



# **Mech'Časopis**

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**Edition 4**  
**August, 2019**

# **Mechanical Engineering**

## **Vision**

To make Department of Mechanical Engineering the unique of its kind in the field of Research and Development activities in the prominent field of Mechanical Engineering in this part of the world

## **Mission**

To impart highly Innovative and Technical Knowledge in the field of Mechanical Engineering to the urban and unreachable rural student folks, through "Total Quality Education".

## **Program Educational Objectives**

PEO1 - Graduates of the Programme will excel in Technical Knowledge and Apply Innovative Skills in the field of Mechanical Engineering.

PEO2 - Graduates will contribute to Technological Development and Research Activities through "Total Quality Education".

PEO3 - Graduate of the Programme will accomplish Leadership Qualities and Social Responsibilities through "Life Long Learning".

## **Program Specific Outcomes**

PSO1 - Graduates will be able to create and analyse the Research and Development activities related to design and manufacturing.

PSO2 - Graduates will be able to design, develop need based products in Mechanical Engineering and allied Industries.

## **About the Department of Mechanical Engineering**

The Department of Mechanical Engineering was started in the year 2005 offering the Bachelor's Degree under Anna University and Post Graduate Degree of Master of Engineering in Manufacturing Engineering in the year 2012. The Department has 25 faculty members, who are highly qualified in different areas of specialization and dedicated their profession for the students. Amongst that, 3 faculty members hold the 2018 -9 Doctorate Degree and also recognized as supervisors for guiding Ph.D.

The Department is nourished with the modern equipment and computing facilities with the latest version of software viz., ANSYS, SOLIDWORKS, Femap Nastran, NX CAD CAM CAE, MASTERCAM and AutoDesk Inventor. Value added courses are provided for the students. Our department is an Anna University recognized Research Centre.

## **About Mech'Časopis**

The name Mech'Časopis is taken from the Croatian language; Časopis (Pronounced as Chasopis) means Newsletter. This newsletter brings the outline of the students and faculty achievements with the activities of the department.





**Motivational talk on “Preparing to become an Entrepreneur”  
on 05.07.2018 by  
Er.C.P.Ajay, Chairman, Ajay Minerals, Virudhunagar.**





**Orientation lecture to ISHRAE Chapter on 10.07.2018 by Dr. P. UdhayaKumar, Professor & Head, KLN College of Engineering, Madurai.**





**One day Hands on Workshop on Maintenance of Air Compressor on 25.07.2018 by Er. R. Balagopalan, Managing Director, Vickram Engineers,**





**Guest Lecture on E- learning Tools on 20.07.2018 by  
Mr. S. Balasubramanian, Thors- E – learning Tools Chennai.**





**One day Hands on Workshop on HVAC on 02.08.2018 by  
Er.A. Shajahan, Centre Head- CADD, Madurai**





**A guest lecture on Modern Manufacturing Process for aviation and automobiles on 20.08.2018 By Dr.T. Ramprabhu Director, DRDO, Bengaluru.**





**Guest lecture on Opportunities in DRDO regarding funding and laboratories available in DRDO  
On 20.08.2018 By Dr.T.Ramprabhu Director, DRDO, Bengaluru.**









**One day workshop on CAD for Mechanical Engineers  
Applications On 12.09.2018 by  
Er.R. SathivelMurugan,AP/MECH, KCET, Virudhunagar**





One day workshop on Industrial Automation 12.09.2018 by Dr.K.Kannan, ASP&HOD/MTR, KCET, Virudhunagar.



**Guest Lecture about Opportunities in Government sectors on  
11.10.2018 by  
Mr.T.Shril Arockia Raj, Indian postal services**





**Guest Lecture on opportunities available for Mechanical Engineers on 26.10.2018 by Mr.V.Sri Sankara Subramanian, Supervisor**





**All India Seminar on Materials for Energy Conversion and Storage on 05.02.2019 & 06.02.2019**  
**Prof. Vijayamohan K Pillai,**  
**Outstanding Scientist at CSIR - CECRI Former Director,**  
**CECRI, Karaikudi.**





**Guest Lecture on Opportunities for Design Engineer**  
16-02-2019 diametric Technologies





**SAE India Sponsored Guest lecture on Total Quality Management and integration of institute with Industry on 09.03.2019 by Mr. Suresh Naidu Gali, Corporate Quality Head, Prabha Engineers & Prabha Auto Products Pvt. Ltd., Mumbai**



