



ISSN 0409-7467



CSIR News

NEWSLETTER OF THE COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

Volume 72 No. 1

website: <http://www.csir.res.in>

January 2022

In The News

CSIR Floriculture Mission Activities Launched in J&K



CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, launched activities of the CSIR Floriculture Mission in the Jammu and Kashmir UT on 5 November 2021 in a day-long programme at CSIR-IIIM (Br.), Srinagar.

Dr Jitendra Singh, Union Minister of State, Science & Technology and Earth Sciences (Independent Charge) was the Chief Guest and Dr Shekhar C. Mande, Director General, CSIR and Secretary, DSIR, Dr J.P. Sharma, Vice-Chancellor, SKUAST-Jammu and SKUAST-Kashmir, Dr D.S. Reddy, Director CSIR-IIIM, Prof. Sarfaraz

Ahmad Wani, Director Research SKUAST-K, Prof. D.M. Makhdoomi, Director Extension SKUAST-K, Prof. Gul Zaffar, Registrar SKUAST-K, Er Abdul Rahim Head, RMBD&IST and Dr Zabeer Ahmed, Head, CSIR-IIIM (Br.) Srinagar, were also present on the occasion. More than 100 farmers from different districts of Kashmir valley attended the event and later interacted with the Minister.

Dr Shahid Rasool, Nodal Scientist, CSIR Floriculture Mission gave a detailed overview of the mission and the role of CSIR in developing and dissemination of technologies for the

Dr Jitendra Singh, Union MoS S&T appreciated the role of CSIR and IIIM in taking lead in conceiving and implementing the different societal programmes with a major focus to enhance the farmers' income and generate employment for youths.

development and promotion of the Floriculture sector on scientific lines. He apprised the gathering about the objectives of the mission in enhancing farmers' income and developing an entrepreneurship ecosystem through high-value floriculture using CSIR technologies. He also highlighted the verticals of the mission to be implemented by CSIR-IIIM in UT of J&K that include development of new floral varieties; expansion of areas under region-specific floricultural crops; integration of apiculture and floriculture and establishing effective domestic and international market linkage.

Dr D.S. Reddy in his welcome address informed about the various societal programmes the institute has initiated in the recent past. The role of CSIR-IIIM in the cultivation and processing of industrially important medicinal and aromatic crops in J&K and other parts of the country through various mission programmes and outreach projects was also highlighted.

Dr Jitendra Singh, Union MoS S&T appreciated the role of CSIR and IIIM in taking lead in conceiving and implementing the different societal programmes with a major focus to enhance the farmers' income and generate employment for youths.

Congratulating the CSIR team for launching the activities of Floriculture Mission in J&K UT, he underscored the importance of agri-entrepreneurship in enhancing the economy of the UT while taking up floriculture as an enterprise.

While interacting with the participating farmers and entrepreneurs, he emphasised upon the scope and opportunities offered in the cultivation of floricultural crops for the unemployed youth of the UT owing to the rich floral biodiversity and agro-climatic suitability of the region for the production of off-season floricultural crops. On the occasion, a scientific bulletin for commercial cultivation of high-value floricultural crops was also released.

Later the Chief Guest distributed quality planting material of different target crops under the mission among the participating farmers.

On the sidelines of the event, a Memorandum of Understanding (MOU) was signed between CSIR-IIIM and SKUAST-Jammu and SKUAST-Kashmir for mutual sharing of the Institutional facilities and human resources, student exchange for the conduct of research, development and extension of the technologies developed jointly.



India International Science Festival (IISF-2021)

CSIR-NIScPR Organises “Science Literature Festival” at Goa

“*Vigyanika* — Science Literature Festival”, was organised by CSIR-NIScPR (National Institute of Science Communication and Policy Research), New Delhi, during 10-13 December 2021 as a part of the 7th India International Science Festival 2021. *Vigyanika* was organised at the Institute Menezes Braganza, Panaji Goa in a hybrid mode with the proceedings being streamed online.

Addressing the gathering in a session, Dr Shekhar C. Mande, Director General, CSIR and Secretary, DSIR, said that the number of science communicators in India is very few compared to European countries. Dr Mande emphasised that we need to scale up science diplomacy, science policy, and science communication in the country so that ordinary people are involved in the enterprise of science.

In the scientific session on ‘Indian Freedom Movement – Science, Scientists & Science Diplomacy’, experts recounted the vital role of many famous Indian scientists who contributed to furthering science under near hostile conditions created by the British. The British used science as a tool to promote their vested interest in expanding the empire and exploiting India’s rich natural resources. Many leading Indian scientists of the period took to science to promote scientific temper, establish a strong foundation for science in India, and use science to consolidate the freedom movement.

The speakers believed that there was a need to showcase the contributions of Indian science and scientists. Experts in the session included Dr Ranjana



Aggarwal, Director, CSIR-National Institute of Science Communication & Policy Research, Shri Vivekanand Pai, National Secretary, Vijnana Bharati, Dr Ayan Datta, Professor, Indian Association for the Cultivation of Sciences, Dr Chaitanya Giri, Consultant, Research and Information System for Developing Countries (RIS) and Dr Jayanti Dutta, Dy Director, HRD Centre, Panjab University, Chandigarh. Dr Ruchir Gupta, Professor and Dean, School of Engineering, JNU, New Delhi, chaired the session.

