## Registration Form:

**VIDYAVARDHINI'S NATIONAL CONFERENCE ON TECHNICAL ADVANCEMENTS FOR SOCIAL UPLIFTMENT VNC - 2020 TASU**

Name: .....

Email ID: .....

Title of paper: .....

Registration Category: .....

Mailing Address: .....

.....

Contact No: .....

Payment Details: Net Banking

Amount in Rs.: .....

Date: Signature of Participant

HEAD
Dept. of Mechanical Engg.
Vidyavardhini's College of
Engineering & Technology
Vasai Road-401202.

**Account Name:** Vidyavardhini's College of Engineering and Technology
**Bank Name:** Union Bank of India
**Branch:** Vidyavardhini College Branch, Vasai Rd (W)
**Account Number:** 320602011001031
**IFSC:** UBIN0562556
**MICR:** 400026153

**Chief Patron**
Shree Vikas Vartak, President, Vidyavardhini.

**Patrons**
Shree Arun Vartak, Chairman, Vidyavardhini.
Shree Shantaram Jadhav, Vice President, Vidyavardhini.
Shree Pandurang Naik, Vice President, Vidyavardhini.
Shree P. D. Kodolikar, Vice President, Vidyavardhini.
Shree Hasmukhlal Shah, Treasurer, Vidyavardhini.
Shree Udhav Gharat, Secretary, Vidyavardhini.
Shree Bhausaheb Mohol, Secretary, Vidyavardhini.

**Honorary Conference Chair**
Dr. Harish Vankudre, Principal.

**Conference Chair**
Dr. Vikas Gupta, Dean Academics,
HOD, Electronics and Telecommunication Engg.

**TPC Co-Chair**
Dr. Uday Aswalekar - HOD, Mechanical Engg.
Dr. Deepak Gawali - HOD, Instrumentation Engg.
Dr. Megha Trivedi - HOD, Computer Engg.
Dr. Ashish Vanmali - HOD, Information Technology.
Dr. Sunil Kirloskar - HOD, Civil Engg.

**Publication Chair:** Dr. Ashish Chaudhari.
**Finance Chair:** Dr. Amrita Ruperee.
**Publicity Chair:** Mrs. Kanchan Sarmalkar.
**Web Administration Chair:** Mr. Yogesh Pingle.

**National Advisory Committee**
Dr. M. N. Hoda, Director, BVICAM, New Delhi
Dr. Vishal Jain, BVICAM, New Delhi
Dr. Suresh K. Ukarande, Associate Dean,
Faculty of Science and Technology, University of Mumbai
Dr. J.W.Bakal, President, IETE, New Delhi.
Prof. Kiran Talele, IEEE, Mumbai Section.
Mr. Pramod Laxman Fegade, Manager L&T Ltd, Mumbai.
Dr. Ketan Kotecha, Director Symbiosis Institute of Technology, Pune
Dr. Mukesh Patil, Principal, RAIT, Mumbai
Dr. Arvind Nema, IIT Delhi
Dr. G.N. Jadhav, Earth Sci. Dept. IIT Bombay
Prof. Dr. P.P. Date, IIT Bombay
Dr. V. R. Kalamkar, VNIT Nagpur
Dr. Tansen Chaudhari, CEO, M/s Fluid Controls Pvt. Ltd., Mumbai
Prof. P. Padmanathan, VIT, Vellore
Dr. D.G. Thakur, Defence Institute of Advance Technology, Pune
Dr. V.B. Tungikar, SGGS IE&T Nanded
Dr. Bindu Garg, Bharti Vidyapeeth University College of Engg., Pune
Mr. Vikram Murthy, Director, Univac Environment Systems Pvt Ltd,
National President, ISHRAE

