CSIR in Media

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A Daily News Bulletin

9th January to 15th January 2018

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Facing low yields, Kupwara farmers shifting to aromatic cash crops

CSIR-IIIM

15th January, 2018

The project is being run by the science and technology department in collaboration with the Council of Scientific & Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu. Despite his best efforts, Mohammad Sultan Margay, a farmer, from a drought-hit Nutnoosa area of Kupwara district, could not get much out of his land last year. The preceding years were no better. Ditto for most of the farmers in the village, Kandi, where paddy and maize cultivation is mostly rain-fed and irrigation facilities are lacking. But Magray and other farmers have now pinned hope on a government-run project, 5000-K, that promotes cultivation of aromatic cash crops like lavender. But Magray and other farmers have now pinned hope on a government-run project, 5000-K, that promotes cultivation of aromatic cash crops like lavender. "The poor yield during preceding years has pushed my family to poverty. I hope the cultivation of high yielding aromatic crops will improve my situation," said Margay who owns 10 kanals. The science and technology department last year grew Tagetus (marigold flower) in several remote areas such as Waisa Kaonar, Hafrada, Dard-e-Harri, Rengpath, Nagri, Kukroosa, Gonipora and Natnusa. The department plans growing lavender (for its highly prized oil) in Machipora, Gonipora, Natnusa, Dard-e-Harri, Kukroosa, Bahadurpora, and Nagri. "The 5000-K project mostly targets the rain-fed areas. It is aimed at raising the socio-economic conditions of poor farmers by harnessing the irrigation-starved land, which of course, is most suitable for growing medicinal and aromatic plants,"

said Dr Mehraj Din Bhat, joint director State Science Technology and Innovation Council. He said Kashmir climate and natural factors favour cultivation of cash crops.

Published in:
Greater Kashmir

PIET Organises NEERI Visit for First Year B. Tech Students

CSIR-NEERI

15th January, 2018

Nagpur: A visit to NEERI for first Year B. Tech students was organized by Department of Applied Chemistry, Priyadarshini Institute of Engineering and Technology, Nagpur, to make them aware of the recent R & D activities on Environmental Engineering. The students visited "Harit Sanghrahalyay"of the Institute where the recent achievements of the Institute have been exhibited. Mr. Prakash Kumbhare of NEERI briefed the students about the research activities being carried out at NEERI. The visit was very beneficial and interesting for the students as they got an opportunity to interact with CSIR-NEERI scientists during their visit. The visit was planned and executed by Dr. Aditi Pandey and Dr. M. Barahate under the able guidance and cooperation of Dr. S. N. Rao, Dean Academics & HOD , Department of Applied Chemistry. Dr. V. M. Nanoti, Principal ,PIET extended support and cooperation for this endeavor by the first year Department.

Published in:
Nagpur Today

IRC accredits 'Geopolymer Concrete' road by NETRA-NTPC and

CSIR-CBRI 14th January, 2018

State-run power giant NTPC today said that Indian Road Congress (IRC) has accredited the construction of road by "Geopolymer Concrete" developed jointly by NETRA-NTPC Ltd and CSIR-CBRI Roorkee recently.NTPC NETRA and CSIR-Central Building Research Institute (CBRI), Roorkee have jointly developed high strength fly ash based geo-polymer concrete for road construction, a statement said. According to the statement, the project can now be replicated across the country and will help in addressing the environmental issues associated with huge quantities of fly ash being generated by coal-based power plants all over India.

The IRC accreditation was based on construction of geo- polymer concrete road stretch of 50m long and 3m wide single lane at CBRI Roorkee and 100m long and 6.5 m wide double lane at NTPC Dadri as per IRC specifications using NTPC Dadri fly ash.Fly ash will be used as a binder in place of conventional cement and does not require water curing.

Unlike in conventional concrete roads, cracks would not appear in this geopolymer concrete road as it is having negligible shrinkage. The road is more environment-friendly as it is made of waste generated from power plant and steel plants and it will avoid CO2 emissions by using fly ash in place of the cement for road construction. This geo-polymer road stretch is first of its kind in India which has been accredited by Indian Road Congress.

Published in:
Business Standard

IGIB discovers a protein regulating melanoma growth, pigmentation

CSIR-IGIB

14th January, 2018

Calcium entry into cells can be an attractive chemotherapy target

Researchers at Delhi's CSIR-Institute of Genomics and Integrative Biology (IGIB) have for the first time identified a calcium sensor protein (STIM1) that independently regulates both skin cancer and pigmentation. The STIM1 protein does so by activating two independent signalling pathways. Interestingly, different parts of the STIM1 protein activate the two independent signalling pathways that control melanoma growth and pigmentation. This opens up the possibility of developing drug molecules that target specific sites in the STIM1 protein to control tumour growth and regulate pigmentation. While skin cancers account for third highest number of cancer associated deaths worldwide, perturbations in pigmentation pathways result in pigmentation disorders such as solar lentigo, melasma, vitiligo, and pityriasis alba. Current therapeutic regimes are not efficient in alleviating pigmentation disorders.

Role of STIM1

"The role of STIM1 in breast cancer and prostrate cancer is already known. Based on this, we hypothesised that STIM1 might have a role in melanoma growth as well," says Dr. Rajender K Motiani from the Systems Biology Group at IGIB who led the team of researchers. To study the role of STIM1 protein in melanoma growth in vitro, the researchers used STIM1 knockdown mouse cells and injected them into mouse models and observed the growth of melanoma. Compared with controls, melanoma growth was reduced by as much as 75% in mice that were injected with STIM1 knockdown cells.

