

April 2019

Srinivas Institute of Technology, Mangaluru
Department of Automobile Engineering

Volume 3, Issue 3

SAD DEMISE



RIP

Mr. Tippanna Kolli (8h Sem)

H.O.D'S MESSAGE

Here comes the 3rd issue of "AUTOTHURST", covering the highlights of all the activity of the current semester. There have been many highs to talk about which the department faculty and the students surely cherish for long. An incredible achievement in skill development service camps, sports, SAE and in AutoExpo -2k19. A



perfect demonstration of team spirit, coordination, trust building, showcasing and what not! Congratulations to all the faculty and the students! We have to aim further higher. Department is now leading by example in conducting outreach program and reaching the society. Department is at loss by the shocking sad, untimely demise of Mr. Tippanna Kolli, an 8th semester student, a good sportsman and a well behaved human. Department conveys its deepest condolences for the departed soul. A message here is very clear, "Please wear helmet while riding your 2-wheeler. It could save a life!" "SARVE BHAVANTU SUKHINHAH".

Dr. Ramakrishna N. Hegde

April 2019

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Rethinking the HUD

Head-up displays (HUD) debuted in the late 1950s as a means of providing jet fighter pilots critical information while maintaining situational awareness outside the cockpit. Today these systems for projecting data onto the windscreens of cars and trucks are becoming a vital conduit of information to drivers. The first production automotive HUD appeared in the 1988 Oldsmobile Cutlass Supreme Indianapolis 500 Pace Car Convertible. That



Simulation of Continental Holographic HUD technology under development, showing highlighting of a motorcyclist that's partially shielded by the SUV at left, and two pedestrians near the road at right

early GM system employed a vacuum fluorescent display tube and mirror to project a virtual speedometer in the pale green hue that would become familiar to drivers of cars so equipped. Today, HUDs are obviously more sophisticated, and common, as technology advances have made them better and cheaper. Their appeal lies in their ability to convey information “in a simple way that is easy to understand,” explained Stephan Peters, project manager for human-machine interfaces at BMW. While in-dash display screens might be used for various purposes, such as showing lavish satellite photo image maps and song information complete with cover art, HUD data is more specific. The focus is on driving-relevant information. Today's typical HUDs employ Thin Film Transistor (TFT) devices, which are becoming increasingly affordable but suffer from limited brightness and field of view.

Source: SAE INDIA

FCA debuts new Ram Heavy Duty pickups

FCA's Ram truck division unveiled its new 2019 Heavy Duty (HD) pickup truck lineup at the 2019 North American International Auto Show (NAIAS). The new HD pickups feature the slick interiors and tech from Ram's new 1500 line, significant powertrain and chassis upgrades and all-new front and rear sheet metal. The Ram HD lineup will face off against Chevy's new HD pickup offerings and Ford's established F-Series and includes 2500/3500 capacities in regular, crew and mega-cab configurations. Since it's a heavy-duty truck launch, Ram is of course touting new capability figures for its HD lineup, which retains its basic cab architecture, but sees nearly every other part of its chassis upgraded.

New diesel, 8-speed for the Hemi

The standard engine for the 2019 Ram 2500 and 3500 HD is the "Hemi" 6.4-L gasoline V8 producing 410 hp @ 5,600 rpm. Changes to the new diesel include an all-new compacted graphite-iron cylinder block, new cast-iron cylinder head, lighter and stronger pistons, new forged connecting rods and new bearings. Standard 6.7-L diesels will be paired to an upgraded 68RFE 6-speed automatic transmission that nets new variable-force solenoids and refined accumulator and hydraulic controls to smooth shifts into reverse and Park.



