



Embassy of India, Berne

# INDIA SCIENCE AND INNOVATION WEEKLY

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

## **Indian Institute of Astrophysics (IIA) developed Machine Learning to identify cluster stars**

Indian Astronomers at the Indian Institute of Astrophysics (IIA), an autonomous institute of the Department of Science & Technology, GoI, developed a new method based on Machine Learning that can identify cluster stars--assembly of stars physically related through common origin, with much greater certainty. Scientists have already been used this method to identify hundreds of additional stars for six different clusters up to 18000 light-years away and uncover peculiar stars. IIA team identified the crucial measurements for this task and understood the complex relationship between these parameters, using a machine learning technique called Probabilistic Random Forest. The IIA team trained their algorithm using the most likely members from a model called the Gaussian Mixture Model, which can identify clumps of co-moving stars.

## **IISc start-up PathShodh got regulatory approval for its semi-quantitative electrochemical ELISA test for COVID-19 IgM and IgG antibodies**

PathShodh Healthcare, a start-up incubated at the Society for Innovation and Development (SID), Indian Institute of Science (IISc), developed a first-of-its-kind, semi-quantitative electrochemical ELISA test for COVID-19 IgM and IgG antibodies and received an approval from the regulatory authorities for manufacture and sale from the Central Drugs Standard Control Organisation (CDSCO). The novelty of the technology is based on the measurement of electrochemical redox activity of IgM and IgG antibodies specific to the SARS-CoV-2 Spike Glycoprotein (S1). This test has been developed by leveraging PathShodh's Lab-on-Palm platform "anuPathTM", which interfaces with disposable test strips functionalised with an immunoreceptor specific to COVID-19 antibodies.

## **Indian Govt. approved PLI scheme on "National Programme on Advanced Chemistry Cell Battery Storage"**

Defence Research and On 12 May 2021, the Govt. of India approved the proposal of Dept. of Heavy Industry for implementation of the Production Linked Incentive (PLI) Scheme 'National Programme on Advanced Chemistry Cell (ACC) Battery Storage'. The adoption of the PLI scheme is aimed and focussed for achieving manufacturing capacity of Fifty (50) Giga Watt Hour (GWh) of ACC and 5 GWh of "Niche" ACC with an outlay of INR 18,100 crore. All the demand of the ACCs is currently being met through imports in India. The National Programme on Advanced Chemistry Cell (ACC) Battery Storage would reduce import dependence and support the Atmanirbhar Bharat initiative. It would also perform as a key contributing factor to reduce India's Green House Gas (GHG) emissions, which would be in line with India's commitment to combat climate change.

## **Scientists at Raman Research Institute (RRI), Bengaluru, developed Magnetometer**

Indian Railways Scientists and researchers at the Raman Research Institute (RRI), Bengaluru, an autonomous institute of the Department of Science & Technology, GoI, developed and devised a more efficient, faster, and low-cost digital receiver system 'Magnetometer' that can make precise measurements of magnetic fields. The RRI also reported that the system costs less than USD 350 for all the silicon-based hardware and associated software. The study was supported by the Department of Science and Technology and the Ministry of Electronics and Information Technology (MeitY), GoI.

## **Special Update: Indian Railways commissioned Wi-Fi at 6000th Railway station**

Indian Railways showed an extraordinary speed in digitally transforming the Indian Railways stations as it commissioned the 6000th Wi-Fi at Railway station in just 5 years. This was done under the Digital India initiative and to connect different parts of India with high-speed Wi-Fi facility and would bridge the digital divide between the rural and urban citizens thereby increasing the digital footprint in the rural villages and also enhance the user experience. The feat of achieving the commissioning of Wi-Fi at the 6000th Railway station realised on 15.05.2021 at with the commissioning of Wi-Fi at Hazaribagh Railway station. Indian Railways have started its Journey by providing Wi-Fi facility at 1st Railway station Mumbai in January 2016. Provision of Wi-Fi facilities at Railway stations is on self-sustainable basis with no cost to the Railways as the facility was provided with the help of RailTel, a PSU under Ministry of Railways and the task was carried out in partnership with Google, DOT (under USOF), PGCIL and Tata Trust.