CSIR In Media
A Daily News Bulletin

10th October , 2016

In laboratories across India, scientists take heart from this little fish

CSIR-CCMB

Dr. Tressa Jacob, Indian Institute of Science Education and Research (IISER), Pune

The human heart cannot regenerate new muscle when damaged but its vertebrate cousin the zebrafish, or Danio rerio, has the ability to regenerate almost all its organs including the heart, the spinal cord, the liver, the pancreas and the kidneys. This has made it the subject of research at 15 laboratories in India as scientists explore and seek to extrapolate its cell behaviour to higher organisms.

The tiny freshwater fish, native to the southeastern Himalayan region, is found in streams, lakes, ponds and rice field marshes. It develops in the water from the zygote stage itself, making it ideal for research.

CCMB is studying the function of Hox genes that help shape the body's axis while the embryo is formed.

"The embryo develops outside the mother's body, and since they are transparent they can be monitored under the microscope," said Rakesh Mishra, director of Centre for Cellular and Molecular Biology, Hyderabad. The transparency makes embryos amenable to gene manipulation techniques. The zebrafish can provide up to 200 embryos in one go, and are ready to breed again in days.

CCMB is studying the function of Hox genes that help shape the body's axis while the embryo is formed. "Since most body parts show regeneration capacity, we are trying to look at the function of these genes in the regenerated parts also," Mishra said.

At Mumbai's Tata Institute of Fundamental Research, researchers have used the zebrafish as a model to study microvillus inclusion disease that affects children, often leading to death. The TIFR findings, reported online in Mechanisms of Development, will appear in print next month.

And at Pune's Agharkar Research Institute, which set up a zebrafish facility two years ago, researchers have set about identifying the molecules that help the heart regenerate. "We are screening five molecules," said Dr Chinmoy Patra of the Developmental Biology group, who did his doctoral thesis at Max Planck Institute for Heart and Lung Research. He said preliminary data showed that a couple of these molecules are plausibly responsible for regeneration.

Dr Surendra Ghaskadbi, senior scientist in ARI's developmental biology group, said the project on heart regeneration in zebrafish is the first of its kind in India. "It is well known that complex organisms such as human beings, which evolved relatively recently, have lost their capacity to regenerate most organs," he said. "If the secrets of heart regeneration in zebrafish are learnt, one can think of applying them to humans."

Around 50 million people in India are estimated to be suffering from coronary heart diseases.

TIFR's research has linked microvillus inclusion disease to mutations in a gene called myosin Vb, also expressed in the intestinal epithelium of zebrafish. Dr Mahendra Sonawane and colleagues Jaydeep Sidhaye, Clyde Pinto, Shweta Dharap, Tressa Jacob and Shobha Bhargava found that mutations in this gene leads to defects in development of the epidermis. They then researched why mutant fishes were dying at later times although the epidermis restores its normal architecture. To their surprise, they found intestinal defects in zebrafish were almost identical to those in humans. "One can now screen for potential drugs to treat the disease… enough mutants could be obtained for such a screen," Sonawane said.

Anuradha Mascarenhas | October 7, 2016
Source: indianexpress.com/article/research/heart-fish-zebrafish-research-regenerate-organs-3074190/

After T-Hub, city now becomes home to iHub

CSIR-CCMB

To promote innovation in the field of biotechnology in the country, Council of Scientific & Industrial Research - Centre for Cellular and Molecular Biology (CSIR-CCMB) has launched incubating centres for startups.

The incubation centre named iHUB will operate out of CCMB's medical biotechnology centre. As part of its new initiative, CCMB on Friday signed an MoU with Bioserve Biotechnologies, a city-based biotechnology firm to set up its research arm at the facility. The iHUB set-up at a cost of `40 crore is a 40,000 sq feet four floor building. The building has been completely dedicated to incubating start ups.

