

# CSIR IN MEDIA



**CSIR**

**NEWS BULLETIN**

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## CSIR-IICT's Kilo Lab facility dedicated to nation

CSIR-IICT

25<sup>th</sup> December, 2021

Hyderabad: CSIR Director General and DSIR Secretary, Dr Shekhar C Mande on Saturday virtually dedicated the Kilo Lab facility named after Acharya PC Ray at the CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Moulali Complex, Hyderabad, to the nation.

The facility has been created as a part of CSIR-Agro Mission to cater the needs of key stakeholders of the agricultural sector. The state-of-the-art facility will be used for process development and scale up of the agro-chemicals.

Speaking on the occasion, Dr Mande said the Kilo Lab would be of immense utility for the industries. "The present facility is another contribution from the CSIR-IICT, which is known for its role in providing various solutions to fight the current pandemic and importantly developing an adjuvant for Covaxin," he said.

Department of Science and Technology Secretary, Dr Srivari Chandrasekhar said with the focus on scaling up the research from laboratory scale or bench scale to pilot scale, the CSIR-IICT procured the equipment with the intent to help the industry with operations at higher scale for efficient adaptability for commercial scale.

In his address, CSIR-IICT Director, Dr VM Tiwari said the CSIR-IICT played a major role in drug repurposing in the current pandemic. "The lab made use of indigenous raw materials to repurpose drugs. Once again, the CSIR-IICT can play a major role in R&D towards development of new technologies in the agro-chemical sector, wherein the technology can be environment-friendly using indigenous raw materials," Dr Tiwari added.

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## Bits'n'bytes: Know about business events in Pune

CSIR-NCL

25<sup>th</sup> December, 2021

Scientist Dr Raghunath Mashelkar, while speaking at the Venture Centre's 15th anniversary celebrations, said that India needs to focus on Science-led high-tech unicorns, further adding that startups will need 'adventure capital' in order to reach there. Council of Scientific and Industrial Research's (CSIR) first and largest incubator, NCL Venture Centre, celebrated a major



milestone of its 15th anniversary. The virtual event was presided by Dr V Premnath, director, Venture Center; Dr Shekhar Mande, DG-CSIR; Dr S Chandrashekhar, Secretary Department of Science and Technology, Scientist Dr Raghunath Mashelkar, Prof Anil Gupta, and current and past Directors of CSIR-NCL – Dr AK Lele, Dr AK Nangia, Dr K Vijayamohanan, Dr S Pal and Dr S Sivaram.

Dr Mande talked about the importance of entrepreneurship in helping India's youth contribute positively to India's growth story, while creating tens of millions of jobs over the next decade.

Dr Ashish Lele, Director, NCL spoke of the plans to double the capacity of Venture Centre to serve startups two folds within the next three years. He announced plans to build a new building to house many more startups. With that the NCL Innovation Park will be able to serve more than 150 residents startups.

**Intangles enables 75 per cent reduction in breakdown events**



Predictive analytics solutions provider for mobility industry, Intangles Lab recorded a 200 per cent upsurge in deployments across heavy commercial vehicles and off-highway equipment. The company said it has clocked 170 per cent growth in revenue over the same period last year. With many markets opening and emerging from the post-pandemic slump, Pune-based Intangles is projecting an impressive revenue growth of 200 per cent by the end of FY'22.

Anup Patil, CEO at Intangles Lab said, “Intangles is on the brink of heralding a new chapter of innovation in vehicle performance and safety across India and the world. As Digital Twin pioneers, the spectacular growth that we have achieved hardly comes as a surprise. While we are consolidating our position in the Indian mobility ecosystem, the outlook is very positive for new opportunities in North America, Europe, Australia and APAC. Our impressive growth and expansion story is merely a testament to the game-changing potential of Predictive Analytics enabled by the Digital Twin technology. In FY'23, we shall continue our endeavours of redefining performance benchmarks in mobility and transportation.”

### **Pune-based Cranberry Analytics announces collaboration with Consult Valiant UAE**

Cranberry Analytics announced a strategic collaboration with ConsultValiant UAE to improve water budgeting, demand and recovery management in the region. The partnership will focus on synergizing their expertise to manage the growing water stress in the region by using Cranberry's flagship water management and predictive analytics tool – Recon.

Headquartered in Pune, Cranberry Analytics has worked extensively with Pimpri Chinchwad Municipal Corporation and helps save approximately 31 billion litres of water annually, while measuring 95,000 million litres per day. Cranberry Analytics and the local municipal corporations' efforts demonstrate that the biggest impetus can come from smart metering of cities, implementation of IoT devices and sensors in water distribution and management.

