

GHARDA INSTITUTE OF TECHNOLOGY



NAAC

<u>Criteria VII</u>

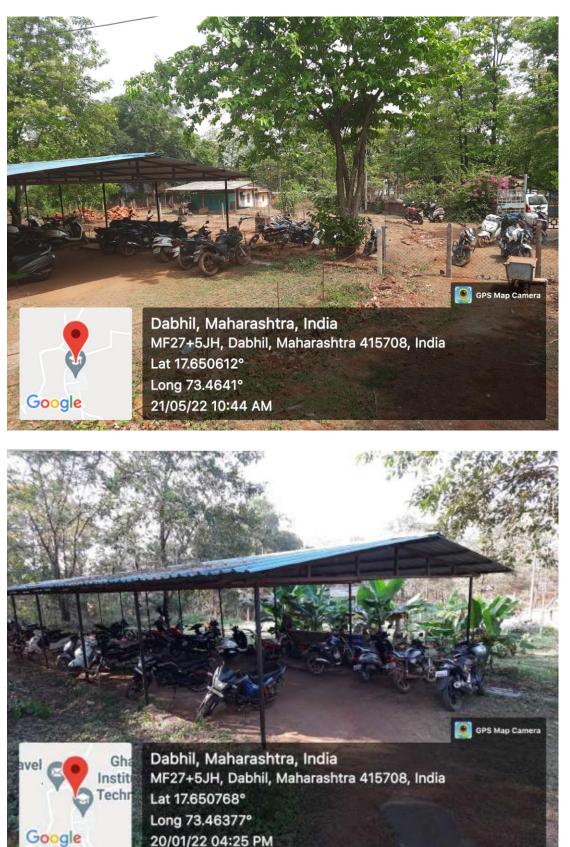
7.1.5 The institutional initiatives for greening the campus

View Slideshow : <u>http://www.git-</u> india.edu.in/git/naac/7.1.5/photogallery.asp

1. Restricted Entry for Automobiles



2. Two Wheeler Parking

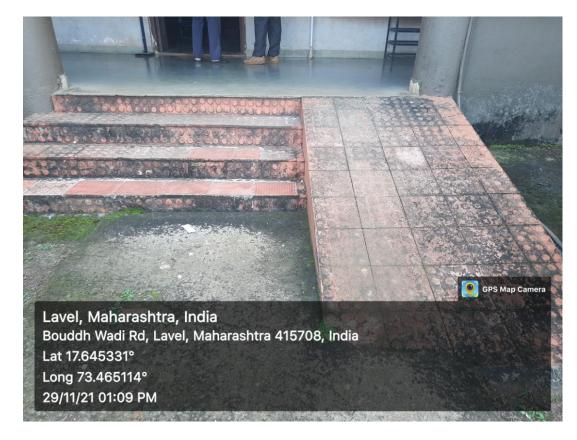


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2. Four wheeler parking

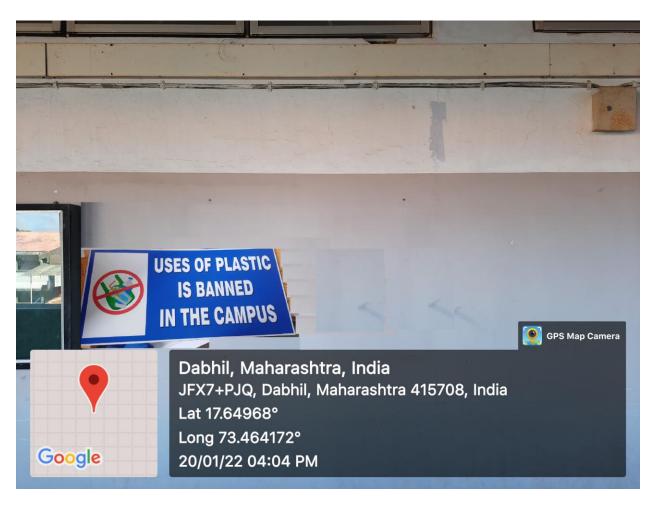


3. Pedestrian Friendly Pathway





4. Plastic Ban in Campus



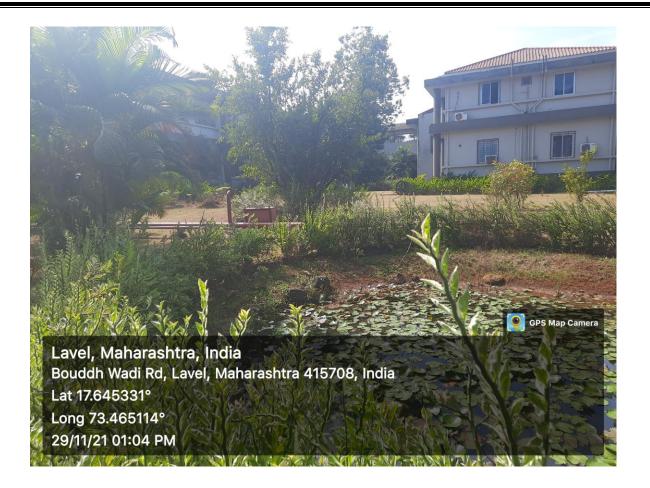
5. Landscaping with Trees and Plants





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A PROJECT REPORT ON



DESIGN AND MANUFACTURING OF E-BIKE (ELECTRIC BIKE)

Submitted by Khandke Sarvesh Pramod Mhamunkar Sanket Shahu Kolambkar Sahadeo Narendra Kamble Sumeet Baburao

Under the Guidance of **Prof. D. M. Dubbawar**

Submitted to <u>DEPARTMENT OF MECHANICAL ENGINEERING</u> GHARDA INSTITUTE OF TECHNOLOGY, LAVEL, KHED.



