



MECHNOVA

2014!

Happy New Year



HOD DESK

Happy New Year to all and may the blessings of the almighty be with you throughout 2014!

It gives me great pleasure to present the fifth issue of "Mechnova". The year passed by was an year of tremendous growth for mechanical engineering department. 2013 was also filled with various activities by the students and faculty in academic, co-curricular, extra-curricular fields. Budding entrepreneurs are given an apt platform by establishing "Entrepreneurship Development Club". KSCTE sponsored Workshop on "Renewable Energy" and workshop on "NPTL awareness" has tried to address issues in current energy and academic environment respectively. Modernization of our lab facilities by addition of large number of state of the art machines and equipment was another big progress made in 2013. Our students successfully participated in "Virtual Baja -2013" organized by SAE India. "Mexterious-2013 - Tech fest of ME department was a huge success.. Our students produced excellent results in university exams declared in 2013. Teamwork of staff and students was the major encouraging factor in all these successes. Hope we all will work harder to achieve better results in all our endeavors in future

Cdr (Rtd) Raju K.Kuriakose
HOD ME.



INSIDE THIS ISSUE

HOD DESK

ELEGANT S6 RESULTS

GSLV -DS GSAT /14

MECH ARENA

MODERNISATION OF LABS

MECH TECHZ n TRENDZ

ELEGANT RESULTS

OUR 6TH SEMESTER (2010-2014) MECHANICAL STUDENTS GOT EXCELLENT RESULTS IN THE UNIVERSITY EXAMS

PASS PERCENTAGE 82.3

TOPPERS

JINESH JOY (80.5 %)
DEEPANAND K (79.25%)
ROYIZ CLEMENT(76.75%)



"Excellence is never an accident. It is always the result of high intention, sincere effort, and intelligent execution; it represents the wise choice of many alternatives - choice, not chance, determines your destiny."

Aristotle

VIMAL JYOTHI'S ASSOCIATION WITH GSLV-D5/GSAT 14 MISSION...!!!!



Prof. K Raghavan
Dean ME

WE ARE VERY PROUD THAT OUR DEAN "PROF. K.RAGHAVAN" WAS ASSOCIATED WITH STRUCTURAL DESIGN OF ISRO GSLV -D5 /GSAT CRYOGENIC ROCKET THAT WAS SUCCESSFULLY LAUNCHED 09/ Jan/2014

GSLV-D5

INDIAN CRYOGENIC ENGINE AND STAGE

GSAT-14

GSLV-D5 is the eighth flight of India's Geosynchronous Satellite Launch Vehicle (GSLV). It is also the fourth developmental flight of GSLV. During this flight, the indigenously developed Cryogenic Upper Stage (CUS) will be flight tested for the second time.

GSLV-D5 Mission

Overall Height : 49.13 metre
Lift-off Mass : 414.75 Ton
Lift-off Thrust : 6773 kilo Newton
No. of Stages : 3

GSLV-D5 will launch 1982 Kg GSAT-14, a communication satellite, into Geosynchronous Transfer Orbit (GTO). After reaching GTO, GSAT-14 will use its own propulsion system to reach its geostationary orbital home and will be stationed at 74° East longitude. GSAT-14 will help provide many satellite based communication services to the country including tele-education and telemedicine.

GSLV-D5/GSAT-14 mission will be launched from the Second Launch Pad at Satish Dhawan Space Centre SHAR (SDSC SHAR), Sriharikota. The flight duration of GSLV-D5 is 17 min 8 sec.

Targeted Orbit of GSLV-D5

Perigee : 180 ± 5 km
Apogee : 35975 ± 675 km
Inclination : 19.3 ± 0.1 deg



GSLV is a three-stage launch vehicle with solid, liquid and cryogenic stages. It is designed to inject 2 Ton class of communication satellites to Geosynchronous Transfer Orbit (GTO). The four liquid L40 strap-ons as well as the second stage of GSLV use storable liquid propellants.

