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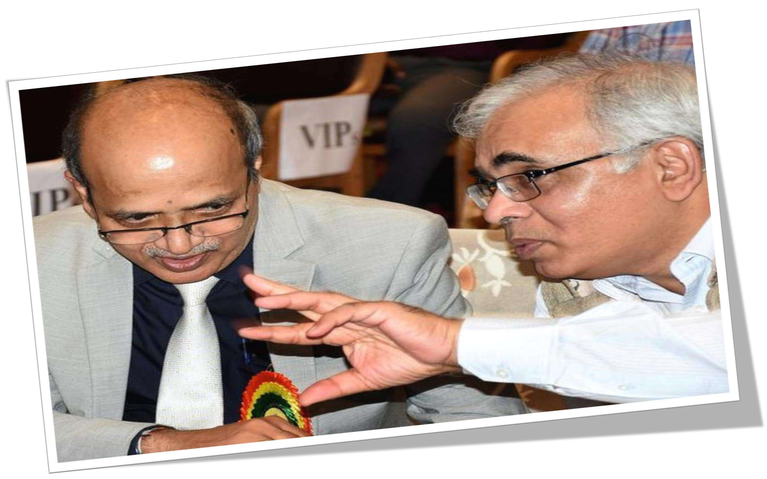

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CSIR-CFTRI

15th December, 2019

'Scientists must help reduce food wastage'

20-25 per cent of farm produce goes waste for various reasons, says IISc. expert

SPECIAL CORRESPONDENT
MYSURU

Scientists from the laboratories of Council of Scientific and Industrial Research must come up with technologies that prevent foods from going waste, Gautam R. Desiraju, Professor, Solid State and Structural Chemistry Unit, IISc., Bengaluru, has said.

"In India, at least 20-25 per cent of food grown in the fields is wasted for various reasons. We cannot afford to lose food like this. This is a serious problem since a lot of water is used to produce foods by our farmers. It's a challenge to preserve food, and processing and value addition could be helpful in minimising wastage," he explained.

In his address at the inauguration of 7th Bioprocessing India Conference held on the campus of CSIR-CFTRI here on Saturday, he said the scientists from top and premier labs can play an important role in curtailing wastage by taking up translational research. The research from the labs should go to the fields and help farmers in a big way.

He urged the CSIR to lay emphasis on translational research, looking beyond the labs since the scientific know-whow should largely benefit the society. "I think the scientists have a greater responsibility and we need to deliver the goods. If 15 per cent of wastage was stopped, it makes a big impact on our economy. This brings a lot of laurels to our scientists."

Shekhar C. Mande, Director General, CSIR, and the Secretary, Department of Science and Technology, who inaugurated the three-day conference, said the CSIR was laying emphasis on translational research and narrated some of the examples implemented in some States in recent years.

CSIR-CFTRI Director K.S.M.S. Rao spoke about the importance of the conference. A souvenir was released on the occasion.

Dr. Mande also inaugurated the poster session. Anurag S. Rathore from IIT Delhi, Jayanth Modak, Deputy Director, IISc, Bengaluru, and others were present.

More than 200 delegates from various States are attending the conference.

CSIR Director-General Shekhar C. Mande (second from left), Gautam R. Desiraju from IISc. and others during the inauguration of 7th Bioprocessing India Conference at CSIR-CFTRI in Mysuru on Saturday. ▪ M.A. SRIRAM

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ಶೇ.25 ಆಹಾರ ಉತ್ಪನ್ನ ವ್ಯರ್ಥ; ಸಂಸ್ಕರಣೆಗೆ ಆದ್ಯತೆ ಅಗತ್ಯ

Mysuru Mitra. 15/12/19. Pg No. 4

ಸಿಎಫ್‌ಟಿಆರ್‌ಐನ ಜೈವಿಕ ಸಂಸ್ಕರಣ ಸಮ್ಮೇಳನದಲ್ಲಿ ಪ್ರೊ.ಗೌತಮ್ ದೇಸಿರಾಜು

ಮೈಸೂರಿನ ಸಿಎಫ್‌ಟಿಆರ್‌ಐನಲ್ಲಿ ಆಯೋಜಿಸಿರುವ 7ನೇ ಜೈವಿಕ ಸಂಸ್ಕರಣ ಸಮ್ಮೇಳನದ ಉದ್ಘಾಟನಾ ಸಮಾರಂಭದಲ್ಲಿ ಶನಿವಾರ ಸ್ಮರಣ ಸಂಚಿಕೆ ಬಿಡುಗಡೆ ಮಾಡಲಾಯಿತು. ಐಐಟಿ ರಾಸಾಯನಿಕ ಎಂಜಿನಿಯರಿಂಗ್ ವಿಭಾಗದ ಪ್ರೊ. ಅನುರಾಗ್ ಎಸ್.ರಾಥೋರ್, ಸಿಎಸ್‌ಐಆರ್ ಪ್ರಧಾನ ನಿರ್ದೇಶಕ ಶೇಖರ್ ಸಿ. ಮಂಡೆ, ಐಐಎಸ್‌ಸಿ ಸಾಲಿಡ್ ಸ್ಟೇಟ್ ಅಂಡ್ ಸ್ಟ್ರಕ್ಚರಲ್ ಕೆಮಿಸ್ಟ್ರಿ ವಿಭಾಗದ ಪ್ರೊ.ಗೌತಮ್ ಆರ್.ದೇಸಿರಾಜು, ಐಐಎಸ್‌ಸಿ ಉಪ ನಿರ್ದೇಶಕ ಪ್ರೊ. ಜಯಂತ್ ಮೋದಕ್ ಹಾಗೂ ಸಿಎಸ್‌ಐಆರ್–ಸಿಎಫ್‌ಟಿಆರ್‌ಐ ನಿರ್ದೇಶಕ ಡಾ.ಕೆಎಸ್‌ಎಂಎಸ್ ರಾಘವರಾವ್ ಚಿತ್ರದಲ್ಲಿದ್ದಾರೆ.

ಮೈಸೂರು, ಡಿ. 14(ಎಸ್‌ಬಿಡಿ)– ಆಹಾರ ಉತ್ಪನ್ನ ಸಂಸ್ಕರಣೆಗೆ ಆದ್ಯತೆ ನೀಡುವ ಅಗತ್ಯವಿದೆ ಎಂದು ಇಂಡಿಯನ್ ಇನ್ಸ್‌ಟಿಟ್ಯೂಟ್ ಆಫ್ ಸೈನ್ಸ್‌ನ ಸಾಲಿಡ್ ಸ್ಟೇಟ್ ಅಂಡ್ ಸ್ಟ್ರಕ್ಚರಲ್ ಕೆಮಿಸ್ಟ್ರಿ ವಿಭಾಗದ ಪ್ರೊ. ಗೌತಮ್ ಆರ್.ದೇಸಿರಾಜು ಗಮನ ಸೆಳೆದರು.

ಮೈಸೂರಿನ ಕೇಂದ್ರೀಯ ಆಹಾರ ತಾಂತ್ರಿಕ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ (ಸಿಎಫ್‌ಟಿಆರ್‌ಐ) ವತಿಯಿಂದ ಆಯೋಜಿಸಿರುವ ಮೂರು ದಿನಗಳ 7ನೇ ಜೈವಿಕ ಸಂಸ್ಕರಣ ಸಮ್ಮೇಳನದ ಉದ್ಘಾಟನಾ ಸಮಾರಂಭದಲ್ಲಿ ಅವರು ಮಾತನಾಡಿದರು.

