Newsletter of BIONEST-IASST

In Association with ISVEC

CREATORS

JULY ISSUE

Volume 8

Editor's Desk

It is a matter of gratification to release the July Issue (Vol-08) of the NEWSLETTER- CREATORS. Although we were impeded by pandemic yet we moved ahead with dedication and perseverance to promote scientific excellence. The current issue highlighted the webinars and events conducted at IASST from April to June to celebrate 75th Year of India's Independence *"Azadi Ka Amrut Mahotsava."* I strongly believe the contents of the newsletter shall continue to be an important conduit for the scientific community to develop the spirit of entrepreneurship from their wet lab research. Lastly, I would like to thank the editorial team who worked proactively to format and edit the content.

Editor
Prof. Ashis Kr. Mukherjee
DIRECTOR-IASST, Ghy-35

2021

WEBINARS AND EVENTS CONDUCTED

WORLD HEALTH DAY
(7th April 2021)

Dr. Daboo Patwari, Department of Internal Medicine at Hayat Hospital delivered a Talk on Post Covid Complications and Covid Vaccine. Dr. B.K. Baishya, Prof. & Head of Department of Neurosurgery, Gauhati Medical College & Hospital gave a talk on "Stroke-it can strike anybody."

WORLD EARTH DAY
(22nd April 2021)

Prof. B. N. Goswami, SERB Distinguished Fellow at Cotton University and Former Director, Indian Institute of Tropical Meteorology, Pune delivered a talk on "Climate Emergency: The Earth's Warning to Stop and Reverse Anthropogenic Degradation of its Environment." He opined that the mean rise of temperature by 1 degree Celsius accompanied by global warming, climate change and mass extinctions are indicators of Climate Emergency and this is high time when we all must act.

NATIONAL LECTURE SERIES-I
(13th April 2021)

Professor Debi P. Sarkar, PhD, FAScT, FNASc, FASc, FNA, Shanti Swaroop Bhatnagar Awardee (Biology, 1998), Former Dean/Head, JC Bose National Fellow, Director, IISER Mohali, MoE (Erstwhile MHRD) delivered a talk on "Glorious Past- Exciting Present and Encouraging Future of Biological Research in India: From Basic Science to translational exploration."

WORLD INTELLECTUAL PROPERTY DAY
(26th April 2021)

Mr. Siddhartha Devnath(Scientist-C) who is heading the Patent Information Centre of Assam Science Technology & Environment Council (ASTEC), Guwahati, Assam delivered a talk on "Intellectual property rights- The steps of technology evolution." He discussed on different forms of IPR like: Patents, Design, Trademark, Geographical Indications, Copyright, Semiconductor Integrated Circuits Layout Design and Plant Variety Protection & Farmer's Rights.

IASST – Ghy, Assam, reopens RT-PCR Testing for Covid-19
(28th April 2021)

Prof. Ashis K. Mukherjee, Director of IASST, reopened the fully equipped RT-PCR based facility, and reiterated its capacity to efficiently perform 1000 tests per day, to reinforce the Assam Government's fight against the pandemic. He endorsed the importance of validated test reports to enhance early detection, disease surveillance, and underscored research potential of this platform at IAAST, in combating Covid -19.

DST FOUNDATION DAY
(3rd May 2021)

Prof. T. Ramasami, Padma Bhushan, Former Secretary, Department of Science and Technology and Former Director of the Central Leather Research Institute, Chennai, India delivered a talk on "NER as Treasure House for Original Research." Followed by this, Prof. P. Balaram, Padma Bhushan, Professor, National Centre for Biological Sciences, Bangalore and Former Director, IISc, Bangalore gave a talk on "Chemistry, Biology and the Unity of Nature."

NATIONAL TECHNOLOGY DAY
(11th May 2021)

The first speaker was Mr. Stanzin Tsephel, Director, South Asia for Bremen Overseas Research and Development Association (BORDA) rendered atalk on Nature Based solutions for solving Sanitaion problems. The second speaker was Mr Arumugam Kalimuthu, Programme Director at Wash Institute and his topic of talk was Application of Technology in Urban Waste Management.

