

# CSIR in Media



75 Years of

CSIR Touching Lives

News Bulletin

26<sup>th</sup> to 31<sup>st</sup> December 2019





## Odisha to script new chapter in steel growth: Union Minister Dharmendra Pradhan

CSIR-IMMT



Union Minister for Steel Dharmendra Pradhan on Monday said the State will script a new chapter in the wave of growth in steel and mineral-based industries of the country. “If the indigenous technology developed by CSIR-IMMT is commercially viable they can bring a great change in the industry in India and Odisha,” said Pradhan. Interacting with heads of different technical, research institutes and senior officials of steel industries at the Institute of Minerals and Materials Technology (Formerly Regional Research Laboratory), Council of Scientific and Industrial Research, Bhubaneswar, the Union Minister shared his views on the necessity of greater synergy between research institutes, industry and

31<sup>st</sup> December, 2019  
policymakers to leverage innovation for leapfrogging growth. “With a holistic strategy and greater convergence between all stakeholders, Odisha can script a new chapter in the next wave of growth of Indian steel and minerals industry,” he said. It is heartening to know that small industries are also giving research opportunities to institutes in the State. These research activities will build the foundation for a technologically more advanced and vibrant mining and steel industry in the region, he added. “We should adopt a outcome-oriented approach to contribute towards national economic growth. Innovation will be key to create a knowledge-based entrepreneurial ecosystem,” he tweeted. Pradhan visited the laboratory of CSIR- IMMT, Bhubaneswar and delighted to know that the institute’s mineral processing pilot plant and pilot-scale fluidised bed reactor have developed technology to utilise low-grade iron ore and thermal grade coal for the industry. Later in the day, the Union Minister visited Konark Interpretation Centre developed by Indian Oil



Corporation Foundation in collaboration with Archaeological Survey of India at Konark Sun Temple. “It is our responsibility to work towards developing world-class tourist facilities in Odisha to boost tourism & promote the culture of Odisha,” he said. Konark, Puri and Chilika have the potential to be developed into high-density tourist hot spots, he added.

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[The Indian Express](#)



## Dehradun-based CSIR lab has an exchange scheme for used cooking oil

CSIR-IIP



For every 10 litres of used cooking oil, either 5 litres of biodiesel or 1 litre of edible oil be given. The Indian Institute of Petroleum (CSIR-IIP), the Dehradun-based laboratory under the Council of Scientific and Industrial Research, has launched a major scheme to lure households and small-time restaurants to part with used cooking oil (UCO). As per the project, to be launched officially by January end next year, households and restaurants collecting and handing over used cooking oil will be given either 5 litres of biodiesel or 1 litre of edible oil for every 10 litres of UCO. This UCO would then be used for producing biodiesel, said Neeraj Atray, a senior scientist with CSIR-IIP, during a workshop here last week. To begin with,

30<sup>th</sup> December, 2019  
the scheme has been launched in Dehradun early this month as part of the Central government's Repurposing Used Cooking Oil (RUCO) initiative. "Apart from collecting the used cooking oil for making biodiesel, it would also help to create awareness about adverse health impact of using cooking oil for repeated frying," said Atray. It is being jointly carried out with Gati Foundation, an NGO based in Dehradun. The programme has huge potential considering that Indian households consume as much as 1000 crore litres of edible oil annually. Add to this, another 666 crore litres oil used by food business operators. A sizeable part of the oil used in the homes or restaurants are used for frying and used repeatedly leading to serious health conditions. "We are sensitising students in Kendriya Vidyalayas in the city as well as restaurants. In December, we have been able to collect 800 litres of UCO. As many as 15-20 restaurants and caterers have come forward, the CSIR-IIP scientist said. So far, they were given Rs 20 per litre of UCO. Once the project becomes full-fledged,



people who participate can get either 5 litres of biodiesel or 1 litre of vegetable in exchange for 10 litres of UCO. While restaurants can use the biodiesel for running their generators, households can use vegetable oil for cooking. Around Dehradun, the institute is already talking to various army cantonment areas and restaurants in other hill stations around. “Almost all of them have evinced interest to join the programme, he said adding that this would be of tremendous benefit to environment as flowing away the used oil in the drain pollute water sources.

The institute, which has developed the technology for biodiesel making and transferred to 11 plants currently operating in the country, plans to expand the programme to other parts of the country and are on the lookout for NGOs that can work with them for the collection of the used oil. “Delhi-NCR would be one of the first. We have already tied up with an NGO there, which will take up the responsibility for collecting UCO,” Atray said. Other cities would follow soon.

Eventually, the plan is to follow the Chinese model, said a source. China, which too have a huge UCO collection programme, gives people 1 litre of edible oil for every 5 litres of UCO supplied.



## Biomarkers for glioma brain tumour found in peripheral blood

CSIR-IMTECH



**These can be used for prognosis and early diagnosis of the most aggressive glioblastoma**

Researchers have found potential gene biomarkers that can be used for prognosis and early diagnosis of the most aggressive form of primary brain tumour called glioblastoma. The biomarkers can help in knowing if the tumour is at an initial stage (low-grade) or advanced stage (high-grade).

The multi-institutional research work carried out by a team led by Javed N. Agrewala from Institute of Microbial Technology (CSIR-IMTECH), Chandigarh, now at IIT Ropar, looked at immune cells called macrophages in

28<sup>th</sup> December, 2019

the tumour microenvironment to understand their role in suppressing or boosting the immune system to keep the tumour under check. The role of certain macrophages in suppressing the immune system leading to progression of cancers such as breast, prostate, bladder and cervical cancers is already known.

