Head Department of Mechanical Engineering Technology, Madurai - 625701

Submitted for the viva-voce examination held on _____09.06.2021___

S. Thy . 12 09/06/21

Internal Examiner

External Examiner

DESIGN AND FABRICATION OF GAS SENSING AND CONTROL SYSTEM IN AUTOMOBILES

A Project Report

Submitted by

M.SIVA R.ARUN S.ROHITHKHAN (920418114071) (920418114009) (920418114066)

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in



MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

April 2021

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF GAS SENSING AND CONTROL SYSTEM IN AUTOMOBILES" is the bonafide work of M.SIVA (920418114071), R.ARUN (920418114009) and S.ROHITHKHAN (920418114066) who carried out this project under my supervision.

S. De 6/6/21

SIGNATURE

Dr.S.SENTHIL M.E.,Ph.D., HEAD OF THE DEPARTMENT, Department of Mechanical Engineering,

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Madurai – 625 701.

SIGNATURE Mr.S.DEVARAJ M.E., SUPERVISOR, Department of Mechanical Fr

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Madurai – 625 701.

Submitted for viva-voce examination held on

INTERNAL EXAMINER

08.06.2021

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF BONE SCAFFOLDS FROM NATURAL COMPOSITE MATERIAL WITH HELP OF 3D PRINTING

PROJECT REPORT

Submitted by

NADARAJAN R (920418114045)

RAMANUJAM P (920418114060)

SASIKUMAR K (920418114069)

in partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF BONE SCAFFOLDS FROM NATURAL COMPOSITE MATERIAL WITH HELP OF 3D PRINTING" is the bonafide work of "NADARAJAN R (920418114045) RAMANUJAM P (920418114060), SASIKUMAR K (920418114069)" who carried out the project work under my supervision

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Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor,

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SIGNATURE Mr. K. MURUGANATHAN M.E.,(Ph.D) Supervisor , Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voce examination held on 08/06/2021

INTERNAL EXAMINER

EXTERNALEXAMINER

DESIGN AND FABRICATION OF PERFORMANCE MONITORING AND CONTROLLING OF SHELL AND TUBE HEAT EXCHANGER USING IOT

A PROJECT REPORT Submitted by

KARTHIKEYAN.R

(920418114031)

(920418114032)

KARTHIKEYAN.R

MELWIN.M

(920418114042)

In partial fulfilment for the award of the Degree of

BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY ANNA UNIVERSITY:CHENNAI 600 025

APRIL-MAY-2021

MADURAI 625 701

ANNA UNIVERSITY: CHENNAI 600 025

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **DESIGN AND FABRICATION OF PERFORMANCE MONITORING AND CONTROLLING OF SHELL AND TUBE HEAT EXCHANGER USING IOT** is the bonafide of **KARTHIKEYAN.R** (920418114031), **KARTHIKEYAN.R** (920418114032), **MELWIN.M** (920418114042) who carried out the project work under my supervision.

SIGNATURE Dr.S.SENTHIL M.E,Ph.D.

HEAD OF THE DEPARTMEN T

Dept of Mechanical Engineering

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SIGNATURE T.RAMESH (M.E,Ph.D)

SUPERVISOR

Dept of Mechanic Engineering

kamaraj college of engineering

And technology Madurai-625 701

Submitted for the viva-voce held on _____09.06.2021

han this

S. Thy 12 04/06/21

DESIGN AND FABRICATION OF POWER GENERATION USING MAGNETIC WHEEL

APROJECTREPORT

Submitted by

JERRY ROBINSON .J

PRATHIYUNNAN .M

(920418114029) (920418114055)

MOHAMED IRFAN KHAN .J

(920418114303)

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BACHELOR OF ENGINEERING



IN MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF POWER GENERATION USING MAGNETIC WHEEL" is the bonafide work of " JERRY ROBINSON J (920418114029), PRATHIYUNNAN .M (920418114055),MOHAMED IRFAN KHAN .J (920418114303)"who carried out the project work under my supervision

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SIGNATURE Mr.M.PRIITHVIRAJ, M.E, SUPERVISOR Dept. of Mechanical Engineering Kamaraj college of Engineering &Technology, Madurai-625701.

