



CSIR IN MEDIA

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CSIR

Efficacy of drugs is crucial: CSIR

MPOST BUREAU

NEW DELHI: Aiming to safeguard the nation's health, the Council of Scientific and Industrial Research (CSIR) on Friday stressed on its theme on 'Generics & Healthcare' as a part of CSIR Platinum Jubilee Technofest at 36th India International Trade Fair, Pragati Maidan.

A wide range of innovations, technologies and products were displayed in the pavilion. A large number of scientists, researchers and industrial partners of CSIR attended the seminar organised on this theme day.

Developed by CSIR-CDRI, Lucknow, the world's first Oral Contraceptive Centchroman Pills, 'Saheli', for women has benefitted more than 6 lakhs women per year. Effective in



preventing heavy menstrual bleeding, abnormal bleeding and nostalgia, it also acts as anti-cancer against breast, head, neck, and chronic myeloid leukemia cells.

Addressing the seminar, Dr. Arun Bandopadhyay, CSIR-IICB said, "CSIR-IICB has innovated drugs and technologies to fight chronic heart

diseases. The Rheumatic Heart Disease (RHD), a very common disease in rural areas, is hampering the health of the nation. It appears in early child days as fever, and then it leading valve disorder if not detected early. People die without proper diagnosis."

Dr R. Ramaiah, Director, CSIR-NEIST, Jorhat said, "Efficacy of drugs is very impor-

tant in herbal products. 'Good labs practices' must be attained by the developers of drugs. We have developed anti-arthritis drug over the years just to get assured on the safety of the drugs. Now we have licensed it for commercial launch."

Prof. Samit Chattopadhyay, Director, CSIR-IICB said, "We have developed anti-cancer drugs. Some more drugs like Prostalyn already in the market cure enlarged prostate which causes cancer. Leishmania Diagnostic Kit will be launched soon to heal Kala Azar."

Dr. B. Narsaiah, Scientist, CSIR-IICT stated that anti-cancer drugs are now easily available. The institute has come up with Anti Tuberculosis drugs. Our aim is to develop economically viable technologies for drugs.

Millenium Post | Delhi | Page 6 | Nov 26, 2016

CSIR-CFTRI

Chocolates and *laddus* made of protein rich quinoa and healthier chia seeds, ice-creams enriched with omega-3, multi-grain banana bars and carbonated fruit juices, the superfoods developed by the CSIR- Central Food Technological Research Institute (CFTRI) are an innovation for the common man. Finally, we may better the nation's health index with a scientific approach to mass diet patterns.

The products exhibited at the India International Trade Fair at Pragati Maidan both impress and surprise us with the range and scope of their utility and potency. The main focus of developing the superfoods is to introduce health and nutrition best practices to everyday life. Superfoods have a superior nutrition profile and on regular consumption are guaranteed to improve health and wellness.

"People in the country have been going through a nutrition transition and there is an increase in incidence of diabetes and obesity while there is still rampant malnutrition," said director CSIR- CFTRI, Prof Ram Rajasekharan. "Chia and quinoa, dubbed super foods for their nutritional value, are consumed as seeds. These can be beneficial supplements in a country like India that has a high index of malnutrition," he added.

The chocolates are made by adding the seeds after roasting them. "Ten per cent of the ingredient of the chocolates are roasted quinoa and chia. The content of saturated fat is reduced by adding the seeds

Food for thought

Low cost, healthy food is the core concept of superfoods developed by CSIR- Central Food Technological Research Institute (CFTRI). SARITHA SARASWATHY BALAN reports



whereas that of omega 3 fat, which is essential for the overall improvement of health, is high," Prof Rajasekharan said.

The oil extracted from quinoa and chia is used to make ice cream. "The ice cream also has the health benefits of omega 3," he added.

Partially broken seeds are used to make *laddu*. "Both the quality and quantity of protein in the *laddu* is high. Consuming it won't raise the blood sugar level. It's not possible to say that diabetic patients can take these products, but the health issues of consuming them are reduced to the minimum," he further said.

In the carbonated drinks only fresh fruits, which have grown naturally, are used where-as banana bar is made of spoiled banana. "By making the bar, we



are converting the spoiled banana into a new product. Any fruit or grain can be put in between the bars and can be consumed as sandwich," the director said.

On making nutrient-rich food for the common man, Prof Rajasekharan said that the prices of these products will be competitive. "We have started producing them on a commer-

cial basis. But the price is less compared to the other products available in the market. At IITF they are cheaper," he said.

CFTRI worked on various facets of food technology, food processing, advanced nutrition, and allied sciences for developing the superfoods. It has developed the agro-technology for growing chia (a species of flowering plant in the mint family) and quinoa (of the flowering plant family) in Indian conditions. Chia is the richest source of omega-3 fats from a vegetarian source and quinoa has excellent protein quality and low glycemic load carbohydrates. They have the potential to improve health condition and both blend seamlessly into traditional food preparations.

Leading scientists of CFTRI, Mysore have been working on the project to develop an indigenous variety of the two highly nutritious grain crops that are grown and used widely across the world for the past four years. "We have set up an independent department to work on molecular nutrition to develop the technology. The team has worked for four years to develop that. We modified the seeds of chia and quinoa to grow them in India," the director said.

CSIR-CFTRI

CSIR scientists mull steps to tackle malnutrition, diabetes

STATESMAN NEWS SERVICE

New Delhi, 24 November

The Council of Scientific & Industrial Research dedicated its theme day to its contribution in the field of food & nutrition at its Platinum Jubilee Technofest at the 36th India International Trade Fair in Pragati Maidan today.

Touching upon important aspects of food and nutrition in a seminar, scientists and researchers from CSIR labs expressed concern over malnutri-

tion, especially among children and pregnant women. The experts spoke on preventive steps to tackle diabetes as well. The industrial partners of CSIR also attended the seminar. Prof Ram Rajsekharan, director, CSIR-CFTRI, addressed the seminar.

"Malnutrition doesn't only mean the deficit of nutrition level, it also occurs due to over-nutrition. CSIR-Central Food Technological Research Institute (CFTRI) has devel-



oped micro-supplements for malnourished children that will help a child in the cognitive learning

process. Our lab has played pivotal role in wiping out malnourishment from the country. When a

pregnant woman is malnourished, the risk of child suffering the same is high." said Dr Sridevi R Singh, Senior Principal Scientist, CSIR-CFTRI.

The panelists at the seminar emphasised on the need to carry out fortification with staple foods to overcome malnutrition, robust agriculture extension, and infrastructure enhancement in the supply chain. The day concluded with the signing of 6 MoUs with the industrial partners of CSIR.

CSIR-CFTRI**CSIR FIGHTS AGAINST MALNUTRITION AND DIABETES**

NEW DELHI: The Council of Scientific & Industrial Research (CSIR) dedicated its theme day to its contribution in the field of 'Food & Nutrition' at CSIR Platinum Jubilee Technofest at 36th India International Trade Fair (IITF), Pragati Maidan on Thursday. Touching upon important aspects of food and nutrition in the seminar, the scientists and researchers from the CSIR labs expressed concerns over malnutrition, especially in the children and pregnant women. Diabetes is another evil which CSIR is determined to fight as the experts spoke on preventive steps. The industrial partners of CSIR also attended the seminar. Prof. Ram Rajsekharan, Director, CSIR-CFTRI addressed the seminar.

CSIR



TECHNOFEST (CSIR)

On seventh day of the Council of Scientific and Industrial Research Platinum Jubilee Technofest in 36th India International Trade Fair, science enthusiasts witnessed latest technological innovations by CSIR.

CSIR



‘Treated Water’ a national challenge

CSIR-CSMCRI CSIR-IITR



The Council of Scientific & Industrial Research (CSIR), is geared to meet the challenge with focus on its ‘Water’ technological interventions on the ninth day of CSIR Platinum Jubilee Technofest at 36th India International Trade Fair (IITF), at Pragati Maidan in the National Capital. Theme-day seminar highlighted important aspects of water conservation and water management system in India. Scientists and researchers from the concerned laboratories of CSIR unfolded the means to generate pure and treated water for a large chunk of India’s population.

