



Embassy of India, Berne

# INDIA SCIENCE AND INNOVATION WEEKLY

02 October 2023

*Ask the right questions, and nature will open the door to her secrets  
- Dr. C.V. Raman, The Nobel Prize in Physics 1930*

## **IIT-Madras Launched an ARVR App 'MovingMemory'**

During the Second Annual International Conference of the Indian Network for Memory Studies, Centre for Memory Studies, at the Indian Institute of Technology (IIT-Madras), an ARVR app for memory studies 'MovingMemory' was launched. The application was developed at the Centre for Memory Studies at the institute and it captures moving models of memory through digital reconstruction and enables the user to select any desired avatar and navigate through these three-dimensional spaces. The conference sought to bridge technology studies and humanities to offer a more complex model of engaging with memory, ecology, and sustainability, besides relating to issues such as disaster studies, anticipatory governance, and durability.

## **IISc Developed a New Type of Enzyme Mimetic**

Scientists at the Materials Research Centre (MRC), Indian Institute of Science (IISc) developed a new type of enzyme mimetic that could degrade toxic chemicals in industrial waste-water effectively in the presence of sunlight. Nano-sized enzyme mimetics or "nanozymes" manufactured in the lab could mimic natural enzymes and overcome various practical challenges. In the current study, the IISc team synthesised a platinum-containing nanozyme called NanoPtA, which could be converted into powder form for industrial use.

## **IISc Developed Fully Indigenous Gallium Nitride Power Switch**

Researchers at the Indian Institute of Science (IISc) developed a fully indigenous gallium nitride (GaN) power switch that could have potential applications in systems like power converters for electric vehicles and laptops, as well as in wireless communications. The entire process of building the switch from material growth to device fabrication to packaging was developed in-house at the Centre for Nano Science and Engineering (CeNSE), IISc. To design the GaN power switch, the IISc team used a metal organic chemical vapour deposition technique developed and optimised over a decade by researchers in the CeNSE lab. It involves growing GaN alloy crystals layer by layer on a two-inch silicon wafer to fabricate a multi-layered transistor. Moving forward, the researchers planned on scaling up the device dimensions so that it could operate at high currents. They also planned to design a power converter that could step up or step down voltages. Elaborating on the partnership between CeRAI and Ericsson, IIT Madras added that networks of the future would enable easier access to high performing AI systems.

## **IIT-Madras & Ericsson Partnered for Joint Research in Responsible AI**

Centre for Responsible AI (CeRAI), Indian Institute of Technology (IIT-Madras), announced its partnership with Ericsson for joint research in the area of Responsible AI. Ericsson signed an agreement to partner with CeRAI as a 'Platinum Consortium Member' for five years. The Centre for Responsible AI is an interdisciplinary research centre that envisions becoming a premier research centre for both fundamental and applied research in Responsible AI with immediate impact in deploying AI systems in the Indian ecosystem. AI Research is of high importance to Ericsson as the 6G networks would be autonomously driven by AI algorithms.

## **Special Update: India is Committed to Achieve the Net Zero Emissions Target by 2070**

Ministry of Science & Technology announced that India is committed to achieve the Net Zero emission target by 2070 and also fully committed to contribute in attaining the United Nations Sustainable Development Goals (SDGs) - by way of Research and Innovation through international collaboration and partnerships. India is set to achieve its short term and long term targets under the Panchamrit action plan, like- reaching a non-fossil fuel energy capacity of 500 GW by 2030; fulfilling at least half of its energy requirements via renewable energy by 2030; reducing CO2 emissions by 1 billion tons by 2030; reducing carbon intensity below 45% by 2030; and finally pave the way for achieving a Net-Zero emission target by 2070.