

Weekly Discovery

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14 January 2019 - 18 January 2019

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Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

3D PRINTING 3D Printing 100 Times Faster with Light



"Rather than building up plastic filaments layer by layer, a new approach to 3D printing lifts complex shapes from a vat of liquid at up to 100 times faster than conventional 3D printing processes."

Source: [University of Michigan](#) (11 January 2019)

ARCHITECTURE How to Improve Communication Between People and Smart Buildings



"USC research shows people help smart buildings conserve energy when they dialogue with a computer persona nicknamed Ellie, who represents the building management."

Source: [University of Southern California](#) (9 January 2019)

AUTOMATION Four Trends That Will Define Automation in 2019



"2019 will be the year that all sides of IT implement continuous test automation to ensure everything is working as expected."

Source: [IT Brief](#) (15 January 2019)

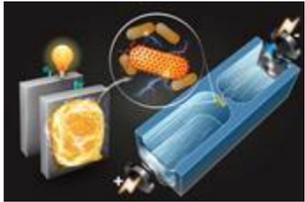
ELECTRONICS Breakthrough Claimed in Organic Electronics



"Researchers from Sweden's Chalmers University of Technology, have discovered a simple technique that could double the efficiency of organic electronics."

Source: [New Electronics](#) (14 January 2019)

ENERGY Technique Identifies Electricity-Producing Bacteria



"Now MIT engineers have developed a microfluidic technique that can quickly process small samples of bacteria and gauge a specific property that's highly correlated with bacteria's ability to produce electricity."

Source: [MIT News](#) (11 January 2019)

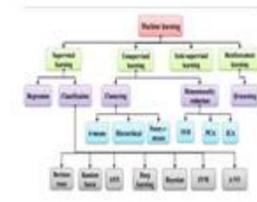
GLASS Nendo Lets Gravity Shape Its Latest Melt Furniture Collection for WonderGlass



"Nendo's Oki Sato has designed a series of cast glass chairs for Venetian brand WonderGlass, which feature a U-shaped base formed by the effects of gravity on molten glass."

Source: [Dezeen](#) (14 January 2019)

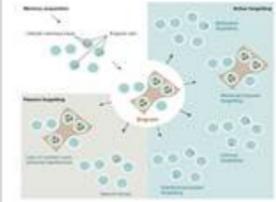
MACHINE LEARNING Machine Learning Algorithms for Wireless Sensor Networks: A Survey



"In this survey, we present various ML-based algorithms for WSNs with their advantages, drawbacks, and parameters effecting the network lifetime, covering the period from 2014–March 2018."

Source: [Information Fusion](#) (September 2019)

NEUROSCIENCE Why Forgetting May Make Your Mind More Efficient



"Understanding how the brain forgets may offer clues to enhancing mental performance in healthy brains while also providing insights into the mechanisms underlying a variety of mental disorders."

Source: [Knowable Magazine](#) (14 January 2019)

PHOTONICS Next Generation Photonic Memory Devices Are 'Light-Written', Ultrafast and Energy Efficient



"Researchers developed a 'hybrid technology' showing the advantages of both light and magnetic hard drives. Ultra-short (femtosecond) light pulses allows data to be directly written in a magnetic memory in a fast and highly energy-efficient way."

Source: [Eindhoven University of Technology](#) (11 January 2019)

PHYSICS Trends, Events and Predictions for 2019



"... our journalists gaze into their crystal balls to predict the future. Hamish Johnston, Matin Durrani and Susan Curtis forecast the key trends in physics and related areas of science, including the unabating rise of quantum-based technologies. They also preview some of the year's key events ..."

Source: [Physics World \(IOP\)](#) (10 January 2019)

QUANTUM COMPUTING IBM's Quantum Computer Is Important, but It's Far from Ready



"IBM unveiled the Q System One, the first standalone quantum computer that's ready for commercial use. While standard computers store information in bits... quantum computing uses qubits, which can represent both 1 and 0 at the same time thanks to a state called superposition."

Source: [Wired](#) (9 January 2019)

RESEARCH FUNDING Crowdfunding Research Flips Science's Traditional Reward Model



"No papers? No problem. Scientists who have historically been at a disadvantage when pursuing traditional funding sources - for example, those who lack extensive experience or who do not demonstrate a good publication record - are now the most successful at sourcing money from the public."

Source: [Nature](#) (11 January 2019)

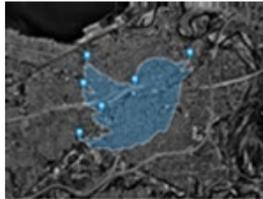
ROBOTICS DARPA Wants to Turn Insect Brains into Robot Brains



"Moths, for instance, are so programmed to navigate based on the direction of light that they occasionally navigate directly into lightbulbs. While these sorts of basic rules can sometimes backfire, they're also incredibly simple and easy to implement, which is what makes them useful to the military."

Source: [Popular Mechanics](#) (11 January 2019)

SOCIAL MEDIA Your Old Tweets Give Away More Location Data Than You Think



"An international group of researchers has developed an algorithmic tool that uses Twitter to automatically predict exactly where you live in a matter of minutes, with more than 90 percent accuracy."

Source: [Wired](#) (10 January 2019)

TECH OUTLOOK Top Tech 2019



"Here are some of the technologies you'll be reading about this year."

Source: [IEEE Spectrum](#) (January 2019)

WASTE MANAGEMENT New Technology to Reduce Petrochemical Waste



"This technology is a process which will decrease the cost of separating materials from the waste in order for those products to be recovered efficiently. The benefit of this idea is that you can get back raw materials in liquid solutions that have dissolved and have previously been hard to recover."

Source: [Tech Explorist](#) (14 January 2019)

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