## Students Achievements

- Five of our Final Year Mechanical Engineering students participated in skit competition at kaala Gandhi birthday celebration 2018 and received second prize from Honorable Chief Minister of Tamilnadu.
- Miss.P.Sujitha from Final Year Mechanical Engineering participated in Tamil Elocution at kaala Gandhi birthday celebration 2018 and received third prize from Honorable Chief Minister of Tamilnadu.
- Six of our Final Year Mechanical Engineering students participated in Mr. Machinist at ISTE events and received cash prize.
- Six of our Third Year Mechanical Engineering students participated in Technical Poster Presentation at ISTE events and received cash prize.
- Mr.R.Nithish from Third Year Mechanical Engineering student participated and secured second position in KalakkalKalattae event at National Institute of Technology, Trichy and received cash prize.
- Mr.R.Vijay from Fourth Year Mechanical Engineering student has been awarded as Best NSS Volunteer by Anna University Chennai on 28.09.18.





### **Students Achievements**

- Four of our Mechanical Engineering students participated in MAKSFETE'18 events organized by Department of Mathematics and won prizes.
- Mr.R.Vijay from Final Year Mechanical Engineering participated in the event of Fun Games and got Second prize in Paavai Engineering college, Namakkal on 29.09.18.
- Mr.R.Nandha Praveen of Third Year Mechanical Engineering student participated and secured First Prize in Rubic Cubix event at SCAD College of Engineering & Technology, Tirunelveli.

### **Faculty Achievements**

- Dr. S. Senthil received FAER scholar program award for his project titled "An innovative design and fabrication of blaze extinguisher"
- Mr.B.Balavairavan and Mr.S.Muthu Natarajan had successfully completed six weeks faculty summer fellowship program at IIT, Delhi.
- Mr.K.Muruganandhan had successfully completed eight weeks Science-Academics summer Research fellowship programme 2019 at IIT, Ropar.



# **Student's Corner - Technical Article**

## **DESIGN AND FABRICATION OF NAPKIN INCINERATOR**

### **Team Members**

S. No.	Roll No.	Name of the student
1	16UMEC007	R. RISHI
2	16UMEC018	P. MUGESH KANNAN
3	16UMEC095	C.MARISELVAM
4	16UMEC127	S. RAJA MAREESWARAN

Project Supervisor - **Mr.K. MUTHU NATARAJAN M.E., (Ph.D).,**

### **ABSTRACT**

The problem of improper disposal of menstrual waste is measure road block to our achieving missions goal to create a clean India. This waste is problematic for several reasons. Heaps of sanitary napkins with a large amount of disease causing bacteria on them pose a significant threat to the hygiene in the surrounding area. Young girls and even certain older women's are not aware of the hygiene problems cause by improper disposal of Napkins. This system is one of the best way to dispose menstrual waste is to burner is napkin using electrical fire based burner without allowing smoke generate in the process to escape into the atmosphere. This steps must be taken to solve the problems that improper disposal of napkins causes to the environment and to the public health. and invest huge capital in many river cleaning projects like, "Narmada Bacha" and many major and medium projects in various cities like Ahmadabad, Varanasi etc. By taking this into consideration, this machine has designed to clean river water surface. Nowadays almost all the manufacturing process is being atomized in order to deliver the products at a faster rate. Automation plays an important role in mass production.

**Keywords:** Electrical ceramics heater, thermocouple, digital thermal controller.



## **CONSTRUCTION:**

In our project, outer surface is covered by metal sheet like MS sheet, MS flat, MS plate etc. To withstand the heat and supportable. In that combustion chamber is fixed. In that the combustion chamber, the electrical ceramic heater is attached to heat the napkin. Around the ceramic heater thermocouple is attached, to fixed and around it by fibre glass wire. Then the digital thermal controller is fixed. It will show and control the temperature.