ಭಾರತದಲ್ಲಿ ಆಹಾರ ಸಂಸ್ಕರಣೆ ವಿಚಾರದಲ್ಲಿ ನಿರ್ಲಕ್ಷ್ಯ ವಹಿಸಲಾಗಿದೆ. ಪರಿಣಾಮ ಶೇ. 20ರಿಂದ 25 ರಷ್ಟು ಆಹಾರ ಉತ್ಪನ್ನಗಳು ವ್ಯರ್ಥವಾಗುತ್ತಿವೆ. ಕೃಷಿಗೆ ಅಗತ್ಯಕ್ಕಿಂತ ಹೆಚ್ಚು ಪ್ರಮಾಣದ ನೀರು ಬಳಕೆಯಾಗುತ್ತಿದೆ. ನೀರಾವರಿ ಪ್ರಕ್ರಿಯೆಯಲ್ಲಿ ಭಾರೀ ಪ್ರಮಾಣದಲ್ಲಿ ನೀರು ಪೋಲಾಗುತ್ತಿದೆ. ಕೃಷಿ ಮತ್ತು ಆಹಾರ ಕ್ಷೇತ್ರದಲ್ಲಿ ಮಾತ್ರವಲ್ಲ ಬಹುತೇಕ ಎಲ್ಲಾ ಕ್ಷೇತ್ರಗಳಲ್ಲೂ ಸೂಕ್ತ ಅರಿವು ಹಾಗೂ ನಿರ್ವಹಣೆ ಕೊರತೆಯಿಂದ ನಷ್ಟ ಉಂಟಾಗುತ್ತಿದೆ. ಆದರೆ ಸಣ್ಣ ಬದಲಾವಣೆಯಿಂದ ದೊಡ್ಡ ಕ್ರಾಂತಿಯಾಗಿ ಜನತೆಗೆ ಉಪಯೋಗಬಹುದು. ಈ ನಿಟ್ಟಿನಲ್ಲಿ ದೇಶದಲ್ಲಿ ಹೆಚ್ಚುತ್ತಿರುವ ಆಹಾರ ಉತ್ಪನ್ನಗಳ ತ್ಯಾಜ್ಯವನ್ನು ತಾಂತ್ರಿಕ ಪರಿಹಾರಗಳ ಮೂಲಕ ನಿರ್ವಹಣೆ ಮಾಡಲು ಮುಂದಾಗಬೇಕೆಂದು ತಿಳಿಸಿದರು.

ಸಂಶೋಧನಾಲಯ ಹಾಗೂ ಪ್ರಯೋಗಾಲಯಗಳು ಜನರಿಗೆ ಹೆಚ್ಚು ಉಪಯುಕ್ತವಾದ ಸಂಶೋಧನೆ ನಡೆಸಬೇಕು. ಜೊತೆಗೆ ಕೃಷಿಕರಿಗೆ ಜಾಗೃತಿ ಮೂಡಿಸುವ ಕೆಲಸವೂ ಆಗಬೇಕು. ಶೈಕ್ಷಣಿಕ ವ್ಯವಸ್ಥೆ ಎಲ್ಲೆಡೆ ವಿಸ್ತರಿಸದಿರುವ ಕಾರಣ ರೈತರಿಗೆ ಅನಾನುಕೂಲವಾಗುತ್ತಿದೆ. ಹಣ್ಣು ಬೆಳೆಯುವ ರೈತರು ಮಾಹಿತಿ ಕೊರತೆಯಿಂದ ಸಕಾಲದಲ್ಲಿ ಉತ್ಪನ್ನವನ್ನು ರಫ್ತು ಮಾಡಲಾಗದೆ ಪರಿತಪಿಸುತ್ತಿದ್ದಾರೆ. ಪೈನಾಪಲ್ ಹಣ್ಣನ್ನು 3 ದಿನದಲ್ಲಿ ಸಂಸ್ಕರಣ ಘಟಕಗಳಿಗೆ. ಸಾಗಿಸಬೇಕು. ಆದರೆ ಮೇಘಾಲಯದ ರೈತರಿಗೆ ಇದು ಸಾಧ್ಯವಾಗದೆ ನಷ್ಟ ಅನುಭವಿಸುತ್ತಿದ್ದಾರೆ. ಹೀಗೆ ನಷ್ಟ ಆಗುವುದನ್ನು ತಡೆಯುವ ನಿಟ್ಟಿನಲ್ಲಿ ಸಂಶೋಧನೆಗಳು ನಡೆಯಬೇಕೆಂದು ಸಲಹೆ ನೀಡಿದರು.

ಕೌನ್ಸಿಲ್ ಆಫ್ ಸೈಂಟಿಫಿಕ್ ಅಂಡ್ ಇಂಡಸ್ಟ್ರಿಯಲ್ ರಿಸರ್ಚ್(ಸಿಎಸ್‌ಐಆರ್) ಪ್ರಧಾನ ನಿರ್ದೇಶಕ ಶೇಖರ್ ಸಿ.ಮಂಡೆ, ಐಐಎಸ್‌ಸಿ ಉಪ ನಿರ್ದೇಶಕ ಪ್ರೊ. ಜಯಂತ್ ಮೋದಕ್, ಸಿಎಸ್‌ಐಆರ್–ಸಿಎಫ್‌ಟಿಆರ್‌ಐ ನಿರ್ದೇಶಕ ಡಾ. ಕೆಎಸ್ ಎಂಎಸ್ ರಾಘವರಾವ್, ಐಐಟಿ ರಾಸಾಯನಿಕ ಎಂಜಿನಿಯರಿಂಗ್ ವಿಭಾಗದ ಪ್ರೊ. ಅನುರಾಗ್ ಎಸ್.ರಾಥೋರ್ ಮತ್ತಿತರರು ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಉಪಸ್ಥಿತರಿದ್ದರು.

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ನಿಖರ ಕೃಷಿ ಯೋಜನೆ ಜಾರಿಗೆ ಸಿದ್ಧತೆ

ಮೈಸೂರು, ಡಿ.14– ರೈತರ ಅನುಕೂಲಕ್ಕಾಗಿ ರಾಜ್ಯದಲ್ಲಿ 'ನಿಖರ ಕೃಷಿ ಯೋಜನೆ' ಜಾರಿಗೆ ಸಿದ್ಧತೆ ನಡೆದಿದೆ ಎಂದು ಸಿಎಸ್‌ಐಆರ್ ಪ್ರಧಾನ ನಿರ್ದೇಶಕ ಶೇಖರ್ ಸಿ. ಮಂಡೆ ತಿಳಿಸಿದರು.

ಮೈಸೂರಿನ ಸಿಎಫ್‌ಟಿಆರ್‌ಐನಲ್ಲಿ ಶನಿವಾರ ಸುದ್ದಿಗೋಷ್ಠಿಯಲ್ಲಿ ಮಾತನಾಡಿದ ಅವರು, ರೈತರಿಗೆ ಕೃಷಿ ಚಟುವಟಿಕೆಗೆ ಸಂಬಂಧಿಸಿದ ನಿಖರ ಮಾಹಿತಿಯನ್ನು ಒದಗಿಸುವ ಉದ್ದೇಶದಿಂದ ಸಿಎಸ್‌ಐಆರ್ ವತಿಯಿಂದ 'ನಿಖರ ಕೃಷಿ ಯೋಜನೆ' ಜಾರಿಗೆ ತರಲು ಸಿದ್ಧತೆ ನಡೆದಿದ್ದು, ರೈತರು ನೋಂದಣಿ ಮಾಡಿಕೊಂಡು ಯೋಜನೆಯ ಉಪಯೋಗ ಪಡೆಯಬಹುದು. 2020ರ ಏಪ್ರಿಲ್‌ನೊಳಗೆ ಸಿಎಸ್‌ಐಆರ್‌ನಡಿ 4 ಸಂಸ್ಥೆಗಳು ಕಾರ್ಯನಿರ್ವಹಿಸುವ ಸಾಧ್ಯತೆ ಇದೆ. ಮಣ್ಣಿನ ಗುಣ ಇನ್ನಿತರ ಅವಶ್ಯ ಮಾಹಿತಿ ಹಂಚಿಕೊಂಡರೆ ಅಲ್ಗರಿದಂ(ಕಂಪ್ಯೂಟರ್ ಸನ್ನೆ) ಮೂಲಕ ನಿಖರ ಮಾಹಿತಿ ನೀಡಲಾಗುವುದು. ಜೊತೆಗೆ ಅಗತ್ಯವಿದ್ದಲ್ಲಿ ಬದಲಾವಣೆಗೆ ಸೂಚನೆ ನೀಡಲಾಗುವುದು. ಈ ಮೂಲಕ ಕೃಷಿ ಸುಧಾರಣೆ ಜೊತೆಗೆ ಅಪೌಷ್ಟಿಕ ಸಮಸ್ಯೆಯನ್ನೂ ತಾಂತ್ರಿಕ ಪರಿಹಾರಗಳ ಮೂಲಕ ನಿಯಂತ್ರಿಸಬಹುದು ಎಂದರು.