UNIVERSITY OF MUMBAI

Academic Year : 2014 - 15

MUMBAI UNIVERSITY BONAFIDE CERTIFICATE

Certified that this project report on "DESIGN AND MANUFACTURING OF E-BIKE (ELECTRIC BIKE)" is the bonafide work of,

Khandke Sarvesh Pramod Mhamunkar Sanket Shahu Kolambkar Sahadeo Narendra Kamble Sumeet Baburao

Who carried out the project work under the designated guide and the said work is placed for approval before examiners. The work carried is satisfactory for the award of degree of bachelor in **MECHANICAL ENGINEERING** of University of Mumbai.

Name & Signature (Prof. D. M. Dubbawar)

Name & Signature Internal Examiner

Name & Signature (Dr. A. C. Gangal)

Name & Signature

External Examiner

PS Kadam) Name & Signature

Gharda Institute of Technology A/P-Lavel Tol Rhincipal Ratnagiri



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Dissertation Report

On

SOLAR CAR WITH SMART FEATURES

Submitted in partial fulfillment of the requirements of the degree

Of

Bachelor of Mechanical Engineering

By

Abhishek Aravind Biradar	(06)
Yograj Sadanand Kasar	(36)
Nilesh Narayan Rane	(61)
Harshal Madhukar Shinde	(72)

Under the guidance of

Prof. Pravin Jadhav



Department of Mechanical Engineering

Gharda Institute of Technology

Po. Lavel, Taluka: Khed, Dist. Ratnagiri - 415708.

University of Mumbai

(2017-2018)

CERTIFICATE

This is to certify that the project entitled "Solar car with smart features" is bonafide work of

Abhishek Aravind Biradar	(06)
Yograj Sadanand Kasar	(36)
Nilesh Narayan Rane	(61)
Harshal Madhukar Shinde	(72)

Submitted to the University of Mumbai in fulfillment of the requirement for the award of the degree of "Bachelor of Mechanical Engineering".

(Prof. Pravin Jadhav) Supervisor/Guide

(Prof. Onkar Jarali) Head of department

to

(Prof. P. S. Joshi) Principal



Thesis Approval for Dissertation for Project Report for B. E.

This thesis / dissertation/project report entitled --Solar car with smart features by

Abhishek Aravind Biradar

Vespraj Sudamand Rasar

Nileyh Narayon Rane

Barubal Madhukar Shinde

Is approved for the degree of --- "Bachelor of Mechanical Engineering"

Examiners:

2

Date

Place

Declaration

We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included; we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Name & Roll No. of StudentSigAbhishek Aravind Biradar(06)Yograj Sadanand Kasar(36)Nilesh Narayan Rane(61)Harshal Madhukar Shinde(72)

Date:

Signature

Ku.

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Chapter 4

Hardware Model

4.1 Solar Car Construction

For converting conventional vehicle into Electric Vehicle, Some hardware modification was necessary. This modification includes making provision for battery placement which include four series connected 12 V batteries, Motor controller placement

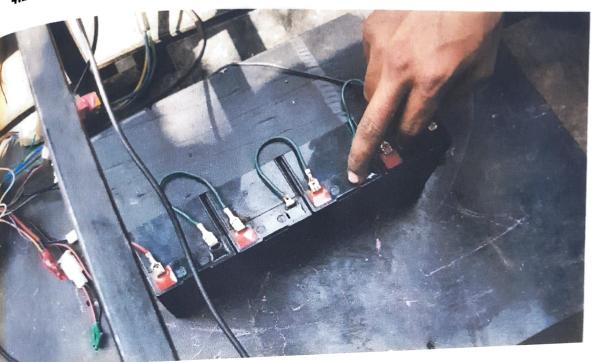
& Battery. Main & complicated task was to modify vehicle structure for that purpose we referred online vehicle designs & decided to extend the vehicle as shown in below figure.



Fig 4.1 mechanical design of solar car

1) Accelerator	4) Solar Panel
2) BLDC hub motor	5) Seat
3) Wheel	6) Brake

4.2 Battery Box



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Figure 4.2 Battery Dimensions

4.3 Motor controller

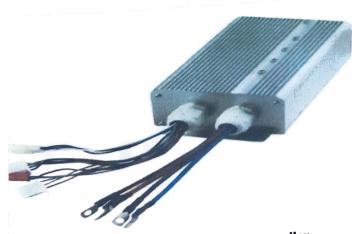


Figure 4.3 Motor Controller

4.4 Final Weight Calculation

Total Solar Car Weight	58.6 Kg
Controller	0.2 Kg
Battery	2.4*4 = 9.6 Kg
Hub Motor	5.8 Kg
Solar Car	43 Kg
	10.11

4.5 Assembling Components

- 1) Hub Motor laced to shaft.
- 2) Throttle control at handle.
- 3) Batteries
- 4) Motor Controller
- 5) Solar panel