## **WORKING:**

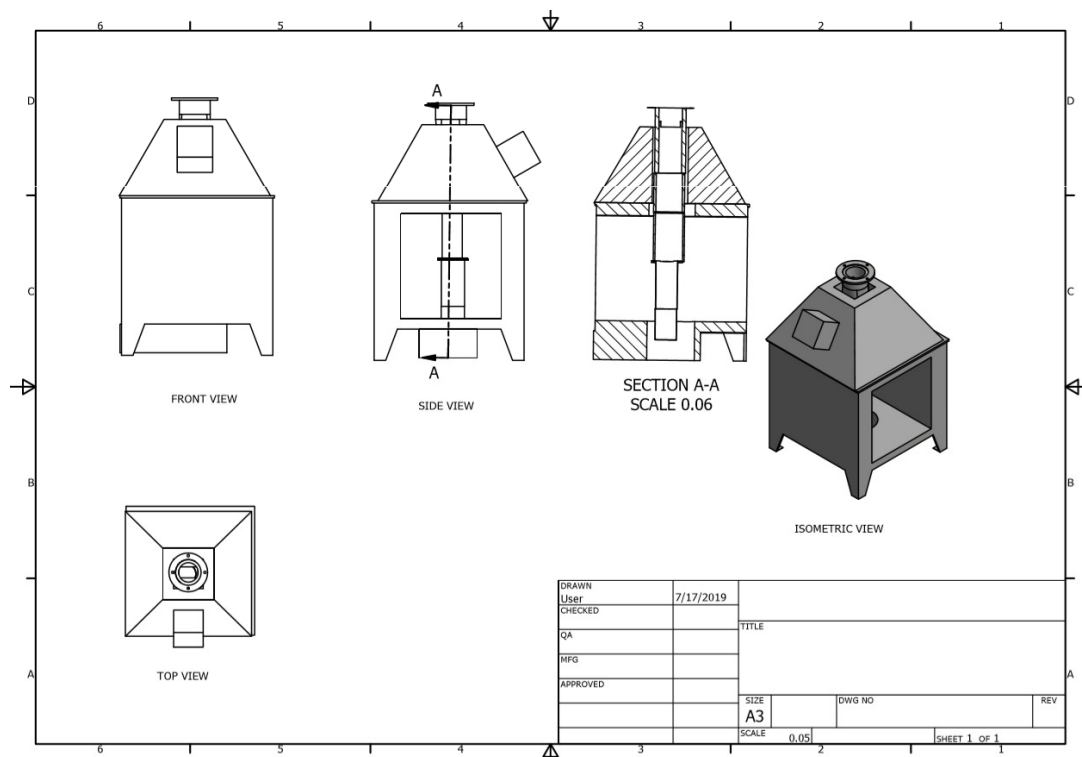
In this napkin incinerator at a time there a 25 to 30 napkins are inserted. First, combustion is preheated, then a limited amount of heat is produced and then a napkin is inserted into the combustion chamber. It takes 20 to 30 minutes to heat at 400°C (approximately 380 to 420°C). In combustion, a thermocouple is fitted because it will sense the temperature. When the temperature increases to 420°C, it automatically



it will shut off its Heat will be decreased it is represented by Digital thermal controller it will shows Digitally who much of temperature is in combustion chamber. Mainly it is covered with help of MS Steel and MS flat and then bot and nut.

While burning both dry and wet napkin, fumes will go to atmosphere at 35 to 40feet (depends on chimney height). After that fumes didn't come to lower .so practically it will proves. Ceramic heater is used to heat the napkin at 400C.In that fibre glass wire is used to withstand the heat.

## CAD DIAGRAM:



This Industrial project gives to  
**P.S. CHIDAMBARA NADAR Senior English School.**



## **Alumni Corner**

### **Technical Article**

#### **HVAC industry & its opportunities for mechanical engineers**

The past few decades has seen the paradigm shift of construction industry, from having been a civil centric business to have included larger priority spaces for building services - Mechanical & Electrical. Thanks to the various driving factors - Technology, financial challenges, Integrated requirements, life safety etc. The mechanical engineer's color has changed from brown/blue to white. Corporate functioned construction business has seeded white collar mechanical engineering jobs via the various technological advancements & the immense competition at the real estate market place.

The building services are briefed as MEP(Mechanical, electrical & Plumbing), with HVAC, Fire & Life safety and Plumbing as the core applications of Mechanical. Fire & life safety is a quintessential system for buildings. Budding engineers expertise in hydraulics with application of Regional & International building codes are at high demand.

Fair construction practice with respect to the environment, taking into consideration, the conservation of water resources & properly designed drainage infrastructure is the need of hour for developing countries future for ecosystem. Engineers expertise in fluid mechanics principles & applications can well serve these industries.



With Climate change posing a major challenge for the world's geography, the HVAC (Heating ventilation and Air conditioning) Industry has dual responsibility of creating sustainable solutions for a safer environment & an energy efficient design practice for a conservative resource utilization.

To drive this mission forward, the HVAC industry requires young passionate engineers who strive to achieve in the field of Contracts, design, execution, commissioning, validation & facility management at temperate/tropical continents including the Middle East & India.

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## **Editorial Team**



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