ದೇಸಿ ವಿಮಾನ: ದೇಶಿಯ ತಂತ್ರಜ್ಞಾನ ಬಳಸಿ 70 ಸೀಟುಗಳ ವಿಮಾನ ತಯಾರಿಸಲಾಗುವುದು. ಇದಕ್ಕೆ ಹಣಕಾಸು ಸ್ಥಾಯಿ ಸಮಿತಿ ಅನುಮೋದನೆ ದೊರೆತಿದ್ದು, ಬೆಂಗಳೂರು ಮೂಲದ ನ್ಯಾಷನಲ್ ಏರೋಸ್ಪೇಸ್ ಲ್ಯಾಬೋರೇಟರಿ ವಿಮಾನ ತಯಾರಿ ಯೋಜನೆಯನ್ನು ಆರಂಭಿಸಲಿದೆ. ಆರೇಳು ವರ್ಷಗಳಲ್ಲಿ ಸೇವೆಗೆ ಲಭ್ಯವಾಗಬಹುದು. ಈ ವಿಮಾನವನ್ನು ಪ್ರಾದೇಶಿಕ ವಿಮಾನ ಸಂಪರ್ಕಕ್ಕಾಗಿ ಬಳಸಲಾಗುವುದು. ಇದರಿಂದ ಸಣ್ಣ ನಗರಗಳ ಸಂಪರ್ಕ ಸಮಸ್ಯೆಗಳಿಗೂ ಪರಿಹಾರ ದೊರಕಿದಂತಾಗುತ್ತದೆ. ಸೈನಿಕರ ಪ್ರಯಾಣ ಹಾಗೂ ಏರ್ ಆ್ಯಂಬುಲೆನ್ಸ್ ಆಗಿ ತುರ್ತು ಸಂದರ್ಭದಲ್ಲೂ ಬಳಕೆ ಮಾಡಿಕೊಳ್ಳಬಹುದು ಎಂದು ತಿಳಿಸಿದರು.

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डिझेल, गॅससाठी नवे सहयोगी इंधन

'डायमिथिल इथर'ची 'एनसीएल'मध्ये निर्मिती

सम्राट कदम :
@namastesamrat

डॉ. टी. राजा

पुणे, ता. १३ : मानवाची ऊर्जेची गरज भागविण्यासाठी संपूर्ण जग स्वच्छ इंधनाचा पर्याय शोधत आहे. असे असतानाच पारंपरिक ऊर्जा स्रोत असलेल्या डिझेल आणि स्वयंपाकाच्या गॅससाठी (एलपीजी) सहयोगी इंधन म्हणून 'डायमिथिल इथर'ची (डीएमई) निर्मिती करण्यात राष्ट्रीय रासायनिक प्रयोगशाळेतील (एनसीएल) संशोधकांना यश आले आहे. 'एनसीएल'मधील उत्प्रेरक विभागातील शास्त्रज्ञ डॉ. टी. राजा यांच्या नेतृत्वाखालील संशोधकांच्या चमूने ही कामगिरी केली आहे.

स्वच्छ आणि प्रदूषण न करणारे इंधन म्हणून 'डायमिथिल इथर' ओळखले जाते. डिझेलमध्ये ४० टक्के आणि स्वयंपाकगृहातील गॅसमध्ये २० टक्के 'डायमिथिल इथर' वापरता येऊ शकतो. यामुळे इंधनाची २० टक्के बचत होईल आणि त्याचबरोबर २० टक्के कार्बन उत्सर्जनाला आळा बसेल, अशी माहिती डॉ. राजा यांनी दिली. ते म्हणाले, "चीनपेक्षाही जास्त म्हणजे २.३ दशलक्ष टन 'एलपीजी' आपण आयात करतो. यामुळे देशाचा पैसा बाहेर जातो आणि त्याचबरोबर इंधनाच्या बाबतीत आपली स्वयंपूर्णता नष्ट होते. याला पर्याय म्हणून यापैकी २० टक्के इंधन देशातच तयार करण्यासाठी पान ८ वर »

डायमिथिल इथरची वैशिष्ट्ये

- कार्बन, सल्फर आदी प्रदूषकांचे उत्सर्जन न करणारे स्वच्छ इंधन
- डिझेल आणि गॅससोबत वापरल्यास उच्च क्षमतेचे उष्णता मूल्य
- उत्कलनांक उणे २५ अंश सेल्सिअस असल्याने थंड प्रदेशात वापरण्यास योग्य
- कमी हवेतही उच्च ज्वलनक्षमता
- डिझेल इंजिनमध्ये कोणताही बदल न करता वापरता येते
- १० लिटर तयार करण्यास केवळ ६०० रुपयांपर्यंत खर्च

डिझेल, गॅससाठी नवे सहयोगी इंधन

» पान १ वरून

आम्ही हा प्रकल्प हाती घेतला. माझ्या प्रयोगशाळेतील संशोधक विद्यार्थ्यांच्या सहयोगाने एका वर्षात आम्ही ज्वलनशील 'डायमिथिल इथर'चा शोध पूर्ण केला."

डॉ. राजा आणि त्यांच्या चमूने यासाठी उत्प्रेरकही (कॅटॅलिस्ट) निर्माण केला असून, त्याच्या 'पेटंट'साठी अर्ज करण्यात आला आहे. तसेच, डायमिथिल इथर, त्याची कार्यप्रणाली आणि यासाठी लागणारी गॅसची शेगडी यांच्या पेटंटसाठी अर्ज करण्यात आला आहे. याचबरोबर औद्योगिक उत्पादनासाठी पाच कंपन्यांसोबत करार करण्यात आला आहे. 'एनसीएल'मध्ये प्रायोगिक तत्त्वावर उत्प्रेरकाची आणि शुद्ध 'डायमिथिल इथर'ची निर्मिती सुरू करण्यात आली आहे. या संशोधनात विपुल पाटील, शिवा प्रसाद, निकिता गुप्ता, आकाश भटकर, किरण चव्हाण, अमरीन पुणेकर, स्नेहल तेली, कार्तिक राज आदींचा सहभाग आहे.

"पंतप्रधान उज्ज्वला योजना आणि सागरमाला योजनेसाठी आवश्यक इंधन पूर्तता याद्वारे करण्याचा आमचा प्रयत्न आहे. सामान्य माणसाला उच्च ज्वलनशील इंधनाचा पर्याय उपलब्ध होत असून, याचे मोठ्या प्रमाणावर उत्पादन होणे आवश्यक आहे.
- डॉ. टी. राजा, वैज्ञानिक, एनसीएल

Published in:
Sakal (Marathi)

CSIR's 'Aroma Mission' may cover Mysuru mallige

CSIR

15th December, 2019

The famous Mysuru jasmine, or Mysuru *mallige*, may soon be covered under the Council of Scientific and Industrial Research's 'Aroma Mission', which has been successfully implemented in Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh and Odisha, where medicinal benefits and oil are being extracted from locally grown flowers and plants. Lavender flower, lemongrass and menthol leaves have been covered so far. "We may as well cover jasmine in Mysuru under the mission," said CSIR director-general G. Shekhar C. Mande on Saturday.

