MENTIRA

MECHANICAL INVENTIONS & NEWS AROUND THE WORLD

A TECHNICAL NEWSLETTER

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DEPARTMENT OF MECHANICAL ENGINEERING

R.M.K COLLEGE OF ENGINEERING AND TECHNOLOGY

AI-DESIGNED 3D PRINTED ELECTRIC MOTORCYCLE

The Light Rider 3D Printed Motorcycle's hollow aluminum frame is fabricated using a selective 3D laser printing system as 14 separate parts, which are welded together after cleaning up. When assembled, the frame weighs 30 percent less than conventional bike frames – a direct result of the unusual hollow sections. It is then combined with more conventional electric motorcycle parts to put together the final ride, which, truth be told, looks positively exciting. Unfortunately, performance is only half as exciting, as the rig only manages a max speed of 45 mph and a range of 75 miles per charge. Price is $56,500. (www.coolthings.com)

The 'black box' that houses an airplanes voice recorder is actually orange so it can be more easily detected amid the debris of a plane crash.

A diamond will not dissolve in acid. The only thing that can destroy it is intense heat.

HOVER CAMERA FOR SELFIES

Made by Zero Zero Robotics, the drone won't just follow you around by tracking your Bluetooth signal. Instead, it can recognize faces and body profile, so it can follow anyone you assign it to, essentially serving as a dedicated stalker robot. Designed for portability, the Hover Camera weighs just 238 grams. It uses a 13-megapixel camera out front with a single-axis gimbal for taking photographs and video (up to 4K). They claim it produces images comparable to those of modern high-end smartphones. Since it's for selfies, the drone is going to be flying in close proximity, so they housed all the propellers inside a cage to ensure user safety. Features include an accompanying app for controls, 32GB of internal storage, a top speed of 30 feet per second, built-in WiFi (it creates a hotspot for connecting to your phone), and a swappable battery rated at eight minutes of flight time. The Hover Camera is currently undergoing beta trial, with plans to launch later in the year. Price is expected to be under $600. (www.coolthings.com)

Marie Curie was the first person to win two Nobel Prizes for Science

Thomas Edison accumulated 2,332 patents worldwide for his inventions

SELF DRIVING TRACTOR

This agricultural machine can seed, plant, and till your farm's row crops all on its own, navigating the land based on pre-programmed paths you draw on a map in the accompanying app. It automatically stops when detecting obstacles (like when a cow is on the way), only proceeding once the path is clear. In case the obstacle isn't moving (like if there's a straw pile lying there or something), it will send an alert via the app, at which point you can replot its path to get around the hurdle.The Case IH Magnum Autonomous Concept Vehicle doesn't come with a cab (since there's no driver), making it look like a tank with the driver sitting snugly inside. It has four cameras (two in front, two in the rear) providing a real-time feed to the app, allowing you to check exactly how good of a job the tractor is doing. You can also monitor its exact location on a map at any point to ensure its running on schedule, with the ability to adjust various parameters, such as engine speed, seeding rate, or planter downforce, in real time. Similar to autonomous cars, it uses radar, LiDAR, and video cameras to constantly monitor its path, all while relying on GPS to verify if it's on the proper route.

(www.coolthings.com)

The Ericsson Company first produced cellular phones in 1979.

Mobile phones have 18 times more bacteria than toilet handles

AUTONOMOUS BOAT

If you're interested in autonomous boats, you might want to check out the Yamaha Breeze10, a self-controlled watercraft designed to survey bodies of water all on its own. The Yamaha Breeze10 is an electric boat that can run autonomously, with manned options for both remote and onboard navigation. It uses readings from a satellite positioning system, along with azimuth angle data, to navigate bodies of water autonomously, as well as save any route it takes for later use. Measuring 3.2 meters long with a 1.2 meter beam, it's small enough to fit into mini-vans for convenient transport, with a special purpose hull allowing it to navigate even in shallow locations.A dedicated mount in the center of the boat allow users to quickly add sonars to perform sounding work, all while a 0.5kW motor keeps it chugging along at maximum speeds of 4 knots. It comes with an onboard battery rated at six hours of operation.