Amitava Das, Director, CSIR-Central Salt & Marine Chemicals Research Institute (CSMCRI), said, “CSIR is focused to find out the solutions to minimize the adverse effect of water crisis in India. We are 4% of global water resource. 88% of India’s population has access to different water bodies, out of which only 32% gets treated or pure water. It has become a national challenge to provide access to treated water to a large chunk of India’s population. There is a huge gap that needs to be bridged and CSIR is dedicated in this cause.” Quoting a data he added, “The per capita usable water availability has drastically gone down from 1820 cubic meter in 2001 to 1550 cubic meter in 2011. As expected, till 2025, it will be struggling at 1340 cubic meter.”

The ‘Water’ theme pavilion showcased advancements in water processing technology. ‘Indigenously developed Membranes’ namely Reverse Osmosis Membranes, Ultra Filtration Membrane and Hollow Fiber Membrane, have revolutionized the efforts targets towards water purification. This technology is commercialized now. The lab has provided resins to overcome the lethal effect in the Arsenic and Fluoride prone water states like West Bengal. 65 water sources have been installed in some parts of West Bengal. Nirmal Kumar Saha, Scientist, CSIR-CSMCRI, marked, “People say water is life, but we say clean water is life. CSIR has been working hard to provide safe, hygienic and affordable water to the masses.”

Dr. Alok Dhawan, Director, CSIR-Indian Institute of Toxicology Research (IITR), said, “We have developed water filters using membrane. ‘O neer’ is a solar-operated purifier eliminating any hassle of changing filters. This is a breakthrough in providing safe and affordable water in the rural areas. CSIR is working on several pilot projects to manage water crisis in the future.” Dignitaries from other major CSIR labs also attended the seminar and discussed on waste water treatment. Working in the theme area, Mr. Rahul Kesharwani, PMPL (Vadodara) and Mr. Soumendu Porel, MD, Poral Dass Water and Effluent Control Pvt Ltd were amongst the industrial partners of CSIR who attended the seminar.

The event day embraced several scientific activities for school students, science quiz and public science talk by CSIR-Center for Cellular & Molecular Biology (CCMB), Hyderabad.

CFTRI to bring about an 'omega revolution' in India

CSIR-CFTRI



The protein-enriched chocobar from puffed quinoa, and omega-3 enriched chocobar from chia seeds, developed by CFTRI - Photo: MA SRIRAM

From chocolates enriched with puffed quinoa and crispy chia seeds, to quinoa laddu, Mysuru-based Central Food Technological Research Institute (CFTRI) is looking to take many of its innovative food products to the consumers.

For starters, protein enriched and Omega-3 enriched Chocobars, developed by CFTRI, is expected to be made available on the shelves by next year. These chocobars are being made and marketed by Campco Ltd.

Ram Rajasekharan, Director of CFTRI said: “We were looking at ways to make unhealthy food products like chocolates healthy. So adding chia and quinoa seeds to chocobars helps reduce fat and sugar. The trials to integrated these superfoods has been successful and now Campco will look at the commercial launch sometime next year.” In a bid to promote chia and quinoa, CFTRI has also developed quinoa laddu. Rajasekharan said that roasted chia and puffed quinoa seeds satchets to combat malnutrition had already been introduced in public meal programmes, run by Integrated Child Development services.

“We are already talking to several States on introduction of chia and quinoa seeds in the mid-day meal programmes. There is a lot of interest among States. I want to bring about an omega revolution in the country, since we are not only deficient in micro-nutrients but also macro-nutrients,” he added.

Carbonated sugarcane juice, carbonated fruit juices, multi-grain banana bar, chia healthy bar, and kokum jelly candy are some of the other innovative products the research institute has developed in recent times.

Meanwhile, CFTRI signed several MoUs on Thursday during the Technofest, at the India International Trade Fair in Delhi.

Under an MoU, National Research Development Corporation will get a non-exclusive right to market CFTRI products, for which 70 per cent of the gross earnings from royalties will be paid to CFTRI. In another agreement, CFTRI in collaboration with Millers Process Intelligence & Engineering, plans to set up Global Centre for Excellence in Rice processing.

MEENAKSHI VERMA AMBWANI | Nov 24, 2016

Source: www.thehindubusinessline.com/news/science/cftri-to-bring-about-an-omega-revolution-in-india/article9382696.ece

CFTRI's 'superfood' chocolates to hit market soon

CSIR-CFTRI



Campco will procure the seeds for their chocolates from the farmers' cooperative society, Raitha Mitra
Photo Credit: M_A_SRIRAM

How to make chocolates healthier and nutrition-rich? The Mysuru-based Central Food Technological Research Institute (CFTRI) has found an answer, thanks to chia and quinoa.

The premier food technology laboratory has developed chocobars that are rich in Omega 3 fatty acids and proteins. Its trial to integrate the "superfoods" into the chocobar recipes had become successful and the commercial launch was expected soon.

The Central Arecanut and Cocoa Marketing and Processing Co-operative Limited or CAMPCO has supported the CFTRI for the large-scale trials of the product, which will be formally announced in New Delhi on November 24.

Protein-enriched chocobar made from puffed quinoa and Omega-3 enriched chocobar made from crispy chia seeds (black and white chocolates) will be launched at CSIR's Platinum Jubilee Techno Fest.

Besides adding to the nutritive value, the ingredients also add to the taste of the chocobars, making it sought after by all age groups, especially children and youth, according to CFTRI.

“CAMPCO, which has availed our chocobar technology for commercial production, is expected to launch the products in the market soon. Our idea is to integrate superfoods into chocolates for indirect blend of nutrition into foods,” said CFTRI Director Ram Rajashekar.

Speaking to The Hindu, the CFTRI director maintained that addition of “superfood” grains in products like chocolates had not been tried since chia and quinoa are new to the country.

Chia is a plant of Mexican and South American origin and known for its nutraceutical value. Seeds contain about 30 to 35 per cent of oil, which is the richest source of Omega-3 fatty acids, according to CFTRI.

Claiming that Chia seed incorporation in chocobars was “a first of its kind in the globe”, the CFTRI director said the product can help in the regular consumption of Omega 3 fatty acids by children thereby improving their cognitive skills, while quinoa incorporation can promote protein consumption.

Healthy and nutritious chocolates are a new concept with high market potential, said Dr. Rajashekar, adding that CFTRI will get a royalty from CAMPCO from the sale of chocobars.

Products from “superfoods” are the CFTRI’s efforts towards promoting two farmer societies – Raitha Mitra and CAMPCO, an FPO.

Campco will procure the seeds for their chocobars from the farmers’ cooperative society, Raitha Mitra, that was set up by local farmers, who started growing chia and quinoa seeds in parts of Mysuru district since over three years due to CFTRI’s intervention.

Shankar Bennur | Nov 23, 2016

Source: www.thehindu.com/news/national/karnataka/CFTRI%E2%80%99s-%E2%80%98superfood%E2%80%99-chocolates-to-hit-market-soon/article16683801.ece?utm_source=RSS_Feed&utm_medium=RSS&utm_campaign=RSS_Syndication

Also Published in : news.webindia123.com/news/Articles/India/20161122/2997049.html

Quinoa laddus, a big hit

CSIR-CFTRI



The quinoa laddu developed by the CFTRI in Mysuru is being sent to five schools by a start-up to improve nutrition among children.

Photo Credit: M_A_SRIRAM

High-energy quinoa-based laddu, a sweet snack developed by the Mysuru-based Central Food Technological Research Institute (CFTRI), has found many takers, especially in north India.

The laddu is rich in quality protein, fat and other essential nutrients which can suit all age groups, the institute claimed

At the CFTRI mess where over 4,000 laddus are prepared daily, a Bengaluru-based start-up, which supplies meal to five schools, had included quinoa-based laddu in its meal as a measure to improve nutrition among the children.