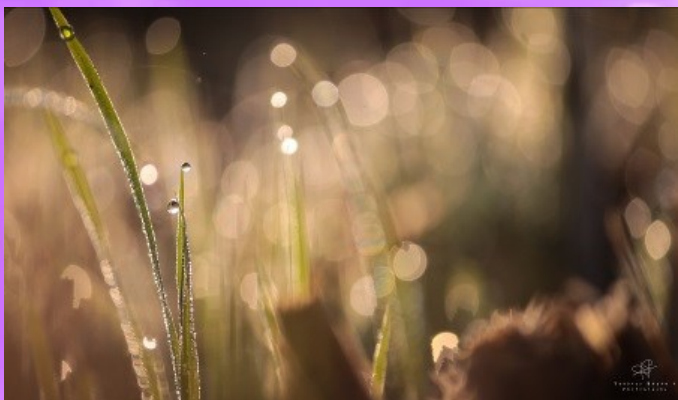
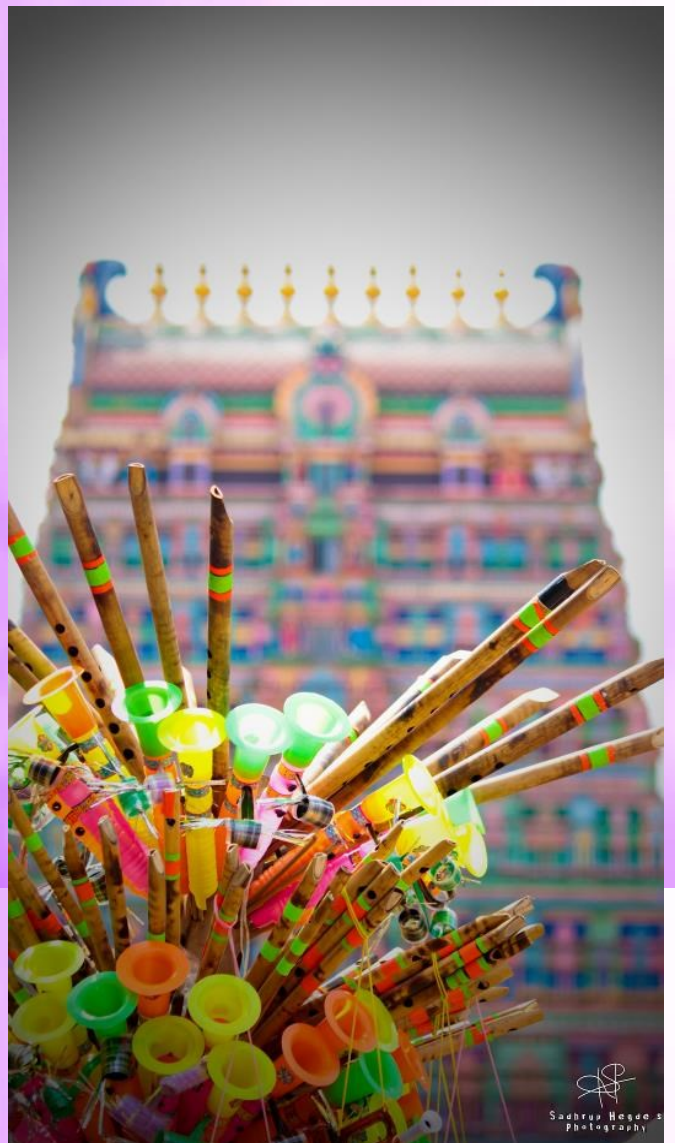
The 2019 Ram HD pickup truck lineup features an all-new front-end design that continues to get bolder and helps improve cooling efficiency.