While trying to find novel players that could potentially regulate pigmentation, the

researchers identified a few signalling pathways which were differently regulated with change in pigmentation level. When chemicals were used to change the levels of pigmentation of melanocytes, the researchers found that along with changes in melanin levels, other signalling modules were also changing. Similarly, melanin level reduced when pigmentation decreased. A surprising finding was that when pigmentation was decreasing, the calcium signalling pathway was also decreasing. "We got a hint that the STIM1 protein, which is a key regulator of calcium signalling pathway, would be regulating pigmentation too," says Jyoti Tanwar from IGIB and one of the authors of the paper published in *The EMBO Journal*.

Zebrafish embryos

To confirm the role of STIM1 protein in pigmentation, the researchers knocked down the protein in melanocytes. This resulted in a reduction in pigmentation levels. "We further validated the role of STIM1 in regulating pigmentation in zebrafish models," Dr. Motiani says. "The knockdown of STIM1 significantly decreased pigmentation in zebrafish embryos. Both in vitro and zebrafish studies established the critical role of STIM1 protein in pigmentation." The protein mediates calcium entry into cells and this leads to melanoma growth. "So calcium entry into cells can be an attractive chemotherapy target for melanoma," says Dr. Motiani. "We will next be studying biopsy samples of human pigmentary disorders. Our research has led to identification of a novel molecular target with high translational value," says Tanwar.

Published in:
The Hindu

‘CSIR-NIO wants to be more self-reliant FY 2018-19’

CSIR-NIO 14th January, 2018

With around 30 per cent of its funding coming from non-CSIR sources, Goa-headquartered National Institute of Oceanography (NIO) is hoping to become more self reliant in the next financial year. In a major innovative programme, the world-renowned science institute is researching how sea weeds or other underground flora and fauna can be used for the betterment of mankind and to explore whether they can be used as nutrition, or a drug or as a cosmetic product. "The NIO is relying on the funding made available from CSIR (Council of Scientific & Industrial Research), which the parent body governing us. But we also get the funds from other sources, including private bodies, to the tune of 30 per cent," CSIR-NIO Director Sunil Kumar Singh told PTI recently. He said the CSIR-NIO was executing projects for other government organisations like the Ministry of Earth Sciences (MOES), Ministry of Environment and Forest and the Directorate of BioTechnology (DBT) besides providing service to the private industries. Singh said the NIO wanted to increase this share of 30 per cent revenue collected from the non-CSIR organisations so that the institute becomes self-reliant. "The budget of CSIR-NIO is Rs 100-120 crore annually of which Rs 30-40 crore is generated from the non-CSIR projects," he added. The NIO has also been associated with the Oil and Natural Gas Commission and private firms like Reliance and Adani for which it is undertaking offshore survey to locate petroleum and hydro-carbon, besides laying underwater pipeline for their projects. The CSIR-NIO has also been doing a survey for the power grid, which also adds to the revenue collected by the science institute. Singh said the revenue generated from the non-CSIR bodies cannot be relied upon as "sometimes some year, NIO gets a good project but for some year, it (revenue) goes down“. "We would like to get more and more of non-CSIR fundings so that there is a self-reliance, but we have not set any such target to earn the funding. We have to keep the lower limit at at least 30 per cent to get the funding," he added.

Singh said the NIO wanted to strengthen the existing facilities as well as to expand the research programme. "Oceanographic research is more towards understanding the processes and it is towards the basic science," the CSIR-NIO director said. He said the stress would be on utilising the research benefit of research for the societal benefit. Singh said one of big programmes the NIO was planning to undertake was the poly-metallic nodule programme. "We have already surveyed and exploratory work is already done. We have identified the areas where we can do mining. This is one area where we would like to strengthen so that mining is possible as soon as it can be," Singh said. In one of its most innovative projects, the CSIR-NIO is also researching how sea weeds or other underground flora and fauna can be used for the betterment of mankind. "Other area in which CSIR-NIO would be very much trying to push is about converting sea weeds and other flora and fauna for the benefit of mankind, whether they can be used as a nutrition, or drug or as a cosmetic product," he said. The director said the extensive research was going on this aspect with breakthrough is being achieved in one of the projects. "Recently, we have transferred one technology to a private firm in which our scientists were able to get some bacteria out of the ocean which can be used as a sunscreen to protect the skin from ultra violet rays," he said. "These bacterias were on the sponges. We have given the technology to a private company which will commercially explore the research and see how they can take it further. This was found off the Cochin area," he added. The researchers are also working on extracting nutrition from the ocean which could be of enormous potential. "Lot of food colour is required for the people. Sea weed could be a source for food colour.We are exploring the possibility whether it can be exploited at industrial scale," Singh stated. The CSIR-NIO is also working in the field of gas-hydrates. "We have been working on this project for some time and we have explored some area in the Krishna Godavari basin where there is potential for gas hydrate. The challenge is how to extract them. We will have to do a lot of technology enhancement for that so that these gas hydrates can be extracted," he added.

