

**LBS INSTITUTE OF TECHNOLOGY FOR WOMEN**



# **ELECTRENEITY**

Innovation at your fingertips



**ELECTRONICS & COMMUNICATION DEPARTMENT**

**2021 - 2022**

**NOVEMBER - FEBRUARY EDITION**

# CONTEXT

- **New innovations and discoveries**  
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Dear Readers,

It's my pleasure to welcome you to the latest edition of our semester wise newsletter, which aims to keep you informed about the latest trends, advancements, and breakthroughs in the world of electronics and communications.

This year has been marked by unprecedented challenges that have tested our resilience and adaptability in new and unexpected ways. Despite these difficulties, the field of electronics and communications has continued to push forward, driven by the passion and dedication of researchers, engineers, and innovators around the world.

In this edition of our newsletter, you'll find a wealth of information on some of the most exciting developments in the field, from breakthroughs in wireless technology and smart devices to the latest developments in artificial intelligence and machine learning.

We're also pleased to share news and updates on the latest events, conferences, and opportunities for networking and collaboration.

We hope that this newsletter will inspire you to continue exploring the frontiers of electronics and communications, and to contribute your own ideas and innovations to this dynamic and ever-evolving field.

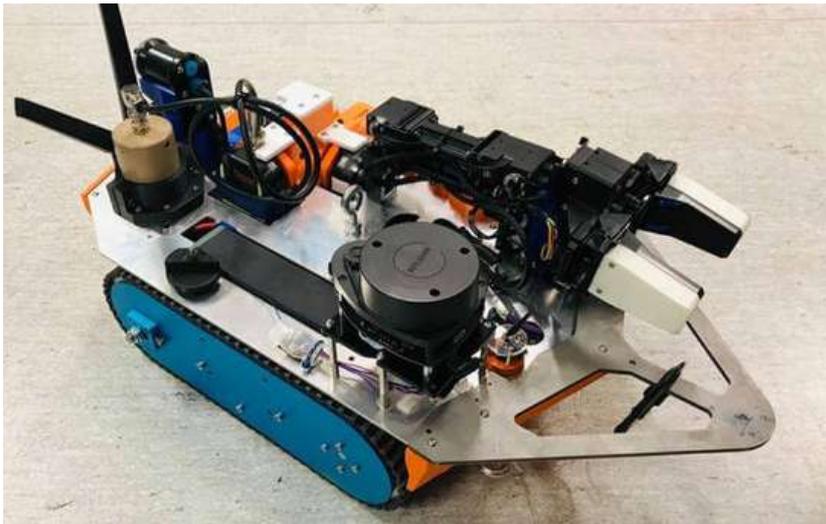
Sincerely,

GOWRI PRIYA P , S3 ECE (2020-2024 BATCH)

# ELECTRENEITY

*Newsletter by ECE (2020-2024), LBSITW*

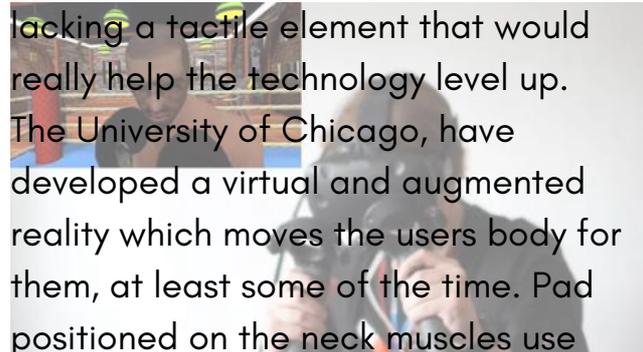
## A Nuclear Inspection Robot



Cleanup efforts following the Chernobyl power plant disaster famously utilized lunar rovers like the Lunokhod and other robots. Now, a new nuclear inspection robot called Lyra is getting in on the action. As explained by the Tech Xplore, Lyra was sent through 140 meters of Ductwork in Dounreay's nuclear facilities in Scotland. Lyra is equipped with five radiation detectors, two cameras, lights, a robotic arm, and a LiDAR system for mapping. The full suite of instruments allowed Lyra to create a 3D video map of the exploded area. Using the radiation sensors, the video Lyra returned included readings of radiation hotspots overlaid on top of the images. Robot like Lyra could allow for more detailed mapping of radiation risks.

