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The device consists of semiconductors stacked in a manner to simulate the natural leaf system. The ultra-thin wireless device mimics plant leaves to produce energy using water and sunlight.



wireless device mimics plant leaves to he said. produce energy using water and sunlight. The device consists of semiconductors "It is known that hydrogen generation from stacked in a manner to simulate the natural renewable resources will be the ultimate leaf system. When visible light strikes the solution to our energy and environment semiconductors, electrons move in one problems," said Chinnakonda S Gopinath, a direction, producing electric current. The current almost instantaneously splits water senior principal scientist at the Council of





into hydrogen – which researchers believe is one of the cleanest forms of fuel as its main byproduct is water. At present, hydrogen is produced from fossil fuels by steam reforming and in this process emits a large amount of carbon di-oxide (CO2) – a green house gas that promotes global warming. In view of pressing energy and environmental issues, it was important to produce hydrogen from natural resources such as sunlight and water, Gopinath said. "In the present work, we have made an attempt to generate solar hydrogen. The preparation method reported is simple and practicable and hence there is a very good possibility of scaling it up," he said. The research, published in the Scientific Reports, an online, open-access journal from the publishers of Nature, states that the device of an area of 23 square centimetres could produce 6 litres of hydrogen fuel per hour. The work has been produced in the lab so far and a lot was still needed on the project, he said. "But in the not-so-distant future, we could expect to see a car fuelled by hydrogen generated from the artificial leaf process onboard or stored during the day time," Gopinath said. In the recent past, automakers have been offering cars powered by hydrogen fuel cells. To improve the light-absorbing efficiency of the artificial leaf, researchers used gold nanoparticles, titanium dioxide and quantum dots. Quantum dots are semiconductor crystals of nanometre dimensions with properties that depend on the size of the dots. When exposed to sunlight for 25 hours, the device retained its efficiency. The cell does not need any external voltage and performs better than existing solar cells, he said. "We have patented our work and looking for industrial partners to move ahead, especially to make bigger-sized devices towards

different applications," said Gopinath.

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Dainik Jagran, Page No.14



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eSkIN next big thing in cosmetic testing

ARCHANA JYOTI NEW DELHI

With Governments across the globe including India banning testing of cosmetics and its ingredients on animals, the cosmetic and pharma firms can now look towards eSkIN, a first-of-its-kind computational

Pune-based private firm Persistent System. The project has been funded under CSIR-NMITLI scheme.

Dr Anurag Agarwal, principal scientist at CSIR-IGIB said that the skin data analysis tool is aimed at meeting the need of experiments conducted by the cosmetic and pharma industries without torturing any animal. By just a few clicks, it will tell what will be the likely result of that data, he added.. "The software is a collection of large data available in the open domain and offers an intuitive solution which can study the data generated by the Biology (IGIB), under the companies during the manu-

So far discovery of new pharmaceutical and cosmetic products traditionally required testing in animals to ascertain the efficacy and adverse effects of these products. However, of over 2600 plus skin specific with the ban of cosmetic testing on animal which has been costly and time consuming, the countries had been looking for development of alternate methods, Dr Aggarwal said. "After intensive research, we have developed eSkIN platform that will empower pharmaceutical and cosmetic companies to predict the effects of their products on human skin in a cost and time-efficient manner with reduced animal the Pune-based Persistent skin centric analysis.

System.

It also said that it converts large scale high-through put Omics data into biomedical knowledge and is a repository genes obtained by manual curation of biomedical literature.

"The eSkIN reduces number of invitro and animal experiments by early elimination of undesirable compounds," the company's website said. Dr Sanjay Kumar, Director of CSIR-Institute of Himalayan Bioresource Technology, who also heads IGIB said that the eSkin tool will no doubt reduce testing," as per the website of animal usage and revolutionize

platform for skin research that can ascertain the efficacy and adverse effects of cosmetic formulations.

