



SRI VENKATESWARA
COLLEGE OF ENGINEERING AND TECHNOLOGY
Thirupachur-631203, Tiruvallur TK & DT
Approved by AICTE New Delhi & Affiliated to Anna University, Chennai
(A Telugu Minority Institution)

**List of Students Under taking Project / Mini Project/ Internship for the Academic Year
2022-2023**

Program Name: MECHANICAL ENGINEERING

MINI PROJECT BATCH LIST 2022-2023

BATCH NUMBER	REGISTER NUMBER	STUDENTS NAME	PROJECT TITLE	NAME OF THE GUIDE
1	112420114016	V. Vetrivel	Chainless bicycle project	Mr Rajasekar Mech/ap
	112420114313	N. Divakar		
	112420114307	R. Ashwathra		
	112420114361	P. Pradeep Kumar		
2	112420114339	R. Karthik	Design and fabrication pneumatic VICE	Mr Rajasekar Mech/ap
	112420114359	R. pineganes		
	112420114344	K. Mathan		
	112420114388	D. Saravanan		
3	112420114320	K. Gokulan	Design and fabrication of ballistic impact response of the glass/natural fiber with Nano silica with epoxy composites	Mr Rajasekar Mech/ap
	112420114327	M. Gunasekaran		
	112420114421	T. Yuvaraj		
	112420114323	T. Gopinath		
4	112420114400	K. Udhayakumar	A study of Eye blink sensor anti sleep alarm	Mr.Nandhakumarmech/AP
	112420114402	P. Vasanth		
	112420114408	P. Vignesh		
5	112420114007	P. Kamesh	Gearless power transmission	Mr.Nandhakumarmech/AP
	112420114310	S. Chandrasekar		
	112420114009	S. Mohandas		
	112420114354	S. Niranga kumar		
6	112420114336	G. Karan	Fabrication of Automatic Bumper and braking system	Mr Rajasekar Mech/ap
	112420114379	M. Sakthivel		
	112420114391	J. Sedhu bala		
	112420114395	J. Stephen raj		
7	112420114409	R.Vignesh	A study on Speed Breakup Power Generation	Mr.Nandhakumarmech/AP
	112420114423	Y.Jagadeeshwaran		
	112420114373	P.J. Rakesh		
8	112420114004	M.Durga prasath	Design and fabrication of Four jack Mechanism	Mr Rajasekar Mech/ap
	112420114005	D.K.Ezhilarasan		
	112420114305	K.Arun pandian		
	112420114302	M.Aravindan		
9	112420114306	P. Arun raj	Design and fabrication of Simple portable Drilling Equipment	Mr Rajasekar Mech/ap
	112420114309	A.Bilal Mohamad		
	112420114381	M. Samuvel raj		
	112420114317	K. Fahim		



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10	112420114318	D. Ganesh Aravindan	Design and fabrication of Electromagnetic Suspension System	Mr Rajasekar Mech/ap
	112420114350	R. Nandhakumar		
	112420114367	V. Raghul		
	112420114386	M. Saravana Kumar		
11	112420114352	M. Naveen kumar	Design and fabrication of paper cutting machine using Geneva mechanism	Mr Rajasekar Mech/ap
	112420114324	P. Gowtham		
	112420114347	D.Murali		
	112420114364	S. Praveen kumar		
12	112420114001	K. Bramaiya	Design and fabrication of Electromagnetic breaking system	Mr Rajasekar Mech/ap
	112420114007	P. Kishore		
	112420114301	Anbazhagan		
	112420114312	S. Dhanasekar		




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CHAINLESS BICYCLE PROJECT

Submitted by

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In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN MECHANICAL

ENGINEERING

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THIRUPACHUR – 631203



APRIL/MAY - 2023



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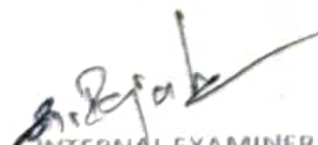
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Mr.RAJASEKHAR,ME
PROJECT GUIDE

Dept.Of Mechanical engineering
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Submitted for the general viva voice held on.......... at Sri Venkateswara
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INTERNAL EXAMINER





PRINCIPAL

EXTERNAL EXAMINER
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1. ABSTRACT

The Parker Hannifin Corporation Hydraulics Department hosts the annual Chainless Challenge, which challenges universities to design the best bicycle with a hydraulic connection and no chain between its pedals and drivewheel. The University of Michigan and the United States Environmental Protection Agency (EPA) have charged us to pioneer the first U of M Hydraulic Bicycle Team in the same spirit as the Solar Car and mini-Baha teams. The objectives of our project are to 1) design the bicycle with the greatest possible acceleration due to a pre-charged hydraulic accumulator and 2) design a pedaling system that allows a cyclist to continue riding after initial acceleration. This involves the use of a hydraulic pump and motor geared to the pedals and drivewheel, respectively.




