

Weekly Discovery

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25 - 29 July 2022

The Library publishes 9 alerts focusing on Topics relevant to growth and research areas to SUTD.

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Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

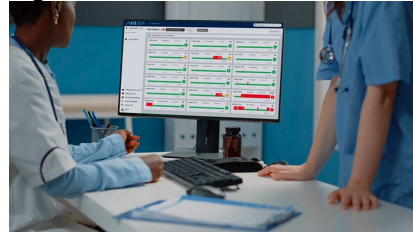
AI
AI Speeds Sepsis Detection To Prevent Hundreds Of Deaths



"Patients are 20% less likely to die of sepsis because of a new AI system developed at Johns Hopkins University that catches symptoms hours earlier than traditional methods, an extensive hospital study demonstrates."

Source: [HUD](#) (21 July 2022)

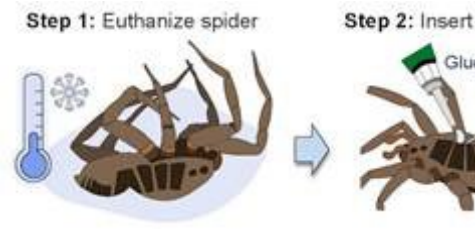
AI
Patient Deterioration Predictor Could Surpass Limits Of Traditional Vital Signs



"An artificial intelligence-driven device that works to detect and predict hemodynamic instability may provide a more accurate picture of patient deterioration than traditional vital sign measurements, a Michigan Medicine study suggests."

Source: [MHEALTHLAB](#) (21 July 2022)

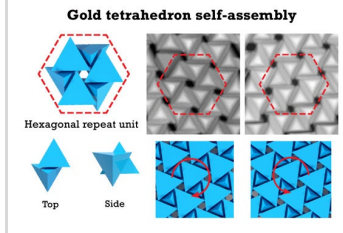
BIOMIMICRY
Rice Engineers Get A Grip With 'Necrobotic' Spiders



"Unlike people and other mammals that move their limbs by synchronizing opposing muscles, spiders use hydraulics. A chamber near their heads contracts to send blood to limbs, forcing them to extend. When the pressure is relieved, the legs contract."

Source: [Rice University](#) (25 July 2022)

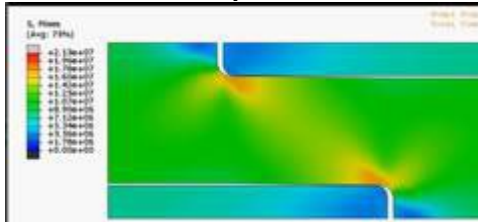
MATERIALS
Tetrahedrons Assemble! Three-Sided Pyramids Form 2D Structures



"The chiral surfaces created at Rice are ultrathin assemblies of particles that incorporate left-handed and right-handed domains in equal numbers. That matters in how they process circularly polarized light, a useful tool in spectroscopy and plasmonics."

Source: [Rice University](#) (25 July 2022)

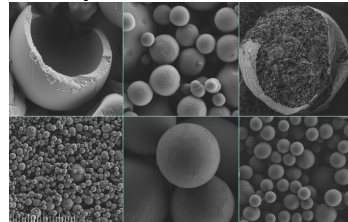
MATERIAL SCIENCE
Bioinspired Protein Creates Stretchable 2D Layered Materials



"Nature creates layered materials like bone and mother-of-pearl that become less sensitive to defects as they grow. Now researchers have created, using biomimetic proteins patterned on squid ring teeth, composite layered 2D materials that are resistant to breaking and extremely stretchable."

Source: [EurekAlert!](#) (25 July 2022)

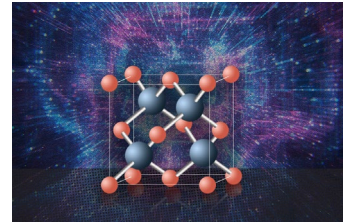
MATERIAL SCIENCE
Silk Offers An Alternative To Some Microplastics



"Researchers have developed a biodegradable system based on silk to replace microplastics added to agricultural products, paints, and cosmetics."

Source: [EUREKALERT!](#) (21 July 2022)

MATERIAL SCIENCE
The Best Semiconductor Of Them All?



"A material known as cubic boron arsenide has two major advantages over silicon, research shows. It provides high mobility to both electrons and holes, and it has excellent thermal conductivity. It is, the researchers say, the best semiconductor material ever found."

Source: [MIT](#) (21 July 2022)

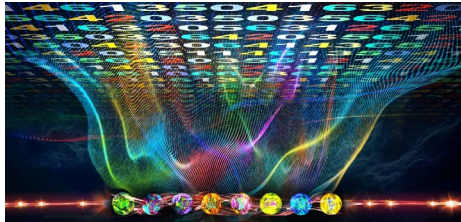
MED TECH
'Smart Necklace' Biosensor May Track Health Status Through Sweat



"In a new study published in the journal Science Advances, a team from The Ohio State University demonstrated a battery-free, wireless biochemical sensor that detected the blood sugar – or glucose – humans excrete from their skin when they exercise."

Source: [Ohio State University](#) (22 July 2022)

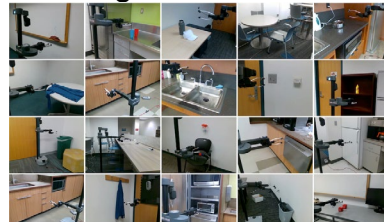
QUANTUM COMPUTING
Quantum Computer Works With More Than Zero And One



"For decades computers have been synonymous with binary information – zeros and ones. Now a team at the University of Innsbruck, Austria, realized a quantum computer that breaks out of this paradigm and unlocks additional computational resources, hidden in almost all of today's quantum devices."

Source: [UIBK](#) (21 July 2022)

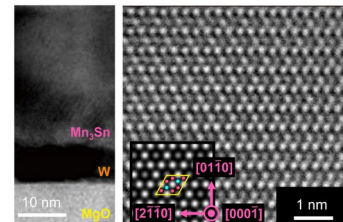
ROBOTS
Robots Learn Household Tasks by Watching Humans



"Researchers have developed a new learning method for robots called WHIRL, short for In-the-Wild Human Imitating Robot Learning. WHIRL is an efficient algorithm for one-shot visual imitation."

Source: [Carnegie Mellon University](#) (20 July 2022)

SPINTRONICS
Magnetic Memory Milestone



"...explore the world of spintronics and other related areas of solid state physics — broadly speaking, the physics of things that function without moving. Over the years, they have studied special kinds of magnetic materials, some of which have very unusual properties."

Source: [University of Tokyo](#) (21 July 2022)

URBAN DESIGN
Placemaking through Play: Designing for Urban Enjoyment



"One way people can participate in placemaking is through play, a form of active engagement with the city. Through play, one can sense, move and act with the built environment, fabricating sustained mental links with the place. Playful urban spaces are more relatable, allowing people to connect with them on a human scale. Playful public activity is an indicator of an energized urban space and successful placemaking."

Source: [Archdaily](#) (22 July 2022)

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