The world's first comprehensive system biology tool, eSkIN is developed by the **Central Science and Industrial** Research(CSIR)'s lab Institute of Genomics and Integrative Union Science and Technology facture of a particular cosmet-Ministry in collaboration with ic product," he said.

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CSIR-IGIB

6th September, 2017







निकाला और ऐसी इलेक्ट्रॉनिक स्किन तैयार की, जिससे कुछ ही घंटों में ट्रायल किए जा सकेंगे। सीएसआईआर की प्रयोगशाला इंस्टीट्यूट ऑफ जीनोमिक्स एंड इंट्रीग्रेटिव बायोलॉजी (आईजीआईबी) के वरिष्ठ वैज्ञानिक अनुराग अग्रवाल के अनुसार, ई स्किन तैयार है और हम क्लिनिकल ट्रायल करने वाली एजेंसियों को इसका लाइसेंस देने जा रहे हैं। इससे ट्रायल में न सिर्फ पशुओं की जरूरत खत्म हो जाएगी, बल्कि परीक्षण में लगने वाले समय में भी कमी आएगी। डालने से क्या होता है, इसकी सारी प्रोग्रामिंग शामिल है। अब यदि जीत की टा परीक्षण होगा आईजीआईबी के निदेशक डॉ. संजय कुमार के अनुसार, ई स्किन पशुओं के साथ-साथ इंसानों पर होने वाले परीक्षणों के लिए भी उपयोगी साबित होगी, क्योंकि इंसानों पर किलनिकल ट्रायल शुरू करने की प्रक्रिया बेहद जटिल है। लेकिन यह सॉफ्टवेयर उस जटिल प्रक्रिया से मुक्ति दिलाता है।

जानवरों पर परीक्षण बैन देश में सौंदर्य सामग्री के परीक्षण पशुओं पर बंद होने के कारण नए बनने वाले उत्पादों को परीक्षण के लिए दूसरे देशों की शरण लेनी पड़ती है। दवा एवं सौंदर्य प्रसाधन अधिनियम के अनुसार परीक्षण सीधे मनुष्य पर नहीं किया जा सकता है। भविष्य में दवाइयों का परीक्षण भी ई स्किन पर हो सकेगा।

वह जानकारी

भी मिल

जाती

है।

एक टीका तैयार किया था। जानवरों पर परीक्षण के दौरान यह कारगर नहीं पाया गया। इसके बावजूद दक्षिण अफ्रीका के बच्चों पर टीके का क्लीनिकल ट्रायल किया गया। **गरीबी का उठाया फायदा** वैज्ञानिकों ने इनकी गरीबी का फायदा उठाया। उन्होंने परीक्षण में शामिल हुए १५०० बच्चों के अभिभावकों को १० पौंड का लालच दिया।

एक दशक से जारी गड़बड़झाला

नवंबर 2006 में इस टीके का परीक्षण बंदरों सहित कई जानवरों पर शुरू हुआ
18 महीने बाद दक्षिण अफ्रीका में टीके के परीक्षण के लिए आवेदन दिया
जुलाई 2009 में परीक्षण में शामिल 2800 में से आधे को टीका दिया गया
2013 में वैज्ञानिकों ने माना कि टीबी से रक्षा में टीका कारगर नहीं है

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CSIR-IICT



6th September, 2017

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Care Hospitals chairman Somaraju Speaking at the valedictory function of Science Exhibition at IICT School in Hyderabad on Wednesday

Hyderabad: Nearly 40,000 students from more than 250 schools in the twin cities and neighbouring districts visited the CSIR Platinum Jubilee Science Exhibition, apart from

farmers, NGOs and general public during the last six days. The valedictory of the exhibition was held at IICT School on Wednesday as a precursory event for IISF-2017 - Chennai to be held from October 13 to 16.

