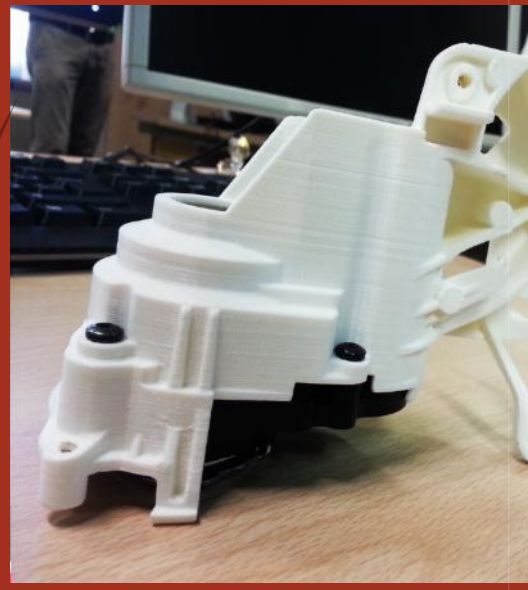
March

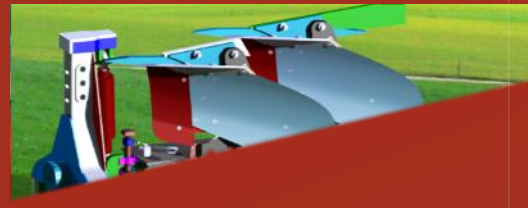
2019

DAuto Newsletter

Edition 2019

115th Edition





"Design engineers turn designs into reality. Without them, a great idea but nothing more than,... well, a great idea."

February 2019 refresh

- ✓ *Mercedes-Benz Vision Urbanetic Concept*
- ✓ *2019 Toyota Camry hybrid launch in India on 18 January*
- ✓ *The V-Class The spacious sedan with star*
- ✓ *These Robotic dogs take fetch to a whole new level*
- ✓ *Travelling at 600mph:India's Hyperloop dreams take shape in the Nevada Desert*
- ✓ *New Robot Science museum will construct itself in Seoul*
- ✓ *Warka water towers collect clean drinking water from the "Lakes in the air"*

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Lamborghini Huracan Evo gets design for improved Aerodynamics

The new Lamborghini Huracan Evo comes with a bunch of design upgrades that make the car a lot more aerodynamic than the standard Huracan. Compared to the regular Huracan, the new Lamborghini Huracan Evo has a lot more to offer. In fact, the car is more stylish, more powerful, and more aerodynamic.

The 2019 Lamborghini Huracan Evo officially went on sale in India. Priced at Rs.3.73 crore,the new Lamborghini Huracan Evo is more stylish, more powerful, and more aerodynamic than the regular Huracan, while taking inspiration from the Huracan Performante. India is the first market to get the Huracan Evo after its in Bahrain, middle East. Compared to the regular Huracan ,the Evo has a lot to offer, in fact, the company claims that the car comes with the technologies that amplify driving pleasure.

Like the regular Huracan, the Evo too comes with a 5.2 litre naturally aspirated V10 engine, However, here the motor is tunes to churn out a maximum output of 630 at 8000rpm, which is 28bhp more than the regular Huracan. The peak torque output, on the other hand, is 600Nm at 6500rpm, which is 40Nm more than the standard model. The Huracan Evo can accelerate from 0-100kmph in 2.9 seconds and from 0-200kmph in 9.0seconds, before reaching a top speed of 325kmph.

The new Huracan Evo is the first Lamborghini that comes with predictive logic on vehicle dynamics control system-Lamborghini Dinamica Veicolo Intefrata(LDVI)-a Central Processing Unit that controls every aspect of the car's dynamic behavior, fully integrating all of the car's dynamic systems and set-up to anticipate the next move and needs of the driver, interpreting this into perfect driving dynamics. This is further enhanced by an improved all-wheel-drive system and all-wheel steering that aid in better responsiveness agility and easiness to drive.

The new updates includes a new front new front bumper that adds a low, assertive stance to the car while the larger air intakes and the front splitter with integrated wing add to its aerodynamic than the standard Huracan.