Submitted for the viva-voce examination held on ____09.06.2021_____

S. Thy 12 04/06/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF WATER HARVESTING DEVICE

PROJECT REPORT

Submitted by

PRASANNA KUMAR.K (920418114054)

VIGNESH.P (920418114080)

RATCHIPPU RAJA.L (920418114062)

In partial fulfillment for the award of

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BACHELOR OF ENGINEERING

IN



MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University ,Chennai)

K.VELLAKULAM-625 701(Near Virudhunagar)

APRIL 2021

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF WATER HARVESTING DEVICE" is the bonafide of PRASANNA KUMAR.K (920418114054), VIGNESH.P

(920418114080), RATCHIPPU RAJA.L (920418114062)" Who carried out the project Under my super vision.

SIGNATURE

Dr. SENTHIL M.E., Ph.D.

HEAD OF THE DEPARTMENT

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SIGNATURE

Dr. B. PRABHU., M.E., Ph.D.

SUPERVISOR

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Madurai-625 701

Submitted for the Viva – Voce Examination held on _08/06/2021____

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF NATURAL COMPOSITE REINFORCED HELMET FOR VARIOUS APPLICATION

PROJECT REPORT Submitted by

MUTHUVENKATESAN P (920418114044)BALAMURUGAN P(920418114015)MANOJ KUMAR R(920418114039)

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APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified bonafide that the project report is the work of BALAMURUGAN **"MUTHUVENKATESAN** (920418114044), Р Р (920418114015), MANOJ KUMAR R (920418114039)" who carried out the project work under my supervision

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. of Mechanical Engineering Kamaraj College of Engg & Tech, K.Vellakulam, Madurai.

SIGNATURE Mr.B.BALAVARIAVAN M.E.,(Ph.D.,) SUPERVISOR, Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voce examination held on <u>08.06.2021</u>

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESING AND FABRICATION OF DEVELOPMENT OF MAGNETIC PULSE FORMING MACHINE

PROJECT REPORT

Submitted by

ARAVINTHAN C S (920418114007)

MARIYA ARUN POTHAGARAJ S (920418114041)

MOHAN RAJ C (920418114304)

in partial fulfillment for the award of the degree of

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APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K. VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESING AND FABRICATION OF DEVELOPMENT OF MAGNETIC PULSE FORMING MACHINE" is the bonafide work of ARAVINTHAN C S (920418114007), MOHAN RAJ C(920418114304), MARIYA ARUN POTHAGARAJ S (920418114041)" who carried out the project work under my supervision

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. of Mechanical Engineering Kamaraj college of Engg & Tech, K.Vellakulam, Madurai. For T. Swyeth

SIGNATURE S.CHIDAMBARAKUMARAN M.E Supervisor, Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voce examination held on 09/06/2021

S. Thy 12 04/06/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF SMART POLUTRY FARM

A PROJECT REPORT

Submitted by

RAMANA.S(18UMEC082)

VISHNU SANKAR.R(18UMEC086)

SURYA PRAKASH .B(18UMEC093)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING



IN

MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

(920418114059)

(920418114308)

(920418114307)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF SMART POULTRY FARM" is the bonafide of "RAMANA.S (920418114059), VISHNU SANKAR.R (920418114308), SURYA PRAKASH.B (920418114307)" who carried out the project work under mysupervision.

SIGNATURE

SIGNATURE

Dr.S.SENTHIL M.E.,Ph.D

Mr.A SANKARA NARAYANA

A. Sal.

MURTHY M.E,(Ph.D).

HEAD OF THE DEPARTMENT

Professor,

Dept.of Mechanical Engineering,

Kamaraj college of Engineering &

Technology,

K.Vellakulam

Madurai- 625 701.

SUPERVISOR

Assistant professor,

Dept.of Mechanical Engineering,

Kamaraj college of Engineering&

Technology,

K.Vellakulam

Madurai- 625 701.