Shishir Thakur, co-founder and director, Cranberry Analytics shared, “The UAE is home to 6 per cent of the world's population and has access to just 1 per cent of world's fresh-water



resources. The region is in urgent need of analytics-driven insights to take critical action and narrow the gap between water demand and supply. In collaborating with ConsultValiant, we are looking forward to bringing our rich experience and learnings to the Middle-East region of the world and taking our water management stewardship globally.”

The partnership was initiated at the ongoing Dubai World Expo 2021 where Cranberry Analytics was displaying their adaptive AI powered technology solution – Recon, for water consumption, distribution, measurement, and management.

### **AWS supporting Pune startups to succeed through cost optimization solutions**

Amazon Web Services (AWS) is helping startups to manage their cloud costs and the benefit of these strategies for startups in Pune. The online event organised on Thursday (December 23) was chaired by Kumara Raghavan, head, AWS Start-ups India, Amazon Internet Services. Mandar Nilange, head of product and technology, Fittr, and Anil Sinha, chief technology officer, EarlySalary participated in the session.

Raghavan said, “Pune is the next global startup destination city of India and is making its mark in the Indian startup ecosystem. Through a host of AWS cost optimisation solutions, we enable startups to reduce their technology spends and build a robust, cost-optimised cloud architecture early on, so they are ready as they scale their business and maximise their funding resources in the early days. We are excited to collaborate with the startups in Pune and expect to expand our network further to fuel innovation in the city.”

### **BYST and HDFC Bank partner to launch Nurturing Grampreneurs**

BYST (Bharatiya Yuva Shakti Trust) and HDFC Bank launched their partnership to promote youth entrepreneurs from rural areas of Maharashtra. BYST has reached out to more than 3 lakh youth in 3 districts – Pune, Aurangabad and Wardha. The programme has created over 3,120 entrepreneurs who have generated 1.50 lakh jobs. BYST has now expanded its work to



three more districts – Kolhapur, Satara and Sangli and aim to create 500 more entrepreneurs in the next three years.

Subodh Bhargava, chairman, BYST said, “BYST initiative brings together renowned mentors with vast experience. Apart from imparting skills and funds to start an enterprise, a lot more focus is required to be placed on guidance, and handholding by experts is critical to create great entrepreneurs and successful enterprises.”

Lakshmi V. Venkatesan, founding and managing trustee, BYST added, “Entrepreneurship and education have no direct correlation. You must have business literacy and acumen, not necessarily a college degree. In the next five years, we aim to create 10,000 mentors, that is 300 each per district. These mentors will be trained to support 30,000 entrepreneurs, who in turn are expected to create 16 lakh jobs in Maharashtra.”



## Aerospace incubation centre launched at NAL

CSIR-NAL

24<sup>th</sup> December, 2021

A new technology accelerator and incubation centre was launched at the CSIR-NAL campus in the city to nurture aerospace start-ups. The announcement was made by Social Alpha, a venture development platform for science and technology start-ups. Dubbed mach33.aero, the centre was described as the first public-private partnership in India. The centre is housed on the CSIR-NAL campus and will focus on aviation, defence, space exploration, agriculture and climate action.



In a statement, NAL said the centre's 'lab-to-market' model will act as a catalyst to accelerate innovations and entrepreneurship while promoting start-ups and SME's in sectors of national strategic importance. "Mach33.aero will leverage innovations to build solutions for some of our toughest challenges with the help of advanced systems and frontier technologies like Robotics, AI/ML/Data Science, Nanotech, Material Science, Advanced Manufacturing, Cryogenics etc," the statement said.

"The idea is to catalyse, incubate and accelerate start-ups and SMEs for Atmanirbhar Bharat in these sectors of national strategic importance," said Dr Shekhar C Mande, director general of CSIR. Social Alpha is backed by Tata Trusts, the National Research Development Corporation (NRDC) and NAL.



## DCGI approves hydroxyurea for treatment of sickle cell anaemia

CSIR-CCMB, IIIM

24<sup>th</sup> December, 2021

HYDERABAD: The Drugs Controller General of India (DCGI) has approved the use of hydroxyurea to treat Sickle Cell Anemia.

The CSIR-Sickle Cell Anaemia (CSIR-SCA) Mission has sought the DCGI for clearance, organised by the CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB) with the help of Cipla, a hydroxyurea manufacturer, and with active support from CSIR-IIIM.

According to the CCMB on Thursday, a committee of specialists appointed by the Central Drug Standard Control Organisation (CDSCO) critically assessed the proposal and approved the marketing of hydroxyurea for the treatment of SCA, subject to post-marketing surveillance.

The medicine can now be used to treat SCA at regular doses, thanks to the authorisation. It also paves the way for the development of smaller-dose formulations that promise higher compliance rates in SCA youngsters, and could potentially lead to syrup-based formulations, according to the CCMB.