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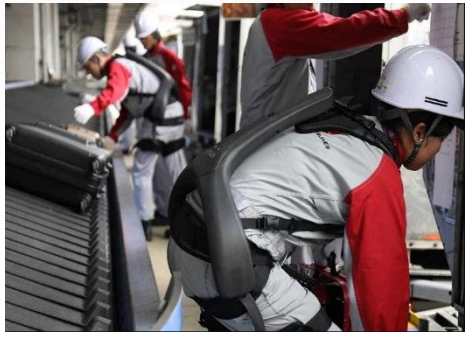
Robots will aid visitors to their seat during Tokyo 2020 Olympics



It's no secret japan wants to use the 2020 Tokyo Olympics as a platform to flex it's tech-induced muscles.

Since it was awarded the games six years ago it has repeatedly outlined aims to use technology to achieve various different things such as facial recognition to streamline the entry of athletes, the launch of a robo-taxi service, and even recycling e-waste to create the Olympic medals. Now its efforts include the Tokyo 2020 robot project, which will bring all of its initiatives together under one roof.

The Tokyo 2020 robot project bring together experts like Panasonic and Toyota who unveiled new robots the projects launch event last week. Toyota unveiled several new robots that it says will be able to assist disabled people attending the 2020 Tokyo Olympics.

Built by Toyota, the human support robot(HSR) and delivery support robot(DSR) will work together to provide assistance to spectators. HSR is a meter-high machine with a built-in arm for picking up trays and baskets, and the delivery support robot(DSR), functions like a mobile waste bin but carry's snacks and other items when ordered via an app on tablet or smartphone. Officials plan to deploy up to sixteen HSRs and around 10 DSRs, most of them at the Olympic stadium in Tokyo.

The robots are designed to aid visitors, especially those in wheelchairs by carrying food and their goods, guiding people to their seats, and providing event information. Panasonic also showed off a power assist suit which works to provide support to the back and hip area so that wearers can perform lifting tasks without fear of injury. Panasonic said it plans to use 20 of the suits at the Olympics to assist in a range of lifting tasks, such as helping visitors with their luggage.

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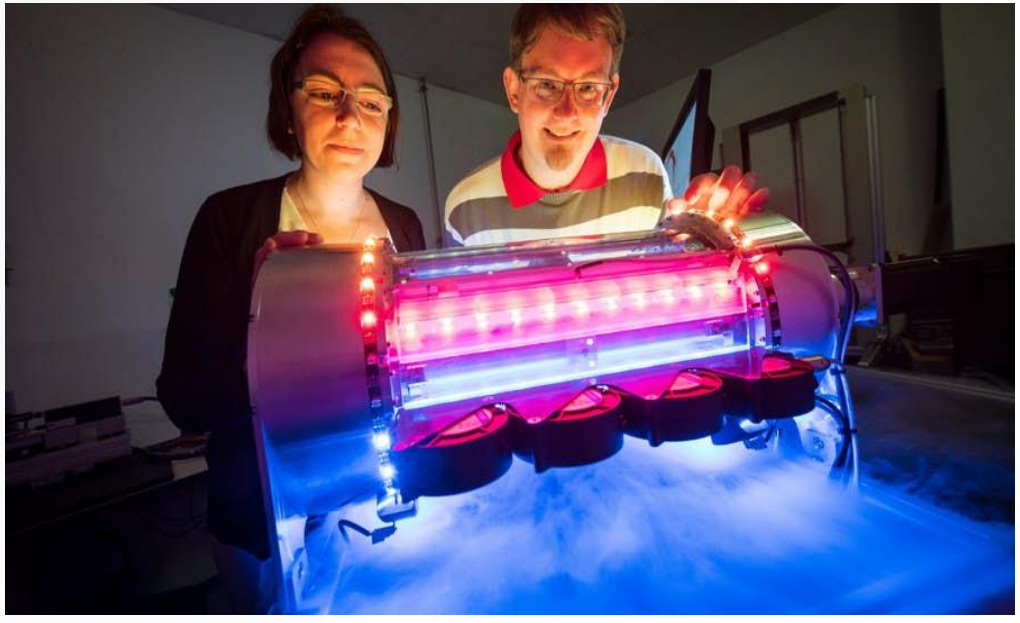
Refrigerant System cools without Chemicals



"Our new technology is also environmentally friendly and does not harm the climate, as the heat transfer mechanism does not use liquids or vapours," says Professor Stefan Seelecke, the university's Chairman of Intelligent Metal Systems. "So the air in an air-conditioning system can be cooled directly without the need for an intermediate heat exchanger, and we don't have to use leak-free, high-pressure piping."