Submitted for the viva-voce examination held on 08.06.2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF MULTIPURPOSE FOLDABLE VESSEL CLEANER

A PROJECT REPORT

Submitted by

SIVA GANESH. N (920418114072)

MANOJ. M (920418114038)

MANIVEL. M (920418114037)

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING





DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

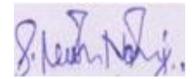
BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF MULTIPURPOSE FOLDABLE VESSEL CLEANER" is the bonafide of "MANOJ.M (920418114038), SIVA GANESH.N (920418114072),

MANI VEL.M (920418114037)" who carried out the project work under my supervision.

SIGNATURE Dr.S.SENTHIL M.E.,Ph.D. HEAD OF THE DEPARTMENT Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology,

Madurai- 625 701.



SIGNATURE Mr. S. MUTHU NATARAJAN M.E.,(Ph.D),

SUPERVISOR Dept.of MechanicalEngineering, Kamaraj college of Engineering& Technology, Madurai- 625 701.

Submitted for the viva-voce examination held on ____09.06.2021_____

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF SPEED BREAKER INCORPORATED WITH MANUAL BARRICADE SYSTEM

A PROJECT REPORT

Submitted by

RAJADURAI M

VISHNU PRIYAN K

ARUN KARTHICK M

in partial fulfillment for the award of the degree

of



BACHELOR OF ENGINEERING



(920418114058)

(920418114084)

(920418114010)

IN

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF SPEED BREAKER INCORPORATED WITH MANUAL BARRICADE SYSTEM" is the bonafide of "RAJADURAI.M (920418114058), VISHNU PRIYAN.K (920418114384), ARUN KARTHICK.M (920418114310)" who carried out the project work under my supervision.

SIGNATURE Dr S. SENTHIL M.E., Ph.D., HEAD OF THE DEPARTMENT

Professor,

Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology, K.Vellakulam Madurai- 625 701.

SIGNATURE Dr B. PRABHU M.E., Ph.D.,

SUPERVISOR

Assistant professor,

Dept.of Mechanical Engineering,

Kamaraj college of Engineering&

Technology,

K.Vellakulam

Madurai- 625 701.

Submitted for the viva-voce examination held on 08/06/2021

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF IOT BASED PORTABLE STRENUOUS EXERCISER A PROJECT REPORT

Submitted by,

MARI KANNAN.A (920418114040)

RITHEESH BABU.G (920418114063)

MADESHWARA MITHRAN.B (920418114035)

in partial fulfillment for the award of the degree

of



BACHELOR OF ENGINEERING



PROGRESS THROUGH KNOWLEDGE

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution, Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar) APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution, Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

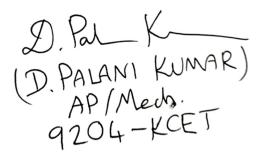
BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF IOT BASED PORTABLE STRENUOUS EXERCISER" is the bonafide of "MARI KANNAN.A(920418114040), G.RITHEESH BABU(920418114063), B.MADESHWARA MITHRAN(920418114035)" who carried out the project work under my supervision.

SIGNATURE Dr.S. SENTHILM.E.,(Ph.D.)

HEAD OF THE DEPARTMENT

Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology. K.VELLAKULAM , Madurai.



SIGNATURE

Mr. D. PALANI KUMAR M.E.,

SUPERVISOR

Dept. of Mechanical Engineering Kamaraj college of Engineering & Technology. K.VELLAKULAM , Madurai.

Submitted for the viva-voce examination held on <u>09.06.2021</u>

S. Thy 12 04/21

Internal Examiner

External Examiner

DESIGN AND FABRICATION OF AUTOMATIC WATER LEVEL SENSOR AND CONTROLLING SYSTEM

PROJECT REPORT Submitted by

PRABHU.N.S(920418114052)BALASURIYA.K(920418114020)JASWANTHRAJ.S(920418114027)

in partial fulfillment for the award of the degree of





BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY. (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF AUTOMATIC WATER LEVEL SENSOR AND CONTROLLING SYSTEM" is the bonafide of "PRABHU.N.S (920418114052),BALASURIYA.K (920418114020),JASWANTH RAJ.S(920418114027)" who carried out the

project work under my supervision.

