



ವಿಶ್ವವಿದ್ಯಾರಣ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ - ಬೆಂಗಳೂರು

VISVESVARAYA TECHNOLOGICAL UNIVERSITY - Belgaum



**“FABRICATION AND POWER BALANCING OF AUTOMOBILE FOR
LUXIROUS PARALLEL HYBRID CAR”**

A Dissertation work submitted in partial fulfillment for the award of the degree of

**BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING**

Submitted by

MANJESH VR
MOHAMMED IRFAN
M SRIHARI
DEEPAK S

3VC17ME421
3VC17ME426
3VC17ME420
3VC17ME405

Asst Prof.Mr. DEEPAK C
Project guide

Dr. KORI NAGARAJ
Head of Department



**DEPARTMENT OF MECHANICAL ENGINEERING
RAO BAHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE**

Formerly VIJAYANAGAR ENGINEERING COLLEGE
(Approved by AICTE, NEW DELHI & Affiliated to VTU)

BELLARY- 583104-2019-2020



VEERASAIVA VIDYAVARDHAKA SANGHA'S
RAO BAHADUR Y MAHABHALESHWARAPPA ENGINEERING COLLEGE
(Formerly VIJAYANAGAR ENGINEERING COLLEGE)
(Affiliated to VTU, Belgaum and Approved by AICTE, New Delhi)
BELLARY-583104, KARNATAKA

DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE

This is to Certified that the project work entitled "FABRICATION AND POWER BALANCING OF AUTOMOBILE FOR LUXIROUS PARALLEL HYBRID CAR" carried out by MANJESH VR (3VC17ME421), MOHAMMED IRFAN (3VC17ME426), M SRIHARI (3VC17ME420), DEEPAK S (3VC17ME405) a bonafide students of Rao Bahadur Y Mahabaleswarappa Engineering College in partial fulfillment for the award of **Bachelor of Engineering in mechanical Engineering** of the Visveswaraiah Technological University, Belagavi during the year 2018-2019. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

(Asst Prof. Mr. Deepak c)

Guide

(Dr. Kori Nagaraj Prof)

HOD

(Dr. K Veeresh)

Principal

Name of the Examiners:

1.

2.

Signature

ABSTRACT

Hybrid Vehicle traction is one of the most promising technologies that can lead to significant improvements in vehicle performance, energy utilization efficiency, and polluting emissions. It has the advantages of high performance, high fuel efficiency, low emissions, and long operating range.

Hybrid cars combine the use of both petroleum fuels through internal combustion engine and electric motor as their energy sources to propel vehicles and power accessory systems. This is because they are more fuel efficient and environment friendly than conventional petroleum-powered vehicles in the same class, while being more financially accessible and technically established than pure electric vehicles; thus, hybrid vehicles serve as significant players in the progress of vehicle electrifying transition and result in remarkable market influence in the automotive industry.

At present, almost all the major automotive manufacturers are developing hybrid vehicles, and some of them have marketed their productions, such as Toyota and Honda. The last decade has witnessed rapid technological advancements in hybrid vehicles, thereby improving their efficiency, and the volatile oil prices have also contributed towards a change of mindset, with more and more motorists opting for the fuel efficient and eco-friendly hybrid cars.

Our project will lead to manufacturing and designing of parallel hybrid car capable of seating two people. This car will be low budget car compared to the hybrid cars that are already running. And it will be more economical with better fuel efficiency and low operating power.

FABRICATION OF OUR PROJECT

The Implementation of this project was based on certain goals and objectives that we scheduled in certain time period throughout its working.

Firstly, we designed the chassis of our car on AUTOCAD. The demonstration of this work is shown below in the figure.