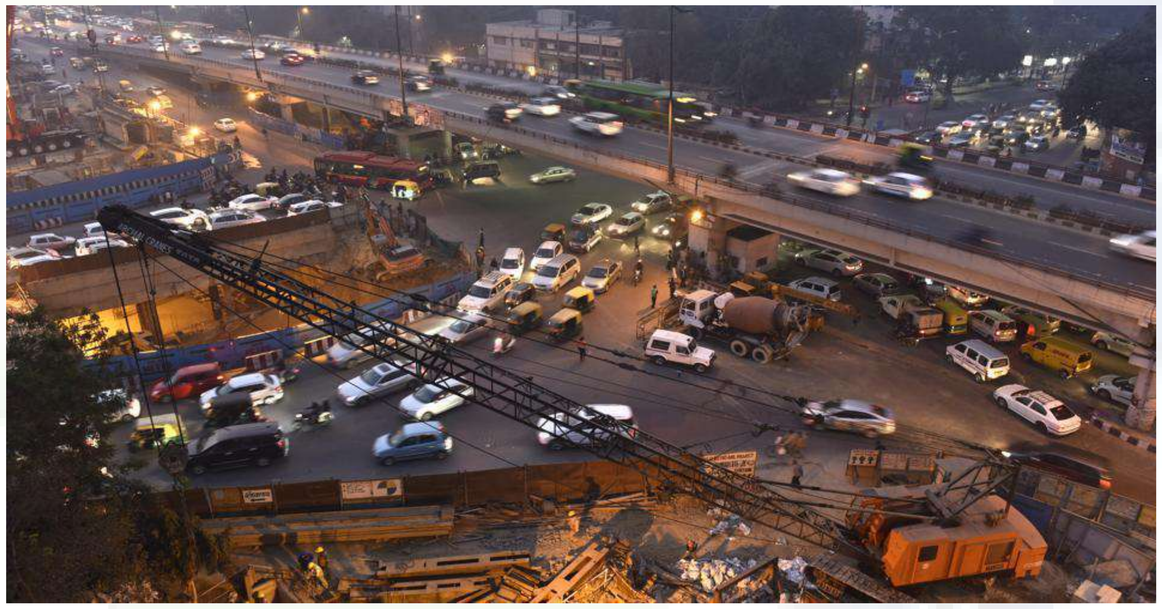
Published in:

Business Standard

At Delhi's Ashram Chowk, there's no end in sight for commuters' traffic woes

CSIR-CRRI 14th January, 2018

Work on the Ashram Metro Station, Kalindi Kunj bypass, shortage of police personnel keeps and already clogged intersection constantly packed, even during non-peak traffic hours.



The infamous Ashram intersection in south Delhi has reached a point where traffic crawls even on a Sunday afternoon when there is little or no traffic in most parts of Delhi. With one carriageway of the flyover towards Lajpat Nagar shut for repairs, motorists on Sunday had a tough time wading through heavy traffic on the stretch. With a traffic volume of 4.29 lakh vehicles daily, the intersection remains one of the most congested areas in the city. Adding to the woes of commuters is the ongoing construction for the Ashram Metro Station.

The station will be part of Delhi Metro's Phase III's Pink Line— from Majlis Park to Shiv Vihar. Even as the Delhi Metro Rail Corporation (DMRC) claims it has given back the majority of the road by pushing back its barricades, locals in the area reject these claims. "The diversions come up overnight. The Metro project is being delayed inordinately here. The situation is also dangerous for pedestrians because there is no footpath due to barricades," said Suresh Kumar Bhargav, president Siddharth Enclave RWA.

DMRC officials said that traffic from Mathura Road turning towards Sarai Kale Khan will be smoother as one additional lane (in front of NAFED office) will be opened by the end of January. Similarly, the stretch from Sarai Kale Khan towards Mathura Road below the Ashram flyover will also get one added lane by February.

Chaos to continue

However, the chaos at Ashram Chowk that connects central, south, and east Delhi along with NCR cities like Noida and Faridabad, will be far from over. The proposal to build a 750-metre-long tunnel which will allow signal-free travel from Nizamuddin to New Friends Colony or Jamia University on Mathura Road will mean more barricades and diversions. “The underpass project is a piecemeal job. The government should have rather expedited the Kalindi Kunj bypass project that would take a major chunk of vehicles off the arterial road,” said S Velmurugan, senior principal scientist, traffic engineering and safety division at CSIR-CRRI. As per the plan, the first leg of the Kalindi Kunj bypass will start from the DND flyover till Kalindi Kunj making it easy for those travelling towards Faridabad to avoid Ashram.

Experts also believe that the upcoming Metro at the intersection will likely lead to more chaos. “The Metro station will attract para-transit habitation. So once the station is open, the area will have to bear an extra burden of e-rickshaws, autos, and other last mile modes of transport,” said Sewa Ram, professor, School of Planning and Architecture.

Ram said most authorities make the mistake of starting several projects simultaneously. “The shockwave of the upcoming Delhi-Meerut Expressway can be felt on this corridor. Same traffic impact is seen from construction of the Barapullah extension to Mayur Vihar Phase I,” Ram said.

Few police personnel

Area residents said traffic deployment at the intersection is also limited. But Traffic Police officers said there are at least nine Traffic Police officers posted at the junction through the day. “At night there are less officers because of lower traffic. At any point in time during the peak hours, there are around three or four officials managing traffic, while others work in shift or are prosecuting traffic offenders,” said a Delhi Traffic Police official.

The officer said Traffic Police has sought additional staff and that it would help if the police strength at the junction is increased. “Policemen can be effective only to some extent because there are other factors involved such as bottlenecks, poor road design and such high traffic volume,” said the officer.

Published in:
Hindustan Times

Four IICT technologies being showcased at Numaish

CSIR-IICT

14th January, 2018

Four technologies developed by the CSIR-Indian Institute of Technology (IICT) are being showcased at the on-going 45-day All-India Industrial Exhibition, Nampally.

Hyderabad: Four technologies developed by the CSIR-Indian Institute of Technology (IICT) are being showcased at the on-going 45-day All-India Industrial Exhibition, Nampally. The technologies are Reverse Osmosis filtration of ground water to drinking water, Enzymatic degumming of rice bran oil, Anaerobic Gas Lift Reactor (AGR) wealth to waste and Pheromones technology Guests at the inauguration of the IICT stall, Prof Goverdhan Mehta, National Research Scientist, Prof Arun Tiwari, Platinum Jubilee Mentor of IICT, and Dr K Ranga Raju, Chairman, Sai Life Sciences Limited, Hyderabad, said that 'It is a very good and innovative move by IICT to bring its achievements to the knowledge of the common public'. The technology of enzymatic degumming of rice bran oil is a big boon to the oil industry and for the overall well being of a person. As the oil has gamma oryzanol, which is an important constituent, removes cholesterol and is loaded with tocopherols and tocotrienols which play a big role in maintaining a person's health. To overcome the issue of bio-degradable waste, Anaerobic Gas Life Reactor converts the bio-degradable waste into bio-gas and very useful manure which can be used for growing plants. This technology is being propagated at a very fast pace among the huge generators of bio degradable waste like marriage halls and hotels. A plant has been commissioned at ISKCON, Bellary. Many such plants are in the pipe line. The use of pesticides to control pests in agriculture/horticulture has reached enormous proportions and poses a challenge to both environmentalists and farmers. To overcome this problem, the synthesis pheromones allure pests and minimise the usage of pesticides.

