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Department of Automobile Engineering

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All the best to the Students for Upcoming VTU exams



H.O.D'S MESSAGE

I am happy that the second half of the current semester was very productive, given the number of activities with the positive involvement of faculty and the students. The department also successfully conducted a one day 'Four wheeler Service Camp' in association with M/s Deepak Automobiles. Students interest in co-curricular activities is highly appreciable, as a result of which a series of industrial visits, outreach programs and swachha abhiyaan were accomplished.



With the current semester nearing an end I urge the students to seriously prepare for the end semester examination and excel.

Dr. Ramakrishna N. Hegde

Nov - 2018

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Mazda details electrification strategy, confirms rotary engine's return

In an announcement from Japan in October, Mazda—one of the few established automakers to articulate a comprehensive long term commitment to hybridization or all-electric vehicle propulsion—said it intends to incorporate some type of electrification in all its vehicles by 2030. Yet in nearly the same virtual breath, the company affirmed its connection to “soulful” forms of internal combustion, including a confirmation that it will renew its longstanding enthusiasm for the rotary engine.

In a carefully-worded statement, Mazda reminded that many credible forecasts call for internal combustion to remain the dominant light-vehicle propulsion source for perhaps decades to come, while discretely laying out its plan for electrification—when and where it makes sense for the environment. “Mazda will strive to reduce carbon dioxide emissions and



Melbourne-based Rotary Engine Development Agency (REDA) has developed a four-stroke rotary engine with a rhombus-shaped rotor.

enhance the joy of driving by deploying compact, lightweight electrification technologies while further refining the internal combustion engine, which is forecast to be equipped in the majority of new cars for many years to come,” the statement said. “The company will introduce electric vehicles as the optimal solution in regions that generate a high ratio of electricity from clean energy sources or restrict certain vehicle types to reduce air pollution,” Mazda stated.

Rotary's new role

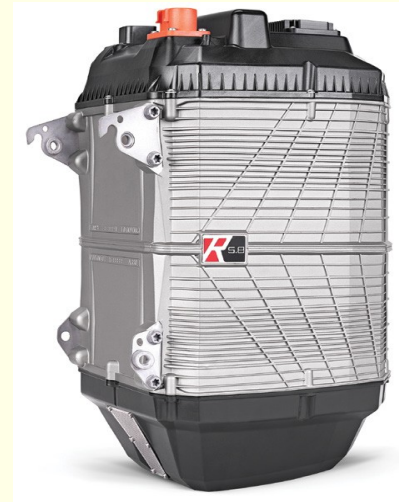
Mazda, for decades the auto industry's stalwart— and only—promoter of the smooth and power-dense rotary (Wankel) engine, reignited enthusiast passion with its announcement that it will revive the engine that's so inextricably connected with the brand, even if it will be in the muted role of range-extender for plug-in hybrid-electric (PHEV) vehicles.

Electrifying the two-wheeler

Alta Motors did not set out to create a zero-emission vehicle or invent a vital cog in the new landscape of electrified mobility. It wanted to build the best motorcycle it could regardless of powertrain, with products to satisfy the most serious motorcyclists. The fact that Alta's electrified two-wheelers are pushing the envelope in terms of power density and control algorithms is secondary, as the company seems mostly fueled by a genuine passion for its products. They'll need that zeal, because they've entered a rough market, irrespective of propulsion source (see "Making It..." sidebar). Alta also has taken more of a racing-focused and proprietary component route, accepting fewer compromises from a supply base that is still struggling with automotive scale electrified products, never mind those of a motorcycle



Alta Motors is fueling zero-emission excitement with a passion for product.



The Alta-designed and assembled 5.8kWh Li-Ion 350v battery pack weighs 30.8 kg recharged in 1.5 hours - 240v charger.

startup. This is a tougher route to ride, and such tenacity may bring more pains as the company grows, but it's quickly won Alta's products many fans in a niche field.