WEBINARS AND EVENTS CONDUCTED

ANTI-TERRORISM DAY
(21st MAY 2021)

IASST organized a pledge taking ceremony in the institute premises at 11 am via online digital platform to avoid public gathering. The Director of IASST Prof. A. K. Mukherjee administered an oath of non-violence and tolerance to the members of the faculty, staff and research scholars and he dissuade any kind of violence and terrorist activities. Further, it was unanimously resolved that IASST will stand against any form of cruel act of terrorism and will spread the message of humanity, brotherhood, goodwill, and friendship.

INTERNATIONAL DAY OF BIOLOGICAL DIVERSITY
(22nd May 2021)

Dr. Ramesh Krishnamurthy, Scientist-Wildlife Institute of India & Adjunct Professor, Faculty of Forestry at the University of British Columbia, Canada delivered a lecture on "Biodiversity and Technology: Towards Integrated Nature- Culture Solutions." He opined that India has 30% of World's Flora and 7.31 % Global Fauna. He gave insights on different technology such as Remote sensing, Camera traps, GPS etc. used for combating and managing Ecological Disaster.

WORLD ENVIRONMENT DAY
(5th June 2021)

Welcome address was given by Dr. Arundhuti Devi, Associate Professor along with an introduction to the present status of the Deepor Beel ecosystem. Prof. Ashis K. Mukherjee, Director, IASST gave the inaugural address by highlighting the ongoing research activities at the Institute in multifarious areas of ecology and environment. Prof. Krishna Gopal Bhattacharyya, presently Professor of Chemistry, Assam Don Bosco University delivered a speech on this year's theme of the World Environment Day, "Ecosystem Restoration." Professor Ramkrishna Sen, Professor of Biotechnology, Indian Institute of Technology, Kharagpur spoke on UN-SDG-inspired Algae-driven Journey through the Contemporary R&D Challenges of Environment, Energy and Water. Prof. Banwari Lal, Senior Director, Environmental and Industrial Biotechnology Division, The Energy and Resources Institute, New Delhi; India showcased a case study on restoring Oil Spill/oil-contaminated site of Kuwait Oil Company.

INTERNATIONAL DAY OF YOGA
(21st June 2021)

The 7th International Day of Yoga was observed at IASST-Guwahati using online medium. The theme for this year's International Yoga Day is "Yoga for Wellness". The participants of IASST viewed a one-hour video of Common Yoga Protocol by Ministry of Ayush and learned the different Yoga practices like Nadi Sodhana, Shitali , Ujjayi, Kapalabhati , Anulom-Vilom, Bhramri , Bhastrika & Moorchha, Standing Tadasana (The Palm tree pose) Katichakrasana (The Half wheel pose) Sitting Ushtrasana (The Camel pose) Sasakasana (The Hare pose) Vakrasana (The Spinal twist pose) Prone Dhanurasana (The Bow pose) Makarasana (The Crocodile pose) Supine Viparit Karani (Leg up the wall pose) Halasana (The Plough pose) Saral Matsyasana (The Fish pose) Shavasana (The Corpse pose) and others like : Uttana Mandukasan, Vajrasana, Vrikshasana, Bhadrasana, Trikonasana, Setubandhasana,Sasakasana, Salabhasana, Pawanmuktasana, Pada Hastasana, Bhujangasana, Ardha Chakrasana. Prof. Ashis K. Mukherjee, Director, IASST with students, faculty, officers and staff members attended the session.

"TALKS BY SCIENTIST AT AI"
(28th June 2021)

Dr. (Mrs) Rajlakshmi Devi, Associate Professor and HOD, Life Sciences division delivered a lecture on the topic "Traditional knowledge to drug development: Research and key challenges". She discussed the important role played by traditional knowledge in the development of new drugs which is the need of the hour considering the tremendous side effects associated with synthetic drugs. She further emphasized the reuse of agricultural waste material like pseudo-stem of banana for production of medical device like "suture material" and processing as bio-fertilizer. She also shared some initiatives taken by IASST to educate and train farmers from two villages of Kamrup District of Assam how to effectively use banana plant as a source of income to sustain their livelihood.

