

February

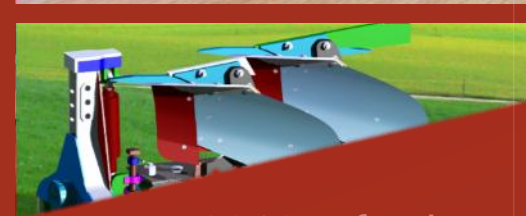
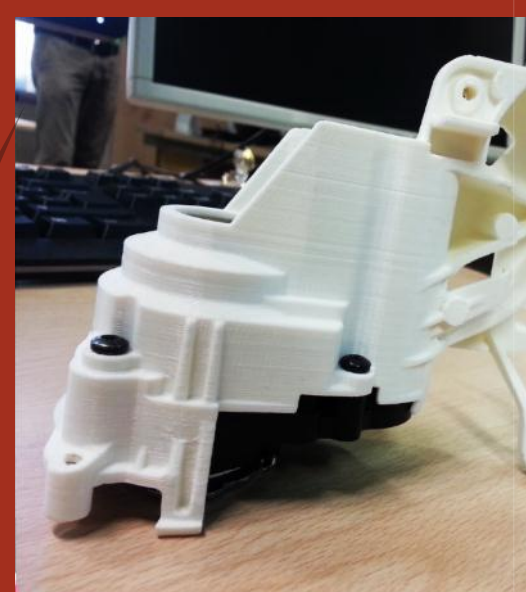
2019

D A U T O N E W S L E T T E R

Edition
2019



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



January 2019 refresh

- ✓ Icon meets Progress, Perfection meets Passion
- ✓ Rolls Royce Cullinan is the first-ever All-terrain vehicle from the British Carmaker's
- ✓ A hybrid plane and blimp flying machine
- ✓ A nuclear Tunnel bot to hunt life in Europa's Hidden ocean Snakes
- ✓ Snakes Robots
- ✓ Detecting Malaria with Magnets
- ✓ AI can now decode Words directly from Brain waves
- ✓ Honda's Self-driving AWW
- ✓ Hyundai and Kia paranomic solar roof

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2019 Toyota Camry hybrid launch in India on 18 January



The new generation of the Toyota Camry is set to launch in India on January 18. Toyota India will only launch the 2019 Toyota Camry hybrid to begin with first. The petrol-only version will possibly follow at a later date. The eighth-generation of the Toyota Camry to be sold in India will be similar to the Thai-spec car already launched there some time ago.

The new Camry is based on the TNGA platform and has gotten larger with this generation change. There is a 50mm wheelbase stretch. The Car is also 35mm longer, 15mm wider and 25mm wider.

The Hybrid model set to arrive here first receives a 2.5 liter, four-cylinder hybrid engine that produces a combined 211PS and 202Nm, mated to a CVT gearbox. The engine makes 178PS and 202Nm while the electric motor makes 120PS and 202Nm of torque. Other choices available on the Thai-spec car are a 2.0 litre, four-cylinder petrol producing 167PS and 199Nm, mated to a six-speed torque converter automatic. The other option is a 2.5 litre petrol with 209PS and 250Nm of torque paired with an eight-speed gearbox. The latter one seems most likely to make the cut for India at a later date.

The new Camry comes with Toyota's full suite of safety features which includes traction control, ABS, EBD, blind spot monitoring, rear cross-traffic alert, hill start control, and seven airbags. Some of the more advanced of these assists might not make it to the Indian car.

The new Camry will compete with the likes of the Honda Accord Hybrid and the Skoda Superb. Expect a Rs50,000 to 60,000 price hike over the current cars Rs37.22 lakh for the hybrid and Rs29.75 lakh. The Camry has been a strong seller in this segment because of the Hybrid's efficiency and the traditional Camry trait of good quality. Toyota's decision to bring the Hybrid to India first is no surprise. The current generation's hybrid version is vastly more popular in India than other option, given the efficiency benefits.

These Robotic dogs take fetch to a whole new level



In the race to automate the delivery of packages and food in urban areas, most companies have been focusing on wheeled robots. But the German automotive companies continental has another idea. At the consumer Electronics show in Las Vegas last week, it showed off a four legged delivery robot designed to walk packages right to customer's front doors.