A panel discussion on ‘Science Literature in Regional Languages – Challenges & Initiatives’ had speakers discussing scientific literature in Bengali, Maithili, Telugu and Kannada. The speakers highlighted that science



CSIR Young Scientist Award winners shared a common view that scientific establishments in India have supportive scientific programmes and systems to retain talent by providing world-class facilities.

communication in Indian languages is essential for taking science to the masses. The science communication experts of different Indian languages were unanimous that there is a general decline in science communication and scientific literature in Indian languages.

The speakers highlighted a few recent initiatives, such as bringing out science magazines in Maithili and Kannada languages, coordinated by Vigyan Prasara. Experts in the session included Shri Indranil Sanyal, Director, NE Zone, National Council of Science Museums, Dr Ruby Mishra, Associate Professor, Shri K.R. Sudhakar Rao, Senior Journalist, Sakshi TV and Shri ASKVS Sharma, Kannada Science Communicator, Mysuru. Dr Nakul Parashar, Director, Vigyan Prasara moderated the session.

The first day ended with an enthralling Science Poetry Convention or the *Vigyan Kavi Sammelan* with well-known poets including Shri Sachin Manerikar, Shri Rutwik Phatak, Shri Noojilla Srinivas, Ms Smita Darshetkar, Dr Shubhrata Mishra, Shri Pankaj Prasun and Shri R. Laldinpuia delighting the gathering with poetry in

Hindi, English and Marathi on various facets of science.

The second day began with the session, 'Inspiring Scientists – Road to Scientific Success' in which five CSIR Young Scientist Award winners shared their views. They shared a common view that scientific establishments in India have supportive scientific programmes and systems to retain talent by providing world-class facilities. Eminent scientist Dr Vijay P. Bhatkar chaired the session and said that youngsters should use imagination and be creative and innovative in their scientific pursuits.

The five young scientists shared their personal stories of how they overcame challenges of being differently-abled, navigated maternity, gave up opportunities to work abroad, etc., to pursue science in India successfully. They encouraged the youngsters to follow their dreams with determination, resolve, and hard work. They shared stories of how the system and establishments have supported them in overcoming the challenges.

Five eminent science authors joined for the next 'Meet the Author' session. They included Prof. Hari Pulakkat,



Ms Shweta Taneja, Dr Dinesh C. Sharma, Shri Devendra Mewari and Dr Pranay Lal. Dr T.V. Venkateswaran of Vigyan Prasar chaired the session.

It emerged that the context, players and medium of science communication are changing. In the present age of over information, the job of a science communicator is very challenging. More scientists are now taking to science communication, which is a positive trend. It was also emphasised that social media offers an opportunity for two-way communication and so new-age social media need to be exploited for scientific communication. It was also noted that scientists and science communicators should join hands to share science stories interestingly and engagingly. Sharing entertaining stories is essential.

The final session of *Vigyanika* was a Panel Discussion on 'Scientific Literature for Scientific Engagement

– Issues, Challenges & Way Ahead'. Eminent science communicators of the country, including Dr Shivaprasad Khened, Former Director, National Science Centre, Mumbai; Dr Geeta Vani Rayasam, Head, Directorate of Science Communication & Dissemination, CSIR; Shri Pallava Bagla, Science Journalist; Dr Somdatta Karak, Science Communication & Public Outreach Officer, CSIR-CCMB, Hyderabad, were the panellists. Dr Frederick Noronha, Technology Journalist, Co-Founder BytesForAll, Goa, chaired the panel discussion.

The valedictory session had Prof. B.K. Mishra, Director, Indian Institute of Technology (IIT), Goa, Prof. Harilal Bhaskara Menon, Vice-Chancellor, Goa University, Dr Gopal Iyengar, Scientist G, Ministry of Earth Sciences (MoES) and Ms Indira Murthy, Joint Secretary, MoES as Guests of Honour.

Mr Hasan Jawaid Khan, Chief Scientist and Chief Coordinator of *Vigyanika* welcomed the gathering and summarised the deliberations of the two days.

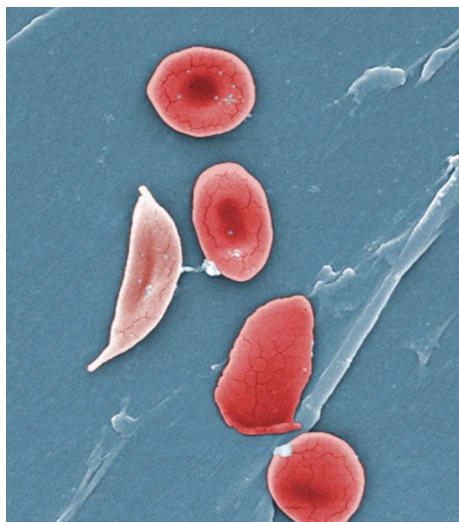
Mr Debobrat Ghose, Editor, *Science India*, proposed the vote of thanks.

