

2014-2015
July to Dec 2014



KCG
COLLEGE OF TECHNOLOGY

Issue -1

DEPARTMENT OF MECHANICAL ENGINEERING

Impact *newsletter*

Highlights of the department

- The Department of Mechanical Engineering had its inception in the year 1998 and is permanently affiliated to Anna University.
- We have MOU's with Companies Like CADD Centre Software Solutions Pvt Ltd, CADDM Technologies.
- The department has bagged an AICTE project for Rs.7.0 lakhs in the area of alternative fuels. Apart from these, two student projects received funding of Rs.1.0 lakh each from AICTE. Nearly 40 % of the students leaving the department after their course are pursuing Master's program from reputed Indian & Foreign Universities. Many are placed in leading companies and a few others have become successful entrepreneurs.

***"To Make every man
a Success and no man
a Failure"***

EDITORIAL MESSAGE

The rapidly changing socio-economic and political trends across the globe are compelling India to be more competitive, if it has to integrate itself to the global economy. To achieve this end, we have to focus on several areas of which developing our human resources will occupy a pivotal role.

Youth development and empowerment for nation building can be achieved only through practical experience and proper education. At the same time, the youth cannot be developed only through pedantic methods. It requires a broader vision wherein the co-scholastic domains of the child also need to be addressed.

The Mechanical department of KCG College of Technology has been functioning with this perspective as its guiding principle for imparting a wholesome education to the student and has made its mark as one of the leading brands in Engineering Education. The department faculty, who are assigned this task, have been adequately oriented about the broader purpose of pedagogy.

Given the vast potential lying within the students, faculty and other members belonging to this department, I have no doubt that it is bound to metamorphose into a vibrant and exemplary place of learning.

It is my hope that our department will prove to be the best among its equals and I exhort each and every member of this family to give their very best to make this department scale newer heights in times to come. With this message, I am proud to release this year's newsletter.

Dr.A.RAMESH KUMAR
HoD-Mechanical Engg

Faculty Development Programs

- Dr. N. Govindaraju attended a 7 days Faculty development program on “ Manufacturing Technology II” on 8-14 Dec 2014 held at Anna University Chennai.
- Dr. D. Easu attended a Faculty development program on Introduction to robotics held at SSN College of Engineering n 30-1 July 2014.
- Mr. K.G. Maheshwaran, Mr. B. Rajesh Kumar , Mr. M. Arul Inigo Raja, Mr. L. Prince JeyaLal, , Mr.Nishant B Mayekar, Mr.A.Sam Daniel Fenny attended a Faculty development program on Strategies in sustainable manufacturing held at KCG College of technology on 25-26 Sep 2014.
- Mr. M. Arul Inigo Raja attended a 2 days Faculty development program on Nano structured materials processing and characterization held at NIT Trichy on 7-8 Nov 2014.
- Dr. K. Jessy attended a Faculty development program on New materials and their characterization held at Anna University on 9-10 Oct 2014.
- Mr.Nishant B Mayekar attended a 7 days Faculty development program on Design of Transmission systems held at Saveetha Engineering College on 12-19 Dec 2014.
- Mr. M. Arul Inigo Raja attended a 5days Faculty development program on FEA using Ansys held at VIT Chennai on 8-12 Dec 2014.



Job Offers

The following Students have been offered placements.

<i>Company</i>	<i>No of Students</i>
• Infosys	15
• Sutherland Global Servies	02
• Lalitpur Power Generation Company	01
• Omega Healthcare	02
• V-Tech Power	10
• Schwing Stetter	01
• Accenture	01



DEARMAN ENGINE *an article*

With carbon emission levels rising, global warming concerns and the fear of depletion of fossil fuel, it is necessary to find a feasible alternative source of fuel.

In the field of automobiles, electric cars look to solve this issue but they too have their drawbacks and disadvantages. In such a time, an innovation that has captured my attention is a unique engine system designed by Dearman Engine Company Ltd., a new type of engine uses liquid nitrogen to power its pistons.

Liquid nitrogen engines have been a goal since nitrogen was first liquefied in the 1880s, but progress was slowed by the challenges of building engines to use fuel at -196°C (nitrogen's boiling point). But current innovations have made it a reality to deliver cold and power at the same time. The engine produces power like a petrol engine, with liquid nitrogen expanding to drive a single piston.



Delvin Hester D
2nd Yr Mech

Before the nitrogen gets to the engine, however, it has absorbed the heat of the refrigerated compartment through a heat exchanger. This latent heat changes the nitrogen into a gas without any increase in temperature. It is then injected into the cylinder to mix with a water-glycol fluid, which enables the gas to expand at a consistent and efficient rate, feat previous attempts at liquid nitrogen engines have struggled with.