In demonstration at the Las Vegas Convention Center, the battery-powered ANYmal robot-made by Swiss robotics manufacturer ANYbotics-hopped out of

Continental's CUBE autonomous vehicle, stepped over a scooter in its path and climbed the front steps of a model front porch. Upon reaching the front door, the dog bot raised a paw to ring the doorbell and gently slid a dockage onto the doorstep. Before returning to the vehicle, the bot did a little dance to celebrate the successful delivery.

"We thought about other use cases and what are the most efficient ways to make deliveries", said Hartmann, head of technical project management at Continental. "The problem is, The CUBE can deliver the last mile- but what about the last meters?"

ANYmal weighs 66 pounds and is capable of carrying up to 22 pounds. It isn't as frisky as a real dog, but at a pace of about one meter per second, it can move from pavement to porch in a matter of seconds. The robot finds its way with help from its wide-angle cameras, sensor-studded feet and a radar-like technology known as LIDA, which uses beams of laser light to map the surrounding area.

Then there are PepsiCo's "snackbots" now in use at the University of the Pacific in Stockton, California. Developed by California-based Robby Technologies, the robots look a bit like large ice chests on wheels. Students can order a snack and meet the bot at one of dozens of designated spots on Campus.

Boston Dynamics plans to begin selling a doglike robot called SpotMini later this year, company founder Mark Raibert said in 2018. The robot can open doors and carry packages, but the company hasn't indicated it has plans to enter the delivery business.

The V-Class The spacious sedan with star

Mercedes-Benz presents luxury in unique format with the V-class EXCLUSIVE, the ultimate VIP shuttle and an exclusive vehicle for long journeys. Extensive engine and transmission variants along with optional extras, equipment packages together with original accessories allow every single V-Class to be customized beyond the scope of the three equipment lines, V-Class, V-Class AVANTGRADE and V-Class EXCLUSIVE.

The V-Class is available with three state of the art four cylinder diesel engines. These engines are distinguished by their high-Torque, economic consumption and low noise. The 140kW variants sums with the 7G-TRONIC PLUS automatic transmission with CRUISE CONTROL, start assist, kick-down, immobilizer and Dynamic SELECT switch. This switch is used to select one of the four driving programs that configure parameters such as the engine, transmissions and DYNAMIC SELECT switch. This switch is used to select one of the four driving programs that configure parameters such as the engine, transmission, suspension and steering characteristics.

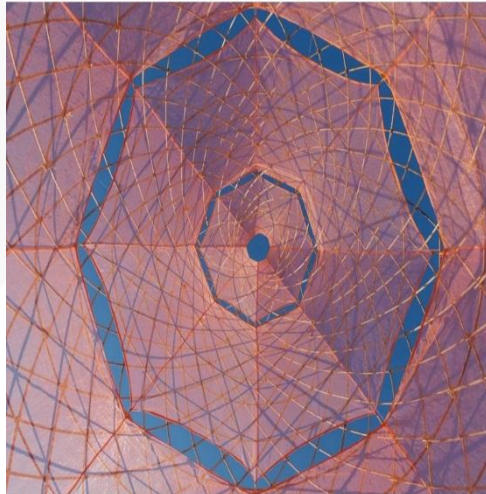
The Mercedes-Benz V Class price starts at Rs.68.40 lakh and the top end variant Mercedes-Benz V-Class Exclusive is priced at Rs.81.90 lakh. The Mercedes-Benz V-Class is powered by a 2.1-Litre, 4-cylinder, turbo-diesel engine developing 163PS of maximum power and 380Nm of peak torque paired to a 7-speed torque converter. Power is sent to the rear wheels, unlike new-age MPVs.

AMG sports cars have always been emotional, dynamic and ,naturally, sporty. For thee first time, and AMG Line is now available for Mercedes-Benz mono volume vehicles. The progressive and distinctive AMG line is reflected by exterior features such as the sporty front and rear skirts with chrome loading sill protection, the AMG alloy wheels and the AMG break-away edge. The interior also bears the unmistakable AMG signature. Noble-carbon look trim elements and black roof lining create a cool overall appearance. Brushed aluminum sport pedals and silver-chrome vents give the AMG line that typical sports car feelings.