"So far, we have 12 applications from different startups. The idea of iHUB is to provide platforms both for translating ideas developed in-house and also to provide a place for start-up companies to met the gap in translating ideas into technologies," said Rakesh Mishra, director of CCMB. We want five to six startups working at this facility per floor, he added. Scientists from Nizam's Institute of Medical Sciences (NIMS) too will set up their research units at the CCMB facility. NIMS will do research on medical use of nano technology.

"We have tried our best to bring down cost of medical equipment and consumables through research in the past. This year alone we have crossed 86 transplants at our hospital, last year it was 100. If we could increase transplant survival rate by using nano technology, that would be a great medical service," said K Manohar, director of NIMS.

CCMB leasing out its space for startups is not something new, Shantha Biotechnics the first Indian pharmaceutical company to produce recombination vaccines in 1997 was incubated at the CCMB.

The CCMB authorities are planning to launch the I-Hub on Friday at its premises at Uppal in Hyderabad. Not just start-ups of scientists and students, the I-Hub will also have incubation centers of existing biotech companies to translate research findings into business ventures. As part of this, the DNA diagnostics has tied up with government hospitals like NIMS and Gandhi, particularly for pre-natal diagnostics, clinical research facility and other wings of applied biotechnology.

The CCMB director further added that the innovation hub would facilitate application-oriented research in association with biotech companies, hospitals and start-ups. "Apart from sophisticated equipment available for use, our experts will interact with companies, depending on the need. In pre-natal diagnostics, we are testing the amniotic fluid collected and sample sent by hospitals for genetic diseases. However, for the future we are working on developing technology to identify and isolate fetal cells in the blood of mother to do pre-natal diagnosis instead of testing from amniotic fluid. A blood sample will do if we can develop this method," said Dr. Mishra.

Overall, the I-Hub will have a common research and technology development centre as well as the diagnostics and clinical research facilities at one place. Very soon the CCMB authorities are also planning to start training programmes in the areas of bio-informatics, forensic sciences and cell biology to help researchers and students.

October 08, 2016
Source: www.newindianexpress.com/cities/hyderabad/2016/oct/08/after-t-hub-city--now-becomes-home-to-ihub-1526144.html?pm=183

Story also published in:

http://www.thehindu.com/news/cities/Hyderabad/ccmb-launches-ihub-for-startups/article9200227.ece
http://www.business-standard.com/article/companies/ccmb-launches-ihub-for-medical-agri-biotech-start-ups-116100800673_1.html
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http://www.thehansindia.com/posts/index/Telangana/2016-10-08/Innovation-hub-at-CCMB/257740

Mangalore University, CFTRI sign MoU for excellence in science

CSIR-CFTRI

Mangalore University and Central Food Technological Research Institute, Mysuru signed a MoU in to achieve excellence in science. This MoU strives for excellence in the fields of food science and technology, biochemistry, protein technology, lipid technology and isolation, purification and characterization of phytochemicals from plants, their evaluation for medicinal properties, applications of radiation technology in the fields of life sciences, and so on.

Both institutions have agreed to share facilities and expertise to augment the research progress in defined disciplines. In this connection, Ram Rajasekharan, director CSIR-CFTRI, and K Byrappa, vice-chancellor, Mangalore University exchanged the MoU. Accordingly, the university will recognize CSIR-CFTRI scientists as research guides and they will be permitted to register the scholars for PhD programme following PhD regulations of Mangalore University.

Students will be permitted to carry out research work at CSIR- CFTRI and submit the thesis to Mangalore University for award of PhD degree. The available expertise will be shared between the institutions through lectures, interactions, discussions and seminars. There will be a monitoring committee to review the implementation of progress as per the MoU. It is also proposed to develop the research proposals in the frontier areas of life sciences/chemical sciences.

The institutions also endeavor to jointly apply for financial assistance to national/international funding agencies through the MoU. This is also expected to boost the research in both the organizations in terms of quality and quantity of publications. K M Lokesh, registrar (administration), Mangalore University, K R Chandrashekar, scientists from CSIR-CFTRI and the teaching faculty of the University were present on this occasion, Lokesh stated.