Dr. Mande said the mission also covers processing flowers offered at Sri Shirdi Sai Baba Temple in Shirdi and at Sri Vaishnodevi Temple in Jammu. "For this, we want to involve women from self-help groups and engage ITC for replicating the model nationally."

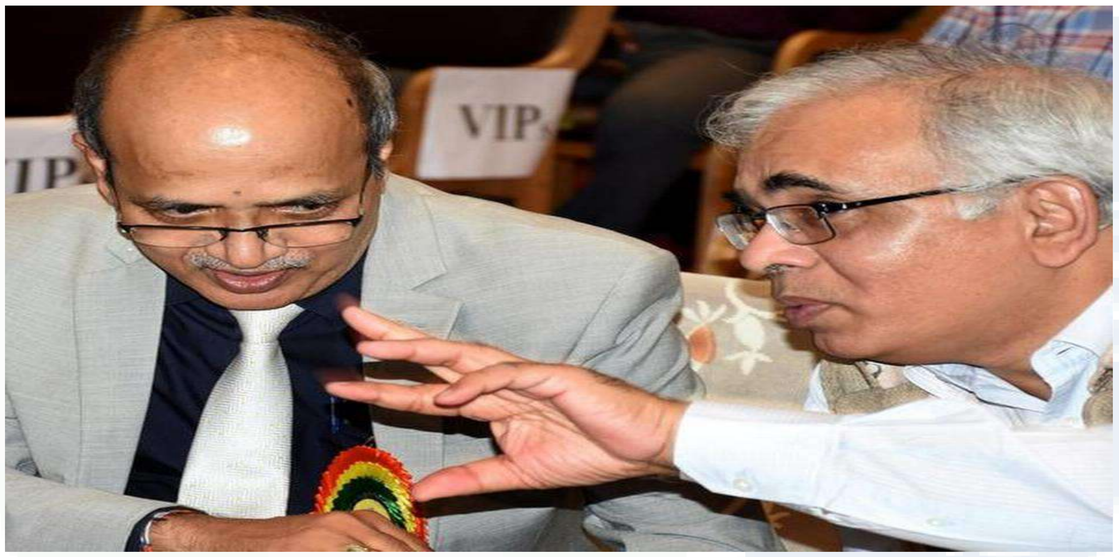
Meanwhile, the Khadi and Village Industries Commission has agreed to join hands with CSIR on its 'Honey Mission'. Honey is a good alternative to sugar as it has medicinal properties. A MoU has been signed in this connection, he said.

Published in:
The Hindu

70-seater indigenous plane is in the works under CSIR's Aircraft Mission

CSIR-CFTRI, NAL

15th December, 2019



If all goes as planned by the Council of Scientific and Industrial Research (CSIR), the prototype of India's first indigenously developed 70-seater aircraft will be ready in five or six years, with one of its labs in Bengaluru — the National Aerospace Laboratories (NAL) — launching the 'Aircraft Mission' soon. NAL has developed Saras, a 19-seater light transport aircraft, and its test flights are on. This multi-purpose civilian aircraft, designed with indigenous technology, is expected to be commissioned in the next three years. Disclosing this to reporters on the sidelines of 7th Bioprocessing India Conference at CSIR-CFTRI here on Saturday, CSIR director-general Shekhar C. Mande said the budget for the design and development of A 70-seater turbojet engine civilian aircraft has been allocated and engineers would start working on it on a mission scale. "We hope to develop the aircraft in about six years as a lot of research and work will be needed for the design of a prototype," he said. Dr. Mande said the development of a 70-seater aircraft could change the aviation scenario as many cities with shorter runways such as Mysuru could operate these flights and be connected by air.

Precision agriculture

CSIR is also in talks with the Government of **Karnataka** for the launch of precision agriculture for the benefit of farmers. Dr. Mande, who is also the Secretary, Department of Science and Technology, GoI, said the project would be implemented as a pilot with the support of Infosys, IIT Dharwad, International Institute of Information Technology, Bengaluru, and other institutions.

With the aim of minimising losses incurred by farmers, the project will look to help them improve farm productivity through various interventions, including the use of artificial intelligence. On wastage of food, Dr. Mande said CSIR has successfully implemented a model under which pineapples grown in Meghalaya, which were largely going to waste, are now being processed locally for juice and fruit preserves. Processing units are being set up in every district of Meghalaya with the help of entrepreneurs.

CFTRI is taking the lead in adding value to farm produce through technology intervention, and such efforts will soon be carried out in other States, including Karnataka, he added. Speaking of another experiment, Dr. Mande said a CSIR lab has developed technology in which potash and organics can be extracted from the spent wash (residual liquid waste) of distilleries and water is used for irrigation. This model has been developed to minimise pollution.

The technology was developed in Ahmedabad and trials were conducted in Sholapur. India imports potash, and at least ₹700 crore can be saved if distilleries adopt this technology across the country, he said. “We want to implement this intervention on a cooperative model.”

Published in:
The Hindu

Students of JH Tarapore School get exposures of R&D activities at NML

Mail News Service

Jamshedpur, Dec. 13 : A group of 49 students from J.H. Tarapore School, Datkidih accompanied by two teachers, Nimisha Kaushik and Mohua Ghosh visited CSIR-National Metallurgical Laboratory, Jamshedpur and interacted with scientists and research scholars this morning under the aegis of Jigyasa -NML School Interactive programme. The students were thrilled to visit the laboratory and interact with working group.

The programme was schedule for three hours. P.N. Mishra, principal scientist, coordinated & delivered welcome address and briefed about the programme and highlighted the major achievement of CSIR and NML and also discussed about the natural resources like minerals, ores, rocks and how NML is helping to make these materials to be useful for the industry and society by the application of basic research, applied research and industrials research. Dr. S.K. Mandal, Chief Scientist and coordinator of the programme discussed about fundamental fact of science and its application in regular life. The students expressed their feelings, asked numbers of questions and clarify their doubt. Dr. A.K. Sahu, Senior Technical Officer, CSIR-NML proposed the vote of thanks.

Further, Dr. P.N. Mishra & Shri S.N. Hembram, Sr. Technical Officer organized laboratory visits for students and teachers to gain practical exposures through interaction with the present working group and observing various samples.

Students further visited at creep testing units of Materials Testing & Evaluation Division, Mr. Prabir Kumar Roy, Sr. Technical Officer explained nicely about the fatigue, creep, fractures prevailing in different types of industrial components like boiler, reformer tubes, pressure vessel etc. Students get exposure of different machine like Servo Hydro Testing Machine, Servo Electrical Machine and furnace.

Electronic Waste Unit attracted students and teachers, Dr. Pankaj Choubey, Research Associate explained the methodology and the steps involved in the recycling of various electronic appliance for recovery of valuable metals like gold, copper, lithium, cobalt, nickel etc.

Students, at the last phase of the programme also visited to NML museum and they were surprised to have a glance on the 70 years' history of NML, displayed through wall mounted posters, samples and products at the museum and they asked few questions based on sample and poster pertaining to minerals based product and facilities.

During the concluding session, teachers and students requested for their next visit to the laboratory for gain deeper knowledge. Teachers expressed their view and was satisfied to know about the consistent effort and research emphasis given in various sectors for the ultimate development of India. They also extend thanks to the Ministry of Human Resource Development, Govt.of India, to launch "GigyasaProgramme" tie up with council of Scientific & Industrial Research and they were extremely delighted to visit the National Metallurgical Laboratory, Jamshedpur.

