



DRONACHARYA COLLEGE OF ENGINEERING

JULY NEWSLETTER, 2008

VOL III ISSUE XXIV

In This Issue . . .

- Editor's Desk
- HOD's Desk
- Live Projects Undertaken By Students
- Technology Focus
- Student's Viewpoint


ISSUE OF MECHANICAL ENGINEERING DEPARTMENT

From Editor's Desk :

***Stand on Ovation to Woman Empowerment!
"Once upon a time thou stood on high heels,
Then came the time thou climbed the hills;
Gone are the days when thou hid behind the veil,
Now is the time thou boldly sit at the Wheel."***



Mechanical Engineering - a Branch with tantalizing tags - evergreen, sinewy, steely happens to be a branch of engineering having a reputation that is proverbial for its steadiness and strength, stringency and stalwartness. Even the layman knows how this Branch is the backbone of Industry. Fusillades of questions and queries raise their heads as we think of this masculine branch. The students of the Department of Mechanical Engineering often appear to be daringly different. In the midst of the meteorically growing popularity of courses as Computers, I.T., Electronics, Electrical, Bio-Tech. and others Mechanical Engineering appears to be something of a myth, a heritage and whirring of wheels and wheels within the wheels. Software or Hardware seems to be pretty safe, soft and sweet, Electronics & Communication Engineering adequately electrifying, Bio-Tech. enviably embodying the Life Force to allure female aspirants. This seems to be the reason few female aspirants are the takers of Mechanical Engineering. I hereby exhort dear daughters and sweet sisters to please muster courage and shed shyness in opting Mechanical Engineering. Today ladies have carved out significant niche in every field and proved themselves to be even stronger than their male counterparts. Miss Tanushree of the Mechanical Branch at DCE has made us proud by her enviable achievements on all fronts - academic, cultural, project work and placement. Girl aspirants! please, ditch the hitch and try your strength in this field too. This is Admission Time - the crucial moment to take a drastic decision. Take a step and the road will take care of the hurdles. Dronacharya has devised special scholarships for meritorious girls. A girl with Merit in Mechanical Engineering Branch will be doubly honoured. Accept the challenge! Show your shakti!!

 Editor, (Dr. R. C. Narula)

From HOD's Desk :

"With perseverance alone, the results we will see. Every innovation big or small, counts. Can that transform the world? Yes !!! So wake up and act instantly !"



I am indeed very happy that Newsletter of July 2008 issue from Mechanical Engineering Department is being placed on the College web - site www.dronacharya.info. The Newsletter serves as an excellent communication channel among the Alumni of DCE Gurgaon.

The Faculty should possess not only the knowledge of the latest technical topics but also to be innovative. If innovation is to be achieved fast, development must be carried out as a number of parallel functions rather than following sequential steps. Computer Aided Design, Modeling and Simulation have a wide spread use. Research & Development and innovation based project activities are being further enhanced and strengthened by more involvement of Faculty, Staff and Students.



This year the Department of Mechanical Engineering has bagged I & III positions in the Best Project Award Competition organized by Faridabad Industrial Association, Faridabad. My best wishes and congratulations to them for winning the Best Project Award. We, the faculty, staff, students, alumni and the undersigned, rededicate ourselves to bring the Department as best department among Engineering Colleges of Haryana under the guidance and supervision of our dedicated, diligent and scholastic **Principal, Dr. B. M. K. Prasad.**

 *Head of the Department, (Prof. S. K. Bagga)*

Live Projects Undertaken By Students :




GENERATION OF ELECTRICITY UTILISING THE EXHAUST GASES

The project is on Generation of electricity utilising the waste energy from an internal combustion engine. The system consists of dynamo or alternator which is rigidly fixed with the gas turbine blades shaft with rigid coupling. The supporting table has a bearing through which the shaft between the dynamo and blade can rotate freely. The gases from I.C. engine impinge on blades. It also consists of voltmeter and ammeter connected in parallel and series respectively with alternator. A battery is used for charging electricity produced by flue gases.

The system is placed in such a way that the exhaust gases will impinge on the blades of gas turbine and due to impact and design of blades. The kinetic energy of flue gases is totally transformed into pressure energy. This mechanical energy can be used directly or after converting into electrical energy with the help of dynamo / alternator.







Team Members **ME Department**

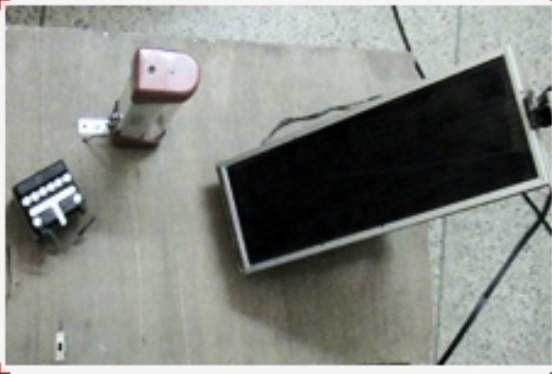
-  Devender Yadav (7229)
-  Inderjeet Yadav (7235)
-  Vijay Chhabra (7268)

DESIGN AND FABRICATION OF PHOTO VOLTAIC SOLAR STREET LIGHT

This project "**Photo Voltaic Solar Street**" is based on the principle of converting solar energy (sun light) into electric energy with the help of solar cell. In this a solar seeker is constructed. Solar seeker system can be defined as a system which produces energy by seeking and sun absorbing maximum sun light at 90 degree angle of the sun. This system is very useful in rural area for irrigation and street energy. This system is designed for outdoor application in un-electrified remote rural areas. This system is an ideal application for campus and village street lighting. The system is provided with battery storage backup sufficient to operate the light for 10-11 hours daily. The system is provided with automatic on / off time switch for dusk to dawn operation and overcharge / deep discharge prevention cut-off with LED indicator.