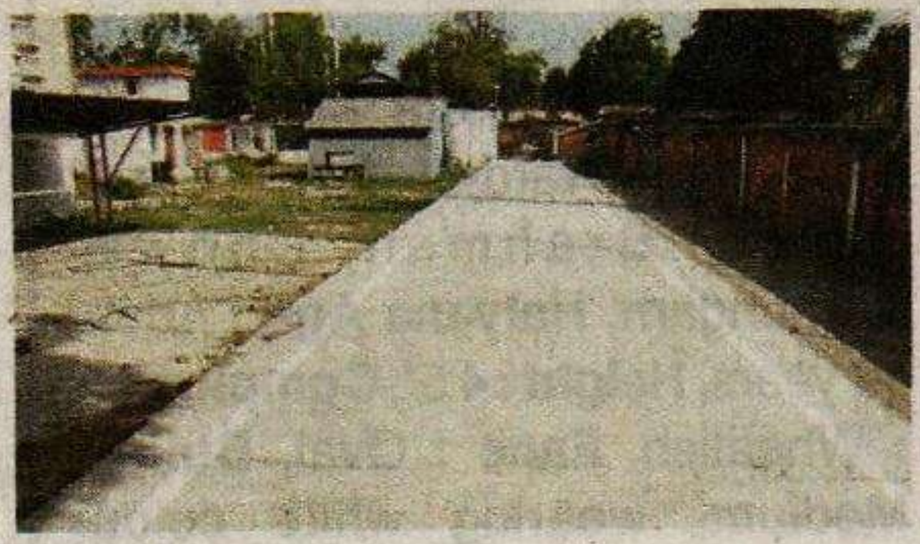
Field trials are being done on a large scale with very promising results on some important crops like cotton, tomato, brinjal, groundnut and a few horticultural crops. The use of pheromones will enable farmers to save a lot of money by minimising the use of pesticides.

Published in:
The Hans India

CSIR-CBRI

14th January, 2018

A TREMENDOUS BOOST TO USE OF FLY ASH-INDIAN ROAD CONGRESS



NTPC NETRA and CSIR-Central Building Research Institute (CBRI), Roorkee have jointly developed high strength fly ash-based geo-polymer concrete for use in road construction. Indian Road Congress (IRC), New Delhi has accredited the construction of road by 'Geopolymer Concrete' Developed/promoted jointly by NETRA-NTPC Ltd and CSIR-CBRI Roorkee recently. The project can now be replicated across the country and will help in addressing the environmental issues associated with huge quantities of fly ash being generated by coal-based power plants all over India. The IRC accreditation was based on construction of geo-polymer concrete road stretch of 50m long and 3m wide single lane at CBRI Roorkee & 100m long and 6.5 m wide double lane at NTPC Dadri as per IRC specifications using NTPC Dadri fly ash. Fly Ash will be used as a binder in place of conventional cement and does not require water curing. Unlike in conventional concrete roads, cracks would not appear in this Geopolymer concrete road as it is having negligible shrinkage. The road is more environment-friendly as it is made of waste generated from power plant and steel plants and it will avoid CO_2 emissions by using fly ash in place of the cement for road construction.

Published in:

The Pioneer, Page no. 8

Indoor air pollution linked to long kidney, dysfunction

CSIR-IITR

13th January, 2018

Air pollution can affect microvascular functions

A cross-sectional study of over 400 kitchen workers in Lucknow and Coimbatore showed that almost 50% of them suffered from poor lung functions and microalbuminuria. They also noticed that Coimbatore workers had a higher risk of obstructive lung problems. The study conducted by researchers from Indian Institute of Toxicology Research (CSIR- IITR) also examined the particulate matter pollution (PM2.5 and PM1) in the kitchen environment and found high concentrations of particulate matter of both sizes, volatile organic compounds, carbon monoxide and carbon dioxide. The study was carried out among male workers in Lucknow and Coimbatore and a control group.

Urine and lungs

Though air pollution primarily affects the lungs, it can also affect other microvascular functions via systemic circulation. So the workers were first tested for microalbuminuria. This is a condition in which there is an excess amount of albumin in urine, and this can be used as a marker for kidney diseases. More workers from Lucknow (56%) had higher microalbuminuria than their counterparts in Coimbatore (42%). Fine particulate matter can reach the alveolar epithelium of the lungs, enter the circulatory system and increase the risk of kidney dysfunction.

"By conducting various lung function tests, we found that lung abnormalities were higher in south Indian workers. Apart from exposure to indoor air pollutants, ethnic differences may be the reason.

Previous studies have shown south Indians have lower lung function," explains Dr C.N. Kesavachandran from CSIR-IITR and corresponding author of the paper published in *Environmental Health*.

The researchers found significantly increased systolic blood pressure in the kitchen workers with microalbuminuria in both states. "But no association was observed between systolic blood pressure and microalbuminuria," says Dr Vipin Bihari, former senior principal scientist and consultant at CSIR-IITR.

Air quality

"We found a cocktail of different elements like carbon, magnesium, calcium, aluminium, iron in its particulate form in the air," says Amarnath Singh, a PhD scholar at CSIR-IITR and first author of the paper.

This study throws light on poor lung function and its inverse relationship with microalbuminuria. The authors say that a follow-up study is necessary to get a more precise measure of the association between the two.

