PARK COLLEGE OF ENGINEERING AND TECHNOLOGY

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List of students undertaking project work field work / internship for academic year 2021 – 2022
B.E MECHANICAL ENGINEERING

S.NO	NAME OF THE STUDENT	REG.NO	YEAR	PROJECT WORK	MINI PROJECT	INTERNSHIP	FIELD WORK
1	S.R.ABISHEK	712218114002	IV	✓	-	✓	-
2	R.HARIKRISHNAN	712218114014	IV	✓	-	-	-
3	S.KEERTHIVASAN	712218114023	IV	✓	-	-	-
4	V.RITHIK KUMAR	712218114040	IV	✓	-	-	-
5	M. ALAGESAN	712218114003	IV	✓	-	✓	-
6	J.ASWIN	712218114004	IV	✓	-	-	-
7	V.BALAPRASAD	712218114006	IV	✓	-	-	-
8	M.NAVIN	712218114034	IV	✓	-	-	-
9	B.BHUVANESHWARAN	712218114007	IV	✓	-	-	-
10	M.S.JAGADEESWARAN	712218114016	IV	✓	-	-	-
11	S.KARTHICK CHOKALINGAM	712218114019	IV	✓	-	-	-
12	P. KESAVAN	712218114024	IV	✓	-	-	-
13	N.S.ABISHEK	712218114001	IV	✓	-	-	-
14	K.DHINESH	712218114011	IV	✓	-	✓	-
15	A.SHEIKMOHAMED	712218114047	IV	✓	-	-	-
16	G.THAMBIDURAI	712218114055	IV	✓	-	-	-
17	K.GOKUL	712218114012	IV	✓	-	✓	-
18	P.GOWTHAM	712218114013	IV	✓	-	-	-
19	R.PRASANNA KUMAR	712218114036	IV	✓	-	-	-
20	V.VISHNU	712218114058	IV	✓	-	-	-
21	A.JAYAPRAKASH	712218114017	IV	✓	-	-	-
22	V.KARTHIK RAMANAN	712218114021	IV	✓	-	-	-
23	S.SARAVANAN	712218114044	IV	✓	-	-	-
24	S.SIVA	712218114048	IV	✓	-	-	-
25	J.JOSHUA	712218114018	IV	✓	-	-	-
26	R.MANIKANDAN	712218114027	IV	✓	-	-	-
27	B.SURESH KUMAR	712218114053	IV	✓	-	-	-
28	R.VENGATESAN	712218114056	IV	✓	-	-	-

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29	P.KARTHIKRAJAN	712218114020	IV	✓	-	-	-
30	M.MOHAMED NASIM	712218114030	IV	✓	-	-	-
31	R.RAGUPATHI	712218114038	IV	✓	-	-	-
32	M.SANKARAPANDI	712218114044	IV	✓	-	-	-
33	R.KAVIN KUMAR	712218114022	IV	✓	-	-	-
34	R.NANDHA KUMAR	712218114033	IV	✓	-	-	-
35	U.S.PRASAD	712218114035	IV	✓	-	-	-
36	M.VISHNU	712218114057	IV	✓	-	-	-
37	S.MADHAN ESWARAN	712218114026	IV	✓	-	-	-
38	N.MANOJKUMAR	712218114028	IV	✓	-	-	-
39	S.RADHAKRISHNAN	712218114037	IV	✓	-	-	-
40	M.JAYAPRAKASH	712218114701	IV	✓	-	-	-
41	S.SATHISH KUMAR	712218114045	IV	✓	-	-	-
42	S.B.SAYOOJ	712218114046	IV	✓	-	-	-
43	K.SUDHARSAN	712218114052	IV	✓	-	-	-
44	M.I.YASAR MOHAMMED	712218114060	IV	✓	-	-	-
45	H.MOHAMED THAMEEMUL JANSHA	712218114029	IV	✓	-	-	-
46	U.SURYA	712218114054	IV	✓	-	-	-
47	S.YOGESHWARAN	712218114061	IV	✓	-	-	-
48	D.BALAMURUGAN	712218114005	IV	✓	-	-	-
49	S.DHANEESWARAN	712218114009	IV	✓	-	-	-
50	M.DHARANIDHARAN	712218114010	IV	✓	-	-	-
51	S.GANESH MANIKANDAN	712218114063	IV	✓	-	-	-

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S.NO	BATCH NO	REGISTER NO	NAME OF THE STUDENT	TITLE OF THE PROJECT	SUPERVISOR
1	1	712218114002 712218114014 712218114023 712218114040	S.R.ABISHEK R.HARIKRISHNAN S.KEERTHIVASAN V.RITHIK KUMAR	Fabrication and mechanical behavior of Areca fiber reinforced epoxy composites with Al_2O_3 filler.	Dr.K.KUMARESAN HOD/MECH
2	2	712218114003 712218114004 712218114006 712218114034	M. ALAGESAN J.ASWIN V.BALAPRASAD M.NAVIN	Design and fabrication of solar water heater with zig zag collector pipes.	Dr.S.SAM STANLEY
3	3	712218114007 712218114016 712218114019 712218114024	B.BHUVANESHWARAN M.S.JAGADEESWARAN S.KARTHICK CHOKALINGAM P. KESAVAN	The study of wear in areca fiber composite and with filler material of Al2O3.	Dr.T.ASHOK KUMAR
4	4	712218114001 712218114011 712218114047 712218114055	N.S.ABISHEK K.DHINESH A.SHEIKMOHAMED G.THAMBIDURAI	Fabrication of multioperational vehicle for agricultural application.	P.GNANESWARAN
5	5	712218114012 712218114013 712218114036 712218114058	K.GOKUL P.GOWTHAM R.PRASANNA KUMAR V.VISHNU	Hardness enhancement treatment of low carbon steel using full hardness and nitriding	C.RAJASEKARAN
6	6	712218114017 712218114021 712218114044 712218114048	A.JAYAPRAKASH V.KARTHIK RAMANAN S.SARAVANAN S.SIVA	Design and fabrication of multipurpose machine for production industry using bevel gear	K.YUVARAJ
7	7	712218114018 712218114027 712218114053 712218114056	J.JOSHUA R.MANIKANDAN B.SURESH KUMAR R.VENGATESAN	Design and fabrication of automatic fire production system with 360 degree rotating system.	P.GOWTHAM
8	8	712218114020 712218114030 712218114038 712218114044	P.KARTHIKRAJAN M.MOHAMED NASIM R.RAGUPATHI M.SANKARAPANDI	Design and fabrication of solar powered wheel chair.	R.PRAVEEN KUMAR
9	9	712218114022 712218114033 712218114035 712218114057	R.KAVIN KUMAR R.NANDHA KUMAR U.S.PRASAD M.VISHNU	Mechanical and wear behaviour of LM6 with Al2O3 and copper powder using stir casting	V.HARIRAMSINGH

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10	10	712218114026 712218114028 712218114037 712218114701	S.MADHAN ESWARAN N.MANOJKUMAR S.RADHAKRISHNAN M.JAYAPRAKASH	Improvement of diesel,ethanol & n-butanol blends performance in diesel engine using response surface methodology	S.SASIKUMAR
11	11	712218114045 712218114046 712218114052 712218114060	S.SATHISH KUMAR S.B.SAYOOJ K.SUDHARSAN M.I.YASAR MOHAMMED	Study and experiment of hybridization of areca / snake grass fiber reinforced composite materials with bio neem filler.	J.RAJKUMAR
12	12	712218114029 712218114054 712218114061	H.MOHAMED THAMEEMUL JANSHA U.SURYA S.YOGESHWARAN	Fabrication of hand gestured controlled robotic arm	P.GNANESWARAN
13	13	712218114005 712218114009 712218114010 712218114063	D.BALAMURUGAN S.DHANEESWARAN M.DHARANIDHARAN S.GANESH MANIKANDAN	Fabrication and analysis of caste aluminium reinforced with sicp and tib2 hybrid composite	Dr.K.KUMARESAN

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Department of Mechanical Engineering
Academic Year: 2021-2022(EVEN SEM)
STUDENTS INTERNSHIP DETAIL

S.NO	STUDENTS NAME	REG.NO	NAME OF THE COMPANY	ADDRESS	FROM TO	DURATION
1	S.R.ABISHEK	712218114002	GEM EQUIPMENTS	COIMBATORE	17TH NOV – 8TH DEC	3 WEEKS
2	M. ALAGESAN	712218114003	GEM EQUIPMENTS	COIMBATORE	17TH NOV – 8TH DEC	3 WEEKS
3	K.DHINESH	712218114011	GEM EQUIPMENTS	COIMBATORE	17TH NOV – 8TH DEC	3 WEEKS
4	K.GOKUL	712218114012	GEM EQUIPMENTS	COIMBATORE	17TH NOV – 8TH DEC	3 WEEKS

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PROJECT WORK

FABRICATION OF MULTI OPERATIONAL VEHICLE FOR AGRICULTURAL APPLICATION

A PROJECT REPORT

Submitted by

N.S.ABISHEK	**712218114001**
K.DHINESH	**712218114011**
A.SHEIK MOHAMED	**712218114047**
G.THAMBIDURAI	**712218114055**

In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

PARK COLLEGE OF ENGINEERING AND TECHNOLOGY
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JUNE 2022

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BONAFIDE CERTIFICATE

Certified that this project report "FABRICATION OF MULTI OPERATIONAL VEHICLE FOR AGRICULTURAL APPLICATION" is the bonafide work of "N.S.ABISHEK , K.DHINESH , A.SHEIK MOHAMED , G.THAMBIDURAI" who carried out the project work under my supervision.

SIGNATURE

Dr K.KUMARESAN
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(HEAD OF THE DEPARTMENT)
Professor
Department of Mechanical Engineering
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20/6/22
SIGNATURE

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M.E.,
(SUPERVISOR)
Assosiate Professor
Department of Mechanical Engineering
Park College of Engineering and Technology
Kaniyur, Coimbatore.

Submitted for the viva voice held on 22-06-2022

22/6/22
INTERNAL EXAMINER

22/6/22
EXTERNAL EXAMINER

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FABRICATION OF MULTI OPERATIONAL VEHICLE FOR AGRICULTURAL APPLICATION

A PROJECT REPORT SUBMITTED BY

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G.THAMBIDURAI.	712218114055

ABSTRACT

Humans invented agriculture between 7000 and 10000 years ago, during the Neolithic era, or the New stone age. There were eight Neolithic crops: emmer wheat, einkorn wheat, peas, lentils, bitter vetch, hulled barley, chick peas, and flax. The Neolithic era ended with the development of metal tools.

Modern agriculture is an evolving approach with innovations in farming practices that helps in increasing agricultural efficiency and reduce the loss of natural resources. By applying this modern technology, farmers are gaining more profits and able to increase their productivity of yield.

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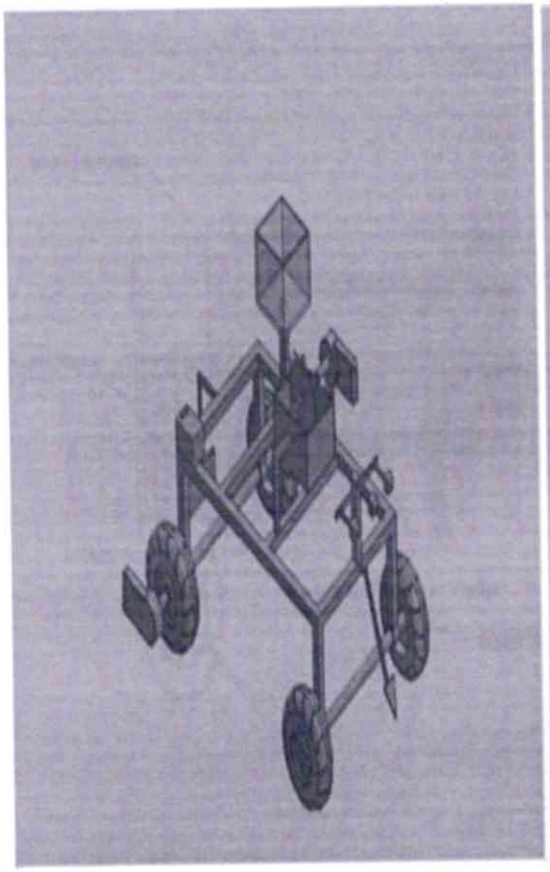

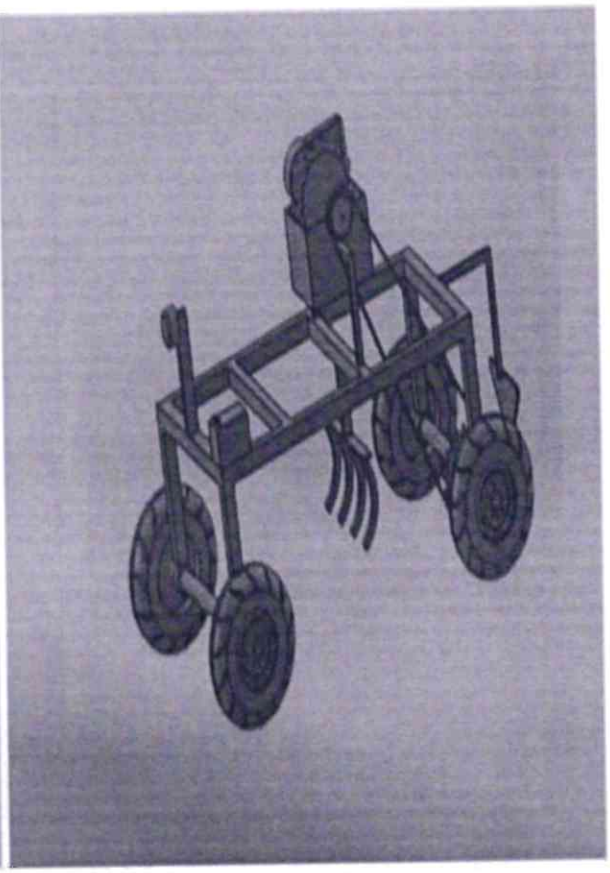

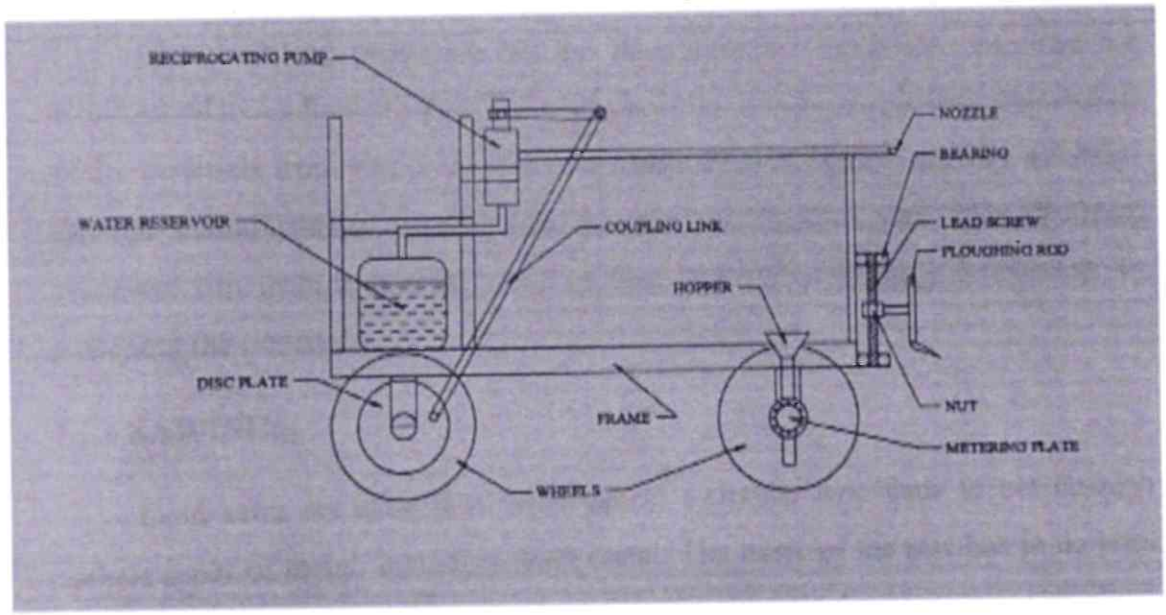

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ADVANTAGES

Usages of external drives are not needed for its operation.

Pollution free handling which is also helpful for crops.

DISADVANTAGES

Direct sowing uses more seed than transplanting.

Direct sowing requires more time thinning

Total cost : 14600

CONCLUSION

Practically our multipurpose agricultural equipment can be used for tilling, fertilizing, sowing, leveling and also used for weed removal purposes. All the parts are connected in such a way that in every stage of agriculture the equipment can be rearranged or easily assembled with fasteners to required length and specifications of field operation. Our team has successfully combined many ideas from various fields of mechanical engineering and agricultural knowledge to improve the yield and by the labor effort and expenses. The whole idea of multipurpose equipment is a new concept, patentable and can be successfully implement in real life situations.