Warka water towers collect clean drinking water from the 'Lakes in the air'



atmospheric water vapor from either rain, fog, or dew, condenses against the cold surface of the mesh



a bamboo frame supports a mesh polyester material inside

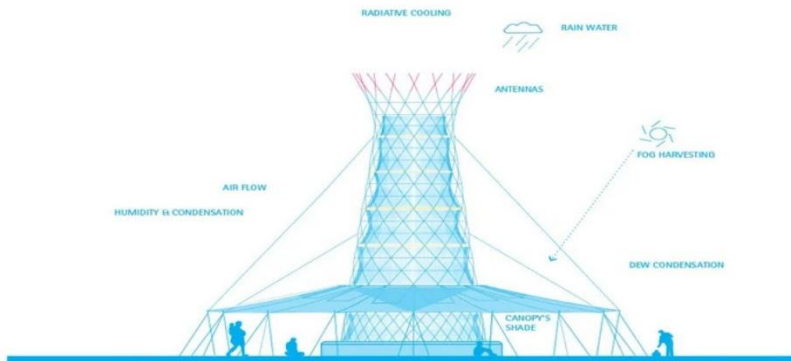


diagram detailing the structure of warka water tower

Throughout many remote villages in Ethiopia and around the world, water gathering is a dangerous task. Following many the many hours it takes travelling to the nearest source, the water fetched is more often than not contaminated with human and animal waste.

The Water scarcity issue-which affects over 1 billion people worldwide-has drawn the attention of big-name philanthropists like Microsoft co-founder bill gates. It's also a problem that designers have tackled head on, like architect Arturo vittori, a bamboo structure designed to collect/harvest Portable water from the air

Vittori got the idea after visiting small isolated villages on a high plateau in the north east region of Ethiopia. There he witnessed villagers who lived in environments often without running water, electricity, a toilet or a shower. He observed how women and children had to walk miles to shallow, unprotected ponds where water is often contaminated with animal and human waste.

Vittori's proposal was a lightweight, easily constructed, and infrastructure independent system comprising a bamboo frame that supports a mesh polyester material inside, the tower is both cheap and easy to build. Atmospheric water vapor from either rain, fog or dew, condenses against the cold surface of the mesh, forming droplets of liquid water that trickle down into a reservoir found at the bottom of the structure. A Fabric canopy shades the lower sections of the tower to prevent the lower sections of the tower to prevent the collected water from evaporating. Performance is weather dependent but each tower has the capability of providing a community with up to 100 liters of water per day.

In total, it costs between \$500-\$1000USD to set up a tower-less than a quarter of the cost of the gates toilet, which costs about \$2200 to install and more to maintain and because its design is basically parametric, the Warka tower can be easily tailored and implemented in variety of different situations.

Travelling at 600mph: India's Hyperloop dreams take shape in the Nevada Desert



All three companies contend that because of energy cost advantages Over other forms of transportation, a system will be able to break Even in decade after full-scale operations begin. Passenger operations Could begin by the middle of the next decade, cutting travel time Between the cities to 30 minutes, one-fifth the current duration.

Virgin, which has raised \$295 million, is in the development stage with projects In India and Ohio. Last month, the Indian state of Maharashtra declared the company's proposal hyperloop system between Pune and Mumbai as an official infrastructure project. Construction on a 7-mile test track could start this year, said Jay Walder, the company's chief executive.

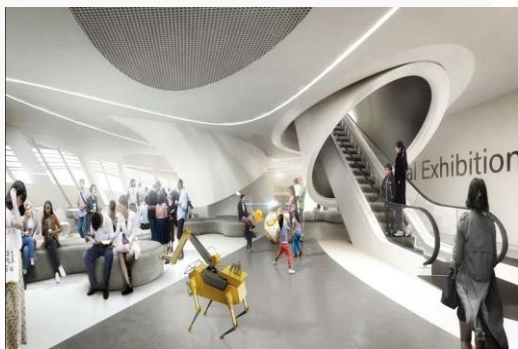
Virgin Hyperloop One, based in Los Angeles, began testing here in 2017 and is now doing so with a full-scale test track; its main competitors, Hyperloop Transportation Technologies ,also in Los Angeles, and TransPod, with headquarters in Toronto, expect to build their own test tracks this year. So far both are working with computer Simulations.

In the desert 35 miles north of the Las Vegas Strip, Virgin's 1640 long foot high tube has been used for hundreds of runs, with an empty pod that in one test accelerated too 240mph. To avoid making anyone sick, the system would take three minutes to accelerate to that speed, and the train would need to travel 6 miles to turn 90 degrees, said Ismael Babur, one of the company's senior civil engineers.

