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3D PRINTING
Industrial 3D Printing: Outlook for 2019

"The manufacturing industry has experienced a steady growth within the ASEAN region especially during the first-half of 2018. The additive manufacturing (AM) market is set to grow at a compound annual growth rate (CAGR) of around 27% between 2018 (USD 1.73 billion) and 2023 (USD 5.66 billion)."

Source: Enterprise Innovation (10 December 2018)

3D SCANNING
White Paper: How 3D Scanning Speeds Up Reverse Engineering

"Given the increased adoption of 3D scanning for reverse engineering, it's important to understand what the technology is and how it works in the real world."

Source: engineering.com (December 2018)

ARCHITECTURE
How to Judge a Building: Does It Make You Feel More, or Less Alive?

"In his monumental four-volume book, The Nature of Order, Christopher Alexander talks about an intelligent architecture, responsive to human needs and sensibilities through adaptation to existing buildings and nature."

Source: Archdaily (7 December 2018)

AUTOMOTIVE SINGAPORE
Singapore Quarterly Regional Regulations and Market Growth Indicators Analysis, Q2 2018

"The Singapore Government's announcement about restricting the growth of passenger vehicles (PVs) starting 2018 is expected to reduce total industry volume (TIV) from 113,357 units in 2017 to 111,000 units in 2018. In H1, sales growth shrunk 1.5% when compared to the same period in 2017."
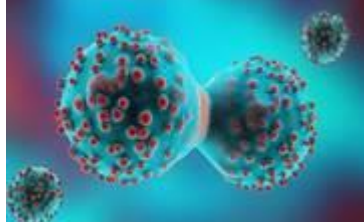
Source: Frost & Sullivan (16 November 2018)

BATTERIES
Honda Claims Breakthrough in New Battery Tech That Offers Longer Range, Greener Operation

"Working with the California Institute of Technology (Caltech) and NASA's Jet Propulsion Laboratory (JPL), the Japanese automaker claims to have developed a new battery chemistry called fluoride-ion that could outperform current lithium-ion batteries, with a less-severe environmental impact."

Source: The Drive (7 December 2018)

BIOTECH
Physicist Applies Nanotechnology to Detect Protein-Protein Interactions

"... tiny sensors that detect, characterize and analyze protein-protein interactions (PPIs) in blood serum. Information from PPIs could be a boon to the biomedical industry, as researchers seek to nullify proteins that allow cancer cells to grow and spread."

Source: Syracuse University News (10 December 2018)

CARBON EMISSIONS
Global Industrial Carbon Emissions to Reach All-Time High in 2018

"Global industrial emissions of carbon dioxide are likely to have risen by 2.7% in 2018 to reach an all-time high, marking a second year of strong growth after a brief period of relatively stable emissions, an international consortium of scientists reports."

Source: Nature (7 December 2018)

DATA MINING
Your Apps Know Where You Were Last Night, and They're Not Keeping It Secret

"Dozens of companies use smartphone locations to help advertisers and even hedge funds. They say it's anonymous, but the data shows how personal it is."

Source: The New York Times (10 December 2018)

DEEP LEARNING
A General Reinforcement Learning Algorithm That Masters Chess, Shogi, and Go Through Self-Play

"Silver *et al.* developed a program called AlphaZero, which taught itself to play Go, chess, and shogi (a Japanese version of chess) ... AlphaZero managed to beat state-of-the-art programs specializing in these three games. The ability of AlphaZero to adapt to various game rules is a notable step toward achieving a general game-playing system."

Source: Science (7 December 2018)

FINTECH
4 Fintech Predictions for the New Year

"Fintechs will invest in greater automation to replace manual processes, resulting in a faster loan origination process ... Automation removes friction for the borrower from the application process and reduces the chance of human error in processing the loan documentation."

Source: Forbes (7 December 2018)

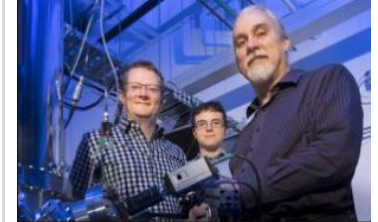**HEALTHCARE DEVICES**
3D-Printed Glucose Biosensors Created by WSU

"Using 3D printing, the WSU research team developed a glucose monitor with much better stability and sensitivity than those manufactured through traditional methods."

Source: Washington State University (5 December 2018)

MATERIALS SCIENCE
Topological Material Switched Off and On for the First Time

"... FLEET researchers at Monash University, Australia, have for the first time successfully 'switched' a material between these two states of matter via application of an electric-field. This is the first step in creating a functioning topological transistor – a proposed new generation of ultra-low energy electronic devices."

Source: Fleet (10 December 2018)

MEDICAL SCIENCE
MIT Engineers Repurpose Wasp Venom as an Antibiotic Drug

"After performing a systematic study of the antimicrobial properties of a toxin normally found in a South American wasp, researchers at MIT have now created variants of the peptide that are potent against bacteria but nontoxic to human cells."

Source: MIT News (7 December 2018)

ROBOTICS
The Leafy Green Cyborgs Are Coming

"Here in 2018, the kind of augmentation Harpreet Sareen and Pattie Maes are exhibiting in a project from MIT is a little more high-tech, harnessing the power of naturally occurring circuits in plants."
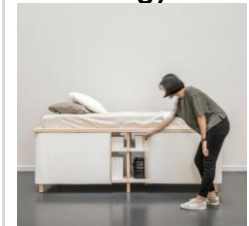
Source: Popular Mechanics (7 December 2018)

TRANSPORTATION
Strategic Insight into the Global P2P Carsharing Market, 2018

"The total number of peer-to-peer (P2P) carsharing members is expected to cross 71 million globally by 2030. Over 3.8 million vehicles are expected to be in the P2P carsharing fleet by then."

Source: Frost & Sullivan (7 December 2018)

TRENDS
Dezeen's Top 10 Design and Technology Trends of 2018

"... design editor Augusta Pownall picks out 10 trends that highlight what's been going on in the design and tech world over the past year, from a focus on football and a move away from Milan, to the return of the humble poster."

Source: Dezeen (11 December 2018)