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VNC - 2020 TASU**

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Vidyavardhini's College of
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Engineering and Technology
Bank Name: Union Bank of India
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**VIDYAVARDHINI'S
NATIONAL CONFERENCE ON
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VNC - 2020 TASU
4TH APRIL, 2020**



Organized by:
Vidyavardhini's College of
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K.T. Marg, Vasai (W) - 401202
Affiliated to University of Mumbai
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In Association With:
BJIT - BVICAM's International Journal of Information
Technology, BJIT is now indexed at DBLP, INSPEC
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IJERT - International Journal of Engineering
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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.

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, Computational 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:

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

Development of External Aerodynamics of an FSAE Racecar using Computational Fluid Dynamics.

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Abstract—This paper describes the procedure implemented in improving the external Aerodynamic characteristics of the FSAE racecar prototype of Vidyavardhini's College of Engineering and Technology, Vasai and development of a new Aerodynamic package for the Year 2020-21 using Computational Fluid Dynamics (CFD) packages. The objectives of the design is to increase Down force on the car with least possible induced Drag so as to improve the dynamic performance of the car in FSAE dynamic events. Also the end comparison between the Aerodynamic characteristics of the 2018-19 model and new model is presented.

with each other. A prototype of an open wheel race car is build by the students within the set of universal FSAE constraints provided by the competition. The participating team competes under the domains of Design, Cost Analysis, Business Plan Development and Dynamic Performance of the car.

Keywords-FSAE, Formula Student, Aerodynamics, CFD.

B. Scope.

In the paper the development of an aerodynamic package including Front Wings, Rear Wings and Underbody Diffuser is explained. The brief overview of the result iterations of the CFD analysis of the individual components and the Analysis of the complete car is presented and the overall behavior is discussed. The Aerodynamic characteristics of the 2018-19 car is compared with the latest developed Aero-kit on the basis of CFD analysis reports.

I. INTRODUCTION

A. Role of Aerodynamics in Race Car.

Racecars are meant to be as fast as possible through straights and corners and at the same time, are required to be as light as possible to yield the maximum performance from the driving unit. Traction is a vital component in improving the cornering speeds which is mainly affected by the downward force available on the tires. Since increasing the Static load of the car is not an option, usage of external aerodynamic features comes in picture. Aerodynamic features on the car create downward forces when in dynamic state and hence help in achieving the required forces for optimum traction without adding on considerable additional dead load on the car.

B. Formula SAE or Formula Student competition.

Formula Student or Formula SAE (FSAE) is a student design competition held across the world where Student teams from various Universities and colleges participate and compete

II. NOMENCLATURE

TABLE I. NOMENCLATURE

Symbol	Units	Physical Quantities
L	N	Downforce (negative Lift)
D	N	Drag Force
A	M^2	Frontal Area
ρ	Kg/m^3	Density of Air
C_l	-	Coefficient of Lift
C_d	-	Coefficient of Drag
v	m/s	Free Stream Velocity

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VNC - 2020 TASU
27th June, 2020

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Certificate of Participation

This certificate is presented to
DIPAK J CHOUDHARI
of
Vidyavardhini's College of Engg and Tech Vasai Road

for presenting paper titled
Development of External Aerodynamics of an FSAE Race car using Computational Fluid Dynamics
in the Vidyavardhini's National conference 2020 "Technical Advancements for
Social upliftments" organised by Vidyavardhini's College of Engineering and
Technology, Vasai held on 27th June, 2020.

Dr. Vikas Gupta
Dean Academics
Conference chair

Dr. Harish Vankudre
Principal
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