Published in:
The Hindu

CSIR-IIP

13th January, 2018

Manipur scientist develops prototype of electric car

CORRESPONDENT

IMPHAL, Jan 12: A scientist here has successfully developed a prototype electric vehicle (EV) kit for the conversion of old or polluting diesel/petrol cars into an electric vehicle with a view to have zero emission transportation system.

According to senior scientist Robindro Lairenlakpam of Council of Scientific and Industrial Research - Indian Institute of Petroleum (CSIR-IIP), who conducted the experiment, the EV kit supported by 48V and 100AH lithium ion battery with appropriate motor will replace the engine of the old vehicle particularly old Indian cars.

A fully charged battery can run a distance up to 30 km at top speed of 42 km/hour, Robindro said over phone. This will help in confronting energy security, climate change and noxious emissions in Indian roads. The EV conversion kit was developed under National Electric Mobility Mission Plan (NEMMP).

By 2020, NEMMP wants to ensure a vehicle population of 6-7 million electric and hybrid vehicles in India. By 2030, it is envisioning a scenario when all vehicles on the country's roads are powered by electricity as the number of privately-owned motorised vehicles in India is likely to reach 500 million by 2030.

The main advantage of the conversion kit is that it can convert fuel vehicle into a zero-smoke vehicle in a cost effective manner.

The CSIR scientist based in Dehradun also informed that the project is still under the process of improving and upgrading technology that can cover the total distance of 100 km. Besides, the concerned authorities are planning to make the conversion kit available in the market.

In fact, EV has the potential to dramatically cut the demand for fossil fuels in the country, according to India's draft National Energy Policy. "If most Indian vehicles are electric by 2030, pollution levels in cities could drop 80- 90 per cent, and India could save $100 billion, a sum over two times larger than the current Defence budget," the draft policy said.

Published in:
Assam Tribune, Page no. 10

CSIR

12th January, 2018

NRDC OPENES INCUBATION CENTRE FOR STARTUPS

To leverage the emerging start-up eco-system in the country, National Research Development Corporation (NRDC) opened an Incubation Centre in its premises which was inaugurated by Dr Girish Sahni, Director General, CSIR and Secretary, DSIR on last Wednesday). In his inaugural address Dr Sahni appreciated efforts of NRDC in establishing Incubation Centre as it fulfils aspiration of the young entrepreneurs who are passionate to address the social problems through their start-ups. Ashwani Gupta and BN Sarkar, Scientist 'G', DSIR were also present amongst the Sr officials of NRDC, incubates during the inauguration. Dr H Purushotham, CMD of NRDC informed that NRDC received about 100 applications seeking incubation space in the NRDC Incubation Centre.

Published in:

The Pioneer, page no. 1

CIMAP gives fragrant boost to farmers' income

CSIR-CIMAP 12th January, 2018

After the success of Mint Revolution, India's leading scientific research agency, Council for Scientific and Industrial Research (CSIR), is aggressively pursuing its Aroma Mission in an attempt to enhance the income of farmers by spreading cultivation of aromatic crops.

In an exclusive meeting with UNI, Anil Kumar Tripathi, Director of Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, said, "Enhancing the income of farmers and empowering them has been our major focus area. In the light of the past successes of CSIR-CIMAP, particularly the Mint Revolution that was brought to Uttar Pradesh, CSIR is pinning a lot of hope on us for focussing on using aromatic crops to boost the income of farmers."

With a view to strengthening the India system of traditional medicine, CSIR is laying emphasis on aromatic crops as an alternative source of income for farmers in the event of mercurial weather conditions.

"When the land is lying fallow, for instance, between wheat harvesting and rice plantation, we provide short-duration crops which precisely fit into the cropping pattern. The income generated through such short-duration crops is almost twice that of the two crops (wheat and rice) put together," Prof Tripathi pointed out.

"The challenge before us now is Aroma Mission, which is targeting expansion of cultivation of aromatic crops in an additional 6,000 hectares. Under this mission, we will provide direct intervention by offering a variety of crop options, guidance programmes, awareness programmes, and setting up of distillation units and marketing facilities, he said.

Aroma Mission has been launched with the ambition of making India emerge as a global leader in the production of essential oils extracted from aromatic crops. Aromatic essential oils have a great demand in the aroma and perfumery industries. "We are targeting 6,000 hectares, but we certainly hope that soon this will catalyse cultivation in about 60,000 to 100,000 hectares, because once the farmers see the 'success story' they promptly grab the opportunity. So, the idea is to create 'success stories' which will automatically attract farmers and, in turn, spread cultivation to 100,000 hectares," Prof Tripathi said.

Besides Lucknow, CIMAP centres in Hyderabad and Bangalore are engaged finding ways to promote Aroma Mission. "The Hyderabad centre has done remarkable work towards expansion of ashwagandha crop cultivation. In very remote areas where rainfall is very poor, ashwagandha has been providing good support to the farmers," he said with a sense of satisfaction.

Referring to Mint Revolution which catapulted India to the top slot of menthol production, Prof Tripathi stated, "About 30 years ago, India was a net importer of menthol, which is used in cough syrup, toothpaste etc. In fact, it was not produced in India at all. Menthol is extracted from a plant which is called Japanese mint. It was brought to India by our visionary directors and acclimatised. Gradually, we developed a whole lot of varieties in such a way that its cultivation fitted very well into the cropping pattern of farmers. There are climates that favour cultivation of mint and UP was most suited for it, because it is grown in summers and UP's summers are real hot."

Prof Tripathi pointed out, "India is currently the largest exporter of menthol oil and mint is cultivated in 200,000 hectares area. Earlier, it was 300,000 hectares, but due to creation of synthetic menthol in Germany, the production went down because the prices went down. Millions of farmers are benefitting and a survey done by us showed that their income has increased by about 1.75 times because of mint cultivation."