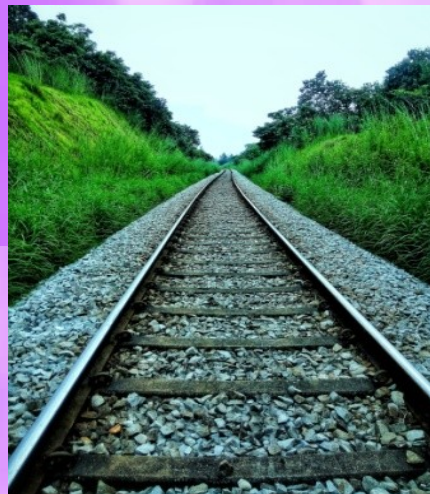
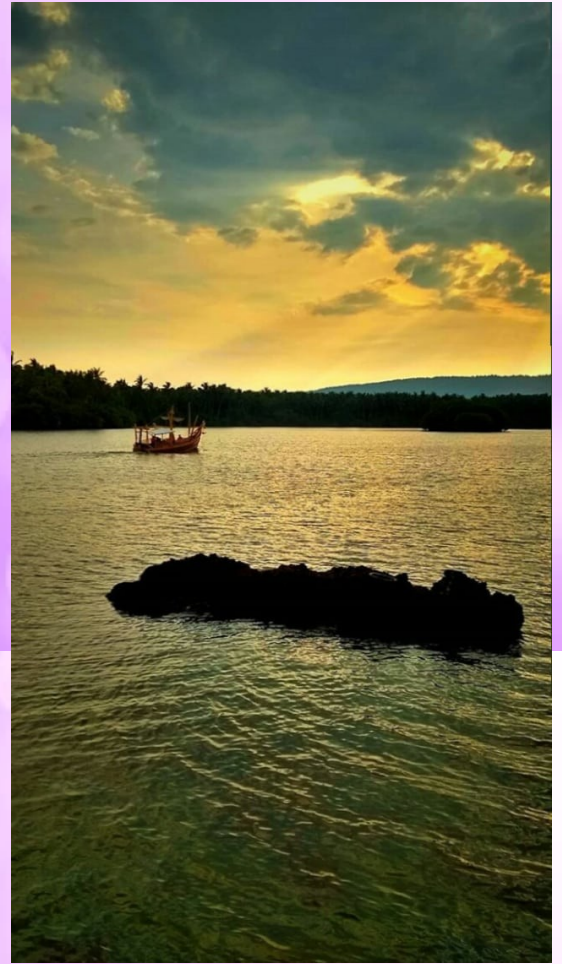
Automotive Engineering spent a day with company co-founder and CTO Derek Dorresteyn discussing Alta's genesis, technology and products. Our visit also included ripping up the nearby streets of San Francisco on several Alta offerings to see if the hype around one of the newest OEMs was warranted.

Competition-focused product line

Alta does not build touring bikes. It instead applies research and engineering resources towards motorcycle products that best leverage the strengths of an electric powertrain (instant torque) and minimize the drawbacks (range). The result is Alta's lineup of competition-grade off-road motocross, street-legal enduro/ dual-sport and street-legal supermoto models. The week we visited, Alta earned its first AMA Pro EnduroCross podium, competing on equal footing with gasoline powered machines.

A tour of Alta's corporate offices and manufacturing line in Brisbane, Calif.—housed under one roof in a nondescript industrial park just south of San Francisco—was led by Dorresteyn, who along with Jeff Sand (chief design officer) and Marc Fenigstein (chief product officer), founded Alta in 2010 and moved Alta to the Brisbane location in 2015.

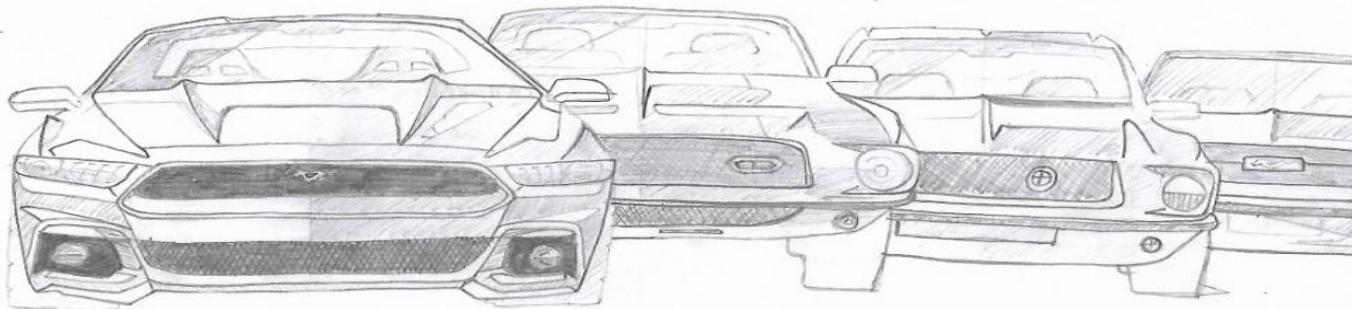
Photography by Amrithlal K (7th sem)