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THE STUDY OF WEAR BEHAVIOUR IN REINFORCED ARECA FIBER EPOXY COMPOSITE WITH FILLER MATERIAL

A PROJECT REPORT

Submitted by

BHUVANESHWARAN.B	**712218114007**
JAGADEESWARAN.M.S	**712218114016**
S .KARTHICK CHOCKALINGAM	**712218114019**
KESAVAN.P	**712218114024**

In partial fulfilment for the award of the degree

of

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IN

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BONAFIDE CERTIFICATE

Certified that this project report **"THE STUDY OF WEAR BEHAVIOUR IN REINFORCED ARECA FIBER EPOXY COMPOSITES WITH FILLER MATERIAL "** is the bonafide work of **" B.BHUVANESHWARAN , M.S.JAGADEESHWARAN, S.KARTHICK CHOCKALINGAM, P.KESAVAN "** who carried out theproject work under my supervision.

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SIGNATURE

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PROFESSOR

(HEAD OF THE DEPARTMENT)

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SIGNATURE

Dr.R.T Ashok kumar PH.D

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22/06/22

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22/6/22

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THE STUDY OF WEAR BEHAVIOUR IN REINFORCED ARECA FIBER EPOXY COMPOSITE WITH FILLER MATERIAL

A PROJECT REPORT SUBMITTED BY

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JAGADEESWARAN.M.S.	712218114016
S.KARTHICK CHOCKALINGAM	712218114019
KESAVAN.P.	712218114024

ABSTRACT

Natural fibres, nowadays; have become the matter of discussion in the research field amongst various scientists to inculcate it in the formation of composites instead of production of composites using synthetic fibres like glass, carbon and aramid.
This is due to various advantages associated with natural fibres like eco-friendly, low cost, availability in abundance and its bio-degradability

Lots of work has been carried out in the production of natural fibre reinforced polymer composites, using natural fibres like jute, hemp, cotton, sisal, kenaf, bagasse, areca, abaca, bamboo etc. and their properties have been studied. Here is an attempt made on the literature survey of areca fibre reinforced polymer composites where different properties of areca fibres, its mechanical properties, related to different composites has been highlighted.

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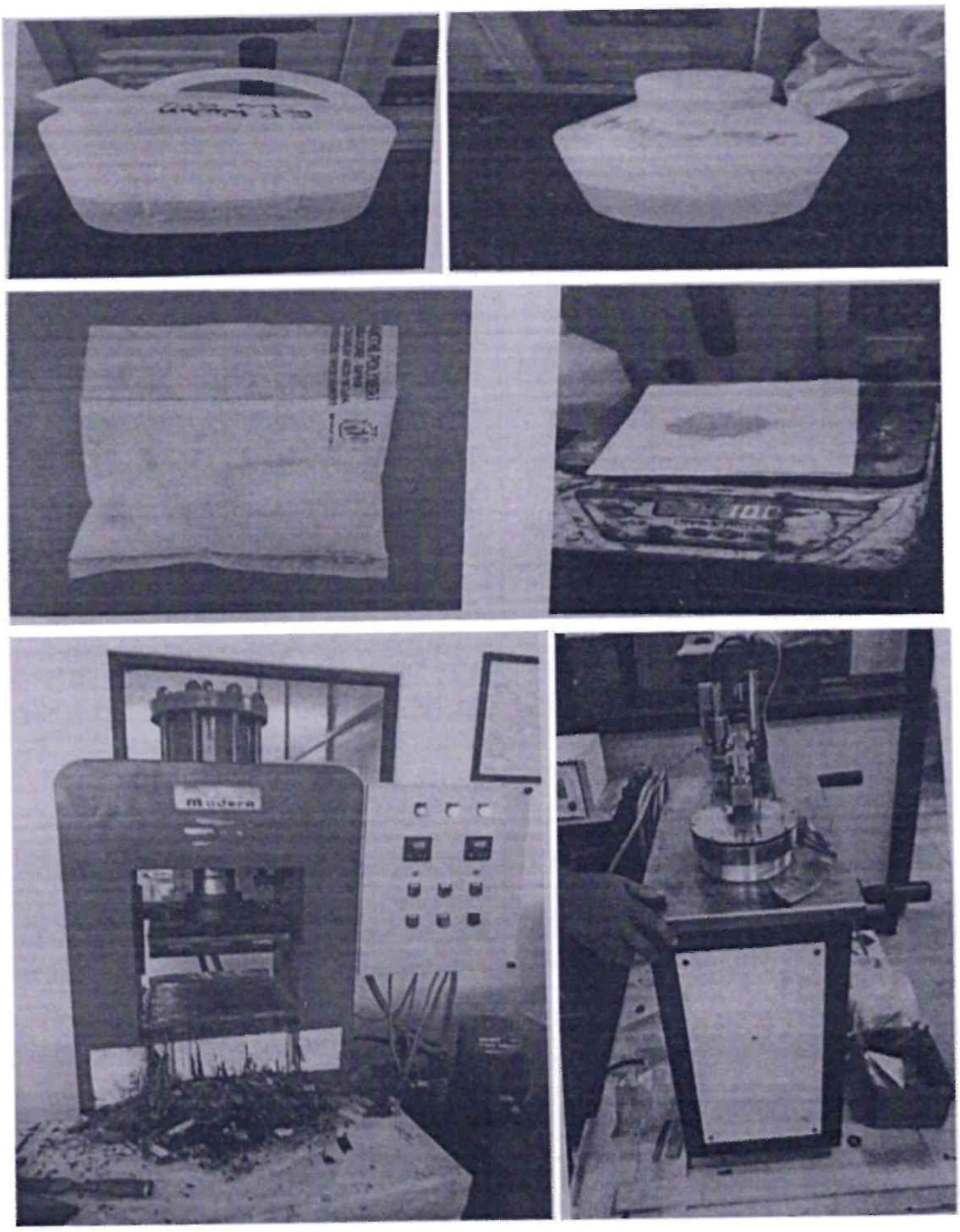

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cost : 14,600

CONCLUSION

The Natural fibre reinforced polymer matrix composites were fabricated successfully. The fibre was treated with treating agent. From the experimentation results the following conclusions are made,

. This work shows that successful fabrication of areca fibre with epoxy and filler material aluminium composite is possible by compression molding technique. The wear test in specific wear rate decreases with additional of fillers the
specific wear rate of 4% A1203 filled areca fibre epoxy composites shows better improvement as compared to unfilled epoxy composites

• The COF is calculated by dividing the frictional force with normal load. The better COF is obtained for 2% Al203 filled areca fibre composites at 20N Load about 0.285.
Using IR spectra we have calculated characteristic of infrared absorption frequencies with reference to areca fibers have been shown above, the FTIR spectrum of untreated and various chemical treated areca fibers FTIR peak position were define

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DESIGN AND FABRICATION OF MULTIPURPOSE MACHINE FOR PRODUCTION INDUSTRIES USING BEVEL GEAR

A PROJECT REPORT

Submitted by

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V.KARTHIK RAMANAN	**712218114021**
S.SARAVANAN	**712218114044**
S.SIVA	**712218114048**

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BONAFIDE CERTIFICATE

Certified that this project report "DESIGN AND FABRICATION OF MULTIPURPOSE MACHINE FOR PRODUCTION INDUSTRIES USING BEVEL GEAR" is the bonafide work of "A.JAYAPRAKASH (712218114017) , V.KARTHIK RAMANAN (712218114021) , S.SARAVANAN (712218114044) , S.SIVA (712218114048)" who carried out the project work under my supervision.

SIGNATURE	SIGNATURE 20/06/22
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(HEAD OF THE DEPARTMENT)	**(SUPERVISOR)**
Professor	Assistant Professor
Department of Mechanical Engineering	Department of Mechanical Engineering
Park College of Engineering and Technology	Park College of Engineering and Technology
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22/6/22	22/6/22
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DESIGN AND FABRICATION OF MULTIPURPOSE MACHINE FOR PRODUCTION INDUSTRIES USING BEVEL GEAR

A PROJECT REPORT Submitted by

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V.KARTHIK RAMANAN	712218114021
S.SARAVANAN	712218114044
S.SIVA.	712218114048

ABSTRACT

Industries are basically meant for production of useful goods and services at low production cost, machinery cost and low inventory cost. So in this paper we have proposed a machine which can perform operations like drilling. grinding with a single systematic arrangement called "MULTI FUNCTIONAL MACHINE". This concept is mainly carried out for production based industries which spends lots of economy for multiple machines for a single operation. The model facilitate us to get the operation performed at different working center simultaneously as it is getting drive from single power source. Obtained power is transmitted to shaft with bevel gear arrangement to function various operations. As an added advantage drilling and grinding operations can be dis-engaged whenever it is not functioned with the help of flange coupling.

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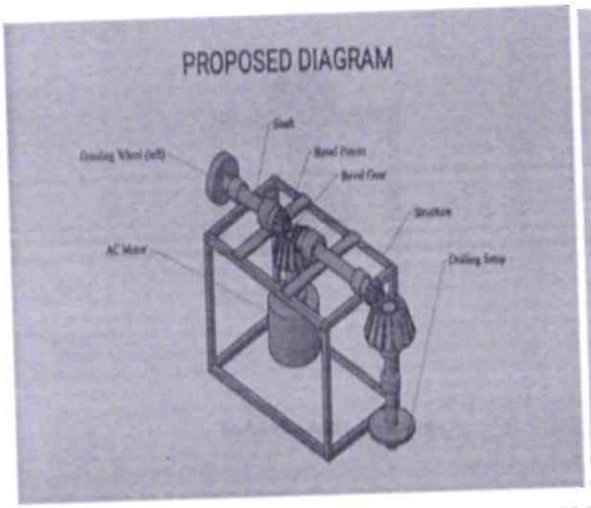

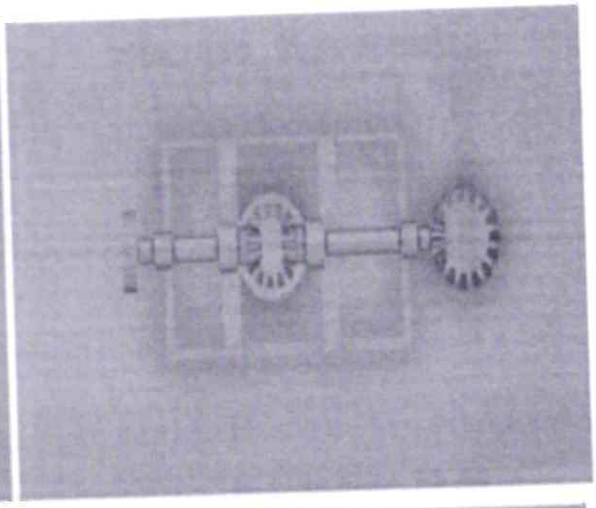

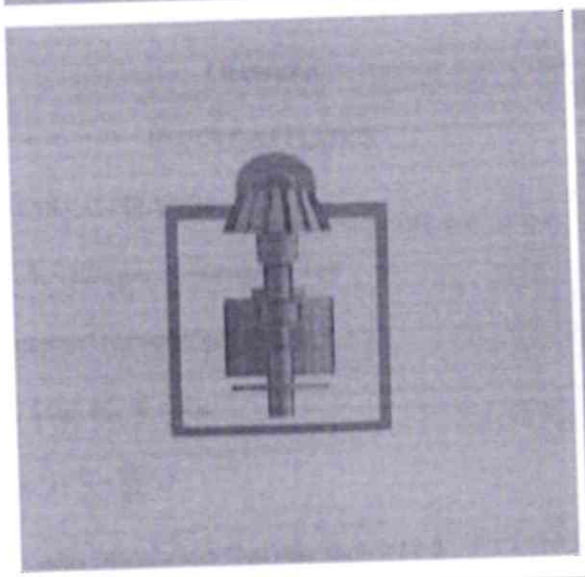

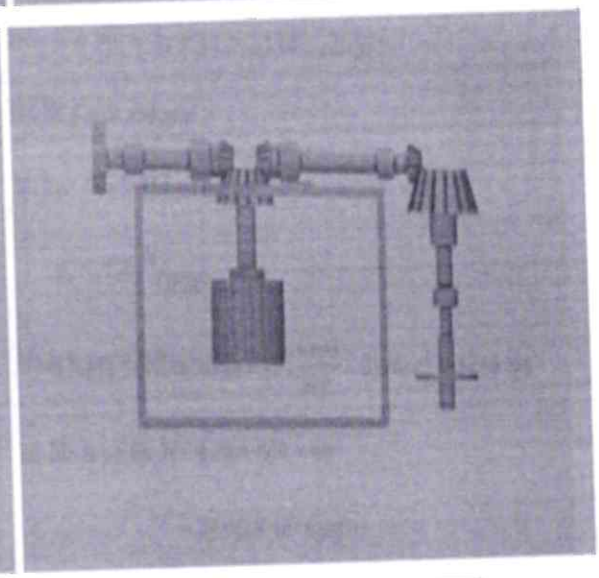

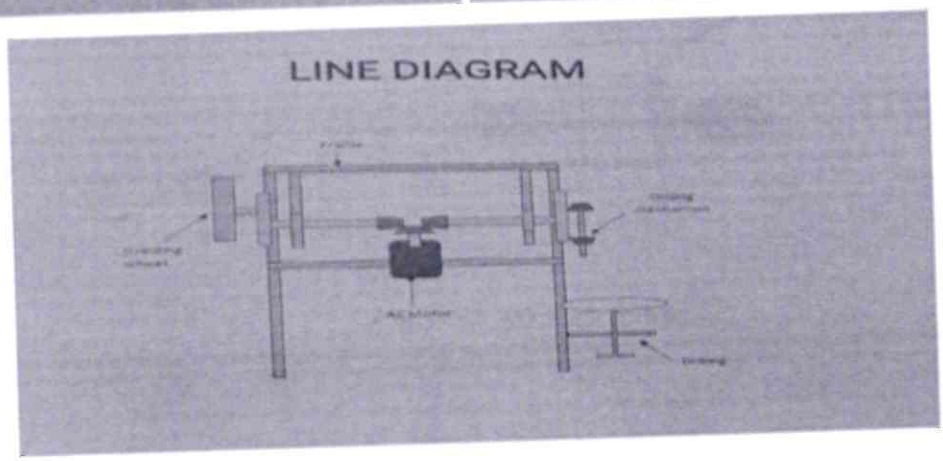

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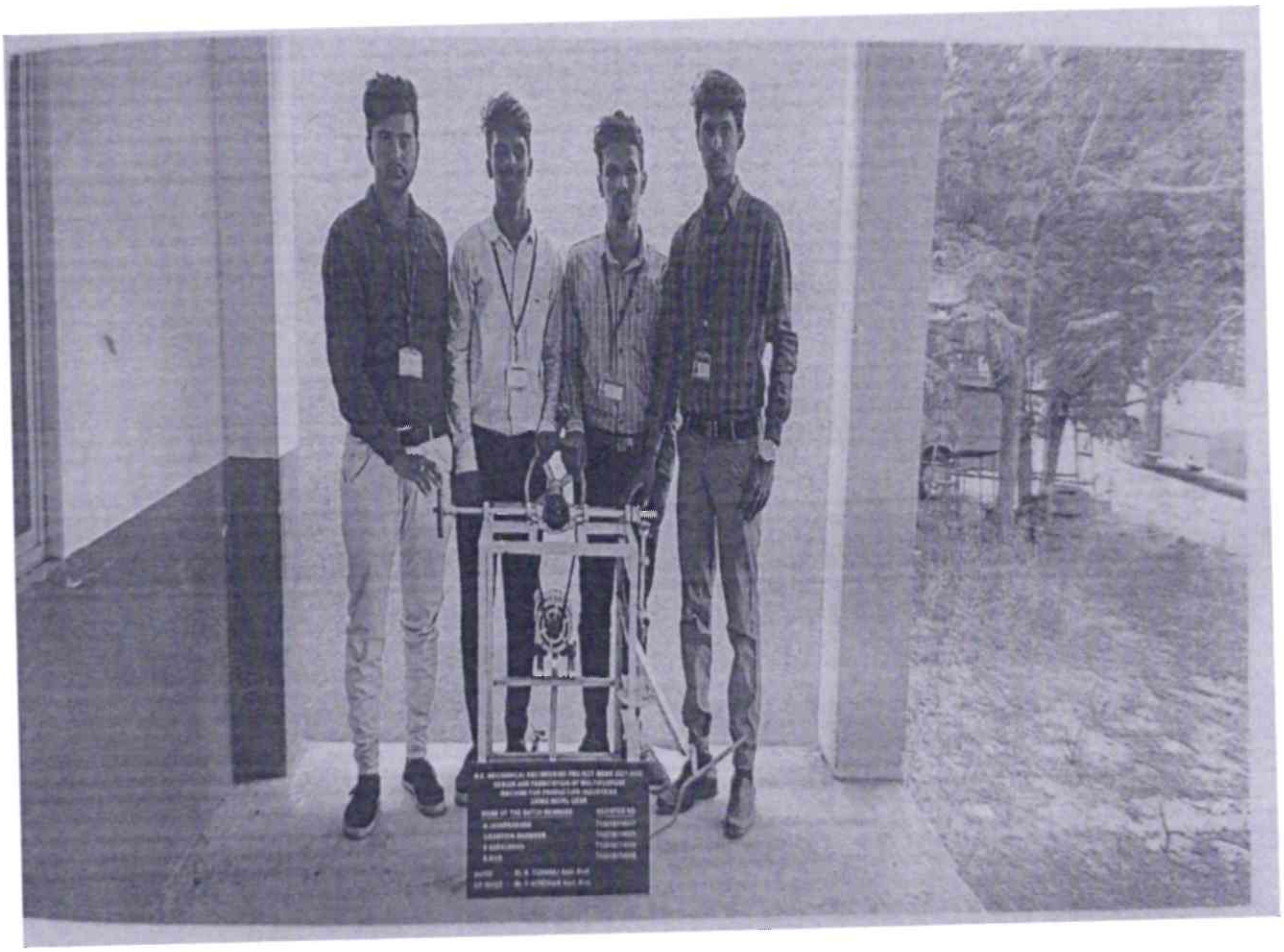
Total cost : 12000

CONCLUSION

The project was developed with the help of literature and conference papers along with different books related to the project. The innovation made within this machine has immense scope in the coming future. With this work we were able to gain lot of knowledge along with great open ideas subjected to it. The project is done based on calculated values and feasible market availability. The machine does able to work all the given operations and functions well while performing operations. The machine is efficient which will reduce the time and energy required as well as manpower.