CFTRI Director Ram Rajashekar told The Hindu that the snack had been prepared from quinoa, a superfood, which contains 15 per cent more of protein than white rice which contains 3 per cent of proteins. “The production had picked up but the volume has to go up further. Some companies in north India have come forward to avail the technology from us for commercial production. We have plans to introduce more Indian foods from chia and quinoa in the days ahead,” he said.

Nov 22, 2016

Source: www.thehindu.com/news/national/karnataka/Quinoa-laddus-a-big-hit/article16682585.ece?utm_source=RSS_Feed&utm_medium=RSS&utm_campaign=RSS_Syndication

CSIR lays down law on patenting

Focus will be on licensing fees from patents and ending 'biodata patents' that only embellish a scientist's CV



LATHA
JISHNU

In the patent fever that has been sweeping the country in the past decade, the focus has been to get scientists to "understand" the importance of intellectual property rights and to encourage them to patent at the slightest excuse

There is a vast gulf between patents that are useful and those that are best described as ornamental. The first brings in revenue through licensing fees, while the other is something that merely looks good on a scientist's Curriculum Vitae. That is what the Council of Scientific and Industrial Research (CSIR) recently told its 18,000-odd scientists. Behave responsibly on patents and cut out the fluff, said Director-General Girish Sahnii in a cut and dried letter he sent out to the 38 laboratories that come under the CSIR umbrella. The fluff is what are termed "biodata patents", good to embellish a scientist's profile and of no use otherwise.

It is possibly the first time that such a message has gone out to public sector scientists. In the patent fever that has been sweeping the country in the past decade, the focus has been to get scientists to "understand" the importance of intellectual property rights (IPRs), and to encourage them to patent at the slightest excuse.

While CSIR has had a much longer history of promoting IPRs, it was practically a virgin exercise at the Indian Council of Agricultural Research (ICAR) which some years ago, had set up a special division under an assistant director-general to foster the drive for patents. This had some unexpected results: scientists were even permitted to patent recipes.

CSIR boasts the largest portfolio of patents among



Representational image

public-funded research institutions in the country—as it should since its labs work on a vast gamut of research, from chemicals to nanotechnology and from pharmaceuticals to space physics.

Its record on licensing is also said to be creditable. A study conducted in 2012 by SpicyIP, a website dedicated to IPR matters, gave an astonishing percentage of licensing of its patents at 21.3 per cent. This was calculated on the basis of the 454 licensing deals—which CSIR had claimed from its active patent list of 1,872. However,

just a month after the SpicyIP study, a press release issued by the Minister of Science and Technology said that CSIR had licensed just nine per cent of its patents.

Obviously, not all is well with CSIR's management of IPR, as Sahnii's missive reveals. Patents are being "filed for the sake of filing without any techno-commercial and legal evaluation" and the majority are just "biodata patents". What has also riled him is the ad hoc and illogical choice of countries for staking the patent claims. A scrutiny of the list of patents held by CSIR in 2013—I was unable to locate anything more up-to-date—

does show a curious penchant for the oddest of countries where CSIR scientists have filed claims. Here is a small sample: Croatia, Azerbaijan, Kyrgyzstan, Uganda, and Egypt.

Individual scientists are using them (patents) for getting promotions and labs are playing a numbers game. Once the patent is granted, neither the scientist nor the lab bothers about it. There is no serious attempt to find licensees nor is there a review system to periodically look at the patent portfolio," reads Sahnii's letter.

The Director-General was heading CSIR's Institute of

Microbial Technology before he was promoted and is, perhaps, accustomed to seeing better returns on patents. The letter is scathing about the lack of due diligence leading to waste of fees that run into crores of rupees.

To show that it means business, CSIR is ending the free run. Hereafter, labs will fork out just 25-50 per cent of the cost of filing and maintaining patents. However, if the labs are able to license their IPRs, CSIR will provide a matching grant. In short, no returns no funding.

DOWN TO EARTH
(The views expressed are strictly personal.)

CSIR Laboratories Instructed to Avoid Filing of Patents Without Appropriate Techno-Commercial Evaluation

CSIR

Council of Scientific and Industrial Research (CSIR) has sent out a message to all its laboratories to avoid filing of patents without appropriate techno-commercial evaluation.

In order to align the IP strategy of CSIR with the priorities of socio-economic development including escalating costs of patent filings, this message was sent to exercise utmost due diligence in filing of patents.

CSIR has taken following steps to put in place an appropriate system:

- (i) Establishment of IP Directorate at CSIR to analyze IP (Intellectual Property) life cycle from generation to exploitation.
- (ii) Preparation of standard operating procedures (SOP) and guidelines for evaluation of inventions in alignment with National IPR Policy.

Nov 24, 2016

Source: www.business-standard.com/article/news-cm/csir-laboratories-instructed-to-avoid-filing-of-patents-without-appropriate-techno-commercial-evaluation-116112400864_1.html

NML celebrates 67th Foundation Day, highlights achievements

CSIR-NML

CSIR-National Metallurgical Laboratory celebrated platinum Jubilee day of Council of Scientific & Industrial Research (CSIR), as well as 67th foundation day of the laboratory. Dr. G.K.Dey, Director, Materials Group, Bhabha Atomic Research Centre, Mumbai was the chief guest of the function.

Mrs. K. Muraleedharan also graced the occasion as a guest of honour. The foundation day function was attended by all the present and past family members of CSIR- National Metallurgical Laboratory along with around 120 science students and the teachers of the city.

Dr. K. Muraleedharan Director, CSIR-NML while delivering his welcome address informed the house about the different steps taken up by CSIR for the benefits of the society and thousands of young students of the country.

He also highlighted the glorious past of CSIR-NML through developing and transferring numbers of technology to Indian metallurgical and mineral industries.

Technology developed by CSIR-NML are largely based on indigenously available raw materials and aimed at creation of wealth from waste.

He has also dwelled upon the futuristic plans of CSIR-NML such as production of Cold Rolled Grain Oriented Steel (CRGO), Amorphous steel, rare-earth metals and magnesium metal. He encouraged the scientist to dream big as innovation and invention takes places in the mind.

Dr. N. G. Goswami, Advisor Management, introduced the Chief Guest to the audience. Chief guest of the function, Dr. G. K. Dey, delivered second Dr. B. R. Nijhawan Lecture-2016 on the topic entitled “Synthesis of Alloys from Indian Resources for Application in the Nuclear Sector”.

For the benefit of students, he talked in detail the science of alloy design, its synthesis and characterization. He presented few case-studies on metallic glasses, shape memory alloy and high-end ceramics to be used in strategic sectors such as energy defence and space.

He highlighted that besides contributing towards nuclear energy, Department of Atomic energy has made significant contributions in the health care, preservation of fruits and vegetables as well as development of disease resistant, seeds having high crop yields.

Director NML and the Chief Guest of the function, gave away mementoes and certificates to CSIR-NML’s employees who have completed 25 years of their services at NML and also to the staff members who have superannuated in 2016. Prizes were also given to the winner staff members for Essay writing competition.

Altekar award for the best technology transfer, B.R.Nijhawan award for best scientific paper, S. Banerjee award for the best in house research project and P.Ramachandra Rao award for best Technical and Non-technical staff members were also given for the year 2016.

The guest of honour Mrs. K. Muraleedharan gave away meritorious student awards to the staff wards who have got admission in IIT and IIM, as well as who have secured more than 90 percent marks in their class 10th and 12th boards examination.

