Weekly Discovery

We SHARE to inspire and ignite ideas!

30 April 2018 - 4 May 2018

3D PRINTING

Circuits 3D-Printed onto Skin Offer Battlefield Benefits to Soldiers

Presenting electronic circuits that can be 3D-printed onto skin surfaces, enabling soldiers to print temporary sensors onto their bodies to detect biochemical threats. Read more at Advanced Materials.

Source: The Engineer (26 April 2018)

AUGMENTED REALITY

Featured Article - Changing How We Design and Develop

Get some insights into why, how and who uses Augmented Reality and Virtual Reality to drive new user experiences.

Source: Net (May 2018)
Available @ SUTD Library (Call Number TK5105 NET)

BIG DATA

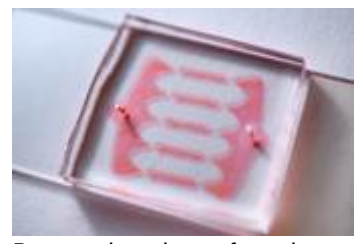
Firms Like Zaha Hadid Architects Are Revolutionizing Office Design Using Big Data

Workers can now easily set up meetings by finding available meeting rooms via apps and sensors that monitor noise, light and temperature and timely adjust them to optimum working environment.

Source: ArchDaily (1 May 2018)

CELL DELIVERY

Ultrafast Compression Offers New Way to Get Macromolecules into Cells

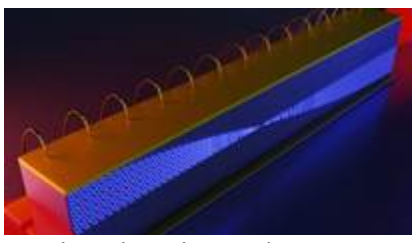


Researchers have found a new technique of compressing cells, allowing cells to exchange with the fluids around them and take in macromolecules from the environment.

Source: Georgia Institute of Technology (30 April 2018)

COMMUNICATIONS

Laser Frequency Combs May Be the Future of Wi-Fi

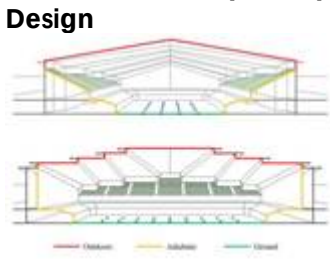


Read about how laser at optical wavelengths can be operated as a microwave device and how it can become a terahertz source for wireless communications, transforming the future of Wi-Fi. Learn more at OSA.

Source: Harvard (30 April 2018)

COMPUTATIONAL DESIGN

Multi-Disciplinary and Multi-Objective Optimization Problem Re-Formulation in Computational Design Exploration: A Case of Conceptual Sports Building Design

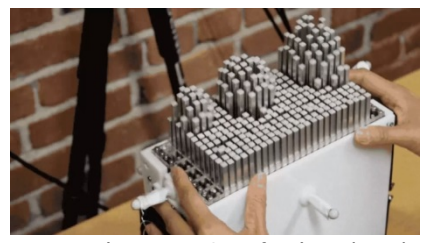


The paper details an integration of mathematical multi-objective optimization and computational construction design through the design of a sports building, which required re-formulation over the design process.

Source: Automation in Construction (August 2018)

COMPUTING DEVICE

A Computer Mouse for the Year 3000



Researchers at Stanford University have developed a 'shapeshifting' futuristic mouse using a series of piston-like pins providing kinaesthetic feedback. In addition, read the publications: Article 1 and Article 2.

Source: Fast Company (30 April 2018)

ERGONOMICS

The Science Behind Where Police Should Place Their Body Cameras

The location of cameras on police officers can affect capture angles, other topics such as audio capture, making sense of footage captured where there is no altercation and also the role of AI in analytics is discussed.

Source: Inside Science (27 April 2018)

HEALTHCARE

Fitbit Strikes Deal with Google That Could Lead to Wearables Collaboration

A smart, innovative collaboration on accessing medical records via a wearable device is defining the next generation of healthcare and wearables.

Source: Fortune (30 April 2018)

MATERIALS

Water-Repellent Surfaces Can Efficiently Boil Water, Keep Electronics Cool

Researchers found out that super-hydrophobic surfaces improve boiling even though they are thought to be bad for boiling since they cannot stay wet. Explore how it works at APS.

Source: Purdue University (30 April 2018)

MEDICAL IMAGING

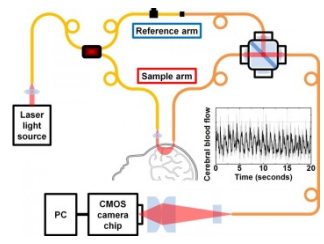
Why We Need Erasable MRI Scans

The use of contrast agents like magnetic dyes, which are injected into the blood or given orally then travel to organs and tissues, is able to make MRI scans easier to read. Read about more details at Nature.

Source: Caltech (24 April 2018)

MEDICAL OPTICS

New Technology for Measuring Brain Blood Flow with Light



With just laser light and common digital camera technique, brain blood flow can be detected based on fluctuations of blood motion. Learn about this low-cost but effective technology at OSA.

Source: University of California, Davis (27 April 2018)

NEUROIMAGING

Brain-Scanning in Chinese Factories Probably Doesn't Work — If It's Happening at All

Safety hats with wireless sensors seem to have worked well for a company in China with positive profits over the last 4 years. This article highlights ethical and technological challenges which call for more discussions.

Source: The Verge (1 May 2018)

POLYMER

Breakthrough Polymer Could Lead to Infinitely Recyclable Plastic

A new polymer that can be recycled repeatedly in lab conditions within only a few minutes, making future plastics significantly more sustainable than their current counterparts.

Source: Digital Journal (30 April 2018)

SMART WINDOW

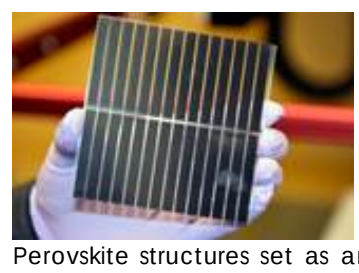
Blind Car Passengers Feel the View with Amazing New Technology from Ford

It might be impossible for the blind to view sceneries. However, Ford's latest Feel The View system allows the blind to feel a passing landscape through vibrations when they are in the car.

Source: The Sunday Times Driving (1 May 2018)

SOLAR CELLS

Bright Future for Solar Cell Technology



Perovskite structures set as an alternative material of solar cells since they are cheaper than silicon and can work efficiently as the light-harvesting active layer of a solar cell. Also read more at Advanced Energy Materials.

Source: Okinawa Institute of Science and Technology Graduate University (27 April 2018)