An innovative refrigerant system powered by artificial system powered by artificial muscles can cool the air three times more efficiently than conventional methods

The device is based on a peculiar property of certain shape-memory metal alloys that spring back into shape after being deformed . In some cases- particulary with nickel-titanium,also known as nitinol-These metals absorbs significant amounts of heat when they‘re bent out of shape, and them release that heat when they’re allowed to revert to their normal shape. The difference between the loaded wire and the released wire can be as much as 20 degree C(36 degree F).

The cooling device is thus quite simple in concept. It uses a rotating cylinder covered in nitinol wire bundles. The wires are loaded up as they pass through one side, sucking heat out of the air and storing it up. Then as they rotate past the other side, they're allowed to snap back into shape, dumping the heat on the second side. Air is blown through chambers on each side, giving you one feed of heated air and another feed of cool air.
The Saarland University team has been experimenting with the device to figure out the optimal convergence of wire loading, rotational speed, and how many wires should be in a bundle to create the biggest possible heat differential between the two sides from a given energy input.

And the results seem very exciting. The Saarland University team claims that "the heating or cooling power of the system is up to thirty times greater than the mechanical power required to load and unload the alloy wire bundles" depending on the type of alloy used. They say that this makes their new system more than twice as good as a conventional heat pump and three times as good as a conventional refrigerator.

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The Groundbreaking BMW X7 combines innovative design and inspiring presence

The BMW X7 is the brand new flagship SUV from the German automaker and features a new design language and more importantly, the biggest kidney grille ever seen on any BMW product ever

The BMW X7 will be a seven seater SUV, a first for BMW. The X7 can also be speced out in a 6 seater configuration. The new BMW X7 will also come with a three-part par anomic sunroof and will get a twin 12.3 inc screen setup for the instrument cluster and the infotainment display. The dashboard design is futuristic yet very familiar in terms of overall layout and design elements.

Although there is no confirmation on the engines that will be offered on the new BMW X7 anytime soon, internationally, the flagship SUV gets a range of petrol and diesel powertrains along with an upcoming hybrid option. The diesel engines include the trid and tested 3-litre, in-line 6-cylinder petrol with 335 bhp and 4.4-litre, twin turbo V8 petrol making 456bhp. There is also the 3.0-litre in-line six-cylinder diesel making 256 bhp and a more powerful 400 bhp version on offer too. The BMW X7 gets an 8-speed automatic gearbox on offer and xDrive all-wheel-drive as standard.

The new BMW X7 is 9 inches longer than the BMW X6 and just barely 3 inches shorter than a regular wheelbase BMW7 series making it the biggest SUV ever made by BMW.
The new BMW X7 will be launched in India in 2019 and will take on a long line of SUVs from the likes of the Mercedes-Benz GLS to the Range Rover Sport to the Lexus LX and Toyota Land Cruiser. Expect prices to be well upwards of the Rs1crore mark, ex-showroom.

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Ennead architects plans nature reserve with a public aquarium in China

Ennead architects has won an international design competition to build a nature reserve in China. Located on an island at the mouth of the Yangtze river, the ambitious plan involves rescuing critically endangered species and restoring biodiversity to a habitat beset by pollution and the impact of previous construction.

The project ,officially referred to as the ‘shanghai Yangtze river estuary Chinese sturgeon nature preserve', had been led by ennead design partner Thomas Wong, alongside landscape architecture firm Andropogon.Set within a 17.5-hectare landscape, the 427000 square foot building contains an aquarium and a research department. The facilities bring together efforts o increase the number of sturgeon and finless porpoise with the public engagement designed to built support for ecological conservation.

The program includes a series of interior and exterior pools for breeding and raising both species, as well as research facilities dedicated to their reintegration into the wild.. Importantly, the project makes the work of the institution visible to visitors through an immersive aquarium and exhibit experience.