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HARDNESS ENHANCEMENT OF AISI1020 STEEL USING FULL HARDENING AND GAS NITRIDING

A PROJECT REPORT

Submitted by

PRASANNAKUMAR R	712218114036
VISHNU V	712218114058
GOWDHAM P	712218114013
GOKUL K	712218114012

In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

PARK COLLEGE OF ENGINEERING AND TECHNOLOGY

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BONAFIDE CERTIFICATE

Certified that this project report **"HARDNESS ENHANCEMENT OF AISI1020 STEEL USING FULL HARDENING AND GAS NITRIDING"** is the bonafide work of **"PRASANNAKUMAR R,VISHNU V, GOWDHAM P GOKUL K."** who carried out the project work under my supervision.

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EXTERNAL EXAMINER 22/06/22

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HARDNESS ENHANCEMENT OF AISI1020 STEEL USING FULL HARDENING AND GAS NITRIDING

A PROJECT REPORT SUBMITTED BY

PRASANNAKUMAR R	712218114036
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ABSTRACT

Low carbon steel is easily available and cheap having all material properties that are acceptable for many applications. Heat treatment on low carbon steel is to improve ductility, to improve toughness, strength, hardness and tensile strength and to relive internal stress developed in the material. Here basically the experiment of harness and ultimate tensile strength is done to get idea about heat treated low carbon steel, which has extensive uses in all industrial and scientific fields.

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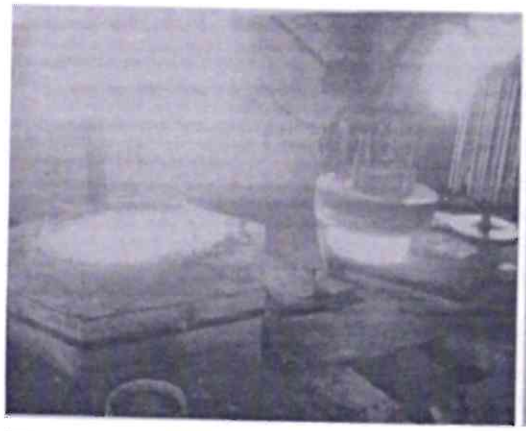
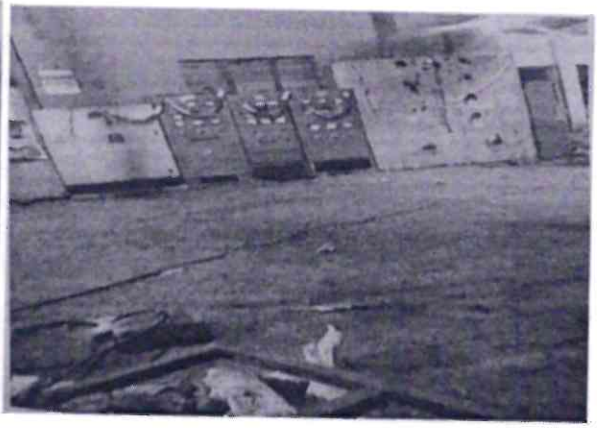
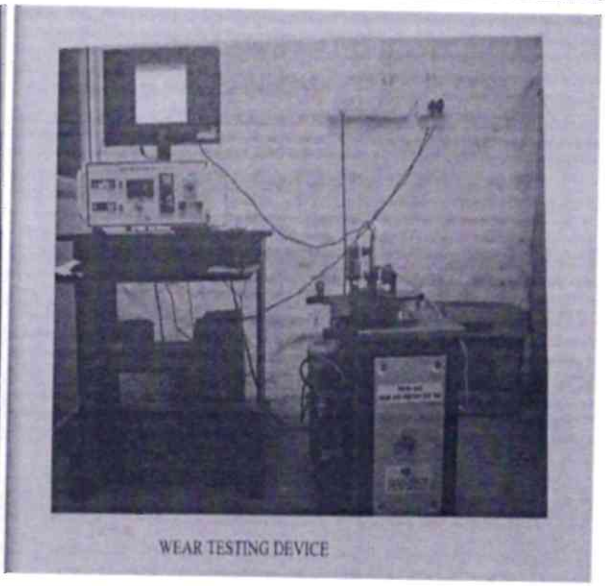
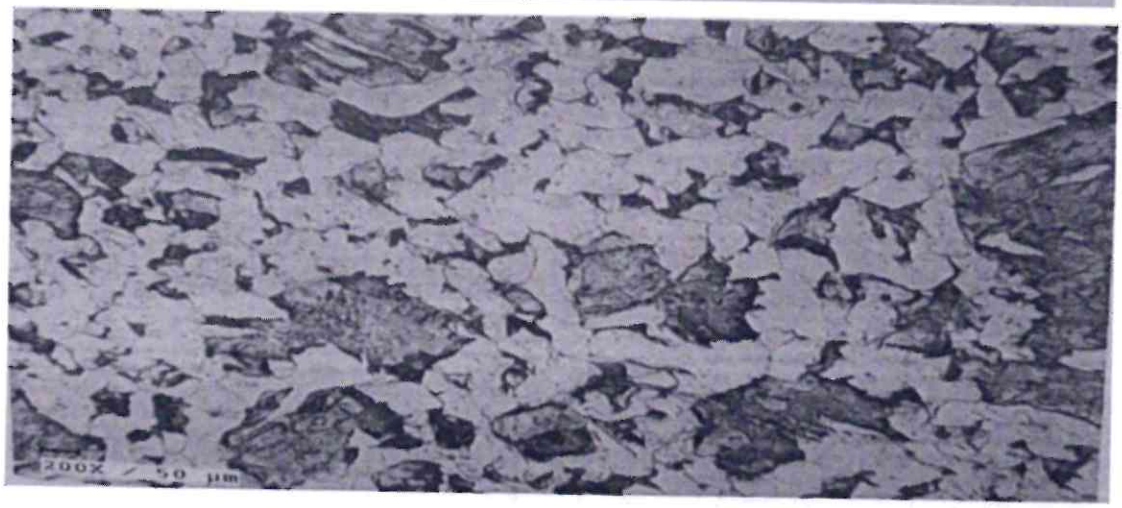






WEAR TESTING DEVICE



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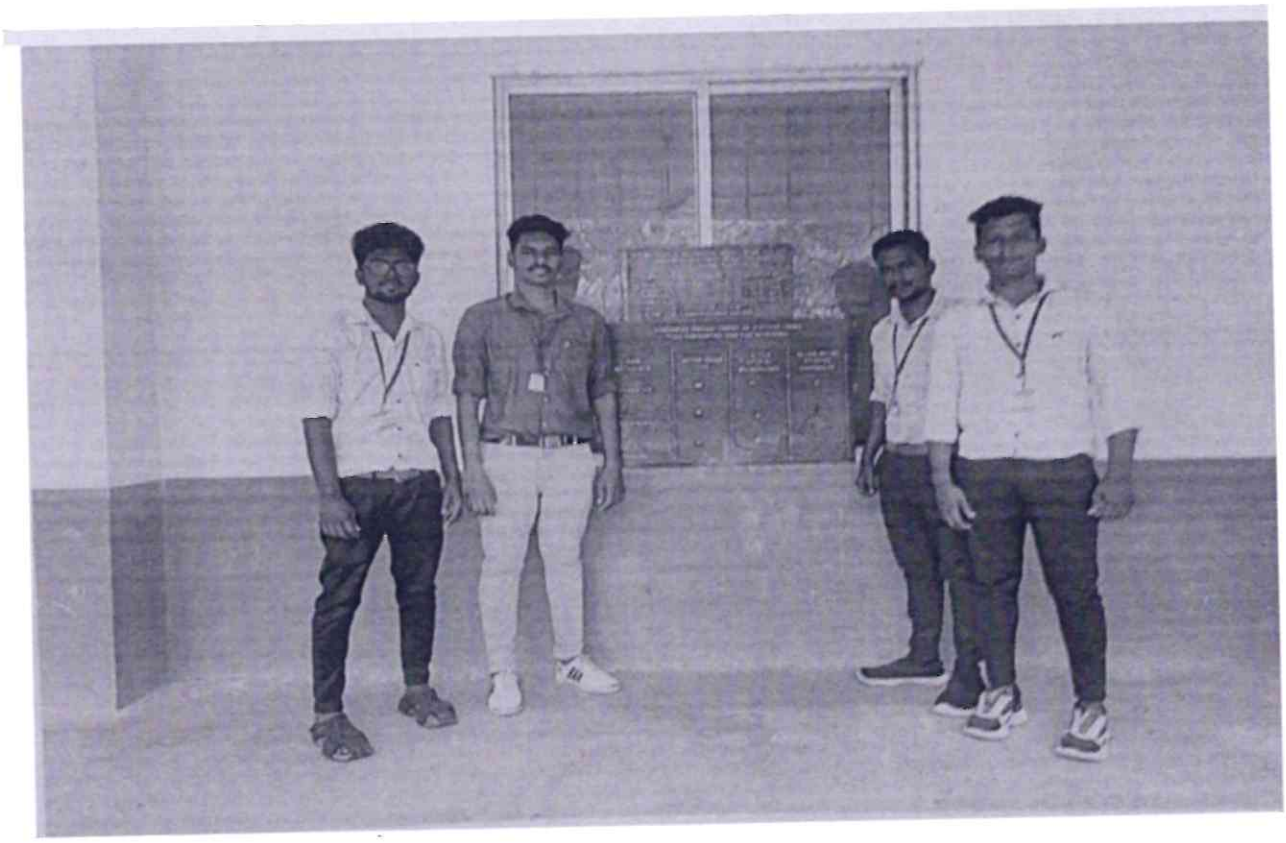
CONCLUSION

From the various results obtained during the project work it can be concluded that the mechanical properties vary depending upon the various heat treatment processes. Hence depending upon the properties and applications required we should go for a suitable heat treatment processes. When ductility is the only criteria tempering at high temperature for 2 hours gives the best result among all tempering experiments however it is simply the hardness of the low carbon steel that is desired than we should go for low temperature tempering for 1 hour or so. However if strength is also desired along with hardness, this should not be done. It is seen that annealing causes a Tremendous increase in % elongation (ductility). It can be clearly seen comparing all the heat treatment processes, optimum Combination of UTS, Yield Strength, % Elongation as well as hardness can be Obtained through austempering only.



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DESIGN AND FABRICATION OF SOLAR WATER HEATER WITH ZIG-ZAG COLLECTOR PIPE

A PROJECT REPORT

Submitted by

ALAGESAN M	**712218114003**
ASWIN J	**712218114004**
BALAPRASAD V	**712218114006**
NAVIN M	**712218114034**

In partial fulfilment for the award of the degree

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BONAFIDE CERTIFICATE

Certified that this project report "**DESIGN AND FABRICATION OF SOLAR WATER HEATER WITH ZIG-ZAG COLLECTOR PIPE**" is the bonafide work of "ALAGESAN M, ASWIN J, BALAPRASAD V, NAVIN M" who carried out the project work under my supervision.

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DESIGN AND FABRICATION OF SOLAR WATER HEATER WITH ZIG-ZAG COLLECTOR PIPE

A PROJECT REPORT Submitted by

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ABSTRACT

The technology of solar water heating is an emerging field in India. This project involves the design and fabrication of a portable solar water heater. The design of the solar water heater was done using relevant equations to size the major components of the system. The materials for the components were then selected with consideration to the design calculations, machinability market availability and cost of the materials. The system was then constructed using the selected materials. The system consists of a storage tank of 60 litres capacity, a flat-plate collector with a single layer of glass on top, and a flow channel arrangedin a straight and zig-zag manner. The thermosyphon principle was applied to the system and an average flow rate of 0.35 litres /min was recorded. The system was tested for three days, the first day of testing were during the late raining season and the last two days within the dry season.

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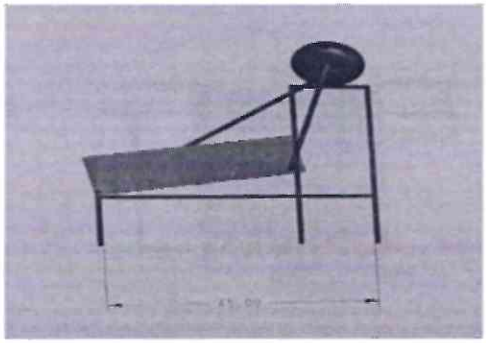

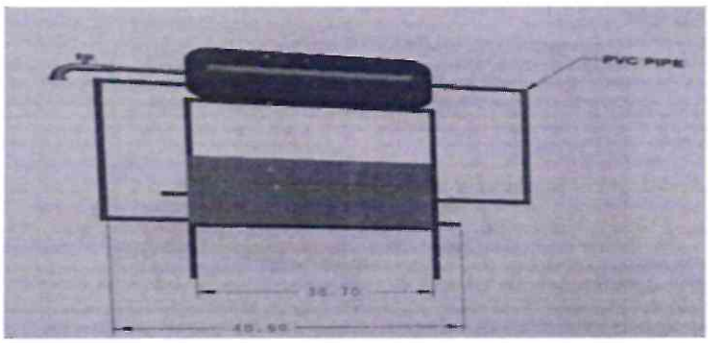

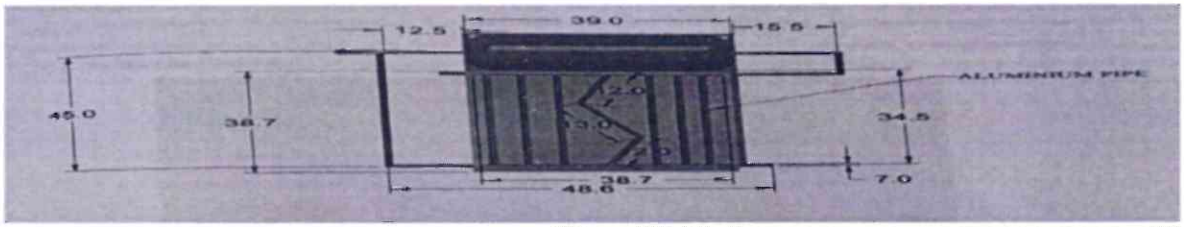

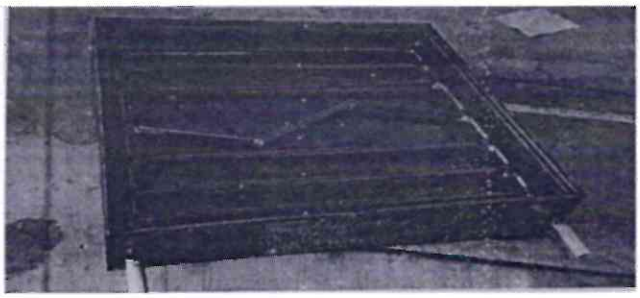

B.E. MECHANICAL ENGINEERING PROJECT WORK 2021-2022

DESIGN AND FABRICATION OF SOLAR WATER HEATER WITH ZIG-ZAG COLLECTOR PIPE

NAME OF THE BATCH MEMBERS	REGISTER NO
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CONCLUSION AND RECOMMENDATIONS

Conclusion

In this work, the design and construction of a 60-litre capacity portable solar water heater has been carried out. using relevant equations to size the major components of the system. The materials for the components were then selected with consideration to the design calculations, machinability. market availability and cost of the materials. The system was tested, and the following results were observed. From the first day of testing during the late raining season, the highest outlet temperature recorded was 47°C. For the last two days of testing during the dry season, the highest outlet temperature recorded was 53°C. This difference clearly shows that the system performs better during the dry season when the irradiance levels are higher. The highest irradiance recorded was on the second day of testing.