SIGNATURE Dr.S.SENTHIL M.E.,Ph.D.

HEAD OF THE DEPARTMENT

Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology,

Madurai- 625 701.

N.R. Ma

06.06.2021 SIGNATURE Er.N.R.MADHAN M.E.,(Ph.D).

SUPERVISOR

Dept.of MechanicalEngineering, Kamaraj college of Engineering& Technology,

Madurai- 625 701.

08.06.2021

Submitted for the viva-voce examination held on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF 3D PRINTED CORAL REEFS TO PROTECT NATURE

PROJECT REPORT

Submitted by

VINOTH KUMAR S(920418114083)

RAM PRASATH S (920418114061)

ARUN PRAKASH P (920418114011)

in partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report" DESIGN AND FABRICATION OF 3D PRINTED CORAL REEFS TO PROTECT NATURE "is the bonafide work of "VINOTH KUMAR S (920418114083), RAM PRASATH S (920418114061), ARUN PRAKASH P (920418114011)" who carried out the project work under my supervision

Contt

SIGNATURE Dr. S. SENTHIL M.E., Ph.D.,

HEAD OF THE DEPARTMENT Professor, Dept. of Mechanical Engineering Kamaraj College of Engg& Tech, K.Vellakulam, Madurai

SIGNATURE Dr. S. SENTHIL M.E., Ph.D.,

SUPERVISOR , Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai

Submitted for the viva-voce examination held on 9/6/2021

S. Thy 12 39/06/21

INTERNAL EXAMINER

EXTERNAL EXAMINER

DESIGN AND FABRICATION OF LPG REFRIGERATION SYSTEM

PROJECT REPORT Submitted by

VASANTH. R (920418114077)

JAWAHAR PANDI. P (920418114302)

SARAVANA PANDI. S (920418114068)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING





DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF LPG REFRIGERATION SYSTEM" is the bonafide work of "VASANTH.R (920418114077), JAWAHAR PANDI.P (920418114302), SARAVANA PANDI.S (920418114068)" who carried out the project work under my supervision.

SIGNATURE Dr.S.SENTHIL, M.E.,Ph.D HEAD OF THE DEPARTMENT Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology, Madurai- 625 701.



SIGNATURE Mr. L. LOGANATHAN, M.E.,(Ph.D) SUPERVISOR Dept.of Mechanical Engineering, Kamaraj college of Engineering & Technology, Madurai- 625 701.

Submitted for the viva-voce examination held on ____09.06.2021____.

S. Thy 12 09/06/2

EXTERNAL EXAMINER

INTERNAL EXAMINER

DESIGN & FABRICATION OF VERTICAL AXIS WIND TURBINE FOR E-VEHICLES

PROJECT REPORT Submitted by

TAMIL SELVAN A (920418114074)

AJAY KRISHNA S (920418114003)

PAUL JACOB R (920418114050)

in partial fulfillment for the award of the degree of



BACHELOR OF ENGINEERING

IN



MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K. VELLAKULAM - 625 701 (Near Virudhunagar)

i

APRIL 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K. VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN & FABRICATION OF VERTICAL AXIS WIND TURBINE FOR E-VEHICLES" is the bonafide work of "TAMIL SELVAN A (920418114074), AJAY KRISHNA S (920418114003), PAUL JACOB (920418114050)" who carried out the project work under my supervision

SIGNATURE Dr. S. SENTHIL M.E., Ph.D., Head of the Department, Professor, Dept. of Mechanical Engineering Kamaraj College of Engg & Tech,



SIGNATURE Mr. L. Loganathan M.E.,(Ph.D)., SUPERVISOR, Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg & Tech, K. Vellakulam, Madurai.

