

## NEST Newsletter (May 2021)

### Indian Science & Technology Efforts in Combatting Covid-19

#### **Ministry of AYUSH**

- Ministry of Ayush **has launched a nationwide campaign to distribute its proven poly herbal Ayurvedic drugs AYUSH-64 and Siddha drug Kabasura Kudineer** for the benefit of the vast majority of out-of-hospital COVID patients.

<https://vigyanprasar.gov.in/wp-content/uploads/vp-Covid-Newsletter-28May2021.pdf>

#### **CSIR**

- CSIR's Central Scientific Instruments Organisation (CSIO) **has developed an UV-C air duct disinfection system**. The disinfection system can be used in auditoriums, large conference rooms, classrooms, malls etc. which will provide a relatively safer environment for indoor activities in the current pandemic.

<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1720933>

- CSIR's Nagpur-based National Environmental Engineering Research Institute (NEERI) **have developed a 'Saline Gargle RT-PCR Method'** for testing COVID-19 samples. The Saline Gargle RT-PCR is an instantaneous method and results can be generated within three hours.

<https://pib.gov.in/PressReleaselframePage.aspx?PRID=1722373>

- To meet the oxygen demand and minimize the supply chain problem of transportation and storage risks related to oxygen cylinders, **CSIR-CMERI has developed 'Oxygen Enrichment' technology which has been transferred virtually to M/s. Apollo Computing Laboratories (P) Ltd.**

<https://vigyanprasar.gov.in/wp-content/uploads/vp-Covid-Newsletter-28May2021.pdf>

#### **DRDO**

- DRDO's Centre for Artificial Intelligence & Robotics (CAIR) **developed ATMAN AI, an AI-based-COVID detection application software** using chest X-rays (CXRs) which can classify the images into normal, COVID-19 and pneumonia classes.

<https://indiaai.gov.in/article/using-chest-x-rays-ai-atman-can-now-detect-covid19-induced-lung-damage>

- “Defense Institute of Physiology and Allied Sciences (DIPAS), a laboratory of DRDO, **has developed an antibody detection-based kit 'DIPCOVAN'**, the DIPAS-VDx COVID-19 IgG Antibody Microwell ELISA for sero-surveillance. The DIPCOVAN kit can detect both spike as well as nucleocapsid (S&N) proteins of SARS-CoV-2 virus with a high sensitivity of 97 per cent and specificity of 99 per cent.”

<https://pib.gov.in/PressReleasePage.aspx?PRID=1720604>

#### ICMR

- Phase 3 trial results of the COVAXIN, developed by the Indian Council of Medical Research (ICMR) in partnership with Bharat Biotech International Limited (BBIL), **have shown an interim vaccine efficacy of 81% in preventing COVID-19.**

[https://www.icmr.gov.in/pdf/press\\_realease\\_files/Press\\_Release\\_ICMR\\_03\\_March\\_2021.pdf](https://www.icmr.gov.in/pdf/press_realease_files/Press_Release_ICMR_03_March_2021.pdf)

#### ISRO

- “Indian Space Research Organization (ISRO) **is repurposing existing resources, scaling up the production capacity of their facilities and also transferring technology to aid the country’s fight against Covid-19.** ISRO Propulsion Complex (IPRC) in Mahendragiri, Tamil Nadu, has been supplying liquid oxygen to the state governments in Tamil Nadu and Kerala.”- Dr. K. Sivan, Director, ISRO.

<https://www.dnaindia.com/india/report-exclusive-isro-turns-savior-amid-india-s-covid-19-battle-supplying-o2-gas-tanks-technology-2890025>

#### IISc

- Researchers at the Indian Institute of Science, Bangalore **have developed a light weight, mobile-friendly efficient deep learning model for detection of COVID-19** using lung ultrasound images.

<https://vigyanprasar.gov.in/wp-content/uploads/vp-Covid-Newsletter-11May2021.pdf>

#### IISER

- Indian Institute of Science Education and Research (IISER) in Bhopal **has developed an affordable oxygen concentrator 'oxycon' to meet the rising demand of medical oxygen** amid the second wave of the coronavirus pandemic.

<https://vigyanprasar.gov.in/wp-content/uploads/vp-Covid-Newsletter-28May2021.pdf>

## General News/ Updates

### DoT

- The Department of Telecommunications (DoT) on 04 May, 2021 **has approved permissions to Telecom Service Providers (TSPs) for conducting trials** for use and applications of 5G technology. The experimental spectrum is being given in various bands which include the mid-band (3.2 GHz to 3.67 GHz), millimeter wave band (24.25 GHz to 28.5 GHz) and in Sub-Gigahertz band (700 GHz).