## VR System That Moves Your Body For You

There's nothing better than virtual reality for total immersion, but it's still lacking a tactile element that would really help the technology level up. The University of Chicago, have developed a virtual and augmented reality which moves the users body for them, at least some of the time. Pad positioned on the neck muscles use electrical muscle stimulation to take control of a player's body and move it. In a fire safety demonstration ,the technology was used to guide a player's eye-line towards the location of fire extinguisher or live fire. Additional demonstration moved a player's head in response to a punch from virtual boxing opponent. The system senses what the user is doing in real-time and initiates only involuntary movement when the muscles are not otherwise activated. So there is no risk of injury due to triggered motion, even if you are punched in VR



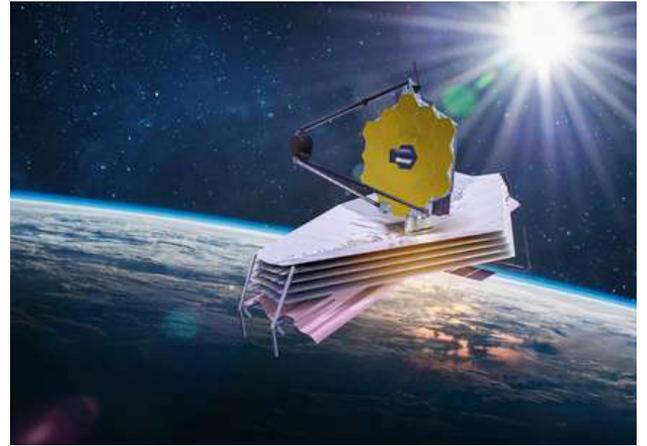
## Hydrogen-powered trains debut in Germany

Germany introduced a fleet of zero-emission trains powered solely by hydrogen in northern Lower Saxony. By combining hydrogen and oxygen, the trains can run while only emitting steam and water. The trains are projected to eliminate 4,000 tons of carbon dioxide that would otherwise be released into the atmosphere each year.

## Joystick controlled Robotic Surgeon

Endovascular operations for treating stroke or aneurysms require specialized training in which it takes years to become proficient. Consequently, only a small portion of doctors are able to complete them and they tend to be located at large medical centers in urban areas. When a patient is experiencing a stroke or aneurysm, there is a "golden hour" during which they can be treated without lasting consequences. That's all fine and good if you happen to be located within a few minutes of a major medical center, but for patients in outlying areas without access to specially trained surgeons, that could mean the difference between recovering or not. With that in mind, engineers at MIT have developed a telerobotic surgical system using a modified joystick that surgeons can use to perform operations remotely. According to a paper published in the journal Science Robotics, the system uses a flexible magnetized guidewire to navigate through blood vessels and reach the location of a clot to retrieve it or break it up. If these systems were set up at hospitals around the country and the world, they could be operated remotely by trained surgeons in other cities, reducing the response time as well as rates of fatality and long-term disability.

