

# YEAR-END REVIEW-2021- COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

Relevant for: Science & Technology | Topic: Achievements of Indians in science & technology

## **PM delivers inaugural address at National Metrology Conclave organized to mark the 75th Foundation Day of CSIR-NPL**

Prime Minister Shri Narendra Modi delivered the inaugural address at the National Metrology Conclave 2021 organised by the Council of Scientific and Industrial Research -National Physical Laboratory (CSIR-NPL), New Delhi on its 75th year of inception.

CSIR-NPL, New Delhi, is one of the few premier laboratories established under CSIR before independence on January 04, 1947. As a beginning of the Platinum Jubilee year and to commemorate this special day as its NPL Foundation Day Celebrations, CSIR-NPL organised a National Metrology Conclave under the theme 'Metrology for the Inclusive Growth of the Nation'. Vice-President, CSIR and Union Minister of Science & Technology, Earth Sciences, and Health & Family Welfare, Dr Harsh Vardhan and Principal Scientific Advisor Dr K VijayRaghvan graced the function.

## **PM chairs meeting of CSIR Society**

Hon'ble Prime Minister Shri Narendra Modi chaired a meeting of the CSIR Society on the 04<sup>th</sup> of June 2021 through videoconference. Speaking on the occasion, the Prime Minister remarked that the Corona pandemic has emerged as the biggest challenge of this century. But whenever there was a big humanitarian crisis in the past, science has prepared the way for a better future. He added that the basic nature of science is to create new strength by finding solutions and possibilities during crises. He urged CSIR to take society and industry along and move forward in a definite way with a roadmap.

## **COVID-19 Mitigation Initiatives**

### **Launch of aerial delivery of Covid-19 vaccine through Octacopter drones in Jammu**

Hon'ble Union Minister Dr Jitendra Singh, launched the aerial delivery of Covid-19 vaccine through Octacopter drones in Jammu on 27<sup>th</sup> November 2021. The Octacopter drones indigenously developed by CSIR-National Aerospace Laboratories (CSIR-NAL) are medium class BVLOS multi-copter UAV. The UAV is made out of lightweight carbon fiber foldable structure for ease of transportation and has unique features like autonomous guidance through dual redundant MEMS based digital Autopilot with advanced flight instrumentation systems. NAL Octacopter is integrated with Powerful onboard embedded computer and latest generation sensors for versatile applications like agricultural pesticide spraying, crop monitoring, mining survey, magnetic geo survey mapping etc. The demo was conducted from CSIR-IIIM, Jammu to Government Sub-District Hospital, Marh, Jammu in 15 minutes covering a distance of 15 kilometers. The first consignment of 50 vials of COVID vaccines was dropped by the Drone near the International Border (IB) in the Marh area.

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CSIR-NAL scientists along with medical professionals from CSIR-IGIB came forward to address

the shortages of ventilators in the beginning of the Covid-19 pandemic and indigenously designed and developed the non-invasive Bilevel Positive Airway Pressure Ventilator – SwasthVayu, with additional features to treat Covid-19 patients and make the country self-reliant. The expert committee constituted by Director General of Health Services, Government of India, has evaluated the performance of the device. The expert committee, after careful evaluation, concluded that SwasthVayu might be used on Covid-19 patients who require oxygen supplementation up to 35%. CSIR-NAL has commercialized this technology with six private companies and one of these companies (in the MSME category) has set up the production facilities for almost 300 units per week. CSIR-NAL bagged an order for supply of 1200 SwasthVayu machines to Delhi Government, and the execution & installation at various hospitals in Delhi.

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Scientists of Nagpur-based National Environmental Engineering Research Institute (NEERI) under CSIR have achieved another milestone in this journey, with the development of a 'Saline Gargle RT-PCR Method' for testing COVID-19 samples. The Saline Gargle method offers a bunch of attractive benefits, all rolled into one. It is simple, fast, cost-effective, patient-friendly and comfortable; it also offers instant results and is well-suited for rural and tribal areas, given minimal infrastructure

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Bharat Biotech International Ltd. (BBIL) emerged as the frontrunner in the development of indigenous vaccine for COVID-19, COVAXIN™. The vaccine developed by BBIL is a highly purified, whole virion, inactivated SARS-CoV2. The vaccine is formulated with Algel-IMDG, which contains chemisorbed TLR7/8 agonist onto aluminium hydroxide gel to generate the requisite type of immune responses. Owing to the significant role played by TLR7/8 agonist molecule in the performance of a vaccine, CSIR constituent lab, Indian Institute of Chemical Technology (IICT) based in Hyderabad, was approached by BBIL to develop the synthetic route for the agonist molecule with indigenous chemicals at an affordable price and with highest purity. This agonist molecule has aided BBIL to scale up the production of the adjuvant.

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To start with, the States of Rajasthan, Gujarat, Punjab and Haryana are being taken up for this latest heli-borne survey and the beginning was made today from Jodhpur in Rajasthan. Speaking on the occasion, Dr Jitendra Singh said that the water technologies of CSIR from source finding to water treatment would benefit millions of people across the country and positively contribute to Prime Minister Narendra Modi's "Har Ghar Nal Se Jal" as well as "doubling farmers' income" goals.