Jaideep Shenoy | TNN | Oct 8, 2016

Source: timesofindia.indiatimes.com/city/mangaluru/Mangalore-University-CFTRI-sign-MoU-for-excellence-in-science/articleshow/54756531.cms-now-becomes-home-to-ihub-1526144.html?pm=183

CRRI team identifies mishap prone sites on NH

CSIR-CRRI

A special team from Delhi based-Central Road Research Institute (CRRI) identified 12-accident prone sites known as black spots on the 28-km stretch of National Highway from Keshpur via Khallikote, Kodala till Budhamba on the highway, sources said.

The black spots are sites on the highway where repeated mishaps have taken place that have resulted in loss of lives and properties while they have rendered many physically handicapped. On being asked by the works department, a special team from CRRI reached the place and conducted a survey before identifying the sites.

The CRRI identified New Berhampur, Pustapur, Dhep, Kanchana, Shani temple crossing, Kanchana Square, Balipoi Square, Kharkari slope, Dandiswar Square, Sitanala Square, Khojapali and Budhamba as black spots . The team identified these sites by using laser gun techniques.

The team concluded that a vehicle, while crossing a pit on the highway, reduces its speed to 40-50 km which reduces the chances of road mishaps.

However, while travelling from Kodala to Khallikote the speed of vehicle automatically increases to 72 km per hour which results in recurring mishaps at Kharkhari slope.

When contacted, assistant engineer Ladu Kishore Panda of Kodala works department said humps have been constructed in accident prone sites to reduce the chances of mishaps.

October 09, 2016
Source: www.orissapost.com/crri-team-identifies-mishap-prone-sites-on-nh/-now-becomes-home-to-ihub-1526144.html?pm=183

Scientist from Durgapur develops 'solar tree' that can provide electricity to 5 houses

CSIR-CMERI

Researchers, led by chief scientist Sibnath Maity, from the Central Mechanical Engineering Research Institute (CMERI), Durgapur have developed a 'solar power tree' that uses only four square feet of space and harnesses enough solar power to provide electricity to 5 houses. Considered an intervention against land constraints, the 'solar tree' has the potential to solve the problem of energy crisis in India.

"Each tree requires an area no larger than four square ft, which is half of the desk space in an ordinary office, but can produce 3-5 kilowatts of electricity," Sibnath, who designed the 'solar tree', told Deccan Herald. The tree, which was inaugurated by the Union Science and Technology Minister Harsh Vardhan in May, is all set to be operational in various locations in Delhi.

The municipal authorities of Durgapur have also asked CMERI to provide them with 10 solar power trees, while a thermal power plant in Bengal has requested the installation of 120 solar power trees in its complex. The lifespan of each tree is 25 years.

Noting how useful a 'solar tree' can be for cultivable lands, Girish Sahni, director general of the Council of Scientific and Industrial Research (CSIR) told Durgapur Adda, "It harnesses solar energy for producing electricity with an innovative vertical arrangement of solar cells, and thus reduces the requirement of land while keeping the land character intact."

Recently, a Mumbai-based couple came up with a product called 'ulta chaata', which harnesses solar energy and harvests up to 100,000 litres of rainwater annually. With indigenous products like the 'ulta chaata' and the 'solar tree', it looks like scientists and entrepreneurs from across the country are hellbent on solving the energy crisis of India, the renewable way.

Produced by Unit for Science Dissemination, CSIR, Anusandhan Bhawan, 2 Rafi Marg, New Delhi

Cool in the kitchen

CSIR-NEERI

Rural folk have a new product to look forward to. As is well known, indoor pollution is one of the major causes of ill health and high mortality rate in the hinterland. The enhanced cook stove could go a long way in reducing its impact if marketed in the right manner and made available across the country.