Externally , the design features forms that rise in undulating, fluid gestures taking cues from the rippling surface of the river and the surrounding landscape. Gently curving wooden structural ribs radiate around a central spine that unites the three wings of the building .Clad in translucent PTFE, the lightweight enclosure envelops the pools to create a luminous, daylight-maximizing interior.

The design integrates highly sustainable strategies, including: a cross laminated timber structural system, geothermal heating and cooling loops, constructed wetlands of local flora, waterborne plants for rapid carbon sequestration, and a process of bio filtration for Aquarium water. Meanwhile, the landscape design reconstruct the shoreline and the variety of eco-regions found throughout the Yangtze river basin Suspended walkways and viewing areas connect the campus, allowing visitors to immerse themselves in the natural settings

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In the design of hotel Torshavn, Architecture influenced by faroe islands sea caves

Henning Larsen architects presents its winning competition entry for a new four-star hotel in Torshavn, capital city of the north Atlantic faroe islands

As the team's conceptual development stems from its commitment to improving city life, the project gives the hotel typology a more active role within its urban context. its design taps into the natural landscape of the islands to introduce a locally-inspired modernization of the classic 'grand foyer.' this space offers the Torshavn city center a new public gathering space, situated between the city's main cultural venues and just beneath the main pedestrian and shopping street.

Hotel Torshavn's expansion by Henning Larsen introduces a grand public foyer connected to the streets by a broad staircase. the space introduces a meeting point and pedestrian thoroughfare for both local and international visitors. partner and design director jacobsen of Henning larsen's faroese studio, regards the design concept as a reflection of the faroese roots.

Both a renovation and expansion, the design revitalizes the interior of the existing hotel while adding a new wing on an adjacent lot. the project will introduce approximately one hundred rooms in total. Henning larsen's 4,500 square meter proposal elevates the hotel from a three-star to four-star establishment, and positions the building as an accessible pedestrian thoroughfare between two of the city center's most active streets. as the faroe islands explore a developing role in global tourism, Henning Larsen's concept for hotel Torshavn anticipates new visitors while benefiting long time residents. the design rises as a new landmark in an emerging hotspot, standing as an inviting icon for guests and an active commons for Torshavn's locals.

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Launched globally last year, the AMG C43 Coupe comes to India as a CBU

German luxury carmaker Mercedes-Benz has launched the AMG C43 Coupe in India at Rs 75 lakh. Essentially a two-door coupe based on the C-Class with the AMG treatment from Affalterbach, the latest-gen C43 Coupe was introduced globally last year and comes to India as a CBU.

In its current avatar, the C43 Coupe gets a new AMG radiator grille with twin silver chrome slats, flanked by redesigned LED headlamps with DLR's on top and large air dams on the bumper. It gets 19-inch AMG alloys for that sporty appeal and the coupe roofline blends seamlessly with the boot to give it a sleek silhouette. At the back, it gets a striking rear diffuser and two round twin tailpipes to match their performance it packs.

The new AMG C43 Coupe is powered by the same 3.0-litre V-6 engine that was used in the C43 4MATIC sedan earlier sold in India, but in a different state of tune. This engine now makes 390PS of power and 520Nm of torque and comes mated to a 9-speed AMG Speed shift gearbox. It also gets 4MATIC all-wheel drive with rear-biased 31:69 power distribution, along with AMG's three-stage adjustable suspension damping from its elder sibling AMG C63. The C43 can do a 0-100kmph run in just 4.7 seconds and has an electronically limited top speed of 250kmph

In its current avatar, the C43 Coupe gets a new AMG radiator grille with twin silver chrome slats, flanked by redesigning LED headlamps with DRLs on top and large air dams on the bumper. It gets 19-inch AMG alloys for that sporty appeal and the coupe roofline blends seamlessly with the boot to give it a sleek silhouette. At the back, it gets a striking rear diffuser and two round twin tailpipes to match the performance it packs.

On the Inside, the C43 boasts of a specially crafted AMG steering wheel wrapped in Nappa leather along with ergonomically positioned touch-control buttons. It also gets a head-up display and a massive all-digital 12.3-inch instrumentation cluster, with 'Classic', 'Progressive' and 'Sporty' modes.