G. Mahesh, CSIR Hqrs

It was also emphasised that social media offers an opportunity for two-way communication and so new-age social media need to be exploited for scientific communication.



Hydroxyurea gets DCGI Approval for Sickle Cell Anemia Treatment



Under CSIR-SCA Mission with six CSIR labs and three Government hospitals, scientists & clinicians are trying to address various lacunae in SCA diagnosis and disease management.

Sickle Cell Anaemia (SCA) is a common genetic disorder among Indians affecting red blood cells. It is transmitted by parents who carry a defective beta-globin gene without suffering themselves. Close to 0.4% of the population suffers from the disease while 10% of people are carriers who lead to the birth of new SCA patients.

The disease is well-known in tribal populations as well as prevalent in general populations in states like Maharashtra, Madhya Pradesh, Chhattisgarh and Orissa. The disease starts early in life, and the affected children have persistent pain, low amount of haemoglobin (anaemia), low energy, reduced growth plus other abnormalities and multiple episodes of frequent severe pain better known as Vaso-occlusive crisis.

Like most genetic disorders, SCA has no cure but has symptomatic treatments for pain, anaemia and Vaso-occlusive crisis. One of the rather inexpensive drugs, hydroxyurea, largely used as an anticancer agent is also used in SCA treatment without any formal approval. The commercially available hydroxyurea formulations are made with their anti-cancer role in mind, and hence, are of big quantity size (minimum 500 mg).

SCA children are typically of low weight, and consequently, their dosage size needs to be much smaller. Given the fixed and larger size of currently commercially available hydroxyurea capsules, it is difficult to give correct doses to SCA patients. Although there is a robust response to hydroxyurea therapy, the complexity and cumbersome nature of disbursing the right dose leads to low compliance and sometimes unpredictable response.

Under CSIR-Sickle Cell Anaemia (CSIR-SCA) Mission with six CSIR labs and three Government hospitals in Chhattisgarh, Madhya Pradesh and Maharashtra, scientists and clinicians are trying to address various lacunae in SCA diagnosis and disease management. The focus is on identifying the patients through population-based screening in states with high disease prevalence and helping the family with proper treatment and preventing the disease in the next generation.

One of the major objectives of the mission has been obtaining approval for use of hydroxyurea for the treatment of SCA. CSIR-SCA Mission, coordinated by the CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB) with the help of Cipla, one of the manufacturers of Hydroxyurea and with active support from CSIR-IIIM, approached the Drugs Controller General of India (DCGI) for approval of hydroxyurea for SCA treatment. A committee of experts constituted by the Central Drug Standard Control Organisation (CDSCO) critically evaluated the proposal and approved the marketing of hydroxyurea for treatment for SCA, subject to Postmarketing Surveillance.

The approval currently legalises the drug to be used at standard doses for treatment of SCA. It also sets up the stage for designing various formulations of smaller dose sizes that promise higher complianceratesinSCAchildrenandmay even lead to syrup-based formulations. “This is a landmark achievement for the Sickle Cell Anaemia community,” says Dr Giriraj R. Chandak, Chief Scientist at CSIR-CCMB and Mission Director, leading the CSIR-SCA Mission. “This

adds to the advantages of identifying the patients through a targeted screening programme. While one of the major focus of the screening programme is to avoid the birth of affected children through genetic and social counselling, this approval provides comprehensive treatment to the identified patients. The message now needs to reach clinicians across the country so that they can use Hydroxyurea regularly for their patients.”



MoUs/Agreements

SBI Foundation and CCMB set up Centre of Excellence for Genomics Guided Pandemic Prevention and Two Satellite Centres



Shri Dinesh Khara, Chairman, SBI inaugurating the SBI Foundation Centre of Excellence for Genomics Guided Pandemic Prevention in the presence of Dr Vinay Kumar Nandicoori, Director, CSIR-CCMB; Shri Om Prakash Mishra, DMD (HR) & CDO, SBI; Shri R. Vishwanathan, DMD (Internal Audit), SBI; Smt. Manjula Kalyanasundaram, Managing Director, SBI Foundation and the team of SBI Foundation in Hyderabad, Telangana

India reported its first case of the COVID-19 infection on 27 January 2020. The COVID-19 infection resembled symptoms like a typical case of cold and flu then. However, as the case count increased, the death count increased especially among the elderly.

The younger population infected with the coronavirus showed quicker recovery.

However, in early April 2021, a deadlier and more fatal variant of the COVID-19 began spreading across the country and claimed the lives of both

"SBI Foundation is proud to be associated with CSIR-CCMB in setting up of the SBI Foundation Centre of Excellence for Genomics Guided Pandemic Prevention to strengthen India's genome sequencing capabilities and provide invaluable data for understanding COVID-19", said Shri Dinesh Khara.

the young and old. The new mutation of the B.1.617.2 strain or the Delta variant, as named by the World Health Organization (WHO), was recognised as the dominant variant behind the onset of the 2nd wave of COVID-19 in India which continues to infect and claim lives across the globe. The Delta variant mutated further into the Delta plus variant or AY.1.