Developed by the National Environmental and Engineering Research Institute (Neeri) and christened'Neerdhur', this multi-fuel domestic cook stove is supposed to be super efficient, saves 50 per cent of fuel, has high thermal efficiency and reduces cooking time.

Its USP is that besides wood it can consume several fuels including coal, cow dung, charcoal, biomass and other agricultural residue. Designed as a hybrid with technology innovations, it uses much less fuel with lower emissions.

Neerdhur has also been extensively tested in the lab and field for user's perception and acceptability. The cook stove has also been approved by the Ministry of New and Renewable Energy on the basis of itsperformance testing conducted by Improved Cook-stove Test Centres. Above all, it is now certified to meet the newly developed cook-stove emission standards by Bureau of Indian Standards.

According to reports, there has been positive feedback from women on its use and efficacy and a majority of those who used it are willing to switch over to this multi-fuel contraption which is better for their health.

October 08, 2016
Source: www.thehindubusinessline.com/specials/india-interior/clean-cooking/article9198506.ece

CSIR-CEERI

'सीएसआईआर' का स्थापना दिवस मनाया

पिलानी, (निसं)। केन्द्रीय इलेक्ट्रोनिकी अभियांत्रिकी अनुसंधान पिलानी 'सीरी' के तत्वावधान में शुक्रवार को सायंकाल सीरी पिलानी के मुख्य सभागाार में वैज्ञानिक तथा औधोगिक अनुसंधान परिषद् 'सीएसआईआर' का 75वां स्थापना दिवस संस्थान के पूर्व मुख्य वैज्ञानिक एवं अध्यक्ष गीतांजली विश्वविद्यालय उदयपुर के डॉ. आर के नाहर के मुख्य अतिथ्य में आयोजित किया।

कार्यक्रम की अध्यक्षता सीरी पिलानी निर्देशक प्रो.शांतनु चौधरी ने की। सर्वप्रथम अतिथियों का पुष्पगुच्छ भेंट कर स्वागत किया गया। कार्यक्रम का शुभारम्भ सरस्वती वन्दना व दीप प्रज्जवलित के साथ किया गया। तत्पश्चात सीरी पिलानी के निर्देशक प्रो. शांतनु चौधरी ने अपने स्वागत भाषण में मुख्य अतिथि के संक्षिप्त परिचय के साथ सीएसआईआर की ऐतीहासिक पृष्ठभूमि व प्रमुख शौध कार्यो का विवरण तथा विगत वर्ष के दौरान की गई उपलब्धियों पर विस्तारपूर्वक प्रकाश डाला। प्रो. चौधरी ने अपने संम्बोधन में भारत के वैज्ञानिक एवं औधौगिक दृष्टि आत्म निर्भर बनाने के उद्देश्य से दूरद्रष्टा एवं उत्कृष्ट वैज्ञानिक व सीएसआईआर प्रथम निर्देशक डॉ. शांतिस्वरूप भटनागर प्रयासों से 26 सितम्बर 1942 का ने सीएसआईआर का गठन किया।