Dr B Somaraju, chairman, Care Hospitals, was the chief guest at the valedictory. Prof Arun Tiwari, author-scientist, Care Hospitals, and Dr C Parthasarathi, Principal Secretary, Agriculture, and G Krishnaveni, Joint Secretary, Environment, were the guests of honour.

Directors of IICT, CCMB and NGRI Dr S Chandrasekhar, Dr Rakesh Mishra and Dr V M Tiwari praised the government's

efforts to improve the basic needs as well as lifestyles of citizens. They urged students to uphold scientific pursuit and contribute to innovations for betterment of the country.

About 10,000 books on earth, earthquakes and essentials of safety in Hindi, English and other languages were distributed to the students and other visitors, who interacted with various scientific personnel of the three CSIR. The stalls displayed the CSIR's efforts towards societal interventions such as waste to energy generation and biovillages with aromatic plants for effective wealth generation for poor villagers.

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CSIR-IICT



September, 2017 7th





తార్నాక: తార్నాకలోని ఇండియన్ ఇనిస్టి వేడుకల్లో భాగంగా ఈ ప్రదర్శనను ఏర్పాటు చుంది విద్యార్థులు ప్రదర్శనను తిలకించారు. వచ్చిన పలువురు విద్యార్థులను 'సాక్షి' పలక ట్యూట్ ఆఫ్ కెమికల్ టెక్నాలజీ (ఐఐసీ చేశారు. దాదాపు 150 వైజ్ఞానిక అంశాలపై ఇక్కడ ప్రదర్శించిన అనేక నమూనాలు మన రించింది. వారు తమ అభిప్రాయాలను ఈ టీ)లో ఈనెల 1న ప్రారంభమైన వైజ్ఞానిక ఏర్పాటు చేసిన ఈ ప్రదర్శన విద్యార్థులు, దైనందిన జీవితంలో ఎదుర్కొంటున్న సమ విధంగా వ్యక్తం చేశారు.

నూతన అనుభూతిని కలిగించింది

అందలకీ అర్ధమయ్యే లీతిలో....

ఐఐసీటీలో ఏర్పాటు చేసిన వైజ్హానికి డ్రద ర్శనలోని నమూనాల ద్వారా ఎన్నో కొత్త కొత్త అంశాలను గురించి తెలుసుకున్నాం. వందలాది పరిశోధనలపై ఇక్కడ నమూ నాలు ఏర్పాటు చేశారు. మానవ జీవి తంలో ఎదురయ్యే అనేక సమస్యలపై సందేహాలను నివృత్తి చేసేవిగా ఉన్నాయి. ఇది మాతన అను భూతిని కలిగించింది. -హమీద్, స్టేట్ స్కూల్, కర్మన్**ఘాట్**.

ఈ ప్రదర్శనలో ఏర్పాటు చేసిన సైన్స్ నమూ నాలను మన నిత్య జీవితంలో ఎదుర్కొనే సమస్య లను వివరిస్తున్నాయి. సైన్స్ పట్ల అంతగా అవగా హన లేని వారికి కూడా చాలా సులువుగా అర్ధమయ్యే విధంగా ఉన్నాయి. విద్యార్థులు సైన్స్ లో జరుగుతున్న అద్భుతాలు తెలుసుకో వడమే కాకుండా వారికి సైన్స్ పట్ల మక్కువను మరింతగా పెంచేవిగా ఉన్నాయి. -హర్షిత చౌదరి, సీఎంఆర్ ఇంజినీరింగ్ కళాశాల.