(www.coolthings.com)

The amount of solar energy that hits the earth in one minute meets the world's energy needs for one year.

Though the sun is 90 million miles from earth, it takes less than 10 minutes for light to travel that distance.

JET-PROPELLED KAYAK

The **Mokai Jet-Propelled Kayak** is a full-featured canoe that you can use both as a regular paddler and a motorized watercraft. Powertrain assembly and disassembly is supposed to take no more than a minute, making it especially ideal for a variety of recreational uses. As such, you can ride it manually one day (for leisurely paddles, exercise or sport) and fit in the engine the next (for fishing, exploring or just speeding through the water) - all with only one boat to carry along. Since it's compact enough to transport atop the roof of a car (dry weight is a mere 100 lbs), it eliminates the need for a trailer, allowing you to pack light for your next outdoor adventure. It powers via a removable four-stroke, 6hp Honda engine, coupled with a jet propulsion system that can run up to 8 hours on a 3-gallon full tank. With the engine on, the Jet-Propelled Kayak can take you to speeds of up to 15mph, effectively leaving behind all the poor paddlers in its wake, while managing a maximum load of 360 lbs. (www.coolthings.com)

Over 5,000 people die a day from polluted water

Traffic pollution is one of the main factors causing asthma.

KICK SCOOTER WITH TANK TREADS

Created by Ben Gulag and his BPG Werks outfit, DTV stands for Dual-Track Vehicle, in reference to the pair of tank treads it uses to scale difficult terrain. Drivers stand atop a traditional skateboard truck, which is connected to the onboard engine and driving mechanism.The DTV shredder is a single-passenger mobility vehicle with a top speed of 30 mph and a low center of gravity. Designed for all terrain use, it can scale slopes up to 40 degrees and turn in four-feet circles, all without losing any of its brutish charm. Even better, it can be operated remotely for use by your army of missile-toting, mass-murdering robots, making it perfect for mad scientists hatching evil plans at an underground volcano facility in their own secret island. (www.coolthings.com)

The melting point of diamond is around 3550°C

The melting point of Mercury is around –36.05°C

LUCY MIRROR

To use the Lucy Mirror, users will need to set it down in a place where it has a line-of-sight to both the sun and the space requiring illumination. From there, you manually point its nose towards the ceiling of the room you want to illuminate to ensure it scatters the natural glow evenly around the room. That's it. A built-in autonomous system will track the sun's movement, constantly adjusting its mirror at an angle where the device can receive maximum sunlight. There's no need to charge or plug it in either, since it powers using sunlight, making its use a relatively set-and-forget affair. Clad in a sphere shape measuring 11.81 inches, it comes with a resting post that allows you to set it down conveniently. They're also planning to sell additional mounting options, including multidirectional arms, so you can get even more creative with the way you can light up your home. By the way, the sphere is hermetically closed, so you can use this both indoors and outdoors, even in the midst of rain. (www.coolthings.com)

It took firefighters 100 days to extinguish all the fires ignited by the attacks in New York.