### Two macrophages

Based on patient tissue samples the researchers identified two macrophages — M1 and M2 — that were associated with the tumour. These were identified using hallmark gene markers (CCL3 gene for M1 macrophage and CD163 for M2 macrophage). The M1 macrophage is protective for glioma while the M2 macrophage is not. The M2 macrophage control the immune response and intimately interacts with the tumour and supports tumour progression. “We observed that as the glioma progresses from low-grade to high-grade, the amount of M1 macrophages reduced and the amount of M2 macrophages increased,” says Prof. Agrewala.



“Thus the ratio of M2 macrophage marker CD163 versus M1 macrophage marker CCL3 can ascertain the glioma progression.”

### **Making a prognosis**

In the low-grade glioma, the ratio of M2/M1 macrophages (or CD163/CCL3) is less while it is high in the case of high-grade glioma tumour. “Besides indicating whether the tumour is low- or high-grade, the macrophages can also indicate the chances of survival of patients with glioma,” says Aurobind Vidyarthi from CSIR-IMTECH, the first author of a paper published in *Cancer Immunology, Immunotherapy*.

He is currently a post-doc at Yale University, New Haven, U.S. “In low-grade glioma patients we see both M1 and M2 macrophages. But if there are more M2 macrophages (as indicated by the gene marker expression) than M1 macrophages, the survival is less. Likewise if there are more M1 macrophages then the patient has better chances of survival.”

Most studies have looked at only the local immune response in the tumour region. But these researchers went a step ahead and looked for macrophage phenotypes and different T cells in peripheral blood samples collected from glioma patients.

### **Markers in blood**

“Interestingly, compared with healthy individuals, there was elevated level of M2 macrophages in peripheral blood too. This indicates that the influence of glioma is so prominent that M2 macrophages can be found in the blood,” says Dr. Vidyarthi. Besides M2 macrophages, the researchers also found in the blood PD-1 expressing CD4<sup>+</sup> T cells. During chronic infection and tumour, the T cells become exhausted. “So instead of promoting, the exhausted CD4<sup>+</sup> T cells end up suppressing the immune system at the systemic level. Consequently, both CD4<sup>+</sup> T cells and M2 macrophages suppress the immune system at the systemic level,” says Prof. Agrewala.



“Thus the gene biomarkers in blood samples can be used for early diagnosis and prognosis of the gliomas. We need to carry out studies on more samples before being certain.”

Researchers from Postgraduate Institute of Medical Education and Research, Chandigarh were also a part of the study.

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## **NML: CSIR Integrated Skill Training Initiative Management Development Programme**

CSIR-NML

28<sup>th</sup> December, 2019

India is always being home for handicraft and metal craft items. With saturating domestic market, the artisans and young entrepreneurs need to explore international market. With this thought, CSIR-National Metallurgical Laboratory, Jamshedpur under the aegis of CSIR-Integrated Skill Training Initiative, in collaboration with MSME-Development Institute, Ranchi organized five days Management Development Programme on “Export Marketing of Metal Craft” from 16<sup>th</sup> December 2019 to 20<sup>th</sup> December 2019 to create awareness among the people about several technologies benefiting metal industry and also intends to mentor entrepreneurs who would like to work in the field of metal crafts. The Valedictory function of this five days Programme was held on 27<sup>th</sup> December 2019 at CSIR-NML.

Dr. Soumitro Tarafder, Acting Director & Advisor Management CSIR-NML, Jamshedpur addressed the participants and congratulated them for successfully completing the five days Management Development Programme. He mentioned that this training programme targeted for generation of employment and development of economy of our country. He emphasised on organising more similar training programme in order to reach out more people to achieve this target. Dr. Mita Tarafder, Head of Research Planning & Business Development (RPBD) Division mentioned that young entrepreneurs can interact with the concerned scientist for the technologies or the procedure of their resource. She told that the motive of the training was to encourage entrepreneurs to export metal crafts as well as other products and utilizing CSIR-NML technologies for that.

. P. K. Gupta, Director and . Sudip Paul, Assistant Director, MSME-DI, (Ranchi), the partner organization were also present in the programme. They discussed about the procedures of exporting quality products.



It was mentioned that this training is a capsule programme for these entrepreneurs for the business startup & was firstly organized in Jharkhand by MSME-DI. The agenda behind this collaboration with CSIR-NML was to know more about the new technologies developed so far which would help them to export good quality of products.

Baidyanath Mandi Vice President and . Basant Tirkey, General Secretary of Tribal Indian Chamber of Commerce and Industry (TICCI), Eastern Region Jamshedpur were the guest of honor of this programme. They congratulated the participants for completing the training program. They expressed their gratitude to NML and the MSME – DI, Ranchi for organizing such training program. Around twenty-nine participants from, TICCI Jamshedpur, participated in the programme.

K. Sudhakara Rao, Technical Officer, RPBD Division concluded the function by offering vote of thanks. He thanked the participants for successfully completing the training program and also expressed his appreciation to all the members of the organizing team for their untiring effort in making the programme a success.



CSIR-NML

28<sup>th</sup> December, 2019

Plan:

एनएमएल में पांच दिवसीय कार्यशाला के प्रतिभागियों को प्रदान किया गया सर्टिफिकेट, बोले डॉ सौमित्रों तरफदार

## हैंडीक्राफ्ट, मेटल क्राफ्ट को बढ़ावा देने से दूर होगी बेरोजगारी

**जमशेदपुर.** एनएमएल में भारत सरकार के मिनिस्ट्री ऑफ एमएसएमई की ओर से मेटल क्राफ्ट के एक्सपोर्ट व मार्केटिंग को लेकर एक कार्यशाला का समापन 20 दिसंबर को हुआ. पांच दिवसीय इस कार्यशाला में शामिल होने वाले प्रतिभागियों के बीच शुक्रवार को सर्टिफिकेट का वितरण किया गया.

