SUTD LIBRARY

Weekly Discovery

We SHARE to inspire and ignite ideas!

2 July 2018 - 6 July 2018

ACOUSTICS
Constant-Pressure Sound Waves in Non-Hermitian Disordered Media

"Here we propose a practical discretized version of this abstract concept and implement it in a realistic acoustic system … demonstrating that gain–loss additions can turn localized systems into transparent ones."

Source: Nature Physics (2 July 2018)

ALGORITHM
'Breakthrough' Algorithm Exponentially Faster Than Any Previous One

Source: Britannica ImageQuest

"A completely new kind of algorithm, one that exponentially speeds up computation by dramatically reducing the number of parallel steps required to reach a solution."

Source: EurekAlert! (28 June 2018)

AWARD WINNING ARCHITECTURE
IMPLMNT Highlights "Connection and Transformation" in Award-Winning Proposal for New Lithuanian Cultural Center

"Lithuanian city Panevezys will have a new cultural hub … This space is planned to have a non-commercial cinema hall, a function that locals admire and value greatly because it keeps the city's culture intact."

Source: Arch Daily (1 July 2018)

BIO-INSPIRED MATERIALS
The Secret to More Durable Industrial Design Is . . . Shrimp
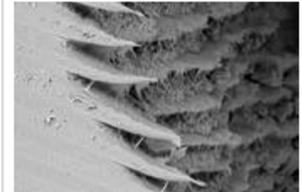
"Researchers have discovered a promising way to make concrete tougher … It's a material inspired by billions of years of evolution that created the micro-architecture hidden inside crustacean shells."

Source: Fast Company (27 June 2018)

BLOCKCHAIN
Decoding Blockchain: Opportunities for Businesses

"Blockchain is still early stage, but businesses across a number of industries are examining use cases to see how it can simplify and automate processes, reduce costs and speed up transactions…"

Source: J.P.Morgan (25 June 2018)

HEALTHCARE
Drug Gets Body Cells to 'Eat and Destroy' Cancer

"Scientists have designed a special type of drug that helps the body eat and destroy cancerous cells … Tests in mice showed the therapy worked for aggressive breast and skin tumours."

Source: BBC News (3 July 2018)

IMAGE PLAGIARISM
Adobe to Use Artificial Intelligence to Detect Manipulation in Images

"Adobe has said that it has developed a tool that uses artificial intelligence to detect images that have been edited or tampered with … This technology could be used to detect other artifacts of manipulation."

Source: Firstpost (26 June 2018)

MAGNETS
Quantum Gas Reveals First Sign of Path-Bending Monopole
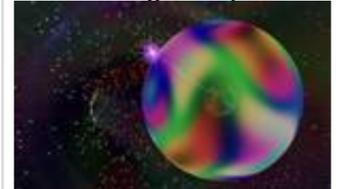
"A team of researchers have succeeded in emulating a Yang monopole with an ultra-cold gas of rubidium atoms. The result provides another example of using cold quantum gases to simulate other areas of physics."

Source: Phys.org (29 June 2018)


MICROBOTICS
Next-Generation Robotic Cockroach Can Explore Under Water Environments

"Harvard's Ambulatory Microrobot, known as HAMR, can walk on land, swim on the surface of water, and walk underwater for as long as necessary, opening up new environments for this little bot to explore."

Source: Harvard John A. Paulson School of Engineering and Applied Sciences (2 July 2018)

NANOCOMPOSITES
Glass That's Handled Like a Polymer
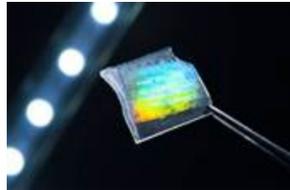
"A nanocomposite material of mixed glass and polymer particles that can be shaped with polymer-molding techniques, then heat-treated to change into optical-grade glass."

Source: Optics & Photonics News (28 June 2018)

PEROVSKITE SOLAR CELLS
Enhanced Photovoltage for Inverted Planar Heterojunction Perovskite Solar Cells
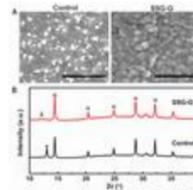
"The University of Surrey has helped to create a technique that has produced the highest performing inverted perovskite solar cell ever recorded."

Source: Science (29 June 2018)

POLICE ROBOTS
As Robotic Police Head out on the Street of Dubai, We Look at the Technology That's Set to Revolutionise Law and Order

"Prof Alan Winfield, a robot ethicist at the University of the West of England, discusses the pros and cons of police robots … What kinds of problems could a robot officer encounter?"

Source: BBC Earth (July 2018)
Available @ SUTD Library (Call Number Q1 BBC)

SMART HOME
For Victims of Smart Home Abuse, There's No Easy Out

"The New York Times recently published a report that revealed a disturbing trend of harassment and domestic abuse via internet-connected devices."

Source: Engadget (2 July 2018)

SUSTAINABILITY
New 'Promiscuous' Enzyme Helps Turn Plant Waste into Sustainable Products
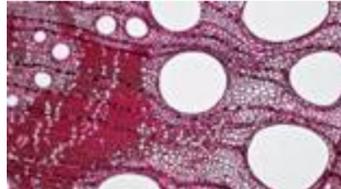
"A new family of enzymes has been discovered which paves the way to convert plant waste into sustainable and high-value products such as nylon, plastics, chemicals, and fuels."

Source: University of Portsmouth (27 June 2018)

TIME SYNCHRONIZATION
Time Split to the Nanosecond Is Precisely What Wall Street Wants

"System engineers at Nasdaq, the New York-based stock exchange, recently began testing an algorithm and software that they hope can synchronize a giant network of computers with that nanosecond precision."

Source: The New York Times (29 June 2018)

VIRTUAL REALITY
New Drug and Material Discoveries to Be Untangled in VR

Source: TechExplorist.com

"Scientists at the University of Bristol have developed new virtual reality (VR) cloud-based tools to help academics and industry progress new drugs, materials and boost the teaching of chemistry."

Source: Science Daily (2 July 2018)

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