Fully optimized frame structure

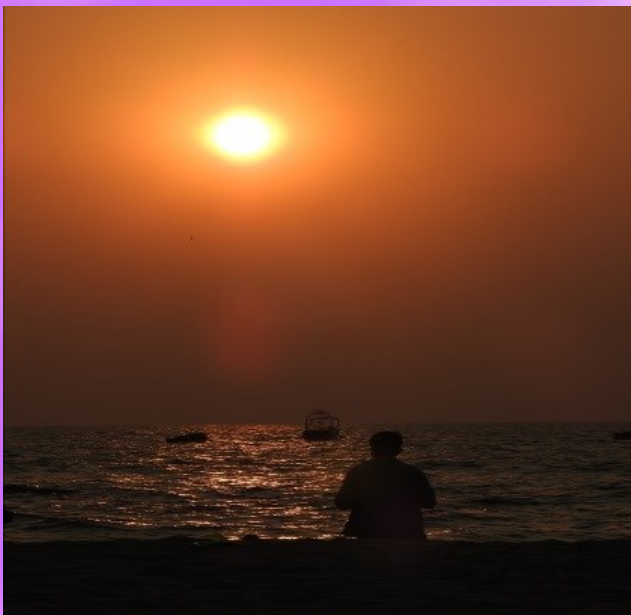
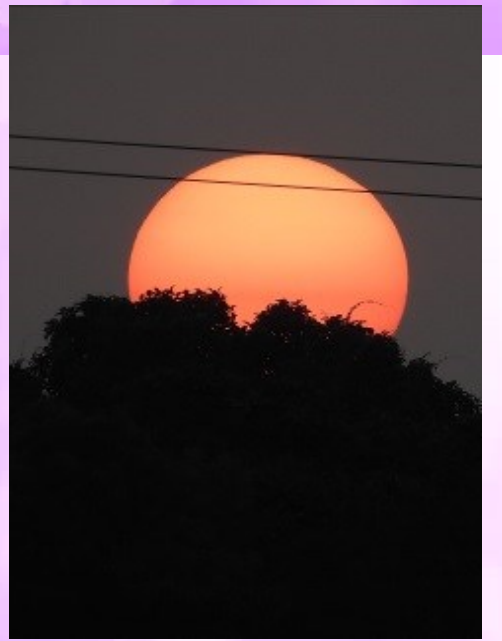
The 2019 Ram HD pickups feature new optimized frames constructed of 98.5% high-strength steel, six cross members, hydro formed main rails and fully-boxed rear rails. A new two piece front-suspension cross member adds a longer frame-weld interface and the rear-axle structural cross member, has been upgraded for 2019 to accommodate the increased towing capacity. A class-exclusive Active-Level rear air-spring rear suspension is also available on both the Ram 2500 and 3500, which on the 3500's Hotchkiss rear setup permits softer heavy load leaf springs for improved unladen suspension articulation. No pricing information for the 2019 Ram HD pickups was revealed at NAIAS, and the Chassis Cab versions of the HD trucks were expected to debut at February's Chicago Auto Show.

Source: SAE INDIA

Photography by Sadrup Hegde (8th sem)



Photography by Gaurav K (8th sem)



The Future of Technology in the Automotive Industry

Much like cell phones are now capable of doing more than making calls, cars can do much more than drive and park. In recent years, the automotive industry has worked hand-in-hand with major technology companies in order to deliver the most advanced, safest and most comfortable vehicles out there. Cars are becoming large smart devices with advanced emergency braking capabilities, mapping technology for autonomous driving, better fuel efficiency and cars as a service as a form of transportation.

More Fuel-Efficient Ride

Tesla is at the forefront of the fuel-efficiency movement, releasing a slew of electric and hybrid vehicles that can take you for hundreds of miles with a single charge. In 2016, more than 2 million electric vehicles were sold worldwide and this figure is expected to rise in the near future as more automotive manufacturers implement electric vehicle technology to their fold. Companies such as VW and General Motors have recently unveiled electric cars to their



fleet, while Volvo said that all of the engines they produce will be equipped with an electric motor by 2019. Electric vehicles are also becoming more affordable, with companies such as Hyundai, Kia and Toyota unveiling hybrid cars under the \$30,000 mark, suggesting that investing in fuel efficiency may soon be widely adopted around the globe. In the U.S., 20% to 25% of all vehicle sales are expected to be electric by 2030, while this figure is expected to reach up to 35% in China.

Self-Driving Technology



Much has been made of autonomous driving technology, and while some companies have been testing their self-driving functionalities on open roads, we're still quite a ways away from widely adopting these cars. A number of cars already have semi-autonomous capabilities in the form of driver-assisted technologies. These include automatic-braking sensors, motorway lane sensors, mapping technology that monitors blind spots, cameras in the back and front of a car, adaptive cruise control and self-parking capabilities.