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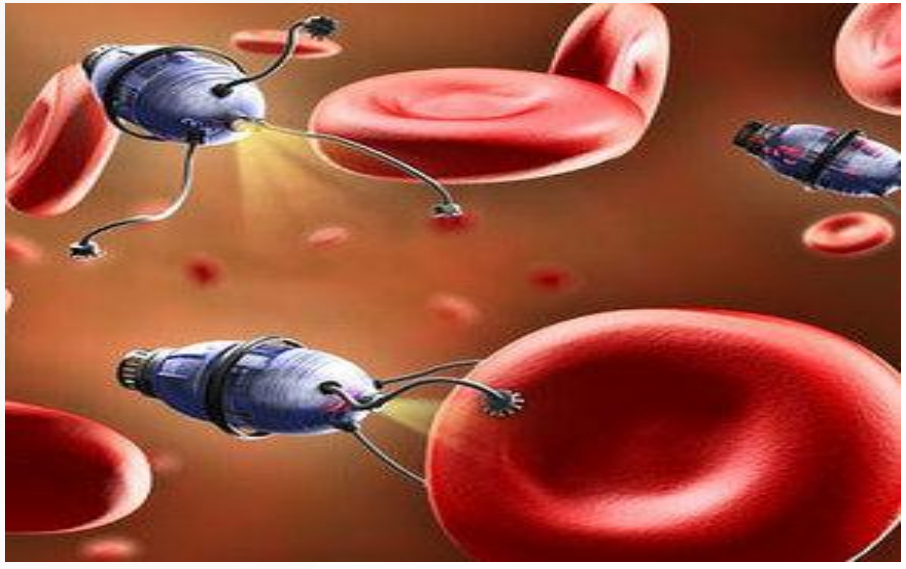
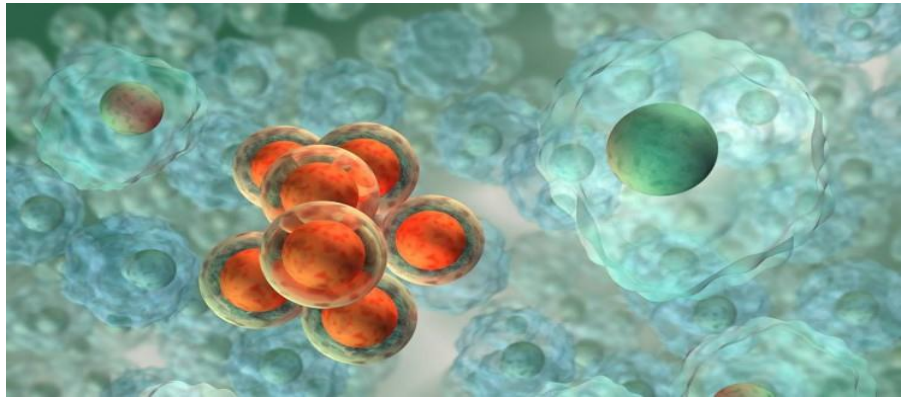
Magnetic Nano-bot Travel in Cells





Magnetic Nano-bots that can be controlled inside of live cells could open the door to new diagnosis and treatment methods.

The Nano bots were created by the team from the University of Toronto, who had previously developed bots able to manipulate cells from the outside using lasers. To take the technology a step further, the new bots can be controlled magnetically, which allows them to make more precise movements without damaging the cells. The team believes the technology could lead to new ways of studying cells as well as diagnosis and treating different diseases.

Sun and his teams have been building robots that can both manipulate and measure single cells. Now, they want to take their work one step further. Essentially, the researchers want to probe living cells. To do so, they require more advanced technology." Optical tweezers using lasers to probe cells- is a popular approach, "said Xian Wang, the phD. Candidate who conduct the research.

Wang designed a novel system that allows for a magnetic iron bead, about 700 nanometers in diameter, to be placed with great precision inside a cell. Wang then controls the bead through a computer-generated algorithm. "We can control the position to within a couple of hundred nanometers down the Brownian motion limit, "said Wang." We can exert forces an order of magnitude higher than would be possible with lasers."