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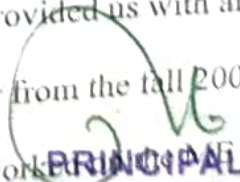
12. CONCLUSIONS

Our initial hope of redesigning a recumbent bicycle for competition in the Parker Chainless Challenge has ran into problems due to the high cost associated with recumbent bicycles. However, upon further research we have come across a better design to use, that of the Go-One, which reaches much higher speeds than a normal (or recumbent bicycle). Although there is also a high associated cost, we may be able to borrow one for the competition, which would be ideal. We are focusing solely on the acceleration part of the challenge, since the pumps needed for the project have to large a lead time. We will have a working prototype for the design expo that uses an initial charge in the accumulator for the hydraulic power.

13. ACKNOWLEDGMENTS

First and foremost, we would like to acknowledge everyone involved in the teaching and administering of ME 450, without whom we would have had neither the funding nor the knowledge of how to undertake such a project. We would also like to acknowledge our sponsor David Swain and the United States Environmental Protection Agency for sponsoring the project and providing a wealth of helpful advice, as well as for donating many parts to the cause. Thanks also to Bob Coury and Marv Cressey at the University of Michigan machine shop, whose expert guidance gave us the skills necessary to bring our CAD models from the computer to a physical product. Lastly, thanks to Jason Moore who provided us with aid not only in person, but also in the quality and clarity of his final paper from the fall 2005 semester. On a related note, we would like to thank all the teams who worked on the ME 450 RBS Bicycle, provided a foundation for our own.




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DESIGN AND FABRICATION

PNEUMATIC VICE

A PROJECT REPORT

Submitted by

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K.Mathan (112420114344)

D.SARAVANAN (112420114388)

In partial fulfillment for the award of the degree

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IN

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THIRUPACHUR – 631203



APRIL/MAY - 2023

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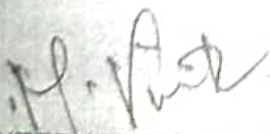
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PROJECT GUIDE

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INTERNAL EXAMINER



EXTERNAL EXAMINER
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ACKNOWLEDGEMENT

We would express our gratitude to our beloved chairman
Dr.Purusothaman., Sri Venkateswara college of Engineering and
Technology, Thirupachur for having arranged to do this project.

We would also like to express our deep sense of gratitude to our beloved
Principal S.Palani for giving all the encouragement and enthusiasm in
the successful completion of the project work.

Our bountiful thanks to our H.O.D JASIGANDURAI

Department of Mechanical Engineering, Sri Venkateswara College of
Engineering
and Technology, Thirupachur for his concern over to fulfill our project.

We extend our hearty thanks to Mr.RAJASEKHAR,M.E, Our project
guide, for his inspiration, invaluable guidance and constant
encouragement and over which
Helped us to design this project.

Our noble thanks to all faculty members of mechanical department,
system administrator and lab technicians who rendered their hands to
complete our project with great success.




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CONCLUSIONS

The project thus gives a system that can easily fixed the workpice & work on it. The pneumatic vice provide extremely high clamping force & High accuracy and repeatability. Pneumatic system can get high production rate. When compressed air is released from the pneumatic components then noise can produced. The operation of pneumatic systems does not produce pollutants.

So ,The pneumatic vice can be use easily.




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**DESIGN AND FABRICATION OF BALLISTIC IMPACT
RESPONSE OF THE GLASS/NATURAL
FIBER WITH NANO SILICA WITH EPOXY COMPOSITES**

A PROJECT REPORT
Submitted by

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In partial fulfillment for the award of the degree

OF

BACHELOR OF ENGINEERING

In

MECHANICAL ENGINEERING



**SRI VENAKATESWARA COLLEGE OF ENGINEERING AND
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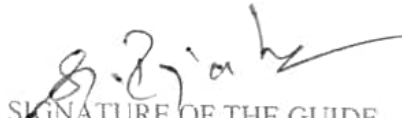
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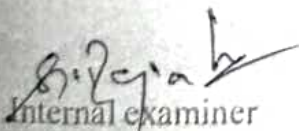
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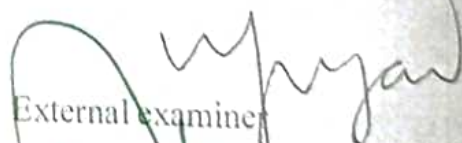
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Submitted for the Anna University Design and Fabrication Project Viva- voice held on _____ during the year 2023-2024



Internal examiner



External examiner



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ACKNOWLEDGEMENT

We wish to express our sincere thanks and heartfelt gratitude to our chairman **Dr.S.K.PURUSHOTHAMAN, M.E., PH.D.**, for managing trustees for their support through the institution.

We express our gratitude and sincere thanks to principal **Dr.P. RETHINASABAPATHY M.E.**, for providing us the necessary facilities and opportunity to carry out this project.

We take immense pleasure to thank our **MR.JAI SINGH DURAI M.E.**, head of the department of mechanical engineering for his valuable guidance, encouragement, suggestions, and advise towards nourishment of our career.

We express our sincere thanks to our project coordinator **MR. JAI SINGH DURAI M.E.**, professor, for his unstinted guidance at every stage. His constant encouragement and advice provide provided us with a drive to see that endeavor reaches the level of excellence required in this field.