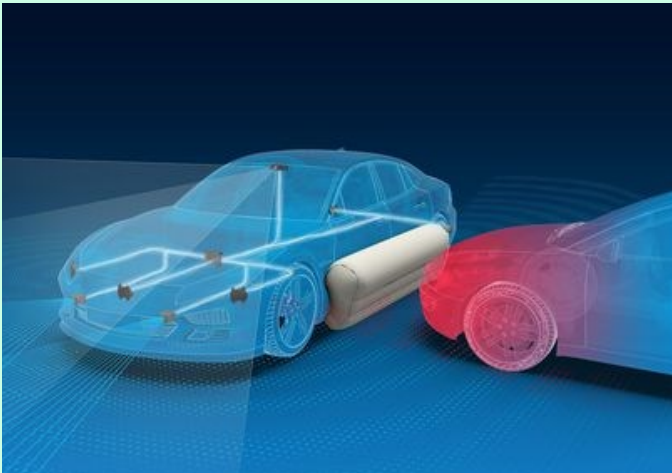
Google recently revealed the self-driving pod Waymo, while Local Motors released a fully-autonomous vehicle as well. Ford hopes to have a self-driving vehicle on the roads by 2021.

Your Next Car Could Have Airbags That Inflate on the Outside

Over the past three decades, we've gotten used to things blowing up in our faces. The advent of airbags has done wonders to protect cars' fragile flesh-and-blood cargo when vehicles go smash.

Lots of people especially those who've been protected from injury or death by an airbag deployment must have wondered: What if we put the same technology on the *outside* of the car? Some of those people must work for German auto supplier ZF Friedrichshafen AG, which has spent 10 years working on the external airbag.

The tech is finally ready for carmakers—that is, if ZF can convince them to buy it.



External airbags work just like you'd expect. They are bigger, exterior versions of the airbags that pop out of surprising places in your car's interior—those ugly balloons that fill with weird gases to cushion the human body.

With ZF's system, each side sill (the outside bodywork underneath the car doors) packs one airbag that runs the full length of the doors. Sensors on the car will watch out for any objects that look likely to slam into the side of the car. When the computers decide a crash is imminent and unavoidable, they deploy from the side sill, revealing the airbag. In no more than 100 milliseconds, inflators pump up the airbag to the height of a typical front bumper.

One advantage of outside airbags is that they disperse the forces of impact. An oncoming car about to slam into the side of your vehicle would strike with the relatively small surface area of its front bumper—and an even smaller surface if it strikes at an angle. But when a car hits an inflated airbag, the impact force is spread through the airbag and along the length of the vehicle's side structure, which reduces energy loads. ZF says its tech reduces intrusions into the passenger cabin by 30 up to percent, and reduces injury levels by 20 to 30 percent.

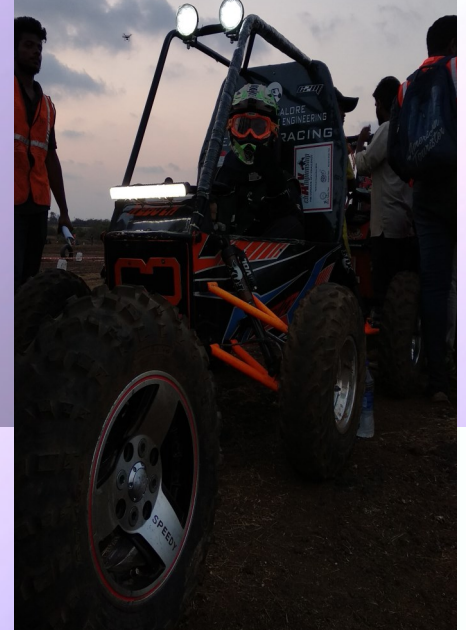
Mr. Prakash S.T
Asst. Professor
Department of Automobile Engineering