"

Today if India is the largest producer and exporter of menthol mint, it is because of CIMAP scientists and their dedication. The varieties of menthol mint, the agro technology, processing technology, marketing extension facilities… everything has been done by CIMAP," he said with a sense of pride while pointing out that menthol oil was Rs4,000-crore annual turnover business.

"Because of Mint Revolution, we have built a great amount of trust among farmers. When the farmers know that CIMAP is the same institution which had created Mint Revolution, they willingly adopt whatever we introduce to them," Prof Tripathi concluded.

Published in:
UNI India

Scientists working to predict fish-rich areas much in advance

CSIR-NIO 12th January, 2018

PANAJI: Scientists are working on a project to accurately predict areas of abundant fishing sea well in advance. Researchers from the CSIR-National Institute of Oceanography (CSIR-NIO) are using satellite imagery and underwater gadgets to come up with correct forecast - nearly one month in advance - about locations of shoals of fish in sea waters.

The fishing industry currently banks on daily advisories to fisher folk provided by the Hyderabad-based Indian National Centre for Ocean Information Services (INCOIS). "To enhance the fishery sector, we are working in a direction to see how we can predict the presence of fish in the ocean on one month time scale or even longer duration using physics, chemistry and biology," CSIR-NIO Director Sunil Kumar Singh told PTI.

The researchers feel long-term predictions would help in rationing the fishery resources and their harvesting in a sustainable manner. He said, "The fishing industry is currently getting prediction on a daily basis. What the INCOIS does is to take satellite imagery from frontal zones and predict fish catch.“ The CSIR-NIO wants to take a step ahead and scientifically probe why some of the frontal zones are acting as a good source of fishing and some of them not, Singh said.

"We have tried to understand physics and chemistry behind the phenomenon of frontal zones. The prediction by INCOIS is accurate during most of the time but in some areas, it is not successful. The CSIR-NIO is trying to understand why some frontal zones are having catch and some not. A team, led by senior CSIR-NIO scientist A C Anil, is trying "to understand, not only at the coast but also in open ocean, what is the controlling factor

of fisheries and how the chemistry, physics and biology of the ocean is governing it.“ Singh said based on the research, the CSIR-NIO will be able to predict, on a long-term scale, the amount and kind of fishes available in a particular area.

This, according to Singh, will help the governments know the total stock available in fishing zones and one can plan accordingly for a year. "Right now, there is no control due to which illegal fishing is going on. The danger is that we will consume all the fishes and nothing will be left.

"So once we are able to predict well in advance (about areas of abundant fish in the ocean), one can plan accordingly," Singh maintained. The researchers will be banking on a combination of satellite and underwater equipment like moorings and buoys to collect the data for long-term predictions, he added.

Published in:
The Times of India

CSIR-CIMAP

11th January, 2018

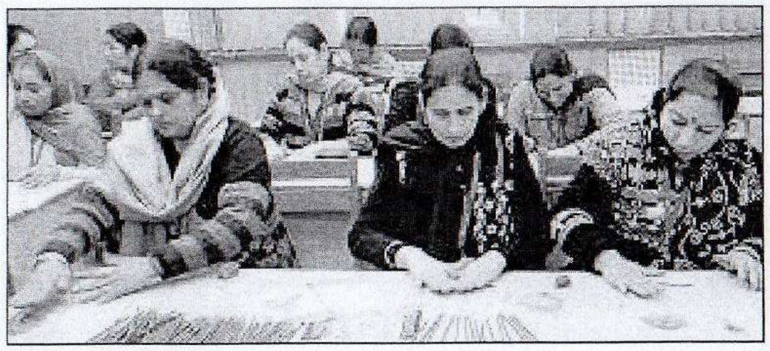
एक पंथ-दो काज चढ़ावे के फूलों से बनाई जाएंगी अगरबत्ती और धूपबत्ती, सीएसआईआर, सीमैप व प्रदूषण नियंत्रण बोर्ड भी कर रहे सहयोग

मां वैष्णो देवी को अर्पित किए फूलों से महकेंगे गरीबों के घर

जम्मू। राहुल शर्मा

माता वैष्णो देवी को अर्पित किए जाने वाले फूल अब दोबारा महकेंगे। साथ ही अनेक लोगों का जीवन भी महकाएंगे। श्री माता वैष्णो देवी श्राइन बोर्ड की पहल पर चढ़ावे के फूलों से सुगंधित अगरबत्ती व धूपबत्ती बनाने की परियोजना को अमली जामा पहनाया जा रहा है। इस काम में वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद (काउंसिल ऑफ साइंटिफिक एंड इंडस्ट्रियल रिसर्च, सीएसआईआर) और केंद्रीय औषधीय एवं सुगंध पौध संस्थान (सेंट्रल इंस्टीट्यूट ऑफ मेडीसिनल एंड एरोमैटिक प्लांट, सीआइएमएपी, सीमैप) के अलावा राज्य प्रदूषण कंट्रोल बोर्ड भी मदद कर रहा है। कटड़ा से सटे क्षेत्रों में आर्थिक रूप से कमजोर महिलाओं को इसका प्रशिक्षण दिया जा रहा है।