मौके पर एनएमएल के एक्टिंग डायरेक्टर डॉ सौमित्रों तरफदार ने पांच दिवसीय कार्यशाला की विस्तार पूर्वक जानकारी दी. उन्होंने कहा कि सरकार के स्तर से हस्तशिल्प को बढ़ावा देने का बेहतर प्रयास किया जा रहा है. इसमें एनएमएल की ओर से युवाओं को ट्रेनिंग देकर दक्ष बनाया



जा रहा है. उन्होंने कहा कि कार्यशाला में प्रतिभागियों को बताया गया कि भारत शुरू

से ही हैंडीक्राफ्ट व मेटल क्राफ्ट के क्षेत्र में बेहतर कार्य कर रहा है. लेकिन इसके

अच्छी मार्केटिंग की जरूरत है. उन्होंने कहा कि कार्यशाला के दौरान मेटल को कम लागत में बेहतर बनाने में एनएमएल की भूमिका की भी जानकारी दी गयी. रिसर्च प्लानिंग एंड बिजनेस डेवलपमेंट हेड डॉ मीता तरफदार ने कहा कि इस प्रकार के आयोजन से युवा सीधे तौर पर वैज्ञानिकों से रूबरू हो पाते हैं. उनके मन में चलने वाली हर समस्या का समाधान वे कर पाते हैं. इस मौके पर ट्राइबल चैंबर ऑफ कॉमर्स के उपाध्यक्ष वैद्यनाथ मंडी व महासचिव बसंत तिकी ने भी अपनी बातों को सभी के समक्ष रखा. कार्यक्रम के आयोजन में एमएसएमई डेवलपमेंट इंस्टीट्यूट रांची का भी योगदान रहा.

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Prabhat Khabar



CSIR-IMMT

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# WORKSHOP ON RESOURCE FLOW IN CITY

POST NEWS NETWORK

**Bhubaneswar, Dec 26:** The European Union's Resource Efficiency Initiative (EU-REI) and Development Alternatives Group (DA), in partnership with CSIR-Institute for Minerals and Materials Technology (CSIR-IMMT)-Bhubaneswar, held a half-day workshop on 'Resource Flows in Bhubaneswar' at CSIR-IMMT here December 17.

EU-REI has been organised by the Ministry of Environment, Forest and Climate Change (MoEFCC), EU Delegation in India, with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, The Energy and Resources Institute (TERI), Confederation of Indian Industry (CII), and consultants Adelphi. DA and IFU Hamburg are providing technical support to implement the Material Flows in Construction Sector study in Indian cities. With an aim to reduce the extraction and use of primary/virgin resources in the construction sector through integration of secondary resource streams in the sector, the EU-REI has



The delegates at the half-day workshop at CSIR-IMMT in City

OP PHOTO

initiated a project titled "Resource flows in Indian cities." The project aims to assess the quantum of material resources which flow into cities to meet demand for construction materials and to assess the substitution potential of these resources with construction and demolition waste and other secondary raw materials. The secondary resource streams in the construction sector can be fly ash, industrial waste, manufactured sand etc.

Bhubaneswar is an ideal city for

Resource Efficiency interventions being one of the first planned cities of modern India and is also one of the selected cities under SMART Cities Mission. Being a fast-emerging regional hub for education, health care and information technology, there is a construction & infrastructure boom in the city. Also, being rich in mineral resources such as iron ore, limestone and bauxite, Odisha is home to many industries which are potential sources of waste which is a

complimentary raw material in building material production.

The programme aimed to bring together key stakeholders concerned with construction sector and its sustainability – including city municipality and development authorities, state government nodal departments, builders, architects, developers, research institutes, academia, and civil society.

The session was chaired by Santosh Mishra, Chief Scientist & Business development officer CSIR-IMMT. The workshop commenced with inaugural remarks from Zeenat Niazi, Vice President, DA. The session further involved deliberations on the results obtained from year-long study which were presented by Rachna Arora (Deputy Team Lead and Coordinator, EU-REI, GIZ India), Reva Prakash, (Technical Advisor, EU-REI, GIZ India) and Pankaj Khanna (Senior consultant, DA).

The workshop included session discussing the state-of-art in Bhubaneswar where inputs were gathered from various dignitaries from industries and organisations as Vedanta, Paradeep Phosphates, The Design Group etc.

