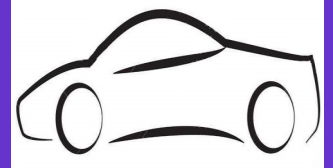




Auto Thrust

When we thrust, we leave everyone in dust.....



November
2017

Srinivas Institute of Technology, Mangaluru
Department of Automobile Engineering

Volume 2, Issue 2

All the best to Students for Upcoming VTU exams



It's Exam Time!
Here's a BIG

**GOOD
LUCK!**

wish to you

H.O.D'S MESSAGE

The second issue of e-news letter Auto Thrust is with you on time ,successfully completing three semesters. The faculty and the students in the editorial board have taken lot of care and put dedication to make this e-news letter really attractive. I would like to congratulate TEAM AUTO THRUST for this and wish they would further improve the quality and content in the upcoming issues.

As we are coming to the end of the semester, it is the right time to re focus on studies, and I appeal all the students to prepare well for the upcoming exams and come out with flying colours.

With lot of student specific activities lined up for the next semester including a mega event M.A.D in the month of February, 2018, the students must refresh themselves and gear up to make this event a grand success.

I wish all the students best for their upcoming semester exams.

Dr. Ramakrishna N. Hegde



November - 2017

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Pinnacle Engines partners with India's Greaves Cotton on new low-emissions OP engine

Indian engine- and equipment-maker Greaves Cotton Ltd. And U.S.-based Pinnacle Engines Inc. recently announced a technology partnership for the launch of an opposed-piston (OP), spark-ignited CNG lean-burn BS VI-compliant engine for three-wheelers in India. This move is said to make India one of the lead markets to adopt this technology.

The Indian government's Bharat Stage VI emissions regulations are expected to be adopted by late 2020. The transition to BS VI requires three-wheeler OEMs in India to significantly upgrade their emissions-control technology.

Through the new partnership, Greaves Cotton will have access to export markets with a large three-wheeler population. With Pinnacle's four stroke, sleeve-valve, opposed-piston design, Greaves aims to offer BS VI-compliant high power and fuel-efficiency engines with lower maintenance cost. This partnership enables Greaves, claimed to be the market leader in diesel engines for three-wheelers, to enter the larger three wheeler gasoline/CNG space.

Pinnacle Engines holds over 170 patents related to its opposed-piston engine architecture and electronic controls.

"Greaves has been a dominant player in the 'last-mile' transport segment with our range of diesel engines for a large number of automotive OEMs," said Nagesh Basavanhalli, Managing Director and CEO, Greaves Cotton Ltd., in a

statement. "The opposed-piston technology has been designed, developed & evolved by the Pinnacle Engines team to give class-leading fuel economy at the right cost, enabling best-in class total cost of ownership for the end customer."



Pinnacle's sleeve-valve, opposed piston four stroke engine addresses the challenges of fuel economy and increasingly stringent emissions

Added Pinnacle Engines CEO David Moll: "We value the opportunity to partner with an established market leader like Greaves, and expect that our combined strengths will provide great advantage to the market. OEMs face great pressures on fuel economy, and ever-tightening emissions norms, and our cooperation provides a great answer to these challenges."

(Source: SAE India)

Formation	26 January 1950
Capital	Chennai
Districts	32
Body	Government of Tamil Nadu
Governor	Banwarilal Purohit
Chief minister	Edappadi K Palaniswami
Chief Justice	Indira Baner- jee
Chief Secre- tary	Girija Vaid- yanathan
Director Gen- eral of Police	T K Rajen- dran
Area Total	130,060 km ² (50,220 sq mi)
Area rank	11th
Total Popula- tion (2011)	72,147,030
Rank	6th
Density	550/km ² (1,400/sq mi)
Demonym	Tamil
Time zone	IST (UTC+05:30)
ISO 3166 code	IN-TN
HDI	0570 (medium)
HDI rank	6 th (2015)
Literacy	80.33% (2011)
Official lan- guages	Tamil and English
Website	www.tngov.in

Kubota goes ‘big’ with first-ever 200-hp diesel

Known for its compact diesel engines below 100 hp (75 kW), Kubota unveils its first diesel engine above that threshold, the 5-L V5009 with an output of 210 hp (157 kW) at 2200 rpm. The new 4-cylinder engine will be Tier 4 Final and EU Stage V ready when mass production begins in 2020.