माता वैष्णो देवी आधार शिविर कटड़ा से प्रतिदिन बड़ी मात्रा में अगरबत्ती व धूपबत्ती की खपत होती है। अब तक इन उत्पादों को बाहर से लाया जाता था। लेकिन अब इनका निर्माण स्थानीय स्तर पर होने लगेगा, जिससे स्थानीय लोगों को रोजगार मिलेगा। साथ ही चढ़ावे के फूलों का सदुपयोग हो सकेगा। बता दें कि श्रद्धालुओं को पवित्र गुफा में फूल ले जाने की अनुमति नहीं है, लेकिन यहां नियमित होने वाली पूजा में फूल चढ़ाए जाते हैं। साथ ही पुरानी गुफा में प्रतिदिन फूलों से सजावट की जाती है। श्रद्धालु पुरानी गुफा तक पुष्प-माला, अगरबत्ती ले जा सकते हैं। जहां इन्हें एकत्र कर लिया जाता है। वहीं कटड़ा आधार शिविर में बने मंदिर में भी श्रद्धालु इन्हें अर्पित करते हैं। पवित्र गुफा, पुरानी गुफा और कटड़ा के सभी मंदिरों से एकत्र किए जाने के बाद यहां प्रतिदिन चढ़ावे के फूल इक्टठे हो जाते हैं। जिनका अब तक समुचित प्रबंधन नहीं हो पा रहा था। परियोजना से जुड़ी वैज्ञानिक अनुराधा शर्मा ने बताया कि श्राइन बोर्ड से जुड़ी स्वयंसेवी संगठनों की महिला कार्यकर्ताओं को प्रशिक्षण दिया जा चुका है। अब धर्मार्थ ट्रस्ट में कार्यरत महिलाओं व फूल व्यवसाय से जुड़े किसानों को प्रशिक्षण दिया जा रहा है।



अगरबत्ती व धूपबत्ती बनाने का प्रशिक्षण लेती महिलाएं। फोटो : ब्यूरो

अन्य मंदिरों से भी एकत्र करेंगे फूल

मां वैष्णो देवी आधार शिविर कटड़ा के मंदिरों व शारदीय नवरात्र पर मां भगवती के भवन की सजावट में इस्तेमाल होने वाले टनों फूलों का इस काम में इस्तेमाल होगा। प्रदूषण नियंत्रण बोर्ड की वैज्ञानिक अनुराधा शर्मा ने कहा कि जल्द ही जम्मू शहर के दूसरे मंदिरों से भी चढ़ावे के फूलों को एकत्रित करने की व्यवस्था की जाएगी। आर्थिक रूप से कमजोर महिलाओं को इसका लाभ मिलेगा।

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CSIR-IMMT

9th January, 2018

खुशखबरी : अब लैब में बनेंगे 'हीरे'

■ नई दिल्ली (वार्ता)।

अपनी खूबसूरती से हर एक दिल जीत लेने वाले हीरे के बेशकीमती होने तथा जमीन से इसे निकालने की जटिल प्रक्रिया के चलते इसका सस्ता विकल्प तलाशा जा रहा है। दुनियाभर के कई देशों की तरह अब भारत में भी प्रयोगशाला में कृत्रिम हीरा तैयार करने की तकनीक पर काम हो रहा है।

अमेरिका, यूरोपीय यूनियन, रूस, चीन, जापान, दक्षिण कोरिया, जापान और सिंगापुर जैसे कई विकसित देशों में लैब डायमंड बनाने की न सिर्फ आधुनिक तकनीक मौजूद है बल्कि ये देश बड़े पैमाने पर इस कृत्रिम हीरे को बाजार में उतार रहे हैं। भारत और

चीन दुनिया में हीरे के सबसे बड़े उपभोक्ता देश हैं। ऐसे में भारतीय वैज्ञानिक भी प्रयोगशाला में हीरा विकसित करने की तकनीक पर काम कर रहे हैं, जो निकट भविष्य में बड़ी जनसंख्या के लिए सस्ता विकल्प होगा।

देश में मुख्य रूप से रत्नों की रंगाई एवं रत्न अभिनिर्धारण प्रक्रिया, प्राकृतिक रत्नों

अमेरिका, यूरोपीय यूनियन, रूस, चीन, जापान, दक्षिण कोरिया, जापान और सिंगापुर जैसे की श्रेणी में खड़ा हुआ भारत

का रूपांतरण और डायमंड कोटिंग जैसी तकनीक पर काम तेजी से हो रहा है। इसमें कीमती रत्नों जैसे माणिक, जिक्रोन, नीलम, पन्ना, स्फटिक, हीरा आदि के खनन के दौरान नष्ट होने पर भी इन्हें वैज्ञानिक तकनीक से लैब में उपयोग लायक बनाने पर काम हो रहा है। वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद (सीएसआईआर) के खनिज एवं पदार्थ प्रौद्योगिकी संस्थान (आईएमएमटी) भुवनेश्वर के कार्यवाहक निदेशक एसके मिश्रा ने बताया कि उनका संस्थान हीरा विकसित करने की नई तकनीक डायमंड कोटिंग पर काम रहा है। देश में हीरा बनाने की सीवीडी तकनीक पर आईएमएमटी भुवनेश्वर, सीजीसीआरआई कोलकाता, आईआईटी मद्रास, आईआईटी मुंबई, बीआईटी-मेसरा रांची, टेक्नोस इंस्ट्रूमेंट जयपुर में शोध हो रहा है।

ऐसे बनता है डायमंड : उन्होंने बताया कि इस तकनीक में हीरे के बेहद सूक्ष्म (माइक्रोस्कोपिक) कण को माइक्रोवेव प्लास्मा सीवीडी रिएक्टर प्रक्रिया के तहत बड़े आकार तक बढ़ाया जाता है, जिसे डायमंड कोटिंग या डिपोजिशन तकनीक कहा जाता है।

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CSIR-CRRI

9th January, 2018

How 2 new flyovers may ease traffic woes on Outer Ring Road

PWD Plans To Widen Road By 30m On Majnu Ka Tilla-Salimgarh Bypass Route

Risha.Chitlangia
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New Delhi: The public works department (PWD) has revived its Rs 300-crore project to decongest Outer Ring Road between Majnu Ka Tilla and Old Hanuman temple near Salimgarh bypass. The reworked plan has been sent to the Delhi government for approval.

The plan is to construct two flyovers and widen the existing road on a 5.6km-long stretch to ease traffic flow. Though the project was approved by Unified Traffic and Transportation Infrastructure (Planning and Engineering) Centre (UTTIPEC) in 2014, it was put on hold as the cost was estimated to be extremely high due to land acquisition.