Art by Prithvi Acharya (7th sem)



Bugatti
Chiron



M U S T A N G

Prithvi Acharya



Photography by Mani-
sha (5th sem)



First Drive: 2019 Kia K900

Ever since Lehman Brothers collapsed nearly a decade ago, there's been a rising anti-capitalist, anti-rich sentiment that's permeated through college campuses and parts of America like some kind of toxic shiver. It's become vogue to keep your indulgences under the radar, and this concept of stealth wealth is why a brand like Kia has managed to carve out a unique niche in the luxury segment.

The new K900 is based on the same architecture as Kia's sporty Stinger, and as with its sibling, ex-BMW engineer Albert Biermann had a hand in its development. You can feel his influence from the first turn of the wheel: Where the old K900 was softly sprung and isolated—a sensible tune for traffic-choked Seoul—the new one feels noticeably stiffer and more buttoned down, though still comfortable and compliant. I purposely dive-bombed a series of potholes, looking for the clunks and rattles that belie deficient (or discount) engineer-



ing. The K900 delivers the kind of composure I've come to expect from German cars—and that I suppose I should now expect from Korean cars with German engineers in charge.

It's the perfect powertrain for a large luxury car: Strong and confident with a Kia-timed 0-62 mph run of 5.6 seconds, a healthy soundtrack under power, and near-silence when cruising. The current K900's naturally aspirated engines—a 3.8-liter V-6 and 5.0-liter V-8—will be offered in other markets, but we're not really missing out. The V-8 supposedly shaves a third of a second off the 0-62 run, but I'm happy to trade that for the 3.3TT's broad torque curve, and I doubt anyone here in the Land of Cheap Gas will miss the economy of the naturally aspirated V-6. Kia long ago mastered the art of high-quality switchgear and materials, and the 2019 K900 raises this to an even-higher level, with metal speaker grilles, detailed stitching on the door panels, and contrasting-color piping on the seats.

Akilesh Sharma
7th sem Automobile Engg

Energy-storing Body Panels

Exxon Mobil predicts that by 2040, half of all new cars coming off the production line will be hybrids. That's great news for the environment, but one of the problems with hybrids is that the batteries take up a lot of space and are very heavy. Even with advances in lithium-ion batteries, hybrids have a significant amount of weight from their batteries. That's where energy-storing body panels come in.

In Europe, a group of nine auto manufacturers are currently researching and testing body panels that can store energy and charge faster than conventional batteries of today. The body panels being tested are made of polymer fiber and carbon resin that are strong enough to be used in vehicles and pliable enough to be molded into panels. These panels could reduce a car's weight by up to 15 percent.



Auto manufacturers are currently researching and testing body panels that can store energy and charge faster than conventional batteries of today

The panels would capture energy produced by technologies like regenerative braking or when the car is plugged in overnight and then feed that energy back to the car when it's needed. Not only would this help reduce the size of hybrid batteries, but the extra savings in weight would eliminate wasted energy used to move the weight from the batteries.

Toyota is also looking into lightweight energy storing panels, but they're taking it one step further and researching body panels that would actually capture solar energy and store it in a lightweight panel. Whether future body panels collect energy or just store it, automotive companies are looking into new ways to make our cars more energy efficient and lightweight.

***Mr. Prakash S.T
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Four wheeler Service Camp 2018



Industrial Visit to KSRTC workshop Bengaluru by 3rd sem students



Swachha Abhiyaan



Engineers Day Celebration



Jawa And Jawa 42

Displacement	293cc
Max Power	27bhp
Max Torque	28Nm
Gearbox	6-Speed
Cooling	Liquid-Cooled
Fuel Supply	Fuel Injection
Emission Standard	BS6
Front Brake	280mm Disc with Floating Caliper & ABS
Rear Break	153mm Drum
Front & Rear Suspension	Telescopic Forks (F) & Hydraulic Dual Shocks (R)
Tyre	90/90-18 (F) & 120/80-17 (R)
Seat Height	756mm
Wheelbase	1369mm
Kerb Weight	170 kg
Tank Capacity	14-liters



Royal Enfield Continental GT



Displacement	648cc Parallel Twin Engine
Max Power	47bhp
Max Torque	52Nm
Gearbox	6-Speed
Cooling	Air+Oil Cooled
Fuel Supply	Fuel Injection
Break	320mm Single Disc (F) & 240mm Single Disc (R), 2-Channel ABS (standard)
Tyre	100/90-18 (F), 130/70-18 (R)
Frame	Tubular
Seat Height	804mm
Wheelbase	1400mm
Kerb weight	212 kg
Tank Capacity	13.7 liters

Life is 10% what happens to you and 90% how you react to it.