ప్రదర్శన అద్భుతం

ఇలాంటి సైన్స్ ప్రదర్శనను చూడటం ఇదే మొదటి సారి. ఎన్నో పరిశోధనల నమూనాలు, 150కి పైగా నమూనా లను ఒకే వేదికపై చూడటం ఒక కొత్త అనుభూతిని కలిగించింది. సైన్స్లలో జరుగుతున్న నూతన ఆవిష్కర 🕻 ణలను తెలుసుకోగలిగా. కొత్త విద్యార్థులతో పరిచయం ఏర్పడడం సంతోషంగా ఉంది. -నృందన, 9వ తరగతి, కోణార్క్ స్కూల్, ఉప్పల్. వివిధ రకాల ప్రయోగాల గురించి తెలుసుకొంటున్న యువత, చిన్నారులు

ప్రయోగాలు సామామ్యడికి చేరాలి

కేర్ ఆసుపత్రి చైర్మన్ దాక్టర్ సామరాజు 💿 ముగిసిన వైజ్ఞానిక ప్రదర్శన

హైస్కూల్ మైదానంలో ఐఐసీటీ, సీసేఎంబీ, ఎన్జీఆర్ సంయుక్త ఆద్వర్యంలో ఏర్పాటు చేసిన మెగా వైజ్ఞానిక ప్రదర్శన ముగింపు వేడుకలకు ఆయన హాజరయ్యారు. ఆయన తోపాటు వ్యవసాయ శాఖ ముఖ్యకార్యదర్శి డా.పార్థసారధి, సీనియర్ శాస్త్రవేత్త అరుణ్ తివారీ, ఎంబీసీ ఛైర్మన్ తాడూరి శ్రీనివాస్, ప్రభుత్వ. సైన్స్ ఆండ్ టెక్నాలజీ సంయుక్త కార్యదర్శి కృష్ణవేణి, ఎన్జీఆర్ఐ డైరక్టర్ ఎన్డీ తివారీ, సీసీఎంబీ డైరక్టర్ రాకేష్ మిశా తదితరులు పాల్గొన్నారు. విద్యార్థులకు

ಕಲ್ಲಾನಂಗಾ.. ಕತ್ಸಾನಾಂಗಾ..

హజ్యగూదలోని జహీర్ మెమోలియల్ హైస్కూల్ మైదానంలో ఆరు రోజులుగా జరుగుతున్న సీఎస్ఐఆర్ ప్లాటినం జాజ్ల సైన్స్ ఎగ్జీజషన్ బుధవారం ముగిసింది. జంటనగరాల నుంచి వచ్చిన విద్యార్థులు, ఉపాధ్యాయులు ఎగ్జీజషన్లో ఉత్సాహంగా పాల్గొన్నారు. ఎగ్జీజషన్లో తాము అనేక విషయాల గురించి తెలుసుకున్నామని విద్యార్థులు పేర్కొన్నారు. - సౌక్షి, సెలీల్యూర్

శాస్త్రవేత్తలతో మాట్లాడుతున్న డా.సోమరాజు, డా.పార్ధసారభి

హబ్సిగూడ, న్యూస్ట్ర్ మిడే: విద్యార్థుల్లో దాగిన శక్తిని వెలి కితీయడానికి శాస్త్రీయ పరిశోదనలు, సాంకేతిక అంశాలు దోహదపడతాయని కేర్ ఆసుపత్రి ఛైర్మన్ డా.సోమరాజు పేర్కొన్నారు. హబ్బిగూడలోని జహీర్ మెమోరియల్

సైన్స్ పై ఆసక్తి పెంచాలని, శాస్ర్రవేత్తల ప్రయోగాలు సామాన్యుడకి చేరినప్పుడే నిజ మైన అభివృద్ధి జరిగినట్లు అన్నారు. 6 రోజులపాటు జరి గిన ప్రదర్శనలో నమునాలను వీక్షించడానికి 250 పాఠశా లల నుంచి సుమారు 40 వేల మంది విద్యార్థులు, హాజ రయ్యారని నిర్వాహకులు తెలిపారు.