If you are wondering what the applications are for such a minuscule robotic system, Sun and his team used theirs to study bladder cancer cells. They were effective in measuring cell nuclei in infract cells.

What they found was that the nucleus is not equally stiff in all directions. "It's a bit like a football in shape—mechanically, it's stiffer along one axis than the other. "said Sun. "We wouldn't have known that without this new technique."
But Sun does not want to limit his work to simply examining cancer cells. He believes his research could offer potential new treatments.

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Harley-Davidson shows off its electric scooter concept and it's pretty cool

Indian Motorcycles is known is known for paying a lot of attention to detail on its premium cruisers. Now, the iconic manufacturer has teamed up with Jack Daniels's for the fourth straight year to create an ultra exclusive cruiser called the 2019 Jack Daniel's limited Edition Indian Springfield Dark houses.

The Motorcycle is limited to the US market and can only be purchased through a lucky draw contest, which is open from March 9 to 17, 2019.An exclusive motorcycle commands a premium price, and this edition starts from $36,999, which is a whole $15000 more than the standard Springfield Dark house!

For one, this special edition cruiser is limited to 177 units, and each motorcycle is meticulously hand-painted with what Indian calls "Heavy Metal Crystal and Thunder Black Vivid Crystal" paint scheme with Steel Gray and a 'Single Barrel Select' wood grain finish. There are plenty of Jack Daniels badging on the motorcycle features a unique "Montana Silversmith" badge engraved with each bike's unique number.

The Jack Daniel's edition is powered by Indian's first factory-fitted 1900 cc Thunder Stroke Engine which makes 20 per cent more power and 15 percent more torque compared to the stock 1811cc motor. The stock unit produces 161.6Nm at just 300rpm and works in conjunction with a 6-speed transmission that's linked to a belt drive. The underpinnings, however, appear to be the same as the ones on the standard cruiser. It rides on cartridge-type inverted forks up front and an air adjustable monoshock at the rear. Braking power is courtesy of 300mm dual discs up front and a 300mm disc at the rear, with standard ABS.

Other notable additions include a tinted quick release windscreen all-LED lightning system with auxiliary lamps, front and rear crash guards, redesigned saddlebags and custom machined dual0-tone wheels. Indian also offers a custom engraved single Barrel Select Whiskey.

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Solar Powered Hydrogen Collects Clean water out of thin Air

Using solar power and what they refer to "Super Sponges," a team of engineers at the University of Texas at Austin have developed a neat, and potentially life-saving, magic trick: pulling water out of thin air.

The sponges are actually hydrogels, gel-polymer hybrid materials that are designed to hold and contain substantial amounts of water. The Texas team focused on Combining the abilities of an especially absorbent hydrogel known as polypyrrole chloride with one that is reacts to heat called isopropyl acrylamide. It's a mouthful, but the two melded together are able to function in both humid and dry weather conditions and have been proven to pull water out of the atmosphere.

Machines have utilized atmospheric water before, like the Freshwater machine from Chile. These hydrogels have also been used for absorption-hygroscopic compounds are typically used in refrigeration .In fact, the team created something similar in 2018, a solar powered water purification innovation using hydrogels that clean water from any source. But by using the water that already exists in the atmosphere, the team was able to improve on their own and existing tech.

Given the increased threat of drought across the globe due to climate change, the 5000 cubic kilometers contained within the atmosphere are a tempting target for relief. Prototypes showed daily water production of up to 50 liters per kilogram of hydrogel.

"We have developed a completely passive system where all you need to do is leave the hydrogel outside and it will collect water," said Fei Zhao, a postdoctoral researcher and co-author of the study in a press statement. "The Collected water will remain stored in the Hydrogel until you expose it to sunlight. After about five minutes under natural sunlight, the water releases."