Submitted for the viva-voce examination held on _____

09.06.2021

S. Thy 12 04/06/21

K. Vellakulam, Madurai.

INTERNAL EXAMINER

EXTERNAL EXAMINER

ANNA UNIVERSITY, CHENNAI AFFILIATED INSTITUTIONS REGULATIONS 2017 M.E. MANUFACTURING ENGINEERING CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

- I. To prepare students to excel in research or to succeed in Manufacturing engineering profession through global, rigorous post graduate education.
- II. To provide students with a solid foundation in mathematical, scientific and engineering fundamentals required to solve Manufacturing engineering problems
- III. To train students with good scientific and engineering knowledge so as to comprehend, analyze, design, and create novel products and solutions for the real life problems.
- IV. To inculcate students in professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach, and an ability to relate Manufacturing engineering issues to broader social context.
- V. To provide student with an academic environment aware of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career

PROGRAMME OUTCOMES:

On successful completion of the programme,

- 1. Graduates will demonstrate knowledge of mathematics, science and engineering.
- 2. Graduates will demonstrate an ability to identify, formulate and solve engineering problems.
- 3. Graduate will demonstrate an ability to design and conduct experiments, analyze and interpret data.
- 4. Graduates will demonstrate an ability to design a system, component or process as per needs and specifications.
- 5. Graduates will demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks.
- 6. Graduate will demonstrate skills to use modern engineering tools, software and equipment to analyze problems.
- 7. Graduates will demonstrate knowledge of professional and ethical responsibilities.
- 8. Graduate will be able to communicate effectively in both verbal and written form.
- 9. Graduate will show the understanding of impact of engineering solutions on the society and also will be aware of contemporary issues.
- 10. Graduate will develop confidence for self education and ability for life-long learning.

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	Т	Р	С
PRACTICAL								
1	MF5411	Project Work Phase II	EEC	24	0	0	24	12
			TOTAL	24	0	0	24	12

TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE = 72

INVESTIGATION ON MICROSTRUCTURE AND MECHANICAL CHARACTERIZATION OF TIG WELDED INCONEL 625 NICKEL BASED ALLOY

PROJECT REPORT Submitted by

AJITH KUMAR M (920419410001)

In partial fulfillment for the award of the degree of

MASTER OF ENGINEERING

IN



MANUFACTURING ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

JUNE 2021

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "INVESTIGATION ON MICROSTRUCTURE

AND MECHANICAL CHARACTERIZATION OF TIG WELDED INCONEL 625 NICKEL BASED ALLOYS '' is the bonafide work of "M.AJITH KUMAR (92041941001)" who carried out the project work under my supervision

Sonttel

SIGNATURE

Dr. S. SENTHIL M.E., Ph.D.,

Head of the Department,

Professor,

Dept. of Mechanical Engineering Kamaraj College of Engg & Tech, K.Vellakulam, Madurai.

P.Nalt.

INTERNAL EXAMINER

P.Nalt.

SIGNATURE Dr.P.NARAYANASAMY M.E., Ph.D SUPERVISOR ,

> Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engg &Tech, K.Vellakulam, Madurai.

E. Meg A: 9/6/21

EXTERNAL EXAMINER



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C.Nagar, K.Vellakulam - 625 701 (Near Virudhunagar), Madurai District.

DEPARTMENT OF MECHANICAL ENGINEERING M.E. MANUFACTURING ENGINEERING REGULATIONS - 2020 (AUTONOMOUS) CHOICE BASED CREDIT SYSTEM

VISION OF THE DEPARTMENT:

To make the Department of Mechanical Engineering unique of its kind in the field of Research and Development activities in the prominent fields of Mechanical Engineering in this part of the world.

MISSION OF THE DEPARTMENT:

To impart highly Innovative and Technical knowledge in the field of Mechanical Engineering to the urban and unreachable rural students' folks, through "TOTAL QUALITY EDUCATION".

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

- To provide graduates with a solid foundation in mathematical, scientific and engineering fundamentals required to solve Manufacturing engineering problems
- II. To train graduates with good scientific and engineering knowledge so as to comprehend, analyze, design, and create novel products and solutions for the real-life problems.
- III. To provide graduates with an academic environment aware of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career.