Published in:

Sakshi, Eenadu Newspaper

Published in:

Navbhart Times, Page No. 3

6th September, 2017

CSIR platinum jubilee Technofest begins

The CSIR Platinum Jubilee and Floriculture, Food and the four Lucknow-based CSIR laboratories, CSIR-IITR, CSIR-NBRI, CSIR-CIMAP and CSIR-CDRI, was inaugurated by Dr Nitya Anand, former Director, CDRI, and a Padmashri recipient, here on Tuesday. CSIR-Technologies across the institutes are exhibited on various themes (Aerospace and Strategic Sector, Engineering and Infrastructure, Mining, Minerals and Materials, Chemicals Petrochemicals, Energy, for the Indian industries

PIONEER NEWS SERVICE LUCKNOW

Ecology and Environment, Leather, Water, Agriculture Technofest organised by Nutrition, Healthcare and Generics, CSIR for Societal Interventions, skill development and IP).

(chemical, pharma, leather and petroleum) and helped the society in product development.

"In the agriculture sector, CSIR has developed newer variety of plants and floriculture and by cultivating medicinal plants it has doubled the income of the former," he said. All the four lab directors, Dr Madhu Dixit, CSIR-CDRI, Professor Alok Dhawan, CSIR-IITR, Professor SK Barik, CSIR-NBRI, and Professor AK Tripathi, CSIR-CIMAP, were present and highlighted CSIR science and technologies and societal interventions.

Four live stalls, food adulterant testing, flower drying techniques and environmental monitoring systems products from CIMAP, CDRI and NBRI are also on display.

After inauguration Dr Nitya Anand talked about the contribution of CSIR to the society and economic growth of the country and how CSIR and served as an engine of growth

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The Pioneer, Page No. 4

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विशिष्ट योगदान दे रही हैं। देश की तरक्की पेट्रोकेमिकल्स, ऊर्जा, पारिस्थितिकी के अलावा आम लोगों की जिंदगी को और पर्यावरण, चमड़ा, जल, कृषि और गुणवत्तायुक्त बनाने के साथ सहज बनाने में इन प्रयोगशालाओं द्वारा विकसित औषधि अनुसंधान संस्थान और केंद्रीय पुष्पोत्पादन, खाद्य एवं पोषण, हेल्थ प्रोद्योगिकी की महत्वपूर्ण भूमिका है। औषधीय एवं सगंध पौधा संस्थान भाग केयर, जेनरिक, सीएसआइआर सोशल मौका है सीएसआइआर के 75 वीं ले रही हैं। इस मौके पर आइआइटीआर इंटरवेंशन, बौद्धिक संपदा आदि कों वर्षगांठ का। इस उपलक्ष्य में लोगों को के निदेशक डॉ. आलोक धवन, प्रदर्शित किया गया है। सीएसआइआर की उपलब्धियों के बारे एनबीआरआइ के निदेशक प्रो. एसके डॉ. नित्या आनंद ने कहा कि कैसे में बताने के लिए भारतीय विष विज्ञान) बारिक, सीमैप के निदेशक प्रो. अनिल) भारतीय उद्योगों रसायन, फार्मा, चमड़ा अनुसंधान संस्थान (आइआइटीआर) कुमार त्रिपाठी व सीडीआरआइ की और पेट्रोलियम उत्पाद के विकास में तीन दिवसीय टेक्नोफेस्ट की मंगलवार विदेशक डॉ. मधु दीक्षित व आइआइटीआर में सीएसआइआर ने प्रमुख भूमिका को शुरुआत की गई। फेस्ट का उद्घाटन के पूर्व निदेशक डॉ. पीके सेठ मौजूद निभाई। उन्होंने कहा कि कृषि क्षेत्र में भी सीडीआरआइ के पूर्व निदेशक व जाने- सहित अन्य वैज्ञानिक मौजूद रहे। सीएसआइआर ने नए किस्म के पौधे. माने साइंटिस्ट पदमश्री डॉ.नित्या आनंद ने फेस्ट मेन सीएसआइआर की विभिन्न फूलों और औषधीय पौधों की खेती किया। इस फेस्ट में शहर में स्थित चारों प्रयोगशालाओं द्वारा विकसित तकनीकों विकसित कर किसानों की आय को सीएसआइआर प्रयोगशालाएं भारतीय जैसे एरोस्पेस एंड स्ट्रैटेजिक सेक्टर, बढ़ाया है। टेक्नोफेस्ट सात सितंबर तक विषविज्ञान अनुसंधान संस्थान, राष्ट्रीय) इंजीनियरिंग एंड इंफ्रास्ट्रक्चर, खनन, सुबह दस बजे से शाम चार बजे तक वनस्पति अनुसंधान संस्थान, केंद्रीय खनिज और सामग्री, रसायन एवं आम लोगों के लिए खुला रहेगा।