MR.D.RAJASEKAR M.E., Department of Mechanical Engineering for his encouragement, valuable guidance, inspiration, discussion and needful suggestion in all the stages of our project.

We are extremely indebted to all the staff members of department of mechanical engineering, for their continuous guidance.

Our special thanks to our parents who motivated and helped us to make this project a successful one. We take this opportunity to express our gratitude to all, whose contribution in the project work can never be forgotten.



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ABSTRACT

The present engineering applications require new and better materials for the replacement of the existing ones. As of now, various kinds of research were going on in the materials industry such as composite materials, especially the laminated composites. When compared to raw or pure or conventional materials, composites have high strength to weight ratio. Fiber reinforced polymer composites are being used in a variety of applications because of their advantages such as ease and various methods of fabrication, relatively low cost of production, superior strength when compared to neat/pure polymer resins. Synthetic fibers such as glass, carbon, basalt etc. have high specific strength but their applications were limited due to higher cost of production. The present research focuses on the characterization and testing of Basalt/Polypropylene mesh epoxy composites with various stacking sequences to study the impact on mechanical properties of these materials. These materials are fabricated and run through various tests to analyze the effects of stacking polymers.

The objective of this study is to investigate and evaluate the ballistic impact response and energy absorbed by the different stacking sequence of pure and hybrid composites.




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CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 CONCLUSION

In this current project six different samples made of basalt/polypropylene mesh were made using six different stacking sequences to be analysed for impact response.

The conclusions made from the current work were that the hybrid composites possess better energy absorption characteristics and superior load bearing abilities compared to pure composites.

The maximum energy absorption was observed in alternately stacked basalt and poly-propylene plate i.e. BP4 followed by pure basalt plate and the least energy absorption was given by BP2 sample.

The maximum area of damage was seen in BP1 sample while the least amount of area damage was received by BP4.

6.2 FUTURE WORK

The above discussed work can be extended in the following ways.

- The damage assessment to be done through non-destructive testing.
- The energy absorption and the damage area assessment to be done at a higher impact velocity than 102m/s.



A handwritten signature in black ink, appearing to be "S. Venkateswara", written over the printed name of the Principal.

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Sri Venkateswara College of
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"A STUDY ON EYEBLINK SENSOR ANTI SLEEP ALARM"

In Partial Fulfillment of the requirement
For the Award of the Degree
of
BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING

Submitted By

KUDHAYA KUMAR

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APRIL/ MAY 2023



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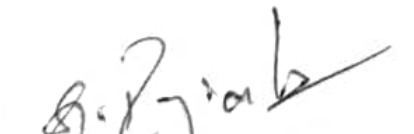

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Submitted for Anna University Eyeblink Sensor Anti Sleep Alarm Project Viva-Voice examination held on 29/05/2023 During the year 2022-2023.


INTERNAL EXAMINER




EXTERNAL EXAMINER

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Abstract

Electrooculogram (EOG) data was used to develop, adjust and validate a method for drowsiness detection in drivers. The drowsiness detection was based on changes in blink behaviour and classification was made on a four graded scale. The purpose was to detect early signs of drowsiness in order to warn a driver. MATLAB was used for implementation.

For adjustment and validation, two different reference measures were used; driver reported ratings of drowsiness and an electroencephalogram (EEG) based scoring scale. A correspondence of 70 % was obtained between the program and the self ratings and 56 % between the program and the EEG based scoring scale.

The results show a possibility to detect drowsiness by analyzing blink behaviour changes, but that inter-individual differences need to be considered. It is also difficult to find a comparable reference measure. The comparability of the blink based scale and the EEG based scale needs further investigation.




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13 Conclusions

The results indicate that it is possible to detect drowsiness by analyzing blink behaviour changes, but inter-individual differences exist. This is a problem, as the model assumes that all participants develop drowsiness in the same way. It is also difficult to find a comparable reference measure.

A better correspondence was obtained in the model with KSS as reference than in the model with OSS as reference for most participants. Unexpectedly, KSS was found a better reference measure than OSS. The reason was a sometimes very low variability in OSS. The problem with KSS however, was a ceiling effect, i.e. the participants seemed to reach the last steps too soon.

Drowsiness was in many cases not found in the EEG even though a change in the eye parameters was detected. It could thus be assumed that the eye parameters were better than EEG for an early detection of drowsiness. The comparison of the scales was difficult as it was not sure if they covered the same physiological states.

When analyzing the results it was shown that the program identified some participants as being more drowsy and some less compared to the references. If believing that the reference measures were true measures of drowsiness, this implies that inter-individual differences exist in the development of drowsiness.

Drowsiness stage two ("low vigilance") was not found possible to detect in this project. The reason was a lack of participants feeling themselves alert. To find a reliable boundary for this stage, more data from people being alert would be required.

Future possibilities

Future possibilities could be to consider inter-individual differences in the model. This would probably require information about the change of the eye parameters during the development of drowsiness though. It would be preferable to be able to predict drowsiness based only on the eye behaviour in the beginning of the alert condition. It is also necessary to further investigate the comparability of the drowsiness scale with EEG to see if it is possible to compare changes in blink behaviour with changes in the EEG content, or if they measure different physiological processes.