Each of the three companies has raised tens to hundreds of millions of dollars and developed its own patented approach to long-distance mass transit. TransPod, with \$52 million in capital, has preliminary agreements to build a 6-mile test track for a route that would eventually span the 180 miles between Calgary and Edmonton in Alberta, as well as a shorter track Limoges, France, for one of several French routes under consideration.

Hyper loop Transportation Technologies, which has raised \$42 million, is in the design phase for a 1100 yard test track in Abu Dhabi.

New Robot Science museum will construct itself in Seoul



And In -depth training course is offered to explore new robots. The proposal prioritizes the use of contemporary fabrication technologies and robotic construction methods, allowing a rich exchange of realities between its robots in construction, robots in service ,robots in exhibition, and RSM visitors. This team of robots will assemble the museum's sweeping metal façade ,saving time and money, led by building information modelling(BIM) system, they will mold, assemble ,weld , and polish the metal plates .Another team of robots will 3D print concrete for the surrounding landscape.

The new robot museum anticipates the opening of its first exhibition on site at the start of 2020 and is expected to be fully completed with the official opening in late 2022.

Turkish practice Melike Altinisik Architects(MAA) presents the winning entry for an international competition for the robot science museum in the Seoul, south Korea. Hosted by the Seoul metropolitan government, the competition called for the design of the world's first pioneer robot science museum(RSM) to support public education in robotics and increase public knowledge and interest in robots. Design principal melike altinisik explains the concepts and design process: 'the new robot science museum which plays a catalytic role in advancing and promoting science, technology, and innovation throughout society is not only going to exhibit robots but actually from design, manufacturing to construction and services robots will be in charge. In other words, RSM will start it's first exhibition' with its own construction 'by robots on site'.

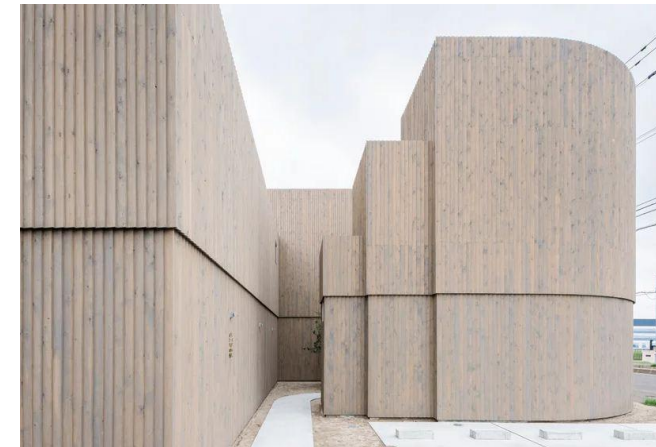
MAA considers the representative role, undertaken from design to construction , to be as important as meeting the highest functional requirements for the museum. With the Universality of Science and technology, prioritizing advanced architectural design solutions for such a pioneering museum with a focus in robots and innovation gains a special meaning from the initial design to the generation of form, from structural design to materiality. Buildings design in this manner must introduce a physical manifestation of robotics, science, technology, and innovation.

The proposal is characterized by its ability to generate its own universe for robots and their visitors, manifested as a sphere-like and fluid volume. The team prefers this organic geometry over rigid and orthogonal form. The proposal creates a wide range of connections within the urban context an public spaced through its non directional organization of pedestrian with the organization and pedestrian traffic, and the generation of interstitial spaces. The function on the museum 's ground floor further provide continuity and engagement between public outdoor and indoor spaces.

RSM introduces a bas to cultivate the science community by providing opportunities to experience the latest robotics technology such as a, Virtual and augmented reality and hologram. And In -depth training course is offered to explore new robots.

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Curved building by Jun Igarashi architects doubles as sake store and residence in japan



Jun Igarashi architects' corridor of the fold is a building in the city of Kitami, Hokkaido, Japan, that combines the functions of a house and a store. Clad in wooden slats, the curved structure resembles the topography of a cove, reflected also in its two-floor interior.

Situated in a residential area of Kitami, the building is composed of a straight and a curved line that result in a unique form, allowing it to stand out from its surroundings. Jun Igarashi architects has placed the entrance to the store, which specializes in sake selection, through the courtyard, creating an alley and making it invisible at first glance.

The curved form continues into the structure's interiors, which encloses the sake store and living areas for two couples. A large circular counter occupies the ground floor, which guides visitors through the shop from display to purchase, while the plan is repeated on the second floor where the program adjusts to the needs of a residence.