Published in:
The Avenue Mail

CSIR-NML

14th December, 2019

जिज्ञासा | शोध कार्यों को देखकर विद्यार्थियों में बढ़ती गई उत्सुकता

एनएमएल का अतीत जान अचंभित हुए छात्र

एनएमएल की प्रयोगशाला में शोध कार्य के बारे में जानकारी प्राप्त करतीं जेएच तारापोर की छात्राएं • जागरण

जासं, जमशेदपुर : यह अनूठा अनुभव था धतकीडीह स्थित जेएच तारापोर के छात्रों का। राष्ट्रीय धातुकर्म प्रयोगशाला एनएमएल की स्थापना से लेकर अबतक के इतिहास के बारे में जान अचंभित हुए तो वर्तमान में यहां चल रहे शोध कार्यों को देख-जान उनकी जिज्ञासा बढ़ती चली गई। संस्थान की ओर से संचालित स्कूल इंटरेक्टिव प्रोग्राम जिज्ञासा कार्यक्रम के तहत जेएच तारापोर के 49 छात्रों का दल गुरुवार को एनएमएल पहुंचा। दल के साथ शिक्षिकाओं में निमिषा कौशिक व महुआ घोष भी थी।

प्रधान वैज्ञानिक डॉ. पीएन मिश्रा ने दल का स्वागत करते हुए उन्हें एनएमएल के इतिहास की जानकारी दी और राष्ट्र निर्माण में अबतक की उपलब्धियों के बारे में बताया। मुख्य वैज्ञानिक डॉ. एसके मंडल ने उन्हें दैनिक जीवन में विज्ञान की उपयोगिता के बारे में जानकारियां दीं। छात्र-छात्राओं ने सवालों की झड़ी लगा दी जिसका जवाब वरीय तकनीकी अधिकारी डॉ. एके साहू ने विस्तार से दिया। इसके बाद छात्रों के दल ने संस्थान की विभिन्न प्रयोगशालाओं का भ्रमण कर वहां हो रहे शोध कार्यों को देखा। क्रीप टेस्टिंग यूनिट के मैटीरियल टेस्टिंग एंड इवैल्यूएशन डिविजन में वरीय तकनीकी अधिकारी प्रबीर कुमार राय ने उन्हें क्रीप, फटिग, बायॅलर, रिफॉरमर ट्यूब आदि के बारे में समझाया। इलेक्ट्रॉनिक वेस्ट यूनिट में रिसर्च एसोसिएट डॉ. पंकज चौबे ने बेकार विभिन्न इलेक्ट्रॉनिक उपकरणों की रिसाइक्लिंग के विभिन्न स्टेप्स की जानकारी दी। छात्र यह जानकर अचंभित हुए कि बेकार उपकरणों से किस तरह मूल्यवान धातुओं का उत्पादन किया जा सकता है। करीब तीन घंटे तक प्रयोगशालाओं का भ्रमण करने के बाद छात्र-छात्राओं व शिक्षकों ने दोबारा यहां आकर और जानकारी प्राप्त करने की इच्छा जताई।

Published in:
Dainik Jagran

New molecule for rheumatoid arthritis may be effective in preventing cartilage destruction

CSIR-CDRI

14th December, 2019

It might prove a game-changer in treating rheumatoid arthritis if further tests and trials find it effective

A specific fragment of a protein secreted by the parasitic worm liver fluke *(Fasciola)* has been found to protect the articular cartilage of joints from being destroyed by the body's aberrant immune system, thus preventing rheumatoid arthritis from progressing. Besides protecting the cartilage from further destruction, the team of researchers from the Central Drug Research Institute (CSIR-CDRI) also found that the protein prevented the joint bone from being destroyed. In rheumatoid arthritis, the joint bone starts getting destroyed following cartilage destruction.

Liver fluke secretion

Liver flukes secrete certain specialised proteins that help the parasites to evade recognition by the host immune system and also blunt the killing machinery of the immune system by dialling down the inflammatory responses. The protein — Fasciola helminth defence molecule-1 (FhHDM-1) — secreted by liver fluke has similarity with a human protein that mitigates inflammatory responses. So the team led by Naibedya Chattopadhyay isolated a specific fragment of this protein having a high anti-inflammatory function. They then synthesised and tested it in a cell culture system followed by animal testing. A mouse model that is vulnerable to rheumatoid arthritis was used for testing the protective effect of the protein. The type-II collagen protein the major component present in the cartilage matrix of the joints but not as a whole protein seen in blood was introduced in large quantities to trigger an autoimmune response. With this, the process of cartilage destruction was set in motion.

Twenty days after introducing the antigen protein to trigger an autoimmune response, the researchers introduced the synthesised peptide every second day to evaluate its potential to protect the collagen from destruction. "The peptide rapidly stopped further damage to the cartilage. The cartilage that has already been damaged was not repaired because the damage is irreversible in the case of rheumatoid arthritis," says Yasir Akhtar Khan from the Department of Zoology at the Aligarh Muslim University, Aligarh, and the first author of the paper. "Besides preventing cartilage destruction, the peptide also prevented the joint

Action on mice

The cartilage of animals that only received the type II collagen but not the peptide was completely destroyed by the end of the experiment (46 days), while the cartilage of the treatment group that received the peptide for four weeks was protected from further damage.

The effect of treatment in controlling cartilage destruction was assessed externally during the course of treatment by measuring paw swelling every day. "By 25 days of treatment, there was complete abolition of paw swelling compared with the diseased animals that did not receive any treatment," says Dr. Khan. All the animals were sacrificed at the end of 46 days and the joints examined.

"There was extensive structural damage to the cartilage in mice that did not receive the peptide. The barrier that insulates the cartilage was destroyed leading to disease progression," he says. "In the treatment group, the barrier was intact and comparable to the control group that did not have rheumatoid arthritis. We also did not see any immune cells in the joints of the treated animals."

In contrast to the currently used anti-rheumatic drug (methotrexate), the biggest advantage of using the liver fluke peptide is that it does not produce a wholesale suppression of the immune system. Even the monoclonal antibodies that act against individual inflammatory molecules have inherent problems. For instance, the monoclonal antibodies target and suppress the tumour necrosis factor (TNF alpha), which is the first line of defence against *Mycobacterium*. In the Indian context, the anti-rheumatic drug and even the monoclonal antibodies that target TNF alpha will leave the person susceptible to infections, including TB.

Immune system intact

"The liver fluke peptide only produces selective protection to the joints and does not alter the systemic immune system. So the body's ability to combat bacterial pathogens will remain intact. Dr. Chattopadhyay says. "We are yet to study the mechanism of selective joint protection (cartilage and bone) provided by the peptide."

Thus, in the Indian scenario, the peptide that specifically prevents joint inflammation and destruction without affecting the body's overall immune function might prove a game-changer in treating rheumatoid arthritis if further tests and trials find it effective.

Published in:
The Hindu

Curtains come down upon CSIR Integrated Skill Training Initiative Professional Training Programme

CSIR-NML 14th December, 2019

Valedictory function of the Professional Training programme (PTP) on Experimental Techniques in Iron and Steelmaking (ETIS 2019) was organized by CSIR-National Metallurgical Laboratory, Jamshedpur at Lecture Hall of CSIR-NML. During the four-day professional training programme, 4 lectures by experts, 8 lectures by NML Scientists and 9 demonstration/hand on sessions were conducted for the delegates from organizations such as Veerabhadrappa Sangappa & Company (Karnataka); DMRL (Hyderabad); Tata Steel BSL (Orissa); JAMIPOL (Jamshedpur); RINL (Vishakhapatnam); Supreme Metallurgical Services Pvt. Ltd (Indore); CSIR-CIMFR (Dhanbad); AcSIR (CSIR-NML Jamshedpur); OPJIT (Raigarh); Vesuvius Refractories (Kolkata); Govt. College of Engineering (Salem); JSW Dolvi (Mumbai)and MECON (Ranchi) participated in the programme.

The expert from IIT Kharagpur, Prof. G.G. Roy delivered a talk on Heat and material balance in ironmaking. Prof. Roy highlighted the importance of charge calculations to improve the efficiency of ironmaking. Prof. Dipak Mazumdar from IIT Kanpur delivered an expert talk on Modeling & Simulation in Steelmaking. He emphasized in the importance of physical and mathematical modelling of steelmaking phenomena to understand the complicities involved in the process.