MAHENDRA E20

Engine Type	3 Phase Induction Motor Engine
Maximum Power	25.5bhp@3750rpm
Maximum Torque	53Nm@0-3400rpm
Gear Box	Fully Automatic
Drive Type	FWD Overdrive
Top Speed	81 Kmph
Mileage (kmpl)	120.0
Fuel Type	Electric (Battery)}
Front Suspension	MacPherson Strut
Rear Suspension	Gas Filled Shock Absorbers
Turning Radius	3.9 meters
Brake Type	Disc, Drum
Length	3280mm
Width	1514mm
Height	1560mm

**Mahindra s201**

Engine Type	mHawk Diesel Engine
Engine Description	1.5-litre 100bhp 12V mHawk Diesel Engine
Engine Displacement (cc)	1493
No. of cylinder	3
Maximum Power	100bhp@3750rpm
Maximum Torque	240Nm@1600-2800rpm
Valves Per Cylinder	4
Valve Configuration	DOHC
Fuel Supply System	CRDI
Turbo Charger	Yes
Super Charge	No
TransmissionType	Manual
Length	3985mm
Width	1850mm
Height	1870mm
Wheel Base	2760mm

Your talent is God's gift to you. What you do with it is your gift back to God.

Adaptive cruise control

Adaptive cruise control (ACC). Systems can vary from automaker to automaker, but all ACCs use some sort of radar/camera system to track the vehicles ahead and adjust speed accordingly. While regular cruise control holds the car at a steady velocity until the driver intervenes, ACC will speed up or slow based on the position of the cars in front, reducing fatigue. Some will even bring you a complete stop when necessary, allowing the driver to set off again with a quick touch of the “Resume” button. For best results, pair with lane keeping assist for a stress-free ride. Completely autonomous cars are still years away, but semi-autonomous features like this are a glimpse into a driverless future.



Keyless entry and push-button start

Most new cars offer an electronic key fob as opposed to a standard key, which allows drivers to lock, unlock, and start their vehicle from afar. And with their proximity sensors, fobs can automatically unlock a car's door when the driver touches the handle, which is handy when you have bags, children, animals, or bags of children and animals in your hands.

Once inside, you'll find yet another function made possible by the key fob —push-button start. Not only is keyless ignition the biggest advancement in vehicle starting technology since, well, the key, it immediately increases the perceived value of the car. Just hit the switch and go.



Just hit the switch and go.

Automatic parking



Automatic parking is the answer to an age-old question — why do it when your car can do it for you? The technology started popping up in the United States in the early 2000s, mostly notably in 2006 with the Lexus LS460. With sonar sensors and a rearview camera working in concert, the luxury sedan could parallel park almost completely by itself, with the driver using only the brake to stop once signaled to do so. Lexus had started a trend.

Ever since, manufacturers like Ford, Audi, Jeep, BMW, and more have flirted with autonomous parking systems, and this year Tesla unveiled a Summon feature that allows Model S and Model X drivers to park their vehicles remotely with their key fob. Imagine a future where you pull up to a restaurant, hop out of the driver's seat, and watch your car autonomously scoot away in search of parking. When you're done, it zips right back to you like a loyal pet, waiting to take you back home. That future isn't far away now, and for that, we give thanks.

Massaging seats

If you're going to sit in a seat for a long period of time, it had better be comfortable. Luckily, modern car seats can be like armchairs, right down to their ability to massage an occupant.

Massaging seats are admittedly a bit decadent, but they're great for long road trips, or even to make sitting in traffic more relaxing. The only downside is the possibility of getting too relaxed. You still have to pay attention to the road, after all.





Outreach Program By 5th Sem students (Govt. PU College Udupi)



Workshop visit to Mandovi Motors Pvt. Ltd Mangaluru by 7th sem students



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