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A MoU was signed between CSIR and National Council of Science Museums (NCSM) in the presence of Shri G. Kishan Reddy, Union Minister of Culture, Tourism and DoNER and Union Minister of State (Independent Charge) Science & Technology, Dr Jitendra Singh. The MoU aims at setting up Science Museums at select CSIR Laboratories to promote scientific curiosity and awareness among the common people across all sections of society.

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In a view to elevate modern technical support to paramilitary forces engaged in maintaining law and order situation; train and equip them with advanced options, CSIR's Central Mechanical Engineering Research Institute (CMERI) demonstrated its three innovative variants 'Compact, Medium, Heavy' category of Mob Control Vehicles (MCVs) to a team of MHA recommended members under leadership of IG (RAF), CRPF. The demonstration was successfully carried out at Parade Ground, CRPF Group Centre, Gurugram recently.

## **CSIR-CDRI and Marc Laboratories Ltd, India sign License agreement for developing drug for coronary and cerebral artery diseases**

CSIR-Central Drug Research Institute (CDRI), Lucknow is committed to support Pharma Cluster in Uttar Pradesh and has tied up with UP-based Marc Laboratories Pvt. Ltd., India, a young progressive enterprise with operating base in 13 other states. It has signed an agreement for the development of a synthetic compound S-007-867 as modulator of blood coagulation cascade, in particular as inhibitor of collagen induced platelet aggregation. This may be helpful in treating patient population of coronary and cerebral artery diseases. The institute has recently obtained the permission to initiate the Phase I clinical trials for the drug



## **Dr. Jitendra Singh inaugurated with one-day awareness cum training programme for farmers, Agriculture Start-Ups and young entrepreneurs in Jammu under CSIR- Aroma Mission Phase-II**

Hon'ble Union Minister Dr. Jitendra Singh inaugurated the one-day awareness cum training programme for farmers under CSIR-Aroma Mission Phase-II at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, and further During interacted with Agriculture Start-Ups, young entrepreneurs and farmers. Dr Jitendra Singh flagged off two mobile vans for awareness the Mission and inspected Stalls showcasing the processed products of aromatic plants from the UT. He also unveiled a song in Baderwahi language composed by artist Maloop Singh for mass awareness to attract farming community to embrace lavender farming.

## **CSIR celebrates 20 years of India's Traditional Knowledge Digital Library, the first of its kind globally**

CSIR launched a new campaign of highlighting 80 success stories from the organization as it is set to turn 80 years old in 2022. This campaign was launched recently as CSIR's Traditional Knowledge Digital Library (TKDL) completes two decades of safeguarding India's Traditional Knowledge. To commemorate the two decades' journey, a webinar "Two Decades of TKDL - Connecting to the Future" was organized. The distinguished dignitaries who graced the program were Dr. Raghunath A. Mashelkar, Former DG, CSIR & Secretary, DSIR; Vd. Rajesh Kotecha, Secretary, Min of AYUSH; Shri Guruprasad Mohapatra, Secretary, DPIIT and Ms. Begona Venero, Sr. Counsellor, Traditional Knowledge Division, WIPO, Geneva, and Dr. Shekhar C. Mande, DG, CSIR and Secretary, DSIR.

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## **SNC/RR**

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CSIR-Central Drug Research Institute (CDRI), Lucknow is committed to support Pharma Cluster in Uttar Pradesh and has tied up with UP-based Marc Laboratories Pvt. Ltd., India, a young progressive enterprise with operating base in 13 other states. It has signed an agreement for the development of a synthetic compound S-007-867 as modulator of blood coagulation cascade, in particular as inhibitor of collagen induced platelet aggregation. This may be helpful in treating patient population of coronary and cerebral artery diseases. The institute has recently obtained the permission to initiate the Phase I clinical trials for the drug

### **Dr. Jitendra Singh inaugurated with one-day awareness cum training programme for farmers, Agriculture Start-Ups and young entrepreneurs in Jammu under CSIR- Aroma Mission Phase-II**

Hon'ble Union Minister Dr. Jitendra Singh inaugurated the one-day awareness cum training programme for farmers under CSIR-Aroma Mission Phase-II at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, and further During interacted with Agriculture Start-Ups, young entrepreneurs and farmers. Dr Jitendra Singh flagged off two mobile vans for awareness the Mission and inspected Stalls showcasing the processed products of aromatic plants from the UT. He also unveiled a song in Baderwahi language composed by artist Maloop Singh for mass awareness to attract farming community to embrace lavender farming.

### **CSIR celebrates 20 years of India's Traditional Knowledge Digital Library, the first of its kind globally**

CSIR launched a new campaign of highlighting 80 success stories from the organization as it is set to turn 80 years old in 2022. This campaign was launched recently as CSIR's Traditional Knowledge Digital Library (TKDL) completes two decades of safeguarding India's Traditional Knowledge. To commemorate the two decades' journey, a webinar "Two Decades of TKDL - Connecting to the Future" was organized. The distinguished dignitaries who graced the program were Dr. Raghunath A. Mashelkar, Former DG, CSIR & Secretary, DSIR; Vd. Rajesh Kotecha, Secretary, Min of AYUSH; Shri Guruprasad Mohapatra, Secretary, DPIIT and Ms. Begona Venero, Sr. Counsellor, Traditional Knowledge Division, WIPO, Geneva, and Dr. Shekhar C. Mande, DG, CSIR and Secretary, DSIR.

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