In August 2021, the SBI Foundation decided to support CSIR-Centre for Cellular and Molecular Biology (CCMB) with a grant of ₹ 9.94 Cr for genome sequencing since a constant need was felt to monitor the evolution of the coronavirus in India. Furthermore, it is important to understand whether the new strains of the COVID-19 have a greater ability to spread and infect the population. As predicted, in November 2021, South Africa reported the spread of the variant named Omicron or B.1.1.529 strain as designated by WHO. So far, several countries including India have reported cases of the Omicron variant.

Therefore, with SBI Foundation's support, CCMB is setting up the SBI Foundation Centre of Excellence for Genomics Guided Pandemic Prevention and is working with the state governments of Andhra Pradesh and Meghalaya to establish satellite genome sequencing centres in the respective states under the initiative. Their current focus is to sequence coronavirus genomes collected from the samples of infected persons in these states. Siddharth Medical College in Vijayawada and Pasteur Institute in Shillong, which have coronavirus testing centres, will now be a part of the SBI Foundation Centre of Excellence for Genomics Guided Pandemic Prevention. Their procedures to access patient samples are already established.

Over a period of one year, the SBI Foundation Centre of Excellence for

Genomics Guided Pandemic Prevention will aim to deliver effective results with immediate and large-scale public health benefits by covering viral genome sequencing, zoonotic (animal) pathogen surveillance, air (pathogen) surveillance and sewage pathogen surveillance across 4-5 states. CCMB will help procure the necessary equipment for these new genome sequencing labs and train their personnel in genomic sequencing and analysis. The handholding will continue until the new labs become independent in running the labs by themselves.

Talking about the initiative, Shri Dinesh Khara, Chairman, State Bank Group said, "SBI Foundation is proud to be associated with CSIR-CCMB in setting up of the SBI Foundation Centre of Excellence for Genomics Guided Pandemic Prevention to strengthen India's genome sequencing capabilities and provide invaluable data for understanding COVID-19, thereby enabling the country to make informed, data-driven decisions in facing the challenges from the COVID-19 pandemic. From past experience, we have learnt that time is of the essence when it comes to fighting this deadly virus that continues to ravage the world."

"This project has two benefits," explained Dr Vinay K. Nandicoori, Director, CCMB. "One, and the more immediate one is that these and more similar centres will help get a more holistic picture of the coronavirus variants circulating in the country. Otherwise, we will be only talking of variants found in urban India. Two, this will establish a genome surveillance system in the country with infrastructure and trained human resources in place. Post-COVID, it can be used for tracking diseases in not only humans but also plants, animals, and the environment, in general. This

is a necessary step in enabling the One Health concept, and preventing future health crises.”

Shri Sampath Kumar, Principal Secretary, State of Meghalaya mentioned that they hope to develop the SBIF Satellite Centre on Genomics Guided Pandemic Prevention, as a Centre of Excellence for Molecular Diagnostics. The lab would focus on rare disease diagnosis as well in coming times. He added that the lab will also address

Tuberculosis (TB) prevalence with a special focus on multidrug resistance, an effort in line with the Government of India's mission of eradication of TB by 2025. “Learnings from the current pandemic underscore the importance of genome sequencing and surveillance. We look forward to understanding the science of pathogens & diseases further with a long-term vision in handling future pandemics,” said Shri Sampath Kumar.

CSIR-CDRI Transfers Technology for Safer Drug for Heart Attack and Stroke to Marc Laboratories Ltd



The CSIR-Central Drug Research Institute (CSIR-CDRI), Lucknow, committed to support the Pharma Cluster in Uttar Pradesh has tied up with UP-based Marc Laboratories Pvt. Ltd, a young progressive enterprise with an operating base in 13 other states, and signed an agreement for the development of a synthetic compound

S-007-867 as a modulator of the blood coagulation cascade, in particular as an inhibitor of collagen-induced platelet aggregation. This may help treat patients with coronary and cerebral artery diseases.

The institute has recently obtained permission to initiate Phase I clinical trials for the drug.

Prof. Tapas K. Kundu, Director, CDRI said, "This is a great moment for CSIR-CDRI, the premiere drug development research institute of the country as it has transferred the technology for the synthesis of compound successfully to Marc Laboratories Ltd.

Arterial thrombosis is an acute complication that develops on the chronic lesions of atherosclerosis leading to heart attack and stroke. Therefore, inhibition of platelet collagen interaction is anticipated to be a promising therapeutic strategy to treat intravascular thrombosis.

The compound S-007-867 significantly inhibits collagen mediated platelet activation and subsequently reduces the release of ATP from dense granules and thromboxane A₂ via COX1 activation. Thus it effectively maintains blood flow velocity and delays vascular occlusion (blockage of the blood vessel, usually with a clot) and inhibits thrombogenesis (formation of blood clot) without compromising hemostasis.

This drug has less bleeding risk as compared to existing therapies for coronary and cerebral artery diseases. In animal experiments, the compound elicited better antithrombotic protection than the standard of care with a minimal bleeding tendency.

