DRONACHARYA COLLEGE OF ENGINEERING

FEBRUARY NEWSLETTER, 2009

VOL IV ISSUE XXXI

In This Issue ....

ISSUE OF MECHANICAL ENGINEERING DEPARTMENT

From Editor's Desk :

"Time past is present in time present,
Time present is present in time future,
Time is a flux...."

(Nobel Laureate: T. S. Eliot)

Yes, Time is a tremendous, terrific, tantalising, frantic force which requires no fuel, no charging, no re-charging, a force which Outbeats all other forces, a current which knows no load-shedding. Time is the other name of eternity, a synonym of perpetuity. The ticking of the clock is the heart-beat of the Power Divine. Time is a super stethoscope which enables the spiritualists to hear the throbbing of Nature's heart. Whatever was, whatever is and whatever will be is dominated by Time who rules the human destinies, who controls the Universe with its uniquely universal force. Seconds, minutes, hours, days, months and years dance to the tune of Time's flute. All happens when Time nods its head, when Time gives its glorious and gorgeous green signal. The theory of free-will seems to be a tool of Time handled by man only in fortunate moments. This philosophic thought makes me think of a big event organized by the magnamious Management of Dronacharya College, Farrukh Nagar, Gurgaon, The enviable event, the most happening thing on the eve of the New Year was the Alumni Meet we had been planning and replanning for a long time.

This gala evening got a nod from Time and the much awaited ***Meet was finally held on Jan. 1, 2009*** with great pomp and show. ***The venue of the Meet was the prestigious Hotel Taj at Dhaula Kuan, New Delhi*** as beautiful a venue as those who graced it. ***Prof. Onkar Singh, H.O.D. Electronics & Communication Engg.,*** the brilliant Training and Placement Officer and the Convener of the event left no stone unturned to make the event the most enviable ever in a decade's history of DCE.

Guests from home and abroad, from industry and a large number of passout Engineering graduates manifested heart-felt zeal in enhancing the significance of the event. ***Dr. Satish Yadav, the Hon'ble Chairman, was the Chief Guest on this unforgettable occasion.*** He expressed a profound sense of gratification in an emotional and heart-warming speech, worthy Principal, ***Dr. B. M. K. Prasad, delivered a sterling speech which had an overwhelming impact on the entire audience.***

Some members from amongst the alumni did not miss the opportunity of paying glowing tributes to the Hon'ble Chairman, the dedicated Principal, devoted Faculty members and above all their Alma Mater whose brand ambassadors they are and will always be. Mr. Singh, the Convener, in his vote of thanks, spoke brilliantly with a criss-cross of emotions and sparks of scholastic sheen.

The Meet concluded with a sumptuous dinner in a thrilling environment. We hope future Alumni Meets will be held regularly in the years to come to continue a radiant relationship between Academia and Industry and strengthen the beautiful bond of love between the alumni and their beloved Alma Mater.

Editor, (Dr. R. C. Narula)

From HOD's Desk :

"In Your Planning for Tomorrow, do not neglect today. It is too valuable to be ignored and there are exactly the same number of hours in the day today as there will be tomorrow."

The role of imparting Technical Education has changed over the years at a tremendously high rate from that of mere teaching to one laying emphasis on Time Management, basic transferable skills, discipline, goal setting, motivation and team building. The one most significant contributing factor for successful technologists, scientists, engineers and managers including bureaucrats is proactive planning keeping in view the aspects of time management.