GSLV-D5 vehicle is configured with its first and second stages similar to the ones flown during earlier GSLV missions. The third stage is the indigenous cryogenic stage. The metallic payload fairing with a diameter of 3.4 metre is adopted for GSLV-D5.

S-band telemetry and C-band transponders enable GSLV-D5 performance monitoring, tracking, range safety / flight safety and Preliminary Orbit Determination (POD).



One of L40 Strap-ons being assembled to the core stage



GSLV-D5 core stage integration at Vehicle Assembly Building



Cryogenic stage integration to the vehicle in progress

MECH ARENA

ME Department conducted two days work shop on 'INTRODUCTION TO AUTO CAD' for first year B Tech students on November 2013. The work shop will be continued in the month of February 2014.

Mr.Subin Michael , Assistant professor ,ME, attended faculty development program held at NIT Calicut, on the topic "Change in scenario in Energy and Environment".



Mr. Jithin .E.V Assistant professor ,ME, presented a paper on "Numerical Simulation on perforated plate , stabilized, premixed flame on a circular, rectangular & elliptical port burners" in International Conference on IC Engines



Mr.Subin Michael



Mr.Jithin E.V

Modernization of Lab Facilities

The recent additions of the following machines which include, lathe ,surface grinding machine, shapers to production Lab has created a state of the art in house production facility for the students"



BANKA
ALL GEAR LATHE



JEET SHAPERS



BHURJI SURFACE GRINDERS
HYDRULIC TWO AXIS AUTOMATIC



Fast Approaching: Driverless Cars

Driving is how you get things done yet it also stops you from getting even more things done. If only the act of driving were a thing of the past and you could become a passenger, get out your work, and let the vehicle be a real-life Jeeves. Well, a few companies are getting us closer to that futuristic feeling, though there's still a long way to go.

Mr. Anson Cherian ME

Toyota's Test

John Hanson, national manager for environmental, safety, and quality communications for Toyota, says it's gone this far because of the current state of the art in sensors and processing. "There are three basic aspects to how it works," he says. "It's the vehicle's ability to perceive its environment—actually see what's going on. The second part is it can process what it's "looking at." It's one thing to see it, another to understand it. The third part is the response. After it perceives its surroundings, can it respond, and do it quicker and with more precision than the driver?" But Hanson says the autonomous ability wasn't created to lose the driver but to gain safety. "It's not so much an endgame but was specifically a research project to use to further explore an integrated or layered approach to safety. What we showed in Vegas (at the Consumer Electronics Show) was a pre-crash collision system.



Toyota's self-driving car is equipped with sensors and automated control systems which respond to the vehicle's surroundings.

Our current pre-crash automotive technologies have been around for 10 years and have been evolving." Hanson feels the greatest barrier may actually be acceptance, not technological challenge. "Look at how hard it was for people to accept the functionality of a car that parallel parks," he says. "Many people identify themselves with driving. To give that up? Not as easy as you would think."

Google and Audi

Of course, Google is also in the game. In the first 300,000 miles, the Internet search leader reported that it hadn't had a single accident. With cameras and computers, it's become the eyes of the driver—but it also got the attention of the eyes of Californians, becoming legalized within the Golden State.

Google has driverless cars as earmarked to be available within five years.

Audi is a player in the market as well, utilizing radar and LIDAR (light, detection and ranging). It boasts of an app that has the car show up in front of your house...or you can get out at the mall and have it go park itself. It also isn't afraid of heights as it was able to find its way to the top of Pike's Peak. Not satisfied, Audi is presently working on a car that actually can make traffic a selling point. While the vehicle is crawling along in gridlock, you can do anything you choose. Of course, it's easy to see the positive—until you ask the driver of that yellow cab you're flagging down. With so many in the driving and delivery industries, there could be countless jobs potentially lost. Even the valet is in trouble. And, for every fare from out of town who enjoyed the conversation of someone who knew the area, the feeling of isolation may be amplified just a little bit more But change appears to



Google's driverless car (top). Image: Google Audi's driverless car (bottom). Image: Audi