VNC - 2020 TASU

# VIDYAVARDHINI'S NATIONAL CONFERENCE ON TECHNICAL ADVANCEMENTS FOR SOCIAL UPLIFTMENT

**VNC - 2020 TASU**

4TH APRIL, 2020

**Organized by:**
**Vidyavardhini's College of Engineering & Technology**
K.T. Marg, Vasai (W) - 401202
Affiliated to University of Mumbai
Approved by AICTE
Accredited by NAAC

**In Association With:**
**BJIT** - BVICAM's International Journal of Information Technology. BJIT is now indexed at DBLP, INSPEC & UGC - CARE List. ISSN: 2511-2104 (Print Version) ISSN: 2511-2112 (Electronic Version)
**IJERT** - International Journal of Engineering Research & Technology ISSN: 2278-0181

**Conference Website:** www.vcet.edu.in/vnc2020

**Technically Sponsored By:**

IEEE BOMBAY SECTION

ISA VCET ISA SC

ISHRAE

## About us:

Vidyavardhini means a Body committed to enhancement of Knowledge. Vidyavardhini was established as a registered society in 1970 by late Padmashri H. G. alias Bhausaheb Vartak for the noble cause of education in rural areas.

Vidyavardhini's College of Engineering and Technology, Vasai is located on the sprawling campus of Vidyavardhini, spread over an area of 12.27 acres. It is a short, two minutes walk from Vasai Road (W) Railway Station. The college is also accessible by road from Mumbai.

Vidyavardhini Society received approval from AICTE to start the new college of Engineering & Technology with effect from July, 1994. The college is affiliated to the University of Mumbai for the four year degree program leading to the degree of Bachelor of Engineering in six branches.

## Objective of VNC 2020 TASU

Technology has always been potential tool for simplifying the way we do things. Present time demands directing the technological advancements towards addressing societal challenges such as improving health care, education environment, sanitation, agriculture, smart city, etc., VNC 2020 TASU aims to provide an opportunity to researchers, academicians, Industrialist and students to interact and share their ideologies and contributions made for social upliftment with the aid of technological advancements.

***Best paper award for each track***

## Call for paper

We welcome submission in following area

1. Sustainable Computing
2. High Performance Computing
3. High Speed Networking and Information Security
4. Software Engineering and Emerging Technologies
5. Mathematical, Experimental, Computional and AI, IoT Techniques in Mechanical Engg.
6. Industrial Engg., ERP, MRP, SCM
7. Renewable Energy Technologies
8. Pollution control and Waste Management
9. Advances in Structural engineering
10. Present geotechnical practices
11. Present practices in construction management
12. Recent developments in Instrumentation, control and automation
13. Embedded Systems, IoT and VLSI Design
14. Optical and Wireless Communication for NGN
15. Antenna and Microwave Devices

Any other relevant topics

## Publication Information

Proceedings of VNC - 2020 TASU will be published with ISBN number

1. Selected Papers will be published in International Journal of Information Technology, Published by Springer Nature, ISSN: 2511-2104 (Print Version), ISSN: 2511-2112 (Electronic Version)
2. All papers will be published in IJERT, ISSN: 2278-0181

## Important Dates:

**Submission of full length paper**
15TH Feb 2020
**Paper Acceptance Notification**
22ND Feb 2020
**Submission of Final Version of Paper**
29TH Feb 2020
**Registration Deadline**
5TH March 2020
**PPT Submission**
20TH March 2020
**Conference**
4TH April 2020

## Registration Fee Details:

| Category of Delegates / Authors | Indian Authors & Delegates (in INR) |
|---|---|
| Full Time Students (UG) | 1,500.00 |
| Teachers/ Research Scholars/ PG students | 2,500.00 |
| Industry | 3,500.00 |

## Paper Submission:

Paper submission should be made strictly via Easy Chair the submission link for VNC 2020 "TASU":
www.easychair.org/conferences/?conf=vnc2020

## Download paper template from:

https://www.vcet.edu.in/vnc2020/Template_For_Full_Paper%20VNC%202020.doc

## Contact Us:

**Mr. Yogesh P. Pingle**
Vidyavardhini's College of Engineering & Technology
K.T. Marg, Vasai (W) - 401202
Maharashtra, India
Contact No.: 9665009742
Email ID: vnc20@vcet.edu.in
Website: www.vcet.edu.in/vnc2020/