With its new 09 Series of diesel engines, Kubota ultimately will expand its offerings from 100 to 200 hp. Engineers expect to have all engineering and supply work for the new V5009, the first engine in the 09 Series, completed ahead of the upcoming Stage V emissions standards, which take effect in 2019 or 2020 depending on engine output.

After treatment devices include a diesel particulate filter (DPF) and selective catalytic reduction (SCR). “The uniqueness of this engine is we are bringing out 210 hp from only five liters and four cylinders,” Ko Shiozaki, product manager in Engine Global Marketing at Kubota Corp., told *Mobility Engineering*. “If you look around, there are a couple engine manufacturers providing 210 [hp] out of six cylinders, or maybe higher displacement, but we have made it very compact.”

The engine is small enough to be easily installed in customers’ current machines, he said. “Our customers have some machines that require higher output and have been asking to get more output. So we’ve been working to make the higher horsepower with the existing

[platform], but going above 150 or 170 hp, we’ve got to work on something completely new,” he explained. Thus, the 09 Series engine platform, with newly designed engine block, crankcase and cylinder heads for the 5-L. The engine design team opted for a ladder frame structure to ensure durability and maintain strong rigidity. A variety of power take-off options have been added for different accessories such as hydraulic pumps for ease of use. In addition, the engine is equipped with hydraulic lash adjusters & an automatic belt tensioner to improve maintainability.



Shiozaki noted two keys to achieving high output and low fuel consumption with the V5009: securing the intake airflow through high-pressure turbocharging, and achieving high in-cylinder pressure through combustion matching.

“A 4.3-L diesel engine variant will also be available in 2020 as part of the 09 Series. It will use the same platform and footprint, with an output in the range of 120 to 130 kW (160 to 174 hp), according to Shiozaki.

(Source: SAE India)

A single thread of hope is still a very powerful thing

Three emerging Trends in Automotive Engineering

One of the biggest trends right now in automotive engineering is improving engine efficiency and fuel economy. This includes downsizing, down-speeding, direct fuel injection, and boosting."

Battery Systems

Battery management systems are being designed to meet performance, life, and warranty



goals for both batteries and their monitoring and management systems. In order to expand battery operating range and reduce costs, some researchers are designing and testing new battery chemistries and subsystems. Advanced chemistries could allow batteries to operate through greater temperature extremes, last longer, and reduce weight and cost.

Downsizing and Turbocharging

The two main benefits in downsizing an internal combustion engine are thermodynamic and mechanical. From a thermodynamic point of

view, the engine operation will move towards higher loads, at which the engine efficiency is higher. "From the mechanical point of view, the positive aspect lies in the reduction of the friction in the piston units, together with the reduction of the number of cylinders."

Downsized engines are lighter than conventional engines, thereby reducing vehicle mass and the improving vehicle fuel consumption. Turbocharging recovers the energy of the exhaust gasses to increase the inducted charge, therefore increasing the power-to-displacement ratio.



Advanced Combustion Modes

Engineers are working to increase the efficiency of internal combustion engines by developing several advanced combustion modes. One of these modes is called (homogeneous charge compression ignition) HCCI. In the HCCI combustion, a highly homogenized mixture of air, fuel, and combustion products from the previous cycle is auto-ignited by compression. "This combustion mode aims at combining the advantages of modern diesel and gasoline combustion processes, namely low emissions and high efficiency

Vikesh

5th sem Automobile Engg

SIT Mangaluru

Remember that life's greatest lessons are usually learned at the worst times...

All Wheel Drive (AWD)

It is well known what all wheel drive does for a sport utility vehicle — just imagine what AWD can do for a mountain bike.

With increased traction, available at the flip of a switch you can conquer conditions that you thought were unridable. AWD provides greater control over wet roots and slippery rocks.



With the front drive disengaged, the CHRISTINI AWD handles and feels just like any dialed-in full suspension Mountain Bike. Engage the AWD system and you'll feel increased control, stability and traction on slippery or loose surfaces. AWD works whether you're pedaling or coasting. You will be able to descend with confidence and corner more aggressively due to increased front wheel grip.

The CHRISTINI AWD is equipped with standard mountain biking components. Pedaling, shifting and braking are just like on a traditional bike. A handlebar-mounted switch controls the AWD “shift on the fly” clutch. When the clutch is engaged, the rear spiral gear interlocks with the rear hub and power is transferred

via internal shafts to the forward spiral gear set, which drives the CHRISTINI freehub.