Dr. Sanjay Kumar, Sr. Principal Scientist & Head, Metal Extraction Recycling (MER) Division highlighted on the processing and utilization of iron and steelmaking slags. Dr. Siddhartha Misra, Tata Steel BSL (Angul) emphasized on the defects control during continuous casting process. The programme was formally concluded by Dr. S.K. Mandal, Officiating Director CSIR-NML, Jamshedpur. Dr. Mandal appreciated the interest of the delegates for coming to CSIR-NML to attend this four-day professional training

programme (PTP) during 10-13 December 2019. He also requested to make collaborative approach as the outcome of this training programme in the area of raw materials, technology of production, environmental issues and challenges related to iron and steelmaking. Dr. J. Pal, Sr. Principal Scientist, Ferrous Processing Group appreciated the delegates for the active participation during the demonstration session and interaction with the NML Scientist.

Published in:
Avenue Mail

CSIR-NIO

14th December, 2019

85th Anniversary General Meeting of INSA to be held in Goa from Dec 16

Panaji, Dec 14 (UNI) The Indian National Science Academy (INSA) will organise its 85th Anniversary General Meeting at CSIR-NIO here from December 16-18, 2019.

According to a statement here, around 250 scientists from all over the country, four overseas scientists and several invited experts, will be participating in the annual mega event in which wide ranging subjects on some of the frontier areas of science and future issues of major societal importance will be discussed.

Besides intense scientific interactions, the Academy will confer fellowship to one overseas and 26 Indian scientists, present INSA Teachers Award to outstanding teachers for their exceptional contribution in providing guidance, inspiration and mentorship to students for careers in science & technology. In addition, 27 young scientists who have demonstrated extraordinary promise and creativity through their research contributions will receive the INSA Medal for Young Scientists Award.

Dr Chandrima Shaha, Professor of Eminence (formerly Director), National Institute of Immunology, New Delhi will take over as President after the meeting. She will be the first woman President of Indian National Science Academy since its foundation in 1935.

The event will also witness two evening public lectures, one by Bharat Ratna Professor CNR Rao on Climbing the Limitless Ladder of Excellence and the other by R Gopalakrishnan, Author and Corporate Advisor, former Director and Head Innovation of Tata Sons, Distinguished Professor IIT, Kharagpur on Lessons and Reflections: The Science of Business and the Business of Science.

Established in 1935, the Indian National Science Academy (INSA) is the National body of Indian Science devoted to the pursuit of excellence in Science. The academy have been extensively contributing to the entire canvass of Indian science, ranging from the promotion of science and developing scientific temper; the human resource development; in developing policy paradigms and towards the broader goal of harnessing scientific knowledge for societal good.

UNI AKM 2050

Published in:
UNI

NML promotes scientific temper among students

CSIR-NML 14th December, 2019

A group of 49 students from JH Tarapore School, Datkidih accompanied by two teachers, Nimisha Kaushik and Mohua Ghosh visited CSIR-National Metallurgical Laboratory, Jamshedpur and interacted with scientists and research scholars this morning under the aegis of Jigyasa -NML School Interactive programme. The students were thrilled to visit the laboratory and interact with working group.

The programme was schedule for three hours. P.N. Mishra, principal scientist, coordinated & delivered welcome address and briefed about the programme and highlighted the major achievement of CSIR and NML and also discussed about the natural resources like minerals, ores, rocks and how NML is helping to make these materials to be useful for the industry and society by the application of basic research, applied research and industrials research. Dr. S.K. Mandal, Chief Scientist and coordinator of the programme discussed about fundamental fact of science and its application in regular life.

The students expressed their feelings, asked numbers of questions and clarify their doubt. Dr. A.K. Sahu, Senior Technical Officer, CSIR-NML proposed the vote of thanks. Further, Dr. P.N. Mishra and S.N. Hembram, Sr. Technical Officer organized laboratory visits for students and teachers to gain practical exposures through interaction with the present working group and observing various samples.

Students further visited at creep testing units of Materials Testing & Evaluation Division, Prabir Kumar Roy, Sr. Technical Officer explained nicely about the fatigue, creep, fractures prevailing in different types of industrial components like boiler, reformer tubes, pressure vessel etc. Students get exposure of different machine like Servo Hydro Testing Machine, Servo Electrical Machine and furnace.

Electronic Waste Unit attracted students and teachers, Dr. Pankaj Choubey, Research Associate explained the methodology and the steps involved in the recycling of various electronic appliance for recovery of valuable metals like gold, copper, lithium, cobalt, nickel etc. Students, at the last phase of the programme also visited to NML museum and they were surprised to have a glance on the 70 years' history of NML, displayed through wall mounted posters, samples and products at the museum and they asked few questions based on sample and poster pertaining to minerals based product and facilities.

During the concluding session, teachers and students requested for their next visit to the laboratory for gain deeper knowledge. Teachers expressed their view and was satisfied to know about the consistent effort and research emphasis given in various sectors for the ultimate development of India. They also extend thanks to the Ministry of Human Resource Development, Govt.of India, to launch "Gigyasa Programme" tie up with council of Scientific & Industrial Research and they were extremely delighted to visit the National Metallurgical Laboratory, Jamshedpur.

Published in:
The Pioneer

Bioprocessing India summit from today

CSIR-CFTRI

14th December, 2019

Shekhar C. Mande, Director-General, Council of Scientific and Industrial **Research** (CSIR) and Secretary, Department of Scientific and Industrial Research, Government of India, New Delhi, will inaugurate the 7th Bioprocessing India National Meet on Saturday. The three-day summit will begin at 2.30 p.m. at the IFTTC Auditorium at CFTRI. CSIR-Central Food Technological Research Institute (CFTRI), Mysuru, is hosting the national meet of researchers in the area of bioprocessing in association with the Association of Food Scientists and Technologists-India, Mysuru, and the Defence Food Research Laboratory (DFRL), Mysuru. It aims to provide a forum to the research community involved in bioprocessing to find solutions to bioprocessing needs of agri-food resources critical to overall food security, health and wellness. Bioprocessing is an area of manufacturing focused on materials from biological sources and includes such frontline research areas like biomolecular research on proteins, enzymes and microbes, biosensors, bioseparations and bioreactors and so on. The conference will be accompanied by an industrial exhibition showcasing products and processes of future and 45 sessions on various perspectives of bioprocessing besides a competition for college students for presentation of novel ideas or innovation. Engineers, researchers, and industries in the area of bioprocessing have registered for the conference. For more details visit http://bpic.cftri.com/bpic2019

Published in:
The Hindu

Indian scientists from CSIR-CEERI design dust-suction tool to help prevent silicosis

CSIR-CEERI 13th December, 2019

Silicosis is a major occupational health problem among people engaged in stone work. The lung disease occurs due to exposure to stone dust like silica, among workers who do not use any protective gear. Silica is a tiny crystal found in sand, rock and mineral ores like quartz. Now, researchers from the Council of Scientific and Industrial Research (CSIR) Central Electronics Engineering Research Institute (CEERI), Pilani, have developed a stone dust precipitator system that can help stone workers breathe easy.

Researchers have developed two variants of the dust precipitator system – one for single artisan and another that can be used by four persons simultaneously. The precipitator for single artisan collects tiny dust particles with its high suction power. This suction is about 10 times higher than that of the inhaling power of human beings. It separates all the dust particles from the air and finally dissolves them in water.

The sediment of this stone dust is drained through a drain pot from time to time, and the stone dust can then be reused. The system for four workers has some modifications as it has four suction branches around the system chamber. Each branch has an individual control unit. According to Dr. P.C. Panchariya, researcher from CSIR-CEERI, the precipitator can suck a significant quantum of dust particles and prevents pollution and exposure. "It's self-filter cleaning technique makes it suitable for non-technical persons also and it is based on power saving technique," said Mahendra Singh, another member of the research team.