CSIR-NML

राष्ट्रीय धातुकर्म प्रयोगशाला जमशेदपुर का स्थापना दिवस समारोह आज 66 साल में एनएमएल ने देश को दी 275 तकनीक

जमशेदपुर • डीपी स्टार

राष्ट्रीय धातुकर्म प्रयोगशाला (एनएमएल) जमशेदपुर 26 नवंबर को अपनी स्थापना का 66 साल पूरा करने जा रहा है। इस 66 साल में एनएमएल ने देश को आर्थिक प्रगति में अहम भूमिका निभाया है। भारत के प्रथम प्रधानमंत्री जवाहरलाल नेहरू ने 26 नवंबर 1950 को इस प्रयोगशाला का उद्घाटन किया और इसे आधुनिक भारत का मंदिर बताया।

इस 66 साल के दौरान प्रयोगशाला ने 275 तकनीक को उद्योग के लिए हस्तांतरित किया है। यही नहीं इसकी उपलब्धियों में 313 भारतीय एवं 41 आंतरराष्ट्रीय पेटेंट, 2500 एस.सी.आई. प्रकाशन (13 ने अधिक साइटेशन/पेपर) तथा 65 से अधिक संस्थागत एच-इंडेक्स शामिल हैं।



स्वदेशी तकनीक पर जोर: प्रयोगशाला के अलावा प्रकाश से स्वदेशी कच्चे माल और अलग प्रविण्डान के तारों के साथ स्वदेशी पौधों के विकास पर ध्यान केंद्रित किया गया था। लौह और अलौह उद्योगों के लिए उच्चतम तकनीकरण प्रौद्योगिकियों का इनके फलफूल पर विचार, लौह और अलौह अयस्क तथा नम-कार्बन क्लैस के उपयोग के लिए वैकल्पिक अयस्क पैकेट करने की प्रक्रिया, बॉलिंग ऑक्सीजन स्टील पैपर करने की प्रक्रिया, निचल-पी स्टीमल स्टील तथा अन्य ताप प्रतिरोधी स्टील का विकास, ऐस-मिनाइजिंग टेक्नोलॉजी, उच्च एवं निचल-कार्बन फेरो-सीड का विकास, इलेक्ट्रो-थर्मिक मेगनीज इड-ऑक्साइड, इलेक्ट्रो-कॉल्टिक मेगनीज के लिए प्रौद्योगिकी का विकास तथा रजत-मैंगनीज-एलीय कनवर्टर्स आदि का विकास प्रमुख हैं।

स्टील इंडस्ट्री में एनएमएल का अहम योगदान

एनएमएल का योगदान स्टील संयंत्रों में लौह अयस्क सजीकरण संयंत्र की स्थापना रहा है जैसे आधारन और वरिगिंग एवं एस्लोमेरेशन प्लांट - (1) टटा स्टील के लिए कोयला, (2) सिंथेट स्टील प्लांट के लिए इस्पात ठंडक, (3) टाजकेस स्टील प्लांट के लिए बरतुआ, (4) दुर्गापुर स्टील प्लांट के लिए कोयले, (5) आधरस एल स्टील इण्डिया के लिए गुआ, (6) भोकारो स्टील प्लांट के लिए किरंदुरु, (7) विजया स्टील प्लांट के लिए बैल्टिंस तथा (8) कोरम स्टील प्लांट के लिए कोयला। कोल वारांगल को स्थापित करने हेतु कोल वारांगल के व्यापक अध्ययन से मदद मिली है जैसे (1) टटा स्टील के लिए जमशेदपुर एवं वेंडो बोकारो, (2) कोरम कोरम सिंथेट के लिए लौह तथा (3) अल कोरम कोल सिंथेट के लिए गुआ। उरी प्रकार, अलौह अयस्क तथा खनिज के क्षेत्र में पापलट प्लांट के अध्ययन से निम्नलिखित की स्थापना में मदद मिली - (1) हिन्दुस्तान कोरल लिमिटेड के लिए मलयालम एवं तमिल कोरल कन्वर्टर्स, (2) हिन्दुस्तान-जिंक लिमिटेड के लिए बरतुआ गुआ-जिंक और कन्वर्टर्स, (3) सिंथेटिक मेटलस कोरल के लिए कोरल-लौह-जिंक कन्वर्टर्स, (4) गुआलत खनिज विकास निगम तथा मध्य प्रदेश खनिज एवं धातु विभाग के लिए फ्लोटेटर कन्वर्टर्स और (5) टिलकाग में डेपॉजिट प्लांट।

Also Published in:

Dainik Jagran, Jamshedpur, Nov 25, 2016

Hindustan, Jamshedpur, Nov 25, 2016

News Ispat Mail, Jamshedpur, Nov 25, 2016

Prabhat Khabar, Jamshedpur, Nov 25, 2016

Water lily can fight diabetes, obesity and ageing, say IICT scientists

CSIR-IICT

The blue water lily, long considered as an ornamental plant, could emerge as the new panacea for diabetes, obesity and memory problems. Scientists at the city-based Indian Institute of Chemical Technology (CSIR-IICT) have discovered that the seeds and tuber of blue water lily are capable of effectively controlling the blood glucose and lipid levels in persons suffering from diabetes and obesity. They also contain chemicals that can delay the process of ageing and related brain and neurological problems.

The blue water lily or *Nymphaea nouchali* grows as a weed in lakes and ponds in several parts of India including Andhra Pradesh and Telangana. Since its seeds and tuber were consumed by people during severe food crisis in the past, the blue water lily has come to be known as 'famine food'. The IICT researchers have decoded the nutritional and medicinal secrets of this famine food. They suggest that people should include *Nymphaea* in regular diet to maintain blood glucose and fat levels under check.

"The plant works on pancreas and intestines and controls the blood glucose level. It works effectively after a meal by reducing the diet-induced blood sugar level. It also controls the lipid (fat) level," said the IICT scientists in their study published in the latest issue of the scientific journal, *Cogent Food and Agriculture*. The team comprised Ashok K Tiwari, U Priyanka, Amtul Zehra and others.

The researchers found that the extract from seeds and tuber also prevents formation of various 'advanced glycation end-products' that contribute to ageing and degeneration of the nervous system.

"Nymphaea nouchali may become an important dietary supplement to counter development of diet-induced hyperglycaemia (high blood sugar level), hyperlipidaemia (high lipid level) and resultant oxidative stress. It can also be utilised as an herbal therapeutic for management of type 2 diabetes mellitus and obesity," they said.

The blue lily is used in traditional systems of medicine including Ayurveda and Unani as a brain tonic and antibiotic. This is, however, the first time that scientists have found that the plant could also be used to control diabetes, obesity and ageing.

Syed Akbar | TNN | Nov 22, 2016

Source: imesofindia.indiatimes.com/city/hyderabad/Water-lily-can-fight-diabetes-obesity-and-ageing-say-IICT-scientists/articleshow/55568270.cms

Also Published in: www.newindianexpress.com/cities/hyderabad/2016/nov/24/medicinal-properties-found-in-blue-water-lilies-1542040.html

కలువలతో మధుమేహం నియంత్రణ!

- ప్రయోగ పూర్వకంగా నిరూపించిన ఐఐఐటీ
- కలువగింజలు, దుంపలతో ఆరోగ్యానికి మేలు
- శాస్త్రవేత్త అశోక్ తివారీ వెల్లడి



విక్టోరియా (ఐఐఐటీ) శాస్త్రవేత్త అశోక్ తివారీ. ఆయుర్వేద, యునానీ వైద్యవిధానాల్లో ప్రస్తావించిన దిన కొన్ని ఆహార పదార్థాలు

సాక్షి, హైదరాబాద్: ఈ రోజుల్లో తినేతిండితో వస్తున్న సమస్యలు అన్నీ ఇన్నీ కావు. బాగా పొలిడ్ల చేసిన పరి, గోధుమలు.. శుద్ధీకరణ కారణంగా వంటనూనెలు అనేక సూక్ష్మ పోషకాలను కోల్పోతున్నాయి. ఫలితంగా శరీరంలో జీవక్రియల్లో తేడాలు వచ్చి.. మధుమేహం మొదలుకుని.. కేన్సర్ వలకూ అనేక వ్యాధులకు దారితీస్తున్నట్లుగా తాజా పరిశోధనలు తేల్చాయి. మరి మధుమేహం, ఊబకాయం వంటి సమస్యలు రాకుండా కాపాడుకోవడం ఎలా? దీనికి మన తాతలు, ముత్తాతలు తిన్న ఆహారాన్ని మళ్ళీ తినడం మొదలుపెడితే చాలు అంటున్నారు సీఎస్ఐఆర్ ఇండియన్ ఇన్స్టిట్యూట్ ఆఫ్ కెమికల్