The Mega Event “ AUTO EXPO 2K19



Mega ATV Championship Event, Goa



Team SITE Racing placed 22nd rank in India out of 95 teams and 3rd in Karnataka

SRINIVAS INSTITUTE OF TECHNOLOGY
Valachil, Mangalore 574143
DEPARTMENT OF AUTOMOBILE ENGINEERING

PAPER PRESENTATION

- Max 2 in a team
- IEEE format 2 copies (Organizers)
- Ganesh : 7892096590
- Farhan : 8310030169
- Time : 10.15AM
- Venue : Maid building

MINUTE TO WIN IT

- Max 2 in a team
- Elimination at each round (Organizers)
- Acharya : 9591800947
- Ryanish : 973956980
- Time : 11.30AM
- Venue : Seminar Hall

AUTO PUZZLE

- Max 2 in a team
- Elimination at each round (Organizers)
- Shreyas : 8792306838
- Shahin : 9035318600
- Time : 12.15PM
- Venue : (Mech Block) Room No. M503

GREASE MONKEY

- Max 2 in a team
- Elimination at each round (Organizers)
- Nikhil Devadiga : 9632192328
- Amit Santra : 8123219662
- Time : 1.00PM
- Venue : Auto Lab

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ENVISION EVENTS 2019



Mahindra XUV300

Price	7.9 - 12.14 Lakh
Fuel Type	Diesel
Engine (cc)	1497
Max Torque	300Nm@1500-2500rpm
Max Power	115bhp@3750rpm
Seating	5
Transmission	Manual ,6 speed
Turbo Charger	Yes
Drive Type	FWD
Top Speed	175 kmph
Mileage (kmpl)	20
Wheel Base	2600 mm
Brake Type	Disc, Disc
ABS	Yes

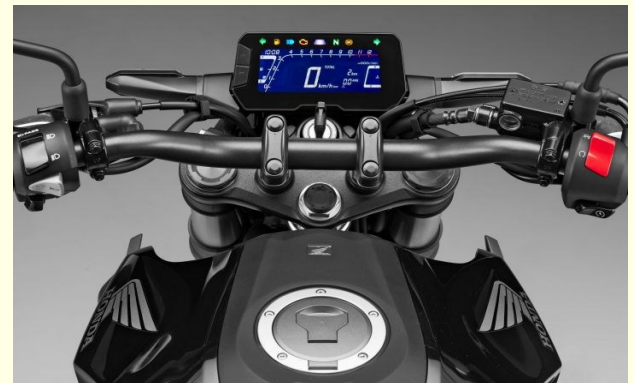
**Nissan Kicks**

Price	9.55 - 14.65 Lakh
Fuel Type	Diesel
Engine (cc)	1461
Max Torque	240Nm@1750rpm
Max Power	108bhp@3850rpm
Seating	5
Transmission	Manual,6 speed
Turbo Charger	No
Drive Type	FWD
Top Speed	180 kmph
Mileage (kmpl)	19.39
Wheel Base	2673 mm
Brake Type	Disc ,Drum
ABS	Yes

Once you replace negative thoughts with positive ones, you'll start having positive results.

HONDA 300R

Displacement	286.9cc
Cylinder	1
Max. Power	30bhp@8000rpm
Max. Torque	27.4Nm@6500rpm
Bore	76mm
Stroke	63.05mm
Fuel Supply	Fuel Injection
Fuel Type	Petrol
Cooling	Liquid Cooling
Gear Box	Manual
No. of Gear	6
Clutch Type	Wet Multiplate
Fuel Capacity	10l
Seat Height	800mm
Kerb Weight	143kg
Tyre Type	Tubeless

**BENELLI TRK502**

Displacement	500cc
Cylinder	2
Max. Power	47.58bhp@8500rpm
Max. Torque	46Nm@6000rpm
Bore	69mm
Stroke	66.8mm
Fuel Supply	Fuel Injection
Fuel Type	Petrol
Cooling	Liquid Cooling
Gear Box	Manual
No. of Gear	6
Clutch Type	Wet Multiplate
Fuel Capacity	20l
Seat Height	800mm
Kerb Weight	235Kg
Tyre Type	Tubeless

Our thoughts and imagination are the only real limits to our possibilities.