BINER 2021 Building Sustainable Incubator Ecosystem in North East Region

On 20th May 2021, an event was organized by BIRAC, Govt of India and BIRAC-BRTC Centre (BIRAC Regional Techno entrepreneurship Promotion Centre at KIIT TBI BioNEST) marking the 75 years of India's Independence celebrations in August 2022- "*Azadi Ka Amrit Mahotsav*" Govt aligned with the theme **विज्ञान से विकास- सशक्त भारत.**

The program was on Launching East and North East Region BioNest Cluster for bringing together all the BioNEST supported incubators spread across the East and North East Region of India and to support growing ecosystem of innovation and entrepreneurship for biotech startups and SMEs in E&NE. It was also the curtain raiser event for BINER-2021 - A training program from 26th-29th May 2021 wherein IASST had nominated Dr. Tania Paul Das (Manager S&T) and Chandrabhan Kakoty Manager (Incubation and outreach) for participation.

BINER-2021: Building Sustainable **I**ncubator Ecosystem in **N**orth **E**ast **R**egion was an online training series designed for business incubation mangers and relevant stakeholders, particularly from the NE region wishing to increase their understanding and know-how of the incubation process to help build them their capacity and influence the success of their incubators. The modules gave a 360-degree holistic view to Incubation Managers who are seeking to understand the building blocks of establishing and running a sustainable Incubator.

On Day 1: Dr Mrutyunjay Suar, CEO, KIIT-TBI gave the welcome and Opening Remarks

Session 1: Important Elements for Building a Sustainable Incubation Centre-Dr. D. Yogeswara Rao. His talk was on types of Incubation Centres (ICs) based on Sector and revenue models. He emphasized on Need for Innovation and Entrepreneurship & Putting North East in the Innovation Map. He opined that the key to successful incubation are- Structure, Systems, Strategy, Skills, Time frame and Branding with Supportive policies & Transparent Governance.

Dr D. Yogeswara Rao
Former Adviser, O/o PSA to GoI

Session 2: Kickstarting an Incubator-Dr. Mrutyunjay Suar His talk was on Feasibility Study and Mapping Capabilities and Key components of TBI & Operational Plan, Building Team. For establishing an authentic incubator, the Incubation Managers should focus on Policies, agreements and certifications, Capacity building for students/women and rural inventors, connecting start-ups to pool of mentors and enablers. Lastly gave a glimpse on his journey from Existence to excellence.

Dr Mrutyunjay Suar
CEO, KIIT-TBI

Session 3: BIRAC enabling ecosystem to Promote Innovation & Entrepreneurship in NER-Dr. Manish Diwan. The talk was on Nurturing innovation from ideation to commercialization. BIRAC believes that Biotech sector has requirement for heavy investment, high risk, long gestation period, and low success rate. However,if successful then rewards are also high. BIRAC provides initial fellowship grant & prototype grant starting from 15 - 50 Lakhs and seed fund upto 700 lakhs through its entrepreneurial schemes.

Dr Manish Diwan
Head-Strategic Partnership & Entrepreneurship Development, BIRAC

Session 4: Funding Schemes and BIRAC-BRTC Centre: Building the Capacity in North East - Ms. Taranjeet Kaur. She delivered a talk on different funding schemes like SITARE, E-Yuva & Sparsh with special emphasis on purpose of BioNest Scheme and its regional clusters- BRIC (IKP), BREC(C-CAMP), BRBC (Venture Centre) and BRTC (KIIT TBI)

Ms Taranjeet Kaur
Manager-Entrepreneurship Development
BIRAC

Session 5: Need of BioNEST Incubator in Entrepreneurship Development-Dr G. Narahari Sastry. He talked about different revolutions in India like:- White revolution: Milk; Silver revolution: Eggs; Red revolution: Tomato; Blue revolution: Fish; Yellow revolution: Oil seeds; Black revolution: Petroleum products; Golden revolution: horticulture; Green revolution: Food grains, Round revolution: Potato; Brown revolution: Leather/cocoa, Grey revolution: Fertilizers; Pink Revolutions: Drugs. He discussed the financial support given by North East Venture Fund, Assam Startup Policy, Numaligarh refinery limited's-iDEATION etc.