మందులుగా ఎలా పనిచేస్తాయన్న విషయాన్ని ఆధునిక పద్ధతుల ద్వారా ఆయన నిరూపిస్తున్నారు. నిలికలువ మొక్కల గింజలు, దుంపలు మధుమేహం, ఊబకాయ సమస్యలను సమర్థంగా ఎదుర్కోగలవని ప్రయోగపూర్వకంగా నిరూపించారు. అధికంగా శుద్ధి చేసిన ఆహారాలను తిన్న వెంటనే రక్తంలోని చక్కెర, కొవ్వుల మోతాదు అకస్మాత్తుగా పెరిగిపోతుందని, ఇవి కాస్తా.. శరీరంలో ప్రీరాడికల్స్ పెరిగేందుకు, తద్వారా జీవక్రియల్లో తేడాలు వస్తోందని కారణమ చెప్పారు. ఈ సేవధ్యంలో తాము ఒకప్పుడు ఆహారంగా వాడిన నీలి కలువల విత్తనాలు,

దుంపలు జీవక్రియలపై ఎలాంటి ప్రభావం చూపుతాయో తెలుసుకునేందుకు ప్రయోగాలు చేశామని చెప్పారు. గింజలు, దుంపల సారాన్ని ప్రవచాపంలో సేకరించి ప్రయోగశాలలో పరిశీలించినప్పుడు అవి కార్బోహైడ్రేట్లు, కొవ్వులను విడగొట్టి ఎంజైమ్లపై ప్రభావం చూపుతున్నాయని, తద్వారా జీర్ణక్రియను మందగింప జీయడంతో పాటు శరీరానికి అవసరమైన శక్తిని కూడా వెక్కువగా విడుదలయ్యేలా చేస్తుందని తెలిపారు. ప్రస్తుతం మార్కెట్లో అందుబాటులో ఉన్న మధుమేహ మందు ఎకార్బోక్, కొవ్వులు తొందరగా జీర్ణమయ్యేందుకు వాడే ఒర్లిస్టాబ్ మందుల కంటే మెరుగ్గా నీలికలువ విత్తనాలు, దుంపలు పనిచేస్తున్నట్లు తమ ప్రయోగాల ద్వారా తెలిసిందని అశోక్ తివారీ తెలిపారు. అంతేకాక.. ఇవి అనేక వ్యాధులకు కారణమయ్యే ప్రీ రాడికల్స్ను శరీరం నుంచి తొలగించేందుకు కూడా బాగా ఉపయోగపడతాయని ఆయన వివరించారు.

Sakshi | Nov 24 , 2016
Also Published in: Eenadu, Nov 24, 2016

'Blue water lily can fight diabetes, obesity and ageing'

Syed.Akbar@timesgroup.com

Hyderabad: The blue water lily, long considered as an ornamental plant, could emerge as the new panacea for diabetics, obese and elderly with memory problems. Scientists at the city-based Indian Institute of Chemical Technology (CSIR-IICT) have discovered that the seeds and tuber of the blue water lily are capable of effectively controlling the blood glucose and lipid levels in persons suffering from diabetes and also obesity. They also contain chemicals that can delay the process of ageing and related brain and neurological problems.

The blue water lily or *Nymphaea nouchali* grows as a weed in lakes and ponds in several parts of India including Andhra Pradesh and Telangana. Since its seeds and tuber were consumed by people during severe food crisis in the past, the blue water lily has come to be known as 'famine food'. The IICT researchers have decoded the nutritional and medicinal secrets of this famine food. They suggest that people should include *Nymphaea* in their regular diet to maintain

NYPHAEAE NOUCHALI

> The consumption of blue water lily controls diabetes, brings down weight in obese, and delays the process of ageing

> In traditional medicine, the seeds and tuber of the plant have been used as brain tonic and as an antibiotic

> IICT's discovery could lead to the commercial production of blue lily that is at present considered a simple ornamental plant



in blood glucose and fat levels under check.

"The plant works on pancreas and intestines and controls the blood glucose level. It works effectively after a meal by reducing the diet-induced blood sugar level. It also controls the lipid (fat) level," said the IICT scientists in their study published in the latest issue of the scientific journal, *Cogent Food and Agriculture*. The team comprised Ashok K. Tiwari, U. Priyanka, Amtul Zehra and others.

The researchers found that the extract from seeds and tuber also prevents formation of various 'advanced glycation end-products' that contribute to ageing and also

to this degeneration of the nervous system.

"*Nymphaea nouchali* may become an important dietary supplement to counter development of diet-induced hyperglycaemia (high blood sugar level), hyperlipidaemia (high lipid level) and resultant oxidative stress. It can also be utilised as an herbal therapeutic for management of type 2 diabetes mellitus and obesity," they said.

The blue lily is used in traditional systems of medicine including Ayurveda and Unani as a brain tonic and antibiotic. This is, however, the first time that scientists have found that the plant could also be used to control diabetes, obesity and ageing.

CSIR-IHBT

CSIR showcases products at open day

OUR CORRESPONDENT

PALAMPUR, NOVEMBER 23

As a prelude to “India International Science Festival”, CSIR-Institute of Himalayan Bioresource Technology organised an open day today to showcase various scientific activities.

The institute remained open to welcome common men who were apprised of the role played by the institute in societal uplift, educa-

tion and industrial research. Special scientific exhibits were displayed to showcase products and technologies developed by the institute. About 500 children from various schools of Palampur, Nagrota Bagwan, Baijnath and Dharamsala participated in the programme.

Addressing students in the auditorium, Dr Bikram Singh, seniormost scientist, apprised about the CSIR achievements and further

highlighted the progress made by the institute under the leadership of the Director, Dr Sanjay Kumar.

A lecture on the topic, “Cultivation of Passion for Science and Innovation” for schoolchildren was delivered by Dr OP Sharma, former Head, Indian Veterinary Research Institute (IVRI), at Palampur. The meritorious students were also honoured by the keynote speaker.

The students were also

shown short documentaries on technologies developed by the institute. The visitors and students were taken to various labs to apprise them of recent research and development activities and to interact with scientists.

Representatives from various Gram Panchayats of the adjoining areas expressed to have been greatly benefited by the visit and lauded the work being carried out by the institute.

ज्ञान जन दिवस पर छात्रों-जनप्रतिनिधियों व एनजीओ की टीमों ने किया दौरा छात्रों ने जानीं सीएसआईआर की गतिविधियां

■ दिव्य हिमाचल टीम, पालमपुर

हिमालय जैवसंपदा प्रौद्योगिकी संस्थान में बुधवार को जन दिवस का आयोजन किया गया। इस अवसर पर क्षेत्र के स्कूली बच्चों, जनप्रतिनिधियों और एनजीओ की टीमों ने संस्थान का दौरा कर सीएसआईआर की गतिविधियों को जाना।

केंद्रीय विद्यालय पालमपुर से अध्यापकों कुशल राज, योगिता गुरंग और कुशल कपूर के साथ पहुंची रिया, पूर्वा, खुशबू व स्मृति आदि ने बताया कि सीएसआईआर में पहुंच कर उनको अनेक जानकारियां मिली हैं। बच्चों ने यहां पर प्रयोगशालाओं का दौरा कर टिशू कल्चर, बांस व अन्य उत्पादों से जुड़ी अहम जानकारियां हासिल की। राजकीय वरिष्ठ माध्यमिक पाठशाला बैजनाथ के तुशार व मुस्कान के साथियों ने बताया कि संस्थान का दौरा उनके लिए काफी लाभप्रद



रहा है। यहां पर उन्होंने ऐसी चीजें देखीं, जिनके बारे में भी वे किताबों में ही पढ़ा करते थे। बच्चों ने कहा कि संस्थान के वैज्ञानिकों का अनुभव विशेषकर विज्ञान की शिक्षा ग्रहण कर रहे बच्चों के लिए काफी लाभप्रद हो सकता है।