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GEARLESS POWER
TRANSMISSION

A PROJECT REPORT
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NIRANGANKUMAR.M	(112420114354)

In partial fulfillment for the award of the degree
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IN
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APRIL/MAY - 2023



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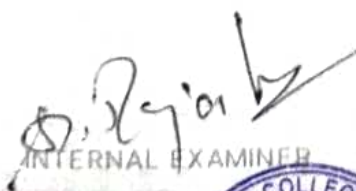
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PROJECT GUIDE

Dept.Of Mechanical engineering

SVCET,Thirupachur-631203

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INTERNAL EXAMINER




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ABSTRACT

Power transmission for skew shafts is with the help of either crossed helical gear or worm gear or hypoid gears in a machine, but the manufacturing of these gear is very complex, power loss in gears due to sliding motion and the shaft orientations is very limited, so need arises for a better system. In Gearless power transmission for skew shafts which reduce the losses, cost & save the time and space. This system allows the changing in the orientation of shafts during motion which is very interesting and fascinating about this mechanism. In this transmission system number of pins or links used must be odd 3,5,7,9... Pins or links are fixed in the drilled holes at the both shaft ends due to which motion is transferred.




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CHAPTER 6

CONCLUSION

This projects which looks very simple & easy to construct was actually very difficult to conceive & imagine without seeing an actual one in practice. Motions demands to be studied first & we have done that very thing. We find that while acceptable analysis for existing mechanism can often be Made quite easily we cannot without insight & imagination make effective synthesis of new mechanism hence we are mould to present this our project gear less transmission at 90 degree (El-bow mechanism) which we have managed to successfully device after long & hard input in conceiving its working principle.

FUTURE SCOPE

Torque bearing capacity can be increased for machines.

Flexible bent links can be used with efficient transmission

Sliding mechanism can be used for triggering mechanism operations replacing cams when the arms are linked

REFERENCE

[1]Prof. A. Kumar and S. Das, "An arrangement for power transmission between co-axial shafts of different diameter", International Journal of Engineering Research and Technology (IJERT), ISSN: 2278-0181, Volume 2, Issue 2, March 2013, Page .no: 338-347.

[2]Prof. Bardiya, T. karthik, L. BhaskaraRao "Analysis and Simulation of Transmission Mechanism", International Journal Of Core Engineering & Technology, Volume 1, Issue 6, September 2014, Page.no: 136-142.



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FABRICATION OF AUTOMATIC BUMPER AND BRAKING SYSTEM".

A PROJECT REPORT

Submitted by

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SAKTHIVEL M	112420114379
SEDHU BALAJ	112420114391
STEPHENRAJJ	112420114395

in partial fulfillment for the award of the degree
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MAY 2023

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report
"AUTOMATIC
SYSTEM"

FABRICATION OF
BUMPER AND BRAKING

is the bonafide work of "KARAN G(112420114336),

SAKTHIVEL M, (112420114379), SEDHU BALAJ

(112420114391), STEPHENRAJ J (112420114395)"

who carried out the project work under my supervision.



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Submitted for Anna University Examination held on _____
the Academic year 2022-2023

During _____



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EXTERNAL EXAMINER

ACKNOWLEDGEMENT

We four students of Mechanical Engineering of 3rd year in ANNA UNIVERSITY, SRI VENKATESHWARA COLLEGE are preparing a 3rd year project name "FABRICATION OF AUTOMATIC BUMPER AND BRAKING SYSTEM". we whole heartedly express our sincere gratitude to MR RAJASEKAR who guided us for the completion of the third year project we are also thankful to all your teachers for explaining on critical aspects of topics related to the project we are also grateful to the assistance of workshop for permitting us to have some help for them. We would like thank all of the faculty member of all other respective departments for their intimate cooperation through out the period of project completion.


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ABSTRACT:


An automatic braking system using IR sensors is a technology that is designed to improve vehicle safety by automatically applying the brakes when obstacles are detected in the vehicle's path. The system uses infrared sensors to detect objects in front of the vehicle and automatically applies the brakes if the driver fails to respond to a potential collision.

The system consists of a set of IR sensors mounted on the front of the vehicle that continuously scan the area in front of the vehicle. The sensors send signals to a control unit that processes the information and determines if a collision is imminent. If a collision is detected, the control unit sends a signal to the braking system to apply the brakes and bring the vehicle to a stop.

The automatic braking system using IR sensors has the potential to significantly reduce the number of accidents caused by driver error or distraction. The system is particularly useful in situations where the driver is unable to respond in time to a potential collision, such as in heavy traffic or during poor weather conditions.

The system is still in development and requires further testing and refinement before it can be implemented in production vehicles. However, it holds great promise as a technology that can improve vehicle safety and save lives on the road.