On this occasion, Prof. Tapas K. Kundu, Director, CDRI said, "This is a great moment for CSIR-CDRI, the premiere drug development research institute of the country as it has transferred the technology for the

synthesis of compound successfully to Marc Laboratories Ltd. This will allow Marc Laboratories to scale up the methodology for the production of the compound under cGMP conditions. This would help to initiate the Phase I clinical trials with the drug to check its safety and efficacy in human subjects."

He added that he is optimistic that this compound would reach the market in a quick time for the benefit of humanity. He further mentioned that this Industry-Academia partnership will be very beneficial for the development of the Pharma cluster in Uttar Pradesh and will open up new avenues for Made in India & Indigenous affordable drugs for the Nation.

Mr Prem Kishore, Chairman, Marc Laboratories said, "Marc's association with CSIR-CDRI will be beneficial to both parties and they will be working hard to take the novel compound forward and complete all regulatory requirements so that it reaches the market at the earliest."

The technology for the preparation of the compound S007-867 was demonstrated by Dr Sanjay Batra and Dr Anil K.S. to the team of Marc Laboratories headed by the plant manager Mr Avinash Srivastava.

Technology Transfer of CSIR-IIIM-160 as Nutraceutical Product for Rheumatoid Arthritis to Viridis Biopharma

CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, has developed a new gastroretentive sustained release capsule formulation IIIM-160-SR for management of pain in rheumatoid arthritis from *Bergenia ciliata*. *Bergenia ciliata* is one of the most

important medicinal herbs in India, grows wild in the temperate Himalayas from Kashmir to Bhutan.

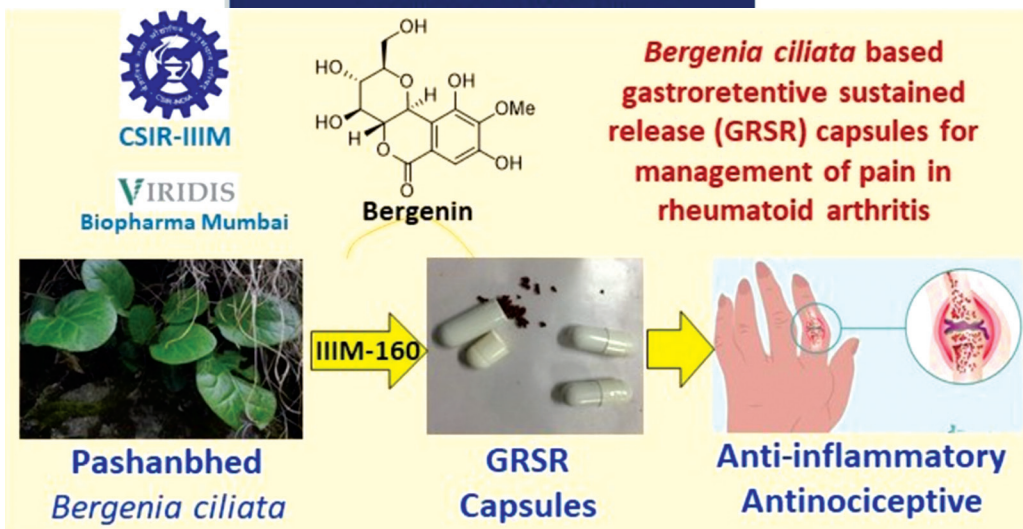
CSIR-IIIM has performed a systematic study on this botanical lead for its anti-inflammatory/antiarthritic as well as anti-nociceptive activity in

**TECHNOLOGY TRANSFER
OF**
Bergenia ciliata Based Nutraceutical Product for the Management of Pain in Rheumatoid Arthritis


To



M/s Viridis BioPharma Pvt Ltd, Mumbai



various cellular and animal models. The safety profile of the lead has been demonstrated in regulatory toxicology studies, and the institute has also secured a patent on the product.

The product is aimed at managing the pain in rheumatoid arthritis *via* its dual activity against the pain as well as inflammation. The Institute is also developing the lead in a drug route (phytopharmaceutical). The technology has been licensed to M/s Viridis BioPharma Pvt. Ltd, Mumbai, for manufacture and marketing as a nutraceutical product in India and abroad.

Dr D.S. Reddy was delighted about the technology transfer of *Bergenia ciliata* based IIIM-160SR in the nutraceutical category to Viridis BioPharma and is looking forward to a fruitful collaboration between the research Institute and Industry. CSIR-IIIM is also continuing to work on the development of a phytopharmaceutical drug from this plant.

Phytopharmaceuticals is a new class of drugs from a plant source and in India, it has great potential owing to its great strength in the Indian System of Medicine. Phytopharmaceutical drugs will prove to be very beneficial in the years to come as they combine traditional wisdom of the Indian system of medicine and scientific development and validation using modern science. Dr D.S. Reddy also acknowledged and appreciated the efforts of Dr Ram Vishwakarma, previous director of the Institute, in this direction.

Mr Ashit Vora, Managing Director, Viridis BioPharma Pvt. Ltd said that pain management in Arthritic conditions is a long term chronic issue faced by a large section of the ageing population and there is a dire need for safe alternative therapies. Supplementation with evidence-based science-supported nutraceutical/dietary supplements will be well accepted in the marketplace.