इसलिए ऐसे आयोजन समय-समय पर किए जाने चाहिए। डा. ओपी शर्मा पूर्व प्रभारी

वैज्ञानिक आईवीआरआई पालमपुर ने 'विज्ञान एवं नवोन्मेश के लिए उत्साह जगाना' विषय पर संभाषण दिया।

छात्रों को संस्थान द्वारा विकसित प्रौद्योगिकी पर तैयार लघु वृत्तचित्र भी दिखाया गया। इस अवसर पर शिक्षा के क्षेत्र में उत्कृष्ट प्रदर्शन करने वाले विभिन्न स्कूलों के बच्चों को पुरस्कृत भी किया गया।

छात्र विज्ञान को कैरिअर के रूप में अपनाएं : ओपी शर्मा

वैज्ञानिक उपलब्धियों पर जन दिवस का आयोजन

सिटी रिपोर्टर | पालमपुर

भारतीय अंतरराष्ट्रीय विज्ञान महोत्सव के अंतर्गत सीएसआईआर-हिमालय जैवसंपदा प्रौद्योगिकी संस्थान पालमपुर में बुधवार को समाज के लिए उपयोगी विविध वैज्ञानिक उपलब्धियों के प्रदर्शन के लिए जन दिवस के रूप में मनाया गया। इस अवसर पर छात्रों, सामान्य जन, महिलाओं, स्वयंसेवी संस्थाओं, क्षेत्र के अन्य नागरिकों को संस्थान की वैज्ञानिक उपलब्धियों, जनसाधारण के सामाजिक-आर्थिक उत्थान व शोध के क्षेत्र में किए जा रहे कार्यों के बारे में जागरूक किया गया। औद्योगिक विकास को प्रोत्साहित करने के लिए संस्थान द्वारा विकसित उत्पादों और प्रौद्योगिकी को एक विशेष प्रदर्शनी

के माध्यम से प्रदर्शित किया गया। पालमपुर, नगरोटा बगवां, बैजनाथ एवं धर्मशाला के कई स्कूलों के लगभग 500 छात्रों व अध्यापकों ने इसमें भाग लिया व प्रतिभावान छात्रों को सम्मानित भी किया गया। डॉ. ओपी शर्मा पूर्व प्रभारी वैज्ञानिक आईवीआरआई पालमपुर ने विज्ञान एवं नवोन्मेष के लिए उत्साह जगाना विषय पर संभाषण भी दिया।

डॉ. शर्मा ने छात्रों को विज्ञान को कैरियर के रूप में अपनाने के लिए प्रेरित किया तथा बताया कि आज बहुत से संस्थान विभिन्न प्रकार के विज्ञान विषयों पर शिक्षा प्रदान कर रहे हैं। इस अवसर पर छात्रों को संस्थान द्वारा विकसित प्रौद्योगिकी पर तैयार लघु वृत्तचित्र भी दिखाया गया। सभी नागरिकों तथा छात्रों को विभिन्न प्रयोगशालाओं का भ्रमण कराया।

Nov 24, 2016

CSIR-NIO

NIO sign MoU on marine sciences with Pancham

BY ROHAN SHRIVASTAV
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Panaji: CSIR-National Institute of Oceanography (NIO), Dona Paula, signed a Memorandum of Understanding (MoU) with Pancham Aquaculture Farms Limited (PANCHAM), in the field of technological innovations in marine sciences during the India International Science Festival held at NIO, as part of CSIR Platinum Jubilee celebrations, on Wednesday.

The MoU will enable PANCHAM to identify issues affecting sustainability in coastal aquaculture.

With the help of this MoU, the CSIR-NIO and PANCHAM will join hands in the areas of research projects, education and training programmes.

Director of NIO, Dr Prasanna Kumar said, "This MoU will enable us to exchange our knowledge and to utilise PANCHAM aquacultural farm for experimenting the lab skill testing, whereas the PANCHAM can make full use of the NIO's scientific knowledge, technology and aquatic health solutions."



Secretary Science and Education Nila Mohanan, Manish Desai (Additional DG PIB) Director of NIO Dr Prasanna Kumar releasing the balloon attached with Vaisala Radio Sonde GPS System device after the inauguration of India International Science Festival 2016 organised by National Institute of Oceanography at Donapaula on Wednesday.

With the help of this MoU, the CSIR-NIO and PANCHAM will join hands in the areas of research projects, education and training programmes.

CSIR-NIO is also in process of signing another MoU with a private venture -- EduMarine Private Limited, a group of IIT graduates and marine enthusiasts, Yugal Chittara and Tarun Jain.

"We want to work with NIO for breeding of jelly fish and to take forward marine education and reach out to all schools. Our aim is to build a future generation of marine-conscious individuals and NIO has the same goal as we do," said Tarun Jain.

The duo from EduMarine Private Limited group exhibited a jelly fish starter kit at the IISF that includes all the essentials for maintaining healthy jelly fish along with information on life cycle of jelly fish, zoo plankton, salinity and water quality of estuaries and sea bacteria/ ammonia cycle.

Nov , 2016

CSIR-NIO

Using technology to bring students closer to marine life

TIMES NEWS NETWORK

Panaji: The Ocean Technology Festival for school students at Council of Scientific and Industrial Research-National Institute of Oceanography (CSIR-NIO) campus was organized on Wednesday to celebrate the CSIR's platinum jubilee. The festival is a precursor to the India International Science Festival scheduled from December 7 to 11 in New Delhi.

Union minister of state for Ayush Shripad Naik inaugurated the event.

Around 1,200 students from 50 secondary and higher secondary schools participated in the event. Award-winning students of the SCERT (State Council of Educational Research and Training) also exhibited their inventions at the festival.

The highlight of the event was the CSIR platinum jubilee technofest, an exhibition based on innovations in marine science and technology.



Venessa Silveira

Around 1,200 students from 50 secondary and higher secondary schools participated in the event. Award-winning students of the SCERT exhibited their inventions at the festival

North Goa collector Nila Mohanan said that education in science is a pathway to become a doctor and engineer but now we need to change this scenario. We need more scientists, for scientific spirit to be included in every subject.

Additional director general of PIB (Press Information

Bureau) Manish Desai said communication is very important especially in the field of science. Taking science to the common man by different media is the only way to promote and popularize the science.

NIO director Prasanna Kumar said "There is a great dearth of students pursuing science, especially physics and mathematics. We also have fast-depleting manpower at the institute. Our sample strength is 200 while we have only 120 as the sample strength in Goa."

The festival is a step in the right direction for interested students, feel scientists.

"We have received great response for the festival because students don't get such opportunities in Goa. Such exhibitions create interest among students as they see can learn better from practical subjects rather than theory," said CSIR chief scientist Rahul Sharma.

GPS system offers improved accuracy on humidity, temperature measurement

THE DEVICE MONITORS MONSOON CLIMATIC CHANGES

BY ROHAN SHRIVASTAV
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Panaji: With an aim to study about the accuracy in humidity, pressure, and temperature measurement, a Global Positioning System (GPS) by the United States-based Vaisala Radio Sonde was exhibited at one-day India International Science Festival (IISF) organised at National Institute of Oceanography (NIO), Dona Paula on Wednesday.

Vaisala Radio Sonde GPS System acts like a weather balloon which flies approximately 20-kilometre above the ground level in the sky before bursting. This device monitors the monsoon climatic changes after which it sends the data to the ground station. The data received at the ground station are used by the meteorologist to predict the rainfall and other changes in the climate within a span of time.

The material used to build Vaisala Radio Sonde GPS System are GPS antenna, battery case, additional sensor interface connector, antenna, temperature sensors, humidity sensors, sensor boom and GC25 interface.

The GPS gives full vertical profile from ground level till ozone layer. It



Narendra Tari (L) with Vaisala Radio Sonde GPS System at India International Science Festival (IISF) organised at NIO, Dona Paula on Wednesday. Pic: Rohan Shrivastav

also sends the latitude and longitude using which the altitude of the balloon is traced.