The project is back in focus with lieutenant governor Anil Baijal asking government agencies to decongest this stretch. In December, Baijal held a meeting, which was attended by CSIR-Central Road Research Institute experts, to discuss the congestion problem. The experts have suggested both short- and long-term steps, including construction of flyovers.

PWD has modified the design of the flyover at Majnu ka Tilla intersection, the main problem area. As per the previous plan, land had to be acquired at Majnu Ka Tilla as adequate space was required at the surface level for the ramp. "But now we have proposed staggered ramps. The two carriageways will touch down at different locations and provide adequate space on the existing road," said an official.

The other flyover will come up at Metcalfe House intersection. The width of the road between Majnu Ka Tilla and Old Hanuman temple, which is now 40-60 metres, will also be increased to 90m. The reworked plan was sent to the government in December.

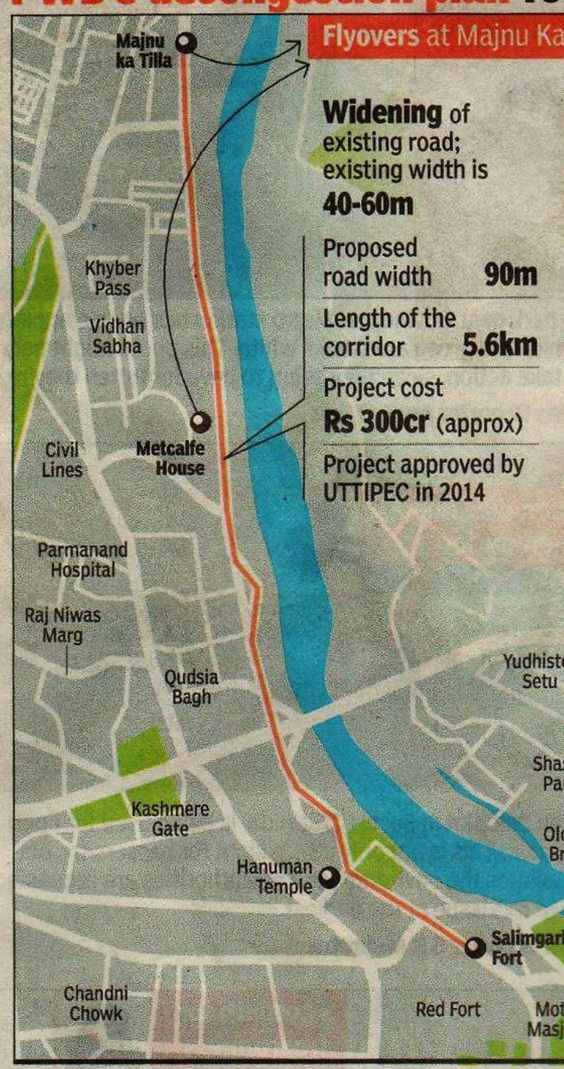
This stretch impacts traffic flow on Outer Ring Road and the neighbouring areas. Besides ISBT at Kashmere Gate making it a busy stretch, this is also the main connecting road to National Highway-1 and north Delhi. S Velmurugan, senior principal scientist, traffic engineering and safety division at CSIR-CRRI, said, "The traffic on this stretch is increasing 3-5% every year. The present volume is 6,000 passenger car units during peak hour."

Traffic on this stretch has also increased since widening of Outer Ring Road from GT Road to Wazirabad Chowk and due to the signal-free Geeta Colony bridge and Salimgarh bypass. "Roads on both sides of this stretch have been widened and the existing road can't take the load," said an official.

Traffic movement, Velmurugan said, has to be regulated as a bottleneck is created where Salimgarh bypass merges with Outer Ring Road. "High-speed traffic from eight lanes of Salimgarh bypass and Geeta Colony bridge merges with the arterial road, which is just a four-lane carriageway. We have suggested controlled release of traffic at this point. Traffic signals should be installed here for alternate discharge of traffic," he said.

Experts have also suggested stopgap arrangements. "After ISBT, traffic going towards Majnu Ka Tilla can be allowed partially in the wrong direction for nearly a kilometre as the traffic volume on the other carriageway is relatively less," said Velmurugan.

PWD's decongestion plan for 5.6km stretch



Flyovers at Majnu Ka Tilla and Metcalfe House intersections

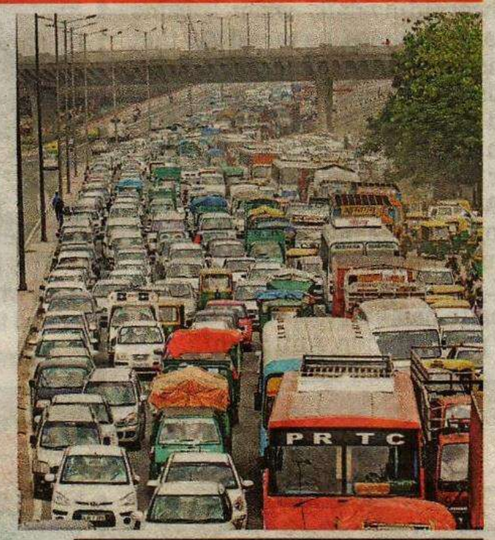
Widening of existing road; existing width is **40-60m**

Proposed road width **90m**

Length of the corridor **5.6km**

Project cost **Rs 300cr** (approx)

Project approved by UTTIPEC in 2014



WHY IT'S IMPORTANT

- Traffic volume is high as it is the main road leading to NH-1 and connects north with central Delhi
- The area is extremely congested due to residential colonies, ISBT Kashmere Gate etc
- Traffic volume will increase due to widening of Outer Ring Road between Grand Trunk Road and Wazirabad
- Traffic volume increasing 3-5% per year
- High traffic volume of 6,000 passenger car units

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