

Weekly Discovery

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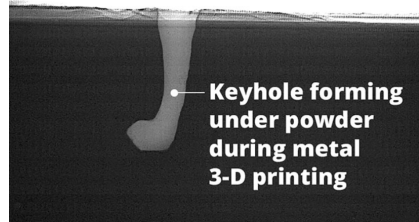
4 March 2019 - 8 March 2019

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HealthCare	Robotics & Automation	Design & Innovation
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3D PRINTING
Eliminating a 3D Printing Defect: Air Pockets



"The researchers believe their findings could motivate makers of 3D printers to offer more adjustments for controlling a machine's laser. If their insights are acted on, 3D printing could also get faster."

Source: [Machine Design](#) (28 February 2019)

ARTIFICIAL INTELLIGENCE
AI Trained on Decades of Food Research Is Making Brand-New Foods



"IBM's algorithm takes the same approach. But because it contains a broader knowledge of food and flavor than an individual expert, Faridi says the system can design a shelf-ready product in a fraction as many iterations as a person could."

Source: [Futurism](#) (1 March 2019)

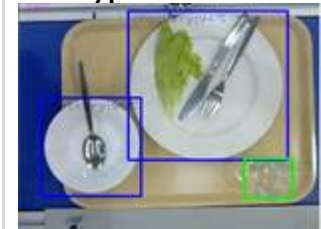
ARTIFICIAL INTELLIGENCE
Pentagon Approaches Massive New AI, Machine Learning Breakthrough



"The Defense Advanced Research Projects Agency is pursuing an unprecedented machine-learning 'breakthrough' technology - and pioneering a new cybersecurity method intended to thwart multiple attacks at one time."

Source: [Fox News](#) (5 March 2019)

AUTOMATION
Consultancy Creates Automated Commercial Kitchen Cleaning Prototype



"Machine vision, AI used with robotics to create plate, cutlery and glassware sortation system for commercial kitchens."

Source: [Robotics Business Review](#) (4 March 2019)

CARBON SEQUESTRATION
Scientists Just Pulled CO2 from Air and Turned It into Coal



"The research, recently published in the journal Nature Communications, provides a step-by-step guide in turning CO2 into coal, acting to remove the greenhouse gas from the atmosphere and lock it away in solid carbon form."

Source: [Forbes](#) (27 February 2019)

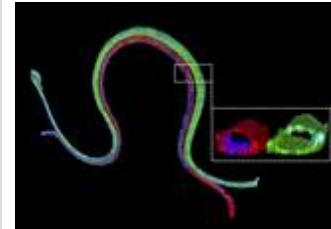
ENERGY
Turning Algae into Fuel



"A team of chemical engineers have developed a new kind of jet mixer that extracts the lipids with much less energy than the older extraction method, a key discovery that now puts this form of energy closer to becoming a viable, cost-effective alternative fuel. The new mixer is fast, too, extracting lipids in seconds."

Source: [The University of Utah](#) (4 March 2019)

HEALTHCARE
Renal Reabsorption in Living Devices



"Researchers created a 3D vascularized proximal tubule model in which independently perfusable tubules and blood vessels are printed adjacent to one another within an engineered extracellular matrix."

Source: [Wyss Institute for Biologically Inspired Engineering at Harvard](#) (4 March 2019)

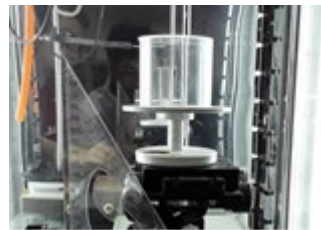
MATERIALS
Europe; Technology Innovation Award - Recycled Rubber Industry



"London-based RECIRCLE Ltd, a rapidly developing industrial biotechnology company, has innovated a microbial devulcanization technology that produces recycled rubber with similar performance levels as virgin rubber."

Source: [Frost & Sullivan](#) (1 February 2019)

MATERIALS SCIENCE
Spider Silk Could Be Used as Robotic Muscle



"Spider silk, already known as one of the strongest materials for its weight, turns out to have another unusual property that might lead to new kinds of artificial muscles or robotic actuators."

Source: [MIT News](#) (1 March 2019)

PHYSICS
The Physics of Peeling Tape



"Scientists exploring the physics of peeling tape have observed that tape detaches from a surface in a series of tiny lines perpendicular to the peeling direction that can travel faster than an F-15 fighter jet ... The study could also shed light on the physics of rapid fracture processes, such as those that occur in building structure failures and earthquake propagation."

Source: [Inside Science](#) (26 February 2019)

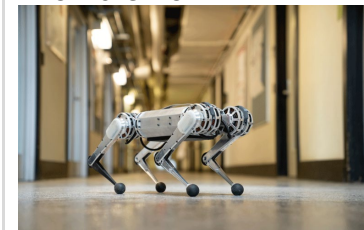
QUANTUM COMPUTING
One Step Closer to Reducing Quantum Computing's Notoriously Troublesome Errors



"While still far from enabling practical quantum computing, new research demonstrates an impressive reduction in error rates for a simple 2-qubit system."

Source: [IEEE Spectrum](#) (4 March 2019)

ROBOTICS
New Cheetah Robot from MIT Does Sweet Back Flips and Yoga Moves Like No Other



"While it weighs only 20 pounds, the cheetah has heavyweight skills like walking over uneven terrain, picking itself up after a fall or a swift kick and of course, its ability to pull off a 360-degree reverse flip from a standing position."

Source: [Forbes](#) (4 March 2019)

SENSORS
Scientists Develop Printable Water Sensor



"A new, versatile plastic-composite sensor can detect tiny amounts of water. The 3d printable material, developed by a Spanish-Israeli team of scientists, is cheap, flexible and non-toxic and changes its colour from purple to blue in wet conditions."

Source: [Deutsches Elektronen-Synchrotron DESY](#) (4 March 2019)

SUSTAINABLE ENERGY
Capturing Bacteria That Eat and Breathe Electricity



"Researchers traveled to Yellowstone National Park to find bacteria that may help solve some of the biggest challenges facing humanity environmental pollution and sustainable energy."

Source: [Science Daily](#) (5 March 2019)

TECHNOLOGIES
10 Breakthrough Technologies 2019



"We asked Gates to choose this year's list of inventions that will change the world for the better." Also read [Ten Big Global Challenges Technology Could Solve](#).

Source: [MIT Technology Review](#) (27 February 2019)

WOMEN IN SCIENCE
Women in Health, Science and Innovation Are Collaborating Globally



"Women leaders in science, health and innovation are collaborating on a global scale to address gender inequality."

Source: [The Conversation](#) (4 March 2019)