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DESIGN AND FABRICATION OF AUTOMATIC FIRE PROTECTION SYSTEM WITH 360 DEGREE ROTATING SENSOR

A PROJECT REPORT

Submitted by

B. SURESH KUMAR	**712218114053**
R. MANIKANDAN	**712218114027**
R. VENGATESAN	**712218114056**
J. JOSHVA	**712218114018**

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

PARK COLLEGE OF ENGINEERING AND TECHNOLOGY

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ANNA UNIVERSITY -CHENNAI 600 025

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BONAFIDE CERTIFICATE

Certified that this project report "**DESIGN AND FABRICATION OF AUTOMATIC FIRE PROTECTION SYSTEM WITH 360 DEGREE ROTATING SENSOR**" is the bonafide work of "**R.MANIKANDAN(712218114027), B.SURESH KUMAR(712218114053) , R.VENGATESAN(712218114056) , J.JOSHVA (712218114018)**" who carried out the project work under my supervision.

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Internal Examiner

External Examiner

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DESIGN AND FABRICATION OF AUTOMATIC FIRE PROTECTION SYSTEM WITH 360 DEGREE ROTATING SENSOR

A PROJECT REPORT SUBMITTED BY

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R. MANIKANDAN. 712218114027
R. VENGATESAN. 712218114056
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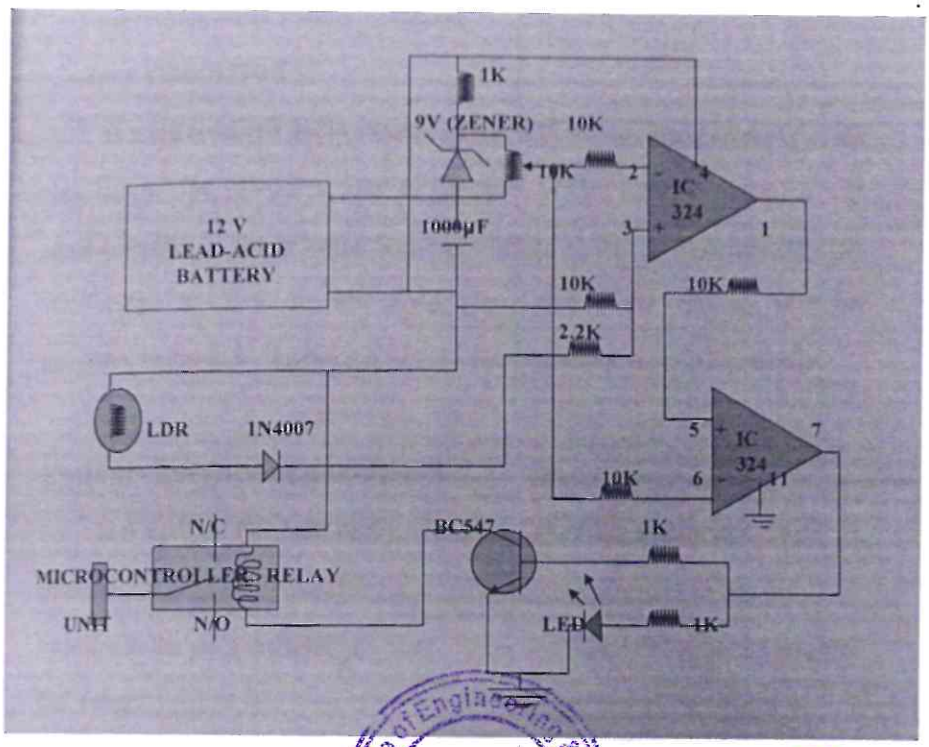
ABSTRACT

There are many fields in which artificial intelligence (AI) may be related to electrical, mechanical lingistres, psychology and philosophy. We use this concept in a simpler application of fire detection. In our project, we use a sensor to detect fire, which sends the information to a micro-controller, which is written with a program based on fuzzy logic algorithm, which turns nozzle head of the fire fighter to that direction.

Two-stepper motors are provided. One for the up and down movement and another one for the clockwise and anticlockwise rotation. A valve opens in the nozzle, which is controlled by the same.

Fuzzy logic algorithm here used is to sense the fire and to trigger the nozzle in the direction of fire.



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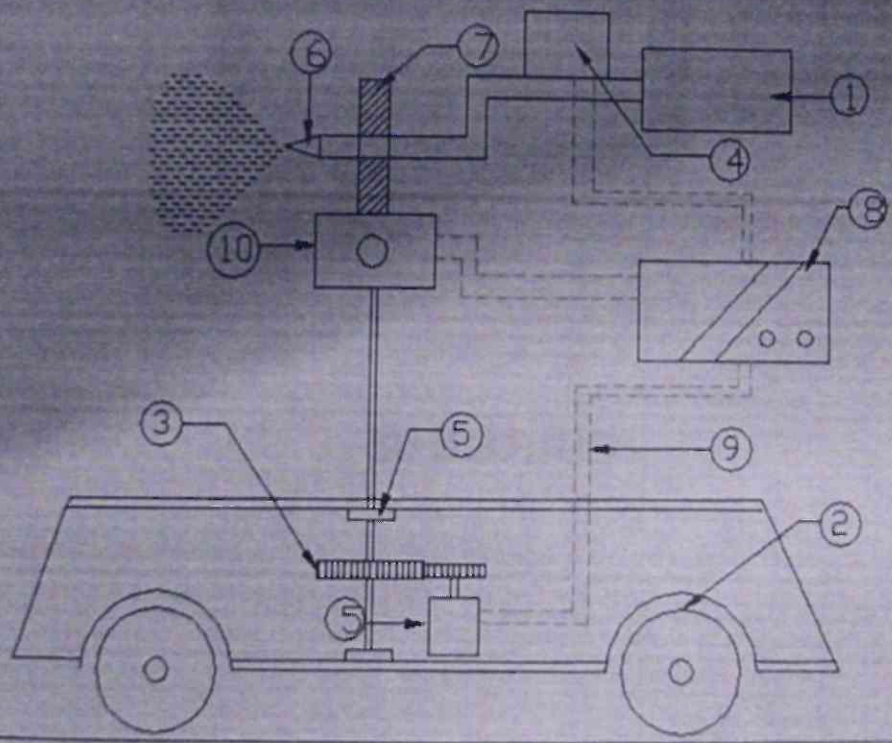
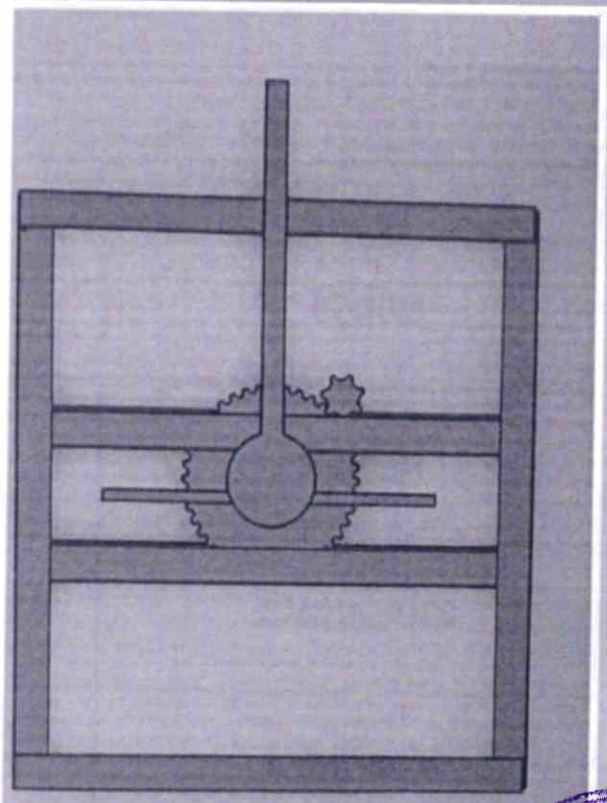
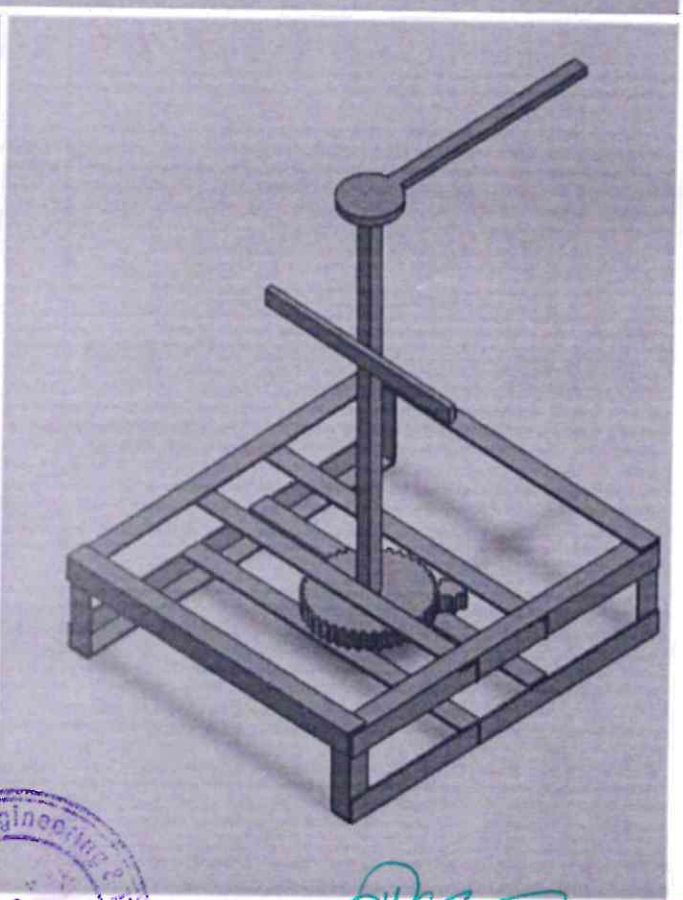
FIRE FIGHTING ROBOT :-



1.WATER TANK
2.WHEEL ARRANGEMENT
3.GEAR WHEEL
4.WATER PUMP
5.D.C.MOTOR
6.NOZZLE
7.ROTATING SHAFT
8.ELECTRONIC CONTROL UNIT
9.ELECTRICAL WIRE CONNECTION
10.SENSOR UNIT





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CONCLUSION

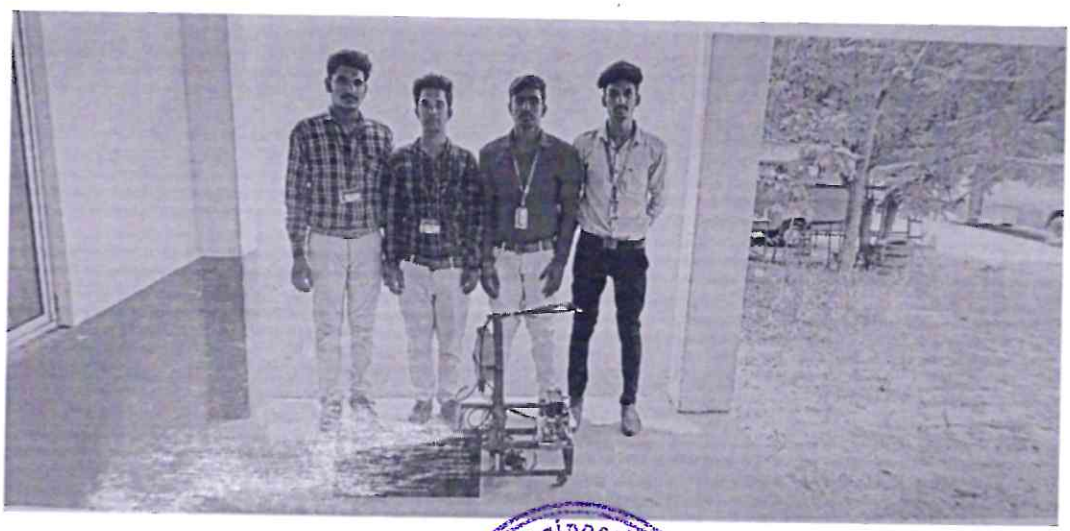
The fire fighter who is designed and fabricated is based on artificial intelligence, which is a branch of computer science involved with the study and creation of computer system, which resembles human intelligence.
The ability to understand a natural language accordingly and perform various tasks similar to human intelligence.
The fire fighter recognize the fire, the direction in which the fire occurs and acts accordingly to extinguish the fire is artificial intelligence of the fire fighter here used is fuzzy logic.
Common sense, human thinking and judgment are the lures of fuzzy logic. what after all does fuzzy logic bring to the party is a question that has been hotly debated upon during the past several years, and probably will continue to remain controversial in the near future. The primary reason for this is that the ultimate universal proof of why a fuzzy logic solution is 'better' than a conventional one. for whatever reason, does not exist.

Advantages

The intelligence of the fire fighter can detect fire for about one feet square arca
The range of detection of fire is 360°, in all directions.

Disadvantages

The nature of the fire cannot be found out.
Huge fires cannot be extinguished.



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FABRICATION OF HAND GESTURED CONTROLLED ROBOTIC ARM

A PROJECT REPORT

Submitted by

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SURYA. U	712218104054
YOGESHWARAN. S	712218104061

in partial fulfilment for the award of the degree

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BONAFIDE CERTIFICATE

Certified that this project report **"FABRICATION OF HAND GESTURED CONTROLLED ROBOTIC ARM"** is the bonafide work of **"SURYA. U, YOGESHWARAN. S, MOHAMED DHAMEEMUL JANSHA. T"** who carries out the project under my supervision.

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22/06/2022

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FABRICATION OF HAND GESTURED CONTROLLED ROBOTIC ARM

A PROJECT REPORT SUBMITTED BY

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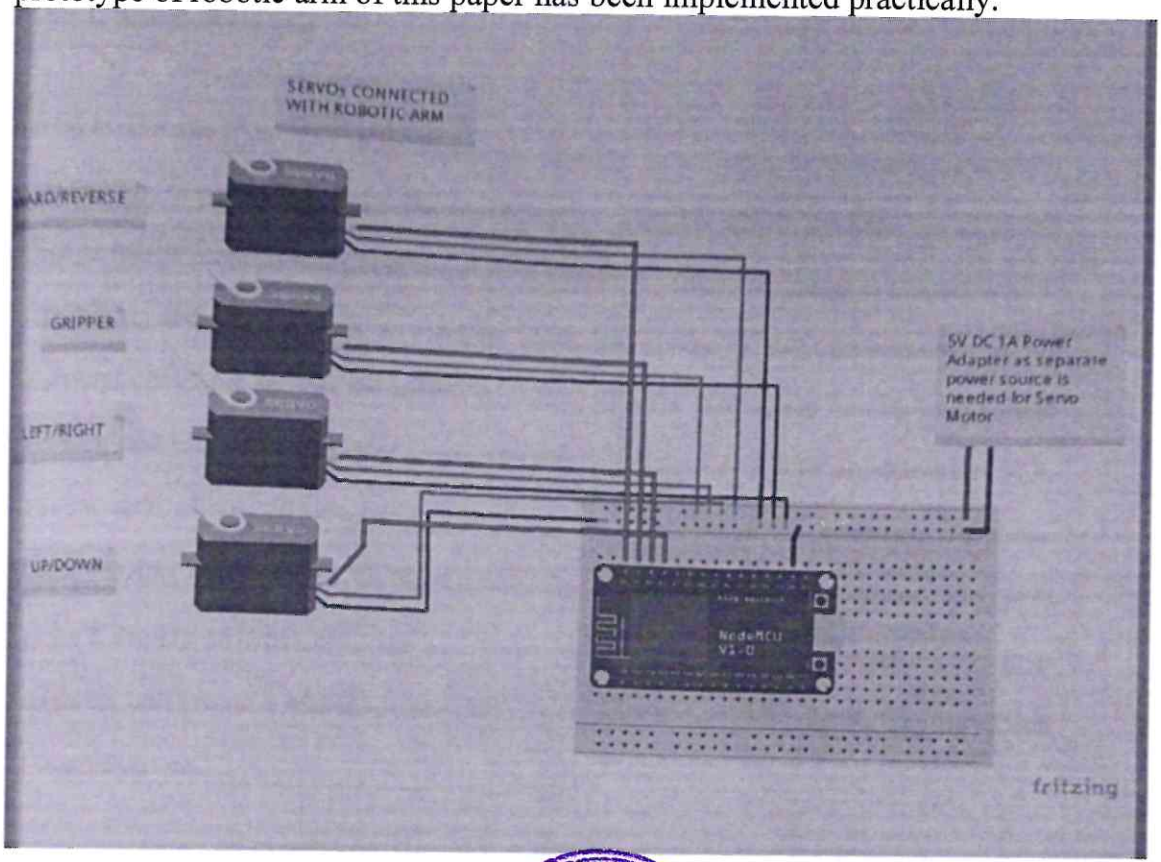
ABSTRACT

There are high requirements to develop artificial arms for many inhuman situations where human interactions are presenting challenges or not possible (i.e. impossible situations). This paper presents information, methods, and techniques which are essential for building a robotic arm controlled by the movements of normal human arm (Gesture Robotic Arm) whose data is acquiring by using the sensor fusion technique of Gyroscope, Accelerometers and Magneto sensors (MEMS sensors). For appropriate control mechanism and for reducing the noise amount which is coming in from the sensors, a proper averaging algorithm is used for smoothening the accelerometer output.