MF1321

OBJECTIVES:

- To identify a specific problem for the current need of the society and collecting information related to the same through detailed review of literature.
- To develop the methodology to solve the identified problem then publish paper at least in conference.

PROJECT CONTENT

- The learner individually works on a specific topic approved by the head of the division under the guidance of a faculty member who is familiar in this area of interest.
- The student can select the specific topic related to the area of manufacturing engineering. The topic may be theoretical or industrial case studies.
- At the end of the semester, a detailed report on the work done should be submitted which contains clear definition of the identified problem, detailed literature review related to the area of work and methodology for carrying out the work.
- The learners will be evaluated through a viva-voce examination by a panel of examiners including one external examiner.

TOTAL: 12 PERIODS

OUTCOMES

Student will be able to

- CO 1: Identify the potential problems scientifically in a systematic way
- CO 2: Analyze the problem through detailed literatures clearly to explore the ideas and methods
- CO 3: Justify the limitations of the work and finding feasible scope
- CO 4: Formulate the objectives and methodology to solve the identified problem
- CO 5: Drawing conclusions based on feasibility & methodology in developing solution for the identified problem and also its need in social relevance

DEVELOPMENT AND CHARACTERIZATION OF POLY VINYL ALCOHOL / IPOMOEA BATATAS PEEL POWDER (IBPP) BIOFILMS

PHASE I REPORT

Submitted by

RAJAN SUSEEDHARAN R (20PMF02)

in partial fulfillment for the award of the degree of

MASTER OF ENGINEERING IN MANUFACTURING ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY,

(An Autonomous Institution)

VIRUDHUNAGAR

JANUARY 2022

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY, (An Autonomous Institution) VIRUDHUNAGAR

BONAFIDE CERTIFICATE

Certified that this report titled "DEVELOPMENT AND CHARACTERIZATION OF POLY VINYL ALCOHOL / IPOMOEA BATATAS PEEL POWDER(IBPP) BIOFILMS" is the bonafide work of RAJAN SUSEEDHARAN R (20PMF02) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Signature of the HOD with cat

Dr. S. Saravanakumar M.E., Ph.D., Associate Professor and Head, Dept. of Mechanical Engineering Kamaraj College of Engineering, & Technology, Virudhunagar.

Signature of the Supervisor with date Dr. P. Narayanasamy M.E., Ph.D., Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engineering & Technology, Virudhunagar.

Submitted for the viva-voice examination held on

04-01-2022

P.Na

INTERNAL EXAMINER

EXTERNAL EXAMINER

DRY SLIDING WEAR BEHAVIOR OF SELF-LUBRICATING AI-SIC-Gr HYBRID COMPOSITES

PHASE I REPORT

Submitted by

VIJAYA MADHAVAN M (20PMF01)

in partial fulfillment for the award of the degree of

MASTER OF ENGINEERING IN MANUFACTURING ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY,

(An Autonomous Institution)

VIRUDHUNAGAR

JANUARY 2022

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY, (An Autonomous Institution) VIRUDHUNAGAR

BONAFIDE CERTIFICATE

Certified that this report titled "DRY SLIDING BEHAVIOR OF SELF LUBRICATING Al-SiC-Gr HYBRID COMPOSITES" is the bonafide work of VIJAYA MADHAVAN M (20PMF01) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

2.2.0

Signature of the HOD with date 12 Dr. S. Saravanakumar M.E., Ph.D., Associate Professor and Head, Dept. of Mechanical Engineering Kamaraj College of Engineering, & Technology, Virudhunagar .

\$ Naliti202

Signature of the Supervisor with date Dr. P. Narayanasamy M.E., Ph.D., Assistant Professor, Dept. of Mechanical Engineering Kamaraj College of Engineering & Technology, Virudhunagar.

Submitted for the viva-voice examination held on

04-01-2022

P.Nal-4/12022

INTERNAL EXAMINER

CF Allon EXTERNAL EXAMINER