The product is aimed at managing the pain in rheumatoid arthritis *via* its dual activity against the pain as well as inflammation.

The MoU between CSIR-NCL and SDMU intends to search for candidate molecules that have the potential to treat an infection caused by antimicrobial resistance ESKAPE pathogens.

CSIR-NCL Signs MoU with SDMU

CSIR-National Chemical Laboratory (CSIR-NCL), Pune, has signed a Memorandum of Understanding (MoU) with the Shri Dharmasthala Manjunatheshwara University (SDMU), Dharwad to explore the bioactive molecules for Multidrug-resistant (MDR) strains of different clinical isolates.

The increasing incidence of antibiotic-resistant bacterial pathogens has resulted in an urgent need for new, clinically useful antibiotics. Antibiotics in clinical development are insufficient to address today's resistant pathogens. Multi-drug resistance is a big problem in gram-negative bacteria, making many antibiotics and antimicrobial agents ineffective in treating infections. There is an urgent need to search for usable alternatives to antimicrobial agents. The microbial metabolites and their chemical modifications are versatile in tackling the menace of antimicrobial resistance.

The proposed MoU will focus on the development of genome sequencing and mass spectrometry technology and bioinformatics-based analysis to identify

specialised metabolite and their biosynthetic gene clusters that have emphasised the vast genetic potential of actinomycetes as nature's pharmacists. Their potential to produce specialised metabolites is far more than initially revealed by traditional screening.

The MoU between CSIR-NCL and SDMU intends to search for candidate molecules that have the potential to treat an infection caused by antimicrobial resistance ESKAPE pathogens. CSIR-NCL synthesised molecules and derivatives will be subjected to activity profiling against drug resistance organisms from the clinical sample and further analysis.

CSIR-NCL team led by Dr Syed G. Dastager has been involved in synthesising natural and biological molecules having potential biological applications. The group interfaces chemistry with biology with its understanding of organic chemical mechanisms underlying biological processes. The team has successfully identified a few molecules with promising activity against gram-negative organisms.

Conferences/Workshops/Seminars

NIScPR SVASTIK Lecture Series on “Marvels of Indian Metallurgy”

Continuing with the NIScPR SVASTIK Lecture Series, CSIR-NIScPR, New Delhi, organised the second session on “Marvels of Metallurgy-I”, on 15 November 2021 to commemorate the National Metallurgists Day, celebrated on 14 November. The session aimed to celebrate and promote India's rich legacy of traditional knowledge and

workmanship in the field of metallurgy. The speakers in the session were Prof. B.N. Jagatap, Senior Professor, IIT Bombay, Mumbai, and Dr V. Ramanathan, Assistant Professor, IIT (BHU), Varanasi.

Dr Charu Lata, Senior Scientist & Head of Traditional Knowledge Studies, CSIR-NIScPR,

'Marvels of Indian Metallurgy-I'

to commemorate the National Metallurgists' Day 2021

Organised by

Traditional Knowledge Studies Division, CSIR-NIScPR, New Delhi

Date: 15 November, 2021 | Time: 3:00 PM

Join us live on Facebook: tinyurl.com/SVASTIKLIVE



Distinguished speakers



Prof Ranjana Aggarwal
Director, CSIR-NIScPR



Prof B. N. Jagatap
Senior Professor, IIT Bombay, Mumbai



Dr V. Ramanathan
Assistant Professor, IIT (BHU), Varanasi

Organising Committee



Dr Charu Lata
Head, Traditional Knowledge Studies
(TKS) Division (Coordinator)



Dr Paramananda Barman
Scientist, TKS Division
(Co-Coordinator)

Members:

Dr Suman Ray
Dr G. Mahesh
Ms Charu Verma
Ms Shubhada Kapil

began the SVASTIK Lecture Series session with the introduction of the distinguished guests.

Prof. Ranjana Aggarwal in her welcome address talked about the work being done by SVASTIK to bring traditional knowledge to society. She noted that the Traditional Knowledge (TK) that existed in India was not limited to any specific field but was very diverse. However, this knowledge was lost with time and now we need modern scientific evidence to show their value. Prof. Ranjana Aggarwal emphasised on TK as a bridge between social sciences and natural sciences. SVASTIK has communicated five traditional practices on social media till now, two of which depicted the traditional metallurgical prowess of India — metal mirrors from Aranmula still being practised in Kerala and the iron technology from the Agaria community.

Prof. Jagatap delivered the Keynote address on the topic "Iron and Steel Technology in India: From Ancient

Times to Early Modern Period". He emphasised the importance of the maturation of the iron technology in the 7-8th century BC in the second wave of urbanisation of the Gangetic plain and also how the knowledge from these technologies can be extended and used in the future.

Prof. Jagatap gave examples of the Iron Pillars in New Delhi, Mookambika temple, Mangalore, and Dhar and the iron beams in the Konark temple, among others, and noted that the iron technology in ancient India was far superior to those existing in European countries at the time. Prof. Jagatap gave a chronology of the evolution of iron technology in India starting from 1400 BC. He also provided examples from ancient Indian texts on the types of iron, methods of making various alloys with metals, and the craftsmanship in iron technology existing in earlier times and those existing even in current times in communities such as Asurs, Brijias, Agarias, and Lohars.

