MAGAZINE

ISSUE NO: 115
September 15, 2022

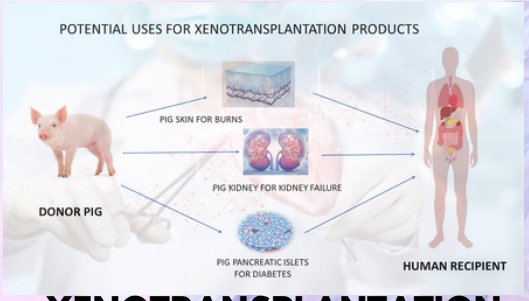
Byte Quest

Department of CSE

SAND BATTERIES

Q BIO

FLEXIBLE OLCD



XENOTRANSPLANTATION

Department Vision

To be a center for academic excellence in the field of Computer Science and Engineering education to enable graduates to be ethical and competent professionals.

Department Mission

To enable students to develop logic and problem solving approach that will help build their careers in the innovative field of computing and provide creative solutions for the benefit of society.

FACULTY COORDINATORS

S. KOMAL KAUR
(ASST. PROFESSOR)
T. NISHITHA
(ASST. PROFESSOR)

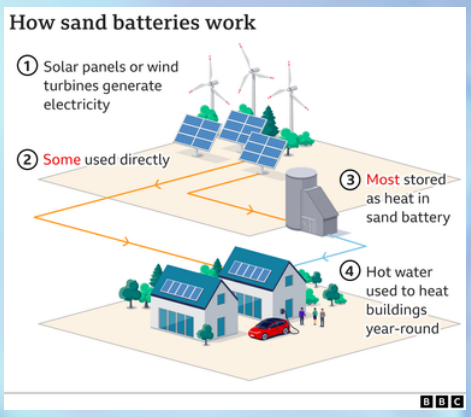
STUDENT COORDINATORS

MANAS (2/4) CSE C
ANISH (2/4) CSE B
RANESH (2/4) CSE A
CHANDRASEKHAR (3/4) CSE B
AKASH (4/4) CSE C

Byte Quest

SAND BATTERIES

Not every technology bettering our future has to be complicated, some are simple, yet extremely effective.
Solar panels or wind turbines generate electricity. In sand batteries, some electricity is used immediately, while the rest is used to heat the battery. This heat is stored and then used to heat water, which can heat buildings all year round.Sand batteries are effectively giant silos filled with around 100 metric tons of builder's sand. This is used as the storage medium and is very effective in retaining heat for long periods.



The sand can be heated up to 1000 °C or even higher. Inside the sand is an insulated heat transfer system to eliminate heat loss and transport to and from storage.
The sand can be kept at around 500 °C for several months using resistive heating, a method of in situ heating that uses energy produced by passing an electric current through a resistance unit.

Q BIO

In Star Trek, where many of our ideas of future technology germinated, human beings can walk into the medbay and have their entire body digitally scanned for signs of illness and injury. Doing that in real life would, say the makers of Q Bio, improve health outcomes and alleviate the load on doctors at the same time. The US company has built a scanner that will measure hundreds of biomarkers in around an hour, from hormone levels to the fat building up in your liver to the markers of inflammation or any number of cancers.

It intends to use this data to produce a 3D digital avatar of a patient's body – known as a digital twin – that can be tracked over time and updated with each new scan.
Q Bio CEO Jeff Kaditz hopes it will lead to a new era of preventative, personalised medicine in which the vast amounts of data collected not only help doctors prioritise which patients need to be seen most urgently, but also to develop more sophisticated ways of diagnosing illness.

Byte Quest

FLEXIBLE OLCD

FlexEnable's glass-free organic LCD (OLCD) delivers high-brightness, long-lifetime flexible displays that are low cost and scalable to large areas, while also being thin, lightweight, and shatterproof.

FlexEnable's glass-free organic LCD (OLCD) delivers high-brightness, long-lifetime flexible displays that are low cost and scalable to large areas, while also being thin, lightweight, and shatterproof.

LCDs accounts for more than 90% of displays sold today, but they are made with glass, meaning they cannot meet the conformability, thinness, and robustness requirements of many new applications. A new disruptive glass-free display technology – organic LCD (OLCD) – is now making high-quality, low-cost flexible displays available to all. It is manufactured on low-cost plastic substrates and uses inherently flexible, high-performance organic transistors instead of the rigid amorphous silicon transistors typically used in glass LCDs.

Why choose OLCD?

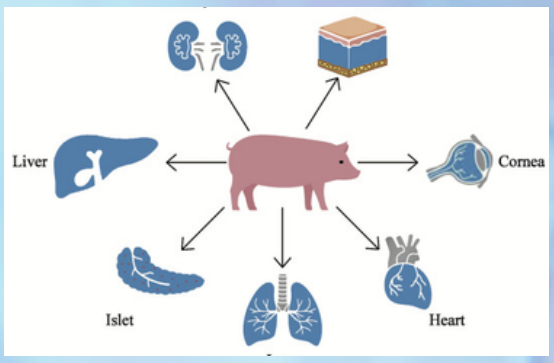
OLCD is a plastic display technology with full color and video-rate capability. It enables product companies to create striking designs and realize novel use cases by merging the display into the product design rather than accommodating it by the design.

Unlike flexible OLED displays, which are predominantly adopted in flagship smartphones and smartwatches, OLCD opens up the use of flexible displays to a wider range of mass-market applications. It has several attributes that make it better suited than flexible OLED to applications across large-area consumer electronics, smart home appliances, automotive, notebooks and tablets, and digital signage.

Byte Quest

XENOTRANSPLANTATION

Xenotransplantation - the procedure of transplanting, implementing or infusing a human with cells, tissues or organs from an animal source - has the potential to revolutionise surgery.



One of the most common procedures performed so far is the insertion of a pig's heart into a human. This has now successfully happened twice. However, one of the patients was only alive for a few months, and the second is still being observed.

In these surgeries, the heart cannot be instantly put into a human, gene-editing needs to take place first. Certain genes need to be knocked out of the heart and human genes need to be added, mainly around immune acceptance and genes to prevent excessive growth of heart tissue.

Right now, these surgeries are risky and there is no certainty around success. However, in the near future, we could see xenotransplants happening on a regular basis, providing hearts or tissues from animals to humans in need of it.

BROUGHT TO YOU BY

Department of
Computer Science and Engineering

Vasavi College of Engineering