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Orissa Post



CSIR-IMMT

27<sup>th</sup> December, 2019

# ରିସୋର୍ସସ୍ମେ ଇନ୍ ଭୁବନେଶ୍ୱର କର୍ମଶାଳା ଉଦ୍‌ଘାଟନ

• ଭୁବନେଶ୍ୱର

ଯୁରୋପୀୟାନ ଯୁନିଅନର ରିସୋର୍ସ ଏଫିସିଏନ୍ସି ଇନିସିଏଟିଭ (ଇୟୁ-ଆରଇଆଇ) ଓ ଡେଭେଲପମେଣ୍ଟ ଅଲଟରନେଟିଭ୍ ଗ୍ରୁପ୍ (ଡିଏ) ସ୍ଥାନୀୟ ସିଏସଆଇଆର-ଇନଷ୍ଟିଚ୍ୟୁଟ୍ ଫର ମିନେରାଲ୍ ଆଣ୍ଡ ମ୍ୟାଟେରିଆଲ୍ ଟେକ୍ନୋଲଜି (ସିଏସଆଇଆର-ଆଇଏମଏମଟି) ର ସହଭାଗିତାରେ 'ରିସୋର୍ସ ସ୍ମେ ଇନ୍ ଭୁବନେଶ୍ୱର' ବିଷୟବସ୍ତୁ ଉପରେ ଗତ ୧୭-୨୪ ଡିସେମ୍ବର ପର୍ଯ୍ୟନ୍ତ ଏକ ପ୍ରାକ୍‌ସପ କାର୍ଯ୍ୟକ୍ରମ ହୋଇଥିଲା । ପରିବେଶ, ଜଳାଳ ଓ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ମନ୍ତ୍ରଣାଳୟ (ଏମଓଇଏଫସିସି) ଓ ଇୟୁର ପ୍ରତିନିଧି ଦଳ ଦ୍ୱାରା ଆୟୋଜିତ ଏହି ଇୟୁ-ଆରଇଆଇ ପ୍ରାକ୍‌ସପକୁ ଡକ୍ଟର ସଂସ୍ଥା ଜିଆଇଜେଡ, ଦ ଏନର୍ଜି ଆଣ୍ଡ ରିସୋର୍ସ ଇନଷ୍ଟିଚ୍ୟୁଟ୍ (ଡେରି), ଭାରତୀୟ ଶିଳ୍ପ ସଂଘ (ସିଆଇଆଇ) ଓ କନସଲଟାଣ୍ଟ ଆଡେଲ୍ଟି ସହଯୋଗ କରିଥିଲେ । ଇୟୁ-ଆରଇଆଇ 'ରିସୋର୍ସସ୍ମେ ଇନ୍ ଭୁବନେଶ୍ୱର' ଉଦ୍‌ଘାଟନ ସମ୍ପର୍କରେ



ପ୍ରକଳ୍ପର ଶୁଭାରମ୍ଭ କରିଥିଲା । ଭାରତର ବିଭିନ୍ନ ସହରକୁ ନିର୍ମାଣ ଲାଗି କେତେ ମ୍ୟାଟେରିଆଲ ଆସୁଛି, ଏହି ନିର୍ମାଣ ସମ୍ପୂର୍ଣ୍ଣ ଧୂସ ବର୍ଜ୍ୟ ଓ ଅନ୍ୟ ପ୍ରାୟତଃ କଞ୍ଚାମାଲରେ ବିକଳ ଦକ୍ଷତାକୁ ପରୀକ୍ଷା କରିବା ଇଚ୍ଛା

ଏହି ପ୍ରକଳ୍ପର ଲକ୍ଷ୍ୟ । ନିର୍ମାଣକ୍ଷେତ୍ରରେ ଦ୍ୱିତୀୟ ସମ୍ପୂର୍ଣ୍ଣ ଗୁଡିକ ହେଉଛି ପ୍ଲାସ୍ ଆସ୍, ଶିଳ୍ପ ବର୍ଜ୍ୟ, ବାଲି ଇତ୍ୟାଦି । ସ୍ୱାର୍ଥ ସହର ଅଭିଯାନରେ ଭୁବନେଶ୍ୱରରେ ସମ୍ପୂର୍ଣ୍ଣ ଦକ୍ଷତା ପରୀକ୍ଷଣ ସକାଶେ ଭାରତରେ ଆଦର୍ଶ ସହର

ହୋଇଛି । ଶିଳ୍ପ, ସ୍ୱାସ୍ଥ୍ୟସେବା ଓ ସୂଚନା ପ୍ରଯୁକ୍ତି, ନିର୍ମାଣ ଓ ଭିଡିଓମି ଲାଗି ଭୁବନେଶ୍ୱର ଆଞ୍ଚଳିକ ହବ୍ ହୋଇଛି । ଲୁହା, ଚୂନପଥର, ବକ୍ସାଇଟ୍ ଆଦି ଖଣିଜ ଲାଗି ଓଡ଼ିଶାରେ ବହୁ ଶିଳ୍ପ ଖୋଲିଛି । ଏହି ଶିଳ୍ପରୁ ବହୁ ବର୍ଜ୍ୟ ସଂଗୃହୀତ ହେଉଛି, ଯାହା ନିର୍ମାଣ ଶିଳ୍ପ ଲାଗି କଞ୍ଚାମାଲ ହେବାରେ ସହାୟକ ହୋଇଛି । ନିର୍ମାଣ କ୍ଷେତ୍ରର ଅଂଶଧାରକଙ୍କୁ ଏକତ୍ରିତ କରିବା ହେଉଛି ଏହି କର୍ମଶାଳାର ଉଦ୍ଦେଶ୍ୟ । ଏହି କାର୍ଯ୍ୟକ୍ରମରେ ପୌରପାଳିକା ଓ ଉନ୍ନୟନ ଅଧିକାରୀ, ରାଜ୍ୟ ସରକାରଙ୍କ ନୋଡାଲ ବିଭାଗ, ବିଲୁର, ଆର୍କିଟେକ୍ଟ, ଡେଭେଲପର, ରିସର୍ଚ୍ଚ ଇନଷ୍ଟିଚ୍ୟୁଟ୍ ଓ ସାମାଜିକ ସଂଗଠନ ଅଂଶଗ୍ରହଣ କରିଥିଲେ । ସିଏସଆଇଆର-ଆଇଏମଏମଟିର ମୁଖ୍ୟ ବିଜ୍ଞାନ ଓ ବ୍ୟବସାୟ ବିକାଶ ଅଧିକାରୀ ସନ୍ତୋଷ ମିଶ୍ର ଅଧ୍ୟକ୍ଷତା କରିଥିଲେ । ତିଏ ଉପାଧ୍ୟକ୍ଷା ଜିନ୍ଦଗ ନିଆଜି କର୍ମଶାଳା ଉଦ୍‌ଘାଟନ କରିଥିଲେ । ଏଥିରେ ଇୟୁ-ଆରଇଆଇ ଡେପ୍ୟୁଟି ଟିମ ଲିଡର ଓ ସଂଯୋଜକ ଡ. ରଚନା ଆରୋରା, ଇୟୁ-