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6-CONCLUSION

- The automatic braking system using IR sensor is an innovative technology that helps to prevent accidents on the road. It is a reliable and efficient system that can detect obstacles and automatically apply the brakes to prevent collisions.
- The IR sensor technology uses infrared light to detect obstacles in the path of the vehicle. It works by emitting a beam of light and measuring the amount of reflection to determine the distance of the obstacle. This information is then used to activate the automatic braking system.
- This project presents the implementation of an Automatic Braking System for Forward Collision Avoidance, intended to use in vehicles where the drivers may not brake manually, but the speed of the vehicle can be reduced automatically due to the sensing of the obstacles.
- With this future study and research, we hope to develop the system into an even more advanced speed control system for automobile safety, while realizing that this certainly requires tons of work and learning, like the programming and operation of microcontrollers and the automobile structure. We believe that the incorporation of all components in Automatic Braking System will maximize safety.




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"A STUDY ON SPEED BREAKUP POWER GENERATION"

In Partial Fulfillment of the requirement
For the Award of the Degree
of

**BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING**

Submitted By

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ANNA UNIVERSITY

CHENNAI - 25

APRIL/ MAY 2023



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During the year



INTERNAL EXAMINER



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EXTERNAL EXAMINER

ABSTRACT

In the present scenario power becomes major need for human life. Due to day-to-day increase in population and due to decreasing the conventional sources, it becomes necessary that we must depend on non-conventional sources for power generation. While moving, the vehicles possess some kinetic energy and it is being wasted. This kinetic energy can be utilized to produce power by using a special arrangement called "POWER HUMPS". The Kinetic energy of moving vehicles can be converted into mechanical energy of the shaft through roller chain mechanism. This shaft is connected to the electric dynamo and it produces electrical energy proportional to traffic density. This generated power can be regulated by using zener diode for continuous supply. All this mechanism can be housed under the dome like speed breaker, which is called hump.

The generated power can be used for general purpose like streetlights, traffic signals. The electrical output can be improved by arranging these power humps in series this generated power can be amplified and stored by using battery. The maintenance cost of hump is very less. By adopting this arrangement, we can reduce the demand to some extent.

This is a mechanical project report on power generation using speed breakers. This project harvests energy from speed breaker by making gear arrangement and using battery. By this way large amount of electricity can be generated and if implemented will be very beneficial for government. The principle involved in this project is potential energy to electrical energy conversion. There are 3 different mechanism from which power can be generated from speed breakers which are crank-shaft mechanism, roller mechanism and rack-pinion mechanism.




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CHAPTER 6

CONCLUSION

Energy is an important input to sustain industrial growth and standard of living of a country and can be directly related to per-capita energy consumption. The conventional sources energy like coal, oil, uranium etc.. are depleting very fast and by the turn of the century man will have to depend upon non-conventional sources of energy for power generation.

1. The various types of non-conventional sources of energy are solar energy, wind energy, biogas etc... now by developing "Power ramp" we can generate power without utilizing any external sources mentioned earlier.
2. Vehicular traffic in big cities is more, causing a problem to human being. But this vehicular traffic can also be utilized for power generation by means of new technique called "Power ramp". If it is placed in heavy traffic roads, the weight and kinetic energy of the vehicles can be used to produce mechanical power in shafts and this mechanical power is once again converted into electrical energy.
3. The major drawback of this Power ramp is design of springs. When we have less traffic and there is difficulty in design of springs also the generation of power is intermittent, we have to smooth out this variations.




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DESIGN AND FABRICATION OF

FOUR JACK MECHANISM

A PROJECT REPORT

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IN

MECHANICAL ENGINEERING



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ACKNOWLEDGEMENT

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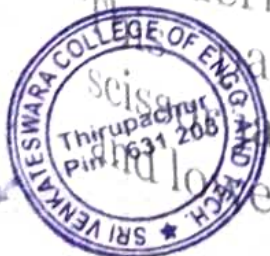
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CONCLUSION

Scissor Jacks are the ideal product to push, pull, lift, lower and position loads of anything from a couple of kilograms to hundreds of tones. The need has long existed for an improved portable jack for automotive vehicles. (t is highly desirable that a jack become available that can be operated alternatively from inside the vehicle or from a location of safety off the road on which the vehicle is located. such a jack should desirably be light enough and be compact enough so that it can be stored in an automobile trunk, can be lifted up and carried by most adults to its position of use, and yet be capable of lifting a wheel of a 5, pound vehicle off the ground.

further, it should be stable and easily controllable bay switch so that jacking can be done from a position of safety. (t should be easily movable either to a position underneath the axle of the vehicle or some other reinforced support surface designed to be engaged by a jack.

Thus, the product has been developed considering all the above requirements. This particular design of the motorized scissor jack will prove to be beneficial in lifting and lowering of loads.



DESIGN AND FABRICATION OF SIMPLE
PORTABLE DRILLING EQUIPMENT

A PROJECT REPORT

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ACKNOWLEDGEMENT

We express sincere thanks and gratitude to our Chairman and founder president **Dr. M.PURUSHOTHAMAN Ph.D.**, Management and our respected principal **Dr. M.PALANI, M.E., Ph.D.**, for providing ample facilities to carry out this project successfully.