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

Born to be not so wild: Harley- Davidson unveils plans for an ELECTRIC SCOOTER to covert city folk to the Eco-Friendly version of the American Brand.

The two new concepts were unveiled at the X Games, a snowboard and skiing event, in Colorado last week to recruit hipper riders to the 166 year old brand.

Harley-Davidson gave visitors to ESPN's winter X games in aspen a sneak peek at its electric scooter concept last week. The 2020 production motorcycle was first presented at EICMA 2018 and then at CES 2019, where two Harley-Davidson electric concepts also debuted and hinted towards and electrified future for the brand.

With power and stylish poise, the "Live Wire" is notably an authentic Harley-Davidson motorcycle but with one subtle difference: It is their first all electric model. The project kick started in 2014 with a prototype and took years to develop before an electric model was unable to match their prized brand experience.

The first of the Harley-Davidson electric concepts is the mountain/trail bike, which features a huge ground clearance. Along with its small body, battery and motor, the two-wheeler is fitted with front and rear suspension, large tires and hydraulic disc brakes.

In contrast, the smaller scooter concept would be destined for the city if it ever were produced. The minimalist design prominently details a long, lat bench seat with skateboard-like footrests on either side, The handlebars includes a drop-down, chopper esque rear view mirror and a huge LED headlight in the center

Wrapped in an evocative styling, the two concepts explore the potential of urban mobility for the Harley-Davidson brand. It has allowed them to use their knowledge of two-wheelers and push new boundaries in terms of technology and design. This project has also enabled Harley-Davidson to point to a potential portfolio of electric bikes in the future, with the company eager to become the leader in the electrification mobility over the next several years.



Green Water-purification system works without heavy metals or corrosive chemicals



The team from IPE and YZU manages to bypass these failings with a unique catalytic design. They utilize Nano sheets of graphitic carbon nitride, an ultra-thin two dimensional material with the right electronic properties to absorb the light and generate reactive oxygen. The configuration helped to facilitate the reaction by generating plenty of hydrogen peroxide, which efficiently kills bacteria by oxidizing their cell walls and wreaking havoc on their chemical structures.

Scientists have developed an effective and energy efficient technique for purifying water by using graphite carbon nitride sheets. Their prototype purified pathogen-rich water in 30 minutes, killing over 99.9999 percent of bacteria, such as E. Coli, meeting China's requirements for clean drinking water.

Scientists at the Institute of process Engineering(IPE) at the Chinese academy of Sciences in Beijing and Yangzhou University(YZU) in Jiangsu have developed an effective technique for purifying water by using graphite carbon nitride sheets.

The prototype, presented February 7 in the journal Chem, purified pathogen-rich water in 30 min, killing over 99.9999% of bacteria, such as E. coli, meeting China's requirements for clean drinking water. Unlike metal -based photo catalytic disinfectants, it achieved this standard without leaving behind secondary pollution or heavy metal ion residues, offering a promising alternatives to less eco-friendly technologies.

"The future application of photo catalytic disinfection technology can significantly relieve clean-water scarcity and global energy shortage," says Dan Wang, a professor at the Institute of Process Engineering and a senior author on the paper.

Unlike traditional water-purification processed using ultra-violet light, chlorination, or ozone disinfection, photo catalytic methods offset environmentally safe water treatment as long as they use the right catalyst. But unfortunately, these greener catalysts tend to be less efficient than metal-based varieties. Widely studied carbon-based catalysts, such as carbon nanotubes and grapheme oxide, aren't quite effective enough for practical water treatment purposes because they fail to produce enough reactive oxygen to overcome pathogens.

GM Unveils 'ARIV' E-Bikes, Plans Europe Launch in Second Quarter

Riders can Charge their ARIV bike Batteries in about three and a half hours and get up to 64 kilometers or nearly 40 miles of ride time with a single charge.

General Motors Company announced on Thursday that its brand of electric bicycles would be called "ARIV" and begin selling in Europe in the second quarter of 2019. Two such bicycles, a compact bike and a foldable one, will launch first in Germany, Belgium and the Netherlands, markets where cycles powered by lithium-ion batteries are already popular, the No.1 U.S. automaker said in a statement.

The ARIV line currently consists of one compact e-bike, the meld, and one folding e-bike, the Merge. Both use the same mid-motor setup with a an integrated battery and have compact design that allows for easy transit and convenient storage. The Merge can still be rolled on its wheels when folded.