Dr G. Narahari Sastry
Director, CSIR-NEIST, Jorhat

Session 6: Building the Business Plan & Sustainability Path of Incubator-Dr Namrata Misra. Her talk was on Different funding schemes for infrastructure development, Technology enabling centre for nurturing established incubator, Source of funds for steady inflow of tech- driven start-ups, Program management fees & twining proposals for technology deployment. She emphasized on the rules of sustainability like Good incubation policy & human resource, credentials, soft skills, networking, industry partners & CSR portfolio.

Dr Namrata Misra
Head Bioinnovations, KIIT-TBI

Session 7: Building Pipelines for TBI: Incubation Process, Activities & Programmes-Dr. V. Premnath, Head & Ms Soma Chattopadhyay: Their talk was on Guidelines/ template for setting up incubator charges, Agreement draft copy for the start-ups/incubatees, Service Contracts & Other legal documents. In short they highlighted Incubation workflow starting from lead generation to lead management and post incubation strategies.

Dr. V. Premnath
Head, NCL Innovations & Director, Venture Center

Session 8: Enabling Startups in getting Grants: Perfect Pitching- Dr. Shikha Dhawan gave a vivid picture of the strategy to pitch which includes value proposition, technical feasibility of the idea, team strength, novelty, commercialization strategy and budget. Writing and selling your proposal should have impactful pitching and have enterprising approach with SMART (Specific, Measurable, Attainable, Realistic and Time bound) objectives.

Dr. Shikha Dhawan
Director Programs, SHARE India

Session 9: Empowering Start-ups: Mentorship-Dr. Shriram Raghavan. In his session he talked on how to empower high risk business and about 6 important Cs- ***C***onceptualize by identifying the pain point, ***C***ommunicate with patients, funding agency & collaborators, ***C***ollaborate for mapping the space, mining the work, ***C***o-incubation by listing incubators and linking them, ***C***apitalize by exploring partnering avenues and ***C***ontract-out capability and capacity.

Dr. Shriram Raghavan
VP, Jananom Technologies

Session 10: Safeguarding Innovations & Building IP Portfolio-Mr. Asutosh Nanda: He put forth his views on advantages of patenting, steps involved in protecting innovations and processes at Indian Patent office. Mr. Vinay Mehta gave a nutshell of Technology Transfer wherein they monitor institutional IP Policy, select inventions, orchestrate the IP suite and build strategy for commercialization.

Mr Vinay Mehta
Head-Technology Transfer Office, KIIT-TBI

Mr Asutosh Nanda
Lead-Technology Enabling Centre, KIIT University

Session 11: Building Networking & Partnership in North East-Dr. Sriparna B Baruah: She has talked about the possibilities of Backward linkages and cluster development for idea generation and creation of pipeline for pre incubation support. She highlighted the strength of IIE as they have strong network with educational institutions, offices in each 8 states of NER, database of entrepreneurs and craft based incubation centres. She also tried to connect the missing link between types of sectors and stakeholders and access of commom people to market.

Dr. Sriparna B Baruah
Head, Centre for Industrial Extension, IIE Guwahati

Session 12: Panel discussion on Best Practices in Technology Incubation. Moderator-Dr Mrutyunjay Suar, CEO, KIIT-TBI Panelists: • Dr. USN Murty, Director & Chairman, BioNEST BIRAC, DBT, Govt. of India, NIPER - GUWAHATI • Dr. G N Shastry, Director, CSIR-NEIST, Jorhat • Dr. Shriram Raghavan, Vice President at Jananom Technologies • Mr. Rajneesh Kumar, Technology Transfer Officer, Birla Institute of Technology & Science, Pilani

Dr USN Murty
Director & Chairman, BioNEST NIPER Guwahati

Mr Rajneesh Kumar
Technology Transfer Officer, BITS, Pilani

List of Participants who attended BINER-2021

Assam	
CSIR-NEIST, Jorhat	2
Guwahati Biotech Park	2
Cotton University, Guwahati	1
IIT Guwahati	2
IASST Guwahati	2
NIPER Guwahati	2
Tocklai Tea Research Institute	1
North East Agriculture Technology Entrepreneurs Hub (an AIC-AAU Incubator)	2
Manipur	
IBSD Imphal	1
Green Foundation	2
MSME Technology Centre Imphal (GOI)	2
Meghalaya	
IBSD Shillong	1
NEHU Tura Campus	2
Mizoram	
Mizoram University BioNEST (DBT)	2
Mizoram University Incubator (DST)	1
Nagaland	
Nagaland Tool Room and Training Centre	1
Sikkim	
Department of Science & Technology, Govt. of Sikkm	1
Tripura	
RKVY RAFTAAR, CAU	3