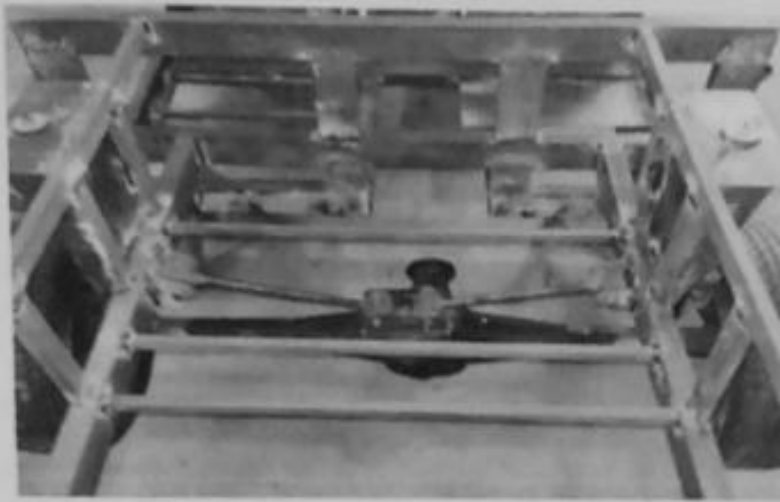


Figure 7.1- Designing of chassis using tube frame pipes

Secondly, we mounted the engine on the front wheel drive as planned earlier in its designing.



Figure7.2- Mounting of engine on front wheel drive.

FABRICATION AND POWER BALANCING OF AUTOMOBILE FOR LUXIROUS PARALLEL HYBRID CAR

Similarly the motor is mounted on the rear wheel drive as the second source it is also connected with the gear transmission and differential.

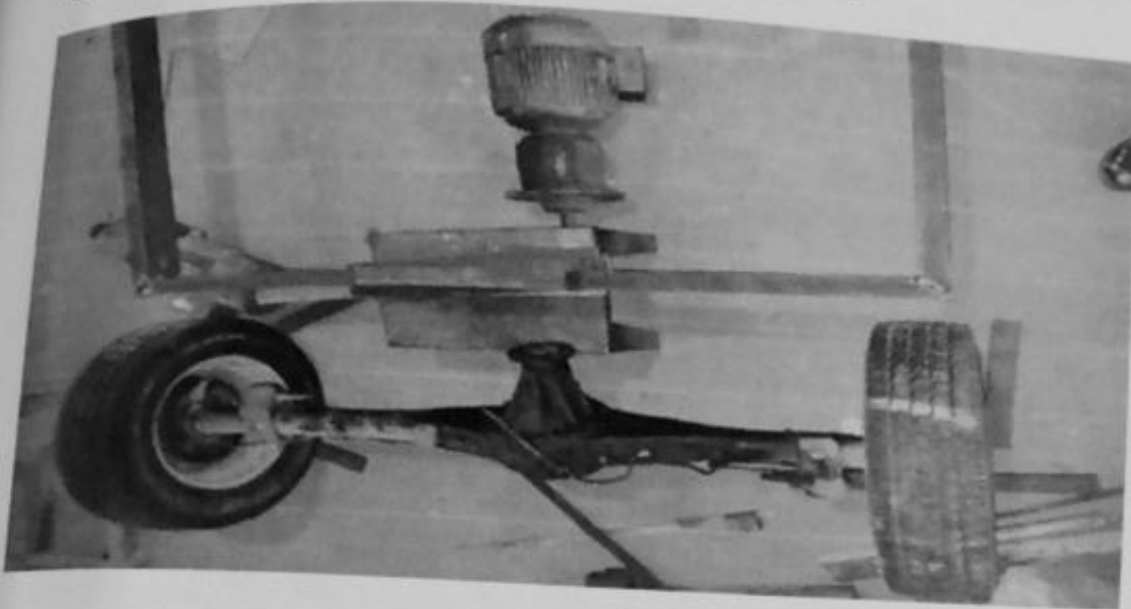


Figure 7.3- Mounting of motor on rear wheel drive

After this we assembled the rear and front wheel drive together with the tube frame chassis as shown below.



Figure 7.4- Assembling of front and rear wheel drives on chassis.

CONCLUSIONS

Before starting this project we only heard that hybrid cars are more fuel efficient but never experienced that, but now after designing our own hybrid car we came to the conclusion that Hybrid cars are fuel efficient such that they give 30 more miles per gallon of fuel.

The hybrid cars due to their unique mechanism and design are high in cost but their running cost is almost 50% less than any other conventional car of same weight and structure, this is the reason most of the competitive automobile companies are launching such vehicles which are hybrid and preference of buyers are diverting towards it. As they are hot in market which gives smooth drive and are much more economical especially for long routes and drives.

