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Dronacharya College of Engineering

ISSUE

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Mechanical Engineering

In This Issue....

From Editor's Desk :

Dronacharya College of Engineering, Gurgaon is a front runner in developing teaching and learning methods that reflect best practice in imparting technical education to young minds. Our experienced faculty members teach students to move from the realm of ideas to real - world applications. The college is committed to equip the students with knowledge, skills and attitude.

At ***DCE,*** we edify our ***Dronacharyans*** to dream and realize the professional growth in a congenial environment with values and characters to attain socio - economical and technological growth at global level. The college is committed to foster in its students the pursuit of individual excellence and participation in full range of seminars, workshops, conferences, project - exhibitions, cultural, social and physical activities to make them evolve as all - rounder. The campus is a place of hope and encouragement.

We believe in the complete development of our students. They are expected to broaden their horizons academically too pursuit of knowledge over and above the prescribed syllabus. We also encourage innovative and independent thinking in developing useful projects so that they can contribute their best to the society and the nation.

We boast of the glittering galaxy of our sterling students who bagged positions in the Merit - list of ***M. D. University, Rohtak.*** The placement of our students is very encouraging. Some of our students have studied and are studying in world famous Universities in and out of India.

I am confident and proud to convey that once the students step in ***DCE, Gurgaon,*** they step out with the self - confidence and knowledge to compete in the world of professionals. We prepare them for that!

Editor, (Dr. Sunil K. Mishra)

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From HOD's Desk :

"Sarva sastra prayojanam atma darsnam".

"The end of all sciences - technical, theoretical, applied
And human - is to enable the individual to know himself."

The greatest discoveries are not merely materialistic achievements, but are the expressions of human intelligence and imagination.

Mechanical Engineering is the most versatile and evergreen branch of Engineering. At ***DCE,*** the Department has advanced laboratories and an adequate number of spacious class rooms equipped with LCD multimedia projectors. We are committed to give practical knowledge on CNC lathe having FANUC control system, mould design, sheet metal, carpentry, welding, foundry etc.

The Department has distinguished, dedicated and competent faculty to impart quality education, project guidance, communication skills etc to enable the students to be placed with reputed MNCs, PSUs etc. Students are also being assisted and supervised for contributing research papers and designing projects focusing on Mechanical Engineering.

We encourage our faculty and students to participate in various seminars / conferences / workshops to update their knowledge.

I am indeed grateful to Hon'ble Chairman, Principal, Dean Academics, faculty and staff members for their valuable guidance, help and suggestions in making the new heights for the department.

Head of Department, (Prof. (Dr.) S. K. Bagga)

National Seminar :

A one - day National seminar on ***Fluid and Solid Mechanics*** was organized by ***Mechanical Engineering Department*** on ***22 August 2011*** wherein faculty and students from various colleges presented their papers. The Chief - Guest ***Dr. Praveen Garg, Chairman, Faridabad Industries Association (FIA), Faridabad*** inaugurated the seminar by lighting the lamp followed by welcome address by ***Hon'ble Principal Prof. (Dr.) B. M. K. Prasad***. Addressing the gathering, the Principal stated that the aim of this National Seminar is to bring Industry & Academia together to provide an exciting research environment for the next generation in the field of Fluid and Solid Mechanics.

Hon'ble Principal addressing the gathering

HOD (ME) Prof. (Dr.) S. K. Bagga delivering his talk on Solid Mechanics

Dr. Praveen Garg from FIA, Faridabad enlightening the participants

Dr. Sanjeev Kathuria from FIA, Faridabad sharing his views at AFSM 2011

Hon'ble Principal presenting a token of honour to Dr. Praveen Garg

Dr. Sanjeev Kathuria receiving a memento

Research & Publication :

Research papers entitled "Effect of Wear at joints in four Bar Mechanism using ANN" and "Magnetic Lapping Tape with Fixed Abrasive" are published in Vol. III, Issue I - 2011 of ***Dronacharya Research Journal (ISSN : 0975 - 3389).***

Live Projects Undertaken by Students :

Compressed Air Engine :

It uses the expansion of compressed air to drive the pistons in a modified piston engine. Efficiency of operation is gained through the use of environmental heat at normal temperature to warm the otherwise cold expanded air from the storage tank. This non - adiabatic expansion has the potential to greatly increase the efficiency of the machine. The camshaft modifications are done in order to eliminate the compression cycle, thus making the 4 - stroke engine to a 2 - Stroke engine. The basic idea of eliminating this cycle is that the compression cycle would try to compress the air that has been forced to the engine, which would cause the engine to stall. The advantage is that there is no point in the cycle where both valves are closed, thus eliminating any compression or suction that could slow down the piston. The air car is a clean, easy to drive and high performance car.

Project Guide

- Prof. (Dr.) S. K. Bagga
- Mr. Deepak Sharma

Team

- Rakshit Sehgal (Roll No. 11316)
- M. Srikanth (Roll No. 11292)
- Neeraj Yadav (Roll No. 11302)
- Mahesh Yadav (Roll No. 11293)
- Aakriti Rupal (Roll No. 11267)

Electricity Generation by Ocean Waves :

Ocean is adobe utilized for generating the electricity permanent source of energy. Consider a moderate ocean swells, in deep water, a few kilometers off a coastline, with a wave height of 3 meters and a wave period of 8 seconds. Using the formula to solve for power, we get

$$P \approx 0.5 \frac{\mathrm{kW}}{\mathrm{m}^3 \cdot \mathrm{s}} (3 \cdot \mathrm{m})^2 (8 \cdot \mathrm{s}) \approx 36 \frac{\mathrm{kW}}{\mathrm{m}}$$

It means that there is 36 kilowatts of power potential per meter of coastline and in major storms, the largest waves offshore are about 15 meters high and have a period of about 15 seconds. According to the above formula, such waves carry about 1.7 MW of power across each meter of wave front.