Both bikes can connect via Bluetooth with ARIV app, which displays your speed, distance, battery level, motor assists level, and distance traveled on your phone screen. Each bike comes equipped with a smartphone handlebar mount with an integrated USB port that charge your phone on the go.

ARIV meld and ARIV merge-in what seemed to be return to the company's beginnings, promoting its plan for an electric future, the company revealed one foldable and one compact bike. With it, GM launched a \$10,000 USD contest to crowd source the name for the bicycle company, which the automaker has announced this week. Riders can charge their ARIV bike batteries in about three and a half hours and get up to 64 kilometers or nearly 40 miles of ride time with a single charge. The bikes have 16x1 3/8-inch wheels, chain drive, an internally geared hub, and Hydraulic disc brakes. They are rounded out by full-coverage fenders, reflective-sidewall tires, ergonomic grips, a kickstand, and a bell. The company says the sleek, single-sized aluminum frame fits riders between 5 feet and a 6 feet tall.

In Belgium and the Netherlands the compact e-bike would cost 2,800 euros(\$3,165), while the folding one would cost 3,400 euros. In Germany, the prices would be 2,750 euros and 3,350 euros, respectively



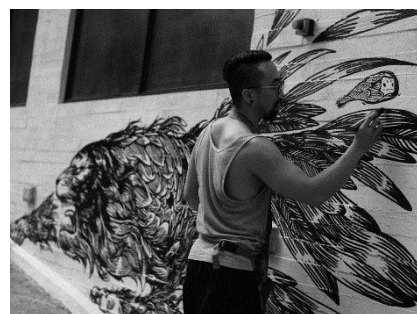
AI can now decode Words directly from Brain waves



Types of Tips used

0.7 mm round tip:-
Fine point marker for every
Day creativity. Approx. 40
min of diesel car pollution

2 mm round Tip:-
Perfect for shading and small
detail. Approx. 50 min of diesel
car pollution.



15 mm Chisel Tip:-
Thick lines, smooth strokes, great feel. Approx. 130 min of diesel
car pollution

50 mm Wide Tip:-
Made extra wide for murals and large-scale pieces. Appro130
minutes of diesel car pollution

Air pollution is responsible for 1 in 9 deaths around the world. It is a growing problem, particularly in cities that are rapidly industrializing. So, what can we do to reduce the amount of particulate matter that reaches our lungs?

Why not turn it into a medium that can help raise awareness , and give voice to the problem at hand.?

Ink has been a central part of storytelling and art for thousands of years; we write with it, and now we're combating pollution with it. The brilliant innovators at Graviky labs have found a way to not only capture ultra-fine carbon emissions but turn that carbon into ink.!

Turning pollution into ink before it reaches our lungs may seem like a drop in the bucket when it comes to improving air quality. Air- Ink has a greater power though; turning a once harmful material into something that can be used to educate people and get them onboard with reducing carbon emissions and pollution.

How its made

In lab they use our proprietary KAALINK prototype to capture particulate matter emitted from direct and ambient sources. This happens without considerable backpressure. Depending upon carbon content pollution from other sources is also taken for recycling.

Pollution collected by KAALINK undergoes various proprietary processes to make the end product is safe to use.

During the final stage, the carbon is taken through another chemical process to make different types of inks and paints.