The development of this arm is based on the PIC Microcontroller platform; in which all are interfaced with each other by using Bluetooth communication. The prototype of robotic arm of this paper has been implemented practically.



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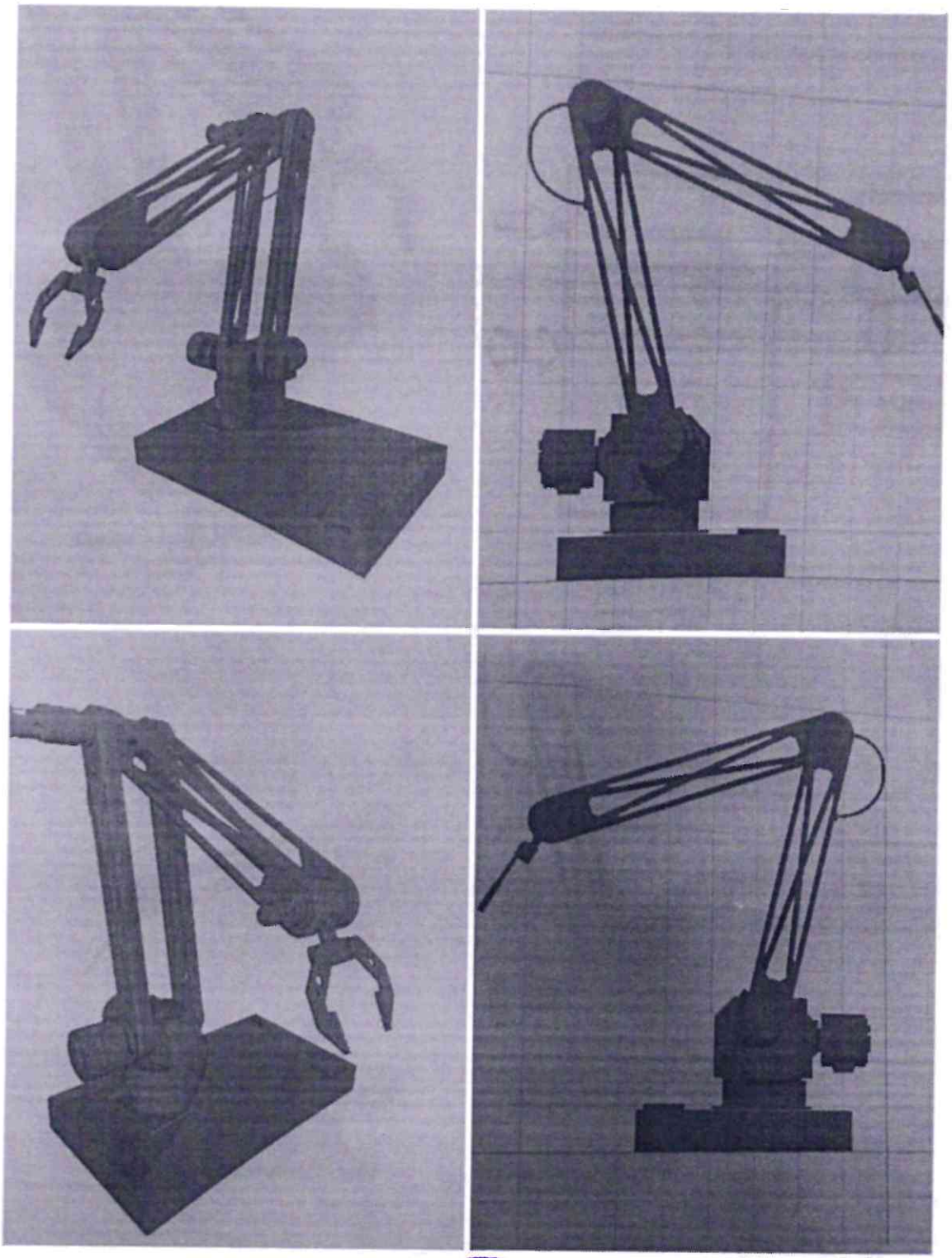

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USES

This robotic arm mimics hand motion and works using sensor and moves accordingly. Can be used in industry for welding and various jobs.

Wireless controlled robots are very useful in many applications like remote surveillance, military etc.

Hand gestured controlled robot can be used by physically challenged in wheelchairs.

Hand gesture controlled industrial grade robotic arms can be developed.

CONCLUSION

Thus this approach provides a better way to control a robotic arm using accelerometer which is more intuitive and easy to work, besides offering the possibility to control a Also, many applications which require precise control and work like human beings can be easily implemented using this method and it provides more flexible control mechanism.

Transmitter-hand glove circuit and receiver-robotic arm circuit are set to work ly by interfacing program in microcontroller. This technology can be utilized for distant operation at hazardous places like nuclear power plant, bomb diffusion and military purpose. It has wide application in manufacturing industry for distant pick and place, also we can use one transmitter to command more than one receiver to automate the operations. After further improvement it can be utilized to do distant medical surgeries in remote areas and in unmanned space applications

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EXPERIMENTAL STUDIES ON HYBRIDIZATION EFFECT OF SNAKE GRASS – ARECA FIBERS REINFORCED EPOXY COMPOSITE: BIO NEEM SHELL FILLER.

A PROJECT REPORT

Submitted by

SATHISH KUMAR S	712218114045
SAYOOJ S B	712218114046
SUDHARSHAN K	712218114052
YASAR MOHAMED M I	712218114060

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

PARK COLLEGE OF ENGINEERING AND TECHNOLOGY

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EXPERIMENTAL STUDIES ON HYBRIDIZATION EFFECT OF SNAKE GRASS-ARECA FIBERS REINFORCED EPOXY COMPOSITE: BIO NEEM SHELL FILLER

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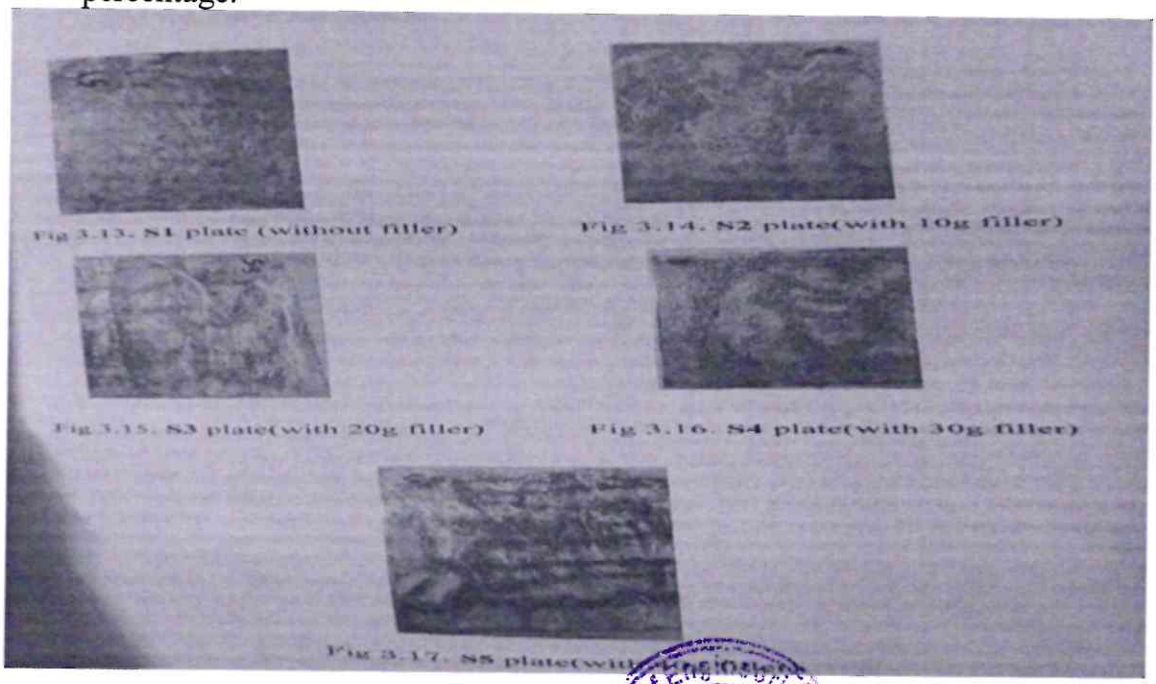
ABSTRACT

Human beings have been strongly aware of environmental degradation, noise pollution and its human health implications as a result of the unprecedented use of synthetic fibres. The search is to develop a new class of material using eco-friendly fiber extracted from the environmental and industrial wastage which is to be better alternative for existing green composites. In this work neem seed shell powder (Azadirachta Indica) has been considered as filler materials due to its excellent stiffness properties. In this combinations of two different natural fibers (areca and snake grass) are hybridized with bio filler neem shell(powder form) and fabricated by a compression moulding process with the combinations of areca fiber (10%) and snake grass fiber (20%,18%,16%, 14%,12%) reinforcement and 70% epoxy matrix with bio filler (0%,2%,4%,6%,8%) material in a various proportion. To evaluate the mechanical properties such as Tensile test, Impact test and Hardness test of prepared epoxy composites and to find optimal reinforcement percentage.



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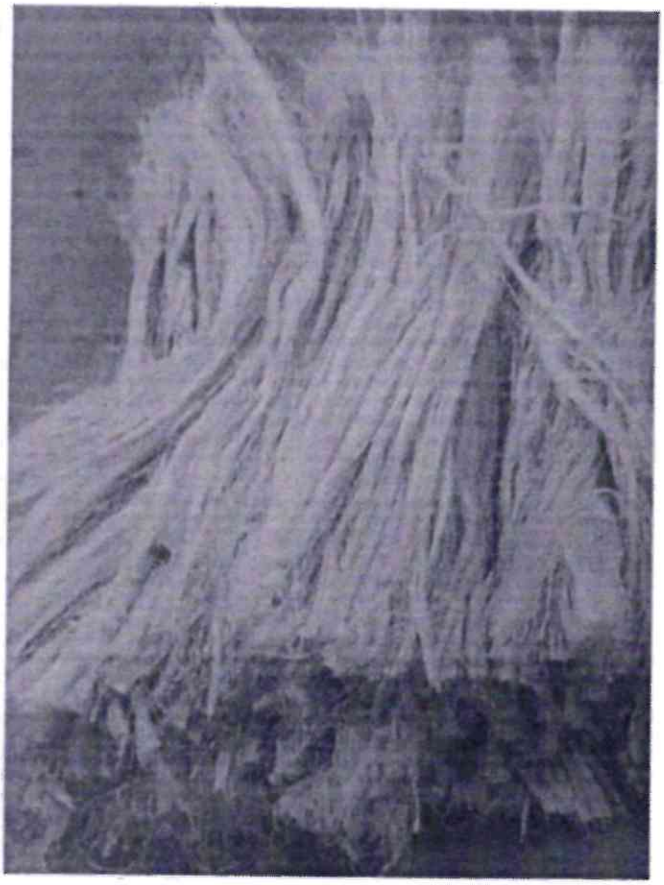

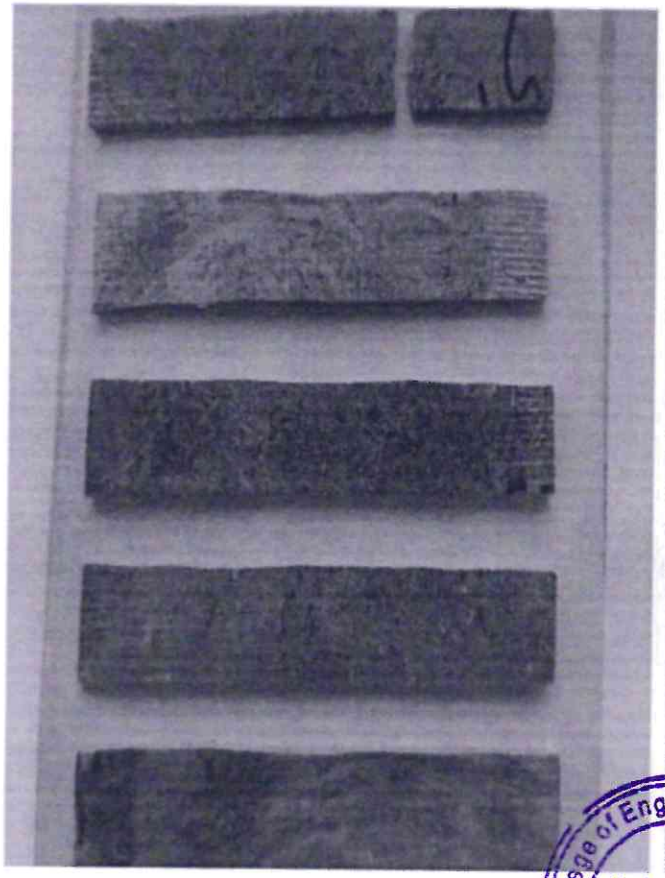

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CONCLUSION

This experimental investigation of mechanical behaviour of Areca and Snake grass with Epoxy and bio filler as neem seed shell Composites leads to the following conclusions

This work shows that successful fabrication of Areca and Snake grass fiber with Epoxy and neem seed shell Composites is possible by compression moulding technique.

The Tensile test has been concluded that the composites with (S1) Areca 10% and snake grass 20% with 0% of bio filler shows the better performance.

The Izod Impact test has been concluded that the composite with (S2) Areca 10% and snake grass 18% with bio filler 2% shows the better performance.

The Shore D Hardness test has been concluded that the composites with (S2) Areca 10% and snake grass 18% with bio filler 2% shows the better performance.

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FABRICATION AND MECHANICAL BEHAVIOUR OF ARECA FIBER REINFORCED EPOXY COMPOSITES WITH Al_2O_3 FILLER

A PROJECT REPORT

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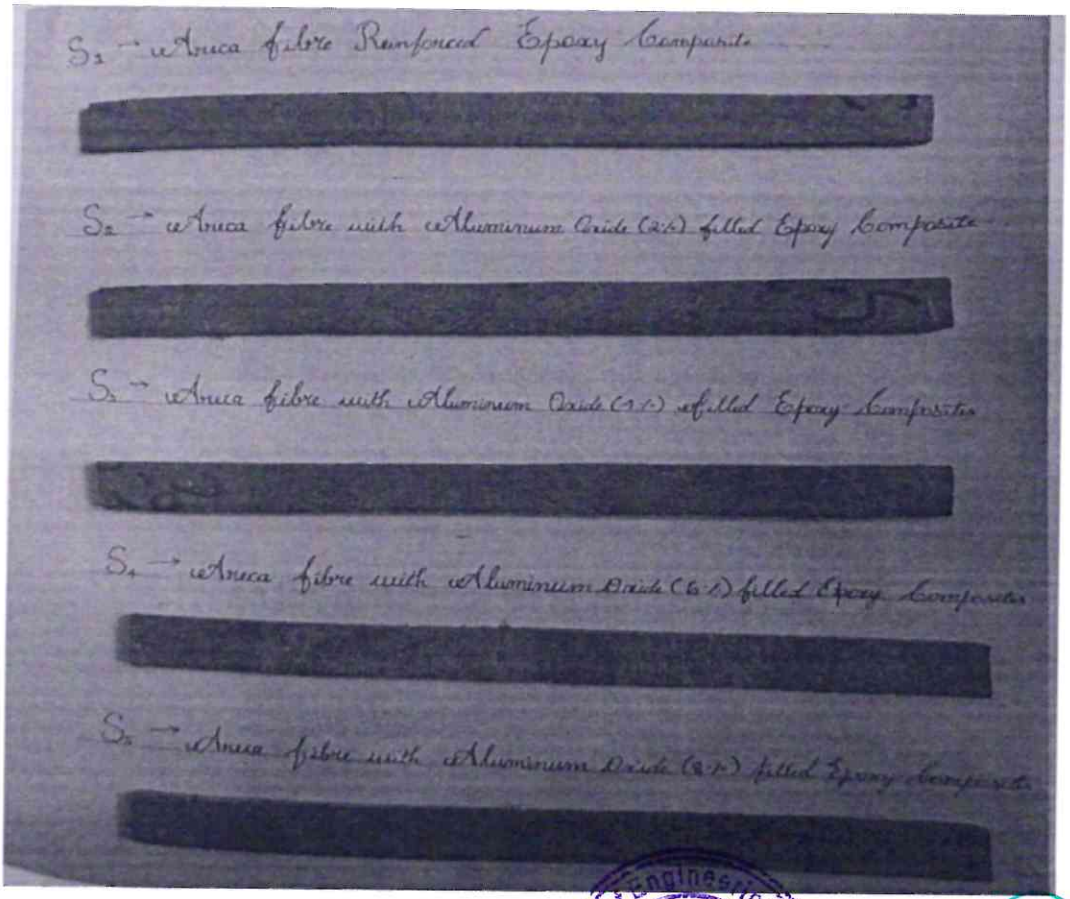
ABSTRACT

Natural fibres, nowadays; have become the matter of discussion in the research field amongst various scientists to inculcate it in the formation of composites instead of production of composites using synthetic fibres like glass, carbon and aramid. This is due to various advantages associated with natural fibres like eco-friendly, low cost, availability in abundance and its bio-degradability. Lots of work has been carried out in the production of natural fibre reinforced polymer composites, using natural fibres like jute, hemp, cotton, sisal, kenaf, bagasse, areca, abaca, bamboo etc. and their properties have been studied.