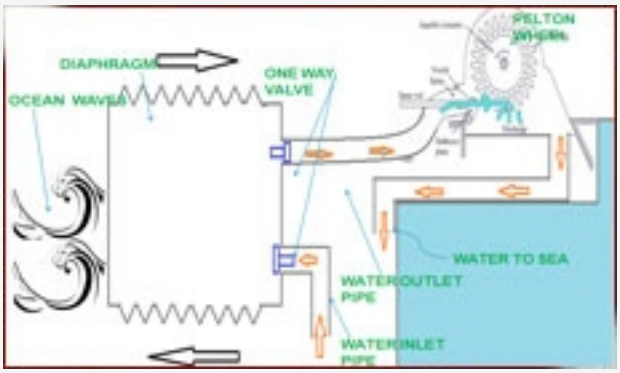
It is a mechanical arrangement in which the energy of sea waves is used which is a permanent source of energy. As the waves never die, the waves hit the shores with a very high energy and pressure. This impact of waves will be used to generate electricity.

Project Guide

- Prof. (Dr.) S. K. Bagga
- Mr. Rajesh Arora

Team

- Bhaskar Bhawani Nandan (Roll No. 11271)
- Hemant Khandelwal (Roll No. 11281)
- Kavita Gambhir (Roll No. 11288)
- Karun Ahuja (Roll No. 11837)



System upto the diaphragm would be submerged under the water. The diaphragm consists of two one way valves; inlet and outlet. As the wave hits the diaphragm, air from the pipe is removed and vacuum is created. Due to this water is sucked in and fills the diaphragm. With the another hit of wave, the water stored gets pushed out under pressure through the outlet valve. This water is further pressurized with the help of a nozzle. And this water is allowed to impinge on the buckets of the Pelton turbine coupled with generator to generate electricity.

Smart Farming :

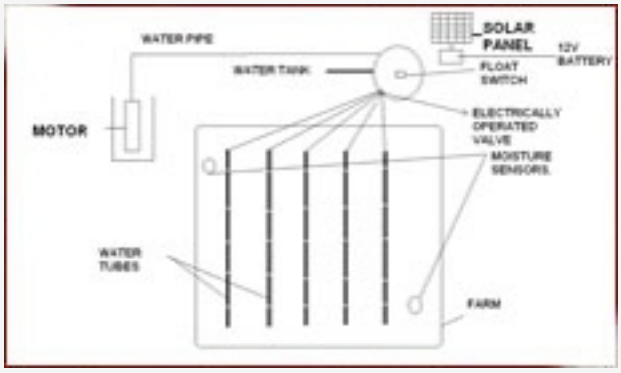
Smart farming makes a farmer smart. By this device once the farmer has to seed the field and after that there is no need to visit farm daily. This device operates the whole process automatically. This project has the facilities to watering the field, putting the pesticides and ON - OFF operation of motor. The moisture sensor senses the soil and also operates the electrically operated valve which runs on with or without electricity. Water tubes are connected at one single hose which is connected to electrically operated valve mounted beneath the storage tank. Solar panel charges the battery. With the help of float switch submersible pump starts and water starts filling into the storage tank. Moisture sensors are installed at various corners of the field for sensing whether moisture level is going down and send a signal to electrically operated valve and valve will get open and water starts flowing into the tubes and after completion of the water supply sensor will again send a signal to close the valve. Float switch will help in maintaining the water level into the storage tank.

Project Guide

- Mr. Ravi K. Sharma
- Mr. Surender K. Yadav

Team

- Manuj Arya (Roll No. 11294)
- Bhupesh Bangia (Roll No. 11272)
- Gaurav (Roll No. 11278)
- Amit Mehndiratta (Roll No. 11834)



Placements :

Our students are trained and prepared for various attributes of their personality development viz communication skill, leadership, speaking power, group discussion and mock interviews so that they could be placed in various MNCs, PSUs and private organizations etc. So far, a number of students are placed in various companies like ***Infosys, Indian Airlines, Hero Honda, Automax, Munjal Showa, JBM, Larsen & Toubro (L&T), Petro Engineering, Sona Steering, Sona Okegawa*** etc.

Student's Viewpoint :

"The spirit of improvement is not always a spirit of liberty;
For it may aim at forcing improvement on an unwilling people."

I am fortunate to be a student in the Deptt. of Mechanical Engineering in ***Dronacharya College of Engineering, Gurgaon***. The teamwork of our Deptt. is excellent of which the students are the proud beneficiaries.

It is a matter of pride that our faculty together with the students is working on concerns vital to the entire spectrum of activities of a good engineering college.

Raj Kumar (Roll No. 10302)

"Life is not life at all without delight"

It gives me immense pleasure to be associated with the Department of Mechanical Engineering where I gained not only the theoretical and practical knowledge but also developed my personality. I sought admission in Mechanical Engineering Branch of this college because it has a reputation for better placement.

I am really thankful to my H.O.D and faculty for grooming and nurturing me overall.

Durgesh (Roll No. 10277)

"Skill and confidence is an unconquered army."

It gives me immense pleasure to be associated with the Department of Mechanical Engineering where I gained not only the technical knowledge but also improve my communication skills with confidence.

I feel proud to be a part of this department.

Monu (Roll No. 10292)