"For the sickle cell anaemia community, this is a watershed moment. This further enhances the benefits of identifying patients through a tailored screening programme. While one of the primary goals of the screening programme is to prevent the birth of afflicted children through genetic and social counselling, this approval allows individuals to receive full treatment. The CSIR-SCA Mission is being led by Dr Giriraj R Chandak, Chief Scientist at CSIR-CCMB and Mission Director.

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[News Track](#)



## Scientists develop silica nanoparticles for better systems of drug delivery

CSIR-NCL

23<sup>rd</sup> December, 2021

Bengaluru: City researchers, along with collaborators from Pune, have developed silica nanoparticles that can improve drug-delivery systems (DDS). These nanoparticles with pores are tuned to absorb hydrophobic drugs with more stable surfaces and effective absorption properties.

In a recently published paper, researchers from Centre for Nano and Soft Matter Sciences, Bengaluru, an autonomous institute of the department of science & technology, and National Chemical Laboratory (CSIR-NCL), Pune showed how they have transformed material widely used to design DDS to make it more stable.

Their work also has an impact on the total amount of drugs that can be loaded and released. DST said the researchers used a technique called selective chemical functionalisation strategies to bring about the modification.



## Tata Medical develops fast-testing solution for Covid-19

CSIR-IGIB

23<sup>rd</sup> December, 2021

Tata Medical & Diagnostics on Wednesday said it has indigenously developed a fast-testing solution for Covid-19 to significantly boost India's testing capacity amid the Omicron variant threat.

The solution, Tata MD CHECK Express RT-PCR, can be applied in multiple areas where quick, high volume, and reliable testing is required, such as airports and events, the company claimed. With studies in India pointing to a possible surge in cases in February next year, there is expected to be a multifold increase in demand for RT-PCR Covid tests that are economical and give fast results, it added.

To meet this challenge, Tata Medical & Diagnostics (Tata MD) has indigenously developed the Covid testing solutions that will significantly boost India's Covid testing capacity, the company said.

Its solutions include 'Tata MD CHECK XF', a kit that has a processing time of one hour and can process 30 samples per batch per machine. It is approved by ICMR with over 95 per cent sensitivity and 100 per cent specificity.

The other one is the 'Tata MD CHECK RT-PCR Fast 3Gene' kit that uses a fast amplification protocol, with a processing time of 90 minutes and can process 90 samples per batch per machine. It is approved by ICMR with 100 per cent sensitivity and 100 per cent specificity, the company said.

Tata Medical & Diagnostics CEO Girish Krishnamurthy said the company was striving to indigenously develop innovative medical technologies and working on several new technologies for Covid-19 testing.



"These express testing solutions can be applied in multiple areas where quick, high volume, and reliable testing is required such as airports and events," he added.

The company said its new Tata MD CHECK Express PCR testing solution has been in use at the Kempegowda International Airport, Bengaluru, since early this month and has proven to deliver rapid and dependable results in a real-world environment with a high volume of tests.

"It has proved instrumental in helping to address the rush of fliers from 'high risk' countries required to undergo mandatory RT-PCR testing," the company said.

Last year in November, the company had launched its Covid testing kit, 'TataMD CHECK', developed in partnership with CSIR-IGIB (Council of Scientific and Industrial Research-Institute of Genomics and Integrative Biology). It has been approved by the Indian Council of Medical Research and Drug Controller General of India (DCGI).



## How coastal inhabitants of India make a living through seaweed cultivation

CSIR-CSMCRI

23<sup>rd</sup> December, 2021

KOLKATA – The maritime rural population living along the coastline of Gujarat (1600 km) and Tamil Nadu (1076 km) cultivate seaweeds for a living. With the help of certain technical proficiency, these people have made seaweed farming a successful venture and earn a decent earning of about Rs 15000 – Rs 20000 per month. Seaweed is one among several renewable marine resources. Around 1000 coastal inhabitants



are using three techniques, namely floating bamboo raft, tube net and long-line methods for undertaking seaweed farming. Nevertheless, the first two methods are widely practised. Farming takes about 40–60 days depending on species. It takes place mostly throughout the year except for the monsoon period when the sea is rough.

India possesses as many as 434 species of red seaweeds, 194 species of brown seaweeds and 216 species of green seaweeds. Most of these seaweeds are reasonably important. *Kappaphycus alvarezii*, in particular, has been cultivated in the states of Tamil Nadu, and tails are successful in Gujarat, Andhra Pradesh, and Maharashtra. However, fisher folks of Gujarat and Tamil Nadu are actively cultivating seaweeds compared to the other states mentioned above.

Experimentation on seaweed cultivation began about fifty-eight years ago by the scientists of Council of Scientific and Industrial Research–Central Salt and Marine Chemicals Research Institute (CSIR-CSMCRI) in Bhavnagar, Gujarat. They provide technical proficiency including the ambient parameters required for cultivation with salinity between 25–30 ppt



(grams per kilogram), surface seawater temperature between 28-32 degrees Celsius, good mixing of water during high/low tide cycle for sufficient availability of nutrients and dissolved oxygen.