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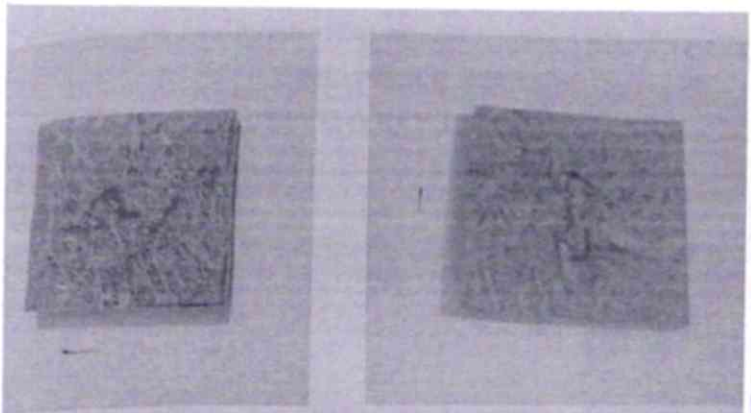
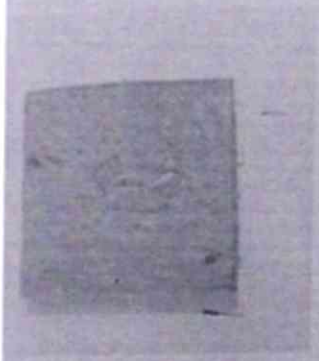
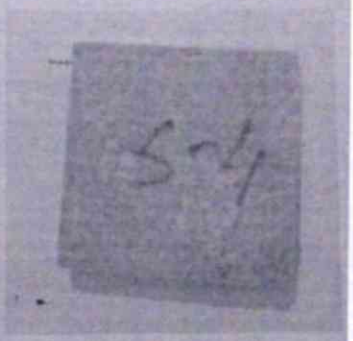


1- Hardness Sample

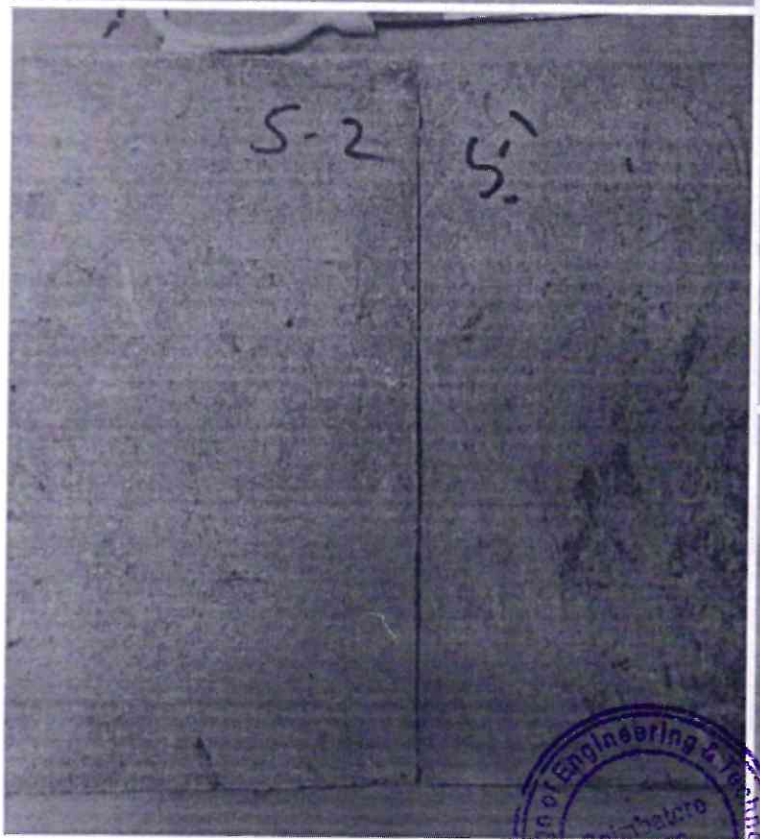
S2- Hardness Sample



Hardness Sample



S4-Hardness Sample



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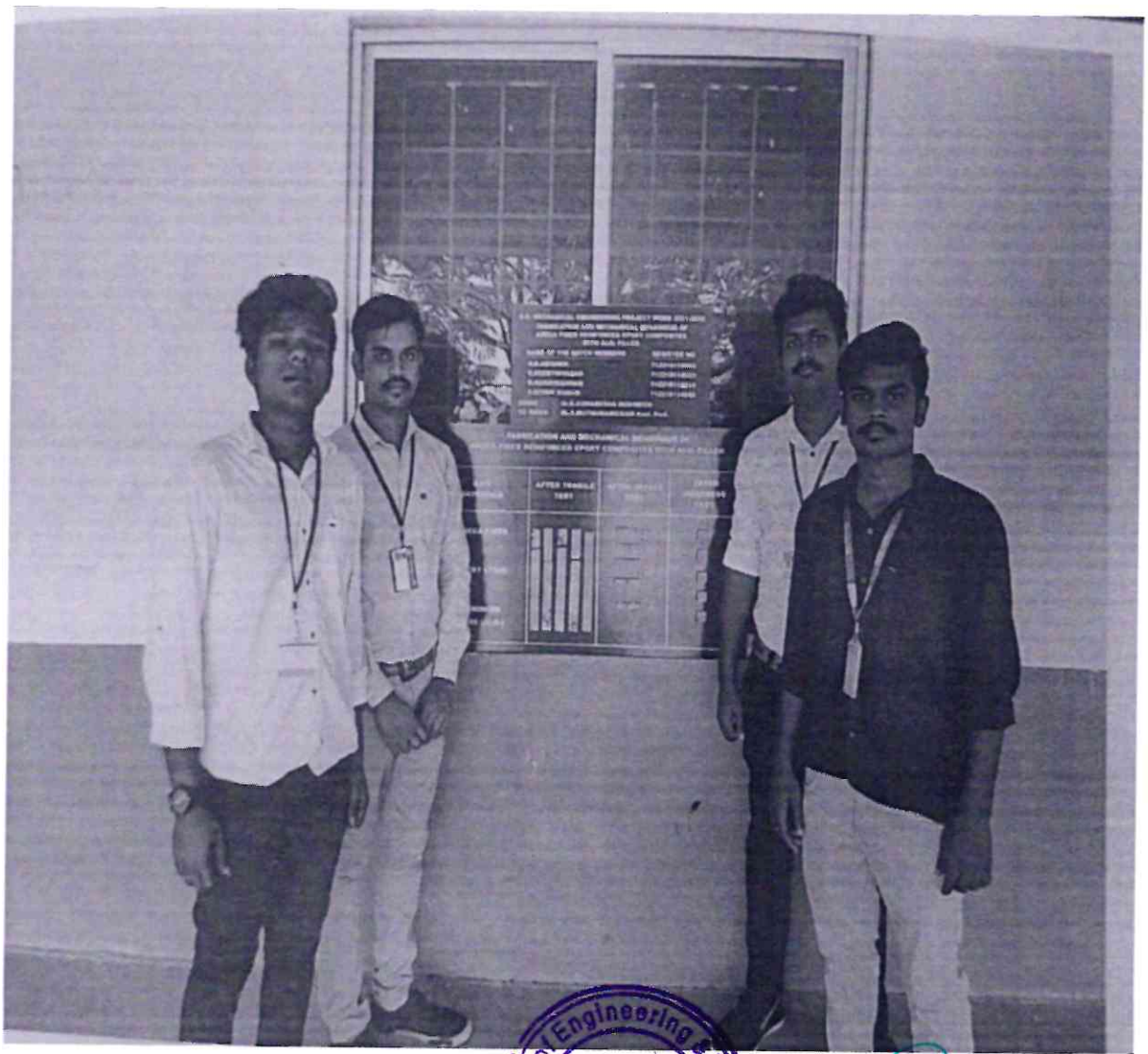
CONCLUSION

This experimental investigation of mechanical behaviour of Areca with Epoxy and Aluminium Oxide Composites leads to the following conclusions

This work shows that successful fabrication of Areca with Epoxy and Aluminium Oxide Composites is possible by compression moulding technique.

The Tensile test has been concluded that the composites with Areca 26% with Aluminium Oxide 4% shows the better performance.

The Izod Impact test has been concluded that the composites with Areca 26% with Aluminium Oxide 4% shows the better performance.



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IMPROVEMENT OF DIESEL, ETHANOL AND N-BUTANOL BLENDS PERFORMANCE IN DIESEL ENGINE USING RESPONSE SURFACE METHODOLOGY

A PROJECT REPORT

Submitted by

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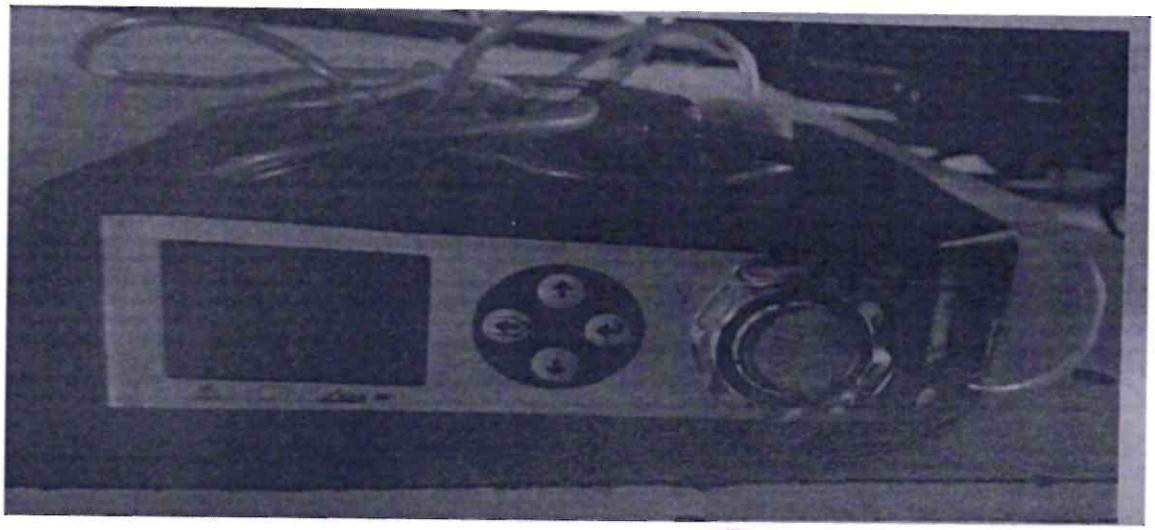
ABSTRACT

The main objective of this work was to improve the performance of diesel. ethanol and blends in a diesel engine by using optimized engine parameters. For optimization of the engine, operational parameters such as additives blend, fuel blend, and load are taken as factors, whereas performance parameters such as brake thermal efficiency (BTE) and specific fuel consumption (SFC) and emission parameters such as carbon monoxide (CO), hydrocarbons (HC) and nitric oxides (NOx) are taken as responses. Experimentation is carried out as per the design of experiments of the response surface methodology. From the results obtained it is inferred that the diesel engine has maximum performance and minimum emissions at 5% fuel blend, 4% additives and at 12 kg of load. At this optimized operating conditions of the engine the responses such as brake thermal efficiency, specific fuel consumption, carbon monoxide, hydrocarbon and nitric oxide are found to be 31 %, 0.25 kg/kW.hr, 0.029%, 25 ppm and 726 ppm respectively. It is finally observed from them mathematical models and experimental data that diesel ethanol blends have maximum efficiency and minimum emissions at optimized engine parameters.



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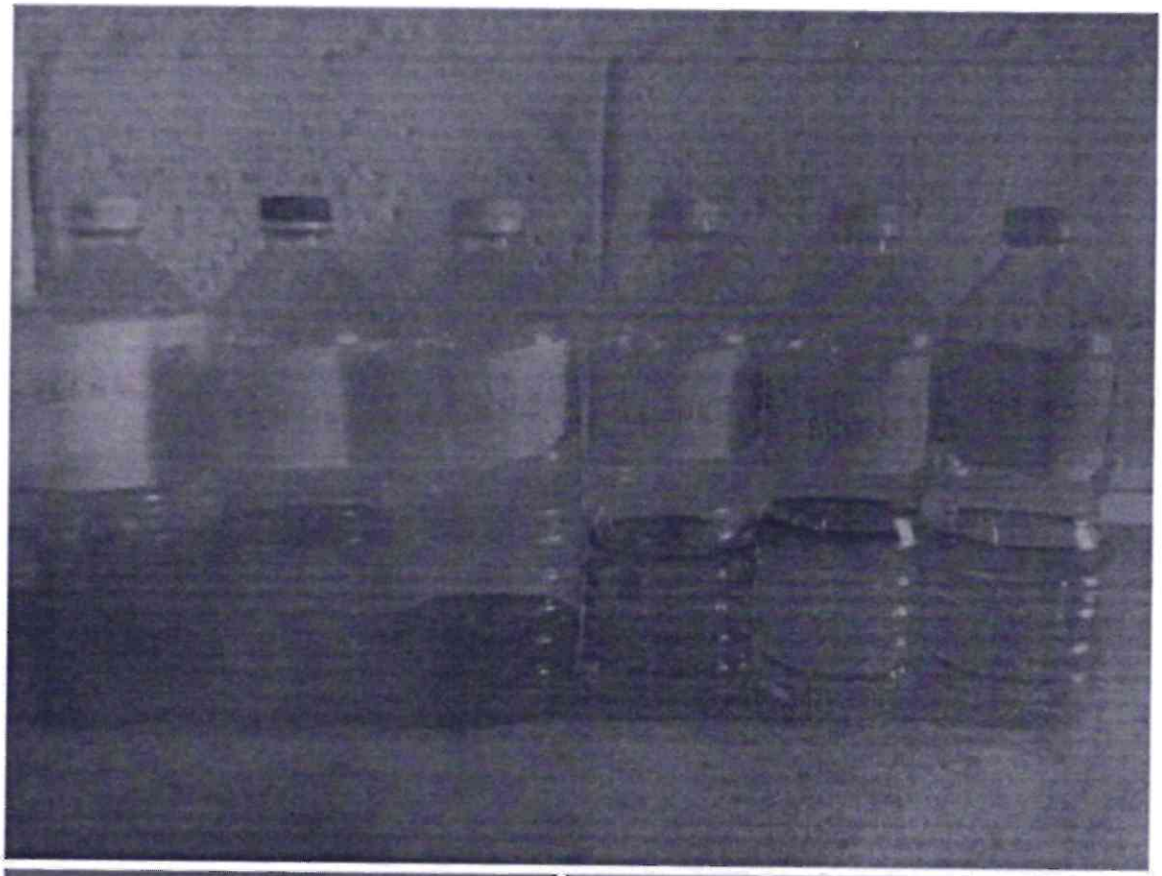