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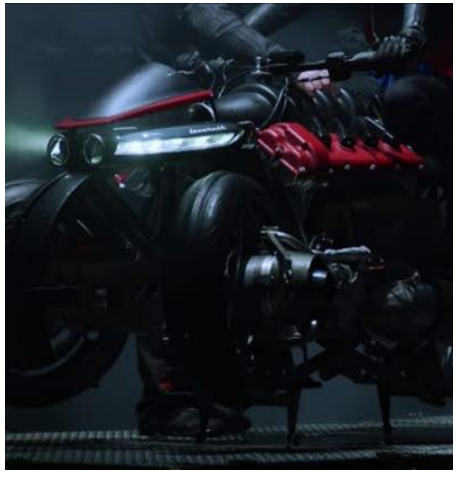
Lazareth's flying motorcycle goes from road to sky in 60 seconds



French Custom auto/moto maker lazareth is one step closer to realizing its vision of a flying motorcycle.

The French custom auto/maker has a long history of building wacky and bizarre one-offs and short run vehicles, but the Moto Volante flying motorcycle is his most ambitious yet.it looks like an evolution of Lazareth's own mind-boggling LM-847, a tilting four-wheeler bilt around a fire-brething 470-horsepower Maserati Engine. But the Moto volante ups the ante by putting a 96000-rpm jetcat jet turbine in the hub of each wheel and adding hydraulic actuators that tilt the four wheels and adding hydraulic actuators that tilt the something like a jet-powered quadcopter. Two extra jets can be added near the middle of the chassis to handle more weight.

You can ride the thing on the road, according to Lazareth, then when you've had it with traffic pull over to a suitable launch area. Pressing a button converts the bike from ride to fly mode and, after waiting about 60 seconds for the jets pre-heat, you can lift off and leave the gridlock behind.

Its truly impressive how lazareth has designed and executed the bike's unique fly/ride power arms. Each of the rear wheels needs to be driven and braked for on-road use, and front wheels need steering and braking capability-all while the main wheel hubs are built around jet turbines thick enough to lift this hulking beast of a thing, with a ballistic parachute mounted in each wheel as well I case things go wrong. Since there are no chains leading back from that monster Maserati powerplant, it appears that the bike runs on electric drive to the two rear wheels in road mode.

France's BFM TV reports that the entire bike weighs just 140 kg, and make some 240 kg of thrust in flight mode.

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MUJI debuts a self-driving bus that can handle all weather conditions

Japanese lifestyle retailer MUJI, and finnish autonomous driving company sensible 4, have launched the first driverless bus for all weather conditions. Titled ”GACHA”, the self driving shuttle bus has been presented in Helsinki with a view to begin public-facing operations as soon as this april.

GACHA will begin operating for the general public in the city as Espoo in April 2019, before rolling out to hameenlinna, Vantaa, and Helsinki later in the year.
While sensible 4 provided the technology for the 4.5-meter-long vehicle, including positioning, navigation, and obstacle detection, MUJI has provided the vehicle’s design developing the functional aesthetic and user experience. The team aims for the fleets to operate as a part of the cities’ existing transportation systems in 2021 , with a long-term objective of establishing partnerships with other cities globally.

Aside from its all-whether capabilities, the design also has no front or rear. The interior seating-accommodating ten in addition to six standing passengers-follows the soft rounded square shape of the vehicle, creating more space for passengers, while the LED light belt serves as both headlights and an external communication screen. MUJI and sensible 4 say that the inspiration for the design came from a toy capsule, a universal shape that ‘embodies joy and excitement, bringing peace and happiness to those who encounter it.’

“The GACHA development got started when sensible 4 team, working back then with the first generation of robot buses, noticed that they just don’t’ perform at all even in light rain, not to mention the typical winter conditions in finland.’ says harri sanatmala, CEO as sensible 4.

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Student's Corner

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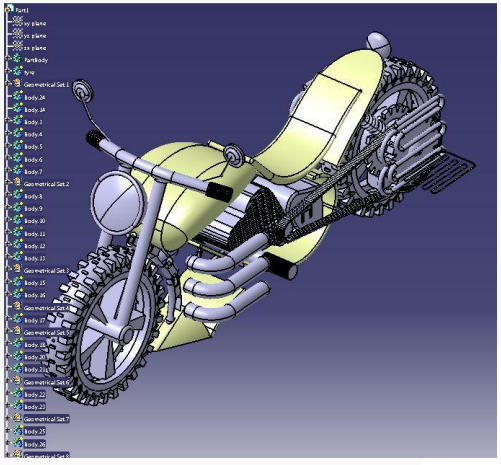