Due to a slight gearing differential, the front wheel is not actively powered on smooth level ground. However, the moment the rear wheel slips, power is instantaneously transferred to the front wheel. Similarly, the moment that the front wheel decelerates, as in hitting a rock or starting to wash out in a corner, power and traction are transferred to the front wheel.



The effect is awesome. Instead of stalling when the rear wheel slips – the front wheel hooks up and you keep climbing. Instead of glancing off a slippery root – the CHRISTINI AWD tracks right over it. Instead of washing out the front end in an off-camber corner – the front wheel literally chews it's way through the turn.

Varun N.
Asst. Professor
Department of Automobile Engineering
SIT Mangsluru

Never give up. Go over, go under, go around, or go through. But never give up



**CAR SERVICE
CAMP
organized
by Automobile
Department**





TWO WHEEL SERVICE CAMP



Workshop Visit to Mandovi Motors by 7th sem students of Automobile Engineering

TVS Akula 310 (Apache RR 310S)

Engine Type	Single- Cylinder Liquid-Cooled Engine
Displacement	310 cc
Maximum Power	34 bhp @ 9500 rpm
Maximum Torque	28 Nm @ 7500 rpm
Estimated Price	Rs1,89,000*
Gear Box	6 Speed
Supply System	Fuel Injection
Transmission Type	Manual

**Maruti Celerio X**

Engine Type :	K10B
Fuel Type :	Petrol
Torque :	90Nm@3500rpm
Transmission :	Automatic
Engine Displacement :	998 cc
Power :	67bhp@6000rpm
No Of Cylinders :	3
Kerb Weight :	835kgs
Expected price	4.50 lakh

**Hero HX 250R**

Engine Type	4-S, Single Cylinder, Liquid Cooled Engine
Displacement	249 cc
Maximum Power	31 bhp @ 9000 rpm
Maximum Torque	23 Nm @ 7000 rpm
Estimated Price	₹ 1,50,000
Maximum Speed	165 kmph
Gear Box	6 Speed
Supply System	Fuel Injection
Transmission Type	Manual

**Maruti New Swift**

Engine Type :	K Series VVT Engine
Fuel Type :	Petrol
Torque :	190Nm@2000rpm
Transmission :	Manual
Kerb Weight :	1415 Kg
Engine Displacement :	1248 cc
Power :	73.94bhp@4000rpm
Gear Box :	5 Speed
Expected Price	Rs. 6.30 lakh



Life is not about waiting for the storm to pass, it's about learning to dance in the rain

Do's and Don'ts during weight loss

Walk for weight loss

Walk for about 30 minutes – 1 hour every morning or evening and you should see the benefits soon. Walking is one of the most famous weight loss techniques for everyone that has no rules to follow and can be done anytime, anywhere before or after meals.



15 minutes yoga

Yoga is most popular and powerful weight loss procedure. 15 minutes of warm up yoga asans are sufficient to promote good blood circulation and eliminate fat accumulation in the body.



Say no to installment meals

Stop eating your meals in installments. Have a very light breakfast of your choice. Eat a heavy lunch without counting on calories between 12:30pm- 2pm.

Stop killing carbohydrates

Don't ignore rice. Prefer healthy rice. Yes, get used to eating Parboiled rice and brown rice as they are loaded with proteins and vitamins despite being less in calories compared to regular white rice.



Exercise

Empty the stomach before you exercise or do yoga. 6am-10am in the morning and 6pm to 10pm in the



evening are the most conducive times to workout.

Detox

Fast for at least 12 hours every 15 days to cleanse your whole system...Practice doing it for 28 days and you will establish a routine for yourself!!!



Warm water

Drinking a glass of **warm water** first thing in the morning can help with **weight loss**. **Warm water** increases body temperature, which therefore increases the metabolic rate. An increase in metabolic rate allows the body to burn more calories throughout the rate.