Rashtradoot Churu| Oct 2, 2016

CSIR-CEERI

देश के विकास में सीएसआईआर का महत्वपूर्ण योगदानः डॉ. नाहर

केन्द्रीय इलेक्ट्रॉनिकी अभियांत्रिकी अनुसंधान पिलानी सीरी के तत्वावधान में सीरी पिलानी के मुख्य सभागाार में वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद् सीएसआईआर का 75वां स्थापना दिवस संस्थान के पूर्व मुख्य वैज्ञानिक एवं अध्यक्ष गीतांजली विश्वविद्यालय उदयपुर के डॉ.आर के नाहर के मुख्य अतिथ्य में आयोजित किया। कार्यक्रम की अध्यक्षता सीरी पिलानी निदेशक प्रो.शांतनु चौधरी ने की। सीरी पिलानी के निदेशक प्रो.शातनु चौधरी ने अपने स्वागत भाषण में मुख्य अतिथि के संक्षिप्त परिचय के साथ सीएसआईआर की ऐतिहासिक पृष्ठभूमि व प्रमुख शौध कार्यो का विवरण तथा विगत वर्ष के दौरान की गई उपलब्धियों पर विस्तारपूर्वक प्रकाश डाला। प्रो. चौधरी ने अपने सम्बोधन में भारत को वैज्ञानिक एवं औद्योगिक दृष्टि आत्मनिर्भर बनाने के उद्देश्य से दूरदृष्टा एवं उत्कृष्ट वैज्ञानिक व सीएसआईआर प्रथम निदेशक डॉ. शांतिस्वरूप भटनागर प्रयासों से 26 सितम्बर 1942 को राष्ट्र के प्रथम वैज्ञानिक ने सीएसआईआर का गठन किया था। इस अवसर पर डॉ. नाहर सिंह ने कहा कि गत 7 दशकों से अधिक समयावधि के दौरान सीएसआईआर की प्रयोगशालाओं में अपने शोध कार्यो से भारतीय जन मानस को जीवन के प्रत्येक क्षेत्र में प्रवाहित किया है। देश के वैज्ञानिक और औद्योगिक आत्मनिर्भरता में सीएसआईआर का योगदान सराहनीय रहा है। उन्होंने सीएसआईआर के नये शौध कार्यो के बल पर विश्व में अपनी साख बनाने की बात कही। इस अवसर पर संस्थान के सेवानिवृत्त हुये 19 सहकर्मियों व परिसर में 25 वर्ष की सेवा पूरी करने वाले 5 सहकर्मियों को उनके समर्पित सेवा के लिये अतिथियों द्वारा सम्मानित किया गया। मुख्यअतिथि ने सीएसआईआर के निबन्ध प्रतियोगिता के 16 विजेताओं को पुरस्कार प्रदान कर सम्मानित किया। संचालन वैज्ञानिक सुशील शुक्ला ने किया।

Navjyoti| Oct 2, 2016

CSIR-CEERI

नए शोध कार्यों से सीएसआईआर की बनी विश्व में पहचान : नाहर

75वें स्थापना दिवस पर कार्मिकों का सम्मान

पिलानी(निसं.)। केन्द्रीय इलेक्ट्रोनिकी अभियांत्रिकी अनुसंधान पिलानी सीरी के तत्वावधान में शुक्रवार शाम को वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद का 75 वां स्थापना दिवस पूर्व मुख्य वैज्ञानिक एवं गीतांजलि विश्वविद्यालय उदयपुर के डॉ. आरके नाहर के मुख्य आतिथ्य में मनाया गया। कार्यक्रम की अध्यक्षता सीरी पिलानी के निदेशक प्रो.शांतनु चौधरी ने की। इससे पूर्व अतिथियों का स्वागत किया गया।

सीरी पिलानी के निदेशक प्रो. शांतनु चौधरी ने सीएसआईआर की ऐतिहासिक पृष्ठभूमि व प्रमुख शोध कार्यों का विवरण तथा विगत वर्ष के दौरान की गई उपलब्धियों पर विस्तारपूर्वक प्रकाश डाला। मुख्य अतिथि डॉ. नाहर सिंह ने कहा कि गत 7 दशकों से अधिक समय अवधि के दौरान सीएसआईआर की प्रयोगशालाओं में अपने शोध कार्यों से भारतीय जनमानस के जीवन के प्रत्येक क्षेत्र में प्रभावित किया है। उन्होंने सीएसआईआर के नये शोध कार्यों के बल पर विश्व में अपनी साख बनाने की बात कही।

