

Weekly Discovery

We SHARE to inspire and ignite ideas!

10 October 2016 – 14 October 2016



Source: Britannica Images

Special Highlight

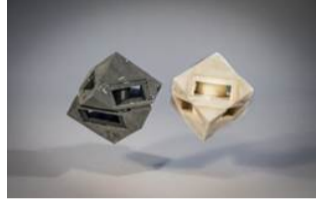
Thermodynamics

Thermodynamics deals with equilibrium, energy and its transformation from one form to another. The behaviour and interaction of thermodynamic quantities are defined by the four laws of thermodynamics. The applications of thermodynamics span a broad range of fields in science and engineering, especially physical chemistry and mechanical engineering. The use of the knowledge also has a close relationship with our everyday life, such as engines in vehicles and vapour power cycles in refrigerators.

[Read more >](#)

ADDITIVE MANUFACTURING

3-D-Printed Robots with Shock-Absorbing Skins



Robots could wear new 'skins' that enable them to move and land more durably and precisely. The material is programmable and 3D-printable to fit any shape and size.

Source: [MIT Computer Science and Artificial Intelligence Laboratory](#) (3 October 2016)

BIOMIMICRY

MIT's Furry Wetsuits Will Keep You Warm In Icy Water



A group of MIT researchers have fabricated [fur-like synthetic material](#) wetsuits inspired by sea otters and beavers. The aim is to allow the wearer to be nimble in water and the suit to quickly self-drain the water when it is on land. Read more at [Physical Review Fluids](#).

Source: [Popular Mechanics](#) (7 October 2016)

BLOCKCHAIN

How Blockchain Can Change The Music Industry



Music distribution could take place in the form of Blockchain technology as it can validate and register transactions securely via a 'digital ledger'. It may prevent music piracy and transform publishing, monetization and the relationship between recording artist and consumers.

Source: [Techcrunch.com](#) (8 October 2016)

CROWDFUNDING

Thinking of Crowdfunding Your Science? Study Suggests Some Tips

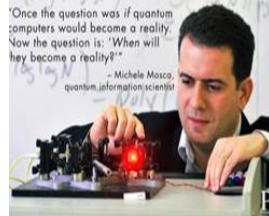


Science communication scholars from University of Zurich have listed four key areas to ensure campaigns are effective, namely selecting appropriate platforms, creating engaging videos, interaction with donors and the size of the required funds. Also read the full report [Selling science 2.0: What scientific projects receive crowdfunding online?](#)

Source: [Science](#) (4 October 2016)

CYBERSECURITY

How Quantum Computing Could Change Cybersecurity Forever



Scientists are looking forward to develop quantum computers that could offer a new type of cryptography to cope with hacking. Watch the [video](#) to see how quantum computing is playing the role.

Source: [Scientific American](#) (5 October 2016)

ENERGY AND POWER SYSTEMS

High Temperature Superconductors



A comprehensive report on various innovations and key trends on High Temperature Superconductors from Sumitomo, SuperOx and Brookhaven. Also features High Temperature Superconducting Fault Current Limiters.

Source: [Frost and Sullivan](#) (7 October 2016)

FUTURE TRENDS

Five Mega Changes That Could Transform The World

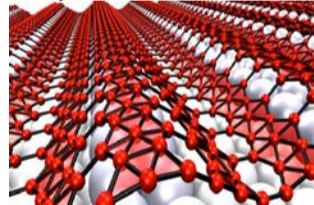


Presents five mega changes which spreads across issues in defense, environment, politics and technology. Understanding these changes can enable us to prepare for changes that these advances may bring.

Source: [Brookings](#) (5 October 2016)

MATERIAL SCIENCE

2D Boron Could Outperform Graphene In Wearables

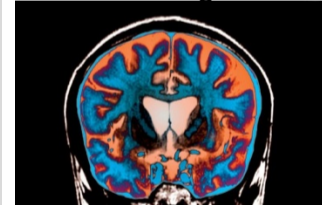


Scientists at Rice University discovered that 2D boron or borophene is a better candidate relative to graphene as a material for wearable devices. Borophene takes on an undulating shape when it is harvested. Borophene has much better flexibility than graphene. More details at [Nano Letters](#).

Source: [The Engineer](#) (5 October 2016)

MEDICAL DRUGS

Children With Fatal Muscle Disease Walk After Drug Breakthrough



A trial antisense drug called Nusinersen, was tested on children with spinal muscular atrophy and they were able to walk with assistance! Possibilities of using this drug to treat neurological conditions such as Huntington's, motor neurone disease and possibly even Alzheimer's.

Source: [New Scientist](#) (6 October 2016)

NANO MACHINES

World's tiniest machines win chemistry Nobel



These tiny chemically-powered molecular machines, such as motors, rotors, switches, and pumps, can serve as tiny robots inside the body to deliver drugs or be used as smart materials for computer memory. Read More at [ACS](#)

Source: [Nature](#) (5 October 2016)

SENSORS

Smart Wearable Sensors for Healthcare



This industry update report by Frost & Sullivan provides current and latest technology innovations in smart wearable medical devices to observe various conditions, including diabetes and cardiovascular related conditions. Also providing an overview of the industry as a whole based on patent developments.

Source: [Frost and Sullivan](#) (7 October 2016)

WOMEN IN ARCHITECTURE

Denise Scott Brown On the Past, Present and Future of VSBA's Groundbreaking Theories



An interview with Denise Scott Brown, Postmodern iconic feminist architect, on her radical outlooks and philosophies in design. She talked about her current work, her views on modernism, postmodernism and the phenomena in architecture in the 20th and 21st Century, and her aspirations for the future of the profession.

Source: [ArchDaily](#) (7 October 2016)