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A report by NEERI recommends that suitable rebate in tax or subsidies may be given to poultry farms to encourage owners to give up the present caged system

owners to give up the present caged system. Union minister of state for home affairs Kiren Rijiju expressed concern on the matter and wrote a letter to union environment minister Dr Harsh Vardhan, requesting him to take action. "I have received a note which expresses concerns

about the unhygienic conditions in the poultry industry and major health hazards The report by the National Environmental Engineering Research Institute (NEERI) says cleanliness and maintenance of the sheds for both—humans and animals on account in poultry farms should be ensured periodically. Photo: AFP New Delhi: Poultry owners should of this. The note highlights serious negative understand that animals raised for food too implications on the animal's health and also deserve to live free from cruelty, and so, on humans who work and live in these layered battery-cage systems in India's unhygienic conditions," Rijiju said in his poultry industry should be replaced with letter on 28 August. India's poultry industry cage-free housings in a phase-wise manner, is worth billions of rupees. The total according to a report by the National poultry population in India is 729.2 million. Environmental Engineering Research Meanwhile, the study further recommended Institute (NEERI). that Animal Welfare Board of India NEERI, a central government institute, also (AWBI), India's nodal body for welfare of said that suitable rebate in tax or subsidies animals, may suggest changes to laws and rules about animal welfare issues. may be given to poultry farms to encourage

"Rules and regulations regarding the use of antibiotics must be regularized and their implementation must be ensured by the government," the NEERI report said. It recommended regulation of use of antibiotics in poultry farms. Last week, a report released by the Centre for Science and Environment (CSE) warned that misuse of antibiotics in poultry farms is leading to multi-drug resistant bacteria which is spreading into the environment through unsafe disposal of poultry litter and waste in agricultural fields, with the potential to infect human beings. "The cage-free system provides enough space for movement of hens and the kind of environment required to express their natural behaviour. Poultry owners and the consumers should understand that the animals raised for food too deserve to live free from abuse and cruelty," said the report. The report recommended that, "layered battery-cage systems should be replaced with cage-free housings in a phase-wise manner" and that "to encourage the existing poultry farm owners to make changes in the present caged-system, suitable rebate in tax or subsidies may be given to the poultry farms" who adopt new systems."All new poultry farms should follow cage-free system since beginning. Concerned licensing departments should be instructed in this regard. Cleanliness and maintenance of the sheds in poultry farms should be ensured periodically," the report said. "Farmers use the excreta (mix of bird's excreta and liquid waste) as manure in the agriculture fields. However, its toxicity should be tested before use as manure," it added. The report also said that "poor poultry workers and local residents living in or around the vicinity of poultry farms are more prone to catch the bacterial and viral infections" and suggested that "certain guidelines be framed to define the vicinity of the poultry farms". "The NEERI report reiterates what HSI India has been stating all along. Factory farming facilities pose unacceptable risks to public health and the environment. Several other studies have shown that the crowded, stressful and unsanitary conditions typical of these facilities are ripe for the development of disease, including avian influenza. It is time the Government of India notifies the recommended rules in the interest of public health, environment and animal welfare," said N.G. Jayasimha, who is the managing director of the Humane Society International (HSI), India. HSI India is an NGO working on animal rights. Published in:

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