इस अवसर पर संस्थान के सेवानिवृत हुए 19 सहकर्मियों व परिसर में 25 वर्ष की सेवा पूरी करने वाले 5 सहकर्मियों को अतिथियों द्वारा सम्मानित किया गया। मुख्य अतिथि ने सीएसआईआर निबन्ध प्रतियोगिता के 16 विजेताओं को पुरस्कार प्रदान कर सम्मानित किया। कसंचालन वैज्ञानिक सुशील शुक्ला ने किया। अन्त में संस्थान के मुख्य वैज्ञानिक प्रो. राज सिंह ने सभी का धन्यवाद ज्ञापित किया। कार्यक्रम में सीरी पिलानी के वैज्ञानिक, सहकर्मी व सेवानिवृत वैज्ञानिक व सहकर्मी उपस्थित थे।

Jaipur Times| Oct 2, 2016

CSIR-CEERI

19 व 25 वर्ष की सेवा वाले पांच कर्मचारी सम्मानित

पिलानी | केंद्रीय इलेक्ट्रोनिकी अभियांत्रिकी अनुसंधान संस्थान पिलानी के मुख्य सभागार में शुक्रवार को सीएसआईआर का 75वां स्थापना दिवस समारोह मनाया गया। मुख्य अतिथि गीतांजली विश्वविद्यालय उदयपुर के अध्यक्ष एवं सीरी के पूर्व वैज्ञानिक डॉ. आरके नाहर एवं विशिष्ट अतिथि आईआईटी दिल्ली के वरिष्ठ परियोजना सलाहकार व सीरी के पूर्व वैज्ञानिक डॉ. वीके द्विवेदी थे। कार्यक्रम के दौरान इस वर्ष रिटायर हुए 19 सहकर्मियों तथा संस्थान में 25 वर्ष की सेवा पूरी करने वाले पांच सहकर्मियों को सम्मानित किया गया। सीएसआईआर द्वारा आयोजित निबंध प्रतियोगिता के विभिन्न वर्गों के 16 विजेताओं को भी सम्मानित किया गया। इस मौके पर उन्होंने संस्थान की वैज्ञानिक मर्सीलता को डॉ. स्वराज श्रीवास्तव मेमोरियल बेस्ट वुमेन रिसर्चर अवार्ड 2016 देने की घोषणा की।

Dainik Bhaskar | Oct 1, 2016

CSIR-CEERI

नवीन अनुसंधानों के बल पर विश्व में देश की बढ़ रही साख

पिलानी @ पत्रिका. वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद (सीएसआईआर)का 75 वां स्थापना दिवस केन्द्रीय इलेक्ट्रोनिकी अभियांत्रिकी अनुसंधान संस्थान (सीरी) में 30 सितम्बर को मनाया गया। सीरी संस्थान में अयोजित समारोह के मुख्यअतिथि गीतांजली विश्वविद्यालय उदयपुर के कुलपति तथा सीएसआईआर के पूर्व वैज्ञानिक डा. आर के नाहर थे। सीरी निदेशक प्रो शांतनु चौधरी ने अध्यक्षता की। मुख्यअतिथि नाहर ने विश्व में तकनीकी जगत में देश की बढ़ती शाख पर खुशी जताई तथा सीएसआईआर द्वारा समय समय पर नवीन अनुसंधान कर देश के विकास में दिए जा रहे योगदान की सराहना की। सीरी निदेशक ने सीएसआईआर के वैज्ञानिकों द्वारा औद्योगिक क्षेत्र में दिए जा रहे योगदान के बारे में विस्तार से बताया। कार्यक्रम में संस्थान से सेवानिवृत हो चुके 19 कार्मिकों सहित कई लोगों को सम्मानित किया गया। कार्यक्रम में संस्थान की महिला वैज्ञानिक मर्सीलता को डा. सरताज मेमोरियल अवार्ड से भी सम्मानित किया गया। संस्थान की ओर से मुख्यअतिथि को प्रतीक चिन्ह भेंट कर सम्मानित किया गया। वरिष्ठ वैज्ञानिक राजसिंह ने आभार जताया। संचालन वैज्ञानिक सुशील शुक्ला ने किया।

Rajasthan Patrika| Oct 1, 2016