It's not about being the best. It's about being better than you were yesterday

ಸ್ವಚ್ಛ ಭಾರತ ಅಭಿಯಾನ ಮತ್ತು ನಮ್ಮ ನಡೆ

ಸ್ವಚ್ಛ ಭಾರತದ ಪರಿಕಲ್ಪನೆಯನ್ನು ನಮ್ಮೆಲ್ಲರಿಗೂ ಮೊದಲಿಗೆ ತಿಳಿಸಿಕೊಟ್ಟಿದ್ದು, ನಮ್ಮ ರಾಷ್ಟ್ರಪಿತ ಮಹಾತ್ಮ ಗಾಂಧೀಜಿ. ಅವರು ಸ್ವಾತಂತ್ರ್ಯಕ್ಕಿಂತ ಸ್ವಚ್ಛತೆ ಮಹತ್ವದ್ದು ಅಂತ ಹೇಳಿದ್ದರು. ಈ ಅಭಿಯಾನ ಗಾಂಧೀಜಿಯವರ ಕಾಲದಲ್ಲೇ ಆರಂಭಗೊಂಡಿದ್ದರೂ, ಅದು ಹೆಚ್ಚು ಪ್ರಚಲಿತಕ್ಕೆ ಬಂದಿದ್ದು ೨೦೧೫-೧೬ನೇ ಸಾಲಿನಲ್ಲಿ. ಈ ಅಭಿಯಾನವು ಅಧಿಕೃತವಾಗಿ ೨ ಅಕ್ಟೋಬರ್ ೨೦೧೪

ಇದರಲ್ಲಿ ಪಾಲ್ಗೊಂಡರೂ, ಅದು ಛಾಯಾಚಿತ್ರಕ್ಕೆ ಮಾತ್ರ ಸೀಮಿತವಾಗಿದೆ. ಇದರ ಹಿನ್ನೆಡೆಗೆ ಇನ್ನೊಂದು ಕಾರಣವೆಂದರೆ ನಮ್ಮ ಭಾರತದಲ್ಲಿ ಉದ್ಯೋಗಕ್ಕೆ ತಕ್ಕಂತೆ ಜಾತಿಯನ್ನು ತಳಕುಹಾಕಲಾಗಿದೆ. ಆದ್ದರಿಂದ ಈ ತಳಕನ್ನು ಮುರಿದು ಹಾಕುವ ಮತ್ತು ಅಭಿಯಾನದ ಬಗ್ಗೆ ಜನರಲ್ಲಿ ಹೆಚ್ಚಿನ ಅರಿವು ಮತ್ತು ಜಾಗೃತಿ ಮೂಡಿಸುವ ಅಗತ್ಯವಿದೆ. ಇನ್ನೊಂದು ಸ್ವಾರಸ್ಯಕರ



ನವದೆಹಲಿಯಲ್ಲಿ ಪ್ರಧಾನ ಮಂತ್ರಿ (ನರೇಂದ್ರ ಮೋದಿ) ರಾಜ್ ಘಟಿನಲ್ಲಿ ರಸ್ತೆಯೊಂದನ್ನು ಗುಡಿಸುವುದರ ಮೂಲಕ ಆರಂಭವಾಗಿತ್ತು.

ಈ ಅಭಿಯಾನವು ಗಾಂಧೀಜಿಯವರ ೧೫೦ನೇ ಜನ್ಮದಿನಾಚರಣೆಗೆ ಮುನ್ನ ತನ್ನ ಗುರಿ ತಲುಪುವ ಧೈರ್ಯ ಹೊಂದಿದೆ. ಇದರ ಮೂಲ ಉದ್ದೇಶಗಳು, ಬಯಲು ಶೌಚ ನಿರ್ಮೂಲನೆ, ಸಂಪೂರ್ಣ ಕೊಳಗೇರಿ ನಿರ್ಮೂಲನೆ, ಘನ ತ್ಯಾಜ್ಯಗಳ ನಿರ್ವಹಣೆ ಅಥವಾ ಮರುಬಳಕೆ, ನಿರ್ಮಲೀಕರಣ ಮತ್ತು ಸಾಮಾಜಿಕ ಸ್ವಾಸ್ಥ್ಯದ ಬಗ್ಗೆ ಜನಜಾಗೃತಿ ಮೂಡಿಸುವುದು ಆಗಿದೆ. ಆದರೆ ನಮ್ಮ ನಿರುತ್ಸಾಹ, ನಿರ್ಲಕ್ಷ್ಯ ಮತ್ತು ಇಚ್ಛಾ ಶಕ್ತಿಯ ಕೊರತೆಯಿಂದ ಈ ಆಂದೋಲನಕ್ಕೆ, ಸ್ವಲ್ಪ ಹಿನ್ನಡೆಯಾಗಿದೆ. ಇದರಲ್ಲಿ ಕೆಲವು ರಾಜಕೀಯ ವ್ಯಕ್ತಿಗಳ ಋಣಾತ್ಮಕ ಪ್ರಚಾರವು ಅಡಗಿದೆ. ಇದು ಸರ್ಕಾರಿ ಕಾರ್ಯಕ್ರಮ ಆಗಿದ್ದರಿಂದ ಹಲವು ರಾಜಕಾರಣಿಗಳು