This discipline of management assumes far greater importance today in the engineering education environment than ever before. Every milestone and goal in the engineering college administration is time bound and must be completed / achieved in the stipulated time without an iota of delay. It gives me immense pleasure that we at Dronacharya College of Engineering plan our technical activities most meticulously and with utmost care keeping in view the best principles of time management. The annals of the College amply reveal and adequately manifest the marvelous erecting of massive mile-stones radiantly reflecting enviable achievements on various fronts within the span of a decade. The proverbial eternity of time has to be perpetually administered, innovatively intercepted and its fervent flow has to be challengingly channelised by myriad modules of Management so as to successfully reach dream destination, in accordance with the pre-conceived plans. There will be no exaggeration if we say: ***"The oars of Management can make the ship of an Organization reach a safe shore by frantically facing the turbulent tempest of time."*** The success stories of great achievers highlight that the made to the top by not doing different things but by doing them different things but by doing them differently. The secret of their enviable, exemplary and unprecedent success lies in how they maintained a balance between their career crafting and other activities of life. There are persons who identify their forte, recognize the nature of their talent and fully dedicate themselves joining fuspiration with perspiration opting particular vocation or avocation. The most ideal situation, an pertinently pointed by recognized American poet Robert Frost, is to use vocation and avocation which are like two eyes making one vision. This is possible only when or person skillfully weilds the magic wand of Management attuned to the music of Time.

We are sure that under the leadership and able guidance of our Principal, ***Dr. B. M. K. Prasad*** we shall achieve highest standards of quality in engineering education in our College.

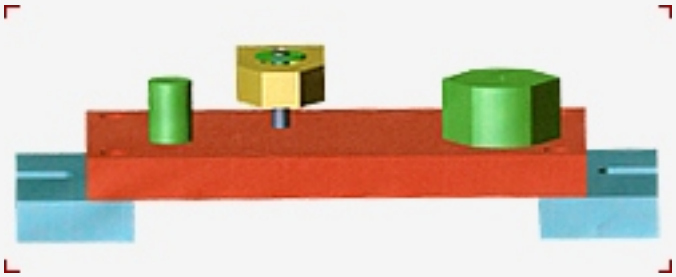
Head of the Department, (Prof. D. S. Sharma)

Live Projects Undertaken By Students :

Design And Fabrication Of Milling Fixture For Connecting Rod

The aim of designing this fixture is to reduce the manufacturing cost and improve consistency in dimensions and avoid rejections. The various principles involved in fixture design are discussed. They consist of locating principles, clamping principles, loading and unloading principles, safety aspects etc. The employment of fixtures is an important aspect of workshop engineering for the production of he articles in large quantities with a high degree of accuracy and interchangeability at a competitive cost. The purpose of fixtures is to maintain low manufacturing costs and to increase industrial efficiency. Fixtures are taking the place of skilled man in the production factory and making it possible to employ unskilled and semi skilled operators. Their use also ensures the uniformity of finished product, which could not be expected otherwise, because of variation of skill between individuals.

In this project attempts have been made in discussions of design principles and basic consideration while designing. Spending a small amount of money when compared to the cost saved per annum we will have an advantage of recurring years together by using a small milling fixture.

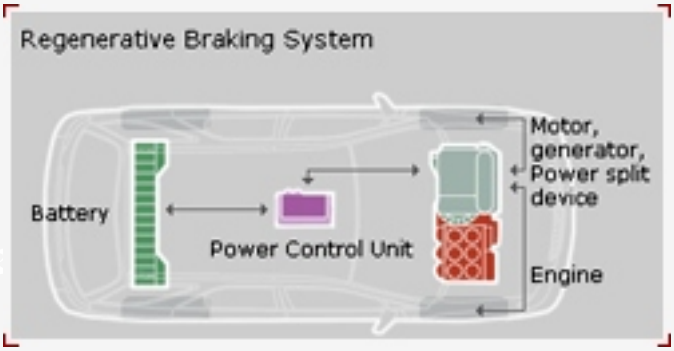


Team Members

- Ombir Yadav (7246)
- Praveen Kumar (7247)
- Rakesh (7249)

Design And Fabrication Of Regenerative Braking System

Regenerative brake cooperative control balances the brake force of the regenerative and hydraulic brakes to minimize the amount of kinetic energy lost to heat and friction. It recovers the energy by converting it into electrical energy. To convert kinetic energy to electrical energy the system uses MG2 as a generator. The drive axle and MG2 are joined mechanically. When the drive wheels rotate MG2 which tends to resist the rotation of the wheels, providing both electrical energy and the brake force needed to slow the vehicle. The greater the battery charging amperage, the greater the resistance. The various uses of regenerative brakes are recharging a battery pack that power vehicle, taking accessory loads such as lights, taking accessory loads such as radio and stereo, giving power to pumps, conditioners and fans and in railways.