19.60 Million Degree farenheit temperature in Hiroshima Bomb blast

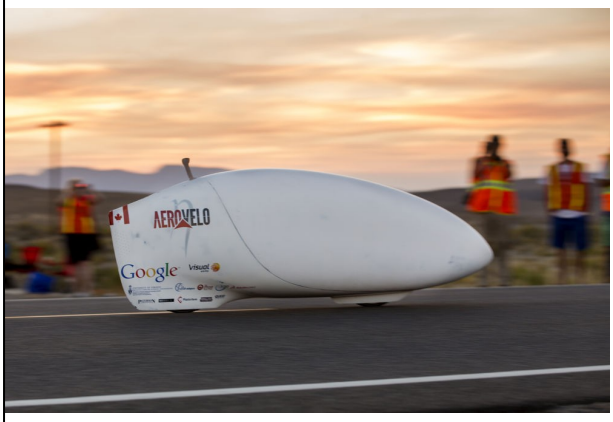
HYPNOTIC LIGHTS

Having problems sleeping? sleeping with the light on. Huh?!? Well, not the big, bright light in your room. Instead, you can try finding slumber by turning on the LightSleeper, a small lamp that projects a soft glowing light that's supposed to soothe your troubled mind to sleep. Sporting a form factor that resembles a webcam, the rest-inducing lamp is designed to sit on your nightstand. It turns on with a gentle tap, at which point it begins projecting a soft, low light onto your ceiling. All you have to do is follow the light with your eyes as it moves in a circular motion, eventually sending you off to dreamland. The Lightsleeper runs for a half-hour then automatically shuts itself down, confident that its gentle, trance-inducing movements has successfully sent you into a temporary coma. An onboard rechargeable battery lets it lull you into sleep for an entire week. (www.coolthings.com)

One million Earths can fit inside the Sun.

You can cry in space but your tears don't fall

WORLD'S FASTEST HUMAN-POWERED VEHICLE



A recumbent bike designed by Canadian engineering company Aerovelo has broken the world record for human-powered speed. On September 17, Aerovelo co-founder Todd Reichert pushed the bullet-shaped Eta to 89.59 miles per hour on a highway in Battle Mountain, Nevada, as part of the World Human Powered Speed Challenge. This is the second year Reichert has set the top speed record at the competition.

Weighing about 55 pounds, Eta is designed to be lightweight. It's carbon fiber outer shell cuts down drag more than 100 times better than the most streamlined cars, according to Aerovelo. (www.popsci.com)

The Apollo astronauts' footprints on the moon will probably stay there for at least 100 million years.

The Great Pyramid of Giza is estimated to consist of 2,300,000 stone blocks that weigh anywhere between 2 to 30 tons.

THE EHANG 184 DRONE

The Ehang 184 AAV is an all-electric drone that uses, pretty much, the same technology as existing quadcopters in the market, albeit in a scale that's large enough to transport an actual person. No controls are available in the cockpit, with the passengers merely entering their destinations, at which point, the drone's autonomous system takes over, controlling takeoff, the actual flight, and the landing. During transport, it can ferry a passenger at speeds of up to 62 mph at heights of under 1,600 feet, with a maximum flight time of 23 minutes, so while it won't quite cover the kind of distances a helicopter travels, it could be plenty viable as a way to avoid traffic during short commutes. Needless to say, this is strictly for use in amiable weather.While the Ehang 184 AAV is currently still in the process of getting approval from various government agencies, it's expected to retail under $300,000 when it does hit the market. (www.coolthings.com)

300 workers, 18,038 pieces of wrought iron and 2.5 million rivets were needed to build the Eiffel Tower.

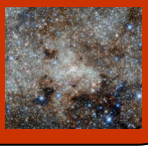
1,665 steps are needed to climb all the way to the top of the Eiffel Tower.

BR-X1 HYPERSTELLAR

Built for space-faring adventurers, the Bell & Ross BR-X1 HyperStellar is rigged to stand up to the challenges of space, sporting a light and durable construction that the outfit describes as being "tough as a rocket." That includes a 45mm case with its cover, center, and sides built with micro-blasted grade 5 titanium, with a protective insert on the bezel cut in anodized aluminum (in blue, no less, so it looks like shiny spaceship lights) and a rubber case bumper for absorbing knocks across the case outline. A skeletonized dial allows you to get a glimpse of BR-CAL.313 automatic movement housed inside the case, with a 90-minute chronograph timer at the 9 o' clock position.Features include a tinted sapphire crystal lens on the case back, rocker pushbuttons, Superluminova-filled hour and minute hands, metal indexes with Superluminova inserts, and a water resistance of 100 meters. It comes with a dual-material strap made from alligator skin and rubber, as well as a steel buckle with rubber insert. (www.coolthings.com)

The most abundant metal in the universe is iron, followed by magnesium.