We thank **Mr. M.JAISINGH DURAI, M.E.**, Head of the department, Department of Mechanical Engineering and our staffs for their guidance and encouragement at each and every stage of our project work and also guiding us properly through the reviews.

With profound respect, we express our deep sense of gratitude and sincere thanks to our guide **Mr. S.RAJASEKAR M.E.**, Department of Mechanical Engineering for his valuable guidance and suggestion throughout this project.

We wish our hearty thanks to all the staff members of department of Mechanical Engineering.




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ABSTRACT

Now a day, machines are widely controlled by embedded system. To meet the need of exploding population economic and effective control of machines is necessary. Our project even is rotated to easily drill at any direction. So that job setting operation is not complicated as well as reduces the setting time for the operation. It also takes into consideration the most effective method of controlling the drilling machine by manually. Materials like wood, plastic and light metals can be drilled with this. The work piece is fixed on the work table, which is provided with a moving arrangement. The drilling machine is one of the most important machine tools in a workshop. In a drilling machine holes may be drilled quickly and at a low cost. The hole is generated by the rotating edge of a cutting tool known as the drill, which exerts large force on the work clamped on the table. As the machine tool exerts vertical pressure to original a hole it loosely called a "drill press". Drilling is the operation of producing circular hole in the work-piece by using a rotating cutter called drill, the most common type of drill is the twist drill. The machine tool used for drilling is called drilling machine.



A handwritten signature in green ink, consisting of a large, stylized loop followed by a few smaller strokes.

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CHAPTER-12

CONCLUSION

This project is an efficient operation and competitive cost. Since a number of operation and hole can be performed in a simple unit. It is efficient and economical. Considering its uses and cost of project, it becomes relatively cheap when compared to other units. The size of machine is smaller than the older machine so it is very simple to move from one place to another. So this machine can be easily transported. The overall space required is also minimum. With the help of this machine we can drill holes in any direction at a particular time. This machine is reduces the manufacturing cycle time, the re-clamping can be eliminated: once the workpiece is clamped, there is no need for re-clamping in a different direction, reduces the number of machines needed, elimination of human error. The machine is very simple to operate.



A handwritten signature in green ink, consisting of a large, stylized initial 'S' followed by a few loops and a horizontal stroke.

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DESIGN AND FABRICATION OF ELECTROMAGNETIC SUSPENSION SYSTEM

A PROJECT REPORT
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ACKNOWLEDGEMENT

We wish to express our sincere thanks and heartfelt gratitude to our chairman **Dr.S.K.PURUSHOTHAMAN, M.E., PH.D.**, for managing trustees for their support through the institution.

We express our gratitude and sincere thanks to principal **Dr.P. RETHINASABAPATHY M.E.**, for providing us the necessary facilities and opportunity to carry out this project.

We take immense pleasure to thank our **MR.M.JAI SINGH DURAI M.E.**, head of the department of mechanical engineering for his valuable guidance, encouragement, suggestions, and advise towards nourishment of our career.

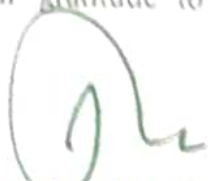
We express our sincere thanks to our project coordinator **MR.M.JAI SINGH DURAI M.E.**, professor, for his unstinted guidance at every stage. His constant encouragement and advice provide provided us with a drive to see that endeavor reaches the level of excellence required in this field.

MR.S.RAJASEKAR M.E., Department of Mechanical Engineering for his encouragement, valuable guidance, inspiration, discussion and needful suggestion in all the stages of our project.

We are extremely indebted to all the staff members of department of mechanical engineering, for their continuous guidance.

Our special thanks to our parents who motivated and helped us to make this project a successful one. We take this opportunity to express our gratitude to all, whose contribution in the project work can never be forgotten.




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ABSTRACT

The shock absorber is an essential part of the vehicle. The different type of springs are used as a shock absorber in the vehiclesuch as helical spring, leaf spring, coil spring etc. the shock absorber is used between the axles and frame of the vehicle. Shockabsorbers are an important part of automobile and motorcycle suspensions, aircraft landing gear, and the supports for manyindustrial machines. Large shock absorbers have also been used in structural engineering to reduce the susceptibility ofstructures to earthquake damage and resonance. In the past decade, regenerative braking systems have become increasingly popular, recovering energy thatwould otherwise be lost through braking. However, another energy recovery mechanism that is still in theresearch stages is regenerative suspension systems. This technology has the ability to continuously recover avehicle's vibration energy dissipation that occurs due to road irregularities, vehicle acceleration, and braking, and use the energy to reduce fuel consumption. A regenerative shock absorber is a type of shock absorber thatconverts intermittent linear motion and vibration into useful energy, such as electricity. Keyword: -Magnetic Shock Absorber, Magnet, Spring, electricity generation, manetic suspension, gear pair, etc....



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CONCLUSION AND FUTURE SCOPE

The experiments were conducted successfully and the readings were taken. These readings were used and graphs were plotted. Since this is only a prototype, there can be various areas of improvement. To name one, motor selection can be done with extra research or even custom made. Effect of this setup on the overall damping coefficient of the suspension system also has to be taken in mind. The main advantage of this prototype is that it can be assembled on any two wheeler vehicle which includes the already running vehicles.