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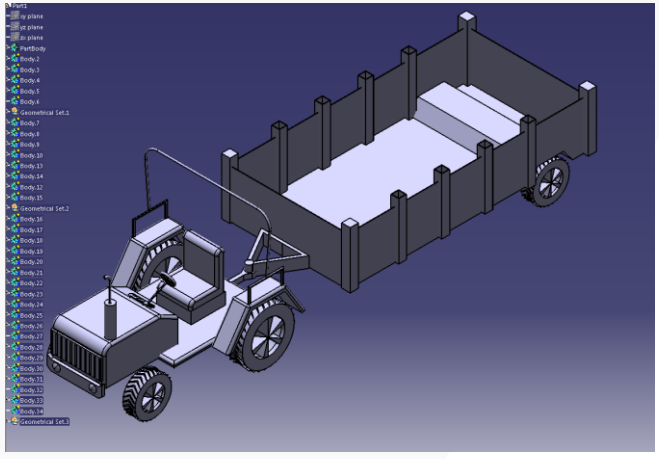
Student's Corner

DAuto Training Yield



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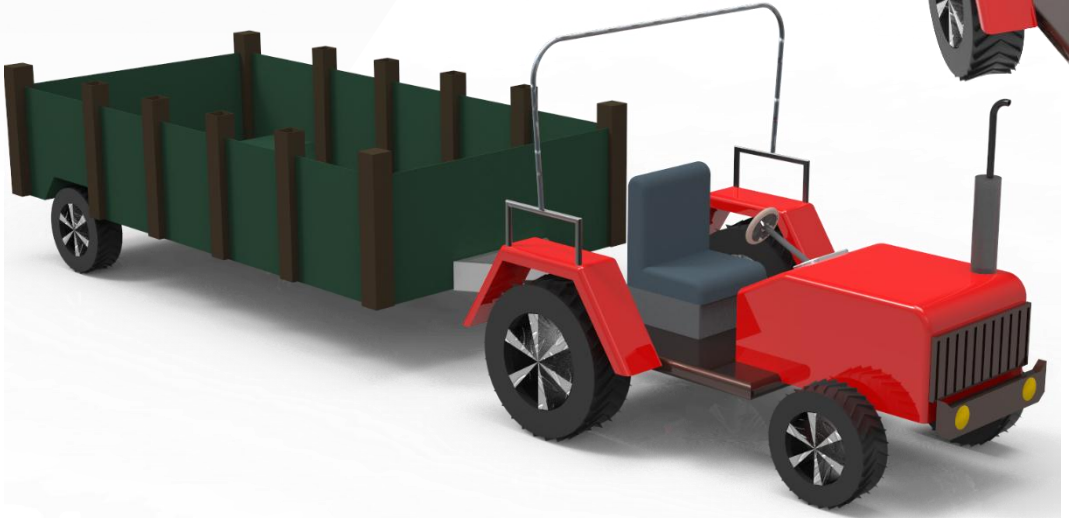

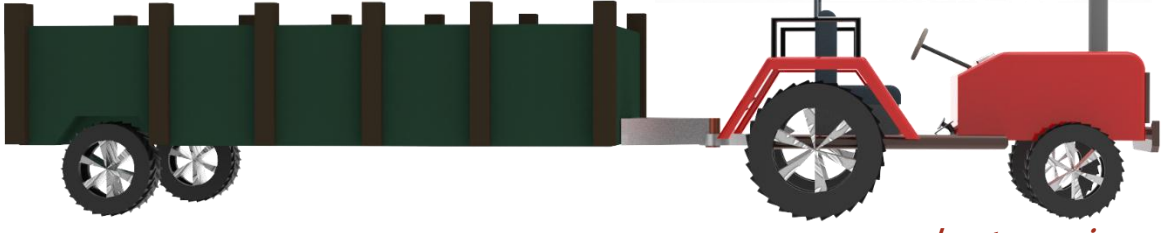

"Never be satisfied with inaction. Question and redefine your purpose to attain progress"

Jeffrey K. Liker, The Toyota Way

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