The program was supported by:

Activated carbon from Tea waste

Manash Jyoti [1], N.C. Talukdar [2] and Devasish Chowdhury [3]

[1] Dr. Manash Jyoti Deka is currently Assistant Professor at Department of Chemistry, B.P Chaliha College, Nagarbera, Kamrup (R), Assam.
[2] Dr. N. C. Talukdar is Former Director, Institute of Advanced Study in Science and Technology, Guwahati. Currently Vice-Chancellor at Assam Downtown University, Ghy.
[3]Devasish Chowdhury is Associate Professor at Institute of Advanced Study in Science and Technology, Guwahati.

Activated carbon (AC),or Active carbon are also termed as activated charcoal, is a form of carbon that possesses very small, low-volume pores that increase the surface area available for adsorption or chemical reactions. The origin of activated carbon (AC) is associated with Ancient Egypt (1500 BC), whereby the Egyptians make use of its adsorbent characteristics for water purifications and medicinal purposes. More recenly, there are some report where the potential use of AC was actually capitalized during the First World War, whereby AC was used in gas mask against toxic gases. Respiratory protective devices were developed as personal protective tools against the use of toxic gases during wars. There are different uses reported for activated carbon to date. These include methane and hydrogen storage, air purification, solvent recovery, decaffeination, gold purification, metal extraction, water purification, medicine, sewage treatment, air filters in respirators, filters in compressed air, teeth whitening, production of hydrogen chloride and many more. In environmental remediation the active carbon plays an important role. Activated carbon is usually used in water filtration systems. Other than it can be also used inspill clean-up, groundwater remediation, drinking water filtration, air purification, volatile organic compounds capture from painting, dry cleaning, gasoline dispensing operations, and other processes. The future market for activated carbon is also likely to derive benefit from a continuous stream of openings from a number of industrial processes that employ adsorption technologies.

Some of the renowned active carbon production company globally are Activated Carbon Technologies Pty Ltd (Australia), Active Char Products Pvt. Ltd. (India), ADA Carbon Solutions, LLC (United States), Advanced Emissions Solutions, Inc. (United States),Albemarle Corporation (United States), Arkema S.A. (France) etc.

Activated carbon is produced by pyrolysis of organic materials of plant origin. These materials include coal, coconut shells and wood, sugarcane bagasse, rice husk, banana waste soybean hulls, water hyacinth waste and nutshell etc. The most demand active carbon in the global market is coconut-shell-based activated carbon. In south India mostly they synthesize active carbon from these Coconut-shells. India holds the premier position in the global export of activated carbon in terms of prices.

Global Scenario of Activated Carbon

Due to an increase in the global price of activated carbon, it fetched a price of ₹ 140/kg in FY 2019 vis-a-vis ₹ 100/kg in FY 2018, helping India's coconut-based AC product exports cross the ₹ 2,000-crore mark in FY 2019. The global activated carbon market was valued at around 1,666 kilotons in 2020, and the market is projected to register a CAGR of over 3% during the forecast period (2021-2026).China (570K tonnes) remains the largest activated carbon-consuming country worldwide, comprising approx. 25% of the total volume. Moreover, activated carbon consumption in China exceeded the figures recorded by the second-largest consumer, the U.S. (271K tonnes) by almost twofold. India (229K tonnes) ranked third in terms of total consumption with a 10% share. The activated carbon market is consolidated, where the top-five players accounting for a major share in the global market.

Activated carbon from tea waste using banana extracts (khar)

We at IASST Guwahati, successfully synthesis active carbon from a novel precursor Tea waste. In the process of production of tea every tea factory produces a large amount of tea waste. This waste includes discarded tea leaves, buds and tender stems of tea plants. If the tea waste is not disposed properly, it can pollute the environment like soil, water and air. In our method we have used tea waste as source of carbon.