Prof. Jagatap emphasised the importance of the maturation of the iron technology in the 7-8th century BC in the second wave of urbanisation of the Gangetic plain and also how the knowledge from these technologies can be extended and used in the future.

The special address was delivered by Dr Ramanathan on the topic "Indian Metallurgical Heritage: Highlights on Gold, Silver and Zinc Works".

He also discussed the making of Indian Wootz steel which was later exported and used in the manufacture of the famous Damascus swords. These swords have been found to contain large amounts of nanomaterials, thus it can be said that Indians were unwittingly using nanomaterials back in the 16th century BC. However, with the restrictions on mining and the use of forests put forth during the colonial period and the imports of cheap iron from Europe, these ancient technologies died and the knowledge was lost. Prof. Jagatap noted that we need to focus on bringing back these technologies as they can have applications in future as well. For example, the use of rustless iron can be useful in making materials that can control radioactivity for hundreds of years.

The special address was delivered by Dr Ramanathan on the topic "Indian Metallurgical Heritage: Highlights on Gold, Silver and Zinc Works". He began with the description of these materials found in ancient Indian texts such as the Krishna Yajur Veda which is debated to be around 3000 BC. He mentioned how due to inconsistencies in older records and linguistic anomalies, some of the knowledge was lost or can cause confusion from a modern perspective. Quoting various examples, Dr Ramanathan highlighted the legacy of gold and silver from the Vedic ages which continues to this day.

The series concluded with a question and answer session and was followed by a vote of thanks by Dr Suman Ray, Principal Scientist CSIR-NIScPR.

Workshop on Noise Pollution Monitoring, Mapping and Control



CSIR-National Physical Laboratory, New Delhi, organised an international workshop on Noise Pollution Monitoring, Mapping and Control in collaboration with the Metrology Society of India on 17 December 2021 in hybrid mode. More than 250 participants from



all corners of the country joined the workshop.

Eminent international experts from various countries like UK, Germany, Japan, Netherlands, France and national experts from IIT Delhi, CSIR-NPL, CSIR-NEERI, SVNIT,



Gujarat, shared their valuable insights and experiences in noise mapping and noise pollution control in urban cities. The participants were mainly from pollution control bodies, academia, industry and research laboratories in India.

The objective of the workshop was to discuss the issue of noise pollution being faced by the world and to develop a harmonised strategy for noise mapping and control in India. Dr Ashish Kamalakar Darpe, Professor, Mechanical Engineering Department, IIT Delhi was the Chief Guest and

Dr S.K. Tyagi, Former Additional Director and Divisional Head, CPCB, was the Guest of Honor.

A brainstorming session on “Noise Pollution Monitoring, Mapping and Control” was also conducted wherein panellists from the industry, academia, research institutions and pollution control bodies participated and presented their views and suggestions for reducing noise pollution in urban cities of India. It was suggested that the number of noise monitoring terminals should be increased subsequently in metropolitan cities like Delhi for understanding the

The objective of the workshop was to discuss the issue of noise pollution being faced by the world and to develop a harmonised strategy for noise mapping and control in India.



status of ambient noise levels at various sites.

Also, the future planning of smart cities and aircraft runways should focus on noise pollution issues exclusively for prevention and control. A national policy for noise control shall be helpful for action planning. Silence and residential zones should be considered as the top priority for avoiding community health hazards associated with noise exposure. The panellists recommended that research institutions, academia and pollution control boards should work cohesively in future to deal with noise pollution so that associated health hazards are minimised. Awareness amongst the community about the health hazards associated with noise

pollution shall be a great initiative for tackling the noise pollution problem in metropolitan cities of India.

A compendium developed by CSIR-NPL experts on National Policy and Action Plan for Environmental Noise Management & Control in Metropolitan cities of India was also released during the workshop. The compendium presented the suggestions and recommendations on a national policy roadmap for noise pollution control that shall be helpful for the development authorities and pollution control bodies to appropriately devise and implement suitable noise control measures for reducing noise pollution in urban scenarios in India.



During the release of the compendium

Events

Programmes by CSIR-HRDC

Induction Programme for Newly Recruited Scientists at CSIR-NGRI, Hyderabad

The 40th Induction Programme for Newly Recruited Scientists was organised by CSIR-HRDC (Human Resource Development Centre), at CSIR-NGRI, Hyderabad, during 15-20 November 2021. The Programme was coordinated by Dr Shobhna Choudhary,

Sr Scientist, and Co-coordinated by Mrs Preeti Chaudhary & Mr Sandeep Mavi, CSIR-HRDC.

