



AY 2015-16 Odd Semester

## NEWSLETTER MECH. YANTRA

### About the Institution

Jyothy Institute of Technology (JIT), managed by Jyothy Charitable Trust<sup>®</sup>, was started in the year 2011 with a mission to provide education in new frontiers of technology and their applications. The Trust was established by its President, Dr. B. N. V. Sunrahmanya, a Karnataka Rajyotsava and Nada Prabhu Kempegowada Awardee, an industrialist and a social worker of repute. The institution is ideally located 1km off Kanakapura Road, at Thataguni, about 3 km from NICE Road. It is spread over an area of 10 acres with lot of greenery all around. It is built aesthetically and architecturally to meet the functional needs of class rooms while meeting all AICTE guidelines.

JIT is an offshoot of the 26 year-old Jyothy Kendriya Vidyalaya(JKV), which caters to students right from LKG level to PU level. The institution offers internships to students of all branches thus enhancing strong industry-institute relationship. This provides students an invaluable opportunity to understand and implement industry standards and requirements. They get exposed to and get the chance to view, learn and imbibe new technologies and keep pace with current technological trends. The internships also help the students to be industry ready as soon as they graduate.

### About the Department of Mechanical Engineering

Mechanical Engineering, fondly known as an 'ever green branch' of engineering, applies the principles of basic engineering, physics, materials science, and metallurgy to design, analyse,

manufacture, and maintain diverse mechanical systems ranging from small individual parts and devices (nuts and bolts, motors) to large systems (machine tools, space crafts, etc.). The department is equipped with state of art laboratories such as computerised heat & mass transfer lab, computerised energy conversion lab, computerised material testing lab, computerised design lab, mechanical measurements and metrology lab, foundry & forging lab, finite element analysis lab, simulation lab, etc. to meet the academic needs while encouraging and supporting research and development activities of its faculty.

The industry division of the department takes all efforts to provide a congenial industry environment within the institution by manufacturing industrial products in the institution with the direct involvement of the students. This helps in developing industrial skills amongst the students. The department is a VTU **recognised "Research Centre"**. The department regularly organises faculty development programs, workshops, student training programmes and student conferences such as Emerging Trends in Engineering & Technology (ETET), every year since its inception.

### VISION OF THE DEPARTMENT

To achieve excellence in Mechanical Engineering Education, Innovation, Research and Entrepreneurship.



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### MISSION OF DEPARTMENT

M1. To provide intellectually vibrant teaching learning environment.

M2. To inculcate in students a culture of Research and Innovation in Engineering.

M3. To produce future Entrepreneurs and Leaders with Technological Patriotism.

#### 1. Activities:

- A Skill Development Training Program on “**Hands on Experience - CNC Programming, Simulation and Machining**” was held from 30<sup>th</sup> September 2015 to 1<sup>st</sup> October 2015 in the institution.



- Students from the JIT-SAE Chapter participated in “SAE INDIA Electra 2015” event organized by SAE INDIA at Hotel Le-Meradian Chennai on 28.08.2015. It involved the design and fabrication of a two wheeler meeting standards stipulated by SAE.



- Students actively participated in a 3-day Workshop on “Advanced Robotics” organized by the department on 14<sup>th</sup>, 15<sup>th</sup>, and 16<sup>th</sup> August 2015. Robokits were supplied to all participants to develop their own robotics using their programming skills.



#### 2. Guest Lectures

- A Technical Talk on “Introduction to Mechanical Software” by EDU CADD was organized on 29.08.2015.



- A Technical Talk on “Business Analytics” was delivered by Dr. Vinod of I-Nurture on 12.09.2015.





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- A Technical Expo 2015, jointly organized by JIT and M/s. Magnus Global Technology, on “Job Opportunities in Oil and Gas, Petrochemical &, Power Plant Industries” was held on 5.10.2015.

### 3. Placement Activities

Technical and Skill Development Training was provided for students. 23 mechanical engineering students were placed in several companies encompassing marine and shipping industries, etc.

### 4. Sports

Shubang of V semester participated in the inter-collegiate basket ball competition organized by BMSCE for their event BMS Utsav 2015.

### 5. Student Articles

#### *HYBRID CARS: THE FUTURE*

Most of today’s transportation depends upon the regular consumption of fossil fuels like petrol, diesel, kerosene, LPG and so on. When it comes to the effects of these fuels, the first thing that comes to mind is the word “pollution” or “carbon footprint”. And despite the efforts to reduce the carbon footprint, the results are negligible.

Companies like Tesla, Honda and Toyota have taken steps to reduce carbon emissions, and many are switching over to the plug-in electric or hybrid vehicles, but they come at a high price.

One of these companies, Honda, of Japanese origin, has adopted an interesting technology, which could very well be the future for reliable and stable energy consumption. The hybrid technology called Earth Dreams involves the combination of both a regular vehicle engine

and an electric setup which mainly runs on conventional lithium battery.

This concept has been suitably designed to reduce carbon emissions by effectively utilising the battery energy at low speeds and when there is low power demand. When higher power is needed, the required power is drawn from the engine which is otherwise in standby mode. This technology has very effectively reduced the dependency on fossil fuels needed for vehicles. Instead the vehicles rely on a more stable and non-polluting supply of energy.

Not only that, the annual expenditure and demand for fuels will see significant drop. This in turn will reduce emissions.

Some cars that have this technology are:

Honda Insight (model 1999-2006, 2010-2014)

Honda Civic Hybrid (model 2003-present)

Honda Accord Hybrid (model 2005-2007)

Some Indian companies have also adopted hybrid technology, such as Mahindra (Scorpio, XUV 500, TUV 300) and Maruti Suzuki (Ertiga and Ciaz). The introduction of such technology has revived our hopes in the area of sustainable vehicle development.

Apart from hybrid technology, other advanced technologies like the introduction of hydrogen fuel cells are being explored. Hydrogen fuel cells may completely eliminate need for fossil fuels and electric power sources. However, this technology is a long time away from being introduced, as it is highly unstable, and requires some more development.

...contributed by Abhinav A, IV semester



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### 6. Photography by Students



by Raghavendra Gajakosh , 6<sup>th</sup> sem. Mech. Engg



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