One of the major step in preparation of activated carbon is the activation step. In general the activating agents used for the synthesis of active carbon from different precursors are highly toxic as well as expensive, mainly potassium salts, toxic acids, and bases are used in this process. However in our case we have used banana plant extract as an alternative activating agent for the preparation of activated carbon from tea wastes as banana plant extract mainly contains oxygenated potassium compounds. These potassium compounds help in activating the carbon prepared from tea waste.

We have prepared the banana plant extract by traditional way which is also known as Khar. Any traditional authentic Assamese meal will always start with a khar. Khar is basically an alkaline extract from the ashes of burnt dried banana peels.The most preferred banana for this is called 'Bheem Kol' in Assamese. Bheem Kol is an indigenous variety of banana found only in Assam and parts of North East India. To make khar, first the peel of the banana is dried and then burnt to make ash out of it. The ash is then crushed and made into a fine powder. Then using a clean cotton cloth, water is filtered through the ash powder and the final solution that we get is called khar. The natural khar which is extracted from banana is called 'Kol Khar' or 'Kola Khar', where 'Kol' means banana and 'Kola' means black. We have used this extract as an activating agent.

The reason for the use of tea as a precursor for the synthesis of active carbon is that in tea structure the carbon atoms are conjugated and have polyphenols bond. This will make the quality of activated carbon better compared to other carbon precursors. The main advantage in this process is that starting material as well as activating agents both are waste materials. We are avoiding uses of any toxic activating agent (e.g., toxic acids and bases) for synthesizing active carbon and thus employed a new and noble strategy. Thus, this process is green and used plant materials as an activating agent for the first time. This novel process of synthesizing of active carbon makes the product cost effecting as well as non-toxic.

Synthesis of Activating Agent from Banana Plant

Synthesis of Activated Carbon from Tea Waste

(From left) Dr. Manash Jyoti Deka, Dr. Devasish Chowdhury & Dr. Narayan C. Talukdar

BIOTECH STARTUPS IN COMBATING COVID-19

-Dr. Tania Paul Das
Manager (S&T), BioNest-IASST

A challenge, **'Submit Solutions to combat COVID-19'** was launched on the Startup India Portal on 24th March 2020. The challenge aimed at scouting innovative technologies and solutions for precautionary as well as treatment-related interventions. The solutions were invited under 10 broad categories namely Personnel protective equipment, Testing Equipment, Critical- care equipment, Large area sanitization and sterilization, AI-based technology for contactless entry, Movement tracking, Geofencing, Crowd management, Fake news detection, and Logistics. The solutions received were evaluated by COVID-19 taskforce comprising of Biotechnology Industry Research Assistance Council, Department of Science & Technology, Department of Biotechnology, AGNIi, Office of the Principal Scientific Adviser, and AIM- NITI.

A few interesting technologies developed are listed below:

BUBBLE BYTE INDIA produced Dr. Sanitor- A smart mechanical liquid disinfectant dispenser, which dispenses fluid without having to touch the bottle.

T. Pradeep of IIT-MADRAS developed a technology- nasal drop-based deactivation of the COVID-19 virus which is extremely effective against high virus load in the water medium.

SWASTI AGRO AND BIOPRODUCTS PVT LTD has a patented derivative of chitosan that is proposed to be re-purposed for coating on masks. These masks can adsorb and kill viruses.

AYU DEVICES PVT LTD created AyuSynk's unique stethoscope which allows healthcare workers to perform auscultation while being protected in an isolation environment.

PUPILMESH PRIVATE LTD has developed low-cost face shield that has got anti-scratch and anti-fogging capabilities.

BLACKFROG TECHNOLOGIES PRIVATE LIMITED developed a portable precision-refrigeration system for transport of blood, serums, vaccines, & transport of Covid-19 samples.

CANDIPHI HEALTHCARE PRIVATE LIMITED developed a Clinic-In-A-Bag (CIAB) product integrated with the Candiphi software to monitor body temperature, SpO_2, cardiology, and lung function tests.

ABSSTEM TECHNOLOGIES LLP's PSA (Pressure swing adsorption) technology-based Medical oxygen plant provides medical grade oxygen onsite using electricity only. The capacity of the machine varies from 4 to 200 oxygen cylinders (2 to 100 ventilators).