Thus it allows each node with message to decide whether to copy the message to a path node by optimizing its transmission effort in order to provide a sufficient level of message delay. Using a channel selection scheme provides spectrum utilization while it minimizes the interference level to primary system. Using trustworthy algorithm, it improves the trustworthiness of the Spectrum sensing in CR-Networks. It enables network nodes to adaptively regulate their communication strategies according to dynamically changing network environment.

Hybrid-electric vehicles (HEVs) combine the benefits of both IC engines and electric motors and can be configured to obtain different objectives, such as improved fuel economy, increased power, or additional auxiliary power for electronic devices and power tools. The transmission of power using freewheels and chain wheels are very cheap and reliable. One disadvantage is that driving on electric power is not a good option for a long distance travel. Though this combined power train system can become much useful in more stop and go traffic situations. With the use of this powertrain system, the overall fuel consumption and fuel economy is improved. The costs of HEVs are a little more than the conventional cars but

V.V.SANGHA'S
RAO BHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BELLARY
DEPARTMENT OF MECHANICAL AND I&PE

BE 7th SEMESTER PROJECT PHASE- 1
NOV 2019-2020

PROJECT TITLE: Mechanical Dynamics of Automobile
For Luxurious Parallel Hybrid Car

PROJECT GUIDE: Dr. Kori Nagaraj / Co-guide Prof. Deekate C.

SL NO	NAME OF THE STUDENT	STUDENT USN	PROJECT PHASE -1 MARKS (REFER RUBRICS)						Total marks obtained
			1	2	3	4	5	6	
01	Durga Prasad T.u.	3vc15mf018	10	10	10	10	10	44	94
02	Hareesha S	3vc15mf025	10	10	10	10	10	40	92
03	Dinesh Kumar Reddy	3vc15mf049	10	10	10	10	10	43	93
04	Paran Kumar B	3vc17mf428	10	10	10	10	10	44	94

SIGNATURE OF THE GUIDE: Dr. Kori Nagaraj & Co-guide: Prof. Deekate C.

RUBRICS FOR AWARDED I.A MARKS AS PER VTU NORMS

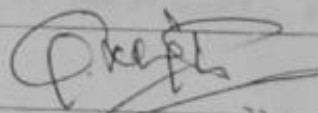
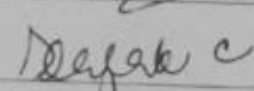
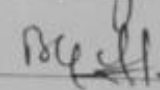

SL NO	PARTICULARS	MAX MARKS
1	RELEVANCE OF THE SUBJECT IN THE PRESENT CONTEXT	10
2	LITERATURE SURVEY	10
3	PROBLEM FORMULATION	10
4	METHODOLOGY	10
5	POSSIBLE OUTCOME OF THE PROJECT WORK	10
6	OVERALL PRESENTATION	50
TOTAL MARKS		100

V.V.SANGHA'S
 RAO BHADUR Y. MAHABALESWARAPPA ENGINEERING COLLEGE, BELLARY
 DEPARTMENT OF MECHANICAL AND I&PE

STUDENTS DETAILS

SL NO	NAME AND ADDRESS OF THE STUDENTS	PHONE NO	E-Mail ID
1	Durgu Prasad, Aavin Apartment, Siddhane Colony, SNPet	7353555554	Durgatlyingmachine@ gmail.com.
2	Horeeshas #76, Karamraoappa Kulgi (Tq), Bellary (Dist).	6360498581	horeeshahori16@gmail.com
3	DINESH word no 17th, near Chatta school, Bellary	8798866879	dineshreddy644@gmail.com
4	PAVANIKUMAR B, word NO12 near Panduranga temple anna road Bellary - 583101	9591195259	Pavamb.Pymec9591@gmail.com

PROJECT WORK VIVA-VOCE (I.A) COMMITTEE MEMBERS NAME & SIGNATURE:-

SL NO	NAME	SIGNATURE
1	P. Manjunath Swamy	
2	Rajak C	
3	B.G. Chandan	
4	Dr. A. Jayarama Murthy	
5		


 HOD SIGNATURE