However, a mass-market cryogenic car is still a long way off and may not be a viable product at all. Instead, Dearman is initially concentrating on how his technology could replace diesel engines in commercial vehicles, starting with the secondary motor that drives refrigeration in food-delivery trucks.

The idea behind a cryogenic engine is that allowing liquid nitrogen to boil produces compressed gas that can be used to generate mechanical and/or electrical power. Its only emission is a blast of harmless but potentially useful cold nitrogen gas. Dearman's innovation is to circulate heat-exchange fluid inside the engine in a way that doesn't flood it but keeps the gas relatively warm as it expands in order to maintain the engine's efficiency. This guarantees a zero-emission, quieter engine.

Whether the Dearman engine can practically replace conventional diesel engine systems is something that one must wait and see.



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Sheerwind Invelox System

Man has been looking at renewable sources of energy to quench his eternal thirst for energy. Wind turbines may be considered an eco-friendly way to generate electricity, but they're heavily criticized for blotting the landscape and killing hundreds of birds. In such a scenario, a new bizarre-looking alternative to these bladed systems that uses a series of funnels and tubes has been designed: Sheerwind Invelox System.

A recently developed technology: INVELOX (increased velocity), has shown promise. The patented INVELOX is simply a wind capturing and delivery system that allows more engineering control than ever before. While conventional wind turbines use massive turbine-generator systems mounted on top of a tower, INVELOX, by contrast, funnels wind energy to ground-based generators. Instead of snatching bits of energy from the wind as it passes through the blades of a rotor, the INVELOX technology captures wind with a funnel and directs it through a tapering passageway that passively and naturally accelerates its flow. By channeling this wind through a passage that narrows at the end it creates a 'jet effect', which increases the wind's velocity, but lowers the pressure. This stream of wind energy then drives a generator that is installed safely and economically at ground or sub-ground levels.

Conventional wind turbines use massive turbine generator systems mounted on top of a tower. Invelox, by contrast, funnels wind energy to ground-based generators. Instead of snatching bits of energy from the wind as it passes through the blades of a rotor, wind is captured with a funnel and directed through a tapering passageway that naturally accelerates its flow. The new technology is safe for humans and wildlife, requires less maintenance than



Adil Malik A.,
II Year Mech

conventional wind systems and produces more electricity per dollar invested than conventional systems. The funnel-driven system captures the wind and brings it to ground-level turbines and blades for safer, easier and cheaper operation and maintenance. Hopefully, we will be able to finally channel the full potential of wind energy to produce electricity and make the Invelox system a feasible alternative .

Industrial Visits



- A batch of 65 Students went for an Industrial Visit to Schwing Stetter, Chennai in 08.08.2014. Schwing Stetter India, a 100% subsidiary of the Schwing Group of companies GMBH was incorporated in the year 1998. They are the pioneer of Concrete Construction equipment manufacturing in India catering to the customers with world class concreting equipment. SCHWING Stetter India has introduced path breaking products in the Indian concrete pumping industry such as SP8800 concrete pumps, CP 30 Batching plants and the 10 M3 Truck mixers which became synonymous within the RMC industry.
- A batch of 65 Students went for an Industrial Visit to Komatsu, Oragadam in 09.09.2014.

In Plant Training

SNo	Period	Name of the Students	Year of study	Company Name	No of Student
1	08/06/2012 to 14/06/2012	Jiju Paul	Final Year	Cochin Port trust, Cochin	1
2	19/06/2012 to 23/06/2012	M. Yuvaraj, T.J. Vivek	Second Year	Southern Railway Chennai	2

About the Department of Mechanical Engineering

The Department of Mechanical Engineering had its inception in the year 1998 and is permanently affiliated to Anna University. Mechanical engineering is a core area which provides the student with the skills required for a professional career in a wide range of sectors like finance, industry, consultancy and public services.

As the work of a mechanical engineer involves production, transmission and use of mechanical power and heat, we teach them to analyze the different materials used for the machines and their tolerances, investigate the different energy sources and the power they generate and the design problems if any. The department imparts knowledge in three major areas, namely Thermal Engineering, Manufacturing and Design. Student chapters of SAE, ISTE, Energy Club, and Institution of Engineers are also functioning effectively to help the student community.



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Courses Offered in Department of Mechanical Engineering

- ***B.E Mechanical Engineering***
- ***M.E Engineering Design***
- ***M.E Manufacturing Engineering***

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