SUKOON SOLUTIONS PRIVATE LIMITED has developed Light Weight folding Stretcher, Rapidly deplorable weather-resistant, portable emergency rooms Manual Ventilation Kit, Dead Body Bags and Boxes & high purity Oxygen Concentration Devices that run with Solar Energy.

ADDVERB TECHNOLOGIES PVT LTD has developed a disinfectant Robot with UV light technology to disinfect large areas to minimize human contact with UV light or virus.

WEINNOVATE BIOSOLUTIONS PVT. LTD has come up with a non-alcoholic, aqueous-based Colloidal Silver solution for disinfecting hands and environmental surfaces.

MARUT DRONETECH PRIVATE LIMITED has designed and deployed customized drones to undertake anti-mosquito operations for anti-larval spraying in lakes & can be effectively used for spraying disinfectants in public spaces to stop the spread of the virus.

THE RIDGE ENVIRONMENT CONSULTANT'S Aireltch Ridge Ozone technology uses ozone gas for sterilization and disinfection. Ozone which is a very strong oxidizing agent is an extremely fast-acting disinfectant/sterilizer.

ZTRIC INDIA PVT LTD created Virus Cavach (Nexar) which is a solution that can provide Anti-Viral coating to surfaces.

CYRAN AI SOLUTIONS PRIVATE LIMITED have developed a unique state-of-the-art AI-based personnel identification vision technology that can recognize individuals wearing normal attire or full protective equipment (PPE).

DIYCAM INDIA PVT LTD developed AI-based Abnormal Temperature Detection and Alert Management System

TECHOLUTION INDIA PVT LTD made Face open software which provides touch-free access designed doors.
to prevent fingerprint/touch-based biometrics

HEAMAC HEALTHCARE PVT. LTD have developed a tracking wristband called CoWatch with features like Prevention, monitoring, tracking, and alerting.

SIGNITEQ SERVICES PRIVATE LIMITED worked on A Powerful App-Based Mobile Tracker for COVID 19 patients, suspected patients, citizens in-home quarantine isolation.

FACLON LABS PVT LTD has developed an AI-powered thermal screening solution to effectively measure human body temperature without any manual intervention

YOBNY TECH's QueueOne App provides tools to create and manage virtual queues. In the current pandemic situation, this can save lives as it helps achieve social distancing.

UnFound AI provides that capability using artificial intelligence & natural language processing for FAKE news detection related to the treatment/cure of the disease to various conspiracy theories.

IYSERT ENERGY RESEARCH PRIVATE LIMITED is ready to transform the waste containers into World-Class Portable Hospitals Units on Wheels/Stationary with the latest equipment, Beds, and basic Amenity services

PEER ROBOTICS programmed Robots for automated delivery of food, medicines, and disposal of waste.

"**DBT- AYUSH partnership:** Joint network programme, involving DBT AIs and National Medicinal Plants Board (NMPB) to harness the potential of indigenous medicinal plants for development of plant based therapeutics to treat COVID-19 and 50 plants to be screened."

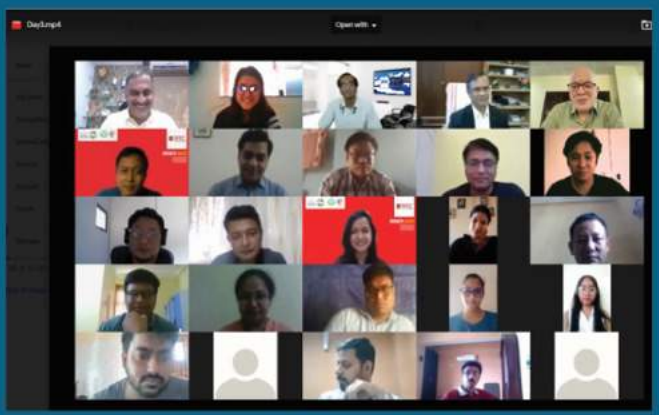
DCGI recently approved first phytopharma drug AQCH for which Phase II clinical trials is ongoing by DBT-ICGEB along with SUN PHARMA.

GALLERY

Awareness Campaign on World Cancer Day-2021 at IASST-Ghy

Celebration of Swatchata Pakhwada 2021 at IASST, Ghy

Reopening of COVID-19 Lab



BINER-2021

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