Farming is recommended in intertidal areas where water is always present during low tide so that plants do not get exposed to direct sunlight and desiccation. Notably, the cultivation also creates natural habitat, which provides shelter, diet and breeding grounds to several marine taxa and thus is responsible for structuring marine habitats and providing ecosystem services.



For the last eight years, Gohil Shakti Singh (35), belonging to the fish farming community at village Simar in Bhavnagar District of Gujarat, says his job is defined. “A 2-inch sapling of seaweed has to be fastened on a 25-metre long rope in a gap of less than a foot. From then on,



I have to navigate for half a nautical mile into the sea on a dinghy to drop the rope together with seaweed. It is kept for 30-40 days in the seawater, where it rapidly grows,” informs Singh. The fronds of alginophyte *Sargassum cinctum* were grown up to 15 to 52 cm in a 40 days growth cycle. This success has given impetus to initiate farming of yet another important agarophyte *Gracilaria edulis* at Krusadai Island in Tamil Nadu.

### **Economic importance of seaweed**

Red algae, *Gelidiella acerosa*, are the principal source for the production of bacteriological grade agar, which is economically important while *Gracilaria edulis* yields food-grade agar and *Gracilaria dura*, agarose. The techniques employed are simple, cost-effective, utilize readily available material, does not require specialized skills and can be practised at the individual farmer level by little training. Nevertheless, species of brown algal genus *Sargassum* and *Turbinaria* are exploited from nature by alginate industries; cultivation of these is not felt necessary due to large quantities of biomass available.





Talking to TwoCircles.net, Dr Vaibhav A. Mantri, Principal Scientist & Divisional Chair Applied Phycology and Biotechnology Division, CSIR-Central Salt and Marine Chemicals Research Institute, said, “The collectors are mostly women who collect the seaweeds for 10-12 days every month coinciding with low tides throughout the year. While for farming it takes 40-60 days depending on species and it takes place mostly throughout the year except for monsoon period when the sea is rough.”

The dried seaweeds are weighed (with about 30% moisture content permissible in commercial purchase) and sold to the dealers, who on the behalf of industry procure the biomass at a predetermined rate. The opportunities in the collection sector are limited and seasonal but for farming, they provide continuous remuneration. “CSIR-CSMCRI helps the seaweed cultivation self-help groups to have linkages with our licensees. We also through various state governments try to train selected people in processing the harvested biomass so the additional opportunities could be created under the ‘Empowerment model’,” the scientist added.





In the model where fishermen can handle 45 rafts (one raft seeding and harvesting per day) for each cycle and it can produce 9000 kg biomass per cycle (considering 200 output per raft), as per the handling capacity of the individual, the production can be increased.

## Challenges

The precaution needs to be taken like other crop plants for epiphytes and diseases, conservation of good and elite germplasm for subsequent seasons during monsoon. The selection of appropriate methods of farming is yet another deciding factor for success. To date, only *Kappaphycus alvarezii* has been commercially cultivated.

“Seaweed with germplasm stops growing rather it gets decayed while the weed without germplasm is producing much better crops,” A.Jeyalakshmi, a seaweed farmer from Rameswaram admits over phone.

“The biggest challenge is the availability of adequate seed material for commercial activities, we have worked out on this and the new protocol has been developed for production of seed,” discloses Dr Mantri.

The sector is currently operating as an informal industry and needs conscious efforts in the establishment of Self Help Groups (SHGs) and fisheries co-operative in all the coastal states and Union Territory and connecting them with the seaweed processing industry. At present, permission is required from several state departments to start commercial farming and the establishment of new entrepreneurs.

According to him, there should be a single agency, which should be granting permission to undertake commercial farming. The special use of coastal areas for seaweed farming and other activities needs clarity, for better utilization of space. Therefore, demarcation of specific cultivation areas along the coast and establishing a permanent anchoring system for undertaking commercial cultivation is essential.





Besides, the ban on the export of seaweed biomass needs to be removed. This ban should be only removed in the case of cultivated material as this would give impetus to farming rather than natural collection, which is an unsustainable practice.

Since commercial seaweed farming is put to the vagaries of nature and cyclones, disease and rain are the common impediments that might impede the prospects of the farming business. The beneficiaries should be given crop insurance to keep the sustained interest of fishermen in this activity.

### **Research Institute's role**

Council of Scientific and Industrial Research-Central Salt and Marine Chemicals Research Institute, Bhavnagar is the leading national institute working on seaweed cultivation and utilization, where Applied Phycology and Biotechnology formerly Algology division dedicated only to carry the research on this domain. The first-ever seaweed cultivation experiments



were conducted in India at Porbandar, Gujarat from November 10 – December 20, 1963, by Francisca Thivy the founder of the Algology division at CSIR-CSMCRI.