Neutron stars can spin at a rate of 600 rotations

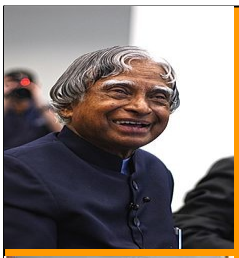


TRIFAN 600 PLANE

Airplanes are amazing machines with one glaring flaw: they require long strips of paved road in order to take off and land. Why can't we have airplanes that take off like helicopters? Turns out, we just might have them soon enough with the TriFan 600. Made by XTI Aircraft, it's a plane that can take off and land vertically, removing one of the most difficult requirements associated with fixed-wing aircrafts. That means, you don't need a big strip of runway to use the plane, removing the need to travel from airport to airport – just a space no bigger than a traditional heliport should do the trick.The TriFan 600 is a six-seat plane sized to accommodate a pilot and five passengers. Designed to perform like any private jet, it can cover as far as 1,200 miles in a single refuel (will vary depending on payload, of course), apart from hitting altitudes over 30,000 feet above predominant weather, essentially combining the power of a plane with the convenience of a helicopter. It manages the vertical takeoff and landing using a trio of ducted fans, with the two wing fans rotating forward as soon as it's sufficiently high up, transitioning into high-speed flight and reaching cruising speeds just 90 seconds after takeoff. Features include dual turboshaft engines, fly-by-wire controls, and the ability to reach max altitude in just 11 minutes. (www.coolthings.com)

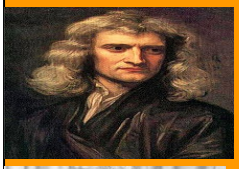
Gold and copper were the first metals to be discovered by man around 5000 B.C

Petroleum is used to make nearly 6000 items like DVD, Ink, golf ball, Foot ball, crayons etc...

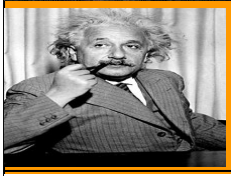


Avul Pakir Jainulabdeen Abdul Kalam was the 11th President of India from 2002 to 2007. A career scientist turned politician, Kalam was born and raised in Rameswaram, Tamil Nadu, and studied physics and aerospace engineering. He spent the next four decades as a scientist and science administrator, mainly at the Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation (ISRO) and was intimately involved in India's civilian space programme and military missile development efforts. He thus came to be known as the *Missile Man of India* for his work on the development of ballistic missile and launch vehicle technology. He also played a pivotal organisational, technical, and political role in India's *Pokhran-II* nuclear tests in 1998, the first since the original nuclear test by India in 1974.

Alfred Nobel-The foundation of the Nobel Prize-that has been honoring people from all around the world for their great accomplishments in physics, chemistry, medicine, literature, and for work in peace-was laid by none other than Alfred Nobel. He was a Swedish scientist, inventor, entrepreneur, author and pacifist. He was a great genius who invented dynamite and many other explosives. He also constructed companies and laboratories in more than 20 countries all over the world.



Sir Isaac Newton- was an English physicist and mathematician (described in his own day as a "natural philosopher") who is widely recognised as one of the most influential scientists of all time and a key figure in the scientific revolution. Newton's *Principia* formulated the laws of motion and universal gravitation, which dominated scientists' view of the physical universe for the next three centuries.



Albert Einstein a German-born theoretical physicist. He developed the general theory of relativity, one of the two pillars of modern physics. Einstein's work is also known for its influence on the philosophy of science. Einstein is best known in popular culture for his mass–energy equivalence formula $E = mc^2$. He also investigated the thermal properties of light which laid the foundation of the photon theory of light. In 1917, Einstein applied the general theory of relativity to model the large-scale structure of the universe.

EDITORIAL COMMITTEE

VISION

To empower the field of Mechanical Engineering to contribute to the development of industrial economy and welfare of humanity.

MISSION

- To achieve quality education by means of state-of-the-art infrastructure
- To establish industry-institute interaction to widen the scope for research and development
- To promote self employment through entrepreneurship and leadership qualities
- To develop team spirit and values for social well being

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1: Graduates will excel in professional career and compete globally to pursue higher education in the field of Mechanical Engineering

PEO2: Graduates will demonstrate core competency in solving complex Mechanical Engineering problems

PEO3: Graduates will engage in continuous professional development through constantly evolving technology for the industrial needs

PEO4: Graduates will emerge as successful entrepreneurs through innovations upholding the ethical values of society