<https://www.pib.gov.in/PressReleaseDetailm.aspx?PRID=1715927>

### MeitY

- The Ministry of Electronics and Information Technology (MeitY) has **formulated a policy paper entitled "Circular Economy in Electronics and Electrical Sector"**, to deal with e-waste. The government has initiated efforts to further circular economy and ensure zero to minimal wastage in the use of electronics and electrical sector.

<https://www.meity.gov.in/content/circular-economy-electronics-and-electrical-sector-policy-paper-and-action-plan>

- Smart city living labs at the International Institute of Information Technology (IIIT) Hyderabad together with the Ministry of Electronics and Information Technology (MeitY) and Smart Cities Mission **have launched a Smart City Startup Challenge**. This is aimed to support and scale emerging tech-startups that are involved in developing sustainable, inclusive, and innovative solutions for smart cities.

<https://smartcityresearch.iiit.ac.in/challenge02.html>

### DRDO

- The Defense Research and Development Organization (DRDO) **has developed the near isothermal forging technology to produce high-pressure compressors (HPC) discs** out of titanium alloy. This is a crucial technology for establishing self-reliance in aero-engine technology and India has joined a league of select few nations with this technology.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1722418>

### HAL

- Hindustan Aeronautics Limited (HAL) and Rolls-Royce **have signed a MoU to establish packaging, installation, marketing and services support** for Rolls-Royce MT30 marine engines in India for Naval applications.

[https://hal-india.co.in/Rolls-Royce%20and/ND\\_343](https://hal-india.co.in/Rolls-Royce%20and/ND_343)

## ISRO

- **ISRO will partner NASA, which will design new Earth-focused missions to provide information to guide efforts** related to climate change, disaster mitigation, fighting forest fires, and improving real-time agricultural processes.

<https://www.nasa.gov/press-release/new-nasa-earth-system-observatory-to-help-address-mitigate-climate-change>

## IIT

- IIT Guwahati researchers **have created a 'smart' window material that would allow for automatic climate control in buildings and cut down on energy usage** and reduce carbon emissions.

<https://twitter.com/IITGuwahati/status/1397105432158633985>

- IIT Delhi **will create a new center named "Optics and Photonics Center"** with focus on optoelectronics, optical data storage, optical computing, microscopy, biomedical optics, nonlinear optics, IR optics, terahertz optics, photonic circuits, ultra-fast optics, and photonic quantum technologies etc.

[https://home.iitd.ac.in/show.php?id=32&in\\_sections=News](https://home.iitd.ac.in/show.php?id=32&in_sections=News)

- **IBM has partnered with IIT Madras, to advance training and research in quantum computing.** The selected institutes' faculty/students will be able to access IBM quantum systems, quantum learning resources, and quantum tools over IBM Cloud for education & research.

<https://twitter.com/iitmadrass/status/1399264119539191809>

- IIT Ropar **has developed a device that records ambient temperature during the transportation of vaccines, body organs and blood.** 'AmbiTag' is a USB-shaped device that continuously records the temperature of its immediate surroundings from -40 to +80 degrees in any time zone for a full 90 days on a single charge.

<https://twitter.com/iitrpr/status/1399319516362989568>

## Ministry of Defense

- "In pursuance of Prime Minister Shri Narendra Modi's endeavor of 'Atmanirbhar Bharat' and to boost indigenization in the Defense sector, Raksha Mantri Shri Rajnath Singh, on

31 May, 2021, **has approved a proposal of the Department of Military Affairs, Ministry of Defense (MoD) to notify the ‘Second Positive Indigenization List’ of 108 items.** The list comprises complex systems, sensors, Helicopters, Corvettes, AEW&C systems, Battle Tank Engines, Missile Systems etc.

<https://www.pib.gov.in/PressReleaseDetailm.aspx?PRID=1723148>

### **Developments in the Private Sector**

#### **RELIANCE**

- "To meet the demands of Streaming Video, Remote Workforce, 5G, IoT, and beyond, **Jio is taking a leadership role in the construction of**, India-centric IAX and IEX subsea cable systems," - Reliance Jio President Mathew Oommen

<https://www.thehindu.com/sci-tech/technology/reliance-jio-joins-global-consortium-to-build-undersea-cable-network/article34586515.ece>

- "Google is **working with partner Reliance Jio on building an affordable smartphone** and that work is underway on the project." - Google CEO Sundar Pichai

<https://trak.in/tags/business/2021/05/29/google-reliance-jio-join-forces-for-launching-low-cost-smartphones-in-india/>

### **ARTICLES/ EVENTS OF INTEREST**

#### **NITI Aayog**

*Technology at the core of foreign aid distribution, ensuring full transparency – NITI Aayog CEO.*

- "The task of managing the flow of foreign aid is massive and technology is at the core of foreign aid distribution, ensuring full transparency." - Niti Aayog CEO Amitabh Kant, who heads a panel mandated to monitor the distribution of relief material.