Proceedings of the 2nd VNC; VNC-2020;
2020 2nd National Conference on "Technical Advancements for Social Upliftment", 04th April, 2020
Vidyavardhini's College of Engineering & Technology (VCET), Vasai (INDIA)

# DESIGN AND DEVELOPMENT OF INLINE TWO WHEELER SELF-BALANCING ELECTRIC BIKE

Shreya Sawant
Mechanical Engineering Department
Vidyavardhini's College of Engineering & Technology (*VCET*)
Mumbai, India
shreyasawant513@gmail.com

Heramb Karpe
Mechanical Engineering Department
Vidyavardhini's College of Engineering & Technology (*VCET*)
Mumbai, India
karpeheramb06@gmail.com

Omkar Devrukhkar
Mechanical Engineering Department
Vidyavardhini's College of Engineering & Technology (*VCET*)
Mumbai, India
om7710909442@gmail.com

Mahedra Solanki
Mechanical Engineering Department
Vidyavardhini's College of Engineering & Technology (*VCET*)
Mumbai, India
mahendrasolanki8552@gmail.com

Ashish Chaudhari
Mechanical Engineering Department
Vidyavardhini's College of Engineering & Technology (*VCET*)
Mumbai, India
ashish.chaudhari@vcet.edu.in

***Abstract*- The two wheel vehicles during operation face the issue of balancing especially with untrained rider. Lot of time and fuel could be wasted by learners of the two wheel vehicle in balancing of the vehicle during training period. So, the main objective of this work is to design and develop a self-balancing electric two wheel vehicle which can balance itself with or without rider even vehicle may be in motion or stationary. The controller has two different objectives: to sense the velocity of vehicle in order to operate the actuator for manipulation of rake angle and other is the angle sensor to manipulate the steering angle with respect to vertical. The simultaneous adjustment of these two sensors will maintain the motorcycle stable. The actual set up will be experimented further aiming to balance the vehicle in different condition of loads.**

***Keywords- Self-balancing; electric vehicle; stability control; trajectory control.***

## I. INTRODUCTION

The bike which can balance itself is very popular project in robotics and engineering. There is lot of work going on about balancing bike and some are already done and a lot of work still need to done. The following section is our literature review on this particular topic.

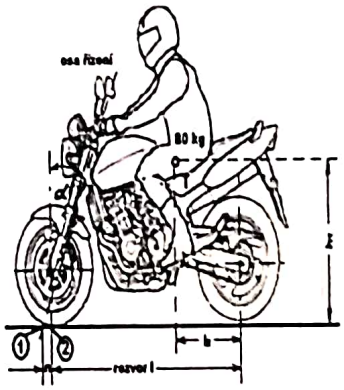
In 1903, an Irish-Australian inventor Louis Grennan was first to patent a gyroscopic balancing a gyroscopic balancing vehicle.

In 1912, Russian inventor Dr.Pyotr Shilovsky in collaboration with Louis Grennan developed and designed a two wheel car with gyroscope sitting in the middle of the body of car for maintaining stabilizing force.

The self-balancing and two wheel robot SEGWAY HT is commercially available and it is invented by Dean Kamen who has design more than 140 systems.

In CES (Consumer Electronics Show) 2017 Honda unveiled the 'Riding Assist' technology which is the best example and working model of self balancing bike.

*Design:*



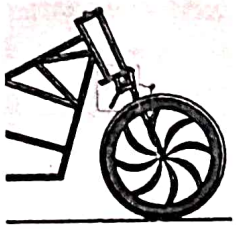



Fig. 1. Chassis Geomtry



HEAD
Dept. of Mechanical Engg.
Vidyavardhini's College of
Engineering & Technology
Vasai Road-401202.