## Carbon dioxide discovered in exoplanet's atmosphere



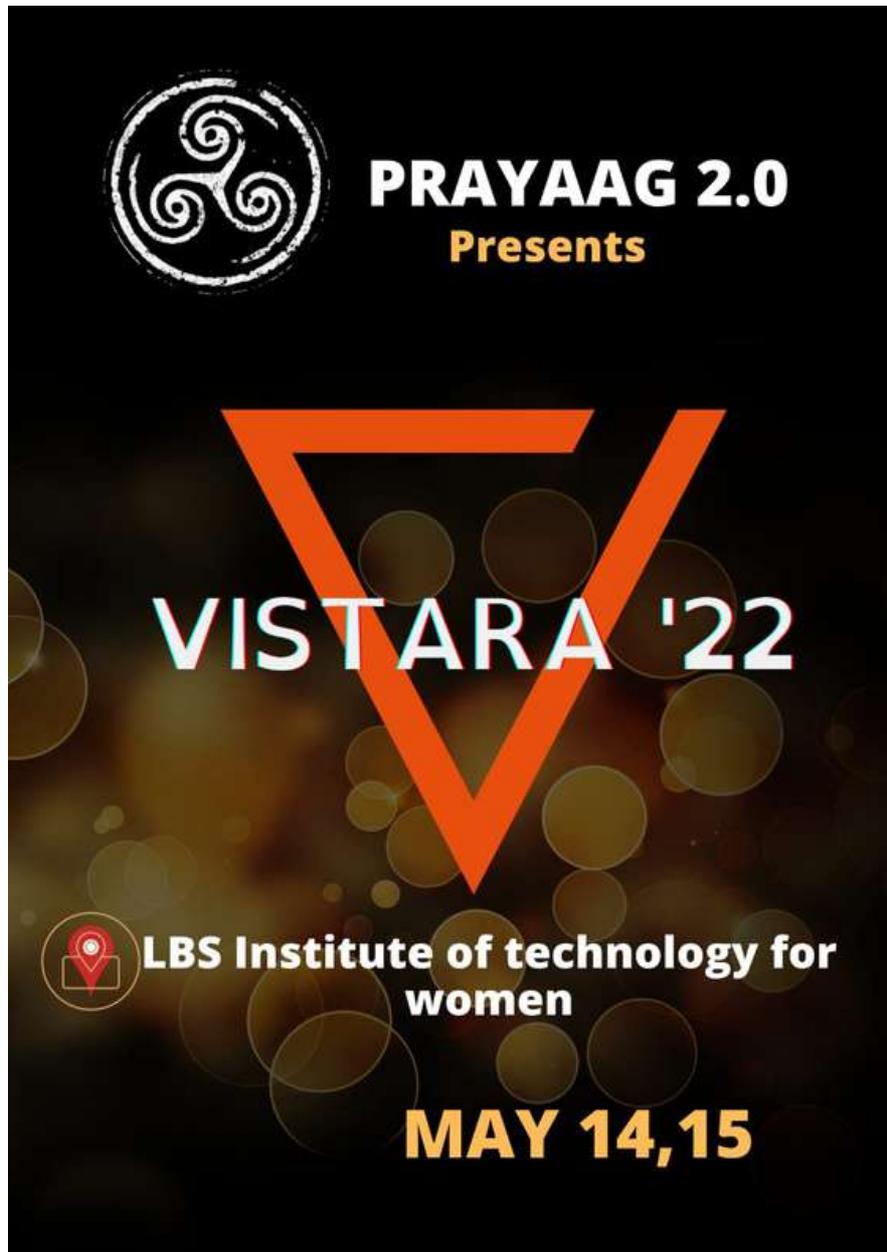
James Webb Space Telescope captured images of a large gas planet 700 light-years away, marking the "first clear evidence for carbon dioxide in the atmosphere of a planet outside the solar system. "The finding provides important information to help scientists understand how planets are formed

## Ice volcanoes on Pluto

NASA's New Horizons mission stumbled upon what could be two cryovolcanoes on the surface of Pluto. Cryovolcanoes develop from frozen ice, indicating that there may be a liquid ocean beneath the dwarf planet's surface, as well as an internal heat source. Both are important stepping stones in establishing the plausibility of life on other planets.

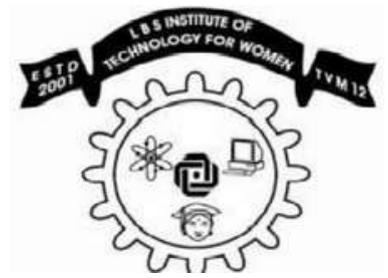
# PRAYAAG

It's a Intercollegiate Technical Fest of LBS INSTITUTE OF TECHNOLOGY FOR WOMEN, TRIVANDRUM . It was conducted on 14th,15th May 2022



Students from various engineering branches were invited to explore and enhance their technical skills through a plethora of competitions, technical workshops and expos especially tailored for them. With plenty of technical events, treasure hunt, quizzes and technical capability test. In Prayaag "VISTARA" is the technical fest conducted by Dept. of Electronics & Communication Engineering

# Vision & Mission of Institute



## VISION

To be Centre of Academic Excellence empowering women in technical domain

## MISSION

Imparting value based technical education for transforming young women to professionals excelling globally in academics ,research and development and industry meeting societal challenges

# Vision & Mission of Department

## VISION

To become centre of excellence in Electronics ,Communication and Instrumentation to facilitate professional education and research keeping higher level of value systems.



## MISSION

To transform young women to high quality engineers and entrepreneurs with ethical values for providing creative engineering solutions and intellectual services for the society and industry application of Electronics, Communication and Instrumentation Engineering.