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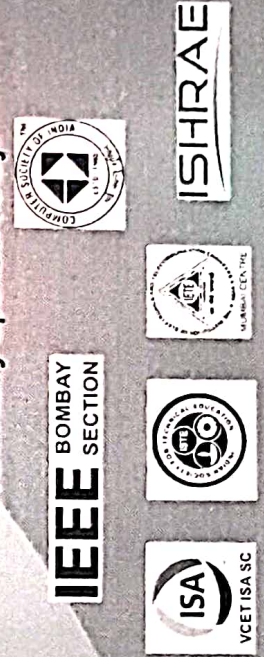
**VIDYAVARDHINI'S  
NATIONAL CONFERENCE ON  
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4<sup>TH</sup> APRIL, 2020**



**Organized by:**  
**Vidyavardhini's College of  
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**VNC - 2020 TASU**

### About us:

Vidyavardhini means a Body committed to enhancement of Knowledge. Vidyavardhini was established as a registered society in 1970 by late Padmeshri 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 15<sup>th</sup> Feb 2020
- Paper Acceptance Notification 22<sup>nd</sup> Feb 2020
- Submission of Final Version of Paper 29<sup>th</sup> Feb 2020
- Registration Deadline 5<sup>th</sup> March 2020
- PPT Submission 20<sup>th</sup> March 2020
- Conference 4<sup>th</sup> 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":

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**\*Best paper award  
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# NOISE AND EMISSION CONTROL OF A SINGLE CYLINDER DIESEL ENGINE & HEAT RECOVERY USING AQUA SILENCER.

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**ABSTRACT-** One of the key threats to society and the environment is known to be air pollution, which has a detrimental impact on human beings and the environment. The main contributor to air pollution is the emission of gasses from vehicles such as carbon dioxide, unburned hydrocarbons, carbon monoxide, etc. In view of addressing this major contributor, the paper concentrated on changing the traditional silencer by incorporating a modified Aqua Silent, which minimizes the generation of such a polluting weapon. Compared to traditional silencer, Aqua Silencer is fitted with small modifications to the engine exhaust tube. The activated charcoal layers manage the emission of the modified aqua silencer. Environment harmful gases are absorbed efficiently within the silencer and keep engines environment friendly. Aqua silencer also addresses the noise pollution concern as sound produced within water is less audible because of small sprockets in water molecules lower its amplitude and so lowers the sound. Also the heat carried away from the exhaust of the engines are wasted here the aqua silencer also works for heat recovery i.e. the heat from the engine is used to heat the water which can be used in the industry or etc for different purposes.

**KEYWORDS-** Aqua silencer, charcoal layer, perforated tube, emission control, heat recovery system.

## I. INTRODUCTION

**Background** -The aqua silencer is an attempt in reducing the increasing emission from automobiles and industry engine's exhaust system. Aqua silencer is used to minimize the harmful

effect of polluting agent in exhaust gases. In addition to the emission control the aqua silencer also lowers the exhaust sound reducing the sound pollution. This report presents an idea regarding design, fabrication and installation of an aqua silencer on a stationary single cylinder diesel engine.

**Motivation** -It has been long observed that diesel engines play a crucial role in the transport industry, agriculture, mining and many other industries. Considering the available fuel resources and the present technological development, diesel fuel is evidently indispensable. In general, the consumption of fuel is an index for finding out the economic strength of any country. In spite of everything, we cannot ignore the harmful effects of the large mass of the burnt gases, which erodes the purity of our environment every day. An aqua silencer is used to control the noise and emission in IC engines. The reason why we opt for an aqua silencer is that, air pollution and noise pollution causes physical ill effects to human beings and also the environment. The main contributor of air pollution is automobiles releasing gases like carbon dioxide, unburned hydrocarbons, etc. In order to cut down on emission of these gases, we can use an aqua silencer.

**Outline** -An aqua silencer consists of a perforated tube which is installed at the end of the exhaust pipe. The perforated tube contains holes of different diameters. Around the circumference of the perforated tube, activated charcoal layer is provided. The charcoal layer absorbs the carbon content in the exhaust and therefore purifies the exhaust. After the charcoal layer the exhaust comes in contact with the lime water which further purifies the exhaust, the lime water used here act as a cleaning agent. The water & charcoal is used so it is called as hybrid Aqua silencer & it is useful in marine & Boats, Automobile etc.



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**27<sup>th</sup> June, 2020**

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This certificate is presented to  
**DIPAK J CHOUDHARI**  
 of Vidyavardhini's college of engg and tech Vasai

for presenting paper titled  
**Noise and emission control of a single cylinder diesel engine & heat recovery using aqua silencer**  
 in the Vidyavardhini's National conference 2020 "Technical Advancements for Social upliftments" organised by Vidyavardhini's College of Engineering and Technology, Vasai held on 27<sup>th</sup> June, 2020.

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