"The data received by this is very im-

ABOUT THE GPS SYSTEM

- The GPS gives full vertical profile from ground level till ozone layer.
- The data received by GPS at the ground station are used by the meteorologist to predict the rainfall and other changes.

portant for the economy of our country, the information received is passed to the farmers across India through Agriculture Ministry; so accordingly farmers prepare themselves to cultivate crops," said Narendra Tari, a deputed volunteer at the exhibition.

Before launching of this balloon, the organisation will have to obtain prior permission from the Airport Authority of India (AAI) in order to avoid any aerial mishaps with the aircraft.

The Vaisala Radio Sonde GPS project which was displayed at IISF, was under the supervision of NIO principal scientist Prakash Mehra.

The project offers improved data availability and improved accuracy on humidity, pressure, and temperature measurement. **More on Pg 2**

CSIR-NIO

NIO science festival reaches out to young minds



Students and visitors looking at the scientific projects displayed at the exhibition

BY A STAFF REPORTER
reporters@gomantaketimes.com

Panaji: There is a need for creating a pool of talented scientists, as National Institute of Oceanography (NIO) is facing shortage of manpower. NIO's requirement is 200 scientists but it is falling short by 70, said NIO director, Dr Prasanna Kumar at the CSIR Platinum Jubilee celebrations, CSIR-National Institute of Oceanography (NIO), Dona Paula, on Wednesday. As part of the celebrations, the Indian In-

ternational Science Festival (IISF-Goa) was organised at the NIO campus. said that many schools in Goa will be entitled to receive funds from the Central government under the scheme of Atal Tinkering Laboratories, thereby

making science interesting, applicable and for applying science in day-to-day life. Mohanan said that

science should not be restricted to career path and stressed on making science applicable to all subjects in the curriculum. "I personally believe that science and scientific spirit should underline the educa-

school students was the exhibition on innovations in marine science and technology, display of award-winning student projects from Goa, scientific talks of current interest, films on ocean sciences and scientist-student interactions. As many as 1200 students from about 50 secondary and higher secondary schools participated in the day-long IISF-Goa.

Technologies developed by NIO exhibited for the IISF were Research Vessel Sindhu Sadhana, marine robots and Integrated Coastal Observation Network (ICON). Films shows

INDIA INTERNATIONAL SCIENCE FESTIVAL

tion imparted in every single subject. There is a need to change the education system to bring science in the mainstream into the everyday teaching process," said Mohanan.

Education in science is a pathway to become a doctor or an engineer. But now, we need to change this scenario. We need more scientists. For that, scientific spirit needs to be included in every subject, said Mohanan.

In her address, Secretary (Education) Nila Mohanan

and lectures on topics of marine sciences like, life in the oceans, chemistry of the oceans, marine robots, marine pollution, ocean and climate, marine surveying also organised for the students. Students from Goa whose inventions were selected for awards by SCERT were also given an opportunity to exhibit their models. The Ocean technology festival is a precursor to India International Science Festival scheduled from December 7 to 11 in New Delhi.

The highlights of the ocean technology festival for

and lectures on topics of marine sciences like, life in the oceans, chemistry of the oceans, marine robots, marine pollution, ocean and climate, marine surveying also organised for the students. Students from Goa whose inventions were selected for awards by SCERT were also given an opportunity to exhibit their models. The Ocean technology festival is a precursor to India International Science Festival scheduled from December 7 to 11 in New Delhi.

Reduce costs and consumption with Blue Light Jet Hand Dryer



Amog Bude, Pratamesh Fadte and Kiran Palki display their Blue Light Jet Hand Dryer.

BY LYNDON J PINTO
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Panaji: Tasked by their teacher to conceptualise a device for their school science experiment, three 17-year-old students of Dnyanprassarak Mandal's PVS Kushe higher secondary school, Assagao, - Amog Bude, Pratamesh Fadte and Kiran Palki - created a hand dryer that costs less to manufacture and consumes less electricity.

Their product - Blue Light Jet Hand Dryer, on exhibition at the India International Science Festival, at NIO, Dona Paula, uses four blue bulbs and two fans, powered by 160 watts of power to dry wet hands within 30 to 60 seconds.

Speaking to Gomantak Times about their creation, Amog Bude said "For a science exhibition organised by our school, our science teacher wanted us to come up with some new concepts and not to steal ideas from the Internet."

"Hence, the three of us decided to create a device for cooking that does not use

the conventional means of gas or firewood. We decided to use blue bulbs and made a design that used an electrical connection, along with four blue bulbs," said Amog.

"However, we found that the heat generated by four bulbs was insufficient to cook anything but was sufficient to evaporate water. We then decided to convert our idea from a cooking device to a hand drying machine by adding two fans at the top and bottom of the device," explained Amog.

Stating that their 'Blue Light Jet Hand Dryer' has a power consumption of only 160 watts as opposed to a traditional hand dryer which uses 2200 watts, Amog also stated that the cost of their dryer is only Rs 600, while the price of a traditional hand dryer is Rs 3000 and above.

"Our dryer is currently made using tin foil and cardboard; materials unsuitable to be used in toilets and bathrooms. However, the same concept can be fitted to more suitable materials for proper usage," concluded Amog.

Popularising jelly fish tanks for science and decoration

BY LYNDON J PINTO
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Panaji: Using a jelly fish tank to study one of the world's oldest organisms as well as measure ammonia, nitrate and nitrite levels through simple science experiments, Delhi-based Jelly Kings, a unit of EduMarine Pvt Ltd hope to make a tank an educational device as well as an ornamental piece.

"EduMarine Private Limited was started with a two-pronged aim. The most important aspect for us is to educate people of India about the various aspects linked to the ocean. The second is to be self-sufficient by selling our education kits as ornamental pieces," said 24-year-old Tarun Jain while speaking to the Gomantak Times, during the exhibition at the India International Science Festival (IISF-Goa) at NIO campus on Wednesday.

"Jelly fish are millions of years old and are even older than dinosaurs, yet they have survived all the changes on earth. By maintaining this jellyfish tank, which is our first product, you can perform scientific experiments at home or in class, instead of only in your school lab," said Tarun.

"You can use a dropper and a kit that comes with the tank to test the water for ammonia, nitrite, and nitrate levels. Through these tests, you will be able to tell the amount of built-up ammonia and tabulate the rise and fall in nitrate and nitrite levels, as well as the life-cycle of a jellyfish," added Tarun.

Born in the landlocked State of Madhya Pradesh,

24-year-old Tarun Jain had not seen the ocean for 20 years of his life, until he travelled to New Zealand to pursue a PhD in mechanical engineering, where he fell in love with the ocean and was inspired to take up the cause of spreading awareness about oceans.

He dropped out of his PhD course, but buoyed with a zest to know more about the ocean, he joined hands with fellow mechanical engineer from Rajasthan, 24-year old Yugal Chittara to try and bridge the gap between people in India and their knowledge of the ocean.

"I did not see the ocean for the first 20 years of my

life. If I had seen the ocean earlier, I would have

pursued a degree in marine biology or a related field. Nonetheless, my passion for understanding the

ocean makes me want to educate 70 per cent of the people in India who have not seen the ocean in their life time," said Tarun.

"Our crystallised tanks are available for ornamental usage as well as educational purposes across the country. We hope people who have not seen oceans, see these tanks, get intrigued by aquatic life and pursue a career that enables us to harvest the resources of the ocean which are largely untapped," said Yugal Chittara.



Yugal Chittara, Tarun Jain, along with their crystallised jellyfish tank

CSIR-CCMB scientists' new findings to pave way for developing personalized medicine

CSIR-CCMB

A team of scientists from Hyderabad-based Center for Science and Industrial Research-Center for Cellular and Molecular Biology (CSIR-CCMB) made new findings of genetic link to skin colour which is expected to further help the scientists to understand the link between genomic features, disease susceptibility and drug response. This will enable to make ground for developing personal and customized medicines for individual patients in future.