“The institute takes pride in being the first to pioneer *Kappaphycus alvarezii* cultivation, heralding an era of commercial seaweed farming in India,” states Dr Mantri. The institute has been imparting needed skills for farming for the last five decades. Given the fact that there is a low literacy level in the coastal rural area due to poor educational facilities coupled with meagre self-employability, seaweed farming is paving the way for young entrepreneurs and women fisher folks.

According to Dr Mantri, one of the surveys carried out revealed that the monthly income of each member is about Rs.15000-Rs.20000. The study confirms improvement in the socioeconomic status of coastal inhabitants engaging in seaweed farming.

“These accrued benefits have attracted more participation from women fisher folks and offer opportunities for economic empowerment to women contributing positively toward reducing gender bias. Till today more than 5000 people have been sensitised for this activity across India and there are about 1500 fishermen in Tamil Nadu alone who have engaged in seaweed farming of which about 90% are women,” Dr Mantri told TwoCircles.net.

### **Positive effect on marine environment**

Any new industry in the coastal area acts as a harbinger of economic growth, but also brings a lot of issues such as pollution. The farming of seaweed on the other hand is a non-polluting industry. It also on the other hand helps in reducing the pressure on natural harvest, which in turn aids conservation of natural resources.

When commercial cultivation takes place the niche environment is created, thus cultivation rates and biomass growth provide shelter, diet, habitat and breeding grounds to several marine taxa and thus are responsible for structuring marine habitats and providing ecosystem services.



Nevertheless, one needs to be cautious as there would be a lot of trash material going to be formed due to old /used infrastructure. The proper disposal protocol needs to be developed for this to take care of issues by environmental activities.



## Bengaluru: CSIR-NAL, NRDC join Tata Trusts-backed initiative to foster innovations in aerospace

CSIR-NAL

22<sup>nd</sup> December, 2021

Social Alpha, an initiative supported by Tata Trusts, along with the National Research Development Corporation (NRDC) and CSIR-National Aerospace Laboratories (NAL) on Wednesday announced the launch of mach33.aero, which is set to be the country's first public-private partnership that focuses on accelerating innovations in aerospace.



The joint initiative will develop a support ecosystem to nurture start-ups in aerospace and allied engineering at a dedicated state-of-the-art centre at the CSIR-NAL campus with a vision to expand its reach to new geographies in future.

Speaking on the launch, Tata Trusts Chairman Ratan Tata said, “I am pleased to note that CSIR-NAL and Social Alpha have joined hands to promote innovations in aerospace engineering with wide ranging applications across aviation, defence, agriculture and climate technologies. I hope a number of high impact and scalable solutions emerge from this initiative, creating a new wave of technology entrepreneurship in the country.”

Commodore (Retd) Amit Rastogi, Chairman and MD of NRDC, said, “NRDC has concluded more than 5,000 technology licence agreements to a large number of small and medium-scale industries paving the way for the success of indigenous technologies and creation of wealth. With its expertise in establishing and successfully running start-ups, NRDC will support incubatees of mach33.aero with professional services like IPRs search, analysis, filing, market survey, feasibility report, technical consultancy, expert advice etc, and/or any other kind of technical services.”



With access to multi-stage funding, regional, national and global market linkages, mach33.aero will offer start-ups strategic connections with government, academia and industry resources, accelerate pathways for technology commercialisation, and encourage scientists and engineers to pursue entrepreneurial opportunities.

NAL Director Jitandra J Jadhav said start-ups have recently been receiving increased attention across the world, especially in the aerospace sector. “With the emergence of start-ups backed by leading industries, the aerospace technology propels us into the future of transportation, be it autonomous vehicles and UAV, hybrid and electric regional aircrafts, electric VTOL aircraft, air taxis, high altitude platform, new space (communication, research space exploration), aircraft connectivity and entertainment, traffic control management, etc, CSIR-NAL has developed many aerospace technologies which will be of interest to start-ups, like UAV-multicopter for agricultural and medical applications, Wankel engine for UAVs, autoclaves for composite fabrication, multi-zone hot bonder composite repair, eco-friendly process for aircraft aluminium alloys, etc,” he said.

NAL is a constituent of the Council of Scientific and Industrial Research (CSIR). “With its expertise, knowledge base in the aerospace sector, supported by several advanced test facilities, CSIR-NAL is embarked to provide start-ups with aerospace technologies, technical assistance/expert advice, test facilities and skill development programmes in aerospace design, development and manufacturing areas,” Jadhav said. CSIR Director General Dr Shekhar C Mande said, “mach33.aero, would lead a deep tech innovation and entrepreneurship promotion initiative focused on “lab-to-market” enablement of Aerospace Engineering innovations and its wide-ranging applications across diverse sectors like space tech, defence, air mobility, agriculture, climate change, natural resources management, insurance and weather forecasting. The idea is to catalyse, incubate and accelerate start-ups and SMEs for Atmanirbhar Bharat in these sectors of national strategic importance.”