If rotary damping coefficient of the motor can be calculated then it might be possible to remove the use of oil for damping and further rack and pinion setup along with motor can be built within the fork.



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"A STUDY ON EYEBLINK SENSOR ANTI SLEEP ALARM"

In Partial Fulfillment of the requirement
For the Award of the Degree
of

**BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING**

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Abstract

Electrooculogram (EOG) data was used to develop, adjust and validate a method for drowsiness detection in drivers. The drowsiness detection was based on changes in blink behaviour and classification was made on a four graded scale. The purpose was to detect early signs of drowsiness in order to warn a driver. MATLAB was used for implementation.

For adjustment and validation, two different reference measures were used; driver reported ratings of drowsiness and an electroencephalogram (EEG) based scoring scale. A correspondence of 70 % was obtained between the program and the self ratings and 56 % between the program and the EEG based scoring scale.

The results show a possibility to detect drowsiness by analyzing blink behaviour changes, but that inter-individual differences need to be considered. It is also difficult to find a comparable reference measure. The comparability of the blink based scale and the EEG based scale needs further investigation.




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13 Conclusions

The results indicate that it is possible to detect drowsiness by analyzing blink behaviour changes, but inter-individual differences exist. This is a problem, as the model assumes that all participants develop drowsiness in the same way. It is also difficult to find a comparable reference measure.

A better correspondence was obtained in the model with KSS as reference than in the model with OSS as reference for most participants. Unexpectedly, KSS was found a better reference measure than OSS. The reason was a sometimes very low variability in OSS. The problem with KSS however, was a ceiling effect, i.e. the participants seemed to reach the last steps too soon.

Drowsiness was in many cases not found in the EEG even though a change in the eye parameters was detected. It could thus be assumed that the eye parameters were better than EEG for an early detection of drowsiness. The comparison of the scales was difficult as it was not sure if they covered the same physiological states.


When analyzing the results it was shown that the program identified some participants as being more drowsy and some less compared to the references. If believing that the reference measures were true measures of drowsiness, this implies that inter-individual differences exist in the development of drowsiness.

Drowsiness stage two ("low vigilance") was not found possible to detect in this project. The reason was a lack of participants feeling themselves alert. To find a reliable boundary for this stage, more data from people being alert would be required.

Future possibilities

Future possibilities could be to consider inter-individual differences in the model. This would probably require information about the change of the eye parameters during the development of drowsiness though. It would be preferable to be able to predict drowsiness based only on the eye behaviour in the beginning of the alert condition. It is also necessary to further investigate the comparability of the drowsiness scale with EEG to see if it is possible to compare changes in blink behaviour with changes in the EEG content, or if they measure different physiological processes.




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Design and Fabrication of Paper Cutting Machine
Using Geneva Mechanism

A PROJECT REPORT

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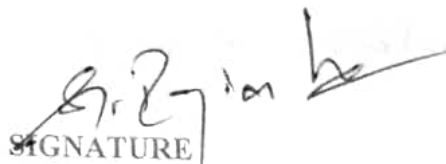


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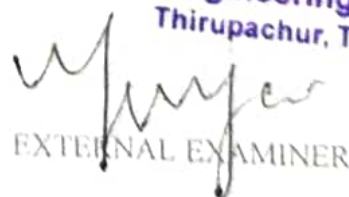
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EXTERNAL EXAMINER

ACKNOWLEDGEMENT

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ABSTRACT

The design and fabrication of paper cutting machine using Geneva mechanism is very useful to cut papers in equal and accurate dimensions. Geneva drive is an indexing mechanism that converts the continuous motion into intermittent motion. Due to the intermittent motion, the paper is moved between the time intervals of cutting periods. Then the paper cutting is achieved by the crank and lever mechanism. The cutter will be back to its original position by the spring effect.

OBJECTIVES:

1. To cut the paper in accurate and equal dimensions.
2. To reduce the time for marking the dimension in paper.
3. To get the paper cutting machine in low cost.
4. To design the machine in compact size.

INTRODUCTION

1. The paper cutting machine is designed, in order to reduce the time for marking and cutting the papers. Geneva mechanism is commonly used indexing mechanism where an intermittent motion is required.
2. The fabrication of conventional Geneva mechanism is generally simple and inexpensive. Because there is no special curved profile on any of the components except straight lines and circular arcs.



cutting is done by crank and lever mechanism. The spring connected to the cutter will bring the cutter back to its original position.

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LIMITATIONS:

1. Can't able to cut the papers above 15 cm width.
2. Can't able to cut bunch of papers i.e. more than 5 papers.
3. Can't be used for large scale industries.

APPLICATIONS:

1. It can able to use in paper cutting industries.
2. It can able to use in paper crafting.
3. It can be used in many small scale paper industries.
4. It can be used to cut the color papers for designing.
5. It can be used in stationary stores.