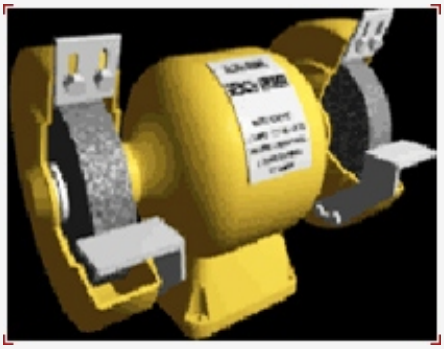
Team Members

- Mukesh (7775)
- Nishu Verma (7243)
- Arvind Kumar (7774)

Design And Fabrication Of Plastic Grinding Machine

This project is on Plastic grinding machine which is an electrochemical machine used for granulating waste of plastic into small parts that can be reused for recycling in the same process as a fresh raw material . This minimizes the reduction in the production process and cost effectiveness. It is working on the principle that the raw material is cut by the shearing force on the material between fixed and rotary blades. The small cut pieces pass out from the sieve plate fixed in the body.

This machine has been used in various industrial processes like grinding of food packages wrappers so that they can be reused, grinding of medical equipments for injections etc. in health centres and hospitals, recyling of used soft drink bottles as they can be decomposed, recycling of polybags and crushing of tyre rubbers.



Team Members

- Deepak Mullick (7777)
- Sumit Kumar (7263)

Technology Focus :

Cokeless Cupola - An Alternative Melting Unit

In spite of strong competition from electric and rotary furnaces, cupola is used as the main melting unit in Iron foundries for last several decades. It has considerable advantages over these batch type melters since it can accept a wide range of such raw materials including oily, wet and contaminated scrap, which are unsuitable for electrical furnaces due to safety reasons. Cokeless Cupola produces molten metal of desired chemical composition and temperature at the required rate in a most economical manner. During Cokeless Cupola melting, there is a degree of refining also before collection in the well. As a result, many contaminants are reduced or lost. In coke-fired cupola, the coke is the basic fuel to impart heat for melting and high carbon ferro-alloys are extensively used with cupola charge for adjusting the chemical composition of metal, whereas in cokeless cupola, the elimination of coke and its replacement by a clean fuel such as light diesel oil (LDO) or compressed natural gas (CNG) gives a number of advantages. The advantages may be summarized as under:-

- There is no free oxygen to form metallurgical fume.
- Superheating of iron is performed by refractory.
- Ceramic Spheres and carbon can be added by injecting a suitable recarburiser into the well of cupola.
- The ideal unit is meant for the production of ductile iron as well as SG iron.

Student's Viewpoint About The Department :

"A total commitment is paramount to reaching the ultimate in performance. The price of success is hard work."

I am fortunate to be a student in the Department Of Mechanical Engineering in Dronacharya College of Engineering. The teamwork in this college is par-excellence 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.

Saurabh Yadav
(Roll No. 9258)

"Education and Experience - No one can take away from you."

I am glad to be associated with the Mechanical Engineering Branch. This department has well equipped workshops, labs and lecture halls and the faculty and staff are ever reachable. They impart state-of-the art teaching through lectures, practials and tutorials. The Training & Placement Cell arranges talks by eminent professionals to groom us for communication skills, speaking power, group discussion and latest trends in mechanical disciplines.

Bhanoo Chhabra
(Roll No. 9221)

"The best preparation for good work tomorrow is to do good work today."

I take pride on being a Student of Mechanical Engineering in Dronacharya College of Engineering which is imparting not only education but preparing us to face interviews and other competitive examinations. This is reflective of high calibre and commitment of the faculty and staff. I wish my college fraternity a bright future.

Hitesh Dhanda
(Roll No. 9230)