“This is yet another effort from the team of scientists at CSIR-CCMB in the field of genomics, which helped us in understanding the genetic link to the skin colour”, said Dr Rakesh Mishra, Director, Centre for Cellular and Molecular Biology. According to Dr. Mishra a team of scientists led by Dr. Kumarasamy Thangaraj at CCMB Hyderabad, in collaboration with Estonian Biocentre, Estonia and 5 other institutes had conducted an extensive research to explore the genetics of skin colour variations across India.

As part of the research, the team of scientists carried out extensive epidemiological survey of 1167 individuals belonging to 27 populations and quantified melanin content at most exposed and low exposed area of human body at Middle region of Gangatic plains (Uttar Pradesh and Bihar), and selected 374 individuals for the first round of genetic study. In their research it is found that SLC24A5 gene is known to make skin lighter and is the main reason behind 25-38 per cent of the pigmentation differences between Europeans and West Africans.

“Earlier it was established that a variant/modification (rs1426654) in the gene is associated with skin pigmentation measures in India. To understand it further the research team analysed the entire gene and found another variant (rs2470102), which contributes to skin pigmentation variation in Indian subcontinent. Further analyses revealed that both the variants (rs1426654 and rs2470102) together could better explain the variation in skin colour among Indian populations than considering each variant independently.

The difference in skin colour persisted even when the contribution by the previously known SNP was adjusted, suggest that the new SNP has an independent effect on skin colour,” explained Dr. Anshuman Mishra, the first author of the study.

The scientists revealed that social structure defined by the caste system has a ‘profound influence on skin pigmentation’. The skin colour was found to vary significantly among ethnic groups and social categories studied. The researchers then compared the skin colour (phenotype) with the genetic variation (genotype) of the individuals. Those with derived (mutant) alleles had fairer skin compared to those who had old (wild type) alleles. “Our study clearly reflects the profound influence of the strict marriage patterns and multi-layered endogamy adding further to the variation in skin color contributing to the mosaic of skin tones” says Chandana Basu, one of the authors of the study and researcher at Estonian Biocentre, Tartu, Estonia.

Study was conducted on 1,825 individuals belonging to 52 diverse populations across India and found that, social category and associated SNPs explain 38.4 per cent of the variation in skin color. “Unlike Africans and Europeans, we do not have homogeneous skin colour throughout the country. This could be due to different waves of human migration into India and recent admixture of all Indian populations, which we predicted in our previous study that it could have happened about two thousand years ago,” said Dr Thangaraj.

Overall with these new findings of genetic mutations linking with skin colour scientists points to the era of personalized medicine based on link of genomic features with disease susceptibility and drug response. “We feel that more such studies be carried, at very large scale, to establish individual specific lifestyle advisory and medical prescriptions as it is clear that ‘one size does not suit all’ is also applicable to the area of human health and disease, opined Dr Mishra.

CSIR-NML

Loyola School wins 7th Prof. P. Ramachandra Rao State Science Quiz 2016

Jamshedpur, Nov. 21: Loyola School, Jamshedpur won the 7th Prof. P. Ramachandra Rao state level Science Quiz, which was organised by National Metallurgical Laboratory for the students of std. IX & X in the fond memory of its former director Prof. P. Ramachandra Rao, supported by Jharkhand State Chapter of the National Academy of Sciences, India (NASI).

Quiz master, V.V Ramanan from Chennai, conducted the quiz. A total of 52 schools comprising 156 student participants accompanied by their respective teachers from different parts of state, namely, Ranchi, Bokaro, Dhanbad, Chaibasa, Chandil, Jadugoda, Chakradharpur, Noamundi, Ghamaria, Ghatshila, Mosabani and also Local



Schools of East Singhbhum district participated in the quiz. There was a preliminary screening written Test where the participants had to attempt 25 questions.

Loyola School emerged as winner represented by Shobhit Mahato, Agnidh Ghosh and Jayant Krishna

scoring 305 points whereas Carmel Junior College, Sonari represented by Harshit Agarwal, Shubraneel Pal and Abinab Neogi finished as the runner-up scoring 155 points.

CSIR-NML adviser (Management) Dr N G Goswami gave away the

prizes. He was accompanied by V.V Ramanan, quiz convener, Suprabha Nayar, principal scientist, Dr S Sivaprasad and other dignitaries including many young scientists and research fellows.

Prof. P Ramachandra Rao (21 March 1942 - 10

January 2010) was a metallurgist and administrator. He has the unique distinction of being the only Vice-Chancellor (2002-05) of the Banaras Hindu University (BHU) who was also a student (1963-68) and faculty (1964-92) at that institution. From 1992 to 2002, Rao was the Director of the National Metallurgical Laboratory, Jamshedpur. After his tenure as Vice-Chancellor of B.H.U., in 2005, he took the reins of the Defence Institute of Advanced Technology (DIAT) as its first Vice-Chancellor. He was to serve DIAT until his superannuation in 2007. From 2007 till the end, Rao was a Raja Ramanna Fellow at the International Advanced Research Centre for Powder Metallurgy and New Materials, in Hyderabad, Andhra Pradesh.

The Avenue mail | Jamshedpur | Nov 22, 2016

CSIR-NML

लोयोला विजेता व कारमेल जूनियर बना उपविजेता

एनएमएल की प्रो पी
रामचन्द्र राव मेमोरियल
साइंस क्विज संपन्न

जमशेदपुर : सीएसआइआर-एनएमएल के तत्वावधान में सोमवार को हुए पूर्व निदेशक प्रोफेसर पी रामचन्द्र राव मेमोरियल साइंस क्विज का विजेता लोयोला स्कूल एवं उपविजेता कारमेल जूनियर कॉलेज बना है।

पूर्व निदेशक की स्मृति में आयोजित इस क्विज में रांची, नोआमुंडी, बोकारो, चाईबासा, धनबाद, हजारीबाग, चक्रधरपुर, गम्हरिया, घाटशिला, मुसाबनी के साथ ही लौहनगरी के विभिन्न 52 स्कूलों की टीमों ने हिस्सा लिया। प्रारंभिक दौर में 25 सवालों की लिखित जांच हुई। इसमें लिटिल फ्लावर स्कूल टेलको, डीबीएमएस कदमा, लोयोला स्कूल बिष्टुपुर, कारमेल जूनियर कॉलेज सोनारी,



चिन्मया विद्यालय बोकारो एवं डीएवी पब्लिक स्कूल पोखारीपुर सफल हुए और अंतिम दौर में शामिल हुए।

लोयोला स्कूल का प्रतिनिधित्व कर रहे शोभित महतो, अग्निध घोष एवं जयंत कृष्णा की टीम ने बड़ा स्कोर 305 अर्जित किया और विजेता बने। वहीं कारमेल जूनियर का प्रतिनिधित्व कर रहे हार्षित अग्रवाल, सुब्रनील पाल एवं अविनव नियोगी की टीम ने 155 प्वाइंट अर्जित किये और

उपविजेता घोषित हुए। इन्हें एनएमएल के सलाहकार एवं चीफ साइंटिस्ट डा एनजी गोस्वामी, क्विज संचालक वीवी रमण, क्विज संयोजक डा सुप्रभा नायर, प्रिंसिपल साइंटिस्ट डा एस शिवप्रसाद ने विजेताओं को पुरस्कार प्रदान किया।

**प्रोफेसर पी रामचन्द्र को
श्रद्धासुमन अर्पित**

एनएमएल के पूर्व निदेशक

प्रोफेसर पी रामचन्द्र को एनएमएल के वैज्ञानिकों ने श्रद्धासुमन अर्पित किया। उनका स्मृति में आयोजित समारोह में चीफ साइंटिस्ट एवं झारखंड नासी के चेयरमैन डा अरविन्द सिंह ने उनकी जीवनी के बारे में बताया। प्रोफेसर पी रामचन्द्र राव 1992 से 2202 तक एनएमएल के निदेशक रहे। बीएचयू से 1963-68 के ग्रेजुएट पी रामचन्द्र राव साल 2002 में बीएचयू के वाइस चांसलर बनाए गए और इस पद पर 2005 तक बने रहे।