Conclusion

The design and fabrication of paper cutting machine using the Geneva mechanism is will be very useful in small scale industries. There are many machines based on paper cutting but it has some demerits like large in size, costly, need skilled people to operate and it needs electrical input. But our machine will overcome this demerits by compact in size, less cost, no need for skilled people and there is no need for electrical input. The design of this machine is done for fabricating the Geneva wheel and other elements. The main aim for this machine is to reduce the time for marking the paper, this aim is achieved in our paper cutting machine using Geneva mechanism.



"A STUDY ON EYEBLINK SENSOR ANTI SLEEP ALARM"

In Partial Fulfillment of the requirement
For the Award of the Degree
of

**BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING**

Submitted By

P.VIGNESH

Reg No:112420114408



**SRI VENKATESWARA COLLEGE OF ENGINEERING AND
TECHNOLOGY**



ANNA UNIVERSITY

CHENNAI - 25

APRIL/ MAY 2023



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BONAFIDE CERTIFICATE

Certified that this project report Titled " A STUDY ON EYEBLINK SENSOR ANTI SLEEP ALARM " is a bonafide work of P.VIGNESH (112420114408), who carried out the research under my supervision.



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Submitted for Anna University Eyeblink Sensor Anti Sleep Alarm Project Viva-Voice examination held on ..29/05/23.... During the year ..2023-2024



INTERNAL EXAMINER



EXTERNAL EXAMINER



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Abstract

Electrooculogram (EOG) data was used to develop, adjust and validate a method for drowsiness detection in drivers. The drowsiness detection was based on changes in blink behaviour and classification was made on a four graded scale. The purpose was to detect early signs of drowsiness in order to warn a driver. MATLAB was used for implementation.

For adjustment and validation, two different reference measures were used; driver reported ratings of drowsiness and an electroencephalogram (EEG) based scoring scale. A correspondence of 70 % was obtained between the program and the self ratings and 56 % between the program and the EEG based scoring scale.

The results show a possibility to detect drowsiness by analyzing blink behaviour changes, but that inter-individual differences need to be considered. It is also difficult to find a comparable reference measure. The comparability of the blink based scale and the EEG based scale needs further investigation.



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13 Conclusions

The results indicate that it is possible to detect drowsiness by analyzing blink behaviour changes, but inter-individual differences exist. This is a problem, as the model assumes that all participants develop drowsiness in the same way. It is also difficult to find a comparable reference measure.

A better correspondence was obtained in the model with KSS as reference than in the model with OSS as reference for most participants. Unexpectedly, KSS was found a better reference measure than OSS. The reason was a sometimes very low variability in OSS. The problem with KSS however, was a ceiling effect, i.e. the participants seemed to reach the last steps too soon.

Drowsiness was in many cases not found in the EEG even though a change in the eye parameters was detected. It could thus be assumed that the eye parameters were better than EEG for an early detection of drowsiness. The comparison of the scales was difficult as it was not sure if they covered the same physiological states.

When analyzing the results it was shown that the program identified some participants as being more drowsy and some less compared to the references. If believing that the reference measures were true measures of drowsiness, this implies that inter-individual differences exist in the development of drowsiness.

Drowsiness stage two ("low vigilance") was not found possible to detect in this project. The reason was a lack of participants feeling themselves alert. To find a reliable boundary for this stage, more data from people being alert would be required.

Future possibilities

Future possibilities could be to consider inter-individual differences in the model. This would probably require information about the change of the eye parameters during the development of drowsiness though. It would be preferable to be able to predict drowsiness based only on the eye behaviour in the beginning of the alert condition. It is also necessary to further investigate the comparability of the drowsiness scale with EEG to see if it is possible to compare changes in blink behaviour with changes in the EEG content, or if they measure different physiological processes.



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FABRICATION OF ELECTROMAGNETIC BRAKING SYSTEM

A PROJECT REPORT

Submitted by

Bramaiyya.K	(112420114001)
Kishore.P	(112420114007)
Anbazhagan.	(112420114301)
Dhanasekar.S	(112420114312)

in partial fulfillment for the award of the degree.

of

BACHELOR OF ENGINEERING

MECHANICAL ENGINEERING



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APRIL 2022-2023

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We wish our hearty thanks to all the staff members of department of Mechanical Engineering.



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ABSTRACT

Now a day, machines are widely controlled by embedded system. To meet the need of exploding population economic and effective control of machines is necessary. Our project even is rotated to easily drill at any direction. So that job setting operation is not complicated as well as reduces the setting time for the operation. It also takes into consideration the most effective method of controlling the drilling machine by manually. Materials like wood, plastic and light metals can be drilled with this. The work piece is fixed on the work table, which is provided with a moving arrangement. The drilling machine is one of the most important machine tools in a workshop. In a drilling machine holes may be drilled quickly and at a low cost. The hole is generated by the rotating edge of a cutting tool known as the drill, which exerts large force on the work clamped on the table. As the machine tool exerts vertical pressure to original a hole it loosely called a "drill press". Drilling is the operation of producing circular hole in the work-piece by using a rotating cutter called drill, the most common type of drill is the twist drill. The machine tool used for drilling is called drilling machine.



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A handwritten signature in green ink, appearing to be "S. Venkateswara", written over the printed name of the Principal.

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