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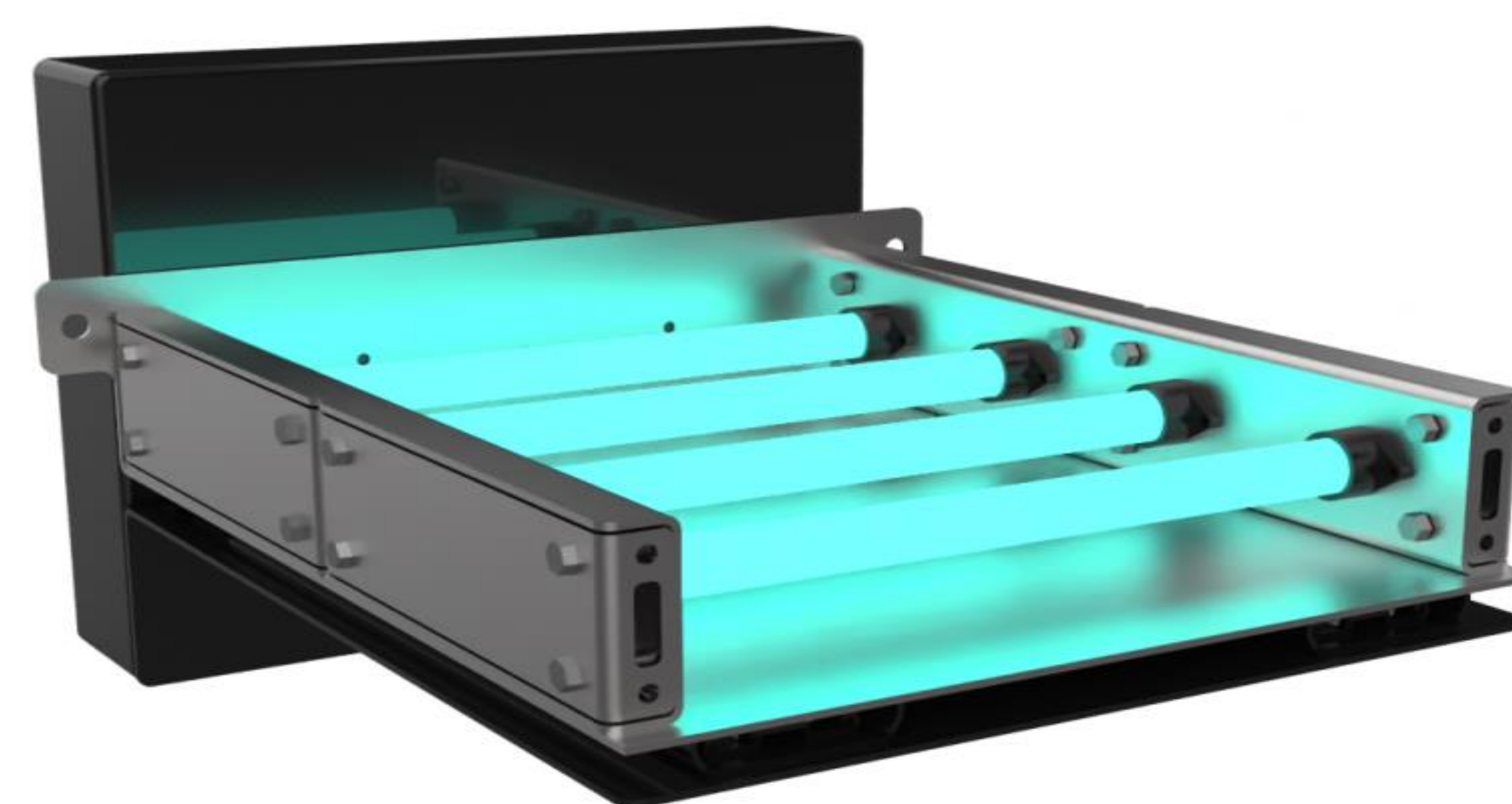


## Travel freely with UV-C based disinfection solutions for the transportation systems

CSIR-CSIO

22<sup>nd</sup> December, 2021

During the Pandemic, people are refraining from travelling in a public transport such as AC buses, CARs trains, and metros. Reason – the danger of the SARS-Covid-19 virus that has emerged as the biggest health threat globally is still looming. After the first wave, overcrowding at the public places benefitted the virus and its variant led to an increase in mortality rates especially in India. Till date,



numerous efforts have been made to control the spread of the virus and saving lives have been the biggest challenge. Also being pre-prepared for the mutant phases where the virus becomes even deadlier is one of the major hurdles that need to be crossed. To restrict the spread of the virus and to provide safer outdoor air, UVHeal in collaboration with CSIR-CSIO has introduced the Clean Air UV-C Induct System to disinfect the air inside Railways, Metros, and Buses. The UV-C-based air disinfectant is CE-certified and NABL approved. This comes along with the fire/smoke sensors which is a necessary safety feature