During stone carving, the production of PM 2.5 and PM 10 is very high. PM 2.5 is mainly responsible for silicosis. "When the dust precipitator system is used, all dust particles produced while carving stone are sucked out by the system. Thus, dust particles can not reach the mouths of stone artisans, saving the, from inhaling it," said Dr Panchariya.

In India, the prevalence of silicosis ranges widely from 3.5% in ordnance factories to 54.6% in the slate-pencil industry. This variation in prevalence is due to the silica concentrations in different work environments, the job demands, and duration of exposure. It is prevalent in Orissa, Gujarat, Rajasthan, Pondicherry, Uttar Pradesh, Haryana, Bihar, Chhattisgarh, Jharkhand, and West Bengal among workers in construction and mining.

Silicosis is an incurable condition with its potential to cause permanent physical disability. As there is no effective specific treatment for silicosis, the only way to protect workers' health is to control exposure to silica-containing dusts.

"The smart stone dust precipitator system would be a good tool to save people from this disease and will provide better health to the workforce," said Dr Panchariya.

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Indus Dictum

CSIR's herbal drug has therapeutic value for treating Type 2 diabetes

CSIR-CIMAP 13th December, 2019

BGR-34, an anti-diabetes herbal drug developed by the Council of Scientific and Industrial Research (CSIR) has been found to have therapeutic efficacy for treating newly diagnosed Type 2 diabetes. This has been shown by an independent clinical trials conducted in Varanasi-based Banaras Hindu University (BHU), Union Minister of Ayush, Shripad Naik said recently in Parliament.

"The CSIR through its labs-- Central Institute of Medicinal and Aromatic Plants (CIMAP) and National Botanical Research Institute (NBRI), both Lucknow- based has developed scientifically validated herbal product NBRMAP-DB as anti-diabetic formulation," said the Minister adding that the knowhow for the product has been licensed to AIMIL Pharma Ltd, Delhi which is manufacturing and marketing it as BGR-34 across the country.

In a written reply to a question in Lok Sabha, he further said that the trial of the clinical study has been registered in clinical trial registry of India. In fact, said the Minister, as the diabetic population in the country is close to hitting the alarming number of 69.9 million by 2025, the Central of Research in Ayurveda Sciences (CCRAS), an autonomous body under the Ministry is conducting research-oriented Ayurveda based on integrative health care services for the management of Madhumeha or Diabetes Mellitus.

The CCRAS in collaboration with Directorate General of Health Services under the Union Health Mministry has implemented a programme integrating Ayush (Ayurveda) component with NPCDCS. (National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases & Stroke) programme in three districts in Rajasthan, Gujarat and 0Bihar to cater health care services and to reduce the burden of

non-communicable diseases including diabetes by combining the strength of Ayurveda and Yoga, said Naik. The ongoing programme is now successfully functional in 52 centres (49 CHCs and 3 district hospitals) of the all the three identified districts, through AYUSH-NPCDCS clinic/lifestyle modification clinics, set up for prevention and management of selected NCDs by ayurvedic intervention, lifestyle modifications and yoga advice, he added.

Published in:
The Pioneer

CSIR-NEERI

12th December, 2019

IIFM students visit NEERI for skill devpt programme

■ Staff Reporter

The participants of skill development programme with Dr Rakesh Kumar, Director, CSIR-NEERI; and Dr J S Pandey, Chief Scientist and Head, CCSD, CSIR-NEERI.

CSIR-NATIONAL Environmental Engineering Research Institute (CSIR-NEERI) has organised a skill development programme for the students of Indian Institute of Forest Management (IIFM), Bhopal. The programme was inaugurated on Monday and will conclude on December 13.

In all, 28 students are participating in the programme to acquire extensive practical exposure in environment sector. Dr J S Pandey, Chief Scientist & Head, Climate Change and Skilling Division (CCSD), CSIR-NEERI, inaugurated the programme. Dr P R Salve, Principal Scientist, CCSD; Dr Harshvardhan Singh, Principal Scientist, CCSD; and Suvha Lama, Scientist, CCSD also were present on this occasion.

In his inaugural address, Dr Pandey advised the students to draw maximum benefits from the skill development programme. He said that this programme would help the participants in finding out practical solutions to critical environmental problems. Environmental management plans need practical solutions rather than documentation. He advocated to evolve site-specific, region-specific, ecosystem-specific environmental management plans and create environment health cards for every region.

Dr Rakesh Kumar, Director, CSIR-NEERI, briefed the participants about steps involved in environmental impact assessment (EIA) process.

The programme includes field visits, industry visits, lectures and live projects relating to air pollution control, waste water treatment-recycle-reuse, water purification, solid waste management, and wasteland development. The students will get hands-on ground experience. They will also gain scientific knowledge, analytical perspective, and technical skill for understanding the environmental issues, their causes, and solutions thereon. The programme will help the students understand various aspects of climate change and environmental sustainability.

Dr P R Salve, Dr Harshvardhan Singh, and Suvha Lama are coordinating this programme.

Published in:

City Line

CSIR-NEERI

12th December, 2019

Skill devpt programme for Bhopal students at Neeri

A five-day skill development programme for the students of Indian Institute of **Forest Management, Bhopal,** organized by CSIR-National Environmental Engineering Research Institute (CSIR-Neeri), got under way recently. In all, **28 students** are participating in the programme to acquire extensive practical exposure to **environment sector.** The programme was inaugurated by **JS Pandey**, chief scientist and head, Climate Change and Sustainability Division (CCSD). **PR Salve** and **Harshvardhan Singh**, principal scientists at CCSD and Suvha Lama, scientist, were present. In his inaugural address, Pandey advised the students to draw **maximum benefits** from the skill development programme. He said that this programme would help the participants to find out practical solutions to critical environmental problems. **Rakesh Kumar**, director, CSIR-Neeri, briefed about the steps involved in **environmental impact assessment** (EIA) process. The students will gain scientific knowledge, **analytical perspective** and technical skill for understanding environmental issues, their causes and solutions.

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Herbal extract may help better uptake of Vitamin B12

CSIR-CIMAP

11th December, 2019

A common concern with oral vitamin B12 therapy is absorption especially in people suffering from anemia and gastrointestinal diseases. Researchers at the Council of Scientific and Industrial Research-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP) have identified a plant extract that has shown potential in enhancing absorption of vitamin B12 through in vitro and in vivo bioassays. Vitamin B12 cannot be synthesized in human body and has to be regularly obtained from ingestion of animal proteins or fortified cereal products. There are no naturally occurring bioactive forms of vitamin B12 from plant sources.

Some plant foods contain added vitamin B12 and others, for example, seaweed and mushrooms contain its analogues that are inactive in humans.

"The name of the plant has not been disclosed due to Intellectual Property Right (IPR) issues but it is a frequently used Ayurveda and traditional system of medicine. No oral sub-acute toxicity of this plant extract was observed at the highest dose up to 2000mg/kg body weight in small animal model. The cost effective oral formulation in capsule form has been developed with standardized plant extract having various advantages," said Dr Dr. Mahendra P. Darokar, Senior Principal Scientist and Head, Molecular Bioprospection Department CSIR-CIMAP. According to Dr Darokar, the formulation releases the Vitamin B12 in controlled manner. It would provide pH dependent solubility (soluble in alkaline/intestinal pH) due to which the acidic gastric environment is bypassed and releases in intestinal pH .

It also reduces the dosing frequency and thereby improves the patient compliance. There is no other product as bioenhancer of vitamin B12 absorption is available. It is based on plant that is known for its human consumption for many years and it reduced dose of Vitamin B12 to meet RDA.

However, Dr Darokar said, further pre-clinical and human studies are required to be done before the formulation is licensed to the interested industrial partner for its commercial utilization.