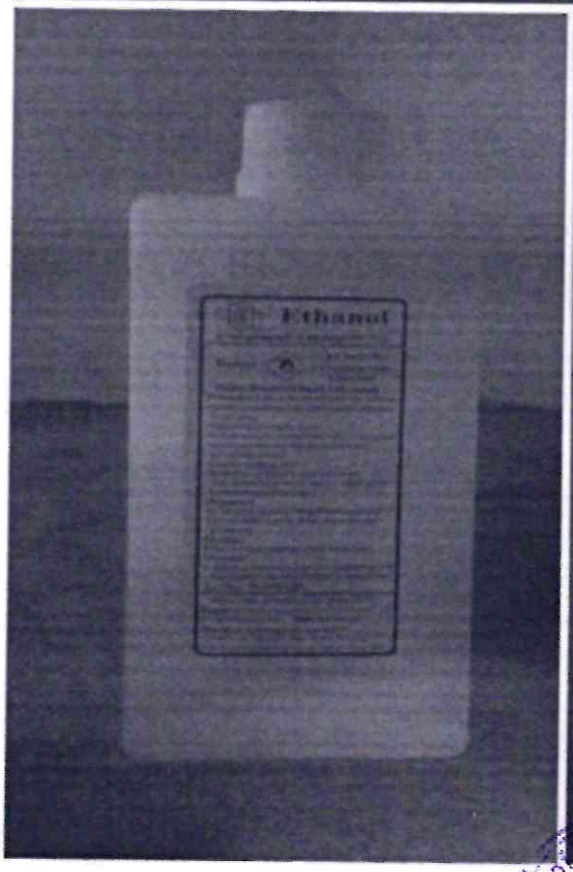

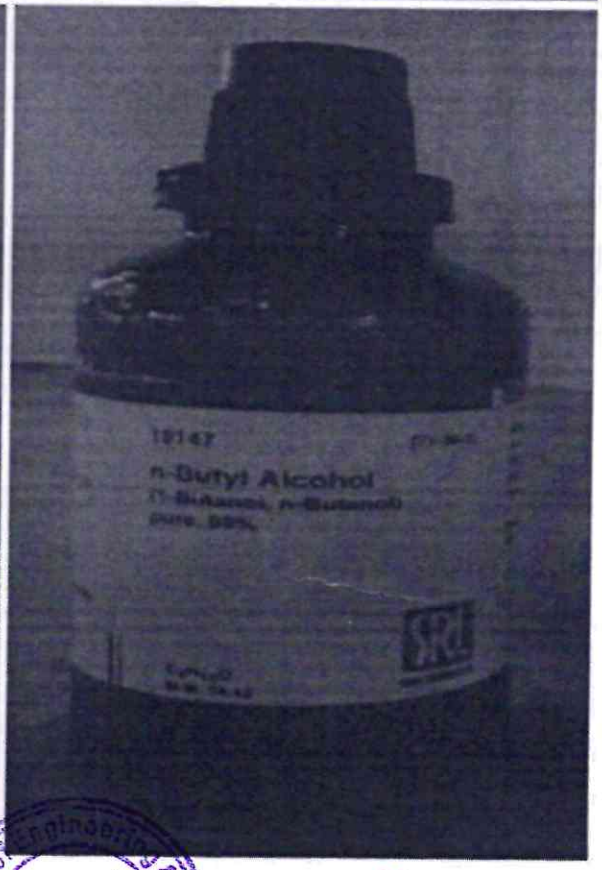

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CONCLUSION

Performance and emission characteristics of diesel, ethanol and n-butanol blends were investigated in four stroke diesel engine. Based on the experimental results, the conclusions can be summarized as follow:

• The SFC for BE10N4 blend was 0.25 kg/kW hr found to be lower than all blends at maximum load. The SFC for diesel is 0.28 kg/kW hr higher than all additives added blend.

• It was observed that, B10EN4 blend shows highest brake thermal efficiency (32%) at maximum load conditions. The diesel blend lowest brake thermal efficiency (28%) at maximum loading condition.

• The CO emission of B10EN4 was very low in the order of (0.027%) vol, when compared to other blends

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FABRICATION AND ANALYSIS OF CAST ALUMINIUM REINFORCED WITH SiCp AND TiB2 HYBRID COMPOSITES

A PROJECT REPORT

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ABSTRACT

Many aerospace components, sports cars, wear parts, seals and piston rings require lighter materials like Aluminum and magnesium that have higher strength and lighter weight. Cast Aluminum with TIB: reinforcement formed In-situ has still higher strength and stiffness when compared to Al/SICP MMCs AI/TIB: MMCs can also be fabricated easily by vortex method which is not very much different from that of the AVSICp MMCs cited in the above paragraph. These properties make AI/TIB2 MMCs very much attractive. Al/TiB, MMCs can be competitive to magnesium, presently used material, the melting and fabrication of which is very complicated. Under all these circumstances: Aluminium becomes an attractive choice whether it is cast as such or reinforced with SiC or TiB. Hence the characterization of all these Aluminium based materials for the mechanical properties like tensile strength,, fracture toughness, hardness and fatigue strength becomes important.

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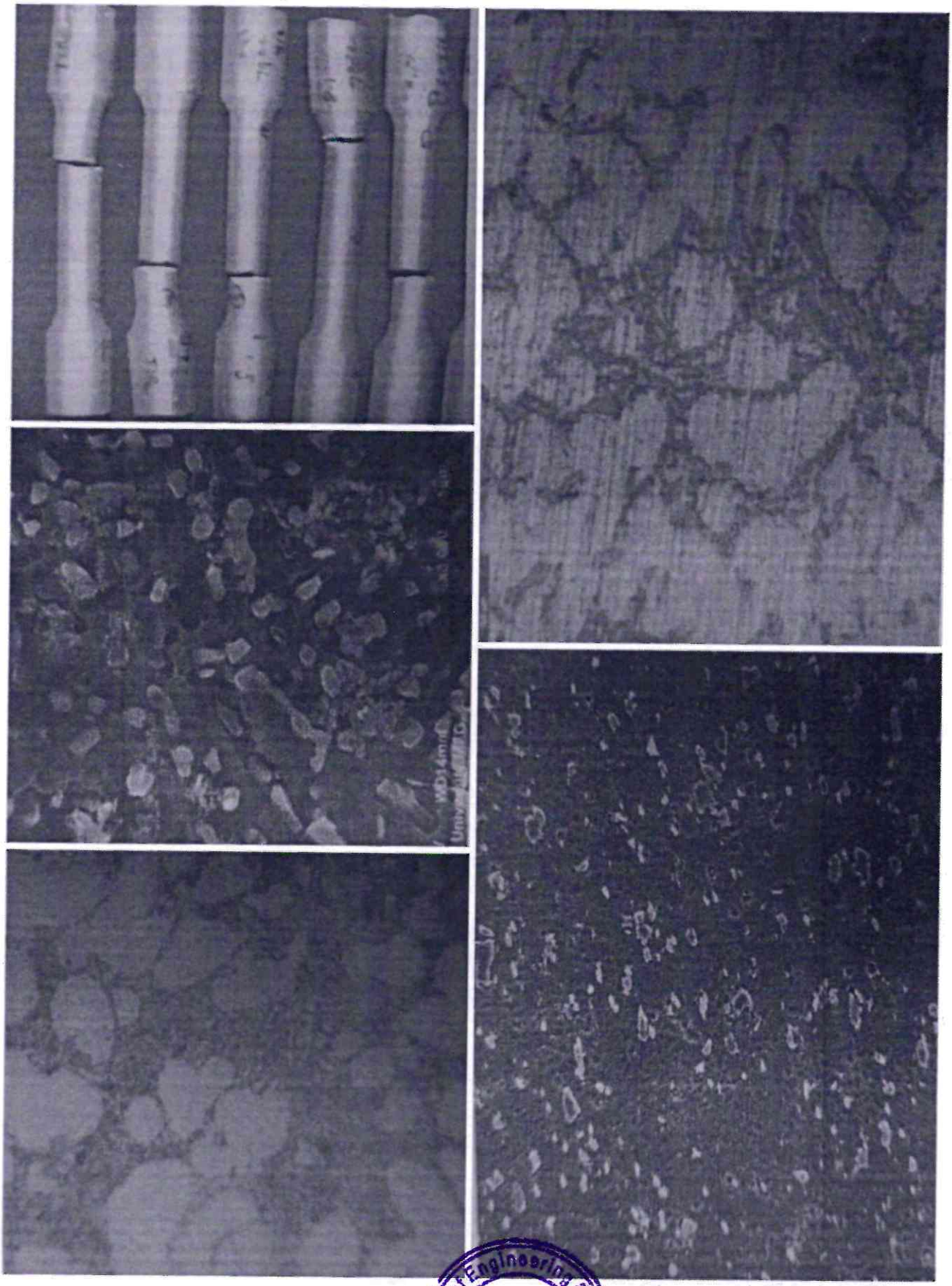

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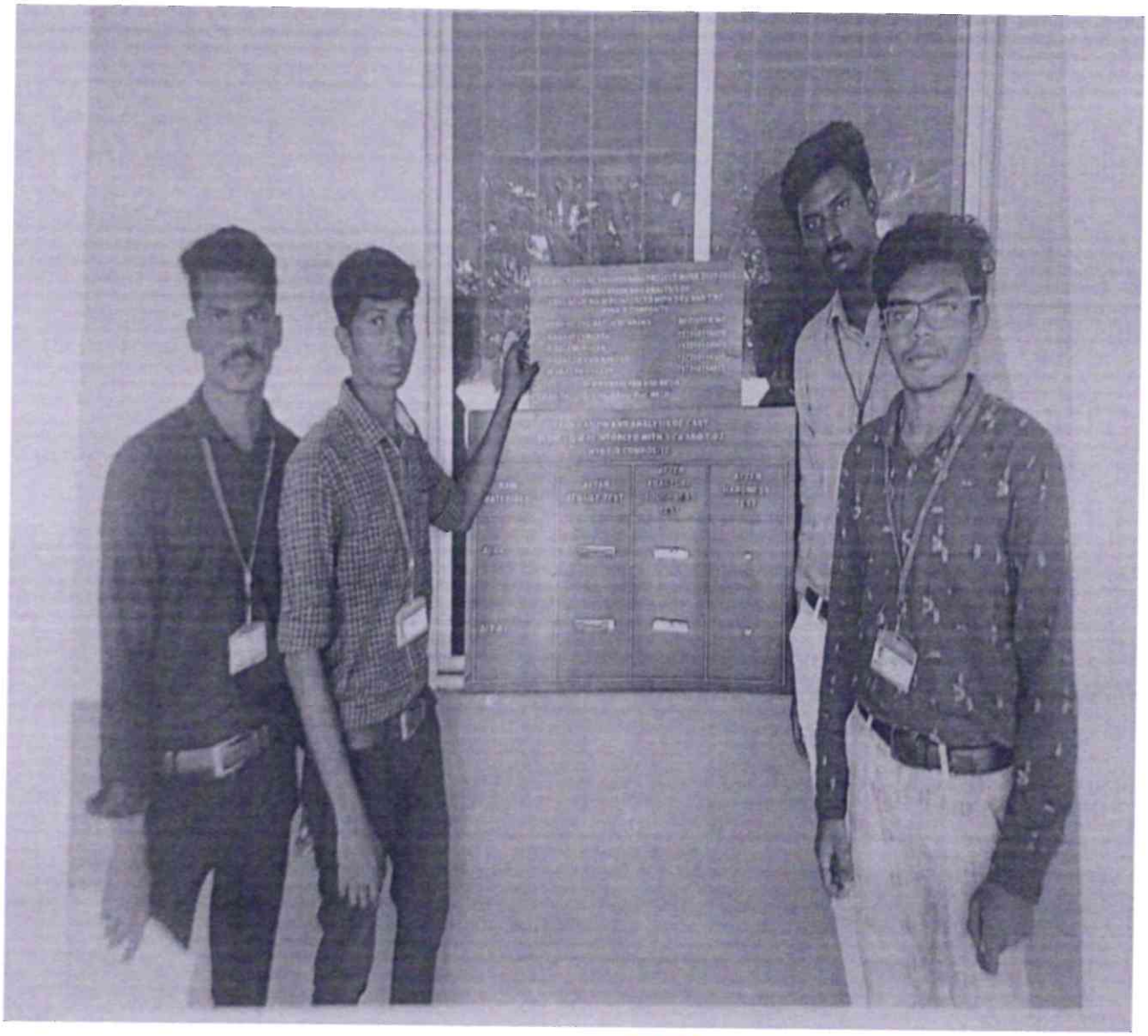
CONCLUSIONS

The AU/SIC MMCs and Al/TIB; MMCs were successfully fabricated using stir casting route. Micro Structural analysis shows the presence of SiC and TIB and its distribution in the metal matrix. The XRD graphs shown confirm the presence of TiB: particles. At pouring temperature of 820'C the number of number of TiB: particles are maximum leading to the highest mechanical properties observed corresponding to this temperature. In case of AUSIC distribution of reinforcements is better corresponding to higher pouring temperature and this is the reason for higher mechanical properties corresponding to higher pouring temperature. Also at the lowest pouring temperature in range tested (730° C) for Al/SIC MMCs agglomeration of SiC is found to be more leading to lower mechanical properties.



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MECHANICAL AND WEAR BEHAVIOUR OF LM6 WITH Al_2O_3 AND COPPER POWDER USING STIR CASTING

A PROJECT REPORT

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Submitted for the viva voice held on 22/06/2022

22/6/22	22/06/2022
INTERNAL EXAMINER	**EXTERNAL EXAMINER**

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MECHANICAL AND WEAR BEHAVIOUR OF LM6 WITH ALO, AND COPPER POWDER USING STIR CASTING

A PROJECT REPORT SUBMITTED BY

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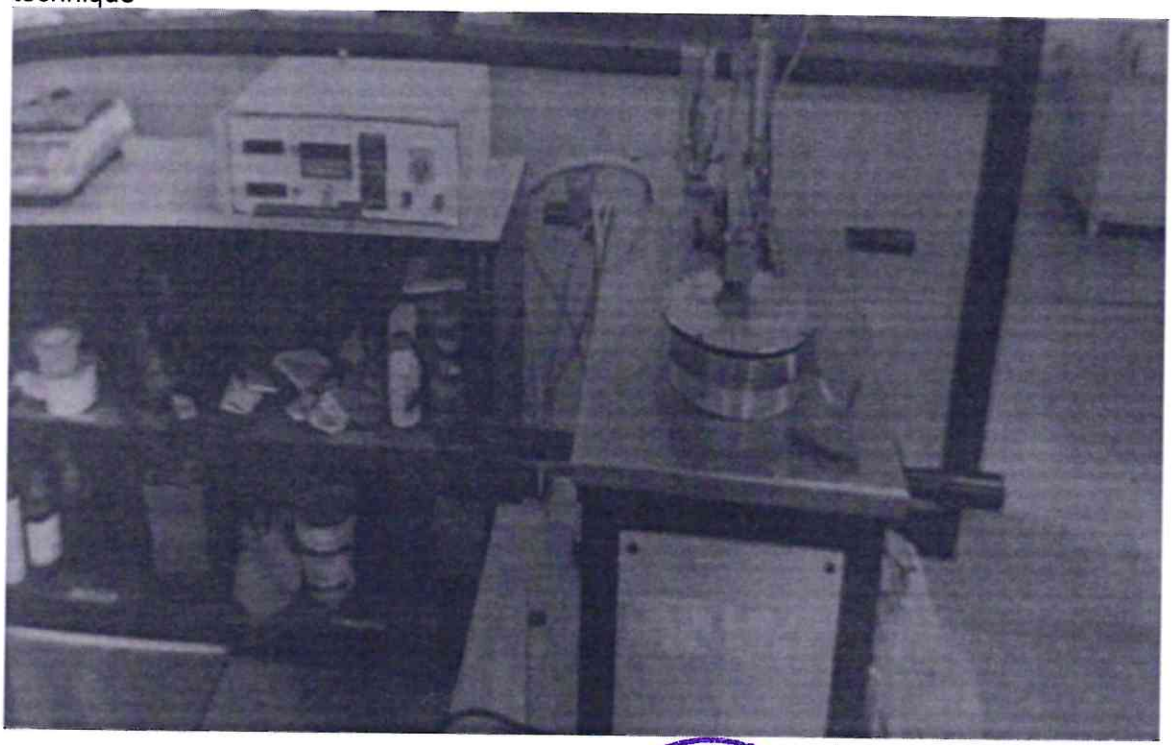
ABSTRACT

In general. Aluminium alloy components are light in weight and widely used in general engineering application. LM6 aluminium alloy is generally employed for producing sliding contacts such as pistons, bearings, sheaves, pulleys etc. Hence the work deals with the aluminium based metal matrix composite and then studying its Wear properties and Hardness test before and after Wear with produced test equipment.