The technology has been developed according to the requirements for deactivation of SARS COV-2 virus contained in an aerosol with necessary ventilation measures, necessary safety, and user guidelines, and tested Bio-safety standards. The UV-C is an energy-efficient system, improves airflow through coils, enhances indoor air quality, requires less maintenance, is easy to retrofit with any existing system having AHU, Casset AC, CSUs ducts or suitable fitouts and has a low initial setup cost. The system comes with commercialized standards and certifications

Ankit Sharma, Director, Airific Systems Pvt. Ltd. said, “We are pleased to share with you all



that our UVC system have been tested by an CSIR-CSIO ICMR accredited lab for COVID-19 disinfection. The systems have PRE successfully passed through the rigorous testing process of India's highest certifying agency and are determined to be 99% effective against the virus. We believe that this will help our country to come out of the Pandemic disaster and move ahead. Our motive behind launching this UV-C air disinfectant is to make people reach their workplace in the safest manner and I say it with this accreditation, UVHeal's R&D Team has gifted a layer of safety against COVID-19 for working employees."

The transportable disinfecting systems are customizable units, comprising UVC lamps. The disinfectant comes with a lamp life of more than 10000 hours. The sizes of the ducts can be customized depending upon the space. It is lighter in weight and can be easily fitted with duct, or available space thus consuming lesser space. This system is UV-C leakproof and is proven to be more than 99% effective in eliminating the SARS-COV19 virus. Ultraviolet radiation of 254-280nm wavelength with no lasting by-products is used. It alters the nucleic acids, DNA or RNA, of the microorganisms that renders them inactive, and stops their reproduction.



## Gulf of Mannar corals to face threat if plan to grow invasive seaweed gets nod

CSIR-CSMCRI

22<sup>nd</sup> December, 2021



CHENNAI: Succumbing to industrial lobby, Union government is reportedly pushing for large-scale commercial cultivation of invasive alien seaweed - *Kappaphycus alvarezii* - inside the eco-sensitive zone of Gulf of Mannar Marine National Park which is one of the world's richest regions for marine biodiversity and coral reefs.

Gujarat-based Central Salt and Marine Chemicals Research Institute (CSIR-CSMCRI) has identified five locations in Gulf of Mannar and two locations in Gulf of Kutch for seaweed cultivation and submitted the proposal for Niti Aayog to initiate pilot-scale cultivation and even received funds.

Officials sources confirmed to TNIE Pattinamaruthur and Vellapatti in Ottapidaram block in Thoothukudi; Periyasampuram in Villathikulam block in Thoothukudi, Erwadi in Kadaladi block in Ramanathapuram and Seeni appadharga in Mandapam block in Ramanathapuram are the five locations identified in Gulf of Mannar for *Kappaphycus* cultivation.

Sources said the multipurpose seaweed park announced for Tamil Nadu by Union finance



minister Nirmala Sitharaman in last budget is being used as gateway to push cultivation of exotic species, rather than promoting native seaweed varieties. Kappaphycus, a fast growing alga known to absorb high amount of nutrients from seawater is already under rampant cultivation in Palk Bay region. Indigenous to Indonesia and Philippines, the exotic seaweed was introduced to India in 1995 for cultivation purpose. The commercial significance of Kappaphycus lies in its role in production of an industrially lucrative polymer called Carrageenan.

This is highly problematic considering the fact that the global invasive species database maintained by International Union for Conservation of Nature (IUCN) placed the Kappaphycus in the 'red list'. The Invasive Species Specialist Group of IUCN has described the Kappaphycus as "destructive invasive species and pose a serious danger to the coral reefs".

There are numerous scientific studies and research papers published over the years by Suganthi Devadason Marine Research Institute (SDMRI), Thoothukudi and National Institute of Oceanography, Goa hinting of possible bio-invasion corals of Gulf of Mannar islands by Kappaphycus, if left unchecked.

A four-year underwater research study done by SDMRI with the funding support of Union environment ministry, whose results were published in 2018, showed that Shingle, Kurusadai and Mulli islands in Mandapam cluster and Valai island in Kilakarai of Gulf of Mannar were invaded by Kappaphycus.

Considering the vast impact on corals, the report recommended that the cultivation of exotic seaweed in and around Gulf of Mannar Marine National Park and Marine Biosphere Reserve areas should be completely stopped. "Government should not grant permission to introduce any alien species in Gulf of Mannar areas including for experimental proposes, as they are capable of altering the ecological balance as well as depleting the health and community structure of key resources like coral reefs and its eco services, and thereby the livelihood of dependent fisher community," the report said. In fact, there is a 2005 Government Order that



restricts cultivation of the exotic seaweed only to the seawaters north of the Palk Bay and South of Thoothukudi coast.

When contacted, Commissioner of Fisheries KS Palanisamy told TNIE a consultant has been appointed to prepare a detailed project report for the proposed seaweed park. Feasibility studies are being conducted in Thoothukudi, Ramanathapuram, Pudukkottai, Thanjavur, Nagapattinam and Tiruvarur.

Palanisamy distanced himself from CSMCRI efforts to promote Kappaphycus inside eco-sensitive zone of Gulf of Mannar Marine National Park. "I am not aware of it. We will not promote anything in violation of 2005 GO. Cultivation will be carried out outside the notified area."

Chief Wildlife Warden Shekhar Kumar Niraj told TNIE: "Kappaphycus is an invasive species and every year the department carries out manual clean-up of coral reefs in the islands invaded by the exotic seaweed. We don't have any problem, if native seaweed species are cultivated, but at no cost Kappaphycus will be allowed to be cultivated inside the Gulf of Mannar. This species can regrow from fragments as small as 0.5 cm making it an extremely difficult to control."



## Award for NGRI scientist

CSIR-NGRI

21<sup>st</sup> December, 2021



Senior principal scientist at CSIR-National Geophysical Research Institute, Abhey Ram Bansal has been selected for the prestigious Anni Talwani Memorial Prize-2021 by the Indian Geophysical Union (IGU).

The award will be given during the 58th annual convention of IGU at Shillong in February next year. Mr. Bansal has carried out significant research work on earthquake triggering, hydrocarbon exploration and geothermal studies.

He is a Fellow of the National Academy of Sciences, recipient of National Mineral Award-2005 and Krishnan Gold Medal -2008. He is also a recipient of Fulbright Nehru Senior Research Fellowship, JSPS invitation fellowship, visiting Associate Professor at University of Tokyo, BOYSCAST Fellowship and the UKIERI Research Fellowship, said a press release.

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CSIR-NCL, CECRI

17<sup>th</sup> December, 2021

# सेन्टिनेंट लैब ने प्रदर्शित की देश की पहली हाइड्रोजन सेल बस

पुणे, 16 दिसंबर (आ.प्र.)

केपीआईटी टेक्नोलॉजीज लिमिटेड द्वारा इनक्यूबेटेड एक आरएंडडी इनोवेशन सेन्टिनेंट लैब ने भारत की पहली स्वदेशी रूप से विकसित हाइड्रोजन फ्यूल सेल बस का प्रदर्शन किया. हाइड्रोजन ईंधन सेल प्रौद्योगिकी को CSIR (वैज्ञानिक और औद्योगिक अनुसंधान परिषद)-NCL (राष्ट्रीय रासायनिक प्रयोगशाला) और CSIR-CECRI (केंद्रीय विद्युत रासायनिक अनुसंधान संस्थान) के सहयोग से विकसित किया गया है.

हाल ही में, Sientent ने दुनिया की पहली तकनीक की घोषणा की, जो ईंधन सेल से चलने वाले वाहनों में उपयोग के लिए कृषि अवशेषों से सीधे हाइड्रोजन उत्पन्न करती है. हाइड्रोजन फ्यूल सेल तकनीक के अलावा, सेन्टिनेंट लैब ने प्लांट, पावरट्रेन और बैटरी पैक के बैलेंस जैसे अन्य प्रमुख घटकों से स्वदेशी रूप से डिजाइन और विकसित किया है. इन घटकों को 9 मीटर, 32-सीटर, वातानुकूलित बस में तैनात किया गया है.



सेन्टिनेंट लैब द्वारा भारत की पहली स्वदेशी रूप से विकसित हाइड्रोजन फ्यूल सेल बस के प्रदर्शन के वक्त (बायें से) रवि पंडित और डॉ. रघुनाथ माशेलकर और NCL के संचालक डॉ. आशीष लेले.

30 किलो हाइड्रोजन का उपयोग करते हुए इसकी रेंज 450 किमी है.

सेन्टिनेंट लैब के चेयरमैन रवी पंडित ने कहा, हमें स्वदेशी रूप से विकसित हाइड्रोजन ईंधन सेल संचालित बस लांच करने पर गर्व है. CSIR-NCL के साथ एक मजबूत तकनीकी टीम ने कई प्रौद्योगिकी

घटकों पर काम किया. यह हाइड्रोजन मिशन, आत्मनिर्भर भारत और महत्वपूर्ण रूप से टिकाऊ गतिशीलता को शक्ति प्रदान करने में एक लंबा सफर तय करेगा. हमारे प्रयास वाहन निर्माताओं और आपूर्तिकर्ताओं को भारत में शुद्ध-शून्य कार्बन पथ बनाने में सक्षम बनाने में भी महत्वपूर्ण होंगे.

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