The system consists of:

-  3 Watt Solar PV Module
-  12 V, 6 Ah battery with battery box
-  Charge Controller cum inverter
-  11 Watt CFL Lamp with fixtures



Team Members
ME Department

- Ammit Raj Bokan (7217)
- Atul Sharma (7223)
- Dinkar (7230)

FABRICATION OF A ROBOTIC ARM

The designed and fabricated ROBOTIC ARM which is capable of performing various functions with maximum accuracy and have the following main components:

Base, Elbow, Gripper, Motors and Wheels

In the fabrication of robot base and elbow are made of mild steel while gripper is made of plastic. This can perform a number of tasks like picking up an object and keeping it at some other place, for digging a pit, to remove earth from the ground surface and to move the trolley carrying goods from one place to another. It has many other applications which can be transformed by changing the end effectors i.e. gripper.



Team Members
ME Department

- Gaurav Sharma (7232)
- Jasvinder Singh (7236)
- Nitin Prasad (7244)
- Robin Gupta (7255)

Technology Focus :

MAGNETIC BEARINGS FOR IMPROVED PERFORMANCE

New developments in magnetic bearings now make possible dramatic improvements in aircraft gas turbine engine performance and efficiency. Although magnetic bearings are heavier than ball / roller bearings elimination of lubrication system and external gear box / power take off system removal due to the elimination of oil. Engine life and reliability are greatly increased because magnetic bearings do not wear out or fail due to fatigue. In fact, magnetic bearings can be built to operate for the life of the engine without periodic maintenance or replacement as required by rolling element bearings. The magnetic bearing engine re-established the concept of the all-electric (fly-by-wire) aircraft. They also reduce shaft power loss due to bearing friction. Magnetic bearings can control the rotor shaft position within a few thousandths of an inch even under high load conditions. These dramatic improvements in engine performance have been made possible by the recent development of a new type of compact, light weight and highly efficient magnetic bearing. The key differences in the new magnetic circuit and high energy product are rare earth alloy paramagnet magnets. The net result is a magnetic bearing that is less than the one third the weight of the previous industrial type magnetic bearings used in large turbo pumps by the petrochemical industry. Such bearings are capable of controlling turbine shafts both statically and under dynamic loading conditions of maneuvering and landing shocks back-up surface or limited life bearings are used to prevent damage to the engine should electrical power be lost during the engine operation. The back-up bearing allows the engine to operate for a limited period of time without the levitation bearings.

Student's Viewpoint About The Department :



"No wild enthusiast ever yet could rest, till half mankind were like himself possessed."

I am very happy to be associated with the Mechanical Engineering branch of the Mechanical Department of Dronacharya College of Engineering. The Faculty grooms us for personality development, motivation, communication skills, attitude and behaviors, do's and don'ts during the course of interview, self esteem and confidence building etc. to enable us to have good jobs in reputed organizations.

By Acquiring above attributes I got my placement with M/s JBM Ltd. through campus selection and wish to be associated with the department for a long run.

 **Jasvinder Singh**



"It is only those who possess firmness who can possess true gentleness."

It gives me immense pleasure to be associated with the Department of Mechanical Engineering where I gained not only the technical knowledge (theoretical and practical) but also developed my personality.

I am really thankful to my H.O.D., Prof. S. K. Bagga, for grooming and nurturing me.

 **Rakesh Kumar**



"Every man is the architect of his own fortune."

I am happy to express my views about the Mechanical Engineering Branch where I not only earned value based engineering education but also shaped my character and personality through the synthesis of science and spirituality. After crediting these qualities. ***I got my placement with M/s Elvy Life Style Pvt. Ltd. through campus selection.***

I wish to be associated with the H.O.D., Faculty, Staff and the College for any kind of service in future.

 **Devender Yadav**



"The great are only great because we are on our knees. Let us rise."

I take pride on being associated with the Department of Mechanical Engineering of Dronacharya College of Engineering. This department has state-of-art labs facilities. Under the supervision and guidance of H.O.D., Prof. S. K. Bagga, a number of projects were completed. He believes in the development of students with innovative ideas, involvement in R&D activities and enhancement of capability with 360° orientation. By acquiring above attributes. ***I got my placement with M/s Satyam Computers Ltd. through campus selection.***

I wish to be associated with the Faculty of this department for building my career in years to come.

 **Amit Kumar**