ವಿಚಾರವೆಂದರೆ, ನಮ್ಮಲ್ಲಿ ಅಡಗಿರುವ ಎರಡು ಮನಸ್ಥಿತಿಗಳು. ನಾವು ದಿನಾಲು ನಮ್ಮ ವಾಹನವನ್ನು ಸ್ವಚ್ಛಗೊಳಿಸುತ್ತೇವೆ, ಆದರೆ, ಸಾರ್ವಜನಿಕ ಸಾರಿಗೆಗಳಾದ ಬಸ್ಸು, ರೈಲುಗಳಲ್ಲಿ ಕಸವನ್ನು ಹಾಕುತ್ತೇವೆ ಅಥವಾ ಮಾಡುತ್ತೇವೆ. ಈ ಎರಡನೇ ಮನಸ್ಥಿತಿಯಿಂದ ನಾವು ಹೊರ ಬಂದಾಗ ಮಾತ್ರ ನಮ್ಮ ದೇಶದ ಸ್ವಚ್ಛತೆ ಸಾಧ್ಯ. ಆದಕಾರಣ ಸ್ವಚ್ಛ ಭಾರತ ಅಭಿಯಾನ ಕೇವಲ ಸರ್ಕಾರಿ ಕೆಲಸವಾಗದೆ ಅಥವಾ ಕಾಟಾಚಾರಕ್ಕೆ ಮಾಡುವ ಕಾರ್ಯಕ್ರಮವಾಗದೆ, ದೇಶದ ಪ್ರತಿಯೊಬ್ಬ ನಾಗರಿಕನ ಜವಾಬ್ದಾರಿಯಾಗಬೇಕು. ಬನ್ನಿ ಕೈಜೋಡಿಸಿ, ಗಾಂಧೀಜಿಯವರ ಸ್ವಚ್ಛ ಭಾರತದ ಕನಸನ್ನು ನನಸಾಗಿಸೋಣ.

ಪ್ರಕಾಶ ಎಸ್. ಟಿ
ಉಪ ಪ್ರಾಧ್ಯಾಪಕರು,
ಆಟೋಮೊಬೈಲ್ ವಿಭಾಗ
ಎಸ್.ಆರ್.ಟಿ ಮಂಗಳೂರು

Everyone must be his own scavenger.

M. K. Gandhi



Mission objectives

- Elimination of open defecation
- Eradication of Manual Scavenging
- Modern and Scientific Municipal Solid Waste Management
- To effect behavioral change regarding healthy sanitation practices
- Generate awareness about sanitation and its linkage with public health
- Capacity Augmentation for ULB's
- To create an enabling environment for private sector participation in Capex (capital expenditure) and Opex (operation and maintenance)



SIT Events 2018 (Tentative)

Date	Events
February 2, 3	Pratibha
Feb 13, 14 or 15	Founders Day, College Day
Feb 20, 21	Envision
March 1	Sports Day
May 2, 3	Project Exhibition

MANGALORE AUTO DRAMA 2018 (Tentative)

More information: www.mangaloreautodrama.com

DAY	DATE	EVENTS	TIME
1	Feb 4 TH	MARATHON	6AM-8AM
2	5 TH	INAUGURATION TECHNICAL TALK	10AM-12PM 2PM-4PM
3	6 TH	HANDS ON TRAINING	10AM-3:30PM
4	7 TH	CLAY MODELING (FOR SCHOOL STUDENTS) R.C.PLANE SHOW	10AM-12PM 2PM-4PM
5	8 TH	SAE BUGGY COMPETITION	10AM-3:30PM
6	9 TH	GOKART RACE	10AM-4PM
7	10 TH	STANCE WARS	10AM-4PM
8	11 TH	AUTO EXPO	10AM-5:30PM



**Freshers Day
Function**