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Business Line

CSIR-CBRI

11th December, 2019

वैज्ञानिकों ने देहरादून के विद्यार्थियों को किया जागरूक

जागरूकता

एक वैज्ञानिक दृष्टिकोण से नवोन्मेष के लिए एक चुभन ही काफी: डॉ. अतुल

रुड़की ,लोकसत्य।

केंद्रीय भवन अनुसंधान संस्थान, रुड़की के वैज्ञानिकों ने जिज्ञासा: विद्यार्थी-वैज्ञानिक संयोजन कार्यक्रम के अंतर्गत केंद्रीय विद्यालय एफआरआई, देहरादून के विद्यार्थियों को जागरूक किया।

सीबीआरआई के वरिष्ठ प्रधान वैज्ञानिक और जिज्ञासा कार्यक्रम समन्वयक डॉ अतुल अग्रवाल ने विद्यार्थियों को "जिज्ञासा: महत्वकांक्षाएं और विज्ञान में आजीविका" विषय पर व्याख्यान प्रस्तुत करते हुए उन्हें जीवन में विज्ञान का महत्व समझाया। उन्होंने विद्यार्थियों से उनके रूचि के विषयों, करियर महत्वकांक्षाओं और विचारों पर चर्चा की; उनके संशयों को दूर किया तथा उनका मार्गदर्शन किया। उन्होंने विद्यार्थियों को विज्ञान के क्षेत्र में करियर के विभिन्न अवसरों के विषय में बताया।

डॉ अतुल अग्रवाल ने विद्यार्थियों को सीएसआईआर एवं सीबीआरआई द्वारा किये जा रहे अनुसंधान कार्यों से भी परिचित कराया। इसी दिशा में विज्ञान के हर क्षेत्र में कार्यरत्त सीएसआईआर में करियर के विभिन्न अवसरों के विषय में भी बताया। उन्होंने कहा कि पढ़ाई की गुणवत्ता से अधिक अंकों पर जोर के कारण तथ्यों के ज्ञान के स्थान पर रटना सिखाया जाने लगा है। अनावश्यक दबाव के चलते विद्यार्थी विज्ञान से दूर भागने लगे है। विज्ञान के इसी डर को दूर कर, एक वैज्ञानिक दृष्टिकोण को अपनाना आवश्यक है। विज्ञान पत्रिकाओं के महत्त्व को समझाते हुए डॉ. अग्रवाल ने बताया कि इनसे हम देश और दुनिया में विज्ञान क्षेत्र में किये जा रहे नवीनतम कार्यों के बारे में जानकारी प्राप्त कर सकते हैं। इनमें छपे वैज्ञानिक उपलब्धियों को दर्शाते लेखों और महान वैज्ञानिकों के जीवन काल से प्रेरणा लेने की आवश्यकता है। उन्होंने विद्यार्थियों को "विज्ञान प्रगति" और "साइंस रिपोर्टर" नामक विज्ञान पत्रिकाएं भी वितरित की।

भारत वर्ष 2019 को महात्मा गाँधी के 150वीं वर्षगाँठ के अवसर पर पूर्ण वर्ष उनके सिद्धांतों का पालन करने का प्रण ले रहा है। ऐसे में, डॉ अतुल अग्रवाल ने विद्यार्थियों को एक स्वच्छ भारत के निर्माण, जल संरक्षण और वृक्षारोपण का संकल्प दिलाया।

डॉ. अतुल अग्रवाल ने शिक्षिकाओं और विद्यार्थियों के साथ विद्यालय परिसर में वृक्षारोपण कर प्रकृति के साथ सानिध्य से रहने का सन्देश दिया।

कार्यक्रम में केंद्रीय विद्यालय एफआरआई, देहरादून के विद्यार्थी अपने प्रधानाचार्य विवेकानंद बहुखण्डी, उप-प्राचार्या श्रीमती कीर्ति सक्सेना, पीजीटी (बायो) ऐ.के. जोशी एवं विज्ञान के अन्य शिक्षकों के साथ मौजूद रहे।

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Lok Satya

CSIR-CBRI

11th December, 2019

A Single Spark Of Scientific Consciousness Can Ignite Young Mind To Innovate: Dr Atul

- **CBRI, Roorkee Scientists Visit KV, FRI, Dehradun, Under Jigyasa: Student-Scientist Connect Programme**
- **Students Discuss Career Opportunities In Science**

Roorkee / Dehradun: Interacting with the students, Dr. Atul Kumar Agarwal, Senior Principal Scientist & Jigyasa Programme Coordinator, CSIR-CBRI, Roorkee presented a lecture on "Jigyasa: Aspirations & Career in Science" and explained the importance of science in our lives. He discussed students' areas of interest, career aspirations and ideas; cleared their doubts and guided them. He informed the students about various career opportunities in science. Dr. Atul Agarwal also introduced the students to research work being carried out by CSIR and CBRI. He also informed about various career opportunities in CSIR that is involved in every field of science.

Dr. Atul Kumar Agarwal motivated the students to face the challenges of life with a positive attitude and transform them into opportunities and achievements through hard work and dedication. Quoting the example of a potter, Dr. Agarwal told that when a potter creates chillam, this form of soil burns both the soil and its consumer. However, when the same potter brings a positive change in his thoughts and creates a pitcher, this form of soil gives the coolness to both the soil and the consumer by storing cool water. Similarly, we are capable of generating enthusiasm in the life of many people associated with us by our positive attitude. He said that the students today face undue pressure wherein they are pushed to rote instead of understanding the facts to achieve higher scores, as more weight is given to quantification instead of quality of knowledge. This in turn pushes the students away from the pursuit of knowledge and science. He said that we need to bring a positive change in the education by reconnecting students with science through development of a scientific temper within them. He ignited the young minds by an incident when a monk and an industrialist- two great Indians- met for the first time on a boat while travelling from Japan to Chicago. As they got talking, Sant Vivekanad (High Touch) explained his mission for the travel- to deliver a talk at US, while Jamshed Ji Tata (High Tech) said that he was in search of an equipment and technology that would strengthen the roots of Indian Steel Industries. Vivekanand blessed Jamshed Ji Tata and said if the people in India could be taught and trained in modern science, half of the problem will be solved. This spark ignited by Sant Vivekanad in the mind of Jamshed Ji Tata led to the establishment of IISc Bangalore-the Pride of the Nation, TIFR, TISS etc.

Dr. Agarwal enlightened the students on the importance of science magazines in the dissemination of science and as a source of the current research and scientific output around the globe. He said that we need to take inspiration from the life stories of great scientists reflecting their intellectual and scientific achievements, through various articles in these publications. He also distributed science magazines- "Vigyan Pragati and "Science Reporter" amongst the students. Dr. Agarwal inspired the students with the life and works of Madame Marie Curie, who is one of the only four great intellectuals of the world to receive the Nobel Prize twice for their work. He informed the students that Madame Curie was the first woman ever to receive a Nobel Prize, and the only person in the world to receive the Nobel Prize in two different areas of science - Physics and Chemistry. He told the students that scientific passion of Marie Curie and her husband inspired their daughter Irene to such an extent, that she too received a Nobel Prize for her contributions towards science. In fact, they are the only mother and daughter pair in the world to have received the Nobel Prize. He said that we must draw inspiration from the lives of great minds as such, to inculcate in ourselves a scientific consciousness. India is celebrating 150 years of the Mahatma by following the principles of Mahatma Gandhi throughout the year. Dr. Agarwal asked the students to work towards building a Swachh Bharat, Water Conservation and Plantation of Trees. Dr. Atul Agarwal along with the teachers and students planted a plant at the school premises and spread the message of living in harmony with nature. Students of Kendriya Vidyalaya, FRI, Dehradun along with their Principal Shri Vivekanand Bahu Khandi, Vice Principal Smt. Kirti Saxena, PGT Biology Shri A.K. Joshi and other science teachers were also present during the occasion.

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The Hawk

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