Electra meccanica takes on tesla with this three-wheeler solo micro car



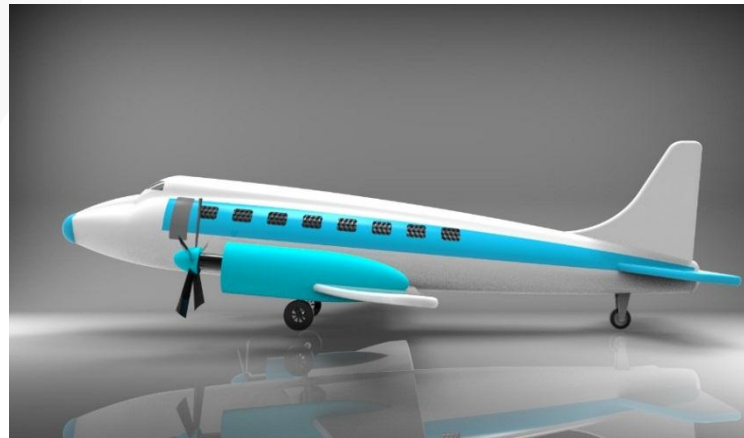
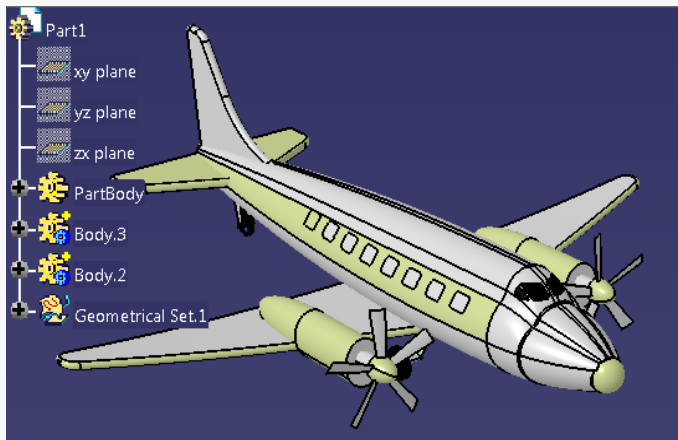
As general motors co. readies itself to close a century-old factory near toronto, Electra Meccanica is shaping the future of automotive industry with its microcar. The compact three wheeler, dubbed 'solo', is an electric one-seater vehicle that costs \$15000, and its forecast to take over the west coast.

The solo features an 82 horsepower AC synchronous electric motor that generates 128 ft lbs of torque. It goes from 0-60 mph in eight seconds and has a top speed of 82 mph. Charge time sits at an impressively short three hours and generates a 100-mile range. It's no wonder then, that according to Bloomberg, 5000 units of electra meccanica's one-seater micro -car are expected to be zipping around LA by the close of 2019, with an additional 70,000 to be delivered over the next two years.

Electra Meccanica has come up with a quirky version of an automobile at a time when carmakers like tesla, Nissan and Volkswagon are racing to make the car of the future. The manufacture is currently discussing plans to take over the closing GM plant and has other vintage-inspired electric vehicles in the making.

Electra Meccanica may have a market value of just \$140 million ,yet it has \$2.4 billion in pre-orders, "reported the news agency. Not surprisingly, Shares in Electra Meccanica shot up 36.7% to \$5.92 in premarket trade this month.

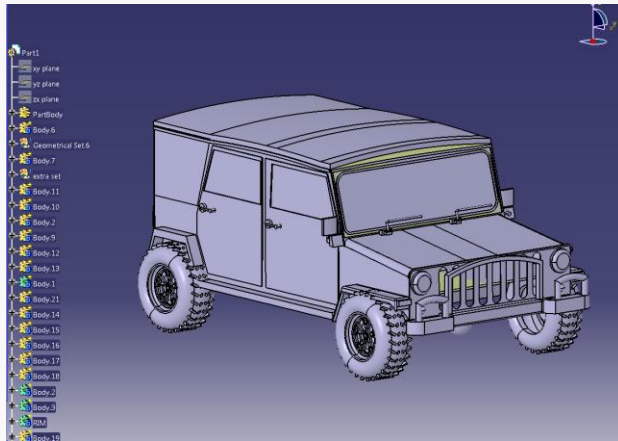
More info about training:
Toll Free # +91 9981500100
E-mail : training@dauto.co.in



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Deepak Chadokar
LNCT, Bhopal
Design Tool : CATIA V5.



DAuto Training Yield



By :
Naveen Agrawal
MANIT, Bhopal
Design Tool : CATIA V5



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

//

Jeffrey K. Liker, The Toyota Way

We can be found here



www.dauto.co.in

*DAuto Corporate Office :
1, Abhinav Homes Phase IV,
Ayodhya by-pass, Bhopal, India.
Cell : +91-9752006008
Phone : +91-755-4244404 / 3264404
E-mail : training@dauto.co.in*

For Training Enquiry

*Branch Office (Bhopal) :
B-56, Kasturba Nagar, Front of Chetak Bridge, Bhopal.
Cell : +91-9981500100
Phone : +91-755-4204404
E-mail : training@dauto.co.in*

*Branch Office (Indore) :
Centre For Innovation Design & Incubation (CIDI)
Shree Govindraam Sekariya Institute of Technology &
Science (SGSITS), Indore
Cell : +91-8878100300
E-mail : training@dauto.co.in*

*Branch Office (Jabalpur):
393, Napier Town, Jabalpur.
Cell : +91-8871008008
Phone : +91-761-4014404
E-mail : training@dauto.co.in*

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