Weekly Discovery

We SHARE to inspire and ignite ideas!

9 July 2018 - 13 July 2018

3D PRINTING

A Family in France Becomes the World's First to Live in a 3D Printed House

"The house took a little more than 2 days to print ... The construction of the entire house cost around £176,000. This means that the cost of construction done by 3D printing is 20% cheaper than using conventional construction techniques."

Source: Interesting Engineering (8 July 2018)

ARCHITECTURE
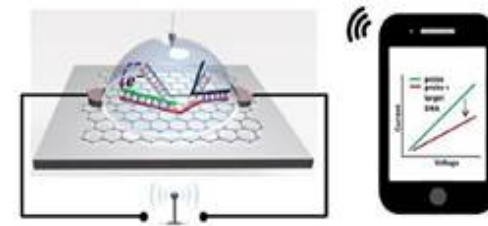
School Architecture: 70 Examples in Plan and Section

"For architects, schools are often complex structures to design … the greatest challenge is to design an area that fosters a positive pedagogical environment for children."

Source: Archdaily (8 July 2018)

BIOSENSOR

Biosensor Chip Detects Single Nucleotide Polymorphism Wirelessly and with Higher Sensitivity

"A team led by the University of California San Diego has developed a chip that can detect a type of genetic mutation known as a single nucleotide polymorphism (SNP) and wirelessly send the results in real time to a smartphone, computer, or other electronic device."

Source: UC San Diego (9 July 2018)

CONDUCTIVITY

Physicists Uncover Why Nanomaterial Loses Superconductivity

"The theory correctly described how the evolution of superconductivity depends on critical temperature, magnetic field magnitude and orientation, nanowire cross sectional area, and the microscopic characteristics of the nanowire material."

Source: Phys.org (9 July 2018)

ENERGY

Generating Electrical Power from Waste Heat

"Researchers from Sandia National Laboratories have developed a tiny silicon-based device made of common and abundant materials, such as aluminum, silicon and silicon dioxide that can harness waste heat and turn it into DC power."

Source: Sandia National Laboratories (9 July 2018)

EXOSKELETON

Exoskeleton That Allows Humans to Work and Play for Longer

"At the Massachusetts Institute of Technology's Biomechatronics Lab, researchers are working on exoskeletons that will work in far better harmony with the body."

Source: BBC News (8 July 2018)

GENE-EDITING

Gene Editing Technique Cures Genetic Disorder in Utero

"Researchers at Carnegie Mellon University and Yale University have for the first time used a gene editing technique to successfully cure a genetic condition in a mouse model … new avenue for research into treating genetic conditions during fetal development."

Source: Carnegie Mellon University (9 July 2018)

HEALTHCARE DEVICES

Wearable and Flexible Sensors for User-Interactive Health-Monitoring Devices

"… we investigate key factors for the development of user-interactive healthcare devices … we describe potential challenges of developing current wearable healthcare devices for applications in fitness, medical diagnosis, prosthetics, and robotics."

Source: RSC (9 July 2018)

HUMAN BEHAVIOUR

Change Health Messaging to Focus on Potential Impact to Help Stop the Next Pandemic

"Changing public health messaging to focus on the impact of our actions - for example, the potentially harmful impact of infecting a colleague with a cold, rather than whether we will infect them if we go into work in the first place - could have significant implications for how we deal with global threats, according to a new study."

Source: Science Daily (9 July 2018)

MACHINE LEARNING

Five Expert Tips to Make Machine Learning Development Work for You

"There are key things you should know before starting a Machine Learning development project, such as choosing the right type of machine learning, paying special attention to data preprocessing and cleaning…"

Source: ITProPortal (9 July 2018)

MATERIALS SCIENCE

This Shirt Is Made from Food Waste

"Circular Systems' innovative technology promises to transform food waste fibers into wearable fabric."

Source: Care2 (8 July 2018)

PHD WELLBEING

Harness the Power of Groups to Beat the 'PhD Blues'

Source: Adapted from Viktoria Kurpas/Shutterstock

"Feelings of depression, anxiety and isolation are so common during a PhD programme that some have dubbed the experience 'the PhD blues'. As a PhD student and practising psychologist, I wanted to try to reduce the impact of the blues on my fellow students and on me."

Source: Nature (4 July 2018)

ROBOTICS
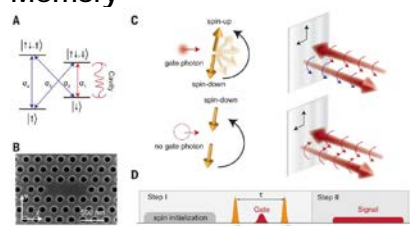
Robotic Surgery Breakthrough

"Researchers from Bristol Robotics Laboratory (BRL), University of the West of England, UK, have led the development of a ground-breaking robotic surgery system that enables surgeons to put joint fractures back together using a minimally invasive approach."

Source: Scitech Europa (3 July 2018)

SEMICONDUCTOR

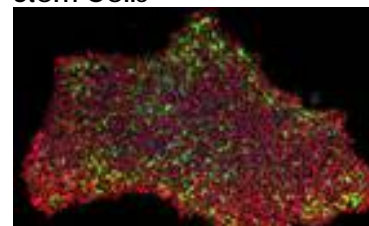### A Single-Photon Switch and Transistor Enabled by a Solid-State Quantum Memory

"We demonstrate a single-photon switch and transistor enabled by a solid-state quantum memory … Our results show that semiconductor nanophotonic devices can produce strong and controlled photon-photon interactions that could enable high-bandwidth photonic quantum information processing."

Source: Science (6 July 2018)

STEM CELLS

Researchers Develop a New Method for Turning Skin Cells into Pluripotent Stem Cells

"… have now succeeded in converting skin cells into pluripotent stem cells by activating the cell's own genes. This was achieved by using gene editing technology - called CRISPRa - that can be directed to activate genes."

Source: Phys.org (6 July 2018)

TRANSPORTATION

CEO of a Hyperloop Company Has Some Surprising Thoughts on the Future of Transportation

"Airport security is a demeaning charade. The security is all psychological, the scanning part doesn't really work … The problem I have with where we are today is that we're treated like animals. We can do things better."

Source: Futurism (9 July 2018)