1. McLaren Speedtail's Ailerons

There are so many mind-bending elements of the McLaren Speedtail, including, the bits that actually bend. The ailerons are actually integrated into a huge single-piece carbon-fiber clamshell that extends all the way from the rears of the doors to the tail of the car. The actual structure of the clamshell changes as you get towards the back of the car.

The ailerons can provide a air-brake effect like the spoiler on a 720S, but mainly used to balance out the aerodynamics of the car based on speed. One of McLaren's main goals for the Speedtail was creating a car that could slip through the air for brutal acceleration (0-186 mph in a claimed and ridiculous 12.8 seconds) and a high top speed (250 mph). That meant minimizing shut lines and panel gaps. Flexible carbon fiber helps the cause.



2. Turn Signals and windows

Legendary car designer Giorgetto Giugiaro revealed a new high-riding supercar concept today called the GFG Style Kangaroo. It's a fully electric vehicle with four-wheel steering. The rear signals occupy the entire rear grille section, flanking the rear license plate. Aside from the angular body language and exceptional ground clearance, the Kangaroo has another neat feature: gullwing *windows*. That's right, the windows go straight up, while the rest of the door opens like a scissor. Going through the drive-thru must be interesting in this.



3. McLaren's Top-Exit Exhaust

If you haven't already heard, the McLaren 600LT uses a top-mounted exhaust. In addition to looking cool and sounding great, there are some actual performance benefits to having the exhaust exit at the top rather than the bumper.

In this, the exhaust exits at either end of the bumper. Because the car is mid-engined, the exhaust has to travel from the engine, over the transaxle, then back down to the bumper to exit. That's a lot of piping. A top-mount exhaust fixes that by simply exiting over the transaxle without having to travel back down to the bumper. This means less piping, which means less weight, less back-pressure, and better cooling. And because there's no exhaust exits at the bumper to disturb air flow, McLaren can incorporate a bigger diffuser to produce more down force.



4. Cars Use Both Port and Direct Injection

Lots of new car engines these days are built with both port *and* direct fuel injection. Why would a carmaker use two different types of injection methods on an engine? There are lots of benefits to both methods of fuel injection, and can use either one (or both at the same time) depending on an engine's RPM range. For example, using port injection means the fuel can cool down the intake air before it reaches the combustion chamber, increasing air density and allowing for more fuel to be used, and therefore more power.

Direct injection, on the other hand, cools the air inside the cylinder, greatly reducing the probability of knock. This means the engine can advance timing and run more boost before running into issues. Direct injection is used at high RPM to cool the chamber at high loads and create the most power possible..



ಸೋತು ಗೆಲ್ಲು !!!

ಸೋತು ಗೆಲ್ಲುವ ಸುಖ ನಿನಗೆಲ್ಲೆ ಗೊತ್ತು! ನಾನು , ನನ್ನದೇ ಸರಿ ಎನ್ನುವೆ ನೀ ಯಾವತ್ತೂ! ನೆನಪಿರಲಿ ಎಲ್ಲವೂ ಹಣ , ಸ್ವಾರ್ಥವಲ್ಲ! ಎಂದು ಅರಿಯುವೆಯೋ ನೀ ಆ ದೇವರೇ ಬಲ್ಲ!!

Dr. Ramakrishna N. Hegde



An outreach Program "Voters awareness" at Lalbhag and surrounding Areas, Mangaluru



An Outreach Program "Swachha Abhiyaan" at Jeppu, Mangaluru



SIT Sports Day



Fareed H (6th) Antony D (4th) Younus K (6th)
2nd Prize in 4 * 100 Relay

Nehal S (6th)

Sharath S (6th)
2nd Prize in Discus
throw