The un lubricated pin-on-disc wear testing were conduced to examine the wear behaviour of aluminium alloy and its composites. The sliding wear tests were carried out at various load (10N-30N), speeds (1.5m/s) and sliding distance (500-2000m). In this present study a modest attempt has been made to develop all properties with low cost method of casting technique



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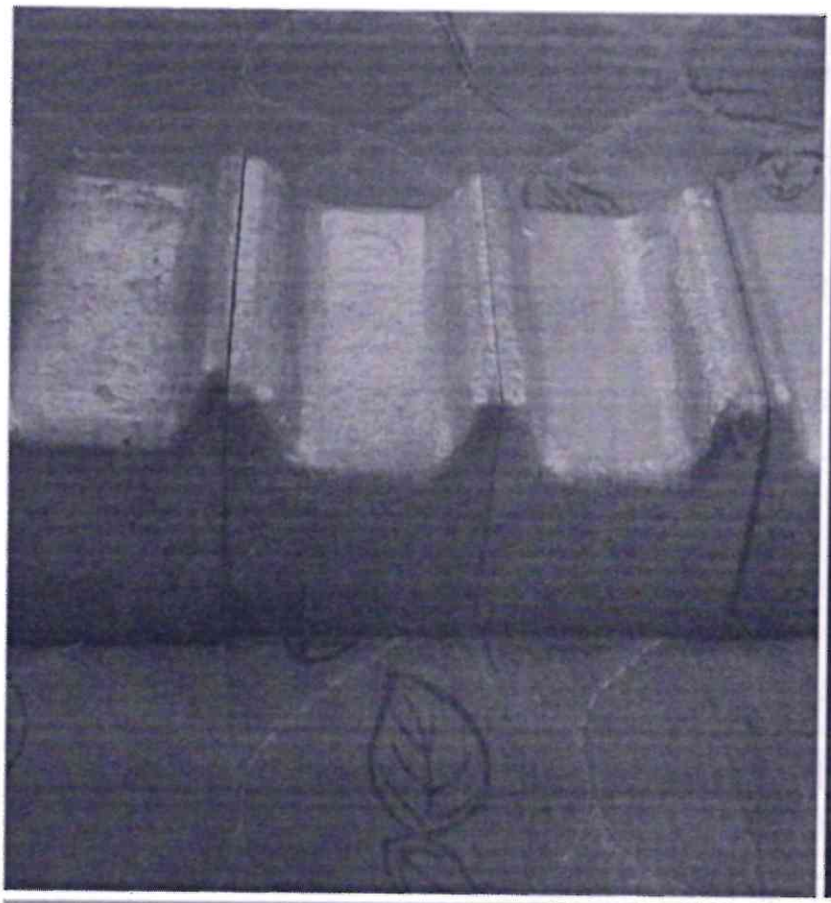

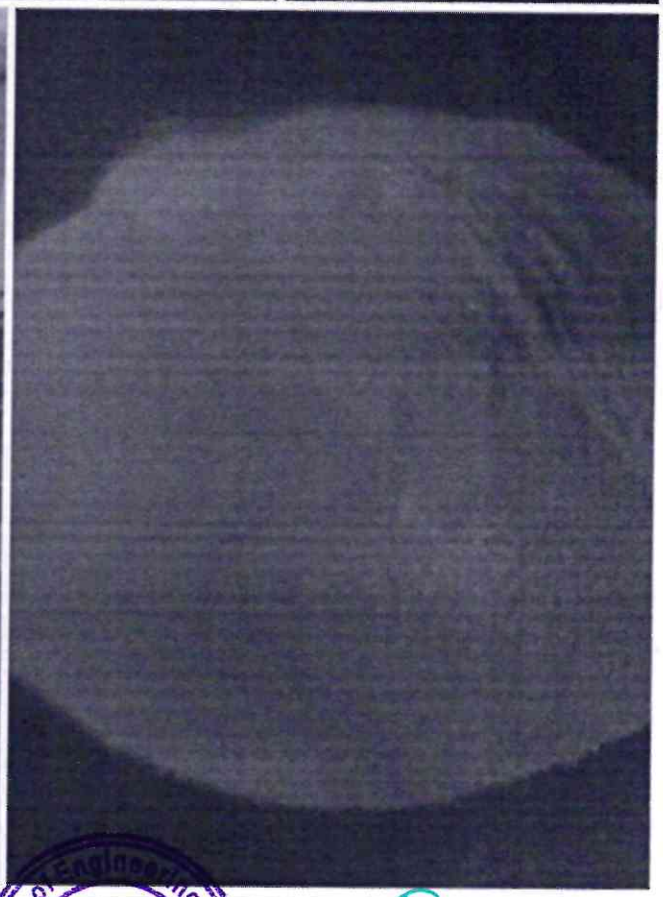

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CONCLUSION

The conclusions drawn from the present investigation are as follows: Aluminium matrix composites have been successfully fabricated by stir casting technique with fairly uniform distribution of particles.

The Hardness increases with the increases of reinforcements such as aluminium oxide and copper powder.

The weight loss of the composite material decreases with the increase of reinforcements such as aluminium oxide and copper powder.

We observed improving mechanical properties like wear and hardness strength by varying wt% of copper powder and constant aluminium oxide in composite
material.

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DESIGN AND FABRICATION OF SOLAR POWERED WHEEL CHAIR

A PROJECT REPORT

Submitted by

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P.KARTHIKRAJAN	712218114020
M.SANKARAPANDI	712218114043

in partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

PARK COLLEGE OF ENGINEERING AND TECHNOLOGY
COIMBATORE-641659

ANNA UNIVERSITY: CHENNAI 600025

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BONAFIDE CERTIFICATE

Certified that this project report "**DESIGN AND FABRICATION OF SOLAR POWERED WHEEL CHAIR**" is the bonafide work of "R.RAGUPATHI , M.MOHAMED NASIM , P.KARTHIKRAJAN , M.SANKARAPANDI" who carried out the project work under my supervision.

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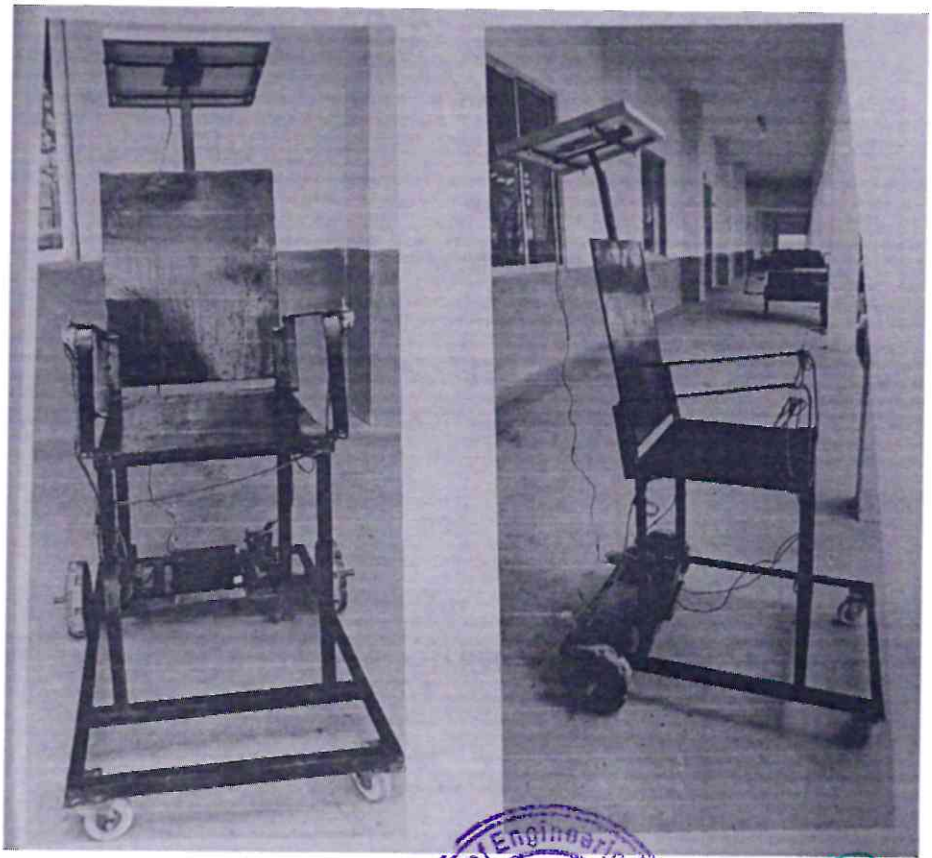
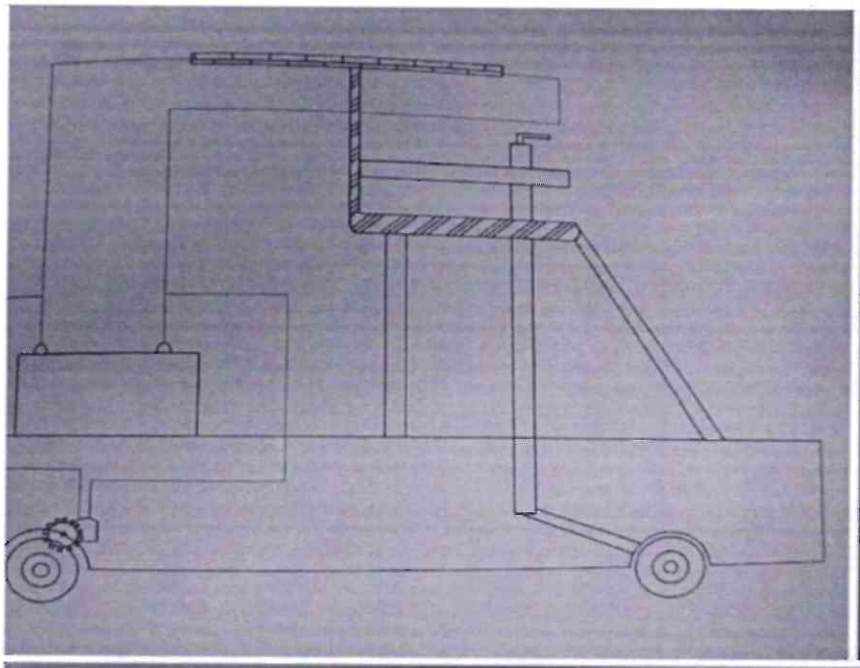
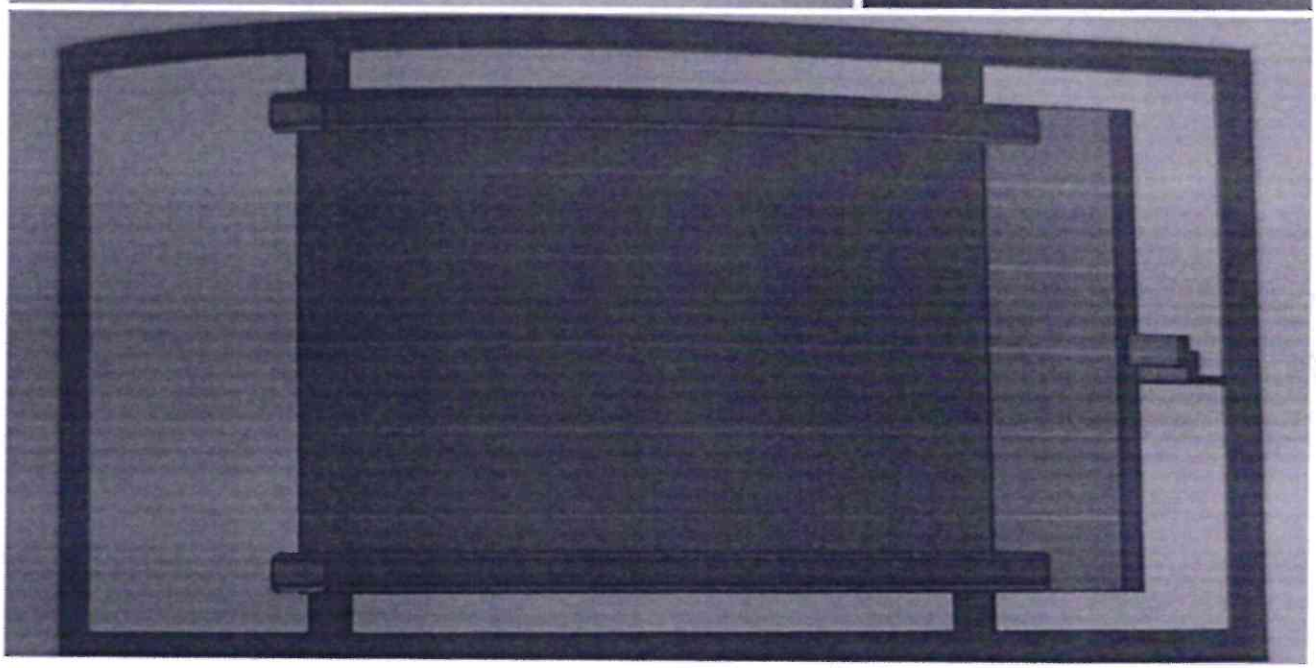
ABSTRACT

The handicapped wheel chair is a mechanism which is used for moving. This is used for handicapped person for living like the normal persons do.For making the handicapped person's job easy (ie., they can move from one place to other by using this wheel chair. Two way switch is used to control the flow wheel chair in forward or reverse direction. The Battery used to drive the D.C motor. The wheel chair is particularly used for the physical disabled person's. It can be used for taking books from the self, taking dress from the self's and this also can be used for cooking. The left and right turning of the wheel chair is done by liver mechanism. This arrangement is fixed in the front wheel of the chair. The spur gear mechanism is arranged by the back wheel of the chair by moving the vehicle in forward and reverse direction. The power supply to the motor is given by using battery. The battery is charged by the solar panel.Solar electricity is the technology of converting sunlight directly in to electricity







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CONCLUSION

This mechanism is designed and developed in order to human fatigue. The moving of the wheel chair is at a constant speed for 12V battery which is charges through solar cell. This is very useful project. As it serves for the handicapped, less maintenance is required for this drive. In the past one person is need for moving and in nowadays only one advantage is there that is moving. By using this project the handicapped may be like as the normal person do. The cost may be little bit high because of the other advantage. But comparing to other it has several.

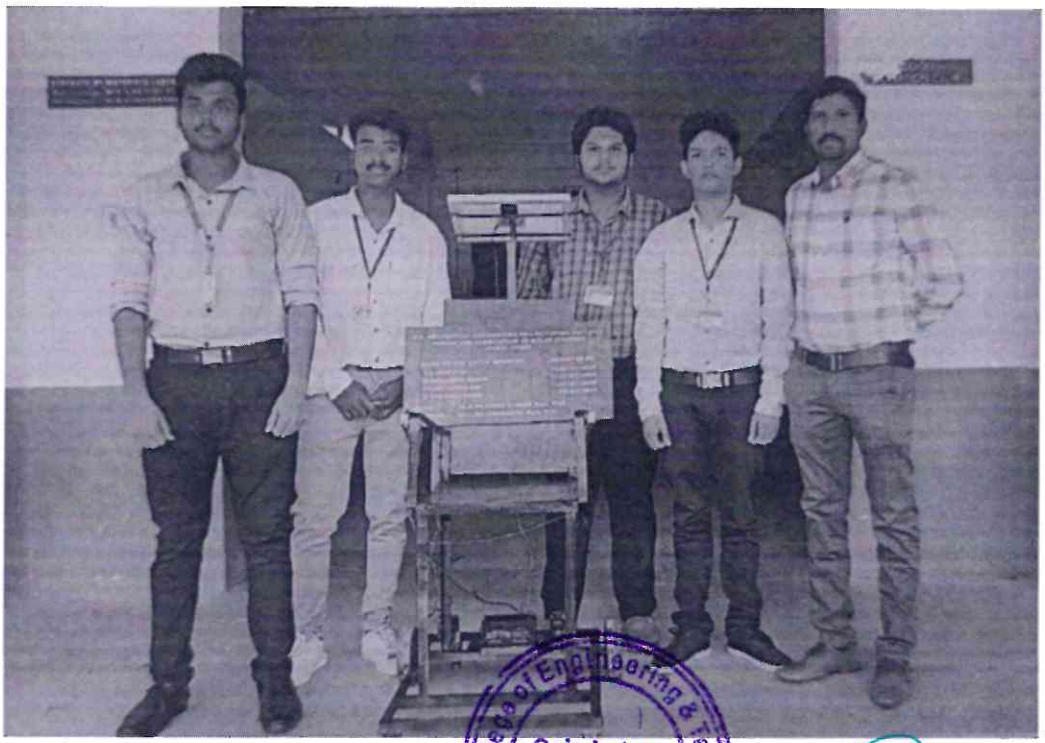
ADVANTAGES

Cost is low.
Maintenance is easy.
Parts are easily available in the market.

DISADVANTAGES

It can be only used for particularly for the handicapped persons (i.e.)
only can be used for the leg handicapped persons.
The speed of the wheel chair is only 2km/hr.

Total cost : 11000



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GEM Equipments (P) Ltd.

GEM
Compressed Air & Cooling Systems

Date : 10/11/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.Abishek.S.R. and Mr.Alagesan .M and Dinesh.K and Mr Gokul.K has undergone his internship in Design Department as trainee at GEM Equipments, Coimbatore, from 17th November 2021 to December 2021.

During the period of his internship program, he has demonstrated his skills with self-motivation to learn new skills. He was punctual, Hardworking and Inquisitive.

We wish him all the best for his upcoming future.

For GEM Equipments Pvt. Ltd.

C.Ravi Selvan

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