<https://timesofindia.indiatimes.com/business/india-business/technology-at-the-core-of-foreign-aid-distribution-ensuring-full-transparency-niti-aayog-ceo/articleshow/82884673.cms>

#### **Observer Research Foundation (ORF)**

*Thank you for your concern, Twitter—now fall in line-* (Article by Gautam Chikermane)

- "For a company that has changed the way we consume news and information, engage with institutions and individuals, and express ourselves through words, images, and

videos, Twitter India is displaying an arrogance that, in the world's largest democracy, stands on little but virtue-signaling."

<https://www.orfonline.org/expert-speak/thank-you-for-your-concern-twitter-now-fall-in-line/>

*Shockproofing India's labour market: Unlocking the livelihoods potential in the platform economy–*  
(Article by SREELAKSHMI RAMACHANDRAN)

- Fourth Industrial Revolution (4IR), will have an impact the way internet has had, radically altering the way we live, move and work. This feat of scale is unprecedented, and technology has pervaded every sphere of human activity including accessing livelihoods, where digital platforms are leading the transformation in moving away from traditional labour contracting to a demand-based work allocation system. Technology has radicalised even the labour market.

<https://www.orfonline.org/expert-speak/shockproofing-indias-labour-market/>

*The equities of telco cyber exploitation: 5G and the Huawei ban -* (Article by Pukhraj Singh)

- "The Indian government has commenced the trials of 5G technology, but the Chinese company Huawei is notably absent from the list of approved vendors."

<https://www.orfonline.org/expert-speak/the-equities-of-telco-cyber-exploitation-5g-and-the-huawei-ban/>

*The material needs of the green transition -* (Article by Annapurna Mitra)

- "As India's industrial sector grows, creating a regular and stable supply of clean energy will be essential for meeting the country's climate targets".

<https://www.orfonline.org/expert-speak/material-needs-green-transition/>

### **Vivekananda International Foundation**

*The United States and India: A Digital Partnership in Need of a Strategy –* (Article by Arjun Kang Joseph and Rudra Chaudhuri)

- "India-US relations have transformed in the last two decades. The defense and strategic partnership remains the silver-lining in an equation increasingly shaped by the rise and bellicosity of China. Yet, there is another aspect of this relationship that has been largely neglected: the need to bridge growing divergences in each countries' approach to the digital economy. This paper outlines these divergences and suggests ways forward."

<https://www.vifindia.org/sites/default/files/national-security-vol-4-issue-2-article-AJoseph&RChaudhuri.pdf>

## **Gateway House**

### *Natural intelligence is vital for AI ethics - (Talk by Chaitanya Giri)*

- “On 25-26 May, 2021, United Nations India held a Virtual Conference on Ethics of Artificial Intelligence (AI): Exploring pluri-perspectives in conjunction with OP Jindal University. Chaitanya Giri, Fellow, Space and Ocean Studies Programme, spoke on 'Operationalizing AI ethics from a Pluri-Philosophical Lens'.”

<https://www.gatewayhouse.in/natural-intelligence-vital-ai-ethics/>

### *Cyber-attacks on critical infrastructure: Is India ready? – (Article by Samir Patil)*

- The ransomware attack on Colonial Pipeline in the U.S. has underlined the importance of cyber security in critical infrastructure. India has not escaped the brunt of a recent global surge in cyber-attacks. Though New Delhi has taken steps to protect critical infrastructure, problems in information sharing of threat vulnerabilities impede an effective response.

<https://www.gatewayhouse.in/cyber-attacks-on-critical-infrastructure-is-india-ready/>

### *Big FinTech is here! – (Article by Ambika Khanna)*

- “The future is likely to see ‘Big FinTech’ replace ‘Big Tech’. But this time around, India can be part of the story from the ground up. India has been ahead of the fintech game on the technology, regulatory and consumer fronts.”

<https://www.gatewayhouse.in/big-fintech-is-here/>

## **Compiled by:**

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