Twenty newly recruited scientists participated in the programme that covered CSIR vision, mission & culture, national & global S&T



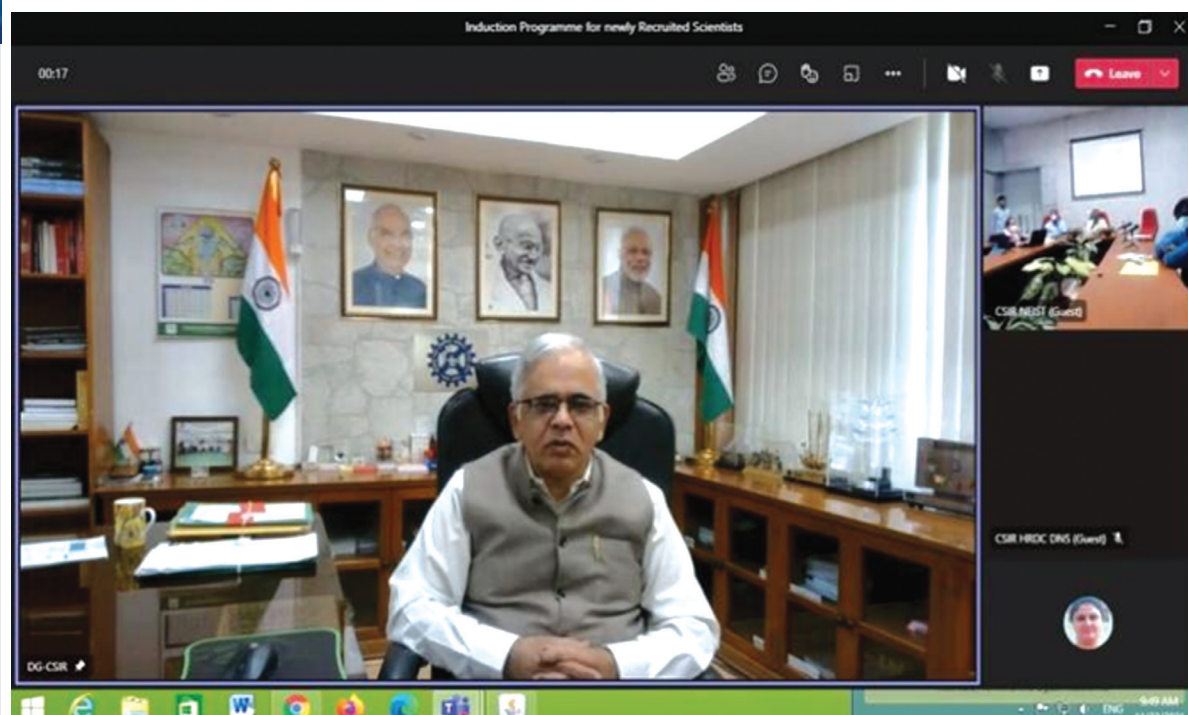
and industrial scenario, societal application in S&T, IPR, procurement, administrative matters, financial system of CSIR, preventive vigilance, gender sensitisation, etc. The programme also included hands-on exercises, case studies, role plays, interactive sessions, laboratory and industry visits, etc.

Dr R.K. Sinha, Head CSIR-HRDC, welcomed the participants and the dignitaries. Inaugural Address was delivered by Dr V.M. Tiwari, Director, CSIR-NGRI, Hyderabad. Dr Srivari Chandrasekhar, Director, CSIR-IICT, Hyderabad, was the Guest of Honour. Prof. B.J. Rao, Vice-Chancellor, University of Hyderabad gave the keynote address.

Dr Vinay K. Nandicoori, Director, CSIR-CCMB, Hyderabad, also interacted with participants and gave the valedictory address.



Induction Programme for Newly Recruited Scientists at CSIR- NEIST, Jorhat



The 41st Induction Programme for newly recruited scientists was organised by CSIR-HRDC, at CSIR-NEIST, Jorhat. The Programme was coordinated by Dr Nadir Sheikh, Sr Scientist, CSIR-HRDC.

Dr Shekhar C. Mande, Secretary, DSIR and DG, CSIR, inaugurated the programme and addressed the participants.

Dr G. Narahari Sastry, Director, CSIR-NEIST gave the opening remarks. Dr T. Ramasami, Former Secretary, DST, also interacted with participants and shared his rich experience. Resource persons from various divisions of CSIR HQ shared their knowledge and experiences and presented the overall view of the functioning of CSIR.

Announcements

Seminar, Webinar and Blog Writing Competition 2022



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Submit entries in hard copy/soft copy along with authentication letter from school

Entry Submission

Till 30th April, 2022

For more information visit www.csir.res.in

Printed and Published by

Hasan Jawaid Khan on behalf of CSIR-National Institute of Science Communication and Policy Research
Dr K.S. Krishnan Marg, New Delhi -110 012 and printed at NIScPR Press
Dr K.S. Krishnan Marg, New Delhi -110 012
Editor: Hasan Jawaid Khan; Assistant Editor: Sonali Nagar
Design: Neeru Vijan, Abhinav Raj; Production: Ashwani Kumar Brahmi
Phone: 25848702; Fax: 25847062; E-mail: hjk@niscpr.res.in
Website: <http://www.niscpr.res.in>
Please direct all Subscription-related queries to:
Sales & Distribution Officer, NIScPR; E-mail: sales@niscpr.res.in; Phone: 25843359
Annual Subscription: ₹500; Single Copy: ₹50.00
RN 4512/57