ଆରଇଆଇର ଟେକ୍ନିକାଲ ଆଡଭାଇଜର ଡ. ରେବପ୍ରକାଶ ଓ ତିଏର ବରିଷ୍ଠ କନସଲଟାଣ୍ଟ ପଙ୍କଜ ଖାନ୍ନା ନିଜର ଗବେଷଣା ରିପୋର୍ଟ ଉପସ୍ଥାପନ କରିଥିଲେ । ଓଡ଼ିଶା ଅର୍ବାନ ହାଉସିଂ ମିଶନର ନିର୍ଦ୍ଦେଶକ ଡ. ସୁରେଶ ଚନ୍ଦ୍ର ଦଲେଇ, ନାଲକୋ ଆରଥାଣ୍ଡ୍ରୀ ମୁଖ୍ୟ ଡ. ସୁବ୍ରତ କର, ଜାଭିୟର ସ୍କୁଲ ଅଫ ସସଟେନେବିଲିଟି, ଏକ୍ସପ୍ଲୋର ଡିନ ଡ. ସୁତପା ପତି, ଆଇଆଇଟି, ଭୁବନେଶ୍ୱରର ପ୍ରଫେସର ପି. ଦିନାକର, କିଟ୍ ପ୍ରଫେସର ସୁରଜ ତ୍ରିପାଠୀ, ଆଇଏମଏମଟି, କିଟ୍, ଆଇଆଇଟି-ଭୁବନେଶ୍ୱରରୁ ବହୁ ବୈଜ୍ଞାନିକଙ୍କ ବ୍ୟତୀତ ବେଦାନ୍ତ, ପାରାଦୀପ ଫସଫେଟ୍ସ, ଦ ତିକାଜନ ଗ୍ରୁପ ଇତ୍ୟାଦି ଶିଳ୍ପ ସଂସ୍ଥାରୁ ବିଶିଷ୍ଟ ବ୍ୟକ୍ତିମାନେ ଆଲୋଚନାରେ ଭାଗ ନେଇଥିଲେ । ତିଏର ସିନିୟର ମ୍ୟାନେଜର ଡ. ରିଆ ସିହ୍ନା ଆଲୋଚନାର ସାରାଂଶ ପାଠ କରିଥିଲେ । ସିଏସଆଇଆର-ଆଇଏମଏମଟିର ବରିଷ୍ଠ ବୈଜ୍ଞାନିକ ଡ. କାଲି ସଞ୍ଜୟ ଧନ୍ୟବାଦ ଅର୍ପଣ କରିଥିଲେ ଓ କର୍ମଶାଳାକୁ ସଂଯୋଜନା କରିଥିଲେ ।

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CSIR-IMMT

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# भुवनेश्वर में संसाधन प्रवाह पर कार्यशाला

भुवनेश्वर, यूरोपीय संघ के संसाधन दक्षता पहल (ईयू-आरईआई) और विकास विकल्प समूह (डीए) ने सीएसआईआर-इंस्टीट्यूट फॉर मिनरल्स एंड मैटेरियल्स टेक्नोलॉजी (सीएसआईआर-आईएमएमटी) के साथ साझेदारी में, सीएसआईआर-आईएमएमटी भुवनेश्वर में ह्यभुवनेश्वर में संसाधन प्रवाह पर आधे दिन की कार्यशाला की। ईयू-आरईआई का आयोजन भारत में पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी), ईयू प्रतिनिधिमंडल द्वारा किया गया है, डॉयचे गेसल्लसचाफ्टफोर्ट इंटरनेशनल जुसमेनरबीट (जीआईजेड) जीएमबीएच, द एनर्जी एंड रिसोर्सेज इंस्टीट्यूट (टीईआरआई), कन्फेडरेशन ऑफ के सहयोग से भारतीय उद्योग (सीआईआई), और सलाहकार एडलफी. डीए और आईएफयू हैम्बर्ग भारतीय शहरों में निर्माण क्षेत्र के अध्ययन में सामग्री प्रवाह को लागू करने के लिए तकनीकी सहायता प्रदान कर रहे हैं।

निर्माण क्षेत्र में द्वितीयक संसाधन धाराओं के एकीकरण के माध्यम से



निर्माण क्षेत्र में प्राथमिक / वर्जीन संसाधनों के निष्कर्षण और उपयोग को कम करने के उद्देश्य से, यूरोपीय संघ-आरईआई ने भारतीय शहरों में संसाधन प्रवाह नामक एक परियोजना की शुरुआत की है। भौतिक संसाधनों की मात्रा जो निर्माण सामग्री की मांग को पूरा करने और निर्माण और विध्वंस अपशिष्ट और अन्य माध्यमिक कच्चे माल के साथ इन संसाधनों की प्रतिस्थापन क्षमता का आकलन करने के लिए शहरों में बहती है। निर्माण क्षेत्र में द्वितीयक संसाधन धाराएँ राख, औद्योगिक अपशिष्ट, निर्मित रेत आदि

हो सकती हैं। भुवनेश्वर संसाधन दक्षता के लिए एक आदर्श शहर है, जो आधुनिक भारत के पहले नियोजित शहरों में से एक है और स्मार्ट शहरों के लिए भी चयनित शहरों में से एक है।

शिक्षा, स्वास्थ्य देखभाल और सूचना प्रौद्योगिकी के लिए एक तेजी से उभरता हुआ क्षेत्रीय केंद्र होने के नाते, शहर में एक निर्माण और बुनियादी ढाँचा है। इसके अलावा, लौह अयस्क, चूना पत्थर, बॉक्साइट जैसे खनिज संसाधनों से समृद्ध होने के कारण, ओडिशा कई उद्योगों का

घर है जो कचरे के संभावित स्रोत हैं जो निर्माण सामग्री के उत्पादन में एक मानार्थ कच्चा माल है। शहर के नगर पालिका और विकास प्राधिकरणों, राज्य सरकार के नोडल विभागों, बिल्डरों, वास्तुकारों, डेवलपर्स, अनुसंधान संस्थानों, शिक्षाविदों और नागरिक समाज सहित - निर्माण क्षेत्र और इसकी स्थिरता से संबंधित प्रमुख हितधारकों को एक साथ लाने का कार्यक्रम। सत्र की अध्यक्षता संतोष मिश्र, मुख्य वैज्ञानिक और व्यवसाय विकास अधिकारी सीएसआईआर-आईआईएमएमटी ने की।

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## 'Steps taken by Mysuru kings can boost modern India'

CSIR-CFTRI

27<sup>th</sup> December, 2019



Royal scion Yaduveer Krishnadatta Chamaraja Wadiyar plants a sandalwood sapling to mark his visit to CSIR-Central Food Technological Research Institute (CFTRI), in Mysuru, on Friday. CFTRI Director K S M S Raghava Rao and India-head of Silicon Road S Sanj

Yaduveer Krishnadatta Chamaraja (YKC) Wadiyar, the scion of the erstwhile royal family, said that the 'old idea of Mysuru' will give a boost to 'modern India'.

Speaking at a programme organised at CSIR-Central Food Technological Research Institute (CFTRI) here on Friday, he said that the heritage of Mysuru is not limited to culture and tradition but encompasses innovation and entrepreneurship. He was felicitated on the occasion.

He recalled that his forefathers, the Maharajas, especially Tenth Chamaraja Wadiyar, Nalvadi Krishnaraja Wadiyar and Jayachamaraja Wadiyar built dams and developed irrigation systems to harness precious water.

They established industries to make use of available resources and provide employment. "Education and healthcare systems were the best, under the Wadiyar kings," he remarked.



“The strong foundation of Mysuru laid by the Wadiyar kings is of everlasting value. Mysuru was the hub of innovation, entrepreneurship and enterprises during the 19th and 20th centuries. The Wadiyars contributed immensely to research and innovation and they supported the establishment of institutions like Indian Institute of Science and CFTRI,” he recounted.

Mentioning that it was the birth centenary of his grandfather Jayachamaraja (JC) Wadiyar, YKC Wadiyar said that if JC Wadiyar were to see Mysuru today, the ‘golden Mysuru’ can be found only on the premises of CFTRI.

“He would be happy to see the old Mysuru charm in CFTRI. CFTRI is an indigenous homegrown institution, finding solutions in the food and nutrition sector. It has put the resources and environment on the premises of the Cheluvamba Mansion to best use,” he said.

He visited various laboratories of CFTRI and interacted with scientists and students. He also planted a sandalwood sapling to mark his visit to the institution.

Cheluvamba Mansion, the residence of the late Maharajakumari Cheluvajammanni, houses the CFTRI since 1950. JC Wadiyar gave up the mansion and its estate to the Union government in 1948 to encourage research. As Cheluvajammanni, a sister of Nalvadi Krishnaraja Wadiyar and her three children died in an epidemic, the palace reverted to the custody of the king.

CFTRI Director K S M S Raghava Rao, senior principal scientists P Manilal and V D Nagaraju, India-head of Silicon Road S Sanjay and CEO of Bherunda Innovation Foundation B N Pramod were present.



## New technology to boost production of Geranium

### CSIR-CIMAP



Geranium plant has huge medicinal value and its essential oil works as an anti-inflammatory and anti-septic agent. The production of Geranium has got boost under the Aroma mission. Scientists from Council of Scientific and Industrial Research- Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow have developed a new low-cost technology to prepare Geranium saplings and make this available for the farmers too. Dr. Saudan Singh, Project Head, CIMAP said that till now the plant of Geranium was saved in aerated glass house, but now with the development of the protective shed technology of the polyhouse, it is prepared at a much cheaper cost on the farmer's farm itself. In one acre around four thousand saplings can be cultivated.

27<sup>th</sup> December, 2019

For this, 50-60 square meter poly house has to be built that costs around 8-10 thousand rupees. “By this technology we can lower down the cost of the sapling production by 2 rupees per sapling which earlier used to be 35 rupees. This can help farmers to earn more with low input cost in Geranium cultivation” said Dr Singh. Till now the plant was prepared from the saplings of Geranium, but these used to be ruined in the rainy season. This made the plant material very expensive to the farmer. Dr Singh also told that CIMAP has started cultivation of Geranium under aroma mission to promote it as an alternative to Mentha (another aromatic plant) under aromatic crops production. Dr. Abdul Samad, Executive Director, CIMAP, said that under the Aroma Mission the institute will be able to cultivate an area of about 50 hectares of plant material of Geranium this year, which is expected to extract about 750 kg of aromatic oil by June 2020. “By selling this fragrant oil, farmers will be able to get immense benefits and their income will increase. Oil extracted from Geranium plant is very valuable



. A crop of just 4 months costs about 80 thousand rupees, while the profits from this are up to about 1.50 lakh rupees. The average price of the oil in India is around 12 to 18 thousand rupees per liter” told Dr Samad

It is originally a plant from South Africa. It is cultivated in Uttar Pradesh, Punjab, Haryana, Bihar, Himachal Pradesh and North Eastern regions. November is suitable for sowing and loamy soil is good for its cultivation. Mother plants are being provided by CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP) to promote the cultivation of Geranium under the Aroma Mission. In various districts of Uttar Pradesh about 133 farmers have been provided with plant material.



CSIR-CBRI

27<sup>th</sup> December, 2019

## Reconnect Students With Science Through Experiments, Demonstrations, Humour & Interactive Session: Dr Atul Agarwal



**Roorkee:** -PGT Workshop for Chemistry PGTs of 8 KVS Regions at CSIR-CBRI, Roorkee

CSIR-Central Building Research Institute, Roorkee organized a PGT Workshop Chemistry PGTs of 8 Regions of Kendriya Vidyalaya Sangathan on December 26, 2019, under the Jigyasa Programme. The scientists of CSIR-CBRI presented lectures in their area of expertise and informed about the latest technologies developed by CSIR & CBRI.

Presenting a lecture on "Jigyasa: Reconnecting Students with Science", Dr. Atul Kumar Agarwal, Senior Principal Scientific and Jigyasa Programme Coordinator, CSIR-CBRI, Roorkee said that compared to other subjects, the students consider science monotonous. Therefore, teachers should try to create vibrancy in the classroom by sharing the scientific jokes and humorous incidents in-

spired from the lives of eminent scientists. For instance, the story of Newton and the apple is exemplified while explaining the context of gravity. Similarly, students can be motivated by citing fun facts from the life of various eminent scientists.

The participants visited the enriched laboratories of CSIR-CBRI and interacted with the scientists of the Institute.

The participants observed the Technology Gallery of the Institute wherein Dr. Atul Kumar Agarwal explained the various advanced building materials by CSIR-CBRI such as rice husk plastic wood, pine needle board, building block from C&D waste, kota stone tiles etc with the help of technical charts.

In the Environment Science & Technology laboratory, Dr. L.P. Singh, Principal Scientist informed about the applications of nanotechnology in buildings, use of

nanotechnology to modulate concrete and optimize loading capability in buildings.

In the Fire Research lab, Dr. Suvir Singh, Chief Scientist informed the participants about various technologies developed by CSIR-CBRI for fire safety in buildings including fire retardant and water repellent canvas, liquid fire extinguishant chemical, fire resistant doors etc.

In the Efficiency of Buildings lab, Scientist Dr. Anuj Chauhan explained the concept of low speed wind tunnel for ventilation in building, dome type of artificial sky for daylight studies etc to the participants.

In the Organic Building Materials lab, the participants learnt about various eco-friendly green building materials such as thermal insulation tiles using vermiculite waste, EPS door shutter etc. with the help of product samples.

In the Rural Technology Park, the partici-

pants saw demonstration models of various rural technologies including fire retardant non erodible mud plaster thatch roof, low cost latrines, waste water disposal system etc.

About 35 Chemistry PGTs from 8 KVS Regions - Agra, Chandigarh, Delhi, Dehradun, Gurugram, Jabalpur, Varanasi, Chhattisgarh - along with Smt. Shivani Choudhary, Kendriya Vidyalaya No. 1 Roorkee and Sangeeta Khurana, Kendriya Vidyalaya Hathibarkala Dehradun participated in the programme.

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जिज्ञासा कार्यक्रम में केंद्रीय विद्यालय संगठन के आठ क्षेत्रों के रसायन विज्ञान के शिक्षकों के लिए कार्यशाला आयोजित

# कार्यशाला में विज्ञान पर आधारित चुटकुलों को किया साझा

भास्कर समाचार सेवा

**रुड़की।** सीएसआईआर-केंद्रीय भवन अनुसंधान संस्थान में जिज्ञासा कार्यक्रम के अंतर्गत केंद्रीय विद्यालय संगठन के आठ क्षेत्रों के रसायन विज्ञान के परास्नातक शिक्षकों के लिए एक कार्यशाला का आयोजन किया गया।

जिज्ञासा विज्ञान और युवाओं का पुनः मिलन विषय पर व्याख्यान प्रस्तुत करते हुए संस्थान के वरिष्ठ प्रधान वैज्ञानिक एवं जिज्ञासा कार्यक्रम समन्वयक, डॉ. अतुल कुमार अग्रवाल ने शिक्षकों को बताया कि आम-



सीएसआईआर केंद्रीय भवन अनुसंधान के कार्यक्रम में उपस्थित वैज्ञानिक।

तौर पर विद्यार्थियों द्वारा विज्ञान विषय को अन्य विषयों की तुलना

में नीरस माना जाता है इसलिए शिक्षण में पाठ्य चर्चा के दौरान

नीरसता को कम करने के लिए शिक्षकों को विज्ञान पर आधारित चुटकुलों और वैज्ञानिकों के जीवन से सम्बंधित हास्य-विनोद के क्षणों को विद्यार्थियों के साथ साझा कर कक्षा में जीवंतता बनाने का प्रयास करना चाहिए।

मुख्य वैज्ञानिक डॉ. सुवीर सिंह ने प्रतिभागियों को भवनों में अग्नि सुरक्षा के लिए सीबीआरआई द्वारा विकसित अग्नि व जल रोधी कैनवास, तरल अग्निशमन रसायन, आग प्रतिरोधी दरवाजे आदि के विषय में जानकारी दी। संस्थान के प्रधान वैज्ञानिक डॉ. एलपी सिंह ने भवनों में नैनो प्रौद्योगिकी के अनुप्रयोग, नैनो

तकनीक द्वारा भवनों में लोडिंग कैपेसिटी को अनुकूलित करने के विषय में जानकारी दी। भवन दक्षता प्रयोगशाला में वैज्ञानिक डॉ. अनुज चौहान ने प्रतिभागियों को भवनों में वेंटिलेशन के लिए कम गति वाली विंड सुरंग, प्राकृतिक प्रकाश द्वारा इमारतों की रोशनी पर अध्ययन के लिए कृत्रिम आकाश गुंबद आदि के विषय में जानकारी प्रदान की। इस अवसर पर देहरादून, दिल्ली, गुरुग्राम, जबलपुर, वाराणसी, छत्तीसगढ़ के रसायन विज्ञान के लगभग 35 परास्नातक शिक्षकों ने प्रतिभागिता की।

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## Students of St Xavier's College visit IICT Hyderabad

CSIR-IICT



Department of chemistry, St Xavier's College, Mapusa organised a study tour for third year chemistry students. A group of 49 students and six faculty members visited Hyderabad for a study tour. Students visited CSIR-Indian Institute of Chemical Technology (IICT), a national-level research centre located in Hyderabad. They learned about the workings of sophisticated instruments and got an opportunity to interact with renowned scientists. Senior technician, IICT, BD Sanjay guided students on the research avenues available at IICT and encouraged them to take a step towards doing quality research. The group also visited tourist attractions of Hyderabad which included the Sudha Cars Museum,

27<sup>th</sup> December, 2019

Golconda Fort, NTR Gardens, Lumbini Park, statue of Lord Buddha in the middle of Hussain Sagar Lake, Charminar and Ramoji Film City.

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## 'నూతన ఆవిష్కరణలపై శిక్షణ అవసరం'

ఉస్మానియా యూనివర్సిటీ, న్యూస్ టుడే: నూతన ఆవిష్కరణల కోసం యువతకు శిక్షణ ఇవ్వాలన్న అవసరం ఉందని సెంటర్ ఫర్ సెల్యులార్ అండ్ మాలిక్యులర్ బయాలజీ(సీసీఎంబీ) సంచాలకులు డా.రాకేష్ మిశ్రా అన్నారు. గురువారం



విద్యార్థులతో సంభాషిస్తున్న డా.వీ.ఎం.తివారి, డా.రాకేష్ మిశ్రా

తారాకలోని సీసీఎంబీలో 7వ యంగ్ ఇన్నోవేటర్స్ కార్యక్రమం నిర్వహించారు. సైన్స్ పై ఆసక్తి కలిగించేందుకు నిర్వహించే ఈ కార్యక్రమానికి రాష్ట్రంలోని వివిధ పాఠశాలల నుంచి దాదాపు 200 మంది విద్యార్థులు హాజరయ్యారు. అందులో నుంచి 25 మందిని తుది శిక్షణకు ఎంపిక చేస్తారు. వారికి సీసీఎంబీలో డిసెంబర్ 31 నుంచి జనవరి 13 వరకు పరిశోధన రంగంలో శిక్షణ ఇవ్వనున్నారు. ఈ సందర్భంగా డా.రాకేష్ మిశ్రా మాట్లాడుతూ దేశంలో యువశక్తి అధికంగా ఉందని, వారికి శిక్షణ ఇస్తే సరైన మార్గంలో పయనించే అవకాశం ఉంటుందన్నారు. పరిశోధన రంగంలో గల అవకాశాలను విద్యార్థులకు వివరించేందుకే ఈ కార్యక్రమం నిర్వహిస్తున్నట్లు వివరించారు. నేషనల్ జియోఫిజికల్ రీసెర్చ్ ఇనిస్టిట్యూట్ సంచాలకులు డా. వీ.ఎం.తివారి మాట్లాడుతూ నీటి అవసరం, నీటి సంరక్షణకు తీసుకోవాల్సిన చర్యలను వివరించారు.

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## CCMB's young innovators' prog commences

CSIR-CCMB

26<sup>th</sup> December, 2019

The CSIR-Centre for Cellular and Molecular Biology (CCMB) commenced its seventh Young Innovators' Programme on Thursday. More than 200 school students from the city and nearby districts appeared for the screening test, stated an official statement by CCMB. About 20-25 students of Classes 8-10 were selected and they will spend two weeks (December 31 to January 13) at CCMB conducting experiments and other activities that hone one's observational and analytical skills, interactive sessions with scientists, and understanding different kinds of opportunities for a researcher – from academia to entrepreneurship.

The participants will interact with CCMB scientists and will be given hands on experience on research. VM Tiwari, director, CSIR-National Geophysical Research Institute, Hyderabad, delivered a lecture on sustaining water availability and inspired attendees to take urgent action on water conservation programs.

“India is a country with the most number of youths. Given the right exposure and training, we aim to develop scientists and innovators who want to go beyond the known as well as solve India-centric problems,” said Rakesh Mishra, CCMB director.

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