

The Association of Mechanical Engineers

NewsLetter

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"It is impossible to walk rapidly and be unhappy" — Dr. Howard Murphy

- Convocation ceremony on 1st of June in the auditorium. It will be webcasted live. Details regarding this can be found on the institute website.
- Congratulations to all mechanical engineering passing out students on this auspicious occasion of convocation ceremony and best wishes from AME to all of them to start off their professional career with an enlightened faith and harmony that binds us.

From the denartment

Endowed Chair positions and awards

Significant achievement in the academic arena was the selection of our esteemed faculties for different chair positions. Professor Kalyanmoy Deb has been endowed with 'Shri Deva Raj Chair'. Professor Gautam Biswas has been selected for 'Dr. Gurumukh D. and Veena Mehta' department-specific endowed chair. The aim of these Chairs is to recognize and honor those faculty members who, through their work at IITK, have achieved excellence. The period of occupation for each chair is of three years at a time.

Another milestone was added to the glory of our department as well as the institute when Dr. Sameer Khandekar was awarded George Grover Gold medal. This award is given by the committee on international heat pipe conferences to individuals for their outstanding contribution to the Science and Technology of heat pipes.

Dr. Kalyanmoy Deb is among the frontier research personality in Genetic Algorithm and Optimization. He has established KANGAL (Kanpur Genetic Algorithm Laboratory) in the department. Genetic algorithm is the art of using genetic mechanism constraints in the practical life situations to improve the results predicted by certain algorithm.

Dr. Gautam Biswas is doing quality research work on Computational Fluid Dynamics, heat transfer and turbulence. Computational Fluid Dynamics is a vibrant field using software implementation of numerical technology in Fluid Dynamics. He has also designed a web based course for sophomore students on Fluid Mechanics.

Dr. Sameer Khandekar has research interests in phase change, heat transfer and Energy Systems. He has been involved in a number of top class project works on heat pipes and heat transfer one of which being on the pulsating heat pipes in space radiators.

New AME council

The new AME council was announced at the farewell function on 15th of April. This year also witnessed the change of faculty adviser as the two year tenure of Dr. P. Venkitanarayanan had come to an end. Although the new PG council was formed in the beginning of the year but the official handing over of the charges took place in the farewell ceremony.

New AME council:

Faculty adviser: Dr. S. Mahesh PG Members:

President Ankit Rajesh Surti General Secretary Puneet Kumar

UG Members:

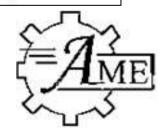
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Puzzle

Using four sevens (7) and a one (1) create the number 100. Except the five numerals you can use the usual mathematical operations (+, -, x, :), root and brackets ().



Magic square with even rows

You all would have tried the magic square with odd rows and columns like 3x3 or 5x5.Do this for a 4x4 matrix. The entries are from 1 to 16 and sum of the entries in each row column or diagonal should be the same.





The passing out AME President – UG speaks...

- **About Summer Projects for second years:** You should try to do something which interests you. Just don't follow the herd. This is the time which you can afford to experiment with and use to decide what you need to do after passing out from IIT. Select whatever you want to do but once you are in it do it sincerely.
- About Internship: If you plan to go for higher studies then you should try to get an internship in US at first hand. Decide where you want to be after IIT and get an internship in that field to get a feel of it.
- **About Winter Trip:** That was the best trip of my stay at IIT Kanpur. We all will carry those memories with us forever. It feels great when entire batch goes together and have fun. You will see it vourself.
- **About Department:** The faculty student interaction in our department is very less. Something should be done regarding this. Faculty is really helpful but the students usually don't go up to them. Projects should be more practical situation based.
- About Four Years at IIT: Great time Indeed!!! You get to learn so many things both inside and outside the classroom. After doing so many courses our confidence level increases very much and we are ready to face any situation in our life. The best thing is the network of friends that you carry with you.

Biodiesel: The Fuel Of future

Widely fluctuating global oil prices and the depleting resources of fossil fuel have forced the world to look for the alternative sources of energy and bio-diesel is hogging the limelight. The concept of bio diesel dates back to 1885 when Dr. Rudolf Diesel built the first diesel engine with full intention of running it on vegetable source.

He first displayed his engine at the Paris show of 1900 and astounded everyone when he ran patented engine on a hydrocarbon fuel - which included gasoline and peanut oil. In 1912 he stated "... the use of vegetable oils for engine fuels may seem insignificant today. But such oils may in the course of time become as important as petroleum and the coal tar products of our present time".

In 1970, scientists discovered that the viscosity of vegetable oils could be reduced in a simple chemical process and that it could work well as diesel fuel in modern engine. This fuel is called biodiesel. It is a substitute for, or an additive to, diesel fuel that is derived from the oils and fats of plants, like Sunflower, Canola or the wonder plant - Jatropha.

With its potential to grow in any type of soil and weather conditions, Jatropha is gaining universally accepted as an energy crop. Jatropha curcus is a drought-resistant perennial, growing well in marginal/poor soil. It is easy to establish, grows relatively quickly and lives, producing seeds for 50 years. Among the positive strengths of Jatropha is its promotion as better use of Land. A yield of 1.6 t of bio-diesel and 5 t of fertilizer from 6.5 t of seed is expected per hectare land after two to three years.

Biodiesel is environment friendly. It is as biodegradable as salt .Bio Diesel produces 80% less carbon dioxide and 100% less sulphur dioxide emissions. It provides a 90% reduction in cancer risks. Bio Diesel can be used alone or mixed in any ratio with mineral oil diesel fuel. It extends the life of diesel engines and is cheaper then mineral oil diesel. Biodiesel fuel is called Transesterification and is luckily less complex then it sounds. The oil from the seeds can be used directly in the car engines.