

# CSIR in Media



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**A Daily News Bulletin**  
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## CSIR-NIO develops robotic platform to track oceanic processes

CSIR-NIO

14<sup>th</sup> April 2017

Researchers at the Dona Paula based CSIR-National Institute of Oceanography (NIO) have developed a robotic platform that can be stationed at any depth from 0 to 200 metres to track the oceanic processes.

"Scientists at Marine Instrumentation Group of CSIR - National Institute of Oceanography (CSIR-NIO) have developed a robotic platform, Seabed Resident Event Profiler (SREP), that can be stationed at any water depth down to 200 meters along the Indian coast," NIO spokesman said today.

"SREP is designed to track oceanic processes such as upwelling that occurs regularly during June to September along the west coast of India and are important for the ecosystem sustenance and fishery," he said.

"Several sensors that can detect the conditions associated with upwelling such as low temperature, low oxygen, high nutrients, and changes in density patterns are placed on this platform," the spokesman said.

NIO has said "this robot records the water column information regularly as programmed at every 10 to 25cm during every profile four times a day, stores the data and communicates the same to users at the institute."

"The robot in its final configuration will be able to sit on the seabed for 100 days continuously," he said.

During the recent voyage of RV Sindhu Sadhana, the latest state of the art research vessel of institute, SREP was tested along the coast.



"The robot autonomously profiles the water column from as deep as 200 meters to surface of the sea. Underwater photograph of SREP at 26 metres below the sea surface shows the system ready for profiling," the spokesman added.

The SREP is particularly targeted at studies related to monsoon, global climate and upwelling.

Southwest monsoon being the backbone of this country's economy, knowing the conditions related to onset of monsoon is one of the major goals.

"Upwelling is another phenomenon associated with the monsoon during which migration of deep sea oxygen minimum zone (OMZ) towards the coast as shallow as 30 meters occurs, apart from bringing the nutrient rich water to the surface and increasing the biological productivity of the region.

"The figure shows a salinity temperature profile collected during the deployment," he said.

"SREP is being prepared for deployment for a duration of about 100 days during upcoming monsoon season," the spokesman added. PTI RPS RMT

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[India Today](#)

**Also Published in:**

[Economic Times](#)



## Getting under the skin, gently

CSIR-IGIB

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Towards better health: Manika Vij, left, and Munia Ganguli have found that application of silicone oil on skin can improve permeation of therapeutic drugs.

By pre-treating the skin with silicone oil, a team of Indian researchers has been successful in delivering biomolecules into the skin with greater efficiency and without destroying the integrity of the skin. Silicone oil is a kind of liquid polymer.

Enhancing the ability of a DNA molecule to penetrate the skin will go a long way in efficiently delivering drugs for skin disorders. The results were published in the journal *Molecular Therapy*.

“Topical application of silicone oil on the skin prior to applying the DNA-peptide (which acts as a carrier of DNA) complex allows the DNA to reach the lower part of the epidermal layer of the skin; a little bit of DNA gets into the dermis as well,” says Munia Ganguli from the Delhi-based Institute of Genomics and Integrative Biology (CSIR-IGIB), the corresponding author of the paper.



The skin with its three layers — stratum corneum (top layer), the epidermis (middle layer) and dermis (inner layer) — acts as a tough barrier for the entry of any foreign substance.

Since the top layer of the skin is rich in lipids it becomes particularly difficult for the DNA to penetrate it.

Only 30% of cells get the DNA complex delivered when the skin is not pretreated with silicone oil. It increases to 45% once the skin is pretreated. “Silicone oil forms an occlusive layer which prevents water loss from the skin and keeps it well hydrated. The rise in hydration pressure, in turn, opens up many porous pathways for entry of the DNA complexes into the skin,” says Manika Vij from CSIR-IGIB and the first author of the paper.

The researchers used hairless mice (the absence of hair follicles makes the skin more closely comparable to human skin) to test the penetration of DNA into the skin. Since the DNA is labelled with fluorescein, it was possible to measure the amount of nanocomplexes that got into the skin by measuring the fluorescence.



Other tests revealed that topical application of silicone oil does not damage the integrity of the skin or damage the tissues.

Dr. Vij says: “In the DNA we can put any gene that encodes for any specific therapeutic protein. This way we can address several skin diseases.”

The researchers are planning to test the ability of the peptide-DNA complexes to cross the skin and enter the blood. “If it does, then it increases the potential to address diseases of other organs,” Dr. Vij says.

“We are yet to carry out studies to see if the DNA gets into the blood circulation or gets locally degraded in the skin cells.”

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## Growing apples in the tropics

CSIR-CCMB

12<sup>th</sup> April 2017



**Farmer Kendre Balaji with the nascent apple fruits in his orchard.**

Telangana's experiments have yielded hot weather varieties

Apple cultivation isn't something one expects to see in the tropics. But in the hills of north Telangana, an experiment to change that is, literally, bearing fruit.

In a small orchard in Dhanora village, Kerameri Mandal, Kumram Bheem Asifabad district

(one of the four districts carved out of what was Adilabad) apple trees planted a year ago are fruiting.

The achievement is a result of a few years of experimentation in apple genomics by scientists from the Centre for Cellular and Molecular Biology (CCMB), Hyderabad, which produced 'low-chilling' varieties of the plant, that is, they are able to withstand hot weather.



Last year, an experiment in apple cultivation at the Regional Agriculture Research Station at Chintapally, Visakhapatnam district, Andhra Pradesh, demonstrated that the fruit can be grown in the hot and arid uplands of Kerameri. The scientists say that the area is conducive for growth of the modified apples, as it is at about 2,300 feet above sea level. “Dhanora is surrounded by hills, while cold winds from the North are not blocked owing to deforestation,” Dr. A Veerabhadra Rao, senior Principal Scientist at CCMB said.

CCMB supplied 120 tribal farmers with about 2,000 grafts of three low-chilling varieties. Kendre Balaji, a local farmer, is growing 150 plants, a mixture of all varieties, using organic cultivation methods which improve the nutritional value of his soil. His plants have shown excellent growth, including flowering and fruiting.

“The apples are expected to taste good,” said Professor Ramesh Agarwal, CCMB’s Chief Scientist.

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## आनुवांशिक बीमारियों पर होंगे शोध

CSIR-IGIB

13<sup>th</sup> April 2017

एसएन मेडिकल कॉलेज व भारत सरकार की रिसर्च एजेंसी सीएसआईआर के बीच एमओयू

पत्रिका न्यूज नेटवर्क  
rajasthanpatrika.com

बासनी/जोधपुर. डॉ. संपूर्णानंद मेडिकल कॉलेज और भारत सरकार की रिसर्च एजेंसी वैज्ञानिक व औद्योगिक, अनुसंधान परिषद (सीएसआईआर-आईजीआईबी) के बीच शोध और अकादमिक गतिविधियों के आदान प्रदान के लिए एमओयू हुआ है। ये दोनों संस्थान पश्चिमी राजस्थान में जन्मजात बीमारियों के आनुवांशिक निदान कर उसके सफल इलाज के लिए मिलकर शोध, एजुकेशन पर काम करेंगे। इसके लिए यहां लैब भी स्थापित करेंगे। इस प्रोजेक्ट में पश्चिम राजस्थान में आनुवांशिक विकार से संबंधित बहुआयामी वैज्ञानिक तकनीकों और शैक्षिक मुद्दे शामिल होंगे।

एसएन मेडिकल कॉलेज के प्रिंसिपल डॉ. एलएल भाट ने



एसएन मेडिकल कॉलेज में एमओयू पर हुई वार्ता में डॉ. एलएल भाट और उनके साथ लखे टोम के अन्य डॉक्टर।

### अधिकांश परिवारों को मिलेगी राहत

दोनों संस्थाओं के साझा प्रयासों में दोनों संस्थाओं को कम से कम 90 प्रतिशत बच्चों के निदान पेश करने का अनुमान है। इसमें यूरोलॉजिक और न्यूरोलॉजिक आनुवांशिक विकार वाले परिवारों

में से अधिकांश में विकार को रोकने में मदद मिलेगी। इस प्रोजेक्ट की एजुकेशन के लिए तीन दिन की सीएमई आयोजन भी बहुत जल्द किया जाएगा। इसमें डॉ. प्रमोद शर्मा के निर्देशन और

डॉ. मन्वीर चरख के नेतृत्व में डॉ. अशोक सिंह गुर्जर, स्त्री एवं प्रसूति रोग विशेषज्ञ की डॉ. पूजन चरख की टीम आनुवांशिक निदान की सुविधा स्थापित करने में जुटे हुए हैं।

बताया कि इसमें पॉडियाट्रिक यूरोलॉजी जेनेटिक्स डिस्ऑर्डर, पॉडियाट्रिक न्यूरोलॉजी एंड न्यूरोजेनेटिक्स डिस्ऑर्डर से संबंधित शोध के लिए दोनों संस्थानों की फैकल्टी सुविधाओं के उपयोग और स्टाफ और छात्रों के आदान प्रदान के लिए प्रावधान है। इससे पश्चिमी राजस्थान की

जनता के लिए बेनिफिट यह रहेगा कि जिन बीमारियों का निदान नहीं हो पाता था, उनका सीएसआईआर-आईजीआईबी की सहायता से निदान संभव हो सकेगा। पिछले 10 गहनों में लगभग 25 हजार बच्चों और उनके परिवारों को न्यूरोलॉजिक और यूरोलॉजिक विकारों के लिए

जांच की गई है। उसमें करीब 450 बच्चों को निदान संबंधी परीक्षण के लिए दुर्लभ आनुवांशिक नमूनों का नमूना दिया गया है। लगभग 36 परिवारों को जन्मपूर्व आनुवांशिक परीक्षण की परीक्षा की गई है। डॉ. भाट के मार्गदर्शन में डॉ. भावना चौधरी और डॉ. तेजेंद्र अनुसंधान करेंगे।

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## Pradhan attended the 54th Foundation Day programme of CSIR-IMMT

CSIR-IMMT

14<sup>th</sup> April 2017



Union Petroleum and Natural Gas Minister Dharmendra Pradhan attended the 54th Foundation Day programme of CSIR-IMMT at Acharya Vihar, Bhubaneswar.

“is my belief that CSIR-IMMT will give the solution to the longest problem in Odisha i.e. How to derive prosperity out of the Mineral Wealth present in the state? CSIR-IMMT is actively working on

advanced minerals & material technology such as Pallet Technology, Sea-bed Technology & Gem-stone processing etc.

An institution of the repute of CSIR-IMMT should come out with disruptive technologies having the potential to transform the lives of poor,” said Minister Pradhan while addressing the Foundation Day programme of CSIR-IMMT.

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[Khabar India](#)

[Orissa Diary](#)



## Websri and CSIR-NBRI Lucknow Collaborated for State First Air Pollution Mitigating App

CSIR-NBRI

13<sup>th</sup> April 2017

Websri is happy but more proud to announce its first contract with CSIR-NBRI (Council of Scientific and Industrial Research National Botanical Research Institute), Lucknow (set up by the State Government of Uttar Pradesh). It is a Government of India undertaking with special emphasis in field of plant sciences, who entrusted Websri with an opportunity to develop an app that will serve a great social cause of eliminating air pollution on national level. The Green Planner is an android based App that provides complete information about plants useful in reducing the air pollution and save us from the potential hazards.

These plants are pollution tolerant and have the ability to absorb harmful gaseous emissions and particulate matters to sufficiently mitigate the health hazards via pollution released from industrial emissions, vehicular exhausts and indoor premises. As far as feasibility is concerned plants listed in database are locally available. Development of Green Planner App has provided Websri an edge over Corporate Social Responsibility and reflected our dedication towards social responsibility. We have ensured Green Planner App does not store any bit of information in the cookies as well as no third party service is implemented in the App.



The Green Planner is an android based App that provides complete information about plants useful in lessening the air pollution and save us from the potential hazards. These plants are pollution tolerant and have the ability to absorb harmful gaseous emissions and particulate matters to sufficiently mitigate the health hazards via pollution released from industrial emissions, vehicular exhausts and indoor premises. As far as feasibility is concerned plants listed in database are locally available. This app will ensure densely populated metros are free from air pollution hazards

This application is free to download at Google Play Store. It will be opportunity for government officials, students and common men to minimize the effect of air pollution with little investment.

The application also, offers an organised green planner for academics, government officials, students and common public. As per Mr. SK Barik (NBRI director), "Information on the right type of plantation will not only help in reducing pollution but also in the mitigation of harmful gases like sulphur dioxide and carbon dioxide."

This approach of this app also serves the purpose of limiting the on going problem of persons suffering from respiratory disorders who can now have a positive outlook towards life owing to clean environment surrounding them. The huge amount of experience that NBRI holds in fighting air pollution will now be channelised via this app to benefit rest of the country.



A user oriented solution on cutting edge technology to engage customers or boost your brand to eventually edge out your competitor you require customized mobile application, web application or an e-commerce solution. Websri boast best fit developers, designers that were key to partner with multiple Fortune 500 firms for delivering industry oriented mobile, web and e-commerce solution always.

Websri(A Unit of SSSPL) is a well established Lucknow based company, operating and performing for 7+ years with 2000+ successful projects delivered. Syncing client idea to reflect their business objectives.

Our key strategy to provide solutions that are industry ready and generate high ROI. Our technical expertise and